

Georgia Department of Transportation
VOLUME 3
Programmatic 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

Refer to volume 2.

2 PROJECT MANAGEMENT

Developer shall establish and maintain an organization that effectively manages all Elements of the Work. This project management effort shall be defined by and follow the Project Management Plan (PMP), which is a collection of several management plans describing discrete Elements of the Work. The PMP is an umbrella document that describes Developer's managerial approach, strategy, and quality procedures to design and build the Project and to achieve all requirements of the DBF Documents. The PMP also includes GDOT's approach to management, quality assurance, and Submittal reviews.

The Financial Plan (FP) shall provide a description of how the Project will be implemented over time by identifying Project costs and the financial resources to be utilized in meeting those costs.

GDOT will develop the PMP and Initial Financial Plan (IFP) and obtain approvals from the U.S. Federal Highway Administration (FHWA) in accordance with the FHWA Major Project Guidance. Developer is responsible for providing any supplemental necessary information, materials, and documents to complete the PMP and any updates thereto, and to satisfy FHWA reporting requirements. Such supplemental necessary information, materials, and documents may include, but not be limited to, Developer's Quality Management Plan and Developer's Risk Management Plan, as well as Developer's management structure, Project team organization chart, and FHWA reporting requirements documentation. Developer shall supplement any information necessary for GDOT's preparation of the IFP. In addition, Developer shall assist GDOT in the development of the subsequent updates to the PMP and the FP, and shall assist GDOT in attaining FHWA approval on the PMP and the Financial Plan (FP) updates in accordance with the FHWA Major Project Guidance:

http://www.fhwa.dot.gov/ipd/project_delivery/defined/major_project.aspx

GDOT will provide the PMP and the IFP at or prior to first Notice to Proceed (NTP1). Developer shall submit to GDOT his information to update the PMP and the FP within sixty (60) days following NTP1.

PROJECT MANAGEMENT PLAN - A PMP shall document the procedures and processes that are in effect to provide timely information to the Project decision makers to effectively manage the scope, costs, schedules, and the quality of (as well as the Federal requirements applicable to) the Project. It shall also document the role of the agency leadership and management team in the delivery of the Project. Developer is required to complete the following Management Plans/documents and include them as Appendices to the PMP in addition to the PMP requirements in this Section 2. The requirements of these management plans and documents can be found throughout the Technical Provisions. The management plans and time of when each management plan shall be submitted for GDOT review are as follows:

- Design Schematic of the Project (at time of Proposal Submission);
- Project Quality Management Plan (QMP) and Design QMP (within thirty [30] Days from NTP1) pursuant to Section 2.2.4;

- Project Construction Quality Management Plan (within sixty [60] Days from NTP1), pursuant to Section 2.2.4;
- 120 Day Schedule (within thirty [30] Days of NTP1), pursuant to Section 2.1.2;
- Project Baseline Schedule (within ninety [90] Days of NTP1), pursuant to Section 2.1.3;
- Transportation Management Plan (within one hundred and twenty [120] Days from NTP1), pursuant to Section 18.2.1;
- Updates to the Public Information and Communications Plan (PICP) (Attachment 3-1) (within thirty [30] Days from NTP1), pursuant to Attachment 3-1;
- Comprehensive Environmental Protection Plan (CEPP) (within one hundred and twenty [120] Days from NTP1), pursuant to Section 4.3;
- Joint Project Inspection Documentation (within one hundred and eighty [180] Days from NTP1), pursuant to Section 2.3;
- Demolition and Abandonment Plan (within one hundred and eighty [180] Days from NTP1), pursuant to Section 10.4.1;
- Landscape Enhancement Plan and Hardscape Enhancement Plan (within ninety [90] Days from NTP1), pursuant to Section 15.2.2;
- Construction Maintenance Limits Plan (within one hundred and fifty [150] Days from NTP1 or prior to the start of a construction phase), pursuant to Section 19.2.1; and
- Construction Phasing Plan and Submittals Schedule for each construction phase (within thirty [30] Days from NTP1, pursuant to Section 23.1

2.1 Schedule Requirements

2.1.1 General Schedule Requirements

Developer shall comply with the Critical Path Method (CPM) Schedule requirements as defined in this Section 2.1. Developer shall be responsible for ensuring that all Work sequences are logical and that the CPM Schedule indicates a coordinated plan. The CPM Schedule shall indicate the order and interdependence of activities and the sequence for accomplishing the Work. The CPM Schedule shall illustrate all activities that occur during the contractual life of the Project, whom is responsible for each respective activity, and the duration for each activity as set forth in the DBF Documents.

Developer's lead scheduler shall have a minimum of five (5) years experience as a scheduler for transportation projects. The same scheduler for design scheduling and construction scheduling is highly preferred.

2.1.2 120-Day Schedule Requirements

Developer shall provide a 120-Day Schedule within 30 Days of NTP1 that meets all of the requirements of the Project Baseline Schedule, as per Section 2.1.3, but shall only be inclusive of those activities that will occur from Project letting to one hundred and twenty (120) days after NTP1.

Developer shall submit monthly updates to the 120-Day Schedule while the Project Baseline Schedule is being developed and until the Project Baseline Schedule is accepted. Monthly updates to the 120-Day schedule shall meet the requirements of the Project Schedule Updates.

120-Day Schedule Submittals shall include:

1. An electronic copy (Primavera P6 Version 7.x or greater) of the file used for the proposed Project Baseline Schedule revision;
2. A Critical Path Schedule plot; and
3. A full schedule plot.

2.1.3 Project Baseline Schedule Requirements

Developer shall use the Preliminary Baseline Schedule submitted with the Proposal as a foundation to prepare a Project Baseline Schedule and shall submit the Project Baseline Schedule to GDOT for review and acceptance. The schedule shall show milestones for intermediate and contract completion dates no later than those specified in the contract. All specified closure or restriction periods, non-work periods, or any other time restrictions in the contract shall be incorporated in the Project baseline schedule. The Project Baseline Schedule shall be submitted no later than ninety (90) Days after NTP1. Should a NEPA/GEPA Reevaluation be required, the Project Baseline Schedule shall illustrate activities of both GDOT and Developer for the respective activities that each are responsible for. The NEPA/GEPA Reevaluation schedule activities shall be in conformance with the approved NEPA/GEPA Reevaluation time provided for in Section 4.

The Project Baseline Schedule shall include all major Work activities required under the DBF Documents, in sufficient detail to monitor and evaluate design and construction progress from commencement of the Work to Final Acceptance of the Work. If required, the Project Baseline Schedule shall also include activities based on GDOT's schedule for acquisition of any State Proposed ROW, as well as for any Developer-identified Developer Proposed/Developer Acquired ROW, Utility Adjustments, permit acquisitions, and interfaces with other projects, localities, municipalities, and other Governmental Entities. For each major activity, Developer shall indicate the duration (in Days) required to complete the activity, along with the anticipated start and finish dates of each activity. In addition, the Project Baseline Schedule shall indicate the sequence of performing each major activity and the logical dependencies and inter-relationships between the activities.

The Project Baseline Schedule shall include a listing of all Submittals as called out in Volume 2, Section 23, other sections of the DBF Documents, or as required to obtain any acceptance by GDOT or any other Government Entity. Submittal activity durations shall include specific durations for GDOT review and/or acceptance of Developer's Submittals.

Float shall not be considered as time for the exclusive use of, or benefit of, either GDOT or Developer, but it shall be considered as a jointly owned, expiring resource available to the Project and shall not be used to the financial detriment of either party. Any method utilized to

sequester Float calculations will be prohibited without prior acceptance of GDOT. Any schedule, including the Project Baseline Schedule and all updates thereto, showing an early completion date shall show the time between the scheduled completion date and the applicable Milestone Schedule Deadline as “Project Float.”

The Project Baseline Schedule shall define the timeframe for completion of the Project and achievement of all contractual milestones, and shall be used to monitor progress and denote changes that occur during design and construction. Additional schedule requirements are as follows:

- The Project Baseline Schedule shall be organized in a Work Breakdown Structure (WBS). Each schedule activity shall be mapped to one (1) and only one of the parent WBS activities. The Project Baseline Schedule shall include all major Work activities required under the DBF Agreement.
- The WBS identified below shall be the basis for organizing all Work under the Contract Documents and shall be used to structure the baseline schedule. The WBS shall conform to the level of structure below, which represents the minimum levels of the WBS that all schedule information shall rollup to. Sections listed below that are not applicable to the Project should be removed at Developer's discretion. Developer shall further develop and detail the base WBS (the minimum requirements of which are listed below) in accordance with its specific schedule activities and shall retain the ability to summarize to at least the same level as shown in the base. Developer may add additional activities to the levels presented below with GDOT’s prior written acceptance. 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 1.1.5 Contract Milestone Deadlines

1.2 Design

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)

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 No.)

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 & 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 Intelligent Transportation System (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 Tolling

- 1.2.10.1 (By subsections determined by Developer w/GDOT concurrence)
- 1.2.11 QA/QC
 - 1.2.11.1 (By subsections determined by Developer w/GDOT concurrence)
- 1.3 Right of Way (ROW) Acquisition
 - 1.3.1 (By subsections determined by Developer w/GDOT concurrence)
 - 1.3.1.1 (By Parcel No.)
- 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 TCP/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 Managed Toll Lanes

1.5.2.1.3.1 Erosion Control

1.5.2.1.3.2 Earthwork

1.5.2.1.3.3 Pavement, Pavement Markings

1.5.2.1.3.4 TCP/MOT

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

1.5.2.1.3.6 Fencing

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, Managed Toll 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 No.)

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 No.)

1.5.4.1.3 Noise Walls

1.5.4.1.3.1 (By Noise Wall No.)

1.5.5 Railroad

1.5.5.1 _____RR (By subsections determined by Developer w/GDOT concurrence)

1.5.5.1.1 Bridges

1.5.5.1.2 Track work

1.5.5.1.2.1 Track

1.5.5.1.2.2 Switches

1.5.5.1.2.3 Signal Work

1.5.5.1.3 Flagging

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 Mgmt. Strategy/All Stages

1.5.9.1.2 Traffic Control and Signing

1.5.9.1.3 Temporary Detours

1.5.10 Tolling

1.5.10.1 (By subsections determined by Developer w/GDOT and SRTA concurrence)

1.5.10.1.1 Electronic Toll Collection System (ETCS) Infrastructure

1.5.10.1.1.1 Conduit Systems and Hubs

1.5.10.1.1.2 Support Structures

1.5.10.1.2 ETCS Equipment

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 and ETCS

1.7.12 Buildings

1.7.13 Incident Response

1.7.14 Customer Response

- The Project Baseline Schedule shall divide the Work into activities with appropriate logic ties to show Developer's overall approach to the planning, scheduling, and execution of the Work. The duration and logical relationships of the activities (or summaries at the project-phase level) shall be based on the actual duration and relationships anticipated. Developer shall not use calendar dates or constraints to logically begin or complete any activity unless calendar dates are shown in the DBF Documents. (In a case where a specific date is required to start or finish an activity, only a "start on or before" or a "finish on or before" constraint is to be used.)
- Activity Identification (ID): Developer shall use standard and consistent activity identification numbers, textual descriptions, and activity and project-level codes in a manner acceptable to GDOT for the Project Baseline Schedule. Developer shall maintain consistency with the Schedule Template provided in the RIDs for all Activity Identifications. Only the use of an alphanumeric coding structure with no spaces, hyphens, symbols, or characters other than letters is to be used in the Activity ID. The Project Baseline Schedule Submittal and resubmittals for revisions shall be clearly identified. New activities for the resubmissions of a Project Baseline Schedule and accompanying review period(s) shall be included on the revised Project Baseline Schedule and shall use the same revision number as the original submission individually identified by a sequential appended letter (A, B, etc.), as an indication of a revised version.
- Each required milestone as set forth in Volume 1, Exhibit 9 shall be included in the schedule and conform to the scheduling requirements set forth in the DBF Documents, and shall be assigned a "finish on or before" constraint date.
- No unspecified milestones, constraints, float suppression techniques, or use of activity durations, logic ties, and/or sequences deemed unreasonable by GDOT shall be used in the Project Baseline Schedule. Each Project Baseline Schedule Submittal shall clearly and individually define the progression of the Work within the applicable timeframe by using separate activities.
- The Project Baseline Schedule shall be used by all Parties for planning and monitoring the progress of the Work and may serve as supporting documentation for determining the Payment Request amount that may be compensable to Developer. The updated Project

Baseline Schedule shall show actual progress and not calculated progress. The use of Expected Finish Dates to calculate remaining activity duration is not allowed without prior approval by GDOT. Accepted changes in logic and approved changes to the DBF Documents shall be incorporated into the Project Baseline Schedule and identified in the narrative with each Submittal. These changes are to be identified with either the change notice number or another method accepted by GDOT to identify the change to the schedule.

- If Developer chooses to resource load the schedule, the following requirements should be met. The commodity, labor, or equipment quantity that the activity value will be based on shall be indicated as a resource. Labor-loading of activities shall be based upon total number of workers – not total number of crews. Major construction equipment to be used by Developer and subcontractors at all tiers in completing Work shall be assigned to applicable activities. The quantity shall represent the estimated effort in-place for the activity value.
- The WBS for each Work element shall indicate the duration, timing, and logical relationship to other Work elements, including relationships to activities other than the parent activity of the particular Work element. Activities shall be broken down minimally to Work elements (for example, bridges shall be broken down into foundations, substructure, superstructure, and decks). All Work shall be broken down to similar manageable Work elements. For Utility Adjustment Work, if the Work is not shown as an activity itself, such Work shall be shown as a Work element, where applicable. For Mobilization activities or Work elements, Developer shall provide a list of Work items that are included in each activity or Work element.
- The Project Baseline Schedule shall define the timeframe for completion of the Project and achievement of milestones, and shall be used to monitor progress and denote changes that occur during design and construction.
- Developer shall add an activity to the end of the schedule labeled “Weather Delays,” which shall be a sum of the remaining allotted number of days calculated in the Baseline Narrative Report in Section 2.1.4.

Project Baseline Schedule Submittals shall include:

1. An electronic copy (Primavera P6 Version 7.x or greater) of the file used for the proposed Project Baseline Schedule revision;
2. A schedule narrative meeting the requirements of Section 2.1.4;
3. A Critical Path schedule plot; and
4. A full schedule plot.

2.1.3.1 Logic Requirements

Logic ties shall refer to all relationship types. All activities/tasks on the Project Baseline Schedule shall meet the logic requirements below:

- A maximum duration of twenty (20) Calendar Days, and not less than one (1) Day, except activities relating to approvals and reviews by Governmental Entities, procurement activities, or as otherwise accepted by GDOT;
- Activity relationships shall be Finish-to-Start (FS) with no leads or lags, Finish-to-Finish (FF), or Start-to-Start (SS) with lags no more than one-half (1/2) of the predecessor's duration;
- The use of leads or lags with a negative value shall not be allowed on any activity relationship type;
- The schedule shall provide sufficient time for all Submittals and re-submittal review times required in the DBF Documents; and
- All activities shown in the schedule, with the exception of the first and last activity, shall have a minimum of one predecessor and a minimum of one successor activity.

2.1.3.2 Calendar Requirements

The use of standard GDOT calendars is required for scheduling the Project. Developer shall refer to Section 101.31 of the *GDOT Standard Specifications*. Developer shall be allowed to add calendars as needed for their specific use provided that the additional calendars are Project-Level Calendars and not Global Calendars.

2.1.4 Narrative Requirements

The Project Baseline Schedule and all schedule updates shall include a separate Narrative Report. The Narrative Report shall be updated with each schedule submission and pertain to the Work identified in the schedule.

For the baseline schedule Submittals, the Narrative Report shall include the following sections:

1. An explanation of the overall plan to complete the Project, including where the Work will begin and how the Work and crews will progress through the Project;
2. An explanation of the use and application of the workdays per week, number of shifts per day, number of hours per shift, holidays observed, and an explanation of how the schedule accommodates anticipated weather for each month. A list of the calendars used in the schedule and a definition of their type should also be submitted;
3. Description of the Work to be completed each season for multi-year projects;
4. A description of the Critical Path;
5. An explanation of the use of any allowed constraints, including the reason and purpose for each constraint;
6. A statement describing the status of any required permits;
7. Developer's proposed methods of operation for designing and constructing the major portions of the Work required by the DBF Documents; and

For Project Schedule Updates the narrative shall also include the following:

1. A description of the Work performed since the last schedule update. The Work performed shall match the Work scheduled to be performed since the last schedule update. If the Work performed does not match the Work scheduled to be performed, Developer shall include a detailed description of why there is a discrepancy between the activities that should have been completed or progressed as indicated in the previous schedule Submittal. GDOT may withhold payment if the reason for the discrepancy is not deemed an acceptable change in sequencing of activities or as outside of Developer's control (third party or weather-related) until additional documentation or a recovery plan is submitted and accepted as appropriate;
2. A description of the status of the scheduled completion date, focusing on any changes since the previous submission including an explanation if the scheduled completion date is projected to occur after the contract completion date;
3. An explanation if any contract milestone dates that are projected to occur after the dates set out in the contract;
4. A description of unusual labor, shift, equipment, or material conditions or restrictions encountered;
5. A description of any problems encountered or anticipated since the last schedule update; and
6. A statement that identifies any current and anticipated delays. A discussion of delays in the narrative report does not constitute notice in accordance with 105.13.B.9. The statement should include identification of the delayed activity, the type of delay, the cause of the delay, and the effect of the delay on other activities and Project milestones, as well as identification of actions required to mitigate the delay.

2.1.5 Project Schedule Update Requirements

Developer shall update, on a monthly basis, the accepted Project Schedule to reflect the current status of the Project and any accepted Compensation or Relief Events by GDOT. The Schedule Update shall be submitted monthly after acceptance of the Project Baseline Schedule and shall be developed in accordance with the applicable provisions of the DBF Documents.

Each Project Schedule Update shall accurately reflect all activities completed as of the data date of the updated Project Schedule. All completed or started activities are to be at least one day prior to the data date of the schedule. Developer shall submit the Project Schedule Update as an electronic version in PDF and .XER formats. Developer shall also submit a PDF version of the Critical Items Graphical Report for each Critical Path (zero float activities) sorted by activity early start date.

The Project Schedule Update shall include the following:

1. An electronic copy (Primavera P6 Version 7.x or greater) of the file used for the proposed Project Baseline Schedule revision;
2. A schedule narrative meeting the requirements of Section 2.1.4;
3. A Critical Path schedule plot;
4. A full schedule plot;
5. A five- (5) week look-ahead schedule for the activities to be completed between the schedule Submittal and the following month's schedule update;
6. A variance report of the previous month's five- (5) week look-ahead schedule; and
7. A letter stating the dates that Developer could not work on activities identified on the Critical Path due to inclement weather. If there were no weather delays experienced during the previous month, the letter should state as such.

No changes in activity durations, calendar assignments, logic ties, or constraints will be allowed in the Project Schedule Update without prior written acceptance of GDOT.

The monthly Project Schedule Update(s) shall reflect updated progress to the data date, forecast the finish dates for in-progress activities, and shall reforecast early dates and late dates for remaining activities, but shall otherwise contain no changes in activity durations, logic ties, or constraints without acceptance from GDOT. The Project Schedule Update(s) shall also incorporate and fully specify all appropriate information from the previously accepted Project Baseline Schedule. Interruptions to an activity, after that activity has begun, shall be added as a separate activity. The activity that is interrupted shall be split into two activities: the initial activity shall be marked as completed, and the new activity shall have an FS relationship with the added interruption activity.

GDOT will review the monthly Project Schedule Update(s) for consistency with Developer's WBS, the accepted Project Baseline Schedule, and the previous month's accepted update for conformance with the DBF Documents. Developer shall correct any deficiencies and resubmit the monthly Project Schedule Update(s). GDOT may withhold payment until the Schedule Update is accepted.

2.1.6 Project Baseline Schedule Revisions

It may become necessary to modify the Project Baseline Schedule to reflect changes to the accepted schedule, Work sequences, contractual changes (accepted Relief Events or Compensation Events), or to further subdivide the schedule. Developer shall request changes to the Project Baseline Schedule and submit such requested changes in writing to GDOT. GDOT shall have final approval authority for requested changes to the Project Baseline Schedule. No changes to the Project Baseline Schedule shall be made without the prior written acceptance of GDOT. Until GDOT approves a change, all Project Baseline Schedule Submittals shall be

tracked against the previously accepted Project Baseline Schedule. Accepted revisions will be incorporated into the Project Baseline Schedule at the next monthly schedule update.

Project Baseline Schedule revision Submittals shall include:

1. An electronic copy (Primavera P6 Version 7.x or greater) of the file used for the proposed Project Baseline Schedule revision; and
2. A narrative describing in detail any proposed changes to the current version of the Project Baseline Schedule with justification for the changes, including, at a minimum, the following:
 - Changes to activity original durations;
 - Changes to activity relationships and/or schedule logic;
 - Identification of activities that have been added, deleted, or modified;
 - Changes to the Critical Path on the Project Baseline Schedule; and/or
 - Changes or delays in any contractual completion date since the last Project Baseline Schedule Submittal.

GDOT will review the Project Baseline Schedule Revision Submittal(s) for consistency with Developer's accepted Project Baseline Schedule and for conformance with the DBF Documents. Once a Project Baseline Schedule Revision is accepted by GDOT, it shall become the Project Baseline Schedule of record and be used as the basis for subsequent Project Schedule Update(s).

2.1.7 Schedule Display Requirements

Each schedule submitted to GDOT shall display the following items on each page:

- Activity ID
- Activity Description (or Activity Name)
- Original Duration
- Remaining Duration
- Early Start Date
- Early Finish Date
- Late Start Date
- Late Finish Date
- Actual Start Date
- Actual Finish Date
- Total Float
- Percent Complete
- Legend
 - Contract Number
 - District
 - Developer Name
 - Project Location
 - Original Contract Completion Date

- Revised Contract Completion Date (as Applicable)
- Data Date

2.1.8 Extension of Contract Time

If Developer believes Work on the Project has been delayed for reasons beyond its control, a written request for an extension of contract time may be submitted in accordance with Article 13 of the DBF Agreement.

Developer's request for extension of time shall include its own analysis, using a method approved by the Engineer, of the delay using the Project Schedule Update at the time of delay and as-built information of work actually performed.

2.2 Quality Management Requirements

2.2.1 Document Management

Developer shall establish and maintain an electronic and hard copy document control system to store, catalog, and retrieve all Project-related documents in a format that is approved for use by GDOT. Unless otherwise directed by GDOT, record retention shall comply with the requirements included in the Retention Schedules for State Government Paper and Electronic Records, and the State Agency Specific Schedules for Department of Transportation, and they shall be provided to GDOT at the time of the expiration or earlier termination of the Agreement.

2.2.2 Quality Management Plan Submittal Requirements

Developer shall submit a comprehensive Quality Management Plan (QMP) to GDOT for approval that is consistent with and expands upon the preliminary QMP submitted with the Proposal and that conforms to the Construction Quality Assurance Program (CQAP) procedures in Attachment 2-5 with provisions contained in 23 CFR 637 Subpart B. . All audits, findings, and reports shall be provided to GDOT on a quarterly basis.

2.2.3 Quality Management Plan Requirements

Developer shall develop, implement, and maintain the QMP until Final Acceptance. The QMP shall describe the system, policies, and procedures that ensure the Work meets the requirements of the DBF Documents and provides documented evidence of the same.

The complete QMP shall incorporate the following features:

- Developer shall make all quality records immediately available to GDOT for review; Developer shall provide GDOT with a copy of any and/or all quality records when requested;
- The QMP shall encompass all Work performed by Developer and Contractors of all tiers;
- Developer shall submit to GDOT the results of all internal audits within seven (7) Days of their completion; and

- Developer shall promptly submit to GDOT non-conformance reports, upon both issuance and resolution.

The QMP shall contain detailed procedures for Developer's Quality Control (QC) and Quality Assurance (QA) activities. Developer's quality process shall incorporate planned and systematic verifications and audits undertaken by an independent party. Developer shall conduct all QC, QA, performance verification, and design overlay and coordination among design disciplines – all in accordance with the QMP and the requirements of the DBF Documents.

Inspections, reviews, and testing shall only be performed by entities prequalified by GDOT with training, qualifications, and certifications using equipment that is accurately calibrated and maintained in good operating condition at an AASHTO Materials Reference Laboratory (AMRL) accredited facility (AASHTO R18, Establishing and Implementing a Quality System for Construction Materials Testing Laboratories).

2.2.4 Quality Management Plan Structure

Developer shall organize the QMP in accordance with, and should include the topics described in, the following outline:

- **Project QMP** - a quality policy statement shall be provided that contains a complete description of the quality policies and objectives that Developer will implement throughout its organization. The policy shall demonstrate Developer senior management's commitment to implement and continually improve the quality management system for the Work. The QMP will also include policies, plans, processes, and procedures for:
 - Organizational requirements with contact information of Developer's Organization as defined;
 - Roles and responsibilities of the Quality Team;
 - Administrative processes and procedures common to both design and construction quality management;
 - Quality records management processes and procedures; and
 - A comprehensive noncompliance process.

The Project QMP shall be submitted to GDOT for review no later than thirty (30) days from NTP1.

- **Design QMP** - including but not be limited to plans, processes, and procedures for:
 - Design development including checking, peer review, cross-discipline coordination for developing Project plans, and Project specifications and estimates with supporting technical documentation;
 - Managing design reviews and changes during design and construction;
 - Independent design checks for major permanent structural components;
 - Design decision making;
 - Design communication, coordination, and collaboration;

- Managing GDOT reviews and responses to Submittals, Work Change Directives, and Change Requests;
- Document control;
- Design and engineering support during construction, witnesses tests, reviewing quality inspection and test records, responding to Request For Information (RFI's) applications, and field changes;
- Independent auditing of design quality management;
- Design criteria adherence; and
- Non-compliance management.

The Design QMP shall be submitted to GDOT for review no later than thirty (30) days from NTP1.

Construction QMP - including but not limited to plans, processes, and procedures for Developer's QC and Quality Acceptance (QAcc):

- Construction inspection, testing, management, and administration;
- Tracking, Measuring, and documenting construction progress;
- Construction decision making;
- Ensuring that only the most up-to-date Released for Construction documents are being used;
- Plan/Protocols for inspection, testing, and maintaining quality certifications;
- Managing reviews and responses to construction documentation (RFIs, field changes, design changes, construction changes, claims, etc., during construction);
- Managing and tracking approved construction changes;
- Managing and controlling construction schedule;
- Construction communication, coordination, and collaboration;
- Environmental compliance;
- Independent auditing of construction quality management, as well as quality oversight processes and procedures; and
- Non-compliance management.

QMP forms and checklists are to be used to facilitate and document QA efforts, including pre-work activity checklists that depict all items required to perform the particular design, construction, and operational efforts, such as: means and methods, subcontractor involvement, materials, and inspection/testing requirements.

The construction QMP shall be submitted to GDOT for review no later than sixty (60) days from NTP1.

2.2.5 Nonconformance Report (NCR) System

A Nonconformance Report (NCR) process shall be required to document, report, and track any Work that fails to conform to the requirements of the DBF Documents in a manner consistent with ISO 9001. Examples of nonconformance are: physical defects; test failures; incorrect or inadequate documentation; or deviation from the design processes, inspection, or test procedures described in the Project QMP.

GDOT will implement a web-based management system, which will have the capability for documenting and implementing the NCRs, that includes the description of the NCR, corrective action, action to prevent, the defined roles, dispositions, tracking log, and work-flow states.

The Originator of the NCR indicates the description of the nonconforming Work and the applicable requirements, and assigns the NCR to the Responsible Organization for disposition.

The Responsible Organization gives a full description of the nature, date, location, and any other pertinent facts, and also indicates the root cause, corrective actions, and actions to prevent recurrence. The Responsible Organization shall submit a proposed disposition of the nonconforming Work that has been reviewed and approved by Developer's Quality Manager and the EOR to GDOT. If the disposition is accepted by a GDOT-Authorized Representative, the Responsible Organization is notified of the final determination. Upon verification that the disposition has been performed, the NCR is closed. If the disposition is not accepted by GDOT, the NCR will remain opened until the disposition is accepted by GDOT.

2.2.5.1 Role Definitions and Order of Review

For purposes of the Technical Provisions, the following terms have the meaning and roles identified below:

- **Originator** – The entity that initiates and creates the NCR. The Originator can be Developer or GDOT. The Originator closes the NCR document once all requirements have been met. The NCR cannot be closed until the Responsible Organization's disposition is approved by GDOT.
- **Responsible Organization** – The entity to whom the NCR is sent. The Responsible Organization is the entity directly responsible for the nonconforming Work for which the NCR was written and is responsible for correcting the nonconforming Work and providing proposed disposition to resolve the NCR.
- **Developer's Quality Manager (QMgr)** – The individual that is responsible for assuring the quality of the Work. After the QMgr has reviewed the Responsible Organization's disposition, he forwards the NCR to the EOR and the GDOT-Authorized Representative.
- **Engineer of Record (EOR)** – The individual that is responsible for the design of the Work. The EOR must review, reject, or approve all NCRs and supporting documents, subject to the GDOT-Authorized Representative's determination of the approved Design Documents. Any changes from the requirements of the DBF Documents must be presented for approval as a Deviation. If the subject of the NCR is not related to a subject that would typically require a design professional's input, the EOR must note that the NCR is "not applicable."
- **GDOT** – GDOT must review and make a recommendation to reject or approve all dispositions and supporting documents.
- **GDOT-Authorized Representative** – The individual authorized by GDOT to be responsible for monitoring the NCR process.

2.2.5.2 Disposition Options

After the Originator of an NCR has activated an NCR, the Responsible Organization provides a proposed disposition. Options available for the disposition are defined in the NCR as follows:

- **Reject** – The Work is unsuitable for its intended use and incapable of being reworked or repaired to meet the specified requirements of the DBF Documents.
- **Rework** – The deficiency can be brought into conformance with the DBF Documents through re-machining, reassembling, reprocessing, reinstalling, or completing the required operations.
 - Inspection is required after the rework is completed to verify the rework is satisfactory to the Originating Party.
- **Repair** – Action is required that will result in making the Work acceptable for its intended use, as determined by an engineering evaluation, although the item might not meet all of the requirements of the DBF Documents.
 - Inspection is required after the repair is completed to verify the repair is satisfactory to the Originating Party.
- **Accept-As-Is** – Allows the use of the Work completed that does not meet all requirements of the DBF Documents, but it is determined by engineering evaluation that the Work will satisfy its intended use.

2.2.5.3 Corrective Action

In addition to the resolution of nonconformance on an individual basis, the corrective action process will urgently recognize, report, and resolve systemic and serious deficiencies, including:

- Repetitive NCRs that indicate inadequacies in either production processes or inspections;
- Issues of safety or conditions likely to have a significant effect on the Project; and/or
- Quality procedures not being carried out in a timely fashion.

The Corrective Action mechanism will address the possibility that the personnel responsible for the relevant activity might be a primary cause of the deficiencies. Remedial action might involve additional training and, in some cases, removal of personnel from the activity and/or the Project.

2.2.5.4 Workflow States

The following workflow states are applicable to the NCR:

State	Description
Draft	Indicates that the NCR is being written.
Active	Indicates that the NCR has been submitted to the Responsible Organization to provide causes, corrective actions, actions to prevent recurrence, and a disposition for the nonconforming Work.

Pending Review/Correction	Indicates that the Responsible Organization has responded with a disposition, and the disposition is under review. The document is routed to appropriate parties for concurrence/approval of the disposition.
Pending Closure	Indicates that the nonconforming Work has been corrected, and the Responsible Organization is waiting for inspection/verification and closure.
Closed	Indicates that the nonconformance has been resolved satisfactorily, and the NCR is closed.

2.2.6 Quality Terminology

Quality terminology, unless defined or modified elsewhere in the DBF Documents, shall have the meaning defined in ISO 9001. Terms used in ISO 9001 shall have the meanings defined below:

- Organization: Developer's organization, including any Affiliates and Contractors.
- Customers: the Users of the roadways, GDOT, SRTA, Customer Groups, and key stakeholders that have an adjacent property interest or connecting roadway.

2.2.7 Quality Management Updates

Developer shall regularly maintain the QMP to include the following information:

- The organizational chart that identifies all quality management personnel, their roles, authorities and line reporting relationships;
- Descriptions of the roles and responsibilities of all quality management personnel and those who have the authority to stop Work; and
- Identification of testing agencies, including information on each agency's capability to provide the specific services required for the Work, certifications held, equipment, and location of laboratories.

2.2.8 Responsibility and Authority of Developer Staff

Personnel assigned to perform inspection, testing, or monitoring of characteristics for QC shall not be those personnel performing or directly supervising the Work being accepted. Developer's QMgr and its QC staff shall have no responsibilities in the production of the Work.

The QMgr shall prepare a monthly report of the quality inspections and tests performed, results of such inspections and tests, and occurrences and resolution of non-conformance discoveries. Developer shall submit the monthly reports to GDOT for review.

Developer's QMgr, QA Manager, Construction Engineering and Inspection (CEI) Consultant, and QC Manager(s) shall have the authority to stop Work because of quality-related issues.

2.2.9 Design Quality Management Plan

It shall be Developer's sole responsibility to provide Project plans, drawings, and specifications of such a nature to deliver the finished construction Work in accordance with all DBF Document's requirements. GDOT comments pertaining to design documents shall not relieve Developer of that responsibility. Developer shall not begin Construction Work until all GDOT comments on the design Submittal are resolved to the satisfaction of GDOT, and the plan is accepted.

Developer shall assign a Design Manager that shall be responsible for the supervision and quality of all Design Work and design processes including, but not limited to, the following:

- Accuracy;
- Adequacy;
- Conformance to professional standards of practice;
- Compliance with all legal requirements and standards mandated by the Agreement;
- Cost effectiveness;
- Quality; and
- Fitness for purpose and function as specified or implied in the Agreement.

Developer shall provide Independent Design Checks by an Independent Design Reviewer. Independent design reviews are to be performed and documented per the process defined in Developer Design QMP and completed prior to any Submittal to GDOT. At GDOT's discretion, GDOT will perform a periodic audit of the Developer's design quality management at a frequency no less than monthly.

Elements of the Design QMP process are:

- **Design Workshop** - Within fifteen (15) days of NTP1, Developer shall arrange a design workshop to be attended by the Designer's personnel, GDOT, and the Utility Adjustment Team (UAT), as well as any invited participants of the Project. The purpose will be to familiarize involved personnel with the design concepts, issues, status, and review procedures. Developer and GDOT will jointly develop the agenda of the workshop and how it will be organized (i.e., by GDOT department and engineering discipline). Consensus will be determined during the Design Workshop on the use of Interim Design reviews for facility elements that pose complex or entail additional conflict resolution effort. The workshop will also discuss the extent of GDOT and UAT reviews. The agenda will include developing agreements regarding time allowed for design reviews. The intent of the workshop is to make the subsequent design reviews more effective and efficient for all parties.
- **Design Review Quality Plan** - The Design Review Quality Plan shall be part of the QMP and be submitted for GDOT review and approval prior to the start of design and

within thirty (30) Days of NTP1. No design Submittals shall be provided until the Design Review Quality Plan is approved by GDOT. The Design Review Quality Plan shall include both the quality responsibilities of the Design Manager and the independent responsibilities of the QMgr. The Design Review Quality Plan shall be specific to each stage of design development. Developer shall make a single independent comprehensive design check and design review for every Submittal. Developer shall provide plans in accordance with the Plan Development Process (PDP), Electronic Data Guidelines (EDG), and the Plan Presentation Guide (PPG) and Manuals for GDOT reviews. Any deviation of software versions from the Technical Provisions used in producing the plans will be allowed under the condition that Developer provides the software, access to software licenses, and training for use of the proposed software. The Design Review Quality Plan stages of design development per the approved Construction Phasing Plan (see Section 23) are:

- Preliminary Design Documents for each approved Construction Phase (See Section 23);
- Final Design Documents for the Staged Design Submittals (see Section 23);
- Final Design Documents (Complete Set) for the approved Construction Phase; and
- As-builts.

Developer shall document all design criteria and design decisions in a Project Design Data Book submitted for approval, per Section 23, and then kept with the project files. The Project Design Data Book shall include complete and up-to-date design parameters and decisions as presented in Chapter 5, Concept Design of the GDOT Plan Development Process (GDOT PDP) included in Volume 3 Manuals.

Developer shall submit the initial Project Design Data Book for GDOT acceptance no later than 30 Days after NTP1. Developer shall not submit any Design Submittal until the Project Design Data Book has been approved.

Developer shall update and include the relevant portions, or as requested by GDOT, of the Project Design Data Book with each design submittal, including, but not limited to Preliminary Design, Final Design, RFC and RFC revisions. Developer shall include the finalized and comprehensive Design Project Data Book with the as-built submittal.

Developer may choose to submit certain drawings for facilitating better communication with GDOT. Interim Design reviews are intended to resolve conflicts and unresolved comments after the Preliminary Design but prior to Final Design Submittals.

- **Independent Design Checks** - Developer shall cause Independent Design Checks to be carried out by an Independent Design Reviewer not involved in the production of the design being reviewed. Those performing the checks should have equal or greater qualifications and experience as the EOR for the design being checked and should be employed by a different engineering firm or located in a separate office location. Developer shall provide to GDOT and the UAT a plan/process and written procedures for this Independent Design Check. An Independent Design Check shall be provided for

each design Submittal prior to being submitted to GDOT. Developer shall provide all comments and comment responses between Developer's EOR and the Independent Design Reviewer for each Submittal review. GDOT will not initiate any design Submittal Review before Developer submits all comments and comment responses between the Developer's EOR and the Independent Design Reviewer.

Independent Design Checks are comprised of design assessments and analytical checks as follows:

Design Assessment – a review of general compliance with the requirements of the Agreement, taking into consideration the following areas:

- Project design criteria;
- Applicable codes and standards;
- Methods of analysis;
- Computer software and its validation;
- Interface requirements;
- Materials and material properties;
- Durability requirements;
- Constructability;
- Context Sensitivity;
- Environmental compliance; and
- Any required Design Exceptions and/or Variances.

Developer shall submit to GDOT, and FHWA as appropriate, all requests for Design Exceptions and Design Variances, including justification and supporting documentation, for review and approval.

Analytical Check – a review using separate calculations (and without reference to Designer's calculations) to establish the structural adequacy and integrity of critical structural members. This includes, but is not limited to the following:

- Structural geometry and modeling;
 - Material properties;
 - Member properties;
 - Loading intensities;
 - Foundation loads; and
 - Structural boundary conditions.
- **Changes Subsequent to Review** - If design is amended subsequent to the design review and approval by GDOT, Developer shall re-check and re-certify the design as an additional design review. Substantive changes to plans and specifications initiated by Developer and already checked by the Design Manager and certified by the QMgr shall be subjected to the Design Review process as an entirely new design.
 - **Design Reviews** - Design reviews and meetings shall be conducted by Developer's Design Manager. The QMgr, the Design Manager, EOR, Developer's Independent

Design Reviewer, and any Design Professionals having significant input into the design or review shall be present. Developer shall notify and invite GDOT and the UAT to participate in all design reviews. At a minimum, the Design Manager shall organize and facilitate a design review kick off workshop with GDOT within thirty (30) days of NTP1 to discuss design Submittals. Thereafter, design review meetings shall be scheduled monthly, or at the frequency determined by GDOT, until all Submittals have been approved to ensure process and success is obtained for all design reviews. GDOT may also invite additional stakeholders to attend. GDOT's participation in design reviews shall not relieve Developer of its responsibility for the satisfactory completion of the Work in accordance with all requirements of the DBF Documents.

Developer's Design Manager shall provide the agenda of the meeting in advance of the meetings and shall provide a detailed summary status of all Submittals to GDOT for their review. The detailed summary status list, at a minimum, shall provide the date submitted, to whom it was submitted, contractual required review period, total days in submission, date approved, and comments.

Developer shall provide or make available to review meeting participants all design documents (e.g., drawings, reports, specifications, basis of design memorandums, and other technical memorandums as necessary to support design decisions) pertinent to the design review, including all prior comments and actions resulting there from. Developer shall prepare and distribute minutes from the review meetings. Design Reviews shall be conducted for the following:

Preliminary Design Submittal shall be the first design review meeting requiring participation of GDOT and is intended to verify that the concepts proposed by Developer comply with the requirements of the DBF Documents. The QMgr shall verify in writing the compliance and completeness of the Design Submittal prior to presenting the Preliminary Design to GDOT for review. The following issues shall be discussed:

- All requirements of the DBF Documents applicable to the proposed concept documents, including: all applicable standards and legal requirements, and environmental permit conditions that have been identified; and the proposed designs are in compliance;
- The proposed concepts are substantiated and justified by adequate site investigation and analysis;
- ROW requirements have been identified, and any changes to the State Proposed ROW have been addressed for GDOT to maintain and operate the Project after Final Acceptance;
- The proposed concepts are constructible;
- Required materials and equipment are available;
- The proposed concepts meet all quality requirements, and all required QMP procedures have been followed including those for site maps and concept drawings, as well as draft specifications for any materials or methods that are not industry standard;

- Proposed concepts comply with permits and environmental compliance plan requirements; and
- All Design Exceptions and Variances are approved.

Optional limited Interim Design reviews are intended to resolve conflicts and unresolved comments after the Preliminary Design but prior to Final Design. Developer should use Interim Design reviews to remedy conflicts, account for exceptions, and incorporate betterments. Developer shall notify GDOT and the UAT if Interim Design reviews are necessary and shall schedule the necessary design reviews. Workshops, meetings, and “over-the-shoulder” reviews are means to facilitate Interim Design reviews by GDOT.

Developer may also use Interim Design reviews to verify that the concepts and parameters established and represented by Preliminary Design are being followed, and that all requirements of the DBF Documents continue to be met. Developer shall specifically highlight, check, and bring to the attention of GDOT any information differing from or supplemented to that presented at the Preliminary Design review.

Final Design reviews shall verify that the concepts and parameters established and represented by Preliminary Design and any Interim Design are being followed and that all Agreement requirements continue to be met. Developer shall specifically highlight, check, and bring to the attention of GDOT any information differing from or supplemental to that presented previously. Prior to scheduling the Final Design review with GDOT and the UAT, the QMgr’s independent review shall have been completed.

Developer shall be responsible for demonstrating that any proposed specifications meet or exceed the minimum Agreement and permit requirements, as determined by GDOT in its sole discretion, and are suitable and appropriate to control the Work.

Temporary Work design reviews, except where public safety might be affected, are the responsibility of Developer to assure conformance with the Final Design plans and specifications and in accordance with the Agreement requirements. Developer shall verify pertinent dimensions in the field prior to conducting a Temporary Works plan review. Developer shall check, review, and certify Temporary Works Designs prior to their use in fabrication and/or construction.

The review of as-built record documents shall be performed initially by Developer to assure “red-lines” and authorized changes to the Final Design Plan are properly notated on the record plans and specifications, and that quality documents and facility records indicating variances or changes have been reflected on the plans and specifications. Once Developer has completed their review, the as-built records are to be submitted to GDOT for review and acceptance.

Design quality records shall be maintained by Developer in an auditable format according to the QMP procedures. GDOT has the right to audit the quality records for compliance with the QMP and the Agreement requirements. Upon completion of the Project, the quality records shall be turned over to GDOT.

Independent design review for the tolling-related components shall be conducted by the same team of individuals for the entire Project unless approved in writing by GDOT.

2.2.10 Record Drawings and Documentation

Prior to Final Acceptance, Developer shall submit to GDOT a complete set of Record or As-Built drawings for all the Construction Phases of the Project. The Record Drawings and documentation shall be an organized, complete record of Plans, supporting calculations, and details that accurately represent what Developer constructed. Developer shall ensure that the Record Drawings reflect the actual condition of the constructed Work.

Record Drawings shall be submitted in hard copy and electronic format for the portion of the Project actually opened to traffic. Developer shall include a signed statement ensuring that the Record Drawings reflect the actual condition of the constructed Work.

2.2.11 Construction Quality Management Plan

The Construction Quality Management Plan (CQMP) shall include a description of the roles and responsibilities of both Developer and GDOT, as described in Section 3 of GDOT's Construction Quality Assurance Program (CQAP) Attachment 2-5 for the Project, as summarized below:

- **Quality Control Program** - Developer shall be fully responsible for the quality of the Work, QC, and for all QC activities specified by the DBF Documents. Developer's QC portion of the CQMP shall include the internal procedures used by Developer that will ensure that the Work is delivered in accordance with the released-for-construction plans, shop drawings, working drawings, and specifications (as applicable). Developer's CQMP shall establish a systematic approach to define the processes, methods, procedures, and documentation for delivery of QC on the Project. These methods and procedures shall clearly define the authority and responsibility for the administration of Developer's QC plan. Developer's QC shall not be part of the acceptance program.
- **Acceptance Program** - GDOT has chosen to transfer the responsibility for the acceptance of the sampling and testing to Developer and to use their results, the Code of Federal Regulations (CFR) requires the verification of the acceptance results by GDOT or its representative. The CQAP allows for the use of Developer's performed Quality Acceptance (QAcc) firm test results as part of an acceptance decision if the QAcc results are verified/validated by the Owner Verification (OV) test results performed by GDOT or its representative. Both testing results, OV and QAcc together, are the basis for the acceptance decision. GDOT will provide final acceptance when test results are statistically validated and/or verified by the Owner's Verification Firm (OVF) results.

The Quality Acceptance Program (QAP) will be in accordance with the requirements in the CQAP, where Developer-performed Acceptance is the front-line sampling and testing, and inspection is performed through a Construction Quality Acceptance Firm (CQAF) hired by Developer. The verification will be performed by the GDOT representative or Owner's Verification Firm (OVF). The following are the components and requirements for the QAP:

- The CQAF shall meet the requirements in Attachment 2-5 CQAP, in Attachment 2-1 (P3 Construction Tests and Certifications), and Attachment 2-4 (Construction and Engineering Services), and as required in the DBF Agreement. Developer is required to provide independent (other than the contractor performed) inspection and testing services throughout the term of the Agreement as provided in Attachment 2-4. Developer shall provide a copy of the CEI contract prior to execution for approval by GDOT and shall provide a copy of the final executed CEI contract to GDOT prior to NTP1. Developer shall utilize Attachment 2-4 as the basis for the contract with the CEI consultant and shall provide all QC services as specified in the DBF Agreement, Attachment 2-1, and Attachment 2-4 greater than or equal to 4.5% of the sum of Rows 3 (Design), 4 (Construction), 5 (Other Costs), 8 (Utility Adjustments) and 9 (Maintenance Costs) included in Form F (Summary of Costs Excluding Developer Financing Costs After Financial Close) of the Instructions to Proposers (ITP). Developer shall also include the cost of the total CEI services contract at greater than or equal to 4.5% as required above (excluding any Developer overhead and profit) as part of their preliminary Schedule of Values provided with their Proposal. Developer may provide a separate Developer's overhead and profit item for the CEI Consultant contract as part of their preliminary and final schedule of values. Developer shall only terminate the CEI contract or remove any of the personnel provided under the CEI services by written direction from GDOT for any noncompliance or at the sole discretion of GDOT. Developer's QAcc portion of the CQMP shall include all the internal procedures used by Developer's CQAF to ensure that the Work is inspected and tested to verify compliance with the released-for-construction plans, approved shop drawings, working drawings, and specifications, as specified in GDOT CQAP. Developer's QAcc shall be separate from Developer's QC program. The CQAF must not be owned by or be an affiliate of Developer, any principal participant, or construction subcontractor. Developer's CQMP shall establish a systematic approach to define the processes, methods, procedures, and documentation for delivery of QAcc on the Project. These methods and procedures shall clearly define the authority and responsibility for the administration of Developer's CQMP.
- Owner Verification (OV) will be performed by GDOT personnel or its representative. GDOT's representative will perform OV sampling and testing and inspection as part of the CQAP, through an OVF. The OVF requirements and responsibilities are described in the CQAP. The OVF will use the current monthly Materials CompStat meeting and continuous process improvement to manage the materials acceptance process. This process shall include the performance and approval of OV tests, review of QAcc test results, performance of statistical analysis on OV and QAcc test results, and any associated tasks arising out of the statistical analysis.
- For Statistical Analysis, sampling is either random or fixed, depending on whether the location was selected randomly (random) or if a specific location was subjectively identified (fixed). Sampling is also either independent or dependent, based on whether the location was independently selected (independent) or based on the location of another sample (dependent/split). The F- and t- tests are only

valid when using random independent samples. A comparison process for performing and analyzing split samples between GDOT (OV testing) and CQAF (QAcc testing) may be utilized during the initial implementation of the CQAP. These samples will be analyzed by GDOT, and the results will be discussed with the CQAF to assure laboratory and technician test results compare favorably. When acceptable tolerance is exceeded, corrective actions for either or both parties will be identified, and corrective actions will be incorporated as appropriate. This process will help provide initial alignment of the GDOT and CQAF laboratories and testing procedures. Split samples may also be performed throughout the life of the Project as necessary to investigate non-validating material categories and verify or realign testing equipment and personnel.

- Disputes over specific test results may be resolved in a reliable, unbiased manner by Referee Testing (RT) according to the requirements of the CQAP and evaluation performed by a referee laboratory. The referee laboratory shall be the GDOT laboratory or an AMRL/CCRL-certified testing laboratory designated by GDOT.
 - Based on the System-based Independent Assurance (IA) Program, as per Section 4 of the CQAP, GDOT's IA engineers shall evaluate all Contractor technicians and their equipment annually.
 - GDOT submits an Annual IA report to FHWA.
- **Independent Assurance** - GDOT will implement the IA Program, as per Section 4 of the CQAP, which provides an independent verification of reliability of the acceptance (or verification) data obtained by the agency and the data obtained by Developer. The results of IA testing are not to be used as a basis of acceptance. IA provides an assessment of certified sampling and testing personnel and information for quality system management. This IA Program evaluates all sampling and testing procedures, personnel, and equipment used as part of an acceptance decision. The IA Program evaluates the qualified sampling and testing personnel, as well as testing equipment and is established using the system approach. The system approach bases frequency of IA activities on time (regardless of the number of tests), quantities of materials, or numbers of projects tested by the individual being evaluated. This program provides uniform statewide procedures to ensure that tests are performed by qualified personnel and that laboratory facilities and equipment are adequate to perform the required sampling and testing methods.
- **FHWA Reporting** - GDOT will submit quarterly reports to FHWA to demonstrate compliance with the approved CQAP.
- **Statistical Analysis** - F-tests and t-tests may be used when sufficient data is available to analyze OV and QAcc data. The F-test is a comparison of variances to determine if the OV and QAcc population variances are equal. The t-test is a comparison of means to determine if the OV and QAcc population means are equal. All significant failures are to be discussed at a monthly Material CompStat meeting. In addition to these two types of analyses, independent verification and observation verification will also be used to validate the QAcc test results.

Developer, through the QMP, shall be responsible for the quality of Work, including the workmanship and products of subcontractors, fabricators, suppliers, and vendors – both onsite and off-site. Responsibility for the quality of Work includes environmental compliance monitoring per the Environmental Compliance Plan that is included in the QMP.

Developer's QMgr shall oversee, manage, certify, and perform Quality Management activities as defined in the QMP and in accordance with the requirements of the Agreement.

- Construction Quality Acceptance (QAcc) Inspection – All construction processes, procedures, and workmanship shall be inspected by Developer's Quality Control Inspectors. Inspection shall include the observations, measurements, and documentation specified in Developer's CQAP and the DBF Documents. Inspection, observations, verification of conformance to specified requirements, measurements, results, non-conformances, and required corrective actions shall be documented on Developer's forms as defined in the Construction Quality Control Management Plan.
- Certified Testing Laboratory – QAcc laboratory testing of field-tested materials shall be conducted by testing laboratories that are certified by GDOT or by a nationally recognized organization for the applicable tests or AASHTO by the time that NTP2 is issued. This certification shall be valid for one (1) year from date of issue. Laboratories performing QAcc testing may be Developer's own, the material supplier's, or an independent testing laboratory, as long as certifications are current and available for GDOT's review. The laboratory or field laboratory is recommended to be located on-site or within thirty (30) miles of the Project limits.
- Field-Tested Materials – Developer shall be responsible for providing all sampling and material testing per Attachment 2-1, furnishing materials of the quality specified, and furnishing quality-level analysis during production when required by the Quality Plan or Agreement specifications. Developer's construction QAcc testers shall perform sampling and testing for process control and QAcc consistent with the Quality Plan and Agreement specifications. Inspections, reviews, and testing shall only be performed by personnel with appropriate training, qualifications, and certifications using appropriate equipment that is accurately calibrated and maintained in good operating condition at an AMRL- (AASHTO R18, "Establishing and Implementing a Quality System for Construction Materials Testing Laboratories") accredited facility, or at a facility with comparable certification (e.g., ISO 17025, "General Requirements for the Competence of Testing and Calibration Laboratories"). The Quality Plan shall address failing tests, retests, and unsuitable test results.
- Non-Field Tested Materials – Developer shall provide materials meeting all Agreement requirements, along with all materials conformance and quality compliance documents. Quality compliance documents shall be in the form of test results certifications, quality compliance certificates, and equipment lists and drawings. Non-field tested materials shall be accepted for use according to the Agreement specifications and the Quality Plan.
- Materials and equipment installed as part of any permanent construction shall be new, unless otherwise specified. The Agreement contemplates the use of first-class materials and equipment throughout the performance of the Agreement, and it is agreed that any material for which no particular specification is given shall be of the highest quality of its

class or kind. For the purpose of this subsection, “new” shall mean purchased specifically for the Project for which award was made.

2.3 Joint Project Inspection

A joint project inspection of the Project area shall be performed and approved with the Construction Maintenance Limits Plan no later than one hundred and eighty (180) days from NTP1. The physical in-field joint project inspection shall be performed by a GDOT-Authorized Representative and Developer, and attended by GDOT, if desired. The purpose of the joint project inspection is to create a physical baseline of the existing real estate and permanent fixtures and assets of GDOT prior to the start of the Work. The area shall encompass the entire Project Area including areas outside the limits of the Project, as there will be required Elements outside of the actual Project limits.

Developer shall clean the existing drainage system sufficiently enough to allow for the proper detailed inspection of the system during the joint inspection within the Construction Maintenance Limits and as required in Section 19.

The joint project inspection Submittal shall be provided by Developer and shall be reviewed and approved by GDOT. The joint project inspection Submittal shall include, but not be limited to, the following:

- Preliminary Plan or Construction Maintenance Limits Plan providing marked-up notes of deficiencies and location reference for cross-referencing any photographs or additional information denoting the existing condition of the infrastructure within the proposed Construction Maintenance Limits Plan area.
- Pre-construction digital photographs and high-resolution digital video of the Project Area including all existing facilities, structures, and environmentally sensitive areas that can readily depict the exact conditions of the existing Elements of the Work. Developer shall provide a sample report of a section of the Project to determine the level of expected accuracy and increments of the photo documentation. Developer shall provide a Document Control Plan approved by GDOT that outlines the requirements for the recording and filing of these documents.
- Intermittent photographs along the pavement and shoulders to clearly depict the existing condition of the pavement and shoulders that will be utilized during construction. Developer shall be responsible for maintaining the existing pavement and shoulders to a condition equal to or better than existing conditions at all times during the Design-Build Period.
- Video Recording prior to the beginning of construction and at final acceptance of any existing underground storm or sanitary sewer system within the Construction Maintenance Limits Plan or to the nearest structure, whichever is greater.
- Pre-construction digital photographs and high-resolution digital video of existing bench marks, temporary bench marks, existing utilities, and trees and plants to remain.

Developer shall restore the Existing ROW outside the general purpose lanes and within the Construction Maintenance Limits to a condition equal to or better than existing conditions by Substantial Completion.

2.4 Requirements for GDOT Offices and Equipment

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, within five (5) miles of the construction site until Final Acceptance to facilitate Project coordination and daily communication. The definition of "co-locate" for the DBF Documents is the shared office building including the key Project members of both GDOT and Developer meeting the conditions of this Technical Provision along or adjacent to the Project.

Developer shall provide GDOT office space (available for occupancy) no later than within sixty (60) Days of issuance of NTP1. The location, condition, equipment, and amenities of the office space for GDOT are subject to GDOT's prior written approval.

Developer shall, as part of the Project, provide and pay for the following:

- Twenty-five (25) office spaces with accompanying facilities, equipment, and services necessary for GDOT and/or GDOT representatives to oversee the Work. Developer may reduce the total number of office spaces to fifteen (15) offices for the final year of the contract or not less than 180 calendar days from the Final Acceptance Date;
- High-speed internet service as specified below for all offices and meeting spaces;
- An enclosed inside space for storage of equipment of at least one hundred (100) square feet in size.
- A computer/phone equipment room of at least one hundred (100) square feet in size.
- One gender-specific restroom for each eight (8) male employees and one (1) gender-specific restroom for each eight (8) female employees that include at minimum a toilet and sink.
- A combination break- and lunch-room area at least four hundred (400) square feet in size with refrigerator, microwave, sink, storage cabinets, drawers, tables and chairs for no less than ten (10) people, and it shall have a dishwasher and water cooler. The restroom, conference room, and break/lunch rooms may be in shared areas.
- At least three conference rooms:
 - One large conference room with tables and chairs capable of seating twenty (20) people; and
 - Two smaller conference rooms with tables and chairs capable of setting eight (8) people in each.
- Two (2) large screen/TV LED, including VGA and HDMI cables (see Table 2-1), that shall be wall-mounted, one each in the large conference room and in one of the smaller conference rooms.
- One (1) dry-erase board (minimum 5-ft by 4-ft in size) and markers for each conference room and in the combination break- and lunch-room;
- Maintenance of the Project office space for at least sixty (60) Days after Final Acceptance or until otherwise agreed to by GDOT in writing; and

- Provide disposal or removal of all temporary office facilities and facilitate any site restoration needed when and as agreed to by GDOT in writing.

The office space and equipment provided by Developer for GDOT shall be in good and serviceable condition, at least of the same quality as those of Developer's Local Project Office, at all times. Developer and GDOT shall participate in a facility condition survey prior to and at the completion of occupancy.

Each personal office, shall be at least one hundred and fifty (150) square feet in size, lockable and enclosed (wall height shall be from floor to ceiling on all sides of office), and shall include:

- One (1) desk with at least twenty four (24) square feet of surface area with four (4) to six (6) lockable drawers with keys;
- One (1) office desk chair on wheels for each desk provided;
- Two (2) straight-back (non-rolling) office guest chairs for each desk provided;
- One (1) Garbage can;
- One (1) filing cabinet with two (2) lockable drawers; and
- A dry-erase board (minimum 4-ft by 3-ft in size) and markers;

All space requirements are approximate in nature. Facilities that reasonably comply with these space size requirements will be acceptable.

Developer shall provide desktop computers and/or laptop computers for each of the GDOT office spaces. A minimum of two (2) desktop computers with CAD software and Microsoft Office installed is required. Microsoft Office is required on all desktop and/or laptop computers. Minimum requirements for the computers are shown in Table 2-1.

Developer shall provide, install, and maintain the following equipment, in working order, for the GDOT Project office:

- A full Network system with T-1 or T-2 internet service, start-up training, and maintenance of the system throughout the duration of the contract;
- Internet Service with Static IP address to allow port forwarding for external access;
- A full-scale color plotter;
- A scanner capable of handling 11-inch by 17-inch (tabloid) scans or full size (24 inches by 36 inches) scans and converting to PDF and JPEG formats;
- At least two (2) high-speed color laser printers capable of handling tabloid (11 inches by 17 inches) prints;
- At least two (2) high-speed color photocopy machines; and
- One (1) facsimile transmission machine (facsimile functionality may be incorporated into the photocopy machine/scanner).

Table 2-1 Minimum Office Equipment Requirements

	Processor	Hard Drive	Ram	Video Card	Operating System	Other	Quantity/Units
Desktop Computer CPU	Core i7 or latest E2400/3.1 GHz	500 GB	8GB	Integrated Video, Intel GMA 4500, Display Port/VGA	Latest Windows system	CD/DVD Burner	4
Laptop with docking station/accessories	Core i7 or latest E2400/3.1 GHz	500 GB	8GB		Latest Windows system	CD/DVD Burner	21
Desktop/Network Server or Equivalent Cloud Network	Core i7 or latest E2400/3.1 GHz	750 GB	8GB		Latest Windows system	CD/DVD Burner	1

	Size	Max Resolution	Hertz	Display	Output	Other	Quantity/Units
Monitor	24"	1920x1080	60 >	Anti-glare, LCD	DVI/VGA		25
Monitor for Server	19"	1440x900	60	Anti-glare, LCD	DVI/VGA		1
Large Screen/TV LED, including VGA & HDMI cables	65" & 60"	1080p	120-240	LED TV	HDMI/VGA/USB		2
Switch Network Box, 36+ ports							1
Wireless Router capable to cover the entire office area							1
Conference Call Station/Device							3
Refrigerator	min. 24 Cubic ft with icemaker						2
Coffee Maker	20 Cup						3
Microwave	min. 2 Cubic ft, 1250 watts						2

	Max Size	Color/Black and white	DPI	Pages Per Min minimum	Scanning Option	Other	Quantity/Units
Plotters	2 x 500 ft Roll	Color	1200 x 1200	Color: 3.5 min/page (A1)	No	Memory - 256 MB,	
				Black and White: 55 sec/page (A1)			
							1
Printers	11" x 17" Sheet	Color	1200 x 1200	Color: 31 ppm	Yes	Two-sided Printing	2
Copier/Printer - multi function	11" x 17" Sheet	Color	1200 x 1200	Color: 31 ppm	Yes	Two-sided Printing, multi tray, auto staple, network connectivity	1

Furniture and Equipment for the Project office shall include, but shall not be limited to:

- Four (4) fire-proof and lockable filing cabinets with keys, two (2) that consist of four (4) drawers each;
- A Plan Rack (capable of holding two (2) sets of all Project plans with no more than one hundred (100) sheets per hanger);
- At least 200 square feet of tabletop space for review of plans;
- A dry-erase board (5-ft by 4-ft minimum size) and markers;
- A separate three-drawer file cabinet, with legal-size width of each drawer; and
- Full-motion wall mounts for computer screens in a minimum five (5) personal offices to be determined by GDOT.

Supplies required shall include but are not limited to: staplers, pens, notebook pads/paper, binders, highlighters, hanging folders for filing cabinets, tape and tape dispensers, masking tape, and any other materials/supplies required to maintain productivity of each employee.

Developer shall, for the Local Project office:

- Secure a well-graded site that has an access road, a parking area, and building space that meets all local building code requirements;
- Obtain all site permits;
- Provide all Utility services;
- Provide a designated parking area for each facility for the intended number of occupants plus visitor spaces to reasonably accommodate stakeholders who may visit the offices for meetings. The parking area shall be reasonably level and have an all-weather surface and all-weather access;
- Provide a secured, fenced area with a 6-foot-high chain-link fence with an extension arm and barbed wire as specified in GDOT Specification 643. Equip the fence with matching gates (meeting the requirements of GDOT Specification 643) consisting of one (1) double 7 foot by 6 foot gate, and one (1) single 4 foot by 6 foot gate. Include positive-type locking devices, a padlock, and a minimum of two keys for each gate.
- Provide an outside shed of at least one hundred and fifty (150) square feet at each facility for storage of small tools and equipment for the exclusive use of GDOT;
- Provide at least two building entrances/exits for each building – each secured with a door lock plus a dead-bolt lock and electronic security system. GDOT spaces shall be separated by lockable doors from each other and from Developer's space;
- Ensure that the site and office space meet all accessibility requirements of the Americans with Disabilities Act (ADA), as amended (42 USC §§12101, et seq.);
- Ensure electricity service and interior overhead lighting that meets OSHA standards and building and electrical code requirements for office space, with minimum electrical circuit capacity of twenty (20) amperes and with at least two (2) duplex electrical receptacles in each personal office area;
- Ensure heating, ventilation, and cooling systems are capable of maintaining temperatures between 65 and 72 degrees Fahrenheit in all spaces within the office throughout the year;

- Provide daily janitorial service (except on Saturdays, Sundays, and holidays), including maintenance of trash containers and trash pickup service;
- Provide maintenance of the exterior areas, including the access to parking areas, that keeps them neat, clean, in good repair, and safe;
- Ensure there is exterior security lighting that is automatically activated at low-light levels to maintain at least two-foot-candles of lighting within the fenced office site;
- Provide 24-hour security patrol service or a silent watchman-type security system;
- Provide hard-wired internet access in each personal office area, and pay for monthly service charges;
- Provide telephone service (local and U.S. long-distance) with at least one outside line (with voicemail service) for each personal office area assigned to the office and at least two lines dedicated to fax service; and
- Provide potable water and sewer service.

If any loss or damage has been caused as a direct result of willful misconduct of GDOT personnel, GDOT will reimburse Developer for the actual, reasonable, and documented costs of the repair, replacement, and/or restoration prior to the Termination Date.

2.5 Web-Based Project Management Program

GDOT will implement a web-based project management website throughout the term of the Agreement for file storage, communication, and correspondence. Developer is required to access and use the web-based project management system provided by GDOT.

This system provides all Project team members:

- Simplification of communications;
- Automated tracking of time-sensitive information;
- Automated reporting;
- Common document storage and management audit trail of information; and
- Secure, real-time 24/7 access and exchange of information.

All Project team members shall be required to use this system for all official Project communications and interactions, including:

- Correspondence;
- QMP and Submittals;
- Issues;
- Meetings;
- Design Management;
- RFIs (Requests for Information);
- Submittals;
- Schedule Submittals;
- Nonconformance reporting (NCR's);
- Resident Engineer's Daily Diary;

- Daily Activity Reports;
- Punch Lists;
- Reporting;
- Document Management (see Attachment 2-2 for the required file-naming convention);
- Construction Drawing Management (including management markups, versions, and revisions);
- Project Archiving and Closeout;
- As-Built Drawing Management.

All Project team members shall use the web-based project management system on a daily basis to perform their Project responsibilities in a timely manner.

Additional requirements/guidelines of the system:

- The web-based system shall be used to track and manage the Project and will be an official record of all Project communication. Organizations shall post key Project-related information to the system. GDOT shall provide a system that will, at a minimum, provide a shared interface for: meeting minutes, Requests for Information (RFIs), general correspondence/transmittals, Punch List(s), resident engineer's daily diary, daily activity report, NCRs, inspection logs and reports, management audit logs and reports, and Submittals including schedule updates and schedule revisions.
- No later than thirty (30) calendar days after NTP1, all Project team organizations involved shall designate a web-based project management system coordinator (an internal point of contact) and provide the coordinator's name, phone number, and email address to GDOT and Developer.
- All users of this web-based project management system must complete training prior to having access to the system.
- All Project team members will be solely responsible for establishing and furnishing high-speed internet connectivity (T1, cable modem, or DSL connectivity is recommended) to access the web-based project management system.
- Submittals must be made, tracked, and reviewed via the system. In the case where physical samples are required, the Submittal will still be reviewed and tracked via the system. The sample itself will be delivered to the reviewer via traditional means.
- Developer and GDOT shall utilize the file-naming convention as provided in Attachment 2-2.

All Submittals shall be provided to the web-based project management system. Project documents transmitted via the system must comply with the following electronic formats:

- Documents generated in Computer-Aided Design (CAD) applications shall be submitted in Portable Document Format (PDF) generated by a PDF writer from the CAD application;
- Documents that are marked up or unavailable in electronic format (drawings, sketches, correspondence, etc., generated by hand-drafting methods) shall be scanned to Tagged Image Format version 5 or 6 [TIFF 5 or 6 (.tif)], Bitonal [or Black and White (a.k.a. Line

Art, on some scanners)] (.tif), or PDF (.pdf), color with a resolution of two hundred (200) dots per inch (dpi) using CCITT Group 4 (2d Fax) compression;

- Documents that have been generated using PDF printer drivers (not scanned) shall be submitted via the system;
- Electronic photographs shall be submitted in Joint Photographic Experts Group (JPEG) (.jpg) file format, sized at a minimum resolution of 1024 by 768 pixels;
- Grayscale or color photo images that are scanned shall be saved in JPEG (.jpg) file format with medium to low quality compression at a resolution of 200 dpi; and/or
- Product data that is available for download from the manufacturer's website that has been generated using PDF printer drivers (not scanned) may also be submitted via the System.

2.6 Project Meeting Requirements

Developer attendance at each meeting shall, at a minimum, include all appropriate staff necessary to make decisions regarding the subject matter of the meeting to progress the Project and maintain the schedule. Developer shall, at the request of SRTA or its agent, hold additional meetings, and Developer shall cause additional staff to be in attendance at all meetings if requested by SRTA or its agent. At a minimum, Developer shall hold, participate, and prepare minutes in the following regular meetings with SRTA and GDOT:

2.6.1 Weekly Meeting Requirements

- Progress Meeting;
- Submittals Review Team Meeting;
- ITS Communications Meeting;
- Traffic Interruption Meeting; and
- Design Coordination Meeting.

2.6.2 Bi-weekly Meeting Requirements

- Public Communications Team Meeting;
- Utility Coordination Team Meeting;
- Quality Management/Compliance Team Meeting;
- Environmental Management Meeting; and
- Materials Team Meeting.

2.6.3 Monthly Meeting Requirements

- Schedule Review Meeting (shall be held the first week of each month);
- Payment Request/Progress Status Team Meeting (shall be held the first week of each month); and
- ROW Acquisition Team Meeting.

2.7 Project Reporting and Tracking

Developer shall be responsible for preparing and submitting to GDOT monthly cost, schedule, and status reports for the Term of the DBF Agreement. The following items are required to be included in the monthly status reports:

2.7.1 Executive Summary

The executive summary shall be a clear and concise summary of the current status of the project, including any major issues that have an impact on the Project's scope, budget, schedule, quality, or safety. It may be done in a bulleted format for ease of briefing. The following summary information is an example of items that would be useful on a monthly basis:

- Current total Project cost (forecast) vs. latest approved budget vs. baseline budget;
- Reasons for any deviations from the approved budget;
- Current overall Project completion percentage vs. latest approved plan percentage;
- Any delays or exposures to milestones and final completion dates. Reasons for the delays and exposures;
- Any significant contracts advertised, awarded, or completed;
- Any significant scope of work changes;
- Any significant items identified as having deficient quality;
- Any significant safety issues; and
- Any significant Federal issues such as environmental compliance, Buy America, Disadvantaged Business Enterprises (DBE) affirmative action requirements, etc.

2.7.2 Project Activities and Deliverables

The purpose of this section is to: (1) highlight the project activities and deliverables occurring during the previous month (reporting period), and (2) define the activities and deliverables planned for the next two reporting periods. Activities and deliverables to be reported on shall include meetings, audits, and other reviews; design packages submitted advertisements; awards; construction submittals; construction completion milestones; financial plan submittals; media or Congressional inquiries; value engineering/constructability reviews; and other items of significance. The two-month "look-ahead schedule" will enable GDOT personnel to better schedule their workloads to accommodate any activities requiring input or assistance.

2.7.3 Action Items/Outstanding Issues

This section shall draw attention to, and track the progress of, highly significant or sensitive issues requiring action, direction, and resolution. In general, issues and administrative requirements that could have a significant or adverse impact to the Project's scope, budget, schedule, quality, safety, and/or compliance with Federal requirements shall be included. Status, responsible person(s), and due dates shall be included for each action item/outstanding issue. Items requiring action or direction that month shall be included in the monthly status meeting agenda. The action items/outstanding issues may be dropped from this section upon full implementation of the remedial action and upon no further monitoring anticipated.

The process of tracking action items, outstanding issues, proposed changes, etc., shall be documented in the PMP to ensure resolution.

2.7.4 Project Schedule

An updated Project Schedule reflecting the current status of the Project activities shall be included in this section. A Gantt- (bar) type chart is probably the most appropriate for monthly reporting purposes, with the ultimate format to be approved by GDOT. The requirements of the Project Schedule are detailed elsewhere in this Section 2. It is imperative that the Project Schedule be integrated, i.e., the individual contract milestones tied to each other, such that any delays occurring in one activity will be reflected throughout the entire Project schedule, with a realistic completion date being reported.

Narratives, tables, and/or graphs shall accompany the Project Schedule, basically detailing the current schedule status, delays, and potential exposures and recovery efforts. The following information shall be included:

- Current overall Project completion percentage vs. latest approved plan percentage;
- Completion percentages vs. latest approved plan percentages for major activities such as ROW, major or critical design contracts, major or critical construction contracts, and significant force accounts or task orders. A schedule status description shall also be included for each of these major or critical elements; and
- Any delays or potential exposures to milestone and final completion dates. The delays and exposures shall be quantified and overall schedule impacts assessed. The reasons for the delays and exposures shall be explained, and initiatives being analyzed or implemented in order to recover the schedule shall be detailed.

2.7.5 Project Cost

An updated cost spreadsheet reflecting the current forecasted cost vs. the latest approved budget vs. the baseline budget shall be included in this section. Developer shall include the following items as part of the cost spreadsheet and update for each monthly report: (1) baseline budget, (2) latest approved budget, (3) current forecasted cost estimate, (4) expenditures or commitments to date, and (5) variance between current forecasted cost and latest approved budget. Line items shall include all significant cost centers, such as ROW, preliminary engineering, environmental mitigation, section design contracts, construction administration, utilities, and construction packages. The line items can detailed such that specific areas of cost change can be sufficiently tracked and future improvements made to the overall cost estimating methodology. A project total line shall be included at the bottom of the spreadsheet.

Narratives, tables, and/or graphs shall accompany the updated cost spreadsheet, detailing the current cost status, reasons for cost deviations, impacts of cost overruns, and efforts to mitigate cost overruns. The following information should be included:

- Reasons for each line item deviation from the approved budget, impacts resulting from the deviations, and initiatives being analyzed or implemented in order to recover any cost overruns;

- Transfer of costs to and from contingency line items, and reasons supporting the transfers; and
- Speculative cost changes that may develop in the future, a quantified dollar range for each potential cost change, and the current status of the speculative change. Also, a comparison analysis of the available contingency amounts shall be included, showing that reasonable and sufficient amounts of contingency remain to keep the Project within the latest approved budget.

A vigorous process shall be implemented to enhance the monthly Project reporting and tracking. Non-integrated cost and schedule reporting normally compares the actual expenditures (contractor payments, invoices, ROW expenditures, etc.) to the planned expenditures. Non-integrated reporting does not take schedule slippage into account; therefore, if the Project is behind schedule, the actual expenditures will naturally be less than the planned expenditures and the comparison could provide a misleading status as to whether or not the project is within budget. Therefore, integrated reporting must be used to ensure timely, accurate data from which to make corrective action if required.

2.7.6 Project Quality

The purpose of this section is to: (1) summarize the QA activities during the previous month (reporting period), and (2) highlight any significant items identified as being deficient in quality. Deficient items noted shall be accompanied by reasons and specifics concerning the deficiencies, and corrective actions taken or planned. In addition, the agency or firm responsible for the corrective action shall be documented. Planned corrective actions shall then be included as Action Items/Outstanding Issues.

2.7.7 Photography

Developer shall provide monthly aerial photo submittals (one hard copy and high [14 or greater mega pixels] and low [6 to 8 mega pixels] resolution digital files), a minimum of two (2) photos of the entire project and three to four (3-4) photos per phase at GDOT specified locations on the Project for the various phases of construction. Photos shall be taken from the same angle, elevation and location as previously taken, in order to show the progress of the work from commence of construction to Substantial Completion.

Developer shall provide high resolution (12 or greater mega pixels) live-stream video feed of construction activities on the Project and time-lapse cameras at various locations (to be reviewed and approved by GDOT) for all phases of the Project. Developer shall also provide and maintain a hosting website at minimum for the duration of the Project or longer if it is as required by GDOT. The hosting service shall have the capability of storing, managing and capturing images/data at multiple locations including but not limited to still photos, time lapse videos, live-stream videos, etc. GDOT and its representative shall have complete access and control of the hosting website. All the data (still photos, time lapse videos, live-stream videos, etc.) and equipment shall become property of the GDOT. Developer will be responsible for the installation including power, and maintenance of the equipment at all times. Minimum requirements for the cameras and hosting website are as follows:

- Minimum one to two (1 – 2) 12 mega pixel PTZ HD 1080P camera with 4G (or latest service available at the time of the award) Cellular interface (with zooming and rotating capability).
- Minimum two to three (2 – 3) 12 mega pixel HD 1080P fixed/dome camera with 4G (or latest service available at the time of the award) Cellular interface.
- Each camera shall have weather protection casing.
- Hosting website service shall include 24 hours, 7 days a week live feed of construction activities, webcam images captured minimum every 30 seconds for time lapse videos, and on-demand and time-lapse video production.

2.7.8 Other Status Reports

GDOT will require Developer to provide other reports to ensure that the project status issues are fully and openly communicated, including but not limited to reports as may be identified in other sections of the Technical Provisions and DBFA on: contractor safety performance (as compared to the National average or other benchmark), DBE actual utilization versus goals, Public Information and Communications Plan, Value Engineering and Constructability Review Plan, Environmental Compliance Report, and/or compliance with the Buy America requirements.

2.7.9 Monthly Pay Estimate Request (PER)

Developer shall submit the following documentation and information to comprise the monthly Pay Estimate Request (PER) in addition to the requirements in Volume 1, Exhibit 7. The PER shall include, but is not limited to the following:

- Pay Estimate Request (PER) Coversheet;
- Detailed Schedule of Values (.pdf and .xlsx formats) as agreed and approved by GDOT (see Attachment 2-6 for Example/Template of the Monthly Schedule of Values)
- DBE Form/Report;
- Materials Certificate Documentation, including a copy of the Monthly Materials Certification from the QAM and a copy of the Materials Check List as required in Volume 3, Attachment 2-5 “CQAP;”
- Payment Certification;
- Pay Estimate Request Backup Documentation, GDOT may request any additional documentation as needed to validate any pay item;
- Design-Build Contractor Report; and
- Certification that Payroll has been reviewed, including the names of contractors and subcontractors, any deficiencies, and any corrective actions

3 PUBLIC INFORMATION AND COMMUNICATIONS

3.1 General Requirements

It is vital to the success of the Project that GDOT and Developer gain and maintain public support. The public will better support GDOT and Developer if they are kept abreast of Project information in a timely manner, are notified in advance of potential impacts, have an opportunity to identify issues and recommend solutions, receive timely and appropriate feedback from GDOT, and perceive a high-quality, well-executed communications plan for keeping them informed, engaged, and educated. Developer shall coordinate with GDOT on items necessary to comply with GDOT's Public Information Policy Manual.

This Section 3 describes the requirements with which Developer shall comply regarding the provision of information and communication with GDOT to facilitate outreach and education to Customer Groups.

3.2 Administrative Requirements

3.2.1 Public Information and Communications Plan

The Project team including GDOT and Developer shall utilize the Public Information and Communications Plan (PICP) (Attachment 3-1) to inform, educate, and engage the Customer Groups throughout every stage of the Project. The team will also implement an Emergency Event Communications Plan that includes guidelines for communications protocol, roles and responsibilities, specific activities, and timelines for adherence in emergency situations. Developer shall comply with the PICP and shall be required to supplement the PICP with any additional information that GDOT requests. The PICP shall include a project mailing list, which GDOT will maintain and update throughout the final design and construction activities to ensure all interested citizens and/or groups will be notified about meetings and Project news.

The PICP shall include a general timeline listing public information activities for the Project, indicating if and to what level Developer shall be involved.

The GDOT-developed PICP is flexible to capture the full magnitude of yet-to-be-determined impacts from Project activities such as design, construction, and the public's reaction to these and other impacts. The PICP is also resilient to successfully implement the outlined strategies, given the ever-changing desire for depth, breadth, and frequency of information by a variety of important Customer Groups such as the media, elected officials, transportation stakeholders, Emergency Service providers, and the general public. Developer shall coordinate with GDOT throughout the Project to ensure information is shared in a timely manner and effective resources are allocated to outreach needs.

Developer shall follow the communications protocol coordinated and approved by GDOT for communication with the public. GDOT will act as the lead in disseminating any information to the public.

GDOT's PICP details the communication hierarchy for information distribution related to compliance with the Comprehensive Environmental Protection Plan (CEPP) prepared by Developer, as described in Section 4 (Environmental). The PICP shall include names and contact information, including emergency contact information, and the preferred methods of contact, and emergency communication distribution. Developer shall ensure that any changes to contact information pertaining to the CEPP are incorporated into the PICP in a timely manner.

3.2.2 Public Information Coordinator

Developer shall provide a Public Information Coordinator (PIC) to lead Developer's responsibility for public involvement activities on a day-to-day basis until Final Acceptance. The PIC shall have a minimum of four (4) years of relevant communications and public involvement experience on projects of similar type and scope. The PIC shall be retained within sixty (60) days of NTP1. Responsibilities shall include coordinating with GDOT to facilitate communication among Developer, GDOT personnel (including GDOT's Communications Officers), and Customer Groups as well as interacting with affected Customer Groups and representing the interests of the Project at associated public meetings and other formal and informal occasions, upon GDOT request. The PIC shall be located on a full-time basis at the Project office.

In implementing the PICP, Developer's PIC shall:

- Notify GDOT no less than twenty one (21) days in advance of the start of any construction activity that will impact the general public or motoring public, such as any changes in traffic patterns to the existing transportation facilities, so that GDOT can communicate the potential impacts of these activities to the general public and adjacent Government Entities;
- Be available to answer questions via telephone (Project phone line), mail, email, or in person (at the Project office) during normal business hours. Developer staff shall maintain a telephone log of comments, concerns, and requests, along with the response that is provided;
- When requested by GDOT, assist in coordinating media and other group tours of the Project at appropriate times and stages;
- Participate, as requested, in on-going dialogue among Customer Groups, GDOT, and Developer;
- Shall attend meetings, upon request and with GDOT's approval, along with other key Developer staff, key elected officials, the general public, representatives of civic organizations, businesses, and special interest groups along the Project corridor (individually or in groups), for the purpose of building rapport with affected stakeholders;
- Upon GDOT's request and approval, shall make presentations to the general public, civic organizations, businesses, and other community and stakeholder groups;
- Upon request from GDOT, shall prepare and install unmanned kiosks as well as staff project informational kiosks throughout the Project corridor; and
- Shall provide GDOT with information on Project status, traffic impacts, and other information for communication to key stakeholder groups and the general public through email, text, and social media.

Developer shall provide supportive information for media inquiries when requested by GDOT.

3.2.3 Reserved

3.2.4 Public Meetings

When requested by GDOT, Developer shall participate by providing necessary staffing support in any meetings with the public that GDOT arranges and conducts. During such meetings, Developer shall be in attendance to assist GDOT in informing the public of the Project progress and to discuss key issues as they emerge. The PIC shall be present during public meetings when requested by GDOT.

Public meetings shall be held at facilities that accommodate members of the public for whom there may be accessibility issues, in accordance with Federal and state requirements, including but not limited to, Title VI of the Civil Rights Act of 1964 including Limited English Proficiency, and the Americans with Disabilities Act, and any amendments thereto.

3.2.5 Monthly Public Information and Communication Reporting

Developer shall provide a monthly Public Information and Communication Report to GDOT, which shall detail the following information regarding subjects of interest to the public including, but not limited to:

- Design and construction issues affecting adjacent residential areas, frontage roads, local streets, and utilities, including such issues as Project definition, grading, drainage, noise, retaining walls, lane closures, ramp closures, local road closures, and traffic shifts (changes in any use of existing traffic);
- Street and roadway detour design and implementation;
- Scheduling and duration of work, including hours of construction;
- Haul routes;
- Methods to minimize noise and dust; and
- Environmental mitigation measures.

3.2.6 Emergency Event Communications

For all Emergency events, such as vehicle collisions, ice/snow conditions, flooding, Hazardous Material spills, and Force Majeure Events, the PIC shall take timely and appropriate action to inform GDOT of all pertinent details. The PIC shall provide these details through the use of appropriate tools to ensure effective and timely communication to GDOT representatives who will, in turn, inform the media, elected and local officials, and key stakeholders.

Developer shall provide an Emergency Response Plan to define communications protocol in emergency situations. This plan shall include a twenty four- (24) hour contact list and protocol (hierarchy of member notification) for all of the Project team members including: the local emergency response members adjacent to the Project, Utility companies with facilities within Project limits, and the Federal Highway Administration (FHWA). GDOT has the following tools to communicate project information: overhead changeable message signs (CMS), temporary

changeable message signs, GDOT's ITS web-based information tool, email/web alerts, telephone notification, facsimiles, and media releases/interviews, as appropriate. The PIC shall continue to provide updated information, as available and on a timely basis, until the Emergency no longer exists.

In the event of an unforeseen Emergency, timely notification shall occur as soon as practicable, but no longer than fifteen (15) minutes from when Developer becomes aware of the occurrence. If advance warning is available for an Emergency event (such as weather), timely notification shall mean as soon as practicable, but in no event longer than fifteen (15) minutes from the time the information was available. In both situations, the PIC shall continue to provide updated information to GDOT, as available and on a timely basis, until the Emergency no longer exists.

3.2.7 Public Information

Developer shall prepare informational materials regarding Project-related subjects for GDOT's review and use in all outreach activities. This information shall be used for but not limited to: meetings, news releases, telephone correspondence, newsletters, email, Advanced Traffic Management Systems (ATMS) (GDOT's ITS web-based information tool), overhead dynamic and changeable message board signs, web alerts, maps, displays, renderings, presentations, brochures, and pamphlets.

Developer shall assist in the development of Project-related information for the GDOT Project website, including but not limited to:

- Project maps;
- Frequently Asked Questions (FAQs);
- Current Project activities addressing design and construction;
- Timing of street and ramp closures and openings;
- Any Utility disruptions; and
- Recommended route alternatives during closures.

Developer, working collaboratively with GDOT, shall furnish facility-related materials in multi-lingual communications not limited to English, Spanish, Portuguese, and other languages.

4 ENVIRONMENTAL

4.1 General Requirements

Developer shall execute the Environmental Commitments required by the DBF Documents, environmental laws, Governmental Entities, Governmental Approvals, and all applicable federal and State laws and regulations. To that end, Developer shall develop, execute, and maintain a Comprehensive Environmental Protection Program (CEPP) for the Work to ensure environmental compliance with all applicable environmental laws and commitments. The CEPP shall obligate Developer to protect the environment and document the measures taken during the performance of the Work to avoid, minimize, and mitigate impacts on the environment from the design and construction activities of the Project. The CEPP shall effectively demonstrate in detail Developer's knowledge of all applicable Project-specific Environmental Approvals, issues, and commitments, as well as applicable environmental laws as set forth in Volume 2 and Volume 3. It shall also describe the processes that will be followed during the course of the Work to comply with those Environmental Approvals, issues, and commitments and laws, as well as the documentation required to validate compliance. All monitoring and reporting activities shall be concise and consistent throughout the term of the Agreement as applicable to the activities being performed, and shall be in accordance with the requirements set forth in the environmental laws. The CEPP shall also effectively describe the quality control and assurance measures that Developer will implement to verify the compliance of the CEPP with all applicable environmental laws. Additional specific requirements are found in Volume 2, Section 4. The CEPP shall establish a goal of zero environmental violations during the performance of all Work activities while meeting each regulatory agency's permitting requirements. However, should violations occur, the CEPP shall set forth detailed processes for rectifying such violations in an appropriate and timely manner.

Developer's obligation regarding Governmental Approvals and laws, including environmental laws and Environmental Approvals, and Developer's obligation for environmental compliance is set forth in Volume 2, Section 4.1.

Developer shall cause Work to comply with Environmental Approvals and compliance requirements for any additional actions throughout the term of the Agreement. Developer shall monitor and document Work activities so that documents providing evidence for compliance are available to FHWA and GDOT for inspection at any time. Evidence of compliance activities may include photo documentation and other appropriate methods to demonstrate compliance. Developer shall report CEPP activities to GDOT and FHWA for inclusion in the PMP. Developer shall execute the environmental mitigation plan, which lists responsible parties for environmental commitments detailed in the NEPA Approval as agreed on by FHWA and GDOT. The environmental commitments table is also referred to as the "Green Sheet" and shall be used to track environmental commitments and shall be updated throughout the Project.

Developer shall commit to using (when and where possible) environmentally sustainable practices and/or materials in the development of the Project.

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

4.2 Environmental Approvals

4.2.1 Responsibilities Regarding Environmental Studies

GDOT-Provided Approvals are based on the requirements in the National Environmental Policy Act (NEPA) Approval as initiated by GDOT prior to Developer's Proposal. Such approvals may require reevaluation, amendment, or supplement as the Work progresses or in order to accommodate actions not identified in the NEPA Approval or covered specifically by existing resource agency coordination and permits. On behalf of GDOT, Developer shall be responsible to validate, provide design information to support additional environmental studies (cultural resources, ecology, aquatics, traffic, noise, and/or air) conducted by GDOT or on behalf of GDOT by others, as appropriate, and requested by GDOT, and shall comply with the Environmental Commitments identified in the NEPA Approval. Developer shall follow GDOT policies and procedures when conducting these activities for the Project.

Changes proposed by Developer to the Schematic Plan of Project, incorporation of Developer Proposed/Developer Acquired ROW, changes to the dimensions of the ROW of the Project, or changes to the Environmental Commitments previously approved by GDOT may require new Environmental Approvals.

GDOT will be responsible for conducting all NEPA documentation and may procure consultant services, independent from Developer, to complete the documentation necessary to obtain Environmental Approvals. Developer cannot conduct NEPA documentation for Environmental Approvals or reevaluations due to conflicts of interest in the outcome of the NEPA Approval.

Developer will be responsible for ensuring compliance with the conditions and schedules set forth in amendments to any GDOT-Provided Approvals or new Environmental Approvals due to changes to the Schematic Plan of Project. GDOT may, at its discretion, provide assistance in securing new Environmental Approvals or amendments to GDOT-Provided Approvals.

Developer shall be responsible to validate, provide design information to support any additional studies, and comply with all such GDOT policies and procedures and Governmental Entities having jurisdiction over the Project. GDOT shall be responsible for all coordination of environmental studies with appropriate Governmental Entities. Developer is responsible for providing GDOT with the necessary information for coordination with Governmental Entities, as requested.

The approval time frames for NEPA documentation and environmental studies are listed in Table 4-1. Table 4-1 below does not include any time frame for required public comment periods and/or responding to the public comments. GDOT shall be responsible for the NEPA Reevaluation and studies as provided in Table 4-1. GDOT will coordinate and provide approved documentation to the appropriate Governmental Entities. The government entity approval time frames listed in Table 4-1 do not include the time frame for GDOT approval prior to submission

to the appropriate Governmental Entity. GDOT reserves the right to request revisions as needed to meet Governmental Entity approval.

Table 4-1 GDOT Led NEPA Approval

NEPA Document	Governmental Entity Approval Time Frame (Calendar Days)	Reviewing Governmental Entity
Environmental Assessment Reevaluation	60 Days *	FHWA
Ecology Report Addendum	45 Days **	FHWA
Assessment of Effects Addendum	45 Days ***	State Historic Preservation Office (SHPO)
Noise Report Addendum	45 Days ***	FHWA
Air Quality Report Addendum	45 Days ***	FHWA
Traffic Report Addendum	45 Days ***	FHWA
Section 4(f) of U.S. DOT Act	45 Days ***	FHWA and Department of Interior (DOI)

*FHWA will provide a document review and legal review. Each review has 30 days to be completed and occur in sequential order. This does not include time for responding to FHWA comments, if applicable.

** FHWA has 30 days to review the ecology report. If revisions are requested or USFWS concurrence for informal Section 7 is required, then an additional 15 days is added to the review schedule. This does not include time for responding to FHWA comments.

*** FHWA has 30 days to review the special studies report. If revisions are requested, then an additional 15 days is added to the review schedule. This does not include time for responding to FHWA comments.

FHWA must approve an Environmental Assessment (EA) before it is made available to the public. EAs do not need to be circulated, but they must be made available to the public through notices of availability in local, State, or regional clearinghouses, newspapers, and other means.

4.2.2 GDOT Review and Approval of Environmental Permits

Developer shall be responsible for preparing required permits and permit modifications as stated in Table 4-2. Developer is responsible to obtain all other permits not included in Table 4-2 to meet the requirements of the Agreement. GDOT will be responsible for reviewing the permits and permit modifications, and submitting to the appropriate Governmental Entities, where the applicant is listed as "GDOT." Developer will provide submissions to appropriate agencies where the applicant is listed as "Developer" and GDOT will review and approve documents at its discretion before submission. Documentation not meeting current submission standards or requirements of Governmental Entities will be returned to GDOT and shall be revised by the independent consultant at Developer's cost. GDOT reserves the right to review, comment on, require revisions to, and reject for resubmission any documentation submitted to GDOT by Developer for environmental compliance or Environmental Approvals. Documentation shall conform to current GDOT submission standards and the requirements of all applicable Governmental Entities, laws, and regulations. GDOT will review and approve all permit applications prior to submittal to the appropriate agency. The agency review time frame for permits is specified in Table 4-2. The review and issuance time periods listed in Table 4-2 for GDOT-Led Approvals do not apply to any revisions of the new permit applications proposed by Developer's Schematic Plan of Project.

Table 4-2 GDOT-Led Environmental Permit Approval

Permit Required	Agency Review and Issuance Time Period (Calendar Days)*	Listed Applicant	Preparer of Application
USACE Section 404 Nationwide Permit	60	GDOT	Developer
Subsurface testing of all Underground Storage Tanks and Hazardous Materials	150	GDOT	Developer
NPDES Construction General Permit (GAR1000002), Notice of Intent	90	Developer	Developer
NPDES Construction General Permit (GAR1000003), Notice of Intent	90	Developer	Developer
NPDES Construction General Permit (GAR 150000), Notice of Termination	90	Developer	Developer

Permit Required	Agency Review and Issuance Time Period (Calendar Days)*	Listed Applicant	Preparer of Application
Georgia Vegetative Buffer Variance	150	GDOT	Developer
USACE Section 404 Individual Permit	365	GDOT	GDOT in Phase I (provisional approval)
USACE Section 404 Individual Permit	60 **	GDOT	Developer in Phase II (final approval)
Post-Construction Stormwater Report	90	GDOT	Developer

* The review and issuance time periods shall commence once a completed permit package that complies with the requirements of the DBF Documents is approved by GDOT and submitted to the appropriate Government Entity. The review time period shall end once the permit is issued by the appropriate Governmental Entity. Therefore, Developer shall schedule several review periods to ensure proper planning to accomplish the entire process for each required permit. Each GDOT review period is thirty (30) Days. Should the Submittal not be complete or rejected as provided in Section 23, each subsequent review period shall be thirty (30) Days and is excluded from the time frame shown in Table 4-2 above.

** The approval time period does not include modifications related to design involving Section 404 resources or impacts to the Section 404 resources. The approval time period is for no changes to the Phase I Individual Permit application.

The above permits and review periods do not take into consideration off-site plant or other off-site activity that Developer may propose for use in construction or other non-permanent construction.

4.3 Comprehensive Environmental Protection Program (CEPP)

As part of the PMP, Developer shall develop and implement a Comprehensive Environmental Protection Program (CEPP), applicable throughout the term of the Agreement to establish the approach, requirements, and procedures to be employed to protect the environment. All component parts of the CEPP shall reflect in order of priority: impact avoidance, minimization, and as a last resort, compensatory mitigation. The CEPP shall satisfy the requirements of the applicable FHWA, GDOT, and Governmental Entities having jurisdiction of the Project, including those detailed as commitments in any Environmental Approvals. Developer shall submit the CEPP no later than one hundred and twenty (120) days from NTP1.

At a minimum, the CEPP shall include the following component parts:

- Environmental Management System (EMS);
- Environmental Compliance and Mitigation Plan (ECMP);
- Environmental Protection Training Plan (EPTP);
- Hazardous Materials Management Plan (HMMP);
- Communication Plan (CP);
- Construction Monitoring Plan (CMP); and
- Recycling Plan (RP).

Amendments and updates to the CEPP as necessary to address changing conditions and environmental requirements shall be in accordance with the procedures for amendments to the PMP.

4.3.1 Environmental Management System (EMS)

The Environmental Management System (EMS) shall be the overarching system by which Developer shall ensure that Environmental Commitments resulting from the Environmental Approvals are carried forward and reflected, as appropriate, in the design and are implemented throughout the Work. Developer shall utilize the EMS to track on-going issues, identify environmental compliances and non-compliances, and identify actions required/taken to correct any such non-compliance. The EMS shall establish a schedule for periodic CEPP review to ensure it is up to date. The EMS shall provide a means to track the reviews and results. At a minimum, the EMS shall require documents in the following list to be on file at the site and available at any time for GDOT review:

- CEPP component parts;
- Weekly Environmental Monitoring Reports;
- Investigative Work Plans, Site Investigative Reports, and Remedial Action Plans as necessary for Hazardous Material discovery/remediation;
- Wetlands and stream delineations and appropriate Section 404 permit application if changes to the design or temporary construction impacts are necessary;
- Mitigation or resource monitoring reports, as required by resource-specific mitigation plans;
- Designs for stream, wetland, and floodplain restoration and/or mitigation;
- National Pollutant Discharge Elimination System (NPDES) Construction General Permit (GAR1000001), Notice of Intent, construction activity for standalone construction projects, if applicable;
- NPDES Construction General Permit (GAR1000002), Notice of Intent, construction activity for infrastructure construction projects;
- NPDES Construction General Permit (GAR1000003), Notice of Intent, construction activity for common developments, if applicable;
- NPDES Construction General Permit (GAR 150000), Notice of Termination for Work completed (to be maintained at the Project Office);
- Water Quality Certification per Environmental Protection Division (EPD) regulations and amendments, including Municipal Separate Storm Sewer Systems (MS4) permits as

required, to reflect Project development and staging, including off-site plans, controls, and reporting from borrow sites, waste sites, and plant location sites;

- Completed permit applications and permits as issued;
- Pre-Construction Inspection Report;
- Training documentation;
- Developer's proposed abatement location for use by the GDOT noise analysis, if different than that included in the GDOT Provided Approvals;
- Environmental Justice (EJ) commitments, as applicable;
- Environmental Commitments (Green Sheet) Table, including permits, special provisions, and responsible parties for Pre-Construction and During Construction; and
- NPDES Monitoring Reports (GDOT form EC-1).

4.3.2 Environmental Compliance and Mitigation Plan

The Environmental Compliance and Mitigation Plan (ECMP) shall document and fully detail compliance strategies and procedures to be employed to cause Work performance to be in accordance with requirements of applicable environmental laws and Environmental Approvals, including any changes to environmental laws, policies, and regulations throughout the term of the Agreement. This plan shall establish and/or document schedules, protocols for submission of any documentation to GDOT or Governmental Entities, and methodologies to be used in accomplishing Work, with an emphasis on monitoring, reporting, corrective actions, and adaptive management.

The ECMP shall include a Compliance Action Plan (CAP). The CAP shall consist of a decision-making matrix that will define the triggers for initiating or re-initiating environmental compliance actions for construction and maintenance activities. For each trigger, the CAP will identify the appropriate type or level of environmental study or other compliance action necessary to ensure the ongoing validity of Project Environmental Approvals and commitments. In addition, the ECMP shall detail any mitigation required by Environmental Approvals and Developer's approach to satisfying mitigation requirements, including mitigation requirements identified after completion of the ECMP.

The ECMP shall include the following components:

- **Environmental Commitments Table**

GDOT requires an Environmental Commitments table as a component of the environmental document to be included in the construction plan sheets. The Environmental Commitments table lists the required environmental permits, special provisions, and stipulations that Developer shall follow. Applicable permits and Environmental Commitments shall be identified on the Environmental Commitments table, which shall be periodically updated, but no less than quarterly, throughout the construction period to identify changing on-site conditions.

- **Clean Water Act - Sections 404 and 401: Waters and Wetlands of the United States.**

GDOT shall be the applicant for the permits identified in Table 4-2 to comply with Sections 401 and 404 of the Clean Water Act (CWA). GDOT will prepare the Section 404 Individual Permit (IP) application based on design plans included in NEPA Approvals. This Section 404 IP application will result in a provisional approval that will include contingencies from the U.S. Army Corps of Engineers (USACE). Developer will update and prepare a Section 404 IP application modification based on updated plans and revisions to the preliminary approved IP application (refer to Table 4-1). Developer is required to show and properly label all Waters of the U.S., state waters, and state buffers on construction plans. Under circumstances where a Section 404 Nationwide Permit or Regional Permit application will be used, Developer is responsible for the preparation of the application on behalf of GDOT. Developer shall comply with the terms and conditions for Section 404 issued to GDOT by the USACE and Section 401 State Water Quality Certification(s) as administered by the Georgia Department of Natural Resources EPD. Developer shall produce the Section 401 and 404 permit for GDOT to review and approve before submitting to agencies for approval. GDOT shall be the main point of contact and shall coordinate directly with the agencies. GDOT, at its discretion, shall involve Developer in the coordination and approval process. Developer shall provide:

- A process for training personnel to recognize Waters of the U.S. that fall under the jurisdiction of the USACE;
- A process for communicating the terms and conditions of all USACE permits and Georgia State Water Quality Certification standards;
- Procedures for carrying out any required mitigation;
- Any change in the Phase I IP plans related to the Waters of the U.S. to GDOT. Prior to Developer purchasing the mitigation credits, GDOT shall have final approval of any changes in the proposed mitigation from the Phase I IP; and
- Mitigation credits. Developer shall be responsible for all mitigation costs and shall purchase the mitigation credits for unavoidable impacts to Waters of the U.S. prior to construction per the USACE-approved commercial mitigation bank based on Developer's final design.

- **Clean Water Act - Section 402**

Developer shall be the applicant for the permits identified in Table 4-1 to comply with Section 402 of the CWA. Developer shall comply with Section 402 of the CWA. The documentation shall include that Developer has day-to-day operational control over activities necessary to ensure compliance with the Georgia Water Quality Control Act, Erosion, Sedimentation and Pollution Control Plan. The documentation shall also include that Developer is responsible for submitting to GDOT for approval. GDOT shall lead coordination with EPD. Developer, at the discretion of GDOT, shall produce the Notice of Intent (NOI) and NPDES permits for GDOT to review and approve before submitting to agencies for approval. GDOT shall be the main point of contact and shall coordinate directly with the agencies. GDOT, at its discretion, shall involve Developer in the coordination and approval process. Developer shall, at a minimum:

- Obtain NPDES permit prior to construction;

- Provide a process for training personnel on the requirements and conditions of the Georgia Permit No. GAR1000002, Authorization to Discharge Under the NPDES Storm Water Discharges Associated with Construction Activity for Infrastructure Construction Projects;
- Provide a process for training personnel on the requirements and conditions of the Georgia Permit No. GAR1000003, Authorization to Discharge Under the NPDES Storm Water Discharges Associated with Construction Activity for Common Development Projects;
- Provide procedures for handling non-compliance issues;
- Provide escalation procedures for NPDES permits;
- Provide a list of federal- and State-listed species and their suitable habitat;
- Delineate Waters of the U.S. and stream buffers on plans; and
- Obtain Stream Buffer Variances.

- **Georgia Vegetative Buffer Variance**

GDOT shall be the applicant for the permits identified in Table 4-1 to comply with the Official Code of Georgia 12-7-1 and the Georgia Erosion and Sedimentation Control Act of 1975. Developer shall comply with the NPDES permit under Section 402 of the Clean Water Act. Any encroachment within the designated 25-foot or 50-foot buffer of a state water will be described, and the need for a variance will be indicated. GDOT shall lead coordination with EPD. Developer shall produce the Georgia Stream Buffer Variance permit for GDOT to review and approve before submitting to agencies for approval. GDOT shall be the main point of contact and shall coordinate directly with the agencies. GDOT, at its discretion, shall involve Developer in the coordination and approval process. Developer shall provide, at a minimum:

- A process for training personnel to recognize buffers that fall under the jurisdiction of the EPD;
- A process for communicating the terms and conditions of all EPD permits;
- Procedures for carrying out any required mitigation;
- Mitigation for unavoidable impacts to a state-mandated buffer and shall be responsible for minimizing and avoiding impacts, where possible. Developer shall coordinate with GDOT for review of the required mitigation plans and mitigation credits (if applicable). GDOT shall have final approval of the mitigation. Developer will purchase the required mitigation credits, prior to construction, if required; and
- Mitigation credits. Developer is responsible for all mitigation costs and shall purchase, if required, the mitigation credits for unavoidable impacts to the buffer prior to construction based on the Developer's final design.

- **Endangered Species Act and Fish and Wildlife Coordination Act**

GDOT shall be responsible for the documentation of Section 7 of Endangered Species Act (ESA) and Fish and Wildlife Coordination Act (FWCA) for federal- and State-listed

species and their suitable habitat applicable to the Project and will provide the list to Developer.

Developer shall develop procedures regarding how they will address federal- and State-listed species and their suitable habitat. The documentation shall be in agreement with all Memorandums of Understanding (MOU) and Memorandums of Agreement (MOA) GDOT has with the Georgia Department of Natural Resources (DNR) including the requirement for coordination with DNR to be conducted by GDOT. The documentation at a minimum shall include:

- A process for communicating any commitments regarding federal- and state-listed species and their suitable habitat; and
- Procedures for complying with any commitments.

GDOT shall be responsible for the documentation of Section 7 of ESA and FWCA requirements. Developer shall document how they shall comply with the Section 7 of ESA and FWCA. Developer shall review the most current county list of threatened and endangered species provided by the U.S. Fish and Wildlife Service (USFWS). The Georgia Department of Natural Resources Natural Heritage Program shall be reviewed for additional information. Developer shall be responsible for compliance with the applicable laws and procedures pertaining to Section 7 of ESA and FWCA throughout the term of the Agreement. The documentation at a minimum shall include:

- A process for training personnel on the requirements of the ESA and FWCA;
- A process for communicating any commitments regarding ESA and FWCA to applicable agencies; and
- Procedures for complying with any commitments including mitigation and Special Provision 107.23G (Attachment 4-2).

- **Migratory Bird Treaty Act**

GDOT shall be responsible for the documentation of Migratory Birds Treaty Act requirements. Developer shall provide written documentation establishing compliance with the Migratory Birds Treaty Act. Developer shall not construct or demolish any bridges or culverts during a period between April 1 and August 31 when the birds would be utilizing the nests under the bridges and culverts. However, Developer may construct or demolish any bridges or culverts if restrictive netting is employed to keep birds from nesting on the structures. Prior to any construction or demolition of any bridges or culverts, an independent survey for migratory birds must be conducted and must document that these nests are not present or are not in use. Construction of a new bridge or culvert adjacent to an existing bridge or culvert that has birds nesting is subject to the same restriction time frame as previously described for demolition. Developer shall follow Special Provision 107.23G for migratory birds.

On bridges that are to be widened, rehabilitated, jacked, painted, and/or demolished, exclusionary netting should be placed along the full length of the bridge to prevent the birds from accessing any existing nesting habitat. The exclusionary netting shall be

installed prior to March 1 and, unless it fails to prevent the nesting of migratory birds, shall remain in place until August 31 or until the bridgework is complete, whichever occurs first.

- **Noise**

To fulfill the commitments of the GDOT-Provided approvals, Developer shall be responsible for implementing all noise mitigation measures to minimize construction noise and long-term impacts of the Project as required in Attachment 4-1, GDOT's Highway Noise Abatement Policy for Federal Aid Projects, and the NEPA Approval. Prior to GDOT's final decision on the placement of any noise abatement, GDOT will conduct outreach with the affected individuals after final design to determine community support for abatement. Due the nature of the Design-Build process, determination of when Final Design has been met will be agreed upon by Developer and the GDOT Project Manager. All NEPA decisions are the responsibility of GDOT and/or FHWA, and will not be made by Developer.

If Developer proposes changes to the Project, Developer shall provide necessary information to GDOT. GDOT shall be responsible for developing the Noise Impact Assessment Report based on changes proposed by Developer that affect the results of previously approved studies. Developer shall coordinate all activities through GDOT and provide all necessary information to GDOT for the Noise Impact Assessment Report. Developer shall comply with all State and local sound-control and noise-level rules, regulations, and ordinances. Developer shall be responsible for and obtain any variances, special permits, or approvals from any Governmental Entities that may be required if construction occurs during nighttime hours and/or on Sunday. Developer shall be responsible for public notification and involvement per GDOT guidelines and in accordance with Section 3 Public Information and Communications. Developer shall comply with the *GDOT Environmental Procedures Manual* for noise requirements. GDOT Noise Policy public involvement activities such as outreach and voting shall be conducted by GDOT.

Developer shall address traffic noise mitigation during construction and follow the Highway Noise Abatement Policy per Attachment 4-1. Developer shall also meet the requirements of 23 CFR 772, the FHWA guidelines for the assessment of highway traffic-generated noise and, at a minimum, shall provide prior to the initiation of construction:

- A plan and process for carrying out noise mitigation measures as identified and discussed in the NEPA Approval;
- A plan and process for carrying out noise mitigation measures determined throughout the term of the Project;
- A plan and process to handle changes that may occur to proposed permanent noise mitigation in the NEPA Approval and the Project;
- A plan to limit the number and duration of onsite idling equipment;

- Maintenance on all construction equipment to keep it in good repair to reduce noise;
- Suitable enclosures that will reduce noise from all stationary equipment and facilities;
- A schedule for construction activity to limit truck loading, unloading, and handling operations;
- A mitigation plan for the extended duration of potential 24-hour effects from construction-related noise, light, glare, and dust. The plan should be coordinated with neighborhood groups, including residents living in close proximity to the Project corridor construction zone and staging areas; and
- Developer shall conduct public outreach in accordance with the Highway Noise Abatement Policy for Federal Aid Projects (July 13, 2011).

- **Water Well Impacts and Requirements**

The Water Well Standards Act (O.C.G.A. 12-5-120 through 138) provides standards for the construction, operation, maintenance, and abandonment of wells and boreholes to protect public health and water resources of the State. EPD serves as the agent for the Water Wells Standard Advisory Council and supports the Council by examining applications, issuing licenses and certifications, performing practical drilling examinations, and conducting investigations of complaints, as well as other duties following approval by the Council. EPD also maintains listings of active, licensed water-well drillers and active, certified pump installers.

Developer shall provide documentation to address wells encountered during the life of the Project. The documentation shall include that Developer is responsible for complying with the laws of the Water Well Standards Act. The documentation, at a minimum, shall include:

- A process for training personnel on recognition of wells;
- Procedures for handling wells; and
- Procedures for handling contamination of a well that results from the Developer's Work. Procedures shall include a requirement to notify GDOT, and with GDOT's concurrence, Developer shall notify the appropriate regulatory agency within twenty-four (24) hours of the discovery.

- **Cultural Resource Studies**

GDOT shall perform consultation for the Project according to current procedures for implementing Section 106 of the National Historic Preservation Act as defined in 36 CFR 800. Developer shall be responsible for ensuring compliance with cultural resource laws on the Project throughout the term of the Agreement. The cultural resource documentation shall be developed in accordance with the GDOT/FHWA *Cultural*

Resource Survey Guidelines. Developer is responsible to ensure that all eligible historic resource boundaries are placed on plans. Developer is responsible for ensuring no construction will occur within historic boundaries.

If Developer proposes changes to the Project outside of the footprint of the Existing ROW or State Proposed ROW, as described in the NEPA Approval, Developer shall be provide all design plans necessary to support Section 106 documentation, as requested. GDOT shall perform all necessary Section 106 documentation including any necessary cultural resource surveys, evaluations, testing, and mitigation in those areas and within the Area of Potential Effects.

Developer shall document efforts to avoid impacts to cultural resources that are listed on or eligible for inclusion in the National Register of Historic Places (NRHP). If evidence of a possible cultural resource property is encountered during the course of the Work, Developer shall immediately cease Work in the immediate area and contact GDOT to initiate post-review discoveries as outlined in the *GDOT Environmental Procedures Manual*. Developer shall undertake appropriate measures to protect the site from further intrusion until an appropriate evaluation of the site can be made. Work shall not resume in the area until Developer receives notification and approval from GDOT.

Developer shall follow the requirements of the Native American Graves Protection and Repatriation Act (NAGPRA), which requires agencies to inventory Native American cultural items (human remains and objects), repatriate Native American cultural items, and consult with Native American groups about permits to excavate on Federal or Tribal lands. The requirements of NAGPRA provide for the ownership or control of Native American cultural items excavated or discovered on Federal or Tribal lands and vests ownership or control of human remains and associated funerary objects: (a) in the lineal descendants of the Native American; or (b) if the lineal descendants cannot be ascertained or the funerary objects and so forth are unassociated, in the Indian tribe or Native Hawaiian organization on whose land the remains or objects were located, or which has the closest cultural affiliation with the remains or objects (and makes claim for them), or, if the land was Federal, in the Indian tribe recognized as originally occupying the area (unless a different tribe, by preponderance of the evidence, makes a stronger claim). NAGPRA requirements also provide for disposition of unclaimed Native American cultural items according to regulations promulgated by the Secretary of the Interior.

NAGPRA defines Native American cultural items as:

- Human remains,
 - Associated funerary objects,
 - Unassociated funerary objects,
 - Sacred objects, and
 - Cultural patrimony.
- **Section 4(f) U.S. DOT Act**

Section 4(f) of the U.S. Department of Transportation Act of 1966 established the requirement for consideration of park and recreational lands, wildlife and waterfowl refuges, and historic sites in transportation project development. Section 4(f) properties include publicly owned public parks, recreation areas, wildlife or waterfowl refuges, or any publicly or privately owned historic site listed or eligible for listing on the National Register of Historic Places. The law is implemented by the FHWA through the regulation 23 CFR 774. If Developer proposes changes to the Project outside of the footprint of the Existing ROW or State Proposed ROW, as described in the NEPA Approval, Developer shall be provide for all design information necessary for Section 4(f) documentation, as requested. GDOT shall perform all necessary Section 4(f) analysis and documentation to achieve FHWA approval.

- **Public Involvement**

Developer shall document how they will comply with all applicable public involvement requirements related to NEPA. The documentation shall include that Developer is responsible for coordinating public involvement activities with GDOT and conducting all public involvement requirements for the life of the Project. The documentation at a minimum shall include:

- A process for conducting and responding to public involvement requirements;
- Procedures for documenting public involvement; and
- An array of public involvement activities as prescribed in Section 3.

4.3.3 Environmental Protection Training Plan

Developer shall develop and implement an Environmental Protection Training Program (EPTP) that shall meet the minimum requirements set forth herein. The EPTP shall include methods and procedures documented in the ECMP to:

- Educate every worker to:
 - Recognize the overall importance of environmental issues as they relate to the Project and its successful completion, and
 - Appreciate the various environmental sensitivities of the Project;
- Train appropriate staff to:
 - Recognize environmentally sensitive resources that may be encountered during the Work;
 - Avoid or take appropriate action to minimize environmental impacts from the Work; and
 - Know the required actions, practices, and procedures regarding regulated resources;
- Foster Developer's management and supervisory personnel's attitude of commitment to the Project's environmental quality;

- Convey to all workers, Developer's management commitment to the Project's environmental quality; and
- Convey to all workers, GDOT's and Developer's commitment to zero tolerance for violations.

4.3.3.1 EPTP Scope and Content

The goal of the EPTP is to educate Project personnel about the following:

- Overall importance of environmental protection to the Project;
- Compliance responsibility and Governmental Entity authority including background and environmental issues regulatory overview;
- Overview of Developer's Environmental Commitments and responsibilities at the Project level;
- Worker responsibilities;
- Wetlands and streams identification;
- Migratory Bird Treaty Act (MBTA) and the Executive Order on the Responsibility of Federal Agencies to Protect Migratory Birds (EO 13186), which requires the protection of migratory birds and their habitats. The habitats and structures potentially significant to migratory birds are to be identified within the survey corridor;
- Section 7 of the Endangered Species Act;
- Cultural resource identification;
- Section 4(f) properties include publicly owned public parks, recreation areas, and wildlife or waterfowl refuges, or any publicly or privately owned historic site listed or eligible for listing on the National Register of Historic Places;
- All applicable Environmental Approvals terms and conditions;
- Best Management Practices (BMPs) for environmental compliance including pollution prevention, erosion, sedimentation, post construction controls, and dust control measures to maintain water and air quality;
- BMPs will be implemented to the extent practicable to minimize: greenhouse gas emissions, the amount of construction dust generated, and worker exposure to diesel exhaust;
- Required mitigation measures;
- Procedures and precautions in the event of spills of or discovery of Hazardous Materials or unknown chemicals or contamination;
- Procedures and precautions in the event human skeletal remains or other archeological or paleontological resources are discovered, including the requirements of NAGPRA;
- Groundwater protection requirements;
- Clean Water Act regulations and surface water protection requirements;
- Overview of noise, as well as residential and commercial impact reduction procedures;
- Air quality requirements; and
- Penalties and/or fines for violations of and noncompliance with Environmental Approvals and environmental laws, including termination of employment.

4.3.3.2 EPTP Participation

Developer shall require all employees involved with the environmental aspects of the Project to participate in the EPTP and shall keep accurate records documenting attendance, as well as materials presented. Developer shall invite the attendance of all GDOT staff, consultants, and any individual or firm associated with the Project.

4.3.3.3 EPTP Schedule

Developer shall submit to GDOT for review and approval, course outlines containing learning objectives designed to achieve stated goals and suggested staff attendance for all anticipated training requirements through the term of the Agreement.

Developer shall include activities for implementation of the EPTP in the Project Baseline Schedule. The length of training sessions and their frequency shall be sufficient to achieve the goals set forth above. Periodic training sessions at key times (e.g., prior to construction or major maintenance in sensitive areas or construction timing restrictions to protect threatened and/or endangered species) shall be used to update workers on specific restrictions, conditions, concerns, and/or requirements.

4.3.4 Hazardous Materials Management Plan

Developer shall prepare a Hazardous Materials Management Plan (HMMP) for the safe handling, storage, treatment, and/or disposal of Hazardous Materials, whether encountered at or brought onto the Project Site by Developer, encountered or brought onto the Project site by a third party, or otherwise, during the term of the Agreement. Developer shall submit the final HMMP to GDOT for review and approval within sixty (60) days of NTP1; approval of the Plan by GDOT shall be a condition of commencement of Construction Work. Developer shall follow the federal Environmental Protection Agency (EPA), EPD guidelines, and GDOT Policies and Procedures for Underground Storage Tank (UST), and Hazardous Waste (HW) Site Investigation Procedure.

Developer's HMMP shall include procedures compliant with all applicable environmental laws and shall include, at a minimum:

- Updated Material Safety Data Sheets (MSDS) for all chemicals to be used on the Project, per OSHA requirements, for the term of the Agreement;
- Designated individuals responsible for implementation of the plan;
- Procedures for identifying and documenting potential contaminated sites that might impact Project development;
- Procedures for mitigation of known contaminated sites anticipated to impact construction;
- Procedures for mitigation of unanticipated contaminated sites encountered during construction;
- Procedures for developing a detailed Spill Response Plan for the term of the Agreement;

- Process for training personnel for responding to and mitigating incidents involving contamination or waste;
- Provisions for appropriate storage and disposal of all waste encountered or disposed of on the Project for the term of the Agreement;
- Provision for a Hazardous Materials training module as an element of the EPTP component of the CEPP;
- Procedures for preparing Underground Storage Tank/Hazardous Waste (UST/HW) site investigation report(s) and package submittals to the Environmental Testing Unit of the Office of Materials and Testing (OMAT) for review in the event that Hazardous Materials are discovered during construction; and
- Identification and contact information for designated responsible individuals.

The HMMP shall include provisions for making all workers aware of the potential Hazardous Materials to which they may be exposed, limiting Contractors and other Site workers' exposure to Hazardous Materials and providing all necessary personal protection equipment to protect workers from exposure. The HMMP shall require Developer to provide any non-Developer personnel who visits the Project area with the appropriate personal protection equipment.

The HMMP shall require that all personnel of Developer-Related Entities handling Hazardous Materials be trained and certified at least to the minimum requirements established under the current guidelines of OSHA 1910.120 (HAZWOPER Training).

Further, the HMMP shall include procedures for ensuring that all applicable certifications, licenses, authorizations, and Governmental Approvals for Developer personnel handling Hazardous Materials are current and valid through the duration of the Work.

4.3.4.1 Underground Storage Tank and Hazardous Waste Site Investigation Procedure

Developer shall prepare a UST/HW Site Investigation Work Plan that addresses the methods, techniques, and analytical testing requirements to adequately characterize the extent of the contaminated media (soil and/or groundwater) potentially impacting the Project. If Hazardous Materials and petroleum products are encountered within the Construction Maintenance Limits, Developer's staging area, field office site, plant sites, borrow site, or stockpile location, Developer shall locate and assess the likely source of contamination.

Upon satisfactorily completing the investigative work, Developer shall summarize the findings within a UST/HW Site Investigation Report and make recommendations regarding potential response actions necessary for Project development. Developer shall take Hazardous Materials and petroleum products contamination into account during all subsequent phases of Project development, including Developer Proposed/Developer Acquired ROW negotiation and acquisition, property management, design, and construction.

A Registered Professional Engineer and other qualified professionals, as needed, shall prepare the UST/HW Site Investigation Report and submit it to the Environmental Testing Unit of the Office of Material and Testing (OMAT) and other appropriate review agencies, and they shall

prepare other necessary reports in accordance with applicable, relevant, or appropriate laws and guidance.

The UST/HW Site Investigation Report shall address:

- The characterization of the impacted area;
- Sampling efforts and findings;
- Opportunities to avoid the contamination by adjusting the design;
- Level of response action warranted if the contamination cannot be avoided;
- Feasibility of initiating response actions prior to construction;
- Pursuit of cost-reimbursement from responsible parties;
- The need for completing response actions concurrent with construction; and
- The nature of any specifications and special provisions necessary for incorporation into the Project.

Developer shall initiate a preventative or corrective action after GDOT reviews and receives approval of the UST/HW Site Investigation Report from appropriate federal or State agencies. If Developer disposes offsite any Hazardous Materials, including Pre-existing Hazardous Materials, encountered during the Work, such disposal shall be at a facility permitted for such materials.

Developer shall review public contamination records prior to conducting the Level 2 contamination assessment. Developer shall not start Work unless the Level 2 contamination assessment is less than six (6) months old where State Proposed ROW and/or Developer Proposed/Developer Acquired ROW is required.

4.3.5 Communication Plan

Developer shall develop a Communication Plan (CP) which describes in detail the communication hierarchy for information distribution related to compliance with the CEPP. The CP will include names and contact information, including emergency contact information, and the preferred methods of routine and emergency communication distribution.

4.3.6 Construction Monitoring Plan

The Construction Monitoring Plan (CMP) shall identify times, locations, and other conditions where monitoring of construction activities are to be performed to maintain and cause compliance with environmental laws, Environmental Approvals, and the DBF Documents. The CMP shall establish and/or document schedules, protocols, and methodologies to be used for monitoring Work with an emphasis on timely reporting, corrective actions, and adaptive management. The CMP shall establish reporting procedures, identify reporting requirements, and establish controls for report distribution and records retention. All Environmental Monitoring Reports shall be made available for review by GDOT at GDOT's request. The CMP shall include procedures to cause immediate notification to GDOT should any non-compliance or violation be observed that represents an imminent danger to human health or the environment.

Prior to NTP2, Developer shall inspect and validate existing facilities, structures, and environmentally sensitive areas in the vicinity of the Site. The Site inspection shall document the pre-construction condition of vegetation, streets, sidewalks, landscaping, residential and commercial property, streams, storm drainage, parks, and infrastructure that may be affected by the Project. The purpose of the inspection is to provide a point of reference to ensure any area affected by the Work is restored to its pre-construction condition. Developer shall document the inspection with a report that shall include photographs, sketches, maps, and narratives clearly depicting the pre-construction Site condition.

Post award, Developer shall inspect the Municipal Separate Storm Sewer System (MS4) located within and adjacent to the Site. The purpose of this inspection is to document pre-existing drainage issues/problems that could later result in a fine or penalty imposed by the jurisdictional Governmental Entity.

Developer shall schedule deliveries of construction materials to minimize disruptions to surrounding areas and include these procedures in the CMP.

As part of the CMP, the following practices shall be documented and implemented as they relate to Construction Equipment:

- Using low-sulphur diesel fuel (less than 0.05% sulphur);
- Retrofit engines with an exhaust filtration device to capture Diesel Particulate Matter (DPM) before it enters the workplace;
- Position the exhaust pipe so that diesel fumes are directed away from the operator and nearby workers, thereby reducing the fume concentration to which personnel are exposed; and
- Use of a catalytic converter, which reduces carbon monoxide, aldehydes, and hydrocarbons in diesel fumes. These devices must be used with low-sulphur fuels.

Additionally, as part of the CMP, Developer shall follow the following procedures:

- Employ work practices and training to help reduce exposure, e.g., turning off engines when vehicles are stopped for more than a few minutes, and training diesel-equipment operators to perform routine inspection and maintenance of filtration devices;
- When purchasing a new vehicle, ensure that it is equipped with the most advanced emission-control systems available; and
- With older vehicles, use electric starting aids such as block heaters to warm the engine, as well as avoid difficulty starting, and thereby reduce diesel emissions.

4.3.7 Recycling Plan (RP)

The Recycling Plan (RP) shall document and fully detail Developer's commitment to recycling, waste minimization, and use of "green products" during all aspects of Work. The RP shall document Developer's recycling initiatives as well as methods and procedures for maximizing the use of recycled materials in all aspects of the Work. If recyclable materials shall be used in

lieu of GDOT-Approved construction and maintenance materials, Developer shall follow GDOT Policies and Procedures relating to use of recycled materials.

4.4 Environmental Personnel

Developer, acting through the Environmental Compliance Manager (ECM), shall designate an Environmental Team (ET), as detailed in this section, to prevent, minimize, and/or correct any violation of or noncompliance with Environmental Approvals. The ET shall include the following persons: Environmental Training Staff, Environmental Compliance Inspectors (ECIs), NEPA Specialist, Archeologist, Historian, Natural Resource Biologist, Water Quality Specialist, Air Quality Specialist, Noise Specialist, Hazardous Materials Manager, and Worksite Erosion Control Supervisor (WECS). All of the ET shall be deemed other principal personnel.

In the CEPP, Developer shall set forth procedures and methods for:

- Staffing and availability of ECM and all ET personnel; and
- ET staff response times during the Work.

4.4.1 Environmental Compliance Manager

Developer shall designate a full-time ECM for the Work. The ECM shall report and coordinate all issues directly with GDOT and Developer's Project Manager. In the event the ECM, in consultation with Developer's Project Manager and GDOT, is unable to reach satisfactory resolution of environmental issues, the ECM shall provide written notification to Developer and GDOT outlining the concerns, actions taken in attempt to correct the concerns, and provide a recommendation as to the suggested course of action.

The ECM shall direct the work of the ET and shall monitor, document, and report environmental compliance for the Work. The ECM shall report immediately to GDOT and Developer any violation or non-compliance and shall include with any such report, the appropriate recommendations for corrective action including stoppage of Work.

The ECM shall coordinate with GDOT, Developer, and appropriate Governmental Entities. The ECM shall submit all necessary environmental documentation and monitoring reports to the appropriate Governmental Entities and when applicable, through GDOT, to the extent necessary to maintain compliance with applicable Environmental Approvals.

The ECM shall be an employee or subcontractor of Developer. Developer shall not have the ability to relieve the ECM of his or her duty without the written consent of GDOT. Should Developer desire to replace the ECM, Developer shall submit the résumé of a replacement candidate. The replacement candidate shall be available fulltime within thirty (30) Days after delivery of GDOT's written acceptance. In the absence of the ECM, Developer's Hazardous Materials Manager shall act as an interim ECM.

Qualifications: The ECM candidate shall have at least five (5) years of experience successfully managing environmental compliance of urban freeway construction. This person or firm must be

prequalified by GDOT and all costs associated with the ECM shall be included in Developer's Proposal. The qualifying experience required of an ECM candidate must include the following:

- Has developed and managed a storm water pollution prevention plan;
- Has developed and managed a hazardous substance and petroleum products management plan;
- Has implemented environmental mitigation plans;
- Has provided environmental and personal protection training; and
- Has monitored compliance with Section 404 Permit conditions.

The ECM's qualifying experience must demonstrate familiarity with:

- The scope and terminology of ASTM E 1527-05, "Standard Practice for Environmental Site Assessment Process;"
- Provisions of the NPDES Construction General Permit (GAR1000002); and
- Requirements of Section 404 and permit provisions.

4.4.2 Environmental Training Staff

Under the direction of the ECM, the environmental training staff shall develop, schedule, and conduct environmental awareness and environmental compliance training for Developer's personnel. All training shall be in accordance with the requirements set forth in Section 4.3.3.

4.4.3 Environmental Compliance Inspectors

The Environmental Compliance Inspectors (ECIs) shall conduct on-site environmental monitoring, prepare documentation, and report to the ECM daily all violations, compliance, and noncompliance with Environmental Approvals.

The ECIs shall report immediately to the ECM any violation or non-compliance and shall include with any such reports, the appropriate recommendations for corrective action including stoppage of Work.

Qualifications: Each ECI shall have at least one (1) year of operational control experience of Water Quality Certification Plan Activities.

4.4.4 NEPA Specialist

The ECM shall designate a NEPA Specialist to provide expertise in NEPA laws, regulations, and policies during the course of the Work. In particular, the NEPA Specialist should be able to address EJ issues related to the Project.

The ECM shall designate personnel in the event that a need arises for renewed activities to comply with environmental laws.

Qualifications: The NEPA Specialist shall meet the certification requirement of GDOT Transportation Planning Prequalification Category 1.06(a) NEPA Documentation.

4.4.5 Cultural Resource Management Personnel

The ECM shall designate an Archeologist, Architectural Historian, Historian, and/or Historical Architect to provide expertise in monitoring impacts to cultural resources during the course of the Work.

The ECM shall designate personnel in the event that a need arises for renewed activities to comply with cultural resources laws.

Qualifications: The Cultural Resource Management Personnel shall meet the certification requirement of GDOT Transportation Planning Prequalification Category 1.06(b) History and 1.06(f) Archaeology. Cultural Resource Management Personnel must meet professional standards under regulations developed by the Secretary of the Interior, found at http://www.nps.gov/history/local-law/Prof_Qual_83.htm.

4.4.6 Natural Resource Biologist

The ECM shall designate a Natural Resource Biologist to provide expertise in monitoring impacts on wildlife and the natural environment during the course of the Work.

The ECM shall designate personnel in the event that a need arises for renewed activities to comply with natural resources laws.

Qualifications: The Natural Resource Biologist shall meet the certification requirement of GDOT Transportation Planning Prequalification Category 1.06(e) and 1.06(g).

4.4.7 Water Quality Specialist

The ECM shall designate a Water Quality Specialist to provide expertise in permitting delineation, storm water pollution prevention, and the protection of jurisdictional waters during the course of the Work.

Qualifications: The Water Quality Specialist shall have verifiable experience implementing Water Quality Certification Plans and be able to demonstrate a working knowledge of the National Pollutant Discharge Elimination System and MS4 permit requirements applicable to the Project. The Water Quality Specialist shall meet the certification requirements of GDOT Transportation Planning Prequalification Category 1.06(e) and 1.06(g).

4.4.8 Air Quality Specialist

The ECM shall designate an Air Quality Specialist to provide expertise for air quality studies during the course of the Work, if necessary.

Qualifications: The Air Quality Specialist shall meet the certification requirement of GDOT Transportation Planning Prequalification Category 1.06(c).

4.4.9 Noise Specialist

The ECM shall designate a Noise Specialist to provide expertise for noise studies during the course of the Work, if necessary.

Qualifications: The Noise Specialist shall meet the certification requirement of GDOT Transportation Planning Prequalification Category 1.06(d).

4.4.10 Hazardous Materials Manager

The ECM shall designate a Hazardous Materials Manager to provide expertise in the safe handling of Hazardous Materials required to perform the Work and those that may be discovered/impacted during the term of the Agreement. The Hazardous Materials Manager shall conduct appropriate activities such as the following:

- Schedule and/or conduct training for Developer's employees;
- Verify all employee certifications prior to and required for any handling of Hazardous Materials; and
- Maintain records of all incidents involving Hazardous Materials and notify the ECM, GDOT, and appropriate authorities in writing of any such incidents.

Qualifications: The Hazardous Materials Manager shall meet the certification requirements of GDOT Soils, Foundation and Material Testing, Hazardous Waste Site Assessment Studies 6.05, and be a qualified professional with forty (40) hours of HAZWOPER certification. In addition, the Hazardous Material Manager shall have at least five (5) years of experience on similar projects in the following areas:

- Developing investigative work plans, site investigation reports, and remedial action plans or equivalent reports necessary and acceptable to the EPA in material discovery and remediation efforts of Hazardous Materials; and
- Investigation and remediation of Hazardous Materials following *GDOT Environmental Procedures Manual* guidelines.

4.5 Required Submittals

Developer will be required to provide Submittals in accordance with the DBF Documents.

5 RIGHT OF WAY (ROW) – DEVELOPER ACQUISITIONS

5.1 General Requirements

This section sets forth the activities assigned to Developer, including pre-acquisition and acquisition activities, and it designates which activities GDOT will conduct. This section also sets forth the requirements applicable to the work assigned to Developer related to the acquisition of State Proposed ROW. Developer shall provide all services necessary to acquire title to the State Proposed ROW, in a form and substance acceptable to GDOT, in the name of the Georgia Department of Transportation. Developer shall also provide for relocation of displacees and clearance/demolition of the improvements from the ROW, as more fully described in the following sub-sections.

Developer's ROW staff and/or Developer will function as independent contractors while acquiring the State Proposed/Developer Acquired ROW.

5.2 Administrative Requirements

State Proposed/Developer Acquired ROW shall be acquired in accordance with State and/or federal laws and in conformance to FHWA and GDOT policies, procedures, and guidelines.

Pursuant to the applicable State and/or federal regulations, Developer shall:

- Acquire State Proposed/Developer Acquired ROW parcels for the Project on behalf of GDOT subject to GDOT's rights of review, approval, and audit;
- Maintain adequate access to all properties at all times or until relocation is completed; and
- Maintain Utility service to occupied properties at all times or until relocation is completed.

Developer shall maintain a complete and current set of approved ROW plans for public use.

GDOT will either provide to Developer any GDOT forms referenced in this section or will make them available upon request.

All ROW activities shall be completed and documented in compliance with all applicable State and/or federal laws, including the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970* (Uniform Act), and the rules and regulations implementing the Uniform Relocation Act.

In the event Developer does not follow the provisions of 49 CFR Part 24 of the Uniform Act in the performance of the acquisition and/or relocation processes for the Project, fails to obtain or create any necessary written documentation in the ROW parcel file(s), or violates any requirements of the Uniform Act that results in the Project losing federal funding on a parcel(s) or the Project in general, Developer shall be responsible for any and all such loss of federal funds and all expenses determined to be ineligible for federal reimbursement due to Developer's failure

to comply with the provisions of the Uniform Act (This is applicable to Federal-Aid Design-Build projects).

5.3 Developer's ROW Scope of Services

Developer shall complete all administrative activities and prepare all documentation sufficient for Developer to acquire the State Proposed/Developer Acquired ROW.

Upon Developer request to GDOT, GDOT will request that the Office of Attorney General assign an approved Special Assistant to the Attorney General (SAAG) to conduct the title work, closings, condemnations, and any related legal activities.

Developer shall not, without prior approval, initiate negotiations of the State Proposed/Developer Acquired ROW until the ROW plans for the applicable constructible segment have been approved by GDOT, and the constructible segment has environmental clearance.

Developer shall not exceed ten percent (10%) in condemnations of the total parcels required for the Project, without prior written approval of GDOT.

If Developer and the property owner cannot negotiate a settlement acceptable to GDOT, then GDOT will enter into an administrative review process with the property owner. Only after a reasonable settlement with a property owner cannot be reached through an administrative review, then acquisition of the property through eminent domain may commence. Developer shall not be permitted to commence any condemnation action through the statutory "Declaration of Taking" on behalf of GDOT.

Developer shall not begin construction on any parcel of real estate unless property rights for the parcel have been obtained and recorded in favor of GDOT and possession has occurred. State Proposed ROW possession may be by use of Right of Entry (ROE) as may be granted by governmental agencies, and/or public Utility-owned companies, and as approved only by GDOT on a case-by-case basis.

Developer shall provide condemnation court coordinator support for twelve (12) months after filing of petition, but not to exceed Final Acceptance date.

Developer's ROW Project Manager (ROW PM) shall be responsible for ensuring that the State Proposed ROW is free of obstructions prior to construction commencing on any constructible segment of the Project.

5.4 Responsibilities of Developer

Developer shall be responsible for the costs of services and preparation of documentation for State Proposed/Developer Acquired ROW acquisition, related relocation assistance for displacees, and property demolition and removal. The Work related to State Proposed/Developer Acquired ROW acquisition includes, but is not limited to:

- ROW plan development and/or revisions after NTP1;

- Surveying;
- Environmental assessment;
- Testing and remediation;
- Appraisals;
- Other necessary valuation or damage impact studies;
- Conceptual stage study;
- Negotiations;
- Acquisitions;
- Closing package preparations;
- Court coordination efforts; and
- Condemnation petition preparations.

Developer shall also be responsible for relocation advisory assistance, as well as demolition or removal of obstructions within the State Proposed/Developer Acquired ROW in compliance with all applicable local, State and/or federal laws.

For billboards impacted within State Proposed/Developer Acquired ROW, Developer shall only be responsible for providing related services which include, but are not limited to surveys to establish horizontal and vertical location (including cat walks), appraisal services, specialty reports, negotiation services, cost-to-cure reports, demolition services, and other services as necessary to handle removal or relocation of billboards. In addition, Developer shall prepare and submit, for inclusion in the appraiser's final report, a Sign Evaluation Report.

Any Developer negotiations with a property owner to use their property outside of the State Proposed ROW acquisition limits for mobile work trailers, storage, equipment, etc., shall be strictly between Developer and the property owner and is to in no way affect the negotiations of any parcel acquisition required for the Project. GDOT shall not be obligated to exercise its power of eminent domain in connection with Developer's acquisition of any such temporary right or interest, and GDOT shall have no obligations or responsibilities with respect to the acquisition, maintenance, or disposition of such temporary rights or interests.

5.5 Responsibilities of GDOT

GDOT will have the following responsibilities in connection with acquisition of State Proposed/Developer Acquired ROW:

- Provide just and adequate compensation (i.e., negotiated settlements, condemnation jury awards);
- Provide final approval, where final approval is warranted, for all negotiation settlements and relocation assistance payments;
- Provide a staff ROW Oversight Manager and/or Administrative Review Officer to serve as first point of contact, and who will be responsible for approving all negotiated settlements; and
- Provide payment for SAAG services and necessary expert witnesses.

5.6 GDOT Project Monitor/Reviewer

In addition to GDOT's review and approval authority, Developer's ROW PM will audit, review, and pre-approve all negotiations, files, settlements, etc. GDOT General Office staff will be the only authorized persons allowed to sign the Option Agreements and any Counter Offer Settlements.

5.7 Responsibilities of the Office of the Attorney General

The parties hereto acknowledge the statutory requirements that the Attorney General of the State of Georgia has exclusive authority to represent and defend GDOT, through the appointed SAAG. In its role as attorney for GDOT, the SAAG has the responsibility to:

- Represent GDOT in all condemnation and eviction proceedings;
- Coordination with GDOT on all legal matters concerning acquisition processes, including all negotiated legal settlements;
- Analyze recommended parcel values and/or appraisal issues;
- Provide additional legal advice and opinions as needed by GDOT;
- Implement jury trials including determination of expert witnesses and all appeals;
- Prepare, obtain, and file of all necessary legal documentation for eviction of property owners or tenants;
- Prepare preliminary and final title opinions; and
- Conduct closings within ninety (90) days of GDOT's acceptance of the Option Agreement.

5.8 ROW Acquisition Plan

Developer shall prepare a ROW Acquisition Plan within thirty (30) days of NTP1. The ROW Acquisition Plan shall set forth Developer's organization including: names, titles, and qualifications of Key Personnel and other ROW personnel; integration of the ROW schedule into the Project schedule; interface between design and ROW activities; documentation and reporting procedures; quality control procedures; and quality review standards.

The ROW Acquisition Plan shall:

- Identify personnel and provide a copy of the GDOT Office of ROW certification of the proposed Developer's ROW PM, appraisers, other valuation experts, relocation negotiation agents, relocation benefits specialist, pre-acquisition agent, conceptual stage study preparer, condemnation court coordinator, condemnation petition preparer, property manager (including asbestos inspector, asbestos abatement, demolition, and UST removal personnel and affiliation), negotiators, and any State Proposed ROW personnel whose services will be required. All of the above must be in good standing with the GDOT Office of ROW.

- Establish the specific means by which Developer will:
 - Provide sufficient prequalified personnel (include an organizational chart) to achieve, in accordance with the Project schedule, the goals and milestones established for ROW acquisition, relocation assistance, appraisals, and clearance/demolition of the improvements from the ROW;
 - Provide relocation advisory assistance such as finding replacement properties and offering special assistance including ADA requirements, if applicable;
 - Provide administrative support;
 - Provide a conceptual stage study, if applicable;
 - Provide translation to foreign language, or communications for those visually impaired or hearing impaired, as necessary;
 - Provide documentation and reports;
 - Procure, distribute, and explain GDOT acquisition and relocation brochures as approved by GDOT and/or FHWA; and
 - Establish, implement, and maintain QC procedures and quality review standards for the acquisition of ROW while preventing fraud, waste, and mismanagement.

Developer shall update the ROW Acquisition Plan including the organization chart whenever changes in the Plan or personnel occur. Any changes in personnel must receive GDOT approval prior to commencing work for the particular scope of work contemplated.

5.9 Schedule and Review Procedures

The Project schedule shall indicate the date to begin the acquisition activities of the State Proposed/Developer Acquired ROW and the anticipated completion date of acquisition activities for each parcel. GDOT shall be advised of all Developer Proposed/Developer Acquired ROW and temporary rights or interests in real property to be acquired by Developer. In developing the Project schedule, Developer will give priority to the acquisition of parcels that have significant impact on the Project schedule and/or affect the Critical Path (i.e., relocation parcels, parcels with improvements, and property management).

Developer shall provide monthly ROW parcel status updates to GDOT.

In developing the Project schedule, Developer shall incorporate the following applicable time periods for GDOT and/or FHWA reviews:

- ROW plans approval by GDOT and/or FHWA: forty-five (45) Days;
- ROW plan revisions approval by GDOT: fifteen (15) Days;
- Assignment of review appraiser: ten (10) Days;
- Revised Conceptual Stage Study review, if needed: thirty (30) Days;
- Appraisal review: thirty (30) Days;
 - No more than eight (8) appraisal packages can be submitted to GDOT for review within a fifteen (15) Day period.
- Relocation benefits package check review: thirty (30) Days;
 - No more than 8 relocation benefits packages can be submitted to GDOT for review within a thirty- (30) Day period.

- Negotiations: ninety (90) Days;
- Negotiation settlement amount approval: ten (10) Days;
- Administrative appeals hearings: thirty (30) Days;
 - No more than four (4) administrative reviews can be submitted to GDOT within a thirty- (30) Day period.
- Review of condemnation petition: sixty (60) Days;
 - No more than 8 condemnation petition packages can be submitted to GDOT for review within a thirty- (30) Day period.

GDOT and/or FHWA will not begin review until the Submittal package is complete. If any Submittal is determined by GDOT to be incomplete or to be revised, the Submittal will be returned and the timeframe given above shall start over for each re-submittal.

Schedule delays resulting from inadequate or incomplete appraisals, specialty reports, ROW Plans, negotiation packages, relocation packages, and condemnation petitions, shall be the responsibility of Developer.

5.10 Acquisition Process Summary

Developer's major activities and services to be provided with respect to the acquisition of the State Proposed/Developer Acquired ROW shall include, but are not limited to, the following:

- ROW plans development, if applicable;
- ROW budget estimates and updates, if applicable;
- Title-related activities, if applicable;
- Appraisals and/or other valuation or damage study reports, if applicable;
- Relocation benefits package preparations, if applicable;
- Negotiations;
- Relocation advisory assistance;
- Condemnation petition preparations;
- Condemnation coordination services;
- Abatement inspections, abatement, and demolition or removal of obstructions to clear required ROW;
- Documentation and document control;
- Monthly Progress Reports;
- ROW administration and management;
- ROW quality management; and
- Obtaining all ROE's, as necessary.

5.11 Developer Conflict of Interest

Developer shall promptly disclose the same to GDOT if at any time, Developer, Developer-Related Entity, or any subsidiary or parent company of Developer to the best of Developer's knowledge, directly or indirectly:

- Acquires or has previously acquired any interest in real property likely to be parcels of the ROW or the remainders of any such parcels;
- Loans or has previously loaned money to any interest holder in any real property likely to be a ROW parcel and accepts as security for such loan the parcel, or the remainder of any such parcel that is not a whole acquisition; or
- Purchases or has previously purchased from an existing mortgagee the mortgage instrument that secures an existing loan against real property likely to be a ROW parcel, or the remainder of any such parcel is employed by or acts as a representative of any property owner or tenant which ROW or easement necessary for the Project will be negotiated. In the case of acquisitions, loans, or mortgage purchases that occurred prior to Effective Date, such disclosure shall be made within fourteen (14) Days after Effective Date.

In the event that Developer, Developer-Related Entity, or any subsidiary or parent company of Developer, acquires a real property interest, whether by title or mortgage, in parcels of the ROW Properties, the real property interest acquired or a release of mortgage as the case may be, shall be conveyed to the State of Georgia by condemnation. Any property interests acquired within thirty-six (36) months prior to NTP1 will deem Developer ineligible to bid on the Project at GDOT's discretion.

In the event that Developer, Developer-Related Entity, or any subsidiary or parent company of Developer, is employed by or acts as a representative of any property owner or tenant which ROW or easement necessary for the Project will be negotiated, Developer must immediately cease that relationship or activity.

5.12 Meetings

Developer shall conduct meetings with the Project property owners prior to negotiations.

In addition, Developer shall conduct and attend meetings as requested by GDOT. Meetings may include, but are not limited to, property acquisition status meetings.

At any such meetings, Developer shall provide exhibits, take minutes, and distribute minutes, as requested by GDOT, within five (5) Days of the meeting. Minutes will not be finalized until an adequate comment period of five (5) Days has been allowed.

5.13 Documentation and Reporting

Developer shall provide monthly ROW parcel status updates to GDOT.

Developer shall provide GDOT with all specific reports and supporting documentation for review and approval during the acquisition process.

All correspondence with GDOT relating to acquisition of real property shall include a heading with the following information (at a minimum):

- County;

- Project number(s);
- PI number(s);
- Parcel number; and
- Name and address of owner(s) of record, tenant, or other interest holder.

All correspondence with property owners relating to acquisition of real property shall be on GDOT Letterhead and include the following information (at a minimum):

- County;
- Project number(s);
- PI number(s);
- Parcel number;
- Name and address of owner(s) of record, tenant, or other interest holder; and
- Name and contact information of ROW service provider.

In administering and managing its ROW activities, Developer shall:

- Maintain parcel records on file of all aspects of the acquisition process in accordance with GDOT requirements and applicable State and/or federal laws. Each negotiation parcel file shall include all documents required by GDOT and/or FHWA;
- Provide monthly summaries (or as requested) for the cost of ROW acquisition and related relocation assistance, including amounts authorized and amounts paid on a parcel-by-parcel basis and budget forecasting on an overall Project basis;
- Maintain and electronically transmit to GDOT, in a format acceptable to GDOT, monthly status reports (or as requested) including pre-acquisition, acquisition, relocation, and demolition or removal of improvement status; and
- Prepare and submit electronically to GDOT, on a monthly basis (or as requested), a spreadsheet that contains ROW-specific data including, but not limited to, parcel number, type of ROW, and progress status, type of properties.

5.14 Pre-Acquisition Activities

Developer shall obtain and adhere to the *GDOT ROW Manual* for pre-acquisition activities.

5.14.1 ROW Plans and Engineering

Developer shall adhere to the *GDOT Plan Presentation Guide*, the *GDOT ROW Manual*, and the GDOT ROW plans checklist for the development of the ROW plans.

Upon approval from GDOT and/or FHWA, the ROW plans may be prepared in separate constructible segments.

Developer shall stake and flag all required ROW to include all temporary and permanent easements in accordance with the *GDOT Automated Survey Manual*, and prior to beginning negotiations with property owner(s) or prior to the appraiser reviewing the property (whichever occurs first), shall re-stake such areas as requested by property owner or GDOT.

5.14.2 Title Services

Developer shall provide to the assigned SAAG one (1) full-size and one (1) half-size set of printed preliminary ROW plans in order for the SAAG to procure preliminary title reports and owner verifications prior to negotiations. Developer shall adhere to the *GDOT ROW Manual*, and shall also comply with the following requirements:

- Review the preliminary title commitment or report to ensure that all current owners of record title are contacted and that negotiations or condemnation actions are conducted with all appropriate parties; and
- Work with the current owners of record of each parcel or with interest in a parcel or their designee and all other appropriate parties to clear any title exceptions or exclusions not acceptable to GDOT.

5.15 Appraisals

5.15.1 Appraisal Services

Developer shall provide GDOT with fair market value appraisals. All appraisals shall be prepared in conformance with acceptable appraisal methods/standards (including the Uniform Relocation Act), and in accordance with professional appraisal methods and applicable GDOT and/or FHWA policies and procedures. In addition, Developer shall adhere to the *GDOT ROW Manual*, and shall also comply with the following requirements:

- Select appraisers from GDOT's prequalified list of appraisers per the appropriate level as determined by the GDOT review appraiser. GDOT shall have final approval of the selection of each appraiser submitted by Developer;
- Obtain back-up appraisal reports per *GDOT ROW Manual* guidelines;
- Select certain specialty valuation and cost estimators as may be required by the assigned review appraiser;
- Establish personal pre-appraisal contact with each owner of record title and each occupant, and shall document all contacts;
- Contact the owner of record or their designated representatives, by telephone, to offer them the opportunity to accompany the appraiser on the appraiser's inspection of the parcel, and maintain a record of all such contacts in the parcel file;
- Obtain and include in the appraisal copies of all written leases, licenses, and other occupancy agreements, including outdoor advertising/sign agreements, in order to identify lessees, licensees, and other occupants with potential compensable interests in each parcel and to determine the value of each such interest;
- Coordinate with the GDOT review appraiser regarding corrections and/or additional information that may be required for a particular appraisal;
- Prepare a report by an environmental professional that meets the requirements of ASTM E-1527-05, Standard Practice for Environmental Site Assessments: Phase 1 Environmental Site Assessment Process, documenting the environmental condition, as appropriate for each parcel, which may be based on field investigations and/or historical review. The report shall be completed in coordination with the appraiser(s) and shall be

available to the appraiser(s). A Phase I environmental site assessment shall be performed for all properties based on UST findings listed in the environmental document. If it is determined that there is a potential environmental risk based on the Phase I report, then a Phase II investigation shall be performed;

- Prepare timely written notification to GDOT of any environmental or other concerns associated with the ROW or Developer Proposed/Developer Acquired ROW to be acquired that could require environmental remediation or other special attention or that would require a report to be prepared;
- Cause the appraiser(s) to prepare updated appraisals when required by GDOT or as needed during eminent domain proceedings. An updated appraisal package shall comply with Uniform Standards of Professional Appraisal Practice (USPAP); and
- Prepare and deliver to GDOT upon request, a copy of all file documents, as formally requested in discovery motions or requests for production.

5.16 Acquisition Activities

5.16.1 Developer Responsibilities during ROW Negotiations

Developer shall comply with the following requirements during State-Proposed ROW negotiations:

- Conduct all negotiations in accordance with the requirements of applicable State and/or federal laws, including 23 CFR 710 and 49 CFR 24;
- Contact each property owner or owner's designated representative in person and onsite, when possible, to present the offer on a pre-approved letter along with all required documentation (a title report not more than six (6) months old and an appraisal not more than twelve (12) months old). Developer shall make no less than three follow-up negotiation contacts with the owner or the owner's representative (one (1) original contact and two (2) follow-up contacts). Developer's Acquisition Manager shall make last contacts prior to sending out any ten (10) day letters regarding warnings of condemnation on each parcel;
- Distribute to all property owners and displacees affected by the Project, GDOT-approved informational brochures;
- Identify lessors, lessees, licensees, occupants, or other parties with potential compensable interests including outdoor advertising sign owners, and, if appropriate after consultation with GDOT, negotiate with such parties for the acquisition of their compensable interests;
- Verify the property owners, lessees, licensees, occupants, and other holders of compensable interests. Confer with and transmit to GDOT any settlement proposals from property owners, lessees, licensees, occupants, or other holders of any compensable interest, as applicable, including a detailed recommendation from Developer. GDOT will determine whether to accept any settlement proposal. Developer shall deliver any settlement proposal and Developer's recommendation to GDOT within seven (7) Days of Developer's receipt of the settlement proposal from the interest holder. GDOT shall provide a settlement decision to Developer within ten (10) Days. Developer shall then provide a response to the interest holder within five (5) Days;

- Send an administrative review hearing notification (i.e. ten (10) day letter) to the interest holder for those negotiations that are unsuccessful. In the event the interest holder requests an administrative review hearing, GDOT will facilitate the process. GDOT will then provide the results of the administrative review hearing to Developer and the interest holder;
- Provide timely (not more than five (5) Days after inquiry) response to the verbal or written inquiries of any property owner, lessee, licensee, occupant, or other holder of a compensable interest, as applicable;
- Create and maintain a complete negotiation parcel file for each interest holder (separately from the relocation files), and in conformance with the *GDOT ROW Manual*. All original ROW documents must be retained and properly secured in Developer's Project office, or as otherwise approved by GDOT, and shall be accessible by GDOT upon request.
- Submit completed (closed or condemned) negotiation parcel files to GDOT for review only after a thorough review is performed by Developer's ROW PM.
- Be open to all reasonable settlement proposals (that comply with the regulations as outlined in this section) from the interest holders, which are feasible and help expedite the ROW acquisition process. Developer understands that GDOT and FHWA encourage solutions that satisfy the interest holder and promote the success of the Project.

5.16.2 Developer Responsibilities during Relocation Assistance

Developer shall coordinate and perform the administrative requirements necessary to relocate any occupants and/or their personality from ROW. All Work prepared by Developer with respect to relocation assistance shall be performed in accordance with applicable State and federal laws, the Uniform Relocation Act, and in accordance with all provisions of this Agreement.

Developer's major activities with respect to the relocation assistance of occupants from ROW shall include, but is not limited to:

- Prepare a revised conceptual stage study, if needed;
- Prepare a Relocation Plan in accordance with the *GDOT ROW Manual*;
- Monitor all relocation assistance activities;
- Prevent fraud, waste, and mismanagement;
- Assist with all GDOT requests and be responsible for carrying out decisions made by GDOT;
- With respect to determining relocation assistance benefits and preparing relocation assistance benefits packages (offer package and any replacement housing reports), all packages shall be prepared in conformance with applicable State and/or federal laws and regulations, 49 CFR, Part 24 – the Uniform Relocation Act, FHWA and/or GDOT policies and procedures. Developer shall employ Relocation Specialists who shall be thoroughly familiar with the Uniform Relocation Act in regards to determining relocation assistance benefits. In addition, the GDOT-approved format for relocation assistance benefits packages shall be used and demonstrated in all forms, letters, and package documentation. Measures shall be taken to protect the integrity of the relocation assistance benefits determination process, such as designating a separate qualified

individual to administer the relocation assistance benefits (other than the individual determining the relocation assistance benefits). Relocation assistance benefits packages must be submitted to GDOT ROW for review and approval prior to Developer proceeding with administering any relocation assistance benefits;

- Provide relocation assistance strictly in accordance with the State and/or federal laws and the Uniform Relocation Act. With respect to administering relocation assistance benefits, Developer shall:
 - Provide written notice to all property owners, lessees, licensees, occupants, and potential relocated person(s) regarding eligible relocation assistance; provide them with a relocation assistance brochure that has been approved by GDOT; perform relocation interviews, complete and maintain interview forms, and discuss general eligibility requirements, programs, and services with potential displacees; and maintain a thorough written record of all contacts;
 - Provide in writing to GDOT any questions as to the eligibility of a potential relocated person(s);
 - Contact and provide relocation assistance to those parties affected by the ROW acquisition;
 - Locate information, evaluate, and maintain files on comparable available housing, commercial, retail, and industrial sites;
 - Calculate replacement supplement benefits;
 - Compute and submit relocation benefits packages to GDOT for review and approval prior to Developer's proceeding with any relocation activities;
 - Perform and complete a Decent, Safe, and Sanitary (DSS) inspection for any replacement housing;
 - Secure and process any required moving estimates and forms, to be approved by GDOT, for the relocation of personal property;
 - Coordinate moves with displacees and/or moving companies in accordance with GDOT procedures and the Uniform Relocation Act;
 - Attend all closings on replacement properties and assure supplemental payments, if any, are properly distributed in a timely manner;
 - Process and compute increased interest payments on the mortgage of owner-occupied dwellings, as required;
 - Deliver to displacees a ninety- (90) Day notice of eligibility letter simultaneous with the delivery of the relocation benefits package.
 - Deliver a ninety- (90) Day letter to displacees with the location of the comparable property used to compute the supplement;
 - Deliver a sixty- (60) Day notice to vacate letter to displacees after obtaining title to the displacee's ROW;
 - Notify GDOT immediately if a displacee has not moved after the sixty- (60) Day notice to vacate has expired. Provide to GDOT a written recommendation to facilitate the displacees' move;
 - Be available for any appeals or hearings;
 - Prepare relocation payment claim submissions for all displacees and all relocation assistance benefits;
 - Verify DSS dwelling criteria on all replacement housing as selected by the displacees;

- Secure dwellings and structures no later than fourteen (14) Days after vacancy and protect the ROW following acquisition and relocation;
- Maintain a complete file, separate from acquisition files, on each displacee and make available for immediate inspection to GDOT;
- Be responsible for all relocation activities that may occur after title is secured by condemnation;
- Prepare all correspondence to the displacees or their representative(s) on GDOT's approved letterhead; and
- Assist the SAAG with eviction proceedings: Serve notice of eviction proceedings to the occupant(s) of the property who have not complied with move dates; coordinate the eviction process with the local authorities; and accompany the Sheriff's Department when they are carrying out evictions.

5.16.3 Developer Responsibilities during Closings

The GDOT-assigned SAAG will conduct all closings. For purposes of closing services, Developer shall:

- Assure Relocation Negotiation Agent attends all relocation closings;
- Assure the Relocation Negotiation Agent properly coordinates all assistance payments with the SAAG and GDOT; and
- Provide transportation assistance to all interest holders needing transportation services to and/or from the closing.

5.16.4 Developer Responsibilities for Condemnation Support

Developer, as directed by GDOT, shall support condemnation efforts undertaken by the GDOT-assigned SAAG and shall:

- Notify GDOT and document the reason(s) for condemnation, including recommendations for properly obtaining title in consideration of all interest holders;
- List all interest holders in the condemnation petition;
- Coordinate with the assigned SAAG on all applicable eminent domain/condemnation activities in accordance with the policies and procedures as described in the *GDOT ROW Manual* and as required per State and federal laws;
- Request an updated title report from the GDOT-assigned SAAG issuing the original title commitment prior to condemnation;
- Prepare and submit condemnation petitions to the Office of ROW for review by GDOT's Legal Division and make any revisions or corrections, as requested by GDOT;
- Forward, upon GDOT approval, petitions to assigned SAAG for recording with the appropriate Clerk of Superior Court;
- Procure and make available a Condemnation Court Coordinator who shall: assist the assigned SAAG in making arrangements for conferences with witnesses prior to trial, appearing at court hearings, and perform any other duties necessary in eminent domain proceedings;

- Procure appraisals and specialty reports, as required for condemnation proceedings, and as acceptable to GDOT and the assigned SAAG;
- Procure and make available any necessary expert witnesses as required by GDOT and assigned SAAG. GDOT will make payments to expert witnesses required by SAAG;
- Arrange for the appearance of all expert witness(es) or fact witness(es) when requested by the assigned SAAG;
- Provide GDOT with a parcel status, on a monthly basis, for all condemnation parcels;
- Provide the assigned SAAG with proper monetary court deposits for Fair Market Value (FMV); and
- Procure the condemnation valuation expert witness as according to the process as defined in the *GDOT ROW Manual*.

5.16.5 Developer Responsibilities for Clearance of ROW

Prior to removal or demolition of any buildings, improvements, and/or fixtures, Developer shall provide to GDOT photographs of the property and all improvements, and other necessary documentation as applicable per the *GDOT ROW Manual*. Developer shall also provide photos of personalty and items of dispute in and of a quality suitable for presentation as evidence in court. Following possession of any improved property ROW, Developer shall:

- Coordinate all property management activities with the GDOT ROW Property Management Demolition/Removal Unit;
- Comply with all required government jurisdictions;
- Secure and protect the buildings, improvements, and fixtures on the ROW until they are disposed of or demolished. Developer shall board-up, mow, and winterize as required by GDOT or other governmental applicable laws;
- Coordinate with owners and occupants to assure the clearance of personal property from the ROW has occurred;
- Provide for any insect and rodent control and initiate extermination as required to protect the adjacent properties and rid the ROW from infestations;
- Secure all appropriate governmental approvals required for demolition or removal of improvements. Secure any environmental surveys or tests as may be required by local, State, and/or federal jurisdictions. Notify GDOT in writing of all such activities;
- Prepare necessary documentation for disposal of improvements, fixtures, and buildings in accordance with applicable laws and submit the same to GDOT;
- Properly disconnect all Utility service(s) including, but not limited to power, water, gas (meter pulls), and sewer (sewer caps), at the back of the required ROW at a minimum, prior to any demolition or removal of any buildings, improvements, and/or fixtures. The exact location of these Utility disconnects shall be given to the GDOT ROW Property Management Demolition/Removal Unit in a format that can be used to easily locate them in the field (e.g., Northing/Easting, parcel number);
- Process all required forms, documents, and permit applications in order to proceed with the timely demolition or removal of any improvements, buildings, and fixtures; and
- Properly notify GDOT ROW property management upon completion of the demolition and clearance of all buildings, improvements, and/or fixtures.

5.16.6 Developer Responsibilities for Property Fencing

Developer shall comply with GDOT Policy and the 2009 International Building Code, 2009 Edition – International Code Council, as well as, the specifications found in the *GDOT Standard Specifications*, and any supplemental specifications. Developer shall also comply with applicable sections of GDOT's *Design Policy Manual* on fencing. Fencing standards for Developer provided fencing shall conform to the overall aesthetics requirements found elsewhere in these DBF Documents and referenced standards. All fencing installed by Developer shall be preapproved by GDOT prior to installation.

5.17 Advanced ROW Acquisition

Advanced ROW acquisitions shall be considered by Developer according to the guidelines set forth in 49 CFR 710.503. Developer shall submit to GDOT a letter of recommendation for any advance “Hardship” purchase requests. GDOT and/or FHWA will review all advanced “Hardship” purchase requests.

Developer shall notify GDOT if an advanced “Protective Buy” purchase request would be in GDOT's best interest. GDOT and/or FHWA will review all advanced “Protective Buy” purchase requests.

Developer shall update GDOT regularly, no less frequently than monthly, on the status of any advanced acquisition purchases, and Developer's ROW PM shall track all acquisitions through GDOT's ROW tracking system.

6 UTILITY ADJUSTMENTS

6.1 General Requirements

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 and/or written permission, and some pursuant to property rights. Certain 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 such processes as coordination with Utility Owners, administration of the engineering, construction and other activities necessary for Utility Adjustments, and required documentation. GDOT will either provide Developer any GDOT forms referenced in this Section 6 or will provide access to Developer to obtain any forms.

Developer will be required to have a Utility Coordinator/Adjustment Team (UAT) qualified in Class 3.10 – Utility Coordination:

<http://www.dot.ga.gov/PartnerSmart/Business/Prequalification/Documents/AreaClass/3-10%20Utility%20Coordination.pdf>

All Utility submittals will be reviewed by the UAT, as required in Section 2.3.15. GDOT will review submittals as needed, but at a minimum will review retention request, Utility permits, agreements and Utility work plans.

Developer, at the Developer's cost, shall cause all Utility Adjustments necessary to accommodate construction, operation, maintenance, and/or use of the Project. GDOT will assist Developer in the Utility Adjustment process, to the extent as described in the DBF Documents. Some Utility Adjustments may be performed by the Utility Owner with its own forces and/or Contractors and consultants, i.e. Owner-Managed; all others shall be performed by Developer with its own forces and/or Contractors and consultants (subject to any approval rights required by the Utility Owner for those working on its facilities), i.e. Developer-Managed. The allocation of responsibility for the Utility Adjustment Work between Developer and the Utility Owners shall be specified in the Utility Agreements.

This Section 6 does not address Utility services to the Project. Utility services to the Project shall be the subject of separate agreements between Developer and Utility Owners.

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

The Memorandums of Understanding (MOUs), included in Attachment 6-1, provide guidance for responsibilities of design, construction and relocation costs. Utility Analysis Preliminary Routing Report (UAPRR) is provided as a RID for information only such as estimated relocation design and construction cost information for possibly affected utilities.

6.1.1 When Utility Adjustment is Required

A Utility Adjustment may be necessary to accommodate the Project for either or both of the following reasons: (1) a physical conflict between the Project and the Utility, and/or (2) an incompatibility between the Project and the Utility based on the requirements in Section 6.2.1, Standards, even though there may be no physical conflict. The physical limits of all Utility Adjustments shall extend as necessary to functionally replace the existing Utility, whether inside or outside of the Existing ROW and State Proposed ROW. Section 6.2.4.2, Acquisition of Replacement Utility Property Interests, contains provisions that address the acquisition of easements for Utilities to be installed outside of the Existing ROW and State Proposed ROW.

Utilities may remain in their existing locations within the Existing ROW and State Proposed ROW if (1) the requirements of Section 6.2.1, Standards, are met, and (2) the existing location will not adversely affect the construction, operation, safety, maintenance, and/or use of the Project.

Developer bears sole responsibility for all Utility Adjustment, relocation, and/or protection for Utility facilities located within the Existing ROW, State Proposed ROW, limits of Developer Proposed/Developer Acquired ROW, or if they are otherwise affected by the Project, whether located on private property or within an existing public ROW.

6.1.2 Certain Components of the Utility Adjustment Work

6.1.2.1 Coordination

Developer shall communicate, cooperate, and coordinate with GDOT, the Utility Owners, property owners, local agencies (Government Entities), local impacted businesses, and potentially affected third parties, as necessary, for performance of the Utility Adjustment Work. Developer shall provide advance notification to all impacted local agencies, businesses, and property owners for any planned disruption of service. Developer shall coordinate with GDOT for any public outreach for planned Utility disruptions as required in Section 3, Public Information and Communications. Developer shall coordinate with GDOT for all existing owned Utility facilities of GDOT. Developer shall be responsible for preparing (unless prepared by the Utility Owner) and securing execution (by Developer and the Utility Owner) of all necessary agreements in advance of scheduled disruptions.

All executed Utility Agreements between Developer and Utility Owners must be approved by GDOT prior to taking effect.

6.1.2.2 Betterments

Replacements for existing Utilities shall be designed and constructed to provide service at least equal to that offered by the existing Utilities, unless the Utility Owner specifies a lesser replacement. Utility Enhancements are not included in the Work; however, any Betterment Work furnished or performed by Developer as part of a Utility Adjustment shall be deemed added to the Work on the date the Utility Agreement providing for same becomes fully effective. Developer shall perform all coordination necessary for Betterments.

6.1.2.3 Protection in Place

Developer shall be responsible for Protection in Place through the use of a GDOT-approved Retention Request of all Utilities impacted by the Project as necessary for their continued safe operation and structural integrity and to otherwise satisfy the requirements described in Section 6.2.1, Standards. Developer shall submit to GDOT for review and approval a Retention Request for each Utility that will remain in place in accordance with GDOT's UAM.

6.1.2.4 Abandonment and Removal

Developer shall make all arrangements and perform all Work necessary to complete each abandonment or removal (and disposal) of a Utility in accordance with the requirements listed in Section 6.2.1, Standards, including obtaining Governmental Approvals and consent from the affected Utility Owner and any affected landowner(s), or shall confirm that the Utility Owner has completed these tasks.

6.1.2.5 Service Lines and Utility Appurtenances

Whenever required to accommodate construction, operation, maintenance, and/or use of the Project, Developer, at Developer's expense, shall relocate, adjust, or protect service lines and Utility appurtenances. On completion of these, Developer shall cause full reinstatement of the roadway including, but not limited to, reconstruction of curb, gutter, sidewalks, and landscaping, whether the Utility Adjustment Work is performed by the Utility Owner or by Developer.

6.1.2.6 Early Adjustments

Early Adjustments, if any, are addressed in Volume 2, Section 6.

6.1.3 Reserved

6.1.4 Agreements between Developer and Utility Owners

Except as otherwise stated in this Section 6 or in the DBF Agreement, each Utility Adjustment shall be specifically addressed in a Master Utility Adjustment Agreement (MUAA) or in a Master Utility Adjustment Agreement Amendment (MUAAA), as described elsewhere in this Section 6. Developer is responsible for preparing, negotiating (to the extent allowed by this Section 6), and obtaining execution by the Utility Owners, of all Utility Agreements, including preparing all necessary exhibits and information about the Project, such as reports, Plans and surveys. A Utility Agreement is not required for any Utility Adjustment consisting solely of Protection in Place in the Utility's original location within the Existing ROW and State Proposed ROW, unless the Utility Owner is being reimbursed for costs incurred by it on account of such Protection in Place.

6.1.4.1 Master Utility Adjustment Agreements

Developer shall enter into one or more MUAAs with each affected Utility Owner to define the design, material, construction, inspection, and acceptance standards and procedures necessary to

complete Utility Adjustments, as well as to define Developer's and the Utility Owner's respective responsibilities for Utility Adjustment costs and Utility Adjustment activities such as material procurement, construction, inspection, and acceptance. A MUAA may address more than one Utility Adjustment for the same Utility Owner. Additional Adjustments may be added to an existing MUAA by an MUAAA.

Developer shall prepare each MUAA using the standard form of GDOT Master Utility Adjustment Agreement (Owner-Managed) or GDOT Master Utility Adjustment Agreement (Developer-Managed), copies of which are in the Volume 2, Technical Provisions Attachments, Attachment 6-3 (Master Utility Adjustment Agreement and the Master Utility Adjustment Agreement Amendment). Developer shall not modify the standard forms except by approval of a Deviation pursuant to Section 7.5.2 of the DBF Agreement.

Promptly following issuance of NTP1, Developer shall begin negotiations with each affected Utility Owner to reach agreement on one or more MUAAs. Developer shall use good faith efforts to finalize the necessary MUAA(s) with each affected Utility Owner within a reasonable time period after issuance of NTP1. Developer shall include any proposed changes to a standard form (other than approved Deviations as described in the preceding paragraph and filling in blanks specific to a particular Utility Owner) in a Utility Owner-specific addendum. Each MUAA shall be subject to GDOT review and approval as part of a Utility Work Plan.

6.1.4.2 Master Utility Adjustment Agreement Amendments

Except where Utility Adjustment Field Modifications are permitted pursuant to Section 6.4.7, Utility Adjustment Field Modifications, modification of an executed Master Utility Adjustment Agreement or any component thereof, after it has been approved by GDOT as part of a Utility Work Plan, shall be stated in an MUAAA. An MUAAA may be used only when the allocation of responsibility for the Utility Adjustment Work covered by that MUAAA is the same as in the underlying Utility Agreement; otherwise, an additional Utility Agreement will be required.

Each MUAAA shall be subject to GDOT's approval and will become part of a Supplemental Utility Work Plan. Except as otherwise directed by GDOT or provided in an applicable Utility Agreement, Developer shall prepare all MUAAs using the standard form included in Volume 2, Technical Provisions Attachments, Attachment 6-3. Developer shall not modify the standard forms except by approval of a Deviation pursuant to Section 7.5.2 of the Agreement. Developer shall include any proposed changes to a standard form (other than approved Deviations and filling in blanks specific to a particular Utility Owner) in a Utility Owner-specific addendum.

6.1.5 Recordkeeping

Developer shall maintain construction and inspection records in order to ascertain that Utility Adjustment Work is accomplished in accordance with the terms and in the manner proposed on the approved Utility Work Plan(s) and otherwise as required by the DBF Documents and the applicable Utility Agreement(s).

6.2 Administrative Requirements

6.2.1 Standards

All Utility Adjustment Work, including retention of existing underground utility facilities, shall comply with all applicable Laws, the Technical Provisions, the Utility Adjustment Standards, and GDOT's UAM.

6.2.2 Communications

6.2.2.1 Communication with Utility Owners: Meetings and Correspondence

Developer shall be required to have a Utility Kickoff Meeting with all Utility Owners within the project limits within fifteen (15) Days of NTP1. Developer is responsible for holding meetings and otherwise communicating with each Utility Owner as necessary to timely accomplish the Utility Adjustments in compliance with the DBF Documents. GDOT may participate in these meetings if requested by the Utility Owner or Developer or otherwise as GDOT deems appropriate.

At least seven (7) Days in advance of each scheduled meeting, Developer shall provide notice and an agenda for the meeting separately to GDOT and the appropriate Utility Owner. Developer shall prepare and distribute minutes of all meetings within seven (7) Days of the meeting with Utility Owners and shall keep copies of all correspondence between Developer and any Utility Owner.

Before distribution of any mass mailings to Utility Owners, Developer shall submit to the UAT, twenty-one (21) Days in advance of distribution, for its review and comment on the form, content, and addressees of any such mass mailings. For purposes of this Section 6.2.2.1, the term “mass mailing” means correspondence that is sent to fifty (50) percent or more of Utility Owners within a three- (3-) week time period, and contains substantially the same content with respect to each Utility Owner.

Developer will be allowed to coordinate with Utility Companies for early coordination of Utility Adjustments.

6.2.3 Utility Adjustment Team

Developer shall provide a Utility Adjustment Team with appropriate qualifications and experience for the Utility Adjustment Work. Developer shall provide the names and contact details, titles, job roles, and specific experience of the team members in the PMP. Specifically, Developer shall provide a Utility Manager (UM) and a Utility Design Coordinator (UDC) as described herein.

The UM's primary work responsibility shall be the performance of all Developer's obligations with respect to Utility Adjustments. The UM shall have a bachelor's degree, and have at least four (4) years of relevant experience in coordinating and solving complex Utility Adjustments on highway improvement projects. The UM should be authorized by Developer to approve all financial and technical modifications associated with Utility Adjustments and modifications to the Master Utility Adjustment Agreement.

The UDC shall be a Registered Professional Engineer in the State of Georgia. The UDC shall be responsible for coordinating the Utility Adjustment design with the overall highway design features during the planning, design, and construction phases of the Work.

Developer will be required to utilize prequalified Utility consultants and contractors.

Developer will be required to have a Subsurface Utility Engineering (SUE) Consultant who is GDOT-prequalified in Area Class 5.08, Overhead/Subsurface Utility Engineering.

6.2.4 Real Property Matters

Developer shall provide the services described below in connection with existing and future occupancy of property by Utilities.

6.2.4.1 Documentation of Existing Utility Property Interests – Affidavits

For each Existing Utility Property Interest within the Existing ROW and State Proposed ROW claimed by any Utility Owner, Developer shall include an easement deed or an Affidavit of Property Interest in the applicable Utility Work Plan with appropriate documentation of the Existing Utility Property Interest attached. Any such claim shall be subject to GDOT's approval as part of a Utility Work Plan review. Except as otherwise directed by GDOT, Developer shall prepare all Affidavits of Property Interest using the standard GDOT form.

6.2.4.2 Acquisition of Replacement Utility Property Interests

Each Utility Owner will be responsible for acquiring any Replacement Utility Property Interests that are necessary for its Utility Adjustments. Developer shall have the following responsibilities for each acquisition:

- Developer shall coordinate with, and provide the necessary information to, each Utility Owner as necessary for the Utility Owner to acquire any Replacement Utility Property Interests required for its Utility Adjustments.
- Developer shall be responsible for all costs of the Replacement Utility Property Interests/new easement, whether inside or outside GDOT ROW when existing Utility facilities were initially installed under prior Utility right-of-way or easement rights. These cost shall include, but are not limited to any activities required for acquisition of replacement utility property interest/easement. Utility owners without a prior Utility right-of-way or easement that elects to be relocated outside GDOT ROW will be responsible for the cost of replacement easement

- If any Developer-Related Entity assists a Utility Owner in acquiring a Replacement Utility Property Interest, such assistance shall be by separate contract outside of the Work, and Developer shall ensure that the following requirements are met:
 - The files and records must be kept separate and apart from all acquisition files and records for the State Proposed ROW and Developer Proposed/Developer Acquired ROW;
 - The items used in acquisition of Replacement Utility Property Interests (e.g., appraisals, written evaluations, and owner contact reports) must be separate from the purchase of the State Proposed ROW and Developer Proposed/Developer Acquired ROW; and
 - Any Developer-Related Entity personnel negotiating the acquisition of Replacement Utility Property Interests must be different from those negotiating the acquisition of State Proposed ROW and Developer Proposed/Developer Acquired ROW.

Developer is not responsible for Utility Owner condemnation proceedings.

6.2.4.3 Relinquishment of Existing Utility Property Interests

Developer shall cause the affected Utility Owner to relinquish each Existing Utility Property Interest within the Existing ROW and State Proposed ROW on behalf of GDOT, unless the existing Utility occupying such interest is either: (a) remaining in its original location subject to approval of a GDOT Easement Limited Agreement (ELA), or (b) being reinstalled in a new location still subject to such interest.

6.2.4.4 Quitclaim Deeds

Except as otherwise directed by GDOT or a Utility Owner, Developer shall prepare a Quitclaim Deed for each relinquishment of an Existing Utility Property Interest using GDOT's standard form. Each Quitclaim Deed shall be subject to GDOT's approval as part of a Utility Work Plan as described below.

Developer understands and expects that a Utility Owner will not relinquish any Existing Utility Property Interest until after the Adjusted Utility has been accepted by the Utility Owner in its new location. Accordingly, instead of an executed Quitclaim Deed, the Utility Work Plan for such a Utility Adjustment shall include a letter signed by the Utility Owner's authorized representative confirming that the interest will be Quitclaimed upon completion of the Utility Adjustment, and a copy of the unsigned Quitclaim Deed. In these cases, Developer shall obtain the executed Quitclaim Deed promptly upon completion of the Utility Adjustment.

6.2.4.5 Georgia Utility Permit

Developer shall cause Utility Owners to submit Utility permit requests through the current GDOT-approved Utility permit tracking software to accommodate the following:

- Each Utility proposed to be relocated within the Existing ROW, State Proposed ROW, and Developer Proposed/Developer Acquired ROW;

- Each Utility proposed to remain in its existing location within the Existing ROW, State Proposed ROW, and Developer Proposed/Developer Acquired ROW; and/or
- Any Existing Utility Property Interest located within the Existing ROW, State Proposed ROW, and Developer Proposed/Developer Acquired ROW that is not required to be relinquished pursuant to Section 6.2.4.3, Relinquishment of Existing Utility Property Interests, and is not addressed in the foregoing clause (a) or clause (b).

Developer shall arrange for the Utility Owner to execute each Georgia Utility Permit(s). Each Georgia Utility Permit (executed by the Utility Owner) shall be subject to GDOT's approval as part of a Utility Work Plan.

6.2.4.6 Documentation Requirements

Developer shall prepare, negotiate (to the extent permitted by this Section 6.2.4, Real Property Matters), and obtain execution by the Utility Owner of (and record in the appropriate jurisdiction, if applicable) all agreements and deeds described in this Section 6.2.4, including all necessary exhibits and information concerning the Project (e.g., reports, Plans, and surveys). Each agreement or deed shall identify the subject Utility(ies) by the applicable Utility Permit Number, and shall also identify any real property interests by parcel number or highway station number, or by other identification acceptable to GDOT.

Developer shall prepare and maintain a Utility Status Report, which will be submitted bi-weekly outlining the status of each Utility conflict. The status report will have at a minimum the following:

- Utility conflict station numbers;
- Proposed Utility relocation start date;
- Proposed date of No Conflict Letter submittals;
- Proposed date the permit will be submitted;
- Proposed date the Master Utility Adjustment Agreement will be submitted;
- Proposed date the Master Utility Adjustment Agreement Amendment will be submitted; and
- Proposed date of the Utility Work Plan submission.

The Utility Status Report will be a separate requirement and not be part of the Utility Impact Analysis/Conflict Matrix requirement.

6.3 Design

6.3.1 Developer's Responsibility for Utility Identification

Developer bears sole responsibility for ascertaining, at its own expense, all pertinent details of Utilities located within the Existing ROW, State Proposed ROW, limits of Developer Proposed/Developer Acquired ROW, or areas otherwise affected by the Project, whether located on private property or within an existing public ROW. This shall include all Service Lines.

Developer shall utilize the SUE process for locating all existing utilities within the Project limits to develop the Utility Work Plan. Developer shall be required to perform SUE, and/or verify existing SUE information for the entire project. Developer shall follow ASCE 38-02 as the standard guideline for the collection and the depiction of existing subsurface Utility data as defined in the UAM.

Developer bears sole cost for any of the Preliminary Engineering (PE) costs for the Utility Adjustments.

Developer shall be required to complete and maintain a Utility Impact Analysis (UIA) for the Project. The UIA will include a Conflict Matrix that will be used to determine to what extent the proposed roadway improvements will impact the existing utilities. The Conflict Matrix is a spreadsheet or chart that outlines avoidance alternates, required adjustments/relocations, and cost estimates to perform those relocations.

Developer will coordinate reviews of the Utility relocation information and obtain acceptance from the Utility Owner and the UAT. In the case where the preliminary plans indicate that no conflict exists and the Utility Owners are in agreement, the Utility Owner will provide a letter of “no conflict” to Developer.

6.3.2 Technical Criteria and Performance Standards

All design plans for Utility Adjustment Work, whether furnished by Developer or by the Utility Owner, shall be consistent and compatible with the following:

- The applicable requirements of the DBF Documents, including Section 6.2.1 (Standards);
- Any Utilities remaining in or being installed in the same vicinity;
- All applicable governmental approvals;
- Private approvals of any third parties necessary for such Work; and
- Volume 2, Technical Provisions, Attachment 6-2, Utility Special Provisions and Insurance Requirements.

6.3.3 Utility Adjustment Preliminary Plans

Developer shall prepare a proposed conceptual Utility design for all Utility conflicts for the Project or constructible segments of the Project, as appropriate. These concept plans should show the approximate location of each existing Utility, the existing Utilities to remain, and Developer’s conceptual Utility Design Plan.

Developer shall submit the proposed conceptual Utility Design Plans to the UAT for its review. The plan(s) shall be color-coded and shall utilize a scale that clearly depicts all of the required information and shall include Utility Owner’s name and contact information. Developer shall coordinate with the affected Utility Owners as necessary to obtain their respective concurrence with the conceptual Utility Design Plan as initially submitted to the UAT and with any subsequent revisions. Concept plans shall be submitted to GDOT for review prior to plans going out to the Utility Owners for their approval.

6.3.4 Utility Work Plans

Developer shall submit Utility Work Plans after the UAT has provided Developer with Utility Adjustment Preliminary Plan review comments. Utility Work Plans, whether furnished by Developer or by the Utility Owner, shall be signed and sealed by a Registered Professional Engineer in the State of Georgia.

6.3.4.1 Plans Prepared by Developer

Where Developer and the Utility Owner have agreed that Developer will furnish a Utility Adjustment design, Developer shall prepare and obtain the Utility Owner's approval of plans, specifications, and cost estimates for the Utility Adjustments (collectively, "Utility Work Plan") by having an authorized representative of the Utility Owner sign the plans as "reviewed and approved for construction." The Utility Work Plan (as approved by the Utility Owner) shall be attached to the applicable Utility Agreement. GDOT's District Utility Engineer should be forwarded a copy for informational purposes.

Unless otherwise specified in the applicable Utility Agreement(s), all changes to Utility Work Plan(s) previously approved by the Utility Owner (excluding estimates, if the Utility Owner is not responsible for any costs) shall require written Utility Owner approval. Developer shall transmit any of the UAT's comments to the Utility Owner, and shall coordinate any modification, re-approval by the Utility Owner, and re-submittal to the UAT or GDOT as necessary to obtain approval.

6.3.4.2 Plans Prepared by the Utility Owner

For all Utility Adjustments to be furnished by a Utility Owner, Developer shall coordinate with the Utility Owner as necessary to confirm compliance with the applicable requirements. Those Utility Adjustments shall be attached to the applicable Utility Agreement, which Developer shall include in the appropriate Utility Work Plan for the UAT and/or GDOT's approval. Developer shall transmit any of the UAT's and/or GDOT comments to the Utility Owner, and shall coordinate any modification, review by Developer, and re-submittal to the UAT as necessary to obtain approval.

6.3.4.3 Design Documents

Each proposed Utility Adjustment shall be shown in the Design Documents, regardless of whether the Utility Work Plan is prepared by Developer or by the Utility Owner.

6.3.4.4 Certain Requirements for Underground Utilities

Developer shall encase proposed underground Utilities per the requirements of GDOT's UAM within the ROW and/or Developer Proposed/Developer Acquired ROW.

If a Utility is encased, casing shall be extended to the limits of the ROW.

Gas Utilities are not required to be encased.

6.3.4.5 Utility Work Plan

Each Utility Adjustment (as well as each Utility remaining in place in the ROW and not requiring any Protection in Place or other Utility Adjustment) shall be addressed in a Utility Work Plan prepared by Developer and submitted to the UAT and/or GDOT for its review and approval. The Utility Work Plan is the combination of the Utility Plans and the Utility Adjustment Schedule. Developer shall provide Utility Work Plans for each individual Utility Owner in accordance with the GDOT UAM. Developer shall coordinate with the Utility Owner to prepare all components of each Utility Work Plan. Completion of the review and comment process for the applicable Utility Work Plan, as well as issuance of any required UAT and/or GDOT approvals, shall be required before the start of construction for the affected Utility Adjustment Work. Provisions governing the procedure for and timing of Utility Work Plan submittals are in Section 6.5, Deliverables.

All Utility Adjustments covered by the same initial Utility Agreement shall be addressed in a single full Utility Work Plan.

Supplemental Utility Work Plan: Each Utility Work Plan shall be provided for by an MUAA or an MUAAA if the Project is proposed to be constructed in phases. For each MUAAA, Developer shall prepare a supplement to the Utility Work Plan for the relevant initial MUAA. The Supplemental Utility Work Plan shall contain:

- A transmittal memo briefly describing the desired amendment and explaining why the amendment is necessary;
- A completed supplemental Utility Work Plan Checklist;
- A proposed MUAAA cost estimate;
- A proposed MUAAA, which has been executed by the Utility Owner and Developer; and
- A Georgia Utility Permit and Affidavit(s) of Property Interest, if applicable.

Utility Work Plan Retention Requests: Developer shall prepare a Utility Work Plan Retention Request for each Utility proposed to remain at its original location within the Existing ROW, State Proposed ROW, and limits of Developer Proposed/Developer Acquired ROW that is not required to be addressed in a Utility Agreement or MUAAA or for a group of such Utilities. Each Utility Work Plan Retention Request shall contain:

- A transmittal memo recommending that the subject Utility(ies) remain in place;
- A completed Utility Work Plan Checklist;
- A certification from the Utility Owner approving leaving the Utility(ies) in place; and
- A Georgia Utility Permit and Affidavit(s) of Property Interest, if applicable.

Utility Certification will be accomplished by the GDOT Project Manager either in its entirety or per constructible segment.

6.4 Construction

6.4.1 Reserved

6.4.2 General Construction Criteria

All Utility Adjustment construction performed by Developer shall conform to the requirements listed below. If the Utility Owner chooses to perform their own relocations and the Utility Owner holds no property interest, the Utility Owner shall confirm in writing to Developer that the Utility Owner will relocate its own facilities at no cost to Developer, GDOT, or SRTA. All construction engineering and contract supervision shall be the responsibility of Developer to ensure that all Utility relocation Work included in the is accomplished in accordance with the contract plans and specifications. Developer will consult with the Utility Owner before authorizing any changes or deviations that affect the Utility Owner's facilities. For Work included in Developer's contract, the Utility Owner or Utility Owner's consultant shall have the right to visit and inspect the Work at any time and advise Developer and GDOT of any observed discrepancies or potential issues. Developer will notify the Utility Owner when all Utility relocation Work is completed and ready for final inspection. Upon maintenance acceptance or final acceptance of the Utility relocation included in the contract and upon certification by the Utility Owner that the Work has been completed in accordance with the plans and specifications, the Utility Owner will accept the adjusted, relocated, and additional facilities. In case of nonconformance, Developer shall cause the Utility Owner (and/or its contractors, as applicable) to complete all necessary corrective Work or to otherwise take such steps as are necessary to conform to these requirements:

- All criteria identified in Section 6.3.2, Technical Criteria and Performance Standards;
- The Utility Work Plan(s) included in the Utility Agreements approved by GDOT (other than Utility Adjustment Field Modifications) must comply with Section 6.4.7, Utility Adjustment Field Modifications;
- All Project safety and environmental requirements; and
- Must meet the Overall Project schedule.

6.4.3 Inspection of Utility Owner Construction

In the PMP, Developer shall set forth procedures for inspection of all Utility Adjustment Work performed by Utility Owners (and/or their Contractors) to verify compliance with the applicable requirements described in Section 6.4.2, General Construction Criteria.

6.4.4 Scheduling Utility Adjustment Work

The Utility Adjustment Work (other than construction) may begin at any time following issuance of NTP1. Refer to Section 7.6.2 of the Agreement for the conditions to commencement of Utility Adjustment Construction Work by Developer. Developer shall not arrange for any Utility Owner to begin any demolition, removal, or other construction Work for any Utility Adjustment until all of the following conditions are satisfied:

- The Utility Adjustment is covered by an executed Utility Agreement (and any conditions to commencement of such activities that are included in the Utility Agreement have been satisfied);
- Availability and access to affected Replacement Utility Property Interests have been obtained by the Utility Owner (and provided to Developer, if applicable);
- If any part of the Utility Adjustment Construction Work will affect the Existing ROW, State Proposed ROW, and/or Developer Proposed/Developer Acquired ROW, availability and access to that portion of the Existing ROW, State Proposed ROW and/or Developer Proposed/Developer Acquired ROW must have been obtained in accordance with the applicable requirements of the DBF Documents;
- If applicable, the Alternate Procedure List has been approved by FHWA, and either (a) the affected Utility is on the approved Alternate Procedure List, as supplemented, or (b) the Utility Owner is on the approved Alternate Procedure List, as supplemented;
- The review and comment process has been completed and required approvals have been obtained for the Utility Work Plan covering the Utility Adjustment;
- All Governmental Approvals necessary for the Utility Adjustment construction have been obtained, and any pre-construction requirements contained in those Governmental Approvals have been satisfied; and
- All other conditions to that Work stated in the DBF Documents have been satisfied.

6.4.5 Standard of Care Regarding Utilities

Developer shall carefully and skillfully carry out all Work impacting Utilities and shall mark, support, secure, exercise care, and otherwise act to avoid damage to Utilities in accordance with O.C.G.A. 25-9 (The Georgia Utility Protection Act). At the completion of the Work, the condition of all Utilities shall be at least as safe and permanent as before.

6.4.6 Emergency Procedures

Developer shall provide an Emergency Procedures Plan with respect to Utility Adjustment Work for each Utility type of Work. Developer shall obtain Emergency contact information from and establish Emergency procedures with each Utility Owner. The Emergency Procedures Plan shall be completed and approved prior to the start of the Utility type of Work contemplated. Emergency procedures shall follow the requirements set forth in the GDOT UAM. The GDOT District Utility Engineer should be forwarded a copy for informational purposes.

6.4.7 Utility Adjustment Field Modifications

Developer shall establish procedures to be followed if a Utility Adjustment Field Modification is proposed by either Developer or a Utility Owner after the Utility Work Plan (which includes the Utility Plan(s)) has been approved. The procedures shall include, at minimum, the following:

- The Utility Owner's review and approval of a Utility Adjustment Field Modification proposed by Developer, or Developer's review and approval of a Utility Adjustment Field Modification proposed by the Utility Owner;

- Transmittal of Utility Adjustment Field Modifications to the appropriate construction field personnel; and
- Inclusion of any Utility Adjustment Field Modifications in the Record Drawings for the Project.

Developer shall cause the procedures to be followed for all Utility Adjustment Field Modifications, whether the construction is performed by Developer or by the Utility Owner.

6.4.8 Switch Over to New Facilities

After a newly Adjusted Utility has been accepted by the Utility Owner and is otherwise ready to be placed in service, Developer shall coordinate with the Utility Owner regarding the procedure and timing for placing the newly Adjusted Utility into service and terminating service at the Utility being replaced.

6.4.9 Utility As-Built Standard

6.4.9.1 General As-Built Utility Requirements

Developer shall be responsible for managing, ensuring the accuracy of, and delivering all utility As-Built which must be provided after utility relocations are completed and prior to project closeout. Developer shall submit detailed As-Built utility information which will include all resulting abandoned or relocated utilities present within the project limits. An “As-Built Drawing” will be submitted for each utility on the project, whether the utility work is included in the contract price, or the utility work is performed by the Utility Owner or the Utility’s contractor.

Developer shall ensure the following:

1. All underground utilities that were relocated within the project limits will be surveyed at the time of installation to determine the exact location and position of the utility line, including, but not limited to:
 - a. The outside diameter of pipe or width of duct banks and configuration of non-encased multi-conduit systems
 - b. The utility’s structural material composition and condition
 - c. Identification of benchmarks used to determine elevations
 - d. Elevations with an accuracy of +/- 0.05-ft and certified accurate to the benchmark(s) used to determine elevations
 - e. Horizontal data accurate to within +/- 0.2 ft or applicable survey standards, whichever is more precise
 - f. Recording and labeling of the average depth below the surface of each run, all change of direction points, and all surface or underground components such as valves, manholes, drop inlets, clean outs, meters, etc.
 - i. For wet facilities – typically at 100’ intervals
 - ii. For dry facilities – typically at 25’-50’ intervals, depending on the vertical alignment

2. All resulting abandoned or excavated underground utilities within the project limits shall be clearly delineated and labeled as “abandoned” or “removed”
3. All relocated aerial facilities will be recorded to include, but not be limited to, the pole
 - a. Owner
 - b. Age
 - c. Size
 - d. Height
 - e. Number
 - f. Material type
 - g. General condition of the utility
 - h. Horizontal location surveyed to the same accuracies and precision as is required for the topographic data
 - i. Aerial Utility Owners attached to the pole
 - j. Horizontal connectivity of the utilities between the poles, including major service drops (substations or industrial facilities)

6.4.9.2 As-Built Utility CADD Files and Plans Preparation

Developer shall submit As-Built information in GDOT's current CADD format (Microstation and InRoads) and in pdf format in accordance with GDOT's current Electronic Data Guidelines (EDG) and Plan Presentation Guide (PPG).

Developer shall ensure the As-Built utility information is submitted as follows:

CADD files

1. All points/data will be placed in one (1) CADD file per Utility Owner
2. DGN files will be named 1234567UTLAB_XYZ.dgn (where “1234567” represents the PI# and “XYZ” the Owner’s UPC code)
3. One (1) empty, overall 1234567UTLEAB.dgn will be created with all individual 1234567UTLAB_XYZ.dgn files attached as reference files
4. All UTLAB files will follow the conventions set forth in the EDG for the UTLE file
5. Sheet files, using GDOT's title block, will be created for each Utility Owner in accordance with Section 44 of the GDOT's PPG; levels will be correctly turned on/off/grayed back to enable future printing if needed
6. The project’s scale will be maintained
7. Relocated poles will be numbered and matched to a pole data table
8. Pole data tables and point data tables will be included
9. All street names will be labeled
10. All easements and right-of-ways will be labeled
11. The location and elevation of the referenced benchmark will be identified and labeled; if the referenced benchmark is not within the project limits, then a complete description of its location will be provided to assist in future locating

12. Any changes in details of design and/or additional supporting information, such as approved placement details, pipe sizes, material changes, geo-coded photos, etc., will be labeled

PDF files

1. PDFs of the CADD sheet files will be created for each Utility Owner in accordance with Section 44 of the GDOT's PPG; levels will be correctly turned on/off/grayed back to enable future printing
2. Include the name, address, and telephone number of the firm preparing the drawing in the title block
3. Include the date the As-Built data is collected in the revision block of the title block
4. Include the Surveyor's/Engineer's stamp and statement certifying that As-Built plans reflect the true conditions in the field
 - a. An electronic stamp may be used
 - b. Certification applies to new As-Built information (not to the existing utility information provided by GDOT)
5. Provide the Contractors' statement (with an original signature and Project Number on the cover sheet and transmittal letter) verifying that all construction specifications and product qualities have been met
6. Label "As-Built Drawing" on each sheet

As-Built Utility Plans Review and Submittal Process

1. Developer shall submit completed As-Built CADD files and pdfs of the As-Built utility plan sheets to Developer's Design Engineer for review and comment(s)
2. Each respective Utility Owner, whose work was included in the contract, will receive a pdf copy of their As-Built plans for review and acceptance at the interval(s) specified in the project's contract; all comments will be provided to Developer
3. Developer shall revise and make changes or adjustments to the As-Built utility related data, as necessary
4. As-Built plans will not be considered complete until Developer has responded to all comments from these reviews to the satisfaction of Developer's Design Engineer and the Utility Owners
5. Developer shall submit final As-Built utility plans to GDOT as follows:
 - a. One (1) overall, final CADD file in the Department's current CADD Software with each Utility Owner's file appropriately attached as a reference file per GDOT's PPG and EDG
 - b. One (1) pdf set of Section 44 plans for each Utility Owner's facilities
6. Quality Assurance (QA) will be performed by GDOT on all deliverables to determine compliance with GDOT's EDG and PPG before final acceptance by GDOT

6.4.10 Maintenance of Utility Service

All Utilities shall remain fully operational during all phases of construction, except as specifically allowed and approved in writing by the Utility Owner. Developer shall schedule Utility Adjustment Work in order to minimize any interruption of service, while at the same time meeting the Project Baseline Schedule and taking into consideration seasonal demands.

6.4.11 Traffic Control

Developer shall be responsible for, and the Construction Traffic Control Plan shall cover, all traffic control made necessary for Utility Adjustment Work, whether performed by Developer or by the Utility Owner. Traffic control for Adjustments shall be coordinated with GDOT. Traffic control shall comply with the guidelines of the *Manual on Uniform Traffic Control Devices* (MUTCD) and of Section 18, Traffic Control.

6.5 Deliverables

Developer shall time all Submittals described in this Section 6 to meet the Project Baseline Schedule, taking into account GDOT's applicable review and response times designated in this Section 6, or if not stated therein, then as stated in Article 6, Section 6.3 of the DBF Agreement.

Developer shall provide to GDOT concurrently with accepted construction as-built plans, one (1) full-sized, three (3) half-sized, one (1) PDF, and one (1) MicroStation copy for review. GDOT will have thirty (30) days to review and return as accepted or with comments. Developer will address any comments and return to GDOT for final review and acceptance. Upon GDOT review and acceptance, Developer will provide a copy of the approved final accepted as-built plans to all Utility Owners who's Utility relocation work was included in the Project.

6.5.1 Reserved

6.5.2 Utility Work Plan Submittals

Developer shall coordinate all Submittals required pursuant to this Section 6.5, so as not to overburden GDOT staff. Developer shall expect a review period of thirty (30) days for each Utility Plan Review and shall not exceed ten (10) submittals in any thirty-day period. Any concurrent reviews above the ten (10) at any given time will be rolled over into the next thirty (30) day period at the conclusion of the initial thirty (30) day review period for the initial ten (10) submittals.

Developer shall transmit any of the GDOT and UAT's comments to the Utility Owner, and shall coordinate any modification, review, and approval by the Utility Owner, as well as any re-submittal to GDOT and UAT, as necessary to resolve all GDOT and UAT's comments and/or obtain GDOT and UAT's approval, as applicable. Upon (a) GDOT and UAT's approval of any Utility Work Plan components for which GDOT and UAT's approval is required; and (b) completion of the review and comment process for all other Utility Work Plan components, GDOT will sign three (3) originals of any approved Georgia Utility Permit and of any other

components of the Utility Work Plan for which this Section 6 requires GDOT’s approval. Utility Agreements, Utility Retention Requests, and Utility Permits will require GDOT approval.

The following procedures shall govern submittal and review of each Utility Work Plan:

- Before submitting a Utility Work Plan to the UAT, Developer shall:
 - Submit the complete Utility Work Plan to the QC/QA entity designated by Developer in accordance with the PMP; and
 - Resolve all comments made by the QC/QA entity, coordinating with the Utility Owner as appropriate.
- Developer shall submit to the UAT five (5) identical and complete originals of each Utility Work Plan (each shall be bound and labeled “Developer Copy,” “GDOT SUO Copy,” “GDOT DUE,” or “Utility Owner Copy,” as appropriate), the “GDOT SUO Copy” shall be color coded. These submittals shall be for the UAT’s review and comment, except for any components of the Utility Work Plan for which GDOT’s approval is required by this Section 6.5.
- The UAT and GDOT will review the Utility Work Plan for compliance with the requirements of this Section 6.5 and within thirty (30) Days will return the Utility Work Plan to Developer with the appropriate notations (pursuant to Article 6, Section 6.3 of the DBF Agreement) to reflect its responses.
- Each re-submittal shall require an additional thirty (30) Day review period.

6.5.3 Reserved

7 RIGHT OF WAY (ROW) - DEVELOPER PROPOSED/DEVELOPER ACQUIRED ROW

7.1 General Requirements

GDOT and Developer will acquire the State Proposed ROW as set forth in the plans in Exhibit 4 Right of Way and per the requirements set forth in Section 5.

This Section 7 sets forth the ROW acquisition activities and scope of services necessary for Developer to acquire Developer Proposed/Developer Acquired ROW. All costs shall be paid for by Developer to acquire Developer Proposed/Developer Acquired ROW including, but not limited to, costs for real estate, any damages, and improvements within. Developer shall fully reimburse GDOT for oversight and review costs necessary to support Developer in acquiring Developer Proposed/Developer Acquired ROW. Developer shall provide all engineering and ROW documents necessary to acquire title for Developer Proposed/Developer Acquired ROW, in form and substance acceptable to GDOT, in the name of the Georgia Department of Transportation. Developer shall also provide for relocation of displacees and clearance/demolition of the improvements from Developer Proposed/Developer Acquired ROW, as more fully described in the following sub-sections.

7.2 Administrative Requirements

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

Developer shall prepare a plat and legal description for Developer Proposed/Developer Acquired ROW needed in accordance with the requirements of this Section 7. Developer shall revise the ROW Plan and shall submit within thirty (30) days from the issuance of NTP1. Negotiations may begin after the Finding of No Significant Impact (FONSI) has been executed, Developer-revised ROW Plan (Exhibit 4) is approved by GDOT and FHWA, and the NEPA reevaluation is approved by FHWA. The review period for any proposed, revised ROW Plan shall be fifteen (15) Days. Refer to Section 5.9 for additional review periods.

The revised ROW Plan for Developer Proposed/Developer Acquired ROW shall be coordinated with the development of the Construction Phasing Plan (see Section 23). Developer's Preliminary Baseline Schedule and the Project Baseline Schedule must account for all newly proposed parcel acquisition and provide a Schedule Activity for each parcel.

7.2.2 Developer Proposed/Developer Acquired Scope of Services

Developer shall reimburse GDOT for all administrative activities and preparation of all documentation sufficient to acquire Developer Proposed/Developer Acquired ROW.

Upon Developer request to GDOT to acquire any parcel, GDOT will request that the Office of Georgia Attorney General conduct the title work, closings, condemnations, and any necessary legal activities. Developer shall reimburse GDOT within thirty (30) days of receipt of the

invoice from GDOT for the cost GDOT will pay the Office of Georgia Attorney General for its services.

Developer shall not begin construction on any parcel of real estate unless property rights for the parcel have been obtained and recorded in favor of GDOT and possession has occurred. Developer Proposed/Developer Acquired ROW possession may be by use of Right of Entry (ROE) as may be granted by certain Governmental Entities, and/or certain utilities company-owned parcels.

7.2.3 Responsibilities of Developer

Developer shall be responsible for the costs of services and preparation of documentation for Developer Proposed/Developer Acquired ROW acquisition, related relocation assistance for the Project, and property demolition and removal. The work related to Developer Proposed/Developer Acquired ROW acquisition includes, but is not limited to:

- ROW plan development and/or revisions after NTP1;
- Surveying;
- Environmental assessment;
- Testing and remediation;
- Appraisals;
- Other necessary valuation or damage impact studies;
- Conceptual stage study;
- Negotiations;
- Acquisitions;
- Closing package preparations;
- Court coordination efforts; and
- Condemnation petition preparations.

Developer shall also be responsible for relocation advisory assistance, as well as demolition or removal of obstructions within Developer Proposed/Developer Acquired ROW in compliance with all applicable local, State and/or federal laws.

Any Developer negotiations with a property owner to use their property outside of Developer Proposed/Developer Acquired ROW acquisition limits for mobile work trailers, storage, equipment, etc., shall be strictly between Developer and the property owner and is to in no way affect the negotiations of any parcel acquisition required for the Project. GDOT shall not be obligated to exercise its power of eminent domain in connection with Developer's acquisition of any such temporary right or interest, and GDOT shall have no obligations or responsibilities with respect to the acquisition, maintenance, or disposition of such temporary rights or interests.

In addition, as set forth in, Article 2 Section 2.2.3.2 of Volume 1 of the DBF Documents and as more fully described in this Section 7, Developer shall be responsible for the reimbursement to GDOT for costs of all services and preparation of all documentation for acquisition of all Developer Proposed/Developer Acquired ROW. Developer shall also be responsible for the costs of acquisition and documentation for the acquisition of any temporary right or interest in Project-

Specific Locations not necessary for the Project but that Developer deems advisable for contractor-preferred areas such as Project office requirements, lay-down areas, material storage areas, borrow sites, or for any other convenience of Developer. Developer entering into negotiations with a property owner to use their property within Project-Specific Locations or outside of the acquisition limits for mobile work trailers, storage, equipment, etc. will be strictly between Developer and the property owner and is in no way to affect the negotiations of any parcel acquisition required for the Project. GDOT shall not be obligated to exercise its power of eminent domain in connection with Developer's acquisition of any such temporary right or interest, and GDOT shall have no obligations or responsibilities with respect to the acquisition, maintenance, or disposition of such temporary rights or interests.

7.2.4 Developer Conflict of Interest

If at any time, Developer or (to the best of Developer's knowledge) any Developer-Related Entity directly or indirectly (a) acquires or has previously acquired any interest in real property likely to be parcels of Developer Proposed/Developer Acquired ROW or the remainders of any such parcels; (b) loans or has previously loaned money to any interest holder in any real property likely to be a parcel of Developer Proposed/Developer Acquired ROW and accepts as security for such loan the parcel, or the remainder of any such parcel that is not a whole acquisition, or (c) purchases or has previously purchased from an existing mortgagee the mortgage instrument that secures an existing loan against real property likely to be a parcel of Developer Proposed/Developer Acquired ROW, or the remainder of any such parcel, Developer shall promptly disclose the same to GDOT. In the case of acquisitions, loans, or mortgage purchases that occurred prior to the execution of the Agreement, such disclosure shall be made within fourteen (14) Days after execution of the Agreement.

In the event that any Developer-Related Entity acquires a real property interest, whether title or mortgage, in parcels of the real property interest acquired, or a release of mortgage as the case may be, the same shall be conveyed to the State without the necessity of eminent domain.

Developer shall not acquire or permit the acquisition by Developer or any Developer-Related Entity of any real property interest in a parcel, whether in fee title or mortgage, for the purpose of avoiding compliance with the Laws, practices, guidelines, procedures, and methods described in Section 7.2.1 and/or to gain an advantage over any competing interest of Developer.

7.2.5 Meetings

Developer shall attend meetings as requested by GDOT. Meetings may include, but are not limited to property owner meetings and property acquisition status meetings. At such meetings Developer shall provide exhibits, take minutes, and distribute minutes as requested by GDOT within five (5) Days of the meeting. Minutes will not be finalized until an adequate comment period has been allowed.

7.2.6 Documentation and Reporting

All documentation relating to the activities in Section 7.2.5 shall be transmitted to GDOT within five (14) Days of taking place.

7.2.7 Responsibilities of GDOT

GDOT will be responsible for the following activities in connection with acquisition of Developer Proposed/Developer Acquired ROW:

- Provide final approval, where final approval is warranted, for all negotiation settlements and relocation assistance payments; and
- Provide a staff ROW Oversight Manager and/or Administrative Review Officer to serve as first point of contact, and who will be responsible for approving all negotiated settlements.

7.2.8 Responsibilities of the Office of Georgia Attorney General

The parties hereto acknowledge the statutory requirements that the Office of Georgia Attorney General has exclusive authority to represent and defend GDOT. In its role as attorney for GDOT, the Office of Georgia Attorney General has the responsibility to:

- Represent GDOT in all condemnation and eviction proceedings;
- Coordinate with GDOT on all legal matters concerning acquisition processes, including all negotiated legal settlements;
- Analyze recommended parcel values and/or appraisal issues;
- Provide additional legal advice and opinions as needed by GDOT;
- Represent GDOT in jury trials including determination of expert witnesses and all appeals;
- Prepare, obtain, and file all necessary legal documentation for eviction of property owners or tenants;
- Prepare preliminary and final title opinions; and
- Conduct all closing activities.

8 GEOTECHNICAL

8.1 General Requirements

Developer shall perform all geotechnical investigations, testing, research, and analysis necessary to effectively determine and understand the existing surface and subsurface geotechnical conditions of the Existing ROW, State Proposed ROW, or Developer Proposed/Developer Acquired ROW to be used by Developer to carry out the Work. Developer shall ensure the geotechnical investigations and analyses are both thorough and complete, so as to provide accurate information for the design of roadways, pavements, foundations, structures, and other facilities that result in a Project that is safe and meets operational standards. Developer shall design the Project in general conformance with GDOT policies, guidelines, and Volume 3 Manuals.

8.2 Design Requirements

8.2.1 Subsurface Geotechnical Investigation by Developer

Developer shall determine the specific locations, frequency, and scope of all subsurface geotechnical investigations, testing, research, and any additional analysis Developer considers necessary to provide a safe and reliable roadway, pavement, foundation, structure, and other facilities for the Project.

Developer shall prepare and amend, as needed, Geotechnical Engineering Reports documenting the assumptions, conditions, and results of the geotechnical investigation and analysis, including the following:

- The geology of the Project area, including soil and/or rock types, and drainage characteristics;
- Field investigations and laboratory test results used to characterize conditions, including moisture content, plasticity index, gradations for each major soil strata change, levels of shrink/swell potential soil compressibility, and short-term and long-term strength tests and properties;
- A discussion of conditions and results with reference to specific locations on the Project;
- Design and construction parameters resulting from the geotechnical investigation and analysis including parameters for the design of pavements, pipes, structures, slopes, and embankments;
- Plan view locations of field sampling, boring logs and other field data, laboratory test results, calculations, and analyses that support design decisions; and
- Slope stability analysis for embankment and excavation slopes including both short-term (undrained) and long-term (drained) conditions, and discussion of design measures undertaken to ensure stability and safety of all slopes. The analysis shall consider the potential for long-term surficial slide failures common to high-plasticity clays in Georgia, and Developer shall provide specific recommendations to minimize their occurrence.

Each Geotechnical Engineering Report, upon completion, shall be submitted to GDOT for review and comment as a Submittal.

If environmentally-sensitive conditions such as undocumented contaminated soil or archaeological sites are encountered during the subsurface exploration activities, Developer shall undertake appropriate actions in accordance with the DBF Agreement.

8.2.2 Pavement Design

Developer shall design, construct, and maintain roadway pavements in conformance to *GDOT's Pavement Design Manual*, GDOT Policies and Procedures, and on the subsurface geotechnical data collected by Developer.

Developer shall prepare a Pavement Design Report that documents the assumptions, considerations, and decisions contributing to Developer's pavement design, including the following:

- Pavement design details by location, including structural layer materials, general specifications, and thicknesses;
- Lifecycle management analysis (using deterministic model), including the periods for resurfacing, reconstruction, and other rehabilitation measures and what these activities are likely to entail;
- Relevant pavement evaluation data (structural and functional) and condition information on adjacent roads;
- For slopes steeper than 2:1, include the slope stability analysis for embankment and excavation slopes including both short-term (undrained) and long-term (drained) conditions, and discussion of design measures undertaken to ensure stability and safety of all slopes. The analysis shall consider the potential for long-term surficial slide failures common to high plasticity clays in Georgia, and specific recommendations shall be provided to minimize their occurrence;
- Relevant geotechnical data and drainage requirements;
- Design criteria used in determining the pavement design(s), including traffic loads, pavement material strength factors, and pavement design life;
- Design methods adopted in developing the pavement design(s) and the rationale for their selection;
- Other considerations used in developing the pavement design(s);
- The pavement for main lanes and ramps shall be designed using the functional highway classification(s) for "Freeways;"
- Tabulation of the relevant subgrade design values such as the modulus of subgrade reaction (k-value), resilient modulus, California Bearing Ratio (CBR), or other basis for each pavement design section;
- Site conditions including any potentially soft compressible zones requiring special design considerations, and the presence and location of expansive soils requiring special design considerations; and

- Recommended subgrade stabilization procedures including the type of stabilizing agents, the application rates, compaction criteria, strength requirements, total depth of treatment, and other relevant details.

For roadways adjacent to and crossing the Project that are disturbed by the construction activities of the Project, Developer shall, at a minimum, match the in-place surface type and structure of the existing roadways. In addition, all new shoulders shall be constructed as full-depth shoulders to match the roadway pavement section. Developer shall design all tie-in Work to avoid differential settlement between the existing and new surfaces.

Developer shall coordinate the design and construction of all cross roads with the Governmental Entity having jurisdiction whether a municipality, county, or GDOT.

8.3 Construction

Materials used to construct the Project shall meet the minimum requirement as specified in GDOT specifications, policies and procedures, guidelines, and Volume 3 Manuals. All materials used to construct the Project shall conform to the requirements of the GDOT Qualified Products List (QPL) or equivalent, as approved by GDOT, as of the release of the final RFP prior to any addenda. Materials that have not been granted via written approval prior to the release of the final RFP will not be allowed. Testing of materials shall be performed by personnel possessing the requisite GDOT materials certifications.

Developer shall be responsible for obtaining and complying with all Governmental Approvals for construction of the Project.

Developer shall submit to GDOT for review and approval any blasting plan(s). Blasting shall be performed in accordance with State Law, and in accordance with GDOT's specifications, policies, and procedures.

8.4 Deliverables

Deliverables shall include Geotechnical Engineering Reports as described in Section 8.2.1, and Pavement Design Reports as described in Section 8.2.2. All deliverables shall conform to the standards required in the QMP including timely submittal of all documents.

All deliverables shall be presented to GDOT in both hard-copy and electronic form compatible with GDOT software. All reports shall be signed and sealed by the responsible Registered PE. Each report shall be accompanied by documentation that the report has completed all aspects of the QMP including all reviews and approvals.

9 SURVEYING AND MAPPING

9.1 General Requirements

Developer shall provide accurate and consistent land surveying and mapping necessary to support ROW acquisition, design, and construction of the Project. Developer is responsible for all surveying responsibilities in accordance with the *Automated Survey Manual*.

Developer shall review existing survey data and determine the requirements for updating or extending the existing survey and mapping data. Developer is responsible for the final precision, accuracy, and comprehensiveness of all survey and mapping.

Developer shall provide surveying and mapping activities in conformance with GDOT policies, guidelines, and Volume 3 Manuals.

9.2 Administrative Requirements

9.2.1 Property Owner Notification

Developer shall prepare for GDOT review and approval a property owner notification letter in accordance with the *GDOT Automated Survey Manual* prior to entering any private property outside the Existing ROW.

9.3 Design Requirements

9.3.1 Units

All survey Work shall be performed in U.S. survey feet. Work shall conform to state plane coordinates.

The combined sea level and scale factor for the Project shall conform to the *GDOT Automated Survey Manual*.

9.3.2 Survey Control Requirements

Developer shall ensure that all surveying conforms to all applicable surveying laws and the *Georgia Professional Land Surveying Practices Act* and shall follow the *General Rules of Procedures and Practices* of the Georgia Board of Professional Engineers and Land Surveying. Developer shall ensure that any person in charge of the survey is proficient in the technical aspects of surveying, and is a Registered Professional Land Surveyor licensed in the State of Georgia.

Developer shall establish all horizontal and vertical primary Project control from approved control provided by GDOT. If Developer chooses to use GPS methods, Developer shall meet the guidelines as defined in the *GDOT Automated Survey Manual*. If Developer chooses to use GPS methods, they shall utilize the approved control provided by GDOT.

Developer shall establish and maintain additional survey control as needed and final ROW monumentation throughout the duration of the Project.

Developer shall tie any additional horizontal and vertical control for the Project to the established primary Project control network.

All survey control points shall be set and/or verified by a Registered Professional Land Surveyor licensed in the State of Georgia.

Developer shall establish and maintain a permanent horizontal and vertical primary survey control network. The control network should consist of, at minimum, horizontal deltas coordinated and elevated set in intervisible pairs at spacing of no greater than three (3) miles. Control monuments set by Developer shall be installed per the National Geodetic Survey (NGS) guidelines (*National Geodetic Survey July 1996*). The horizontal deltas shall be installed per the *GDOT Automated Survey Manual*. Prior to construction and in coordination with GDOT, Developer shall provide the National Oceanic and Atmospheric Administration (NOAA) no less than a ninety- (90) day notification of planned activities that will disturb or destroy any geodetic control monuments. This will provide time to plan for and execute relocation of geodetic monuments. Developer shall replace all existing horizontal and vertical primary survey control points that have been disturbed or destroyed. Developer shall make all survey computations and observations necessary to establish the exact position and elevation of all other control points based on the primary survey control.

Developer shall deliver to GDOT a survey control package in accordance with the *GDOT Automated Survey Manual*. In addition, Developer shall deliver to GDOT a revised survey control package when survey monuments or control points are disturbed, destroyed, or found to be in error.

9.3.3 Conventional Method (Horizontal and Vertical)

If Developer chooses to use conventional methods to establish additional horizontal control, Developer shall meet the accuracy of the appropriate level of survey as defined in the *GDOT Automated Survey Manual*.

9.3.3.1 Horizontal Accuracy Requirements for Conventional Surveys

Horizontal control is to be established (at a minimum) on the Georgia State Plane Coordinate System of 1985 [NAD83 or GCS 85].

Upon request by Developer, GDOT will compile and provide to Developer a survey control package of existing GDOT-approved survey monumented data in the Project vicinity.

9.3.3.2 Vertical Accuracy Requirements for Conventional Surveys

Vertical control shall be established on the North American Vertical Datum of 1988 (NAVD 1988).

Table 9-1 Accuracy Requirements

	1 st Order	2 nd Order	3 rd Order	Remarks And Formulae
Error of Closure	0.013 feet \sqrt{M}	0.026 feet \sqrt{M}	0.049 feet \sqrt{M}	Loop or between control monuments
Maximum Length of Sight	250 feet	300 feet		With good atmospheric conditions
Difference in Foresight and Backsight Distances	±10 feet	±20 feet	±30 feet	Per instrument set up
Total Difference in Foresight and Backsight Distances	±20 feet per second	±50 feet per second	±70 feet per second	Per total section or loop
Recommended Length of Section or Loop	2.0 miles	3.0 miles	4.0 miles	Maximum distance before closing or in loop
Maximum Recommended Distance Between Benchmarks	2000 feet	2500 feet	3000 feet	Permanent or temporary benchmarks set or observed along the route
Level Rod Reading	± 0.001 foot	± 0.001 foot	± 0.001 foot	
Recommended Instruments and Leveling Rods	Automatic or tilting w/ parallel plate micrometer precise rods	Automatic or tilting w/ optical micrometer precise rods	Automatic or quality spirit standard, quality rod	When two or more level rods are used, they should be identically matched

Principal Uses	Broad area control, subsidence or motion studies jig & tool settings	Broad area control, engineering projects basis for subsequent level work	Small area control, drainage studies, some construction and engineering	
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9.3.4 Reserved

9.3.5 Right of Way Surveys

Developer shall base all surveys on the primary horizontal and vertical control network established for the Project.

9.3.5.1 Accuracy Standard

In performing ROW surveys consisting of boundary locations, Developer shall meet the accuracy standards of the appropriate level of survey as defined in the following table.

Table 9-2: Chart of Tolerances

	Urban / Rural	Urban Business District	Remarks and Formulae
Error of Closure	1:10,000	1:15,000	Loop or between control monuments
Angular Closure	15" \sqrt{N}	10" \sqrt{N}	N = number of angles in traverse
Accuracy of Bearing in Relation to Source*	20"	15"	$\sin \alpha$ = denominator in error of closure divided into 1 (approx.)
Linear Distance Accuracy	0.1 foot per 1,000 feet	0.05 foot per 1,000 feet	$\sin \alpha \times 1000$ (approx.) where \pm = Accuracy of Bearing
Positional Error of any Monument	$AC/10,000$	$AC/15,000$	AC = length of any course in traverse

Adjusted Mathematical Closure of Survey (No Less Than)	1:50,000	1:50,000	
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* GDOT policy requires all bearings or angles be based on the following source: Grid bearing of the Georgia Coordinate System of 1985, with the proper zone and epoch specified.

9.3.6 Survey Records and Reports

Developer may use electronic field books to collect and store raw data. Developer shall preserve original raw data and document any changes or corrections made to field data, such as station name, height of instrument, or target. Developer shall also preserve raw and corrected field data in hardcopy output forms in a similar manner to conventional field books for preservation.

Field survey data and sketches that cannot be efficiently recorded in the electronic field volume shall be recorded in a hardcopy field note volume and stored with copies of the electronic data.

All field notes shall be recorded in permanently bound books. (Field notes on loose-leaf pages will not be allowed.) Developer shall deliver copies of any or all field note volumes to GDOT upon request.

9.4 Construction Requirements

9.4.1 Units

Comply with the Design Requirements in Section 9.3.

9.4.2 Construction Surveys

Comply with the Design Requirements in Section 9.3.

9.5 Deliverables

9.5.1 Final ROW Surveying and Mapping

The documents produced by the Surveyor or the Surveyor's subcontractors are the property of GDOT, and release of any such document must be approved by GDOT.

All topographic mapping created by Developer shall be provided to GDOT in digital terrain model format using the software and version being used by GDOT at the time of delivery.

9.5.2 ROW Monuments

Upon completion of the ROW acquisition and all construction Work, such that the final ROW lines will not be disturbed by construction, Developer shall set permanent and stable concrete ROW monuments (constructed according to *GDOT Standard Specifications*) located on the final

ROW line at all points of curvature (PCs), points of tangency (PTs), points of intersection (PIs), miters and breaks, points of compound curvature (PCCs), points of reverse curvature (PRCs), and all intersecting crossroad ROW lines. In addition, Developer shall set permanent and stable concrete ROW monuments (constructed according to *GDOT Standard Specifications*) located on all final ROW lines where the distance between such significant ROW line points exceeds fifteen hundred (1,500) feet.

Developer shall purchase all materials, supplies, and other items necessary for proper survey monumentation.

10 GRADING

10.1 General

Developer, in accordance with Volume 3 Manuals (Technical Documents), shall conduct all Work necessary to meet the requirements of grading including:

- Clearing and grubbing;
- Excavation and embankment;
- Removal of existing buildings, pavement, and miscellaneous structures, except as may be specifically noted otherwise;
- Subgrade preparation and stabilization;
- Dust control;
- Aggregate surfacing; and
- Earth shouldering.

Borrow, Stockpile, and Waste Sites: All Borrow, Stockpile, and Waste Sites for this Project shall be environmentally approved prior to construction activities occurring in them. All common fill or excess material disposed of outside the project ROW shall be placed in either a permitted solid waste facility, a permitted inert waste landfill, or in an engineered fill. See Section 201 of the *GDOT Standard Specifications* and supplements thereto for additional information.

There is no suitable place to bury existing bridge debris within the ROW. Developer shall provide an environmentally approved site to dispose of the existing bridge debris at no additional cost to GDOT.

Any features that are abandoned in place, e.g., parking lots, abandoned pavements, sidewalks, driveways, catch basins, drop inlets, pipes, manholes, curbing, retaining walls, utilities, foundations, paved floors, underground tanks, fences, bridges, buildings, and other incidental structures, shall be removed with the following requirements:

- **Abandon Pavements:** Ensure existing pavement inside the Project limits no longer being used is obliterated, graded to drain, and grassed;
- **Abandon Pipes:** Ensure abandoned pipes that are left in place are grout filled or filled with flowable fill;
- **Under New Pavements:** Remove to a depth of at least three (3) feet below the finished subgrade elevation;
- **Underneath New Other Structures:** Remove to at least three (3) feet below the foundations of any proposed structure, including installations such as guard rail posts and Utility poles;
- **Elsewhere in the ROW and easement areas remove as follows:** Remove to at least three (3) feet below the finished surface of slopes and shoulders and one (1) foot below natural ground outside construction lines;

- Abandoned structures that may impound water shall be thoroughly cracked or broken. These structures include but are not limited to concrete floors, basements, and catch basins within ten (10) feet of finished grade; and
- Break floors so that no section greater than ten (10) square feet remains intact.

10.2 Preparation within Project Limits

Developer shall develop, implement, and maintain until Final Acceptance a Demolition and Abandonment Plan for all existing structures, features, and utilities as described in Section 10.1 above (listing the types and sizes) that will be removed, abandoned, or partially abandoned. The Demolition and Abandonment Plan shall ensure that said structures are structurally sound after the abandonment procedure. The Demolition and Abandonment Plan shall show the locations of all existing features as listed in Section 10.1 that will be abandoned and shall show sufficient detail for the abandonment.

GDOT reserves the right to require Developer, at any time, to salvage any GDOT-owned equipment and materials in an undamaged condition and deliver to a location designated by GDOT within the GDOT District in which the Project is located. GDOT shall have first right of refusal to retain any salvage material or equipment. If GDOT decides not to salvage the material or equipment, Developer may take possession but not reuse for the Project. All material incorporated into the Project shall be new.

The material from structures designated for demolition shall be Developer's property. All material removed shall be properly disposed of by Developer outside the limits of the Project.

10.3 Slopes and Topsoil

Developer shall comply with Volume 3 Manuals regarding design limitations and roadside safety guidelines associated with the design of slopes along roadways. Developer shall adjust grading to avoid and minimize disturbance to the identified Waters of the U.S. Developer's grading plan shall be in accordance with the approved NEPA/GEPA documents; however, Developer shall secure all associated Governmental Approvals to meet the Released for Construction (RFC) plans.

Developer shall perform finished grading and place topsoil in all areas suitable for vegetative slope stabilization (and areas outside the limits of grading that are disturbed in the course of the Work) that are not paved.

10.4 Deliverables

10.4.1 Released for Construction Documents

The Demolition and Abandonment plan shall be submitted to GDOT for approval no later than one hundred and eighty (180) Days from NTP1 but must be completed prior to any construction phase as specified in Section 23.

11 ROADWAYS

11.1 General Requirements

The objectives of the Project include the provision of a safe, reliable, cost-effective, and aesthetically-pleasing corridor for the traveling public. The requirements contained in this Section 11 provide the framework for the design and construction of the roadway improvements to help attain the project objectives.

Developer shall coordinate their roadway design, construction, maintenance, and operation with all other Work planned or under construction by GDOT and/or any Governmental Entity.

Whenever Developer receives a design request from an adjacent property owner, Developer shall, within thirty (30) Days of the request, produce a report to GDOT identifying the nature of the request, the financial consequences to GDOT of compliance (if any), Developer's assessment of the feasibility of compliance, any Change Requests from the Technical Provisions that would be required, and any potential risks to GDOT that may arise from implementation of the design request such as environmental and permitting risks. Where Developer determines that there are no financial consequences to GDOT, time impacts to the Project, or Change Request(s) from the Technical Provisions, and provided that GDOT raises no objection within thirty (30) Days of Developer's report, Developer may proceed with the implementation of the design request at its option and shall advise GDOT in writing of its decision.

No open cutting (removal of pavement to construct, repair, or relocate utilities/drainage structures or for any purposes that cause a full-depth cut of existing pavement and removal of any subgrade beneath) of the Travel Lane pavements or ramp pavements shall be allowed without prior approval of GDOT. Any pavement that is open cut as described in this paragraph shall be repaired in-kind prior to the Travel Lane or ramp being opened to traffic.

The stockpiling of materials may be permitted on a case-by-case basis provided that participation is based on the appropriate value of approved specification materials delivered by Developer to the Project site or other designated location in the vicinity of the Project, as well as alignment with the terms and conditions below. Stockpiled materials that may qualify for material allowances include materials that are not readily available, can be easily identified and secured for the Project, and can be stockpiled for long periods without detriment. The procedure identified in GDOT Supplement Specifications 109.07.B shall be used to process a Material Allowance Request. Other procedure requirements include:

- Stockpiles shall be constructed in conformity with the provisions in the current GDOT Standard Specifications. Appropriate erosion control measures shall be placed and maintained, and the sites shall be restored to its original condition. Developer shall provide satisfactory evidence of insurance against loss by damage or disappearance;
- The stockpiled material is stored in such a manner that security and inventory can be maintained, and Developer is responsible for any costs of storage of said materials;
- The material is supported by a paid invoice or receipt for delivery, with Developer to furnish the paid invoice to GDOT within a reasonable time after receiving payment;

- The material conforms with the requirements of the plans and specifications;
- Any damage to the material due to the delay in incorporation of the material into the Final Plans shall be at the risk of Developer; and
- The quantity of the material does not exceed the quantity required by the project, nor does the value exceed the appropriate portion of the contract item in which the material is to be incorporated.

11.2 Design Requirements

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

Developer shall coordinate its roadway design with the design of all other components of the Project. The Project roadways shall be designed to integrate with streets and roadways that are adjacent or connecting to the Project.

The Project roadways shall be designed to incorporate roadway appurtenances including, but not limited to: fences, noise attenuators, barriers, and hazard protection as necessary to promote safety and to mitigate visual and noise impacts on neighboring properties. Fence type shall be replaced in accordance with GDOT Construction Standards and Details. Proposed fencing types that do not conform to the GDOT Construction Standards and Details shall be submitted for approval to GDOT.

Developer shall design and construct any and all proposed intersection reconstruction or rehabilitation to meet the requirements of the NEPA/GEPA Approvals and Volume 3 Manuals (Technical Documents).

Vibration Control

Developer is responsible for any and all vibration-related damages to existing structures or other facilities located in the vicinity of construction-related activities. Where vibration-inducing construction activities are to be performed in the vicinity of existing properties, structures, utilities, or other facilities, Developer shall evaluate potential impacts and develop a Vibration Control Plan for GDOT review and acceptance. The plan shall include certain triggers of action to ensure no damage to existing structures occurs, as well as a means to resolve public concerns for the vibration at any level. Additional requirements for the Vibration Control Plan are as follows:

- Use vibration attenuation relationships published by applicable governmental agencies and/or applicable equipment manufacturers to estimate the zones within which vibrations caused by the Project may impact existing properties and facilities;
- Within the zone of potential vibration impacts, conduct and document site reconnaissance of properties during site investigations to determine the sensitivity of each structure/facility to vibrations;
- List all properties that may be adversely affected by vibrations;
- Conduct and document a preconstruction survey of each structure determined to be susceptible to vibrations;

- Provide GDOT with recommendations to mitigate each structure that may be adversely affected by vibrations; and
- Use the vibration monitoring records to develop attenuation curves for predicting vibrations at varying distances from the source.

Developer shall adjust operations immediately if the threshold readings above are exceeded.

Blasting

Follow GDOT Standard Specification 107.12

Control of Access

Developer shall maintain all existing property accesses, including those not shown on the schematic, and shall not revise control of access without GDOT review and the written agreement of the affected property owner. Access control shall be in conformance with the *GDOT Regulations for Driveway and Encroachment Control*.

11.2.1 Typical Section(s) and Pavement Design

Refer to Volume 2.

11.2.2 Additional Roadway Design Requirements

Developer shall coordinate, design, and construct the improvements on crossing streets in accordance with the Governmental Entity having jurisdiction of said roadway. All roadside safety devices used on the Project shall meet current crash test and other safety requirements that meet or exceed current GDOT requirements. GDOT does not allow longitudinal pavement joints in the wheel path of the traveling public unless otherwise accepted by GDOT.

When designing and constructing hardscape elements at intersections, at a minimum, Developer shall use colored, textured concrete in all raised medians. Monolithic concrete medians will not be accepted. Stamped concrete may only be used where local communities agree to maintain them, and it meets the requirements in *GDOT Standard Specifications*, policies, procedures, and Volume 3 Manuals (Technical Documents).

Concrete paving shall be used in hard-to-reach mowing areas or under structures (such as, but not limited to: areas near, next to, or between guard fence posts/sign posts; bent columns; next to retaining walls; freeway ramp gores; paved ditches; flumes; ditch inlets, etc.) to improve roadway appearance.

When guardrail is required on interstates, freeways, and other four-lane roadways, shoulder paving shall be extended beyond the usable paved shoulder to conform to *GDOT Standards and Details*.

When construction impacts existing cable barrier that will remain in place, new end terminals shall be installed, as required, to ensure cable barrier remains in operation at all times. If existing cable barrier cannot remain in operation during construction, temporary concrete barrier shall be

installed in the same general location as the existing cable barrier for the full length impacted, including approaches.

The use of Type S Concrete Median Barrier and Texas DOT Type 1 Single Slope Concrete Barrier is allowed as per Volume 2 Attachments, Sections 11-5 and 11-6 respectively.

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

Refer to Volume 2.

11.2.4 Visual Quality

When lighting is required, Developer shall provide luminaries of equal height along the roadway.

11.2.5 Permanent Lighting

Developer shall design the lighting of the Project in accordance with Volume 3 Manuals (Technical Provisions), the DBF Documents, and at a minimum shall match the existing lighting illumination of the adjacent highway lanes. Developer shall also make all necessary enhancements or changes to the existing lighting system to maintain the existing illumination if diminished by the Project.

Developer shall install mechanical copper wire theft-deterrent devices in all Project electrical conduits supplying power to the Project. 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.

Developer shall prepare lighting studies that consider illumination levels, uniformity, and sources for the roadways, interchanges, and special areas including local roadway intersections, if impacted by the Project. Developer shall maintain an average horizontal luminance on the roadways that provides consistent illumination.

Developer shall submit nighttime and daytime illumination studies for each underpass detailing 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 third-party requests for lighting within the Project Site shall be subject to GDOT acceptance.

Developer shall provide an average-to-minimum uniformity ratio per AASHTO's *Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals*, the Illuminating Engineering Society of North America (IESNA) RP-8-14 *Roadway Lighting*, and

the *Roadway Lighting Design Guide* for general use lanes, collector-distributor (CD) lanes, auxiliary lanes, ramps, frontage roads, and ramp terminal intersections with cross streets.

Developer shall design the lighting system to minimize or eliminate illumination of areas outside the Existing ROW. Luminaires shall be, at a minimum, high-pressure sodium and be in accordance with GDOT's Qualified Products List (QPL). Neither mercury vapor nor metal halide is allowed. Other energy-efficient lighting technology will be considered by GDOT with acceptance, such as light-emitting diodes (LED) or induction luminaires.

Developer shall design and construct the lighting system in a manner that will reduce and/or discourage vandalism.

Luminaire poles and breakaway bases shall be designed in accordance with AASHTO's *Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals*. Developer shall install breakaway wiring connectors when using luminaire poles and breakaway bases. For all poles located within the clear zone of the roadways, Developer's design shall incorporate breakaway devices that are pre-qualified by GDOT. Appropriate safety measures shall be used if Developer does not use luminaire poles and breakaway bases. Luminaire poles and breakaway bases shall not be used when mounted on side barriers, median barriers, or bridge structures.

Developer shall place all understructure lighting in a configuration that minimizes the need for lane closures during maintenance.

Developer shall determine and design appropriate foundation types and lengths for permanent lighting structures. GDOT requires consistent footing designs and has a minimum footing size criteria as follows:

Height of Pole in feet	Diameter by depth of footing in feet
Less than or equal to 40 feet	2 feet by 6 feet
40 feet to 50 feet	3 feet by 7 feet
50 feet to 60 feet	3 feet by 9 feet
High Mast min - 100 feet or greater	4 feet by 20 feet
NOTE: Poles for barrier mounted lights have a minimum of 2 feet by 4 feet base	

Developer shall not place ITS cable, fiber-optic lines, signal conductors, or any other non-lighting-related cables or conductors in the lighting conduit, ground boxes, or junction boxes.

Top latch mechanisms shall be used on all high-mast lighting towers.

Developer shall minimize the potential hazards of lighting poles through the careful consideration of mounting options and pole placements, including the following:

- Placing mast arms on traffic signal poles;

- Placing pole bases on existing or proposed concrete traffic barrier;
- Placing poles behind existing or proposed concrete traffic barrier, guardrail or cable barrier; and/or
- Placing high mast lighting outside the clear zone, especially in roadway horizontal curves.

Developer shall ensure that lighting structures comply with Federal Aviation Administration (FAA) height restrictions within two (2) miles of airport facilities. In the event that proposed or existing luminaries, mast arms, or poles infringe into an airport's or heliport's base surface, Developer shall coordinate with the FAA and GDOT to permit or relocate such structures. If FAA restrictions prohibit lighting structures from being placed in certain areas near an airport Project, Developer shall find alternative ways of providing the required level of lighting.

Developer shall coordinate with the Utility Owner(s) and ensure power service is initiated and maintained for permanent lighting systems. Where the Work impacts existing lighting, Developer shall maintain the existing lighting as temporary lighting during construction and restore or replace in kind prior to Substantial Completion.

Developer shall place all bore pits safely away from traffic, provide positive barrier protection, and provide necessary signs to warn of the construction area.

Developer shall contact Utility Owners regarding their specific required working clearance requirements.

Developer shall ensure that roadway lighting is provided, as required, for the safety of vehicles and pedestrians as they approach local intersections.

Developer shall affix an identification decal on each luminaire, ground box, and electrical service for inventory purposes and shall submit inventory information to GDOT in a GDOT-compatible format. This identification shall denote that these are property of GDOT and shall provide a contact phone number and address in the event of Emergency.

11.2.6 Related Transportation Facilities

Developer shall design and construct all new roadway and bridges to accommodate the planned expansions or updates of Related Transportation Facilities as designated in the current transportation master plans found in Volume 2.

11.3 Deliverables

Developer shall provide the Submittals as required in Section 23 and in the DBF Documents.

12 DRAINAGE

12.1 General Requirements

Effective performance of the Drainage System is an integral part of the success of the Project. All stormwater runoff that flows through the Project, whether originating within or outside of the Project, must be accounted for in the design of the Drainage System. All existing and proposed riverine/tidal bridges, stormwater conveyances (open-channel and closed-conduit), inlets, and stormwater management such as detention/retention ponds are included as part of the Drainage System.

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

The Drainage System shall meet the following requirements:

- The analysis, design, and construction of all components of the Drainage System shall address the interim conditions during construction of the Project and the Final Design; and
- The System shall have adequate capacity to convey all stormwater through the Project without any adverse impacts to upstream and/or downstream adjacent properties.

12.2 Administrative Requirements

12.2.1 Data Collection

Developer shall collect all necessary data, including those components outlined in this Section 12.2.1, to establish a Drainage System that complies with the requirements and accommodates the historical hydrologic flows within the Project limits.

Developer shall collect all available data identifying stormwater runoff obligations, including;

- Water quality regulations as imposed by State and federal governments;
- National Wetland Inventory and any other wetland/protected waters inventories;
- Any local floodplain ordinances in effective Federal Emergency Management Agency (FEMA) floodplains;
- Any restrictions on discharging stormwater to environmentally sensitive areas, navigable waters, or coastal zones; and
- Official documents concerning the Project, such as the NEPA/GEPA document and any other drainage or environmental studies.

Developer shall determine any stormwater runoff issues that may include: areas with historically inadequate drainage (evidence of flooding or citizen complaints of flooding), maintenance problems associated with drainage, and areas known to contain Hazardous Materials. Developer shall identify watershed boundaries, protected waters, areas classified as wetlands, floodplains,

and boundaries between regulatory agencies (e.g., watershed districts and watershed management organizations).

Developer shall acquire all applicable municipal drainage plans, watershed management plans, coastal zone management plans, and records of citizen concerns. Developer shall acquire all pertinent existing storm drain plans, bridge hydraulic studies, and/or survey data, including data for all culverts, drainage systems, storm sewer systems, and bridge sites within the Construction Maintenance Limits. Developer shall also identify existing drainage areas and calculate the estimated runoff to the highway drainage system.

Developer shall obtain photogrammetric and/or geographic information system (GIS) data for the Project limits that depicts any impaired waters as listed by EPD. Developer shall conduct surveys for information not available from other sources.

If documentation is not available for certain components of the existing drainage system within the Construction Maintenance Limits and these components are scheduled to remain in place, Developer shall investigate and video record or photograph these components to determine condition, size, material, location, and other pertinent information.

The data collected shall be taken into account in the Final Design of the drainage facilities.

12.2.2 Coordination with Other Agencies

Developer shall coordinate all stormwater runoff issues with affected interested parties and regulatory agencies, including but not limited to EPD, USACE, and USFWS. Developer shall document any resolutions of stormwater runoff issues.

12.3 Design Requirements

Within the Construction Maintenance Limits, Developer shall upgrade all substandard drainage facilities where the design and construction of the Project propose to utilize or impact those facilities. A substandard drainage facility is any stormwater drainage system component where the existing structural condition per Section 13, Structures and/or hydraulic capacity per this Section 12, Drainage, is inadequate to carry additional stormwater generated by the Project. The design of the Drainage System shall include any necessary modifications to the existing drainage systems within the Construction Maintenance Limits and design of new storm drainage systems as required per the performance requirements, defined in this Section 12.

Damage to existing infrastructure due to Developer's operation shall be immediately repaired to maintain existing system capacity at all times. This permanent repair shall be at Developer's expense.

Developer shall provide facilities compatible with the existing drainage system and all applicable municipal drainage plans or systems in adjacent properties. Developer shall preserve existing drainage patterns wherever possible.

Developer may utilize the existing drainage facilities, provided overall drainage requirements for the Project are achieved. Modifications of existing systems or installations of new drainage systems to create in-line/buried/subsurface/underground detention or stormwater runoff storage shall not be allowed. The use of blind junctions and/or non-accessible structures shall not be allowed unless otherwise approved in writing by GDOT. Developer shall not install and/or utilize longitudinal storm sewer pipe under travel lanes unless otherwise approved in writing by GDOT. If no modification or upgrading of the existing GDOT stormwater system is required, Developer shall, at a minimum, maintain the existing system. This maintenance includes but is not limited to silt removal from any pipe, ditch, or structure, and removal of any debris prior to the use of any existing GDOT stormwater system. This maintenance shall be at Developer's expense.

Developer shall base its Final Design on design computations and risk assessments for all aspects of Project drainage.

Developer shall design channels and ditches such that erosion within and downstream of the channels and ditches is minimized. Developer shall design channels to provide freeboard from the roadway base for the channel design storm event per Table 4.3 - Design Storm Event Summary Table in the GDOT – Manual on Drainage Design for Highways (Drainage Manual). If this freeboard requirement is not achievable with a channel, Developer may design an open concrete-lined conveyance limiting ponding per Section 12.3.2.3, Gutter Spread/Ponding.

Developer shall coordinate with FEMA and/or the appropriate local community regarding any impacts to regulatory floodways and floodplains. In the event a Conditional Letter of Map Revision (CLOMR) is required, local community approval and the subsequent submission to FEMA shall occur as early in the Project timeline as possible. Developer shall allow up to one (1) year in the schedule for FEMA approval of any required CLOMR review.

Developer shall design the Project to follow FEMA regulations in FEMA-regulated floodplains. This design may include but is not limited to: bridge structures over streams, bridge or bottomless culverts over streams, increasing the tie slope, and/or utilizing retaining walls to reduce fill in the floodplain.

All areas of the Project shall comply with the Post-Construction Stormwater Design Guidelines contained in GDOT's *Manual on Drainage Design for Highways* (Drainage Manual).

Flood damage potential for the completed Project shall not exceed pre-Project conditions.

12.3.1 Surface Hydrology

12.3.1.1 Design Frequencies

Developer shall use the Design Discharge Criteria in the Drainage Manual and comply with Code of Federal Regulations (CFR) Part 650-Bridges, Structures, and Hydraulics.

If a design storm frequency is not specified for a given component of the temporary Drainage System, Developer shall use the design storm frequency for the corresponding Final Design facility.

12.3.1.2 Hydrologic Analysis

Developer shall design the drainage system to accommodate the Project drainage areas. These areas may extend outside of the Project limits.

Developer shall perform hydrologic analyses for the design of drainage features during the staging of construction and for the Final Design for the Project according to the Drainage Manual.

12.3.2 Storm Sewer Systems

Where precluded from handling runoff with open channels or ditches, Developer shall design enclosed storm sewer systems to collect and convey runoff to appropriate discharge points.

Developer shall prepare a storm sewer drainage report encompassing all storm sewer systems that contains, at a minimum, the following:

- Drainage area maps with each storm drain inlet and its pertinent data, such as delineated drainage area, topographic contours, runoff coefficients/design curve numbers, times of concentration, land uses, discharges, velocities, and headwater elevations;
- Detailed tabulation of all existing and proposed storm drains. This includes but may not be limited to: conveyance size and class or gauge; catch basin spacing/location; and detailed structure designs;
- Specifications for the pipe bedding material and structural pipe backfill on all proposed pipes and pipe material alternates; and
- Storm drain profiles, including: pipe size, length, type, height of fill, class/gauge, gradient and design hydraulic grade line (HGL); and numbered drainage structures with station offsets from the roadway alignment and elevations.

12.3.2.1 Pipes

Storm drains shall be designed with design flow velocities greater than or equal to three (3) feet per second (fps) or slopes greater than or equal to 0.0100 ft/ft to prevent sedimentation in the pipe. Storm drains shall be designed to prevent surcharging of the system at the flow rate for the design year event.

All storm drains shall be reinforced concrete unless accepted otherwise by GDOT prior to installation. Developer shall adhere to the approved Geotechnical Engineering Report and ensure appropriate materials are used pursuant to Section 8.

Minimum pipe inside diameter shall be eighteen (18) inches for all new installations. GDOT acceptance shall be required for all existing pipes proposed to remain or to be replaced with a diameter less than eighteen (18) inches.

Existing pipe systems not meeting GDOT's maximum structure spacing requirement that are not being impacted by the construction of the Project may remain. If an existing system is being impacted it shall be upgraded to meet the requirements of this Section 12.

Some existing culverts and storm drains were designed with a "step down" structural capacity. This step-down design for reduced structural capacity occurs in the dead load zone of the fill slopes. Where there is "step down," the section of culvert/storm drain within the dead load influence has less structural capacity than the section of culvert/storm drain within the live and dead load influences. For the Project, Developer shall design all stormwater conveyances to accommodate all live and dead loads from the existing and proposed roadway system.

12.3.2.2 *Municipal Separate Storm Sewer System*

Developer shall follow requirements in Section 10.2.2 MS4 Related Post-Construction Stormwater Requirements in the Drainage Manual for compliance with GDOT's General NPDES Stormwater Permit No. GAR041000 (MS4 Permit). Developer shall also be directly responsible for the following minimum control measures within the MS4 Permit, as directed by GDOT:

- Public involvement/participation;
- Illicit discharge detection and elimination per Attachment 12-3;
- Construction site stormwater runoff control; and
- Pollution prevention/good housekeeping for municipal operations per Attachment 12-1, Facilities Stormwater Pollution Prevention Plan.

Thirty (30) Days prior to the end of each reporting period, as required in the MS4 Permit, Developer shall provide to GDOT annual report data covering the portion of GDOT's MS4 within the Construction Maintenance Limits.

Developer shall submit to GDOT a signed and sealed Post-Construction Stormwater Report prepared per the GDOT Drainage Manual. GDOT will provide this report to EPD for compliance with the permit and EPD will have ninety (90) Days to review the Report.

Developer shall:

- Attend a GDOT/EPD-approved training program to educate contractors and employees conducting activities that may impact stormwater runoff;
- For existing conditions, provide GIS data of the existing storm sewer system and all ditches within the ROW prior to the start of any Construction Phase. This GIS data shall comply with GDOT's Supplemental Specification Section 156. See Attachment 12-2;
- Mark all proposed storm drain access covers within the Construction Maintenance Limits with a GDOT-approved medallion educating the public to the destination of the storm drain contents;
- Provide as-built GIS data of the entire storm drain system within the ROW;

- Clean the existing drainage system sufficiently enough to allow for the proper detailed inspection of the system within the Project limits and as required in Section 19 for any proposed stormwater systems;
- Inspect outfalls for illicit discharges according to GDOT's Illicit Discharge Detection and Elimination Plan while mapping the storm sewer system within the ROW. This inspection shall identify any dry weather flows and determine if these flows are from an illicit discharge. Documentation of the outfall inspections conducted each year shall be submitted to GDOT for inclusion in the annual report;
- Trace and eliminate any identified illicit discharges according to GDOT's Illicit Discharge Detection and Elimination Plan that are found to originate within the Project limits; and
- Report to GDOT all other identified illicit discharges.

12.3.2.3 Gutter Spread/Ponding

Developer shall design pavement drainage systems, in both staging of construction and the proposed project, to limit ponding to the widths listed below for the design storm frequency:

- For all interstate highways and all roads other than interstates with design speeds of greater than 45 miles per hour (mph), ponding shall be confined within the shoulder. In no event shall any ponding occur in an interstate travel lane;
- For all roads other than interstates with design speeds of 45 mph or less, ponding shall be confined to within one-half (1/2) of the lane adjacent to the gutter/shoulder and the gutter/shoulder; and
- For all bridge decks, ponding shall be limited according to Section 13.2.2, Design Spread and Frequency, in the Drainage Manual.

Note: Bicycle lanes are considered part of the shoulder.

Concentrated stormwater shall not be allowed/released to flow across any travel lane within the Project. The term “shallow-concentrated” shall be synonymous with “concentrated” with respect to flows across travel lanes. Only sheet flow shall be allowed to flow across travel lanes.

12.3.3 Hydraulic Structures (Culverts/Bridges)

Developer shall analyze existing and proposed culverts and bridges impacted, replaced, or created by the Project design, for any flooding problems.

For all culverts, Developer shall determine the allowable headwater depth (HW_d) for the design-year storm per the Drainage Manual and based on items such as potential damage or loss of use to adjacent property, the culvert, roadway, stream and/or floodplain, as well as traffic interruption or hazard to human life.

All hydraulic computations, designs, and recommendations shall be consistent with past studies and projects in the area performed by local, State, or federal agencies.

Where hydraulic design is influenced by upstream storage and/or tidal surges, the analysis of the storage and/or the tidal surges shall be considered in the design of the structure.

Bridge culverts shall have a minimum rise dimension of four (4) feet.

12.3.3.1 Method Used to Estimate Flows

Developer shall ensure that the selected hydrologic method is appropriate for the watershed conditions.

As appropriate, Developer shall utilize flow information within FEMA Flood Insurance Studies (FIS) and any subsequent Letters of Map Revision (LOMR).

For crossings not located within a FEMA FIS or on a gauged waterway, Developer shall utilize the required method for calculating the design flows according to the Drainage Manual.

12.3.3.2 Design Frequency

Culverts and storm drain systems shall be designed for the Design Storm Event according to the Design Discharge Criteria in the Drainage Manual. Bridges shall be designed for both the fifty- (50) and one hundred- (100) year frequencies.

12.3.3.3 Hydraulic Analysis

Developer shall evaluate bridge for contraction and pier scour concerns and shall design for scour protection in accordance with the Drainage Manual.

For bridge abutments in urban areas, Developer shall install protection in accordance with Section 15, Landscape and Hardscape Enhancements.

12.3.3.4 Riverine Bridge/ Bridge Culvert Design

For existing bridges, Developer shall analyze each structure with the proposed flows to ensure it provides the required freeboard per the Drainage Manual. If this requirement is not met, Developer shall design and construct a replacement structure with sufficient capacity to pass the Design Storm Event flows while providing the required freeboards.

For existing bridge culverts, Developer shall analyze each structure with the proposed flows to ensure the headwater does not exceed that of the allowable headwater per the Drainage Manual. If this requirement is not met, Developer shall design and construct a replacement structure with sufficient capacity to pass the proposed Design Storm Event with a resulting headwater depth of no greater than the HW_d .

Bridge/bridge culvert design shall maintain the existing channel morphology through the structure, if possible.

12.3.3.5 *Bridge Deck Drainage*

Runoff from bridge decks shall be carried off the bridge and into the adjoining roadway drainage system. The roadway drainage design shall include bridge approach drains to intercept gutter/shoulder flow at each end of the bridge. Stormwater flowing toward the bridge shall be intercepted upstream of the bridge.

Open deck drains are not permissible for bridges passing over environmentally sensitive areas, roadways, or railroads. In these situations, if ponding will exceed width limits, runoff shall be collected in inlets and conveyed in a closed deck drain system before discharging outside of these areas.

12.3.3.6 *Drainage Report for Hydraulic Structures*

Developer shall prepare a Hydraulic and Hydrologic (H&H) Study and any other required documentation for all existing and/or proposed river and tidal bridge sites, and for culverts that meet any of the conditions listed in Section 12.1 of the Drainage Manual and any Environmental Commitments identified in the NEPA/GEPA Approval. Additional documentation may include, but not be limited to, the preparation and submittal of any CLOMR or LOMR required for community and/or FEMA coordination. The H&H Study shall further include the detailed calculations with electronic and printed copies of the computer software input and output files, as well as a discussion about hydrologic and hydraulic analysis and reasons for the design recommendations. At a minimum, for each crossing the H&H Study shall include:

- Hydrology
 - Drainage area maps with watershed characteristics (hardcopy);
 - Hydrologic calculations – where computer software is used, include both hardcopy report and electronic input and output files on a disc; and
 - Historical or site data used to review computed flows.
- Hydraulics and Recommended Waterway Opening and/or Structure
 - Photographs of Site (pre- and post-construction);
 - General plan, profile, and elevation of recommended waterway opening and/or structure;
 - Calculations – include a hardcopy report of output, in addition to electronic input and output files for all computer models used for final analysis or for permit request(s), as well as a summary of the basis of the models;
 - Cross-sections of waterway – a hard copy plot, plus any electronic data used; and
 - Channel profiles.
- Scour Analysis
 - Channel cross-sections at bridge(s) showing predicted scour depths;
 - Calculations and summary of the calculations table, clearly showing predicted scour and assumptions regarding bridge opening and piers (dimensions, shape, etc.) used to calculate predicted scour;
 - Discussion of the potential for long-term degradation/aggradations and effects; and
 - Recommendation(s) for abutment protection (type, size, dimensions, etc.).

These H&H Studies shall constitute a section in the Drainage Design Report.

12.4 Construction Requirements

Developer shall design the Drainage System to accommodate construction staging. The design shall include temporary erosion control, sediment basins, and other BMPs needed to satisfy the NPDES and other regulatory requirements. All environmental approval commitments related to drainage design and erosion control shall be included as “notes” on the plans for each stage of construction.

Developer shall obtain GDOT acceptance during the Design-Build Period to utilize any existing stormwater system (any and all pipe, structure, ditch, detention/retention system, or any other component necessary for the conveyance of stormwater) outside of the Construction Maintenance Limits. Maintenance responsibility and costs shall be as follows during the Design-Build Period:

- Initial costs to reconstruct or upgrade the substandard drainage facility(ies) outside of the Construction Maintenance Limits shall be at the sole cost of Developer. Rehabilitation of substandard drainage facilities may be considered. The rehabilitation must meet the useful life as if the substandard drainage system structure was replaced as new.
- Any stormwater system accepted by GDOT and constructed for the sole purpose of the Project outside of the Construction Maintenance Limits shall be maintained by Developer at Developer’s sole expense until Final Acceptance.
- Developer, at Developer’s expense, shall be responsible for maintenance and restoration of the existing system to its original intended purpose for any accepted existing stormwater system whether used jointly by Developer and GDOT or for Developer’s sole use.
- Maintenance work includes but is not limited to silt removal of any pipe, ditch, or structure, and removal of debris prior to the use of any existing GDOT stormwater system.

12.5 Deliverables

Developer shall submit to GDOT for review and acceptance, a Drainage Design Report per the accepted Construction Phasing Plan, which shall be a complete documentation of all components of the Project’s drainage system. At a minimum, the report shall include:

- A set of all drainage computations, both hydrologic and hydraulic, with all support data;
- Hydraulic notes, models, and tabulations;
- Bridge and culvert designs and Hydraulic reports (each riverine bridge layout/design shall be submitted at the same time as their corresponding H&H Study);
- Pond designs, including a graphic display of treatment areas and maintenance guidelines for operation;
- A correspondence file;
- Drainage system data (location, type, material, size, and other pertinent information) in a suitable electronic format such as GIS;

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- A Post-Construction Stormwater Report with a Post-Construction BMP Infeasibility Report as applicable; and
 - Storm sewer drainage reports (if applicable) including Temporary and Final Drainage System layout with staged erosion control BMP location details.

13 STRUCTURES

13.1 General Requirements

The structural Elements of the Project shall be designed and constructed in conformance with the requirements of the DBF Documents in order to provide the general public a safe, reliable, and aesthetically-pleasing facility. These include, but are not limited to: bridges, culverts, drainage structures, signage supports, illumination assemblies, traffic signals, retaining walls, and sound barriers.

Developer shall prepare a detailed plan for such Elements constructed on the Project with recommended design and construction. The design of the Project shall be in accordance with Volume 3 Manuals (Technical Documents) and the requirements of the DBF Documents.

13.2 Design Requirements

13.2.1 Design Parameters

Developer shall ensure that bridges crossing over waterways are designed in accordance with Section 12 and other applicable sections of the DBF Documents.

Developer shall design and construct all new bridge structures to accommodate any planned expansions or updates of each facility by its respective Governmental Entity or GDOT as designated in their respective current transportation master plans. The current transportation master plans can be found in Section 11 of Volume 2. For the purposes of the Technical Provisions, "superstructure" is the portion of the bridge above and including the bearings and the "substructure" is the remaining portion of the bridge below the superstructure.

Unless otherwise noted, design and detailing for all structural elements to be constructed or rehabilitated, and incorporated within the Project (not including future replacement structures) shall be based on the Load Resistance Factor Design (LRFD) methodology using the GDOT *Bridge and Structures Design Manual* (GDOT Bridge Manual) as the primary reference. The AASHTO *LRFD Bridge Design Specifications*, 7th Edition with 2015 Interim Revisions (AASHTO LRFD Specifications) shall be used in conjunction with GDOT Bridge Manual. Where AASHTO LRFD Specifications and GDOT Bridge Manual requirements contradict or conflict with one another, the GDOT Bridge Manual requirements shall take precedence.

13.2.1.1 *Horizontal and Vertical Clearances*

New bridges constructed over the interstate shall provide a minimum vertical clearance of seventeen (17) feet (new box girder bridges shall be seventeen (17) feet, six (6) inches). Straddle bent substructure elements over the interstate shall provide a minimum vertical clearance of seventeen (17) feet, six (6) inches. New bridges constructed over other roads such as State, Rural Secondary, and Urban Routes, as defined by the *GDOT Design Policy Manual* shall provide a minimum vertical clearance of sixteen (16) feet, nine (9) inches. Temporary vertical clearances

shall be no more than six inches (6") below the proposed minimum vertical clearances, but no less than existing vertical clearances.

Unless otherwise specified, the vertical clearance under existing bridges being modified, rehabilitated, widened, and/or raised shall meet the requirements of Section 2.3.3.1 - Vertical Clearances, of the GDOT Bridge Manual.

Refer to Section 2.3.3.2 of the GDOT Bridge Manual for horizontal clearance requirements for bridge piers.

13.2.1.2 Bridge Design Live Loads and Load Ratings

Unless otherwise noted, all new or widened bridges must be designed to carry an HL-93 vehicle live load plus the effect of the dynamic impact allowance. Developer is responsible to ensure that the Final Plans of each bridge meet the load rating requirements for the design vehicle, as well as all state legal live loads. GDOT will perform a load rating as part of the final review for each bridge design. Load ratings will be performed according to the GDOT policy and practices.

13.2.1.3 Seismic Design

Bridges shall be designed in accordance with the seismic design guidelines in the GDOT Bridge Manual as well as the AASHTO LRFD Specifications.

13.2.1.4 Fatigue Design

Fatigue design shall be in accordance the GDOT Bridge Manual as well as the AASHTO LRFD Specifications.

13.2.2 Bridge Decks and Superstructures

Developer shall design and detail bridge decks in accordance with Section 3.2 of the GDOT Bridge Manual.

Timber bridges, masonry bridges, unpainted weathering steel, and structural plate arches will not be permitted. Bridges shall not use intermediate hinges.

The use of epoxy anchors in direct tension and overhead applications is prohibited.

Developer shall minimize the number of deck joints wherever possible. Developer shall locate joints to provide for maintenance accessibility and future replacement.

Longitudinal expansion joints shall not be placed in the travel lane.

To the extent possible, Developer shall make bridge superstructures, joints, and bearings accessible for long-term inspection and maintenance. Developer shall make open-framed superstructures accessible with walkways or by use of ladders or an under-bridge inspection truck.

Developer shall provide concrete diaphragms for pre-stressed concrete beams spanning forty (40) feet or more.

Galvanized steel diaphragms are allowed on pre-stressed concrete beam bridges, with the following limitations:

- Only structures with substantial clearance (20 feet or greater) over roadways or over waterways are acceptable locations for galvanized steel diaphragms;
- Concrete diaphragms shall be used over roadways where the beams may be impacted by over-height loads;
- Bolts shall not be exposed on the exterior face of concrete beams; and
- Only steel X-type cross frames shall be used.

The maximum weight of beam that may be transported on state routes is limited. Shipping weights larger than 150,000 pounds, including the truck, shall be submitted to GDOT to determine if a special hauling route is necessary for delivery.

Bolted field splices are allowed for use on steel girders providing the following requirements are met:

- Bolts shall be placed in double shear;
- Splice plates and bolts shall not encroach on the slab design thickness; and
- Direct Tension Indicators (DTIs) shall not be used.

Cover plates are prohibited for use on new steel beams. When widening existing bridges “in kind” that have cover plated members, Developer shall use a larger member size that will not require plates. For strengthening and rehabilitation work of existing steel beams, Developer shall determine if there are other methods available to provide the required capacity before submitting to GDOT for acceptance. If accepted, cover plates shall be checked for fatigue.

Fracture critical members (FCMs) shall not be used for bridges. Steel box girder straddle bent caps are considered to be FCMs due to their non-redundant properties and will not be permitted on the Project. Post-tensioned concrete straddle bent caps are not considered FCMs, as the post-tensioning strands provide internal redundancy. Bridges designed using rolled steel beams, steel plate girders, pre-stressed concrete I-beams, and pre-stressed concrete bulb-tee beams as the main members of the bridge superstructure shall be designed and constructed using a minimum of four (4) beams in the bridge typical section. Joints for all grade separation structures shall be sealed.

Box girder superstructures and substructures shall be accessible without impacting traffic below. Developer shall make box girders and box beam pier caps with a minimum inside depth of six (6) feet to facilitate interior inspection. Developer shall include a minimum access opening of three feet (3'-0") in diameter into all cells, and between cells, of the girders or pier caps to allow free flow of air during inspections. The outside access opening cover shall hinge to the inside of the box girder and pier caps. An electrical system (110V and 220V) shall be incorporated inside

the box girder and pier caps with lighting and power outlets. Developer shall install air-tight sealed and locked entryways on all hatches and points of access.

Developer shall ensure the bridge deck will drain with a gutter spread of no more than the Design Spread according to the Drainage Manual. Deck drainage may utilize four- (4) inch diameter open deck drains or three- (3) inch by six- (6) inch deck drains through the barriers. This open deck drainage may not be located within five (5) feet of the back face paving rest (BFPR) or bent centerline, over riprapped endrolls, railroads, Environmental Sensitive Areas, or traffic lanes. A closed drainage system may be required if the above conditions cannot be met. The closed drainage system shall be designed using the results of the bridge deck hydraulics study to size and space the required inlets on the bridge. Refer to Section 3.15.4 of the GDOT Bridge Manual for specific requirements of a bridge deck drainage system.

13.2.3 Bridge/ Retaining Wall Foundations

The foundation design shall be based on the recommendations of the accepted Bridge or Wall Foundation Investigation Report and the requirements of Section 8 of Volumes 2 and 3. Developer shall perform LRFD bridge and wall foundation investigations for all proposed walls and bridges to be constructed on this Project. Except as provided in Section 8 of Volume 2, any previously accepted reports provided by GDOT are for informational purposes only, and GDOT does not certify or warranty the information contained in these reports.

For bridges crossing streams or any other body of water:

- All foundations shall be evaluated and designed to account for the effects of scour;
- The design shall include the recommendations from the hydraulics and hydrological report to ensure that footings, piles and caissons/drilled shafts have the proper embedment below the scour line; and
- Protection of slopes with rip rap shall be in accordance with the recommendations of the hydraulics report.

Foundations shall be designed based on LRFD methodology in accordance with the GDOT Bridge Manual and AASHTO LRFD Specifications.

13.2.4 Bridge Railing and Barriers

All barrier systems used on the Project shall meet LRFD design, crash test, and other safety requirements as determined by GDOT. All testing and associated costs for non-standard railings shall be the sole responsibility of Developer and shall be accomplished through a third-party contractor acceptable to GDOT.

13.2.5 Retaining Walls

Developer shall design and construct all retaining walls to meet the requirements of the *GDOT Bridge and Structures Design Manual*, *GDOT Standard Specifications* and GDOT Special Provisions.

To the extent possible, Developer shall design and construct to provide embankments without the use of retaining walls. Where earthen embankments are not feasible, Developer may use retaining walls.

Metal walls, including bin walls and sheet pile walls, recycled material walls, and timber walls shall not be permitted. Steel sheet pile walls may be used for temporary construction.

Alternate wall types, including cast-in-place walls, are permissible. Soil-nail walls are permitted, but the wall soil mass critical failure plane shall be located outside of the limits of influence of adjacent roadways, parking lots, and permanent structures. Modular walls employing interlocking blocks shall be limited to a 20-foot maximum exposed height and shall not be used in areas where surcharge loads from vehicular traffic are present or as part of bridge abutments.

If pipe culverts are to extend through the retaining walls, the pipe shall be installed so that no wall expansion joints are located within two (2) pipe diameters from the centerline of the pipe or under the wall.

No weep holes through the face of retaining walls shall be permitted, except at the base of the walls. Mechanically Stabilized Earth (MSE) walls shall not be used to support spread footing abutment foundations on the Project.

13.2.6 Aesthetics

Developer shall design retaining/structural walls to be similar in color, texture, and style that are consistent with other Elements present in the entire Project such as structures, landscaping, and other highway components.

All embellishments for structural Elements shall be coordinated with Developer's structural design team to facilitate constructability and maintain safety requirements. Structural element surfaces exposed to public view shall meet the requirements of the *GDOT Standard Specifications* and any Supplemental Specifications.

No exposed conduits shall be allowed on bents, columns, bridge beams, overhangs, or any other visible surface. Developer is to minimize drain pipe exposure to public view.

All bridge substructure columns shall be consistent in form and texture, with similar shapes and details used for all bridges.

Bridges with all or part of the structure visible to traffic either passing beneath the bridge or travelling in lanes adjacent to the bridge, shall use constant depth of fascia beams along the entire length of the bridge to maintain a uniform appearance. An exception to this requirement is at locations where the fascia beam material changes from steel to concrete or vice versa. In this case, cheek walls may be used at piers to mask transitions where superstructure depth change is required due to the change in material type.

Bridges that are not visible to traffic either passing beneath the bridge or traveling in lanes located adjacent to the elevated portions of the bridge are not required to have all fascia beams constant throughout the bridge length.

13.2.7 Sound Barriers

Sound Barriers mounted to bridge barriers shall be designed to resist all loading that it will be subjected to including wind and ice loading. The bridge deck overhang on new and existing decks shall have adequate capacity to accommodate these loads.

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

The maximum elevation of sound barriers attached to MSE retaining walls is eighteen (18) feet above the coping. Sound barriers exceeding these limitations require special design and details for free-standing barriers and are subject to the approval of GDOT. Foundations for free-standing barriers shall be coordinated with sub-surface structures such as pipes and culverts, and foundation spacings shall be detailed to avoid conflict.

Weight of material for sound barrier panels installed on bridges shall be designed to be a maximum limit of seven (7) pounds per-square-foot of face of wall, and shall meet the sound and aesthetic requirements for the Project.

Refer to Section 22 for additional Sound Barrier design and construction requirements.

13.2.8 Drainage Structures/Culverts

In developing the design of the drainage system per Section 12, unless otherwise specified, Developer shall account for maximum anticipated loadings. “Step down” design shall not be utilized for any part of the proposed drainage system unless otherwise approved in writing by GDOT.

13.2.9 Sign, Illumination, and Traffic Signal Supports

Developer shall be responsible for the design of overhead sign supports to accommodate a full load of signs for the Project. Developer shall use sign bridge (Type I) or butterfly (Type III) in accordance with GDOT’s related standard specifications, policies, guidelines, and Volume 3 Manuals. Type II and Type V sign (cantilever type) structures are not permitted.

Support columns for Type I and III overhead sign bridges shall not be mounted to any portion of the new or existing bridge superstructure. Where an overhead sign structure is required to be placed on a bridge, it shall be mounted either on the bridge substructure directly, such as the concrete pier cap, or on a pier and foundation separate from the bridge entirely. For a sign structure that is mounted to the pier cap, the bridge pier must be designed for the additional loads and forces the sign structure will induce on the bridge substructure, including but not limited to: dead load, ice load, wind load, and vibration. All sign structure loads shall be developed in

accordance with the AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals* 5th edition with 2010 and 2011 interims.

See Section 16.3.8 for additional information regarding the design and construction of traffic signal support structures.

13.2.10 Widening, Modification or Rehabilitation of Existing Structures

Structures to be widened, modified, or rehabilitated are listed in Section 13.2.10 of Volume 2. Developer shall rehabilitate/strengthen/replace the existing structure as specified in Volume 2 or as recommended by the most recent bridge condition and bridge deck condition surveys. Developer shall analyze the existing structural elements adjacent to the widening to ensure adequate capacity and shall strengthen or upgrade the existing structure as required by the analysis. Examples include strengthening of an existing fascia beam or improving the strength of a pier cap to meet the increased load capacity requirements due to the new load distribution on those elements. Any portion of the existing bridges damaged as a result of the widening, modification, or rehabilitation operations shall be replaced or repaired at Developer's cost, as determined by GDOT. Developer shall provide any studies, calculations, and plans that are required for GDOT review and acceptance prior to any bridge widening or modification.

The use of epoxy anchors for structural connections is prohibited.

13.2.11 New Bridges Required in Lieu of Culvert Extensions

Refer to Volume 2.

13.2.12 Use of GDOT Standard and Details

Developer may use GDOT Construction Standards and Details on the Project without updating to meet LRFD requirements. If Developer chooses to modify any of the standards and details, the design shall be updated to meet LRFD requirements.

13.3 Construction Requirements

13.3.1 Concrete Finishes

Concrete finishes shall comply with the performance requirements as stated in Section 15 or as otherwise specified in the DBF Documents.

13.3.2 Structure Metals

Welding shall be in accordance with the requirements of the American National Standards Institute's (ANSI) *AASHTO/American Welders Association (AWS) D1.5M/D1.5:2010 Bridge Welding Code* and any interim editions.

13.4 Final Bridge Inspection Prior to Service Commencement

GDOT shall inspect all bridges constructed prior to service commencement. GDOT will perform the initial bridge ratings as part of the Work. Bridges cannot be opened to traffic until they have been accepted by GDOT.

Developer shall provide to GDOT an overall schedule of completion for each structure in accordance with the Construction Phasing Plan and shall coordinate an inspection schedule with GDOT that will meet the service commencement date.

13.5 Deliverables

13.5.1 Preliminary Bridge Plan Layouts

Developer shall prepare Preliminary Bridge Plan Layouts in accordance with the *GDOT Bridge Detailing Policy Manual*.

Additionally, Developer shall provide a typical section drawing which indicates the following information:

- The center-to-center spacing of girders;
- Overhang or distance from the outside edge of slab to center of exterior girder: This distance (overhang) shall meet AASHTO requirements but shall not exceed between four feet, seven and a half inches (4'-7.5") or one half (1/2) of the adjacent beam spacing, whichever is less. Overhangs shall be a minimum width of one-half (1/2) of the top beam flange plus six (6) inches;
- Cross slope of the deck;
- Deck thickness between girders and deck thickness at the centerline of girder measured from the top surface of deck to top of the flange;
- Barrier location, height, and width;
- Gutter to gutter and out-to-out dimensions;
- Location of the profile grade; and
- Any drawing and/or narrative description of the construction scheme necessary to indicate how the bridge is to be built, including traffic handling sketches and temporary barrier locations.

13.5.2 Preliminary Wall Plans

Developer shall prepare Preliminary Wall Plans in accordance with the *GDOT Bridge Detailing Policy Manual*.

Any construction sequence requirements that will affect the construction of the walls shall be accounted for in the preparation of retaining wall plans.

13.5.3 Bridge and Wall Construction Plans

After the preliminary bridge and wall layouts have been accepted by GDOT, Developer shall prepare final plans.

Developer shall provide Submittals as required in Section 23.

14 RESERVED

15 LANDSCAPE AND HARDSCAPE ENHANCEMENTS

15.1 General Requirements

Aesthetic treatments play a significant role in the Project. This Section 15 defines the minimum requirements with which Developer shall design and construct aesthetic treatment enhancements for the roadway and landscaping Elements of the Project. Aesthetic treatments shall be designed to harmonize with the indigenous landscape and architecture.

15.2 Administrative Requirements

The intent of this Section 15 is to provide guidelines on enhancement value for both the users and the onlookers of the corridor and to provide a roadway corridor with continuity and attractiveness through the use of comprehensive aesthetic treatments. This Section 15 presents minimum landscape and hardscape design requirements for the Project.

15.2.1 Reserved

15.2.2 Landscape and Hardscape Enhancement Plans

Developer shall submit a Landscape Enhancement Plan and a Hardscape Enhancement Plan for approval by GDOT within ninety (90) Days from NTP1.

The Landscape Enhancement Plan shall provide guidelines and requirements for the landscape design of the Project. The Landscape Enhancement Plan shall include all elements to fully communicate the proposed design to GDOT. GDOT approval of the Landscape Enhancement Plan is required prior to construction of any affected Elements. The Landscape Enhancement Plan for the Project shall include at a minimum the following:

- A plan that indicates plant palettes, locations of plants, plant types, and planting dates;
- A maintenance program; and
- Composite drawings of all utilities and easements that would interfere with landscaping, markers, or any other identified enhancements.

The Hardscape Enhancement Plan of the Project shall include at a minimum the following:

- A master plan that will convey the layout of the various roadway features included by Developer, e.g., where the depressed sections, elevated sections, and at-grade roadways are located; as well as where there are bridges, retaining walls, sound barriers, sign structures, and other structure components;
- Drawings showing where site-specific elements are located, e.g., fences, signage, potential locations of community improvement opportunity areas, gateway markers, control buildings, bridge enhancements, landscaping, etc.; and
- Color schemes and their locations.

The completed Hardscape Enhancement Plan shall provide guidelines and requirements for engineering and development of the highway corridor aesthetics. The guidelines shall serve as the primary standard guidance necessary to produce the intended aesthetic form, function, and appearance of this and potential future projects.

15.2.3 Personnel

Developer shall provide a landscape architect, registered in the State of Georgia, with a minimum of three (3) years' experience in designing landscape enhancement Elements for roadway projects of similar scope and size, to develop the Landscape and Hardscape Enhancement Plans.

15.3 Design Requirements

15.3.1 Landscape and Hardscape Enhancement Principles and Strategies

Developer shall follow the guidelines and requirements of the approved Landscape Enhancement Plan, as well as the aesthetics principles, requirements, and strategies established in the Hardscape Enhancement Plan as approved by GDOT for the Project, including the following:

- The Project shall minimize impacts on the existing natural environment to the extent possible;
- The Project shall be complimentary to the indigenous landscape to the fullest extent possible;
- Simple geometric shapes for structures shall be used to the extent possible for continuity along the entire length of the Project;
- All structures shall be carefully detailed to achieve the greatest level of quality and fit within the regional context;
- Color, texture, and form shall be used consistently for all structures;
- Where color is used for concrete features, Developer shall use colored mix concrete or staining application with prior approval by GDOT. No painted concrete features will be allowed;
- Graphics, signage, and lighting shall be consistent along the entire length of the Project;
- Unmanaged woods, existing trees, and rock outcroppings shall be preserved to the greatest extent possible;
- Embellishment Elements shall be fully integrated with the overall landscape design;
- Landscape Enhancement Plans shall conform to GDOT's specifications, policies, and procedures;
- Visual quality of the landscape shall be consistent along the entire length of the Project;
- Embellishment Elements shall be easy to maintain and provide protection from vandalism and graffiti; and
- Aesthetics shall not interfere with safety, constructability, and maintenance.

15.3.2 Walls

Developer shall design sound barriers and retaining/structural walls to be similar in color, texture, and style that are consistent with other Elements present in the entire Project such as structures, landscaping, and other highway components.

Developer shall apply aesthetic treatments to the vertical surfaces of retaining and sound barrier walls where the surface is visible from the roadway or adjacent houses. Consistent treatments shall be used for retaining and sound barrier walls that articulate the design themes established for the Project.

Developer shall pay special attention to themed design embellishments and utilize high-quality finishes and materials at interchanges.

15.3.3 Bridges and Other Structures

All embellishments for structural Elements shall be coordinated with Developer's structural design team to facilitate constructability and maintain safety requirements. Structural element surfaces exposed to public view shall meet the requirements of the *GDOT Standard Specifications*.

No exposed conduits shall be allowed on bents, columns, bridge beams, overhangs, or any other visible surface. Developer is to minimize drain pipe exposure to public view.

All bridge substructure columns shall be consistent in form and texture, with similar shapes and details used for all bridges.

Bridges with all or part of the structure visible to traffic, either passing beneath the bridge or travelling in lanes adjacent to the bridge, shall use constant depth of fascia beams along the entire length of the bridge to maintain a uniform appearance. An exception to this requirement is at locations where the fascia beam material changes from steel to concrete or vice versa. In this case, cheek walls may be used at piers to mask transitions where superstructure depth change is required due to the change in material type.

Bridges that are not visible to traffic either passing beneath the bridge or travelling in lanes located adjacent to the elevated portions of the bridge are not required to have all fascia beams constant throughout the bridge length.

15.3.4 Trees, Shrubs, and Other Plant Materials

Tree, shrubs, and other plant materials shall comply with applicable requirements in *GDOT's Specifications 700 (Grassing), 702 (Vine, Shrub and Tree Planting); and GDOT's Policies and Procedure 6755-9 (Landscaping on GDOT ROW)*.

15.3.5 Lighting

Developer shall design the lighting with the following embellishment criteria:

- One pole type for the entire Project; and
- Developer shall provide a lighting layout plan that addresses each light fixture (i.e., roadside lighting, high mast lighting, wall pack, etc.) and type of luminaire (i.e., LED lighting, HPS, Induction, Metal halide, etc.).

15.3.6 Control Buildings

If control buildings are built, Developer shall provide a minimum of three design concepts for review and approval for all building structures in the Hardscape Enhancement Plan. The control facilities, vent stacks, power centers, or any other structure that requires the seal of a registered architect, shall require the preparation of concept plans and materials samples.

15.3.7 Intersection Hardscape

When designing and constructing hardscape elements at intersections, at a minimum, Developer shall use colored textured concrete in all raised medians. Monolithic concrete medians will not be accepted. Stamped concrete may be used only where local communities agree to maintain them, and it meets the requirements in GDOT specifications, policies, procedures, and Volume 3 Manuals (Technical Documents).

15.3.8 Miscellaneous Concrete Paving

Concrete paving (4") shall be used in hard-to-reach mowing areas or under structures (such as, but not limited to areas near, next to, or between guard fence posts, sign posts, and bent columns; and/or next to retaining walls, freeway ramp gores, paved ditches, flumes, ditch inlets, etc.) to improve roadway appearance.

15.4 Construction Requirements

Prior to start of production of any embellishment Element, Developer shall provide GDOT samples, mock ups, or catalog cuts for review and approval.

Developer shall provide GDOT sample panels of textured concrete surfaces a minimum of sixty (60) Days in advance of starting construction.

15.5 Deliverables

Developer shall provide Submittals as required in Section 23.

16 SIGNING, PAVEMENT MARKING, SIGNALIZATION

16.1 General Requirements

This Section 16 includes requirements with which Developer shall design and construct all signing, delineation, pavement markings, and signalization for the Project. Developer shall design the Project in conformance with GDOT policies, guidelines, and Volume 3 Manuals (Technical Documents).

16.2 Administrative Requirements

16.2.1 Meetings

Developer shall arrange and coordinate all meetings with local agencies that will assume responsibility for maintaining and operating traffic control devices including, but not limited to, traffic signals. Developer shall provide GDOT with notification of such meetings a minimum of ten (10) business days prior to the start of the meeting. GDOT, at its discretion, may attend such meetings.

Developer shall arrange and coordinate all meetings with requesting agencies or individuals regarding special signs.

16.3 Design Requirements

16.3.1 Final Plans

Developer shall submit the Preliminary and Final Plans for the signing, delineation, pavement marking, and signalization for GDOT review and acceptance. In the event that additional property is needed to place any required signs, Developer shall acquire the additional property as Developer Proposed/Developer Acquired ROW. Any Developer Proposed/Developer Acquired ROW acquisitions not provided in the approved environmental document must be approved by GDOT, and if required by FHWA, through a NEPA reevaluation.

16.3.2 Permanent Signing and Delineation

Developer shall design and install all signs as shown on the Final Plans. This includes installing all new signs required for the Project as well as replace existing signs and structures that are impacted by the Project. Developer's design shall include the locations of proposed ground-mounted and overhead signs as well as existing signs that are to remain, graphic representation of all signs, proposed pavement markings, delineation placement, guide sign and special sign details, clearance diagrams, and structural and foundation requirements. Signs shall be located in a manner that avoids conflicts with other signs, vegetation, Changeable Message Signs (CMS), lighting, and structures. Developer shall ensure that signs are clearly visible, provide clear direction and information for users, and comply with all applicable MUTCD requirements. Developer shall ensure that placement, construction, and installation activities of signage shall avoid impacts to waters of the U.S.

Developer shall ensure that all sign placements meet or exceed appropriate sight line requirements and standards. All sign structures and overhead signs shall be designed and located to ensure that they and any existing GDOT overhead signs have a minimum sight distance of 1000 feet and shall meet any other allowable sign spacing requirements of MUTCD or *GDOT Signing and Marking Design Guidelines*.

Developer shall submit to GDOT all requests for new signs, including traffic generators, or modifications of existing sign legends. Such requests are subject to GDOT's acceptance.

Any existing signs and sign structures impacted by the Project or in conflict with proposed signs shall be replaced with new signs and structures that comply with the MUTCD; GDOT's related standard specifications, policies, guidelines; and Volume 3 Manuals Technical Documents, or as otherwise approved by GDOT.

All overhead signs on a single structure shall be the same height with the exception of general information or regulatory signs, such as for a Rest Area or an R554-X.

Arrow-per-lane guide signs shall be required for all multi-lane exits at major interchanges that have an optional exit lane that also carries the through route, and for all splits that include an option lane.

Sign attachments to any existing roadway bridge shall not be permitted. Support columns for Type I or Type III overhead sign supports shall not be mounted to any portion of the new or existing bridge superstructure. When an overhead sign structure is required to be placed on a bridge, it shall be mounted either on the bridge substructure directly, such as the concrete pier cap, or on a pier and foundation separate from the bridge entirely. For a sign structure that is mounted to the pier cap, the bridge pier must be designed for the additional loads and forces the sign structure will induce on the bridge substructure, including but not limited to: dead load, ice load, wind load, and vibration. Loads shall be developed in accordance with AASHTO Load and Resistance Factor Design (LRFD) *Standard Specifications for Highway Bridges, 17th Edition* and the AASHTO *Standard Specification for Structural Supports for Highway Signs, Luminaires and Traffic Signals*. For a sign structure mounted to a foundation that is independent from a bridge, the design of the sign foundation shall be in accordance with the AASHTO *Standard Specification for Structural Supports for Highway Signs, Luminaires and Traffic Signals*.

Supplemental signs on interstates shall comply with MUTCD. Guidance on destinations is provided in GDOT's Policies and Procedures 6775-9.

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

For signs located outside the Existing ROW, State Proposed ROW, and Developer Proposed/Developer Acquired ROW but within a public ROW, Developer shall install the signs in existing ROW controlled by local or other Governmental Entities. Developer shall coordinate with applicable Governmental Entities for the design and installation of such signs. This shall include any trailblazing signing required for the Project.

16.3.4 Reserved

16.3.5 Specific Service Signs

In addition to the warning, regulatory, and guide signs within the Project, GDOT or Governmental Entities may allow specific service signs, such as logo signs, to be installed. Developer shall coordinate and cooperate with GDOT or any third party performing such work. Developer shall remove and remount any logo sign that conflicts with a proposed sign installation and shall provide proper sign spacing in accordance with *GDOT Signing and Marking Design Guidelines* and the MUTCD.

Developer will need to coordinate with Georgia Logos, LLC [phone: (770) 447-6399] per *GDOT Signing and Marking Design Guidelines*. Cost for removing, resetting, and maintaining logo signs as necessary shall be included in the overall price bid. Any logo signs damaged during construction shall be replaced by Developer at no additional cost.

16.3.6 Sign Support Structures

Developer shall determine foundation types and shall design sign foundations based on geotechnical surveys/tests. Sign support structures shall be designed in accordance with *GDOT Signing and Marking Design Guidelines*, standard specifications, and AASHTO's *Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals*. Developer design of the structural support for overhead signs shall be provided to GDOT and must provide for the maximum allowable sign area that can be placed onto the structure support as defined in *GDOT Signing and Marking Design Guidelines*. Type III structures shall be designed to accommodate at least five hundred and fifty (550) square feet of sign area.

A GDOT structural support number shall be placed on the outside vertical support of the structure. Requirements for the alphanumeric code are specified in the *GDOT Signing and Marking Design Guidelines*. Developer shall use sign bridge (Type I) or butterfly (Type III) in accordance with GDOT's related standard specifications, policies, guidelines, and Volume 3 Manuals. Designs for sign supports shall also comply with requirements in Sections 13, Structures. Type II and Type V cantilever signs shall not be used for sign installations.

16.3.7 Permanent Pavement Marking

Developer shall ensure that the design and installation of all pavement markings including Raised Pavement Markings (RPM) comply with the MUTCD, *GDOT Signing and Marking Design Guidelines*, GDOT standards and details, and GDOT specifications. Developer shall ensure the use of contrasting black border around pavement markings on bridges and all other concrete surfaces. RPM's shall be installed where new pavement marking is provided.

16.3.8 Permanent Signalization

16.3.8.1 Traffic Signal Requirements

Developer shall design and install fully-actuated permanent traffic signals at all GDOT-permitted intersections within the Project limits. In addition, Developer shall modify, as appropriate, any existing traffic signals impacted by the Project. Developer shall coordinate with GDOT and the applicable local Governmental Entities to define appropriate traffic signal design requirements, local agency oversight of Developer's Work, and final acceptance of traffic signals. Developer shall coordinate with local Governmental Entities for synchronization of traffic signal networks.

Developer shall provide interconnection systems between new or modified signals and any other signal system within the Project limits as required by GDOT or the applicable local Governmental Entity. Connection of the completed intersection to the Governmental Entity's communications network shall be coordinated with the Governmental Entity. Developer shall ensure continuous communication with the traffic signal system within the Project limits, and shall provide all communication hardware/equipment for GDOT or the applicable local Governmental Entity to communicate with the signal systems within the Project limits.

Developer shall provide both pedestrian and vehicle detectors at all traffic signals per GDOT or applicable local Governmental Entity's (maintaining agency) requirements within the Project limits.

Developer shall coordinate with the Traffic Management Center (TMC) and the District Traffic Operations to ensure that all signalized locations are permitted prior to submission of Final Plans.

16.3.8.2 Traffic Signal Timing Plans

Developer shall coordinate and implement signal timing plans that optimize traffic flows and provide signal coordination with adjacent intersections and arterials for all existing and new traffic signals, modified signals, and interconnected signals. Developer shall obtain acceptance with GDOT or the applicable local Governmental Entity for the initial signal timings and updating signal timings as necessary to maintain optimized flow.

16.3.8.3 Traffic Signal Permit

As part of the design process, Developer shall be responsible for obtaining necessary traffic signal permit or permit revisions by following GDOT's and/or the local Governmental Entities' signal permit process, as applicable, prior to any new signal installation or existing signal modification.

16.3.8.4 Traffic Signal Support Structures

Developer shall coordinate with GDOT and the local Governmental Entities to determine the type of traffic signal support structures. Developer shall obtain the maintaining Governmental Entities' acceptance of traffic signal support structures to be used on new signal installations.

16.4 Construction Requirements

16.4.1 Permanent Signing and Delineation

Developer shall use established industry and Utility safety practices when erecting or removing signs located near any overhead or underground utilities and shall consult with the appropriate Utility Owner(s) prior to beginning such work.

Developer shall maintain all applicable advance guide signs and/or exit direction signs in place at all times and shall not obstruct the view of the signs to the motorist. Developer shall replace any other removed signs before the end of the work day.

Signing reflectivity shall conform to the MUTCD and *GDOT Signing and Marking Design Guidelines*.

16.4.2 Permanent Pavement Marking

Developer shall install required full-pattern pavement markings on all pavement courses before any roadway is opened to traffic in conformance with the MUTCD, *GDOT Signing and Marking Design Guidelines*, and GDOT's standards, details and specifications. RPM's shall be placed and/or maintained when the roadway is open to traffic.

16.4.3 Permanent Signalization

Developer shall coordinate with the Utility Owner(s) and ensure necessary power service is initiated and maintained for permanent signal systems.

16.5 Deliverables

All deliverables shall be presented to GDOT in both hardcopy and electronic form compatible with GDOT software as required by the Volume 3 Manuals (Technical Documents) and the DBF Documents.

16.5.1 Permanent Signing and Delineation

Before placing any permanent signs, delineation, third-party signs, or non-standard sign structures, Developer shall provide GDOT with a layout indicating the proposed location of such items. Overhead sign structures will be reviewed and accepted by the GDOT Bridge Department.

16.5.2 Permanent Pavement Marking

Before placing any permanent pavement markings, Developer shall provide GDOT, for review and acceptance, a layout indicating the proposed location of such items.

16.5.3 Permanent Signalization

Developer shall, after implementing accepted timing plans, provide GDOT and Governmental Entities (maintaining agencies) responsible for operation and maintenance of the traffic signal system with legible written documentation of all intersection characteristics, timing plan parameters, and installation information necessary for GDOT or the Governmental Entity to incorporate the completed signal installation into the central intersection management software being used.

17 INTELLIGENT TRANSPORTATION SYSTEMS

Refer to Volume 2 for all Intelligent Transportation Systems requirements.

18 TRAFFIC CONTROL

18.1 General Requirements

Developer shall design and construct the Project, in conformance with the requirements stated in this Section 18, to provide for the safe and efficient movement of people, goods, and services through and around the Project while minimizing negative impacts to Users, residents, and businesses.

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

18.2 Administrative Requirements

18.2.1 Transportation Management Plan

Developer shall prepare and implement a Transportation Management Plan (TMP) that meets the requirements of TOPPS 5240-1, GDOT - Work Zone Safety and Mobility Policy. The TMP shall include, but is not limited to, the following:

- Descriptions of the qualifications and duties of the traffic engineering manager, traffic control coordinator, and other personnel with traffic control responsibilities;
- Procedures to identify and incorporate the needs of transit operators, Utility Owners, Governmental Entities, local governmental agencies, Emergency Service providers, school districts, business owners, and other related Users, Customer Groups, or entities in the Project corridor and surrounding affected areas;
- Procedures for obtaining acceptance of detours, road and lane closures, and other traffic pattern modifications from applicable Governmental Entities, and implementing and maintaining those modifications;
- Procedures for signing and marking transitions during construction from one stage to the next, and from interim to permanent signing and marking;
- Procedures for maintenance and replacement of traffic control devices, including pavement markings and traffic barriers, if used;
- Procedures to regularly evaluate and modify, if necessary, traffic signal timings, and the procedures for the development, GDOT approval (and local Governmental Entity approval, if necessary), implementation, testing, and maintenance of all affected signals;
- Procedures to coordinate with the appropriate Governmental Entities' operating signal networks along the Project or Project detour routes to ensure temporary system compatibility, establish responsibilities for temporary signal installation, maintenance, operation and removal, and coordinate traffic signal timing with local signal networks;
- Procedures and processes for the safe ingress and egress of construction vehicles in the work zone;
- Provisions to provide continuous access to established truck routes and Hazardous Materials routes, and to provide suitable detour routes, including obtaining any approvals required by the appropriate Governmental Entities for these uses;

- Procedures to modify plans, as needed, to adapt as necessary to Project circumstances;
- Procedures to communicate TMP information to Developer's public information personnel and notify the public of maintenance of traffic issues in conjunction with the requirements of Section 3 of Volume 2; and
- Descriptions of contact methods, personnel available, and response times for any deficiencies or Emergency conditions requiring attention during off-hours.

The TMP shall be submitted within one hundred twenty (120) Days from NTP1 and must be approved by GDOT prior to NTP2.

The safe, convenient passage of the traveling public shall be ensured by Developer at all times. Developer shall prepare contingency traffic control plans for use in relieving travel delays. If in GDOT's sole opinion, sustained traffic control placement creates unnecessary hindrance to the traveling public, Developer shall implement contingency plans that will alleviate traffic congestion immediately or cease traffic interruptions immediately upon notification from GDOT.

18.3 Design Requirements

18.3.1 Traffic Control Plans

Developer shall use the procedures in the TMP and the standards of the MUTCD, AASHTO's *Roadside Design Guide*, as well as comply with GDOT *Special Provision 150 – Traffic Control* to develop detailed Traffic Control Plans (TCP), which provide for all construction stages and phasing, as well as all required traffic shifts procedures. TCPs shall include, but are not limited to: shoulder closures, lane closures, lane shifts, and detours.

Developer shall produce a TCP for every phase of Work that impacts traffic. Each TCP shall be submitted to GDOT for review and approval a minimum of fourteen (14) Days prior to implementation. The TCP shall be signed and sealed by a licensed Georgia engineer, and shall include, but not be limited to details for all detours, traffic shifts, lane closures, shoulder closures, traffic control devices, striping, and signage applicable to each phase of construction. TCPs shall be a separate Submittal and addition to the RFC staging plans. Information included in the TCP shall be of sufficient detail to allow verification of design criteria and safety requirements, including typical sections, alignment, striping layout, drop-off conditions, and temporary drainage. The TCP shall clearly designate all temporary reductions in speed limits. Changes to posted speed limits will not be allowed unless specific prior approval is granted by GDOT. Each TCP shall be evaluated in conjunction with the other TCPs that will be in effect at the same time.

Opposing traffic on a divided roadway shall be separated with appropriate traffic control devices in accordance with AASHTO's *Roadside Design Guide*, the MUTCD based on the roadway Design Speed, and Volume 3 Manuals (Technical Documents).

Developer shall maintain signing continuity on all active roadways within or intersecting the Project at all times.

Throughout the Term, 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.

Developer shall prepare public information notices, in coordination with Section 3, Public Information and Communications, in advance of the implementation of any lane closures or traffic switches. These notices shall be referred to as Traffic Advisories.

18.3.1.1 Roadway Guidelines

Developer shall produce TCPs for periods of construction in accordance with Volume 3 Manuals (Technical Provisions), Special Provision Section 150, and the DBF Documents.

18.3.1.1.1 Design Parameters for Traffic Control

Design Vehicle: Turning movements shall accommodate a WB-67 design vehicle. Turning movements on all other local streets and driveways shall, at a minimum, provide similar characteristics as existing geometry.

Work Zone Speed Limits: The work zone speed limits on Interstate and State Highways shall be in conformance with *Special Provision 150*.

Number of Lanes: Except as allowed by Section 18.3.1.1.2, the minimum number of lanes to be maintained for each traffic movement shall be the number of lanes currently available on each controlled access facility. Lane closures on other roadways may be allowed, with GDOT approval, so long as Developer demonstrates that access is not reduced and all traffic patterns are maintained.

Lane Widths: During construction, the minimum lane width for main lanes, frontage roads, and major crossing streets is eleven (11) feet. For minor crossing streets, GDOT may, in its sole discretion, allow ten- (10) foot lanes in limited circumstances during construction for short distances after reviewing Developer's TCP.

18.3.1.1.2 Allowable Shoulder/Lane/Roadway Closures and Stage Changes

Developer shall provide GDOT and appropriate Customer Groups a minimum of three (3) weeks advanced notice for long-term lane/shoulder closures and/or traffic changes. Long-term closure or Traffic changes are those to be in effect longer than twenty four (24) hours. Developer shall provide GDOT and appropriate Customer Groups a minimum of seventy-two (72) hours advanced notice for short-term lane/shoulder closures that are planned to be in effect for less than twenty-four (24) hours, using all appropriate tools as needed.

Developer shall identify alternate routes for emergency services within the project corridor. The Public Information Coordinator (PIC) shall coordinate the closure restrictions with GDOT on all lane/shoulder closures (or on any event that results in lane closures) and shall incorporate lane/shoulder closures into GDOT's ITS web-based information tool. Developer shall provide a

traffic interruption schedule that includes all lane/shoulder closures and traffic stage changes for a period of four (4) weeks beyond the date of the Traffic Implementation Meeting required in Section 2.6.1.

Closures must be coordinated with adjacent projects to ensure the safe convenient passage of the traveling public. During construction of the Project, GDOT will facilitate coordination with all local entities for Traffic Control.

Lane and Shoulder Closure During Design-Build Period

Developer may reduce the number of mainline travel lanes in accordance with the restrictions in Section 18.3.1.1.2 of Volume 2.

Developer shall not install lane and shoulder closures, perform flagging, or move equipment on the travel way on the highway lanes, ramps, CD ramps, and all other roads and streets from the Wednesday before Thanksgiving Day to the first Business day after New Year's Eve between the hours of 5:00 a.m. to 11:00 p.m., Monday through Friday, and between the hours of 7:00 a.m. to 11:00 p.m., Saturday and Sunday.

Additional lanes may be closed during off-peak or nighttime hours upon receipt of written permission from GDOT. Consideration will be given to traffic data collected in VPH/lane formatting during allowed closure periods that clearly demonstrate industry-accepted traffic flow ratios can be maintained.

Full Roadway Closure

Developer shall not be permitted any full (all lanes and shoulders) roadway closures unless approved by GDOT and Governmental Entities having jurisdiction of roadways affected by the closure.

GDOT will have the right to lengthen, shorten, or otherwise modify the foregoing restrictions as actual traffic conditions may warrant. The detour route for these approved full roadway closures shall be limited to usage of the on- and off-ramps at the mainline interchange locations. Developer shall utilize off-duty uniformed police officers for all detours.

Major crossing streets, as listed in Table 18-1 of Volume 2 of the DBF Documents, must remain open to traffic. When minor crossing streets are closed, the major crossing streets must have a minimum of two lanes in each direction but shall be approved by the agency having jurisdiction of the major street crossing.

Minor crossing streets, as listed in Table 18-1 of Volume 2 of the DBF Documents, may be closed for bridge construction during the Construction Work if adjacent cross streets are open to traffic but must be approved by the agency having jurisdiction of the minor crossing street.

Any complete roadway closure will require a TCP to be submitted and approved by GDOT and any Governmental Entities having jurisdiction of roadways affected by the closure. Availability of frontage roads, ramp locations, and detour distances shall be considered in the design.

Holiday Restrictions

No work that restricts or interferes with traffic shall be allowed during the following holiday periods. GDOT has the right to lengthen, shorten, or otherwise modify these restrictions as actual traffic conditions may warrant.

- Memorial Day Weekend (12:00 p.m.[noon] Friday through 10:00 p.m. Tuesday)
- Independence Day (12:00 p.m. [noon] July 3 through 10:00 p.m. July 5th)
- Labor Day Weekend (12:00 p.m. [noon] Friday through 10:00 p.m. Tuesday)
- Thanksgiving Holiday (12:00 p.m. [noon] Wednesday through 10:00 p.m. Monday)
- Christmas Holiday (12:00 p.m. [noon] December 23 through 10:00 p.m. December 26)

18.3.1.2 Other TMP Requirements

Additional Traffic Control requirements are as follows:

- Developer shall notify the traveling public by placing Changeable Message Signs (CMSs) a minimum of seven (7) Days in advance of an actual roadway closure or any major traffic modifications. Where available and when possible, Developer shall coordinate and utilize Overhead Changeable Message Signs on the regional ITS system; and
- Developer shall utilize off-duty uniformed police officers for mainline lane closures.

18.4 Construction Requirements

Construction shall be in accordance with the approved TCP, GDOT-approved Developer's TMP, as well as applicable provisions of the MUTCD and GDOT Special Provision section 150 – Traffic Control.

18.4.1 Developer Responsibility

If at any time GDOT determines, in its sole discretion that Developer's traffic control operations do not meet the intent of the TMP or any specific TCP, Developer shall immediately revise or discontinue such operations to correct the deficient conditions.

Developer shall provide GDOT the names of the Certified Workzone Traffic Control Supervisor and support personnel, and the phone number(s) where they can be reached twenty-four (24) hours per day, seven (7) days per week.

18.4.2 Access

Existing bicycle and pedestrian access and mobility shall be maintained across all cross streets. Access to existing transit stop locations shall be maintained during construction or reasonable alternative locations shall be provided, if applicable.

18.4.3 Detours

Developer shall maintain all detours. A pavement transition, required in accordance with AASHTO's Roadside Design Guide, GDOT guidelines, and the MUTCD based on the roadway Design Speed of the section shall be provided at all detour interfaces. Developer shall adhere to the public involvement requirements in GDOT's *Environmental Procedures Manual* (EPM) with respect to detours.

18.4.4 Traffic Interruption Request (TIR)

Developer shall submit a Traffic Interruption Request (TIR) with advanced notification, as described in Section 18.3.1.1.2, via the web-based project management system provided by GDOT for any impact to traffic due to Developer activity. Activities requiring a TIR include, but are not limited to, any lane and shoulder closure, ramp closure, detours, pacing activities, and shifts. GDOT will review and approve TIRs in accordance with the DBF Documents, RFC plans, and the Developer's previously approved TCP for each phase and/or stage of the construction. Developer shall also submit a TIR during the design phase for any field work required to support the design, including but not limited to, subsurface exploration, utility locates, surveying and joint inspection/maintenance limits activities. Developer shall not submit a TIR for construction activities that are not included in a previously approved TCP and/or for which plans have not been Released for Construction.

19 MAINTENANCE UNTIL FINAL ACCEPTANCE

19.1 General Requirements

Developer shall maintain the Project from NTP2 until Final Acceptance in a manner that provides a safe and reliable transportation system. Upon NTP2, Developer shall be fully responsible for maintenance as required by GDOT Standard Specification 105.14.

19.1.1 Reserved

19.1.2 GDOT Obligation to Repair

In the period between the Effective Date and the commencement of Construction Work, GDOT will reasonably perform the type of routine maintenance of each Element Category of the existing improvement, which normally occurs in GDOT's highway maintenance and repair program. GDOT is not obligated to extend the Residual Life of any Element through reconstruction, rehabilitation, restoration, renewal, or replacement.

19.2 Construction Maintenance Limits Plans

Developer shall specify the physical boundaries of Developer's maintenance responsibilities for the Construction Work until Final Acceptance.

Developer shall provide the final Construction Maintenance Limits Plan no later than one hundred and fifty (150) Days from NTP1 or prior to the start of a construction phase (see Section 23). The Construction Maintenance Limit Plan shall include: 1) a drawing or set of drawings that highlight the exact area of the proposed construction activity or Construction Maintenance Limits within the Existing ROW and the State Proposed ROW, as well as the limits of any Developer Proposed/Developer Acquired ROW to be acquired for the Project; and 2) a description of Developer's management plan for maintaining the Construction Maintenance Limits. The drawing(s) will serve as the boundary for the Construction Work and will also be used as the exact limits for Developer to maintain any Element within the ROW required to construct the Project beginning at the time of each phased NTP2 through Final Acceptance. Developer shall be responsible for all maintenance activities, in accordance with the *GDOT Standard Specifications* within these limits that is impacted due to the construction activity of Developer, including but not limited to:

- Pavement maintenance including pothole patching, concrete patching, striping, etc.;
- Existing ITS system and Drainage System continuity;
- Landscaping repair;
- Utility Adjustments; and
- Existing lighting system(s).

The drawing should show hash marks or a method to clearly depict the area of the Construction Maintenance Limits. The Construction Maintenance Limits Plan shall be approved by GDOT prior to and as a condition to the issuance of NTP2. Developer is required to depict in the

Construction Maintenance Limits Plan any and all proposed staging and lay down areas. All staging and lay down areas must have prior approval by GDOT.

Notwithstanding GDOT's approval of the Construction Maintenance Limits, Developer shall be responsible for any and all maintenance for any area(s) encroached on by Developer during the performance of the Construction Work.

Developer shall provide a Construction Maintenance Limits Phasing Plan per the approved Construction Phasing Plan required in Section 23.

20 BICYCLE AND PEDESTRIAN FACILITIES

20.1 General Requirements

This Section 20 includes requirements with which Developer shall design and construct all bicycle and pedestrian facilities for the Project, if required. Developer shall ensure the bicycle and pedestrian facilities of this Project support GDOT's commitment to integrate bicycle and pedestrian travel into Project development. Developer shall coordinate the Elements of the Project with the existing and planned trails and other facilities of local and county administrations for pedestrians and cyclists as shown in Volume 2.

Developer shall ensure the bicycle and pedestrian facilities of the Project adhere to the following guidance documents:

- *Georgia Guidebook for Pedestrian Planning*;
- *Georgia Pedestrian & Streetscape Guide*;
- *ADA Standards for Accessible Design*;
- Applicable portions of GDOT's *Design Policy Manual*;
- FHWA's *Highway Design Handbook for Older Drivers and Pedestrians*; and
- AASHTO's *Bicycle and Pedestrian Design Guidelines*.

Bicycle and pedestrian planning and design documents can be found at the following websites:

<http://www.dot.ga.gov/DriveSmart/Travel/Pages/BikePed.aspx>

<http://www.dot.ga.gov/PS/DesignManuals>

20.2 Design Requirements

20.2.1 Bicycle Facilities

Developer's bicycle facilities shall be consistent with State, regional, and local bicycle and pedestrian plans, and shall accommodate proposed and existing bicycle paths and crossings, as well as on-street bicycle facilities as indicated in Section 20 of Volume 2. Developer shall coordinate their design with Governmental Entities' designs to ensure consistency of use with existing facilities and to accommodate proposed bicycle facilities. Developer shall design all bicycle facilities according to the GDOT - *Design Policy Manual*, Chapter 9, *AASHTO Guide for the Development of Bicycle Facilities*, 4th Edition, and *Volume 3 Manuals*.

20.2.2 Pedestrian Facilities

Developer shall design, construct, and maintain sidewalks where sidewalks currently exist and where required by State or federal regulations. Sidewalks shall comply with the Title II provisions of the Americans with Disabilities Act (ADA) *Accessibility Standards*. Developer shall install pedestrian signals and curb ramps at all existing and proposed signalized intersections. All pedestrian facilities shall be designed to incorporate ambulatory, visibility, and auditory needs of all users.

20.2.3 Final Design

Developer shall incorporate into the Final Design the following elements relating to bicycle and pedestrian facilities:

- Alignment, profile, cross-section, and materials;
- Points of connection to existing and proposed bicycle and pedestrian facilities, such as a connection to an existing or proposed multi-use trail, sidewalk, or bike lane on an adjacent facility;
- Signing, signalization, and pavement markings;
- Methods of illumination, where applicable; and
- Requirements of the Landscape Enhancement Plan and Hardscape Enhancement Plan.

21 RESERVED

22 SOUND BARRIERS

22.1 General

Developer shall design sound barriers to be consistent in color, texture, and style with other Elements present in the entire Project such as structures, landscaping, and other highway components. See Section 15 for more information on the aesthetics requirements for sound barrier walls.

Sound barriers exceeding the design height limitations in GDOT Construction Standards and Details will require special design and details and are subject to the approval of the Department.

Developer shall construct the sound barriers adhering to the design provided by the independent GDOT-provided noise analysis in the Environmental Approvals and shall meet or exceed the decibel reduction for the listed applicable receptors in the Environmental Approvals. The top elevations of the sound barriers shall be set based on the NEPA approval of the noise reevaluation based on the Developer's final design. The final sound barrier design and location will be re-evaluated by GDOT upon the acceptance of the Final Design for the project. The final sound barrier design and location must meet all applicable State as well as federal guidelines. After review and acceptance by GDOT, the final sound barriers will be shown via public outreach to property owners and dwellers. Coordination with property owners and dwellers will be conducted by GDOT prior to the final decision on the installation of the sound barriers. Developer shall not participate in coordination directly with property owners during the process of implementing the GDOT noise policy requirements. If coordination with property owners results in a sound barrier or portion of a sound barrier to not be installed, this shall be considered a SRTA Change. Developer is responsible to implement the sound barriers required in the final Noise Impact Assessment Report. All materials used to construct the sound barriers shall conform to the requirements of the GDOT Qualified Products List (QPL). See Section 4 for additional information on the sound barrier approval process.

Developer's work plan shall identify when sound barriers are to be installed, and shall stage this work such that sound barrier construction can be completed as soon as practical. Developer shall provide alternate means to maintain existing sound reductions until sound barriers are completed.

Interlocking Steel Panels (Type B) and Treated Timber Panels (Type D) as listed in the *Standard Specifications* Section 624.1, for sound barriers shall not be permitted, except that Interlocking Steel Panels (Type B) can be used on existing bridge barriers and on existing retaining walls. Developer is to provide a final structural design that meets the requirements of the location(s) of the sound barriers as provided in the approved environmental document.

All bottom panels of free standing sound barriers shall be embedded a minimum of six inches (6") below finished ground line.

Sound barriers shall include access doors at regular intervals for maintenance. Access doors shall be located in sound barrier walls that are greater than one thousand five hundred (1,500) feet in length. An access door shall be located at the mid-point of the total wall length for walls

that have a total length between one thousand five hundred (1,500) feet and two thousand (2,000) feet. Access doors shall be spaced approximately every one thousand (1,000) feet for sound barrier walls greater than two thousand (2,000) feet in length. Access doors shall not be located on sound barrier walls mounted to bridges, retaining walls, or where a steep or vertical drop-off of the final grade is occurring. Coordinate locations for access to maintain sound barriers, including breaks and offsets between barriers and maintenance doors.

Ensure positive drainage for ground-mounted, barrier-mounted, and free-standing barrier installations.

Coordinate placement of sound barriers with ancillary structures such as lighting luminaires, strain poles, and overhead sign supports.

Sound barrier installations adjacent to shoulders shall be protected by a concrete side barrier.

The color scheme of sound barriers shall be consistent throughout the project and shall be aesthetically pleasing as determined by GDOT.

23 SUBMITTALS

23.1 General

Developer shall provide Project Submittals, in both electronic and hard copy format, as required to obtain any acceptance or final Release for Construction (as applicable) by GDOT and to demonstrate compliance with the DBF Documents, Government Acceptances, and regulations. Volume 2 (Technical Provisions) provides a list of some of the required Submittals. The Volume 3 Manuals (Technical Documents), the Master Submittal List (Attachment 23-1), or other requirements in the DBF Documents may require additional Submittals. This list is intended to be a guide for coordinating reviews and facilitating the Work.

Developer may design and construct the Project in multiple phases. A Construction Phase is a portion (segment) of the overall Project. If the Project will be designed and constructed in multiple phases, then Developer shall provide a Construction Phasing Plan and Submittals Schedule for each construction phase within thirty (30) days from NTP1. The Construction Phasing Plan shall provide logical termini for each proposed segment or phase of the Work and must consider any phasing of required acceptances.

For a given Construction Phase, Developer shall be allowed to either submit a complete set of drawings or make a series of Staged Design Submittals (components). The timing and content of Staged Design Submittals must be logical and shall include or be preceded by related items (e.g., bridge Submittals must include or be preceded by related highway geometry; a bridge and its related retaining walls must be submitted together; etc.). The Submittals Schedule shall identify all proposed Staged Design Submittals and what components will be included in each. Developer must obtain GDOT acceptance of the Construction Phasing Plan and the Submittals Schedule prior to providing any design Submittals for GDOT review.

In addition, a Design Submittal Guide/Index showing a proposed index of plan sheets for each Construction Phase must be submitted and accepted prior to providing any design Submittal. Once accepted, this Design Submittal Guide/Index shall be updated and provided with each subsequent design Submittal. File naming of each plan sheet in a Submittal shall correspond to the final index name of the plans for ease of reference to create the final set of drawings. The Design Submittal Guide/Index shall also include all reports, specifications, studies, calculations, etc.

Sufficient review and revision time shall be provided in the schedule and account for possible multiple re-submittals to secure a final Release for Construction prior to starting construction on any particular Element of the Work. Construction cannot proceed on any of the Work until the design Submittal has been reviewed, accepted, and Released for Construction as described in Section 23.3 below.

23.2 Design Submittals and Progress of Design Work

Each required Submittal shall be delivered to GDOT in conformance of the review times provided in Volume 2, Section 23.2. The times provided in Volume 2, Section 23.2 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. Notwithstanding the foregoing, notices sent after 12:00 p.m. Eastern Standard/Daylight Time (as applicable), including all notices, correspondence, or communications (including email and facsimile) received after 12:00 p.m. shall be deemed received on the first business day following delivery (that is, in order for a fax to be deemed received on the same day, at least the first page of the fax must have been received before 12:00 p.m.).

No fabrication, casting, or construction will occur until all related design review and shop drawing review comments are resolved and the corresponding drawings and specifications have been accepted by GDOT and stamped “Released for Construction.” All design Submittals shall be complete along with all the supporting information necessary for review. The Work must represent logical Work activities and must show impacts on subsequent Work on this Project. Any modification to the component construction due to subsequent design changes as a result of design development is solely at Developer’s risk.

23.2.1 Construction Phasing and Additional Submittal Requirements

Developer is responsible for obtaining any Government Approvals or other approvals required to allow for implementation and construction of the Construction Phasing Plan. Developer shall not begin any Work, including any land disturbing activities for the Construction Phase, until the following have been completed and/or accepted by GDOT, FHWA, and/or Governmental Entity as required:

- All required Management Plans are accepted and NTP2 is issued (for a given Construction Phase or entire Project);
- Acceptance of the Construction Phasing Plan;
- Acceptance of the Construction Maintenance Limits Plan for the proposed Construction Phase of Work;
- Acceptance of the Submittals Schedule (Design Submittal Guide);
- Acceptance of the Project Baseline Schedule;
- Acceptance of the Preliminary Plans for the entire Project by GDOT and FHWA (if applicable);
- Acceptance of the Drainage Report (for the proposed Construction Phase);
- Acceptance and subsequent Release for Construction of the Final Plans for the construction proposed (Construction Phase or entire Project);
- Utility certification or recertification by GDOT and FHWA, as applicable (Construction Phase or entire Project);
- NEPA/GEPA reevaluation by FHWA and/or GDOT (as applicable);
- Environmental certification by GDOT;
- ROW certification by GDOT;
- Acceptance of any required Design Variances or Design Exceptions (Construction Phase or entire Project);

- Approved Permits (including but not limited to the Nationwide 14 USACE Section 404 permit and traffic signal permits);
- Acceptance of Erosion Sedimentation and Pollution Control Plans (Construction Phase or entire Project);
- Executed NPDES NOI (Construction Phase or entire Project);
- Acceptance of CQMP;
- Acceptance of Traffic Control Plan (Construction Phase or entire Project);
- Acceptance of Traffic Management Plan;
- Utility Agreements, Utility Encroachment Permits, Utility Relocation Plans, Utility Retentions (as required), and/or Contractor Certification of “No-Conflict;” and
- Delivery of the existing GIS data and existing mapping as required in Section 12.3.2.1.

23.2.2 Staged Design Submittals

Once the Preliminary Plans for the entire Project have been accepted by GDOT and FHWA (if applicable), Developer shall be allowed to submit Staged Design Submittals (components) instead of a completed set of drawings for an entire accepted Construction Phase. A Staged Design Submittal is a Submittal that consists of a portion or portions of the Work within the limits of an accepted Construction Phase. For example, Staged Design Submittals for a bridge might be categorized as foundations, substructures, abutments, or complete continuous units of superstructure. Staged Design Submittals for other components of the Project might include grading, drainage, signing and pavement marking, and erosion control. If Developer chooses to provide Staged Design Submittals, the list of Staged Design Submittals shall be identified as part of the proposed Construction Submittals Schedule.

23.2.3 Changes to Accepted and Released for Construction Submittals

After GDOT has accepted the Final Plans and has authorized them as Released for Construction, then Developer shall submit to GDOT a request for any subsequent plan/design changes and include necessary documentation that supports the reasoning behind the change request. GDOT must accept the requested change with written notice prior to its implementation as a plan revision and subsequent construction activity.

23.2.4 Presentation Requirements

Developer shall provide all plan Submittals in accordance with the *Plan Development Process (PDP)*, *Electronic Data Guidelines (EDG)*, and the *Plan Presentation Guide (PPG)* Manuals for GDOT reviews.

The Plans shall be fully dimensioned in English units, and all elevations necessary for construction shall be shown similar to the Department’s normal practice. All plans are to be prepared on the scales according to GDOT’s PPG.

Each location shall include details for all civil elements and calculations within proximity of the site so that these locations can be reviewed holistically, and connections with communication and electrical networks are clearly understood.

Construction Plans Organization and Sheet Index: Construction plans shall be assembled according to the GDOT PPG.

Computations: All design computations and computer printouts shall be neatly recorded on letter-sized paper (8.5 inches by 11 inches), and shall be fully titled, numbered, indexed, dated, and signed by the designer/Project manager and checker. The electronic files, along with two hardcopies of the computations that have been fully checked and appropriately bound, shall be submitted to GDOT with the plans. A complete tabulation of the drainage analysis along with the calculations used to determine the size of drainage structures shall be submitted to GDOT.

Submittal Formats: Each Design Submittal shall, in addition to electronic delivery in PDF format on the web-based document management system, consist of ten (10) sets of scalable tabloid-sized (11 inches by 17 inches) and six (6) full size Arch D-sized (24 inches by 36 inches) design drawings, and six (6) sets of calculations and a DVD/CD of the Submittal including all InRoads, MicroStation V8-format files. For all Final Plan Submittals (plans, calculations, specifications, reports, etc.), each document shall be sealed by a qualified Registered Professional Engineer in the State of Georgia. In addition to written design review comments (if any), design drawings may be returned to Developer with any remarks indicated. After a Design Submittal is “Released for Construction,” Developer shall, in addition to posting the complete electronic files on the web-based document management system, furnish GDOT with one (1) Arch D-sized set and ten (10) sets of tabloid-sized corrected design drawings sets, as well a DVD/CD containing the design drawings in In-Roads, Micro-station V8 format. After all individual Staged Design Submittals have been accepted for a particular Construction Phased Plan, a final complete set of plans for the Construction Phase will be compiled and provided to GDOT as the Released for Construction set.

Additional Specifications: In addition to the design drawings that include Georgia standards and details, Developer shall prepare and furnish to GDOT, all specifications for construction Work included in the plans that are not covered by the GDOT’s Standard Specifications, the Supplemental Specifications, and/or the Special Provisions as required in Volume 3 Manuals (Technical Documents).

Any Submittal(s) received by GDOT after 12 p.m. (noon) shall be considered as being received the following business day.

23.3 Submittals Process

Review of the Design Documents by GDOT may be limited to the basic requirements of the DBF Documents as they relate to design compliance and material type(s). This may not include a detailed review, checking the design of components and related details, or confirming the accuracy with which such designs are depicted on the design drawings.

Review and/or acceptance of any Design Documents shall not relieve Developer of responsibility under the Contract for the overall correctness of Design Documents including engineering mathematical computations. All Design Documents, including but not limited to: plans, specifications, reports, calculations, shop drawings (where public safety is affected), and Permit

documents, shall be submitted to GDOT. GDOT will be responsible for distributing the Submittals to all required parties of the Contract.

All Submittals shall include a cover letter describing the Submittal, review period, and the due date for any GDOT response.

All Submittals shall include Developer's QA/QC certification statement (in addition to the design consultant's QC/QA certification statement for all design-related Submittals). GDOT will reject any Submittal if the QC/QA certification statement is not included. Each Submittal shall also provide a certification statement that the Submittal complies with all terms and conditions of the DB Agreement signed by the Designer of Record.

23.3.1 Required Participants of the Process

GDOT, except as otherwise required in the DBF Documents, will be primarily responsible for: verifying that the accepted Design Quality Management Process as required in Section 2 has been followed, verifying that the Submittal meets all contract requirements, ensuring that all necessary Governmental Approvals have been obtained by Developer, and performing any review(s) as provided for in Volume 2, Section 23.2.

Developer is responsible for providing all required Submittals in compliance with the DBF Documents and in compliance of the accepted Submittals Schedule. Developer must further provide a certification that the Submittal meets the terms of the contract and has been independently reviewed in accordance with the accepted Design QMP (see Section 2.2.15) with the each Submittal.

23.3.2 Process

The following steps shall be followed:

- Developer shall provide independent review for all Submittals in compliance with the accepted Design QMP as specified in Section 2.2.15.
- Developer shall provide the Submittal to GDOT via a web-based application and required hard copies in accordance with the Submittal Schedule. Submittals shall be categorized into "Discipline Groups" as follows:
 - ROW, Railroad, Utilities, Transit (RRUT Group);
 - Roadway, Drainage, and Maintenance of Traffic (RDMOT Group);
 - Bridge, Structures, Retaining Walls, and Aesthetics (BSRA Group);
 - ITS, Traffic (includes signing, pavement marking, signals, and lighting) (ITSTT);
 - All types (ALL Group); or
 - Other (OTH).
- GDOT logs in the Submittal and distributes to the required review participants.
- Review period begins (the following business day for any Submittals received after 12 p.m.) per the period as prescribed in Volume 2, Section 23.2, except where there is a maximum number of concurrent Submittals of a particular type specifically noted in Volume 2, Section 23.2. In such cases and where the maximum is exceeded, the review period will begin when prior Submittal reviews are completed so that the maximum

number in concurrent review is not exceeded. For the general case where there is not a maximum number of concurrent Submittals specifically noted in Volume 2, Section 23.2, an additional seven (7) days will be added to the prescribed review period whenever there are more than five (5) concurrent Submittals in review in the subject document's particular Discipline Group. Further, an additional seven (7) days will be added for each additional increment of five (5) concurrent Submittals in review in a Discipline Group. For example, if there are between six (6) and ten (10) Submittals in concurrent review in a Discipline Group, then an additional seven (7) days are added; and if there are between eleven (11) and fifteen (15) Submittals in concurrent review in a Discipline Group, then an additional fourteen (14) days are added, and so forth. For purposes of calculating the number of Submittals, the accepted Submittal schedule will generally be used as a guide except that complementary documents (e.g., bridge plans and bridge calculations) will be considered a single Submittal. Documents that fully integrate multiple disciplines in the presentation (e.g., roadway and drainage plans, together with the respective calculations) would be counted as one (1) Submittal. For documents or packages that include multiple bridges, each individual bridge will be counted as a separate Submittal.

- Once a review is complete, the drawings and or Submittal will be designated by GDOT as either:
 - Accepted;
 - Accepted with Comments; or
 - Rejected.
- The terms “Accepted” and “Accepted with Comments” shall mean that the design process may proceed but is not a notice that construction may begin.
- If “Accepted” or “Accepted with Comments,” the GDOT Representative will deliver the comments and, if necessary, return the drawings and/or Submittal via web-based application and/or hardcopy to Developer. For final Submittals, after updating the documents to resolve all comments (as applicable) and receiving written notice from GDOT that the drawings and/or Submittal are “Released for Construction” pursuant to Exhibit 1 of the DBF Agreement, Developer shall stamp the accepted set “Released for Construction” and shall distribute copies as required within three (3) business days.
- If “Rejected,” the GDOT Representative shall deliver the rejected drawings and/or Submittal via web-based application and/or hardcopy to Developer. Developer shall address the specific comments and resubmit. The re-submittal becomes a new Submittal and shall follow the same time period as provided in Volume 2, Section 23.2.

23.4 Shop Drawings and Temporary Works Submittals

23.4.1 General

Shop drawings include all working, shop, and erection drawings, associated trade literature, calculations, schedules, manuals, and similar documents submitted by Developer to define some portion of the Project Work. The type of Work includes both permanent and temporary works as appropriate to the Project. Permanent works include all the permanent structures and parts thereof required of the completed DBF Documents.

Temporary works include any temporary construction Work necessary for the construction of the permanent works. This includes falsework, formwork, scaffolding, shoring, temporary earthworks, sheeting, cofferdams, special erection equipment, etc.

Falsework includes any temporary construction Work used to support the permanent structure until it becomes self-supporting, such as steel or timber beams, girders, columns, piles and foundations, and any proprietary equipment including modular shoring frames, post shores, and adjustable horizontal shoring.

Formwork includes any structure or mold used to retain plastic or fluid concrete in its designated shape until it hardens. Formwork comprises common materials such as wood or metal sheets, battens, soldiers and walers, ties, proprietary forming systems such as stay-in-place metal forms, and proprietary supporting bolts, hangers, and brackets. Formwork may be either permanent formwork requiring a shop drawing Submittal such as stay-in-place metal or concrete forms, or may be temporary formwork that requires certification by the Specialty Engineer for construction affecting public safety and for major and unusual structures.

Scaffolding is an elevated work platform used to support workmen, materials, and equipment, but is not intended to support the structure.

Shoring is a component of falsework such as horizontal, vertical, or inclined support members. In this Section, this term is interchangeable with falsework.

Construction affecting public safety is defined as construction that may jeopardize public safety such as structures spanning functioning vehicular roadways, pedestrian walkways, railroads, navigation channels of navigable waterways, and walls or other structure foundations located in embankments immediately adjacent to functioning roadways. It does not apply to those areas of the site under Developer's control and outside the limits of, or influence of, normal public access.

For the purpose of shop drawing review and processing as described in Section 23.4, the term "Specialty Engineer" will apply to the initiator or producer of shop drawings regardless of whether that party is normally the Engineer of Record (EOR). The term "Engineer of Record" will apply to the shop drawing checker and certifier regardless of whether or not that party is normally the EOR or the Specialty Engineer.

23.4.2 Work Items Requiring Shop Drawings

Shop drawings shall be submitted for items of Work not fully detailed in the plans that require additional drawings and coordination prior to constructing the item, including but not limited to:

- Bridge components not fully detailed in the plans, i.e., segments, steel girder details, post-tensioning details, handrails, etc.;
- Retaining wall systems;
- Precast box culverts;
- Building structures;
- Drainage structures, attenuators, and other nonstructural items;

- Design and structural details furnished by Developer in compliance with the Contract; and
- Temporary works affecting public safety.

23.4.3 Schedule of Submittals

Shop drawings shall be included on the Submittals Schedule described in Section 23.1. For each planned shop drawing Submittal, Developer shall define the type and approximate number of drawings or other documents that are included and the planned Submittal date, considering the processing requirements herein. Developer shall coordinate subsequent Submittals with the Project Schedule to allow sufficient time for review and re-submittal as necessary.

23.4.4 Style, Numbering, and Material of Submittals

23.4.4.1 Drawings

Developer shall submit the shop drawings electronically in PDF format on the web-based project management program. In addition to the electronic delivery, Developer shall furnish four (4) sets of printed shop drawings to GDOT for review and shall consecutively number each sheet in the Submittal series, indicating the total number in the series (e.g., 1 of 12, 2 of 12, ... 12 of 12). Included on each sheet shall be the following items as a minimum requirement:

- Bridge Number(s);
- Drawing title and number;
- A title block showing the names of the fabricator or producer, and Developer for which the Work is being done;
- The initials of the person(s) responsible for the drawing;
- The date on which the drawing was prepared;
- The location of the item(s) within the Project;
- Developer's approval stamp with date and initials; and
- When applicable, the signature and seal of the Specialty Engineer.

A re-submittal will be requested when any of the required information is not included.

23.4.4.2 Other Documents

In addition to electronic delivery in PDF format on the web-based project management program, Developer shall:

- Provide four (4) sets of original documents or clearly legible photographic or xerographic copies of documents other than drawings, such as trade literature, catalogue information, calculations, and manuals. Developer shall clearly label and number each sheet in the Submittal to indicate the total number of sheets in the series (e.g., 1 of 12, 2 of 12, ... 12 of 12);
- Provide an additional three (3) sets of documentation for items involved with precast pre-stressed components;

- Provide an additional two (2) sets of documentation for items involving structural steel components;
- Bind and submit all documents with a table of contents on a cover sheet listing the total number of pages and appendices, and including a title referencing:
 - The Submittal item(s);
 - The name of the firm and person(s) responsible for the preparation of the document;
 - Developer’s approval stamp with date and initials; and,
 - When applicable, the signature and seal of the Specialty Engineer.
- Submit appropriately prepared and checked calculations and manuals that clearly outline the design criteria;
- Include on the internal sheets the initials of the person(s) responsible for preparing and checking the document; and
- Clearly label trade literature and catalogue information on the front cover with the title, date, and name of the firm and person(s) responsible for that document.

23.4.5 Submittals and Copies

23.4.5.1 General

Shop drawings are not required for Qualified Products accepted by GDOT and included on the Qualified Product List as specified in Volume 3 Manuals. For non-Qualified Product, Developer shall submit shop drawings to GDOT after the EOR has reviewed and accepted for conformance with the DBF Documents and for compliance to the design intent. Upon completion of GDOT’s review, GDOT’s red ink review stamp will signify an officially reviewed shop drawing and will state either “Released for Construction” or “Released for Construction as Noted.”

23.4.5.2 Developer-Originated Design

Developer shall submit shop drawings and applicable calculations to the EOR for review, and shall ensure that each sheet of the shop drawings and the cover sheet of the calculations are signed and sealed by the Specialty Engineer.

23.4.5.3 Temporary Works

For construction affecting public safety, Developer shall submit to the EOR shop drawings and the applicable calculations for the design of special erection equipment, false-work, scaffolding, etc. Developer shall ensure that each sheet of the shop drawings and the cover sheet of the applicable calculations is signed and sealed by the Specialty Engineer.

23.4.5.4 Formwork and Scaffolding

Developer is solely responsible for the safe installation and use of all formwork and scaffolding. GDOT does not require any formwork or scaffolding Submittals unless such Work would be classified as construction affecting public safety.

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

Developer shall submit to the EOR shop drawings and the applicable calculations. Developer shall ensure that each sheet of the shop drawings and the cover sheet of the applicable calculations is signed and sealed by the Specialty Engineer.

23.4.6 Processing of Shop Drawings

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

For shop drawings, Developer shall:

- Coordinate, schedule, and control all Submittals with a regard for the required priority, including those of the various subcontractors, suppliers, and GDOT, to provide for an orderly and balanced distribution of the Work;
- Coordinate, review, date, stamp, accept, and sign all shop drawings prepared by Developer, Contractors, or Developer-Related Entities (subcontractor, fabricator, supplier, etc.) prior to submitting them to GDOT for review. Submittal of the drawings confirms verification of the Work requirements, units of measurement, field measurements, construction criteria, sequence of assembly and erection, access and clearances, catalog numbers, and other similar data;
- Indicate on each series of drawings the specification section and page or drawing number of the Released for Construction plans to which the submission applies;
- Indicate on the shop drawings all changes from the Released for Construction drawings and itemize all changes in the letter of transmittal. Likewise, whenever a Submittal conforms to the Released for Construction plans, clearly state so in the transmittal letter; and
- Schedule the submission of shop drawings to allow a GDOT review period as specified in the DBF Documents. The review period commences upon GDOT's receipt of the valid Submittal or re-submittal and terminates upon the transmittal of the Submittal back to Developer.

Developer is discouraged from transmitting voluminous Submittals of shop drawings at one time. For Submittals transmitted in this manner, Developer should allow for additional review time. Only shop drawings distributed by GDOT with the "red ink" stamps are valid and all Work that Developer performs in advance of GDOT's release of shop drawings will be at Developer's risk.

23.4.6.2 *Scope of Review by the Engineer of Record*

The EOR's review of the shop drawings is for conformity to the requirements of the DBF Documents and to the intent of the design. The EOR's review of shop drawings, which includes means, methods, techniques, sequences, and construction procedures, is limited to the effects on the permanent works. The EOR's review of Submittals, which includes means, methods,

techniques, sequences, and construction procedures, does not include an in-depth check for the ability to perform the Work in a safe or efficient manner.

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

For construction affecting public safety, the EOR will make an independent design review of all relevant shop drawings and similar documents. Developer shall not proceed with construction of the permanent works until receiving the EOR's approval. Developer shall send a copy of the approval letter to GDOT. The review of these shop drawings is for overall structural adequacy of the item to support the imposed loads and does not include a check for economy, efficiency, or ease of construction.

23.4.7 Other Requirements for Shop Drawings for Bridges

23.4.7.1 *Shop Drawings for Structural Steel and Miscellaneous Metals*

Developer shall furnish shop drawings for structural steel and miscellaneous metals. Shop drawings shall consist of working, shop, and erection drawings; welding procedures; and other working plans showing details, dimensions, sizes of material, and other information necessary for the complete fabrication and erection of the metal work.

23.4.7.2 *Shop Drawings for Concrete Structures*

Developer shall furnish shop drawings for concrete components that are not cast-in-place and are not otherwise exempt from Submittal requirements. Also, Developer shall furnish shop drawings for all details that are required for the effective prosecution of the concrete work and are not included in the DBF Documents such as: special erection equipment, masonry layout diagrams, and diagrams for bending reinforcing steel, in addition to any details required for concrete components for the permanent Work.

23.4.7.3 *Special Construction Submittals*

In addition to any other requirements, within sixty (60) days from the issuance of the notice to proceed, Developer shall submit information to GDOT outlining the plan for construction integration into the overall approach to the Project. Where applicable to the Project, Developer shall include, but should not limit this information to:

- The overall construction program for the duration of the DBF Agreement. Clearly show the milestone dates (for example, the need to open a structure by a certain time for traffic operations);
- The overall construction sequence: the order in which individual structures are to be built, the sequence in which individual spans of girders or cantilevers are to be erected, and the sequence in which spans are to be made continuous. Erection plans and sequence drawings shall be provided for all bridge construction Work to be performed on or over Transit Agency ROW as defined in Section 24;

- The general location of any physical obstacles to construction that might impose restraints or otherwise affect the construction, and an outline of how to deal with such obstacles while building the structure(s). (Obstacles might include road, rail, and waterway clearances; temporary diversions; transmission lines; utilities; property and Developer's own temporary works such as haul roads, cofferdams, and plant clearances; and the like);
- The approximate location of any special lifting equipment in relation to the structure, including clearances required for the operation of the equipment. (For example, crane positions, operating radii, and the like);
- The approximate location of any temporary falsework and the conceptual outline of any special erection equipment. Provide the precise locations and details of attachments, fixing devices, loads, etc. in later detailed Submittals;
- An outline of the handling, transportation, and storage of fabricated components, such as girders or concrete segments. Provide the precise details in later detailed Submittals;
- Any other information pertinent to the proposed scheme or intended approach; and

Clearly and concisely present the above information on as few drawings as possible in order to provide an overall, integrated summary of the intended approach to the Project. GDOT will use these drawings for information, review planning, and to assess Developer's approach in relation to the intent of the original design. The delivery to and receipt by GDOT does not constitute any GDOT acceptance or approval of the proposals shown thereon. Developer shall include the details of such proposals on subsequent detailed shop drawing Submittals, and shall submit timely revisions and re-submittals for all variations from these overall scheme proposals.

23.4.7.4 *Shop Drawings Requiring Transit Agency Coordination*

GDOT's acceptance of shop drawings and Submittals involving railroad coordination and review does not constitute final acceptance to begin Work on these items. Refer to the requirements of Section 24 for coordination and duration of shop drawing reviews for construction Work being performed on or over the Transit Agency ROW. Direct coordination between the Transit Agency will be necessary to ensure that all necessary approvals from the railroad are in place prior to beginning of construction activities in these areas.

23.4.8 Modifications on Construction

Where GDOT allows Developer to make modifications to the permanent works for the purposes of expediting Developer's chosen construction methods, Developer shall submit proposals to the EOR for review and approval prior to modifying the works. Developer shall submit proposals for minor modifications under the shop drawing process, and shall indicate on all drawings the change(s) from the DBF Documents and itemize all Change Requests in the letter of transmittal.

GDOT will require additional Submittals for major modifications. Minor modifications are those items that, in the opinion of GDOT, do not significantly affect the quantity of measured Work, or the integrity or maintainability of the structure or its components (for example, adjusting concrete dimensions, substituting steel plate sizes, changing reinforcing bar size and spacing, etc., all within the acceptable limits of the design). Major modifications are any

modifications that, in the opinion of GDOT, significantly affect the quantity of measured Work, or the integrity or maintainability of the structure or its components (for example, substituting alternative beam sizes and spacing, changing material strength or type, etc.). Developer shall provide signed and sealed revised sheets to GDOT for any required revisions to the Released for Construction plans prior to submitting shop drawings. GDOT's decision on the delineation between a minor and a major modification and the disposition of a proposal is final.

23.5 As-Built Plans

Upon completion of the Construction Work, a complete set of As-Built Plans (Record Drawings) organized by Construction Phase shall be provided to GDOT as a condition to Final Acceptance and in the following formats:

- Two (2) CD-ROMs or DVDs containing:
 - All electronic design files, electronic calculations, etc.;
 - Full-sized (24 inch by 36 inch) TIF images of each plan sheet – one sheet per file;
 - Full-sized (24 inch by 36 inch) PDF containing the entire plan set;
 - One (1) hard copy of the design databook and drainage calculations;
 - Two (2) full-size (24 inch by 36 inch) sets of bond prints; and
 - Two (2) half-size (11 inch by 17 inch or 12 inch by 18 inch) sets of bond prints.

These as-built Record Drawings shall not be field sketches or redlines, but shall be CAD-generated drawings that compile all field changes, redlines, plan revisions, and all non-conforming Work into a single “strike-through” format set of plans. Where appropriate, new drawings may be inserted to depict portions of the As-Built Work.

Developer shall be responsible for all production and delivery of materials needed for Department review. Two (2) members of the design team, one who is a Professional Engineer, and another member who is a Registered Surveyor licensed to practice engineering in the State of Georgia, shall seal the As-Built plans.

All files are to conform to the criteria for the design platform of choice (CAiCE or InRoads) found in the GDOT's Electronic Data Guidelines (EDG).

23.5.1 Reserved

24 TRANSIT

24.1 General Requirements

This section defines the criteria required for addressing impacts to established Transit Agency within or adjacent to the Project limits. Any activity that penetrates or encroaches on the horizontal plan limits of established Transit Agency ROW or other related limits as may be prescribed in the DBF Documents shall be considered as impacting the Transit Agency. Such activities include, but are not limited to:

- Overhead or underground Utility encroachments on Transit Agency ROW including construction of temporary bore and jack pits;
- Protection of existing Transit Agency facilities during Project construction activities including protection from crane booms or other equipment with potential for fouling live track(s);
- Construction of Project facilities, such as bridges and/or roadways that are across or adjacent to established Transit Agency ROW;
- Temporary and/or permanent modifications to existing Transit Agency facilities in connection with project objectives; and
- Coordination of detour routes affecting Transit Agency bus line operations.

If the Project includes impacts to existing Transit Agency ROW as defined herein, Developer shall provide supplementary information to GDOT to be included in the PMP. Supplementary information shall include, but is not limited to, detailed procedures and methods for addressing those impacts meeting the requirements set forth in the DBF Documents.

The Transit Agency or its authorized representative shall have final authority in all matters affecting the safe maintenance of rail traffic and facilities including, but not limited to: determining impacts to its Transit Agency ROW; determining adequacy of structures and foundations supporting rail track(s) and/or embankment(s); approving procedures for Work to be performed over its track(s); and determining the necessity for flagging protection during construction.

GDOT or its authorized representative shall have authority over all other matters as prescribed in the DBF Documents.

24.1 Transit Agency Design Standards

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

Developer's design shall, at a minimum, preserve the current operational characteristics of existing rail line and public access.

24.1.1 Design Railroad Live Load

Developer shall design any permanent or temporary facilities that could be subjected to train loadings from existing or future tracks, including but not limited to: falsework, temporary shoring, temporary crossings or structures, shooflies, culverts, bore and jack pits, etc., in accordance with applicable provisions of the MARTA Design Criteria.

24.1.2 Design Lateral Pressures for Railroad Live Load Surcharge

Permanent and temporary facilities supporting railroad embankment excavation shall be designed for lateral pressures resulting from railroad live load surcharge per the MARTA Design Criteria.

24.1.3 Clearances

Wherever practicable, overhead bridge structures shall have all piers and abutments located outside of the Transit Agency ROW. Overhead bridge structures shall otherwise provide the horizontal and vertical clearances specified herein for existing tracks and drainage. If future tracks and drainage have been designated by the Transit Agency in the Project area, the clearances specified herein shall apply to those tracks and drainage as well.

24.1.3.1 Permanent Clearances

Minimum horizontal and vertical clearances to the Transit Agency tunnel structure shall be five feet (5'-0"). Minimum horizontal clearance to the Transit Agency aerial substructure shall be one foot (1'-0") with GDOT-approved traffic barrier. Minimum vertical clearance to the Transit Agency aerial superstructure shall be five feet (5'-0") beyond the GDOT-approved vertical minimum clearance. Minimum clearances for the North Springs Station fly-over access ramp bridge structure shall follow GDOT bridge criteria.

On structures to be affected by construction, the proposed minimum vertical and horizontal clearances, as well as the existing clearances, shall be indicated on the General Plan and Elevation sheet.

The permanent clearances shall be correlated with the methods of construction so that temporary construction clearances will not be less than the minimum allowed.

24.1.3.2 Temporary Clearances

Falsework and formwork above or adjacent to operated tracks shall conform to the following:

- Maintain minimum vertical clearance of twenty-two feet (22'-0") above the top of high rail; and
- Maintain minimum horizontal clearance of thirteen feet (13'-0") from centerline of tangent track or fourteen feet (14'-0") from the centerline of curved track.

Minimum temporary clearances, if less than required minimum permanent clearances, shall be indicated on the General Plan and Elevation Sheet.

Temporary clearance requirements shall also apply to all other physical obstructions including, but not limited to: stockpiled materials, parked equipment, placement or driving of piles, and bracing or other construction supports.

24.1.4 Crashwalls

GDOT-approved traffic barrier shall be used adjacent to Transit Agency substructure in lieu of crashwalls.

24.1.5 Drainage

The bridge and roadway plans should indicate all proposed drainage encroachments on Transit Agency ROW.

Drainage plans affecting the Transit Agency drainage system must be included with the bridge and roadway plans submitted to the Transit Agency for approval. These plans must include hydrologic computations indicating the rainfall intensity and duration of the design storm used, as well as the method of analysis. A 100-year recurrence interval is the minimum design storm. If the proposed Project will not change the quantity and/or character of flow in the Transit Agency's ditches and/or drainage structures, the plans shall include a general note stating thus.

Where the Project design calls for an increase in the drainage flow through the railroad embankment, a separate drainage structure parallel to existing drainage structure(s) shall be provided for such purposes. Structure shall be designed and constructed per the MARTA Design Criteria.

No scuppers or other deck drains, roadway drainage, catch basins, inlets, or outlets are permitted to drain onto Transit Agency ROW. Any variance of this policy must have prior written approval of the Transit Agency, and maintenance of drainage structures so approved will be the responsibility of Developer and/or GDOT. Drainage from bridge scuppers and deck drains must be conveyed through pipes to a location off of, and draining away from, Transit Agency ROW. If it is not practicable to convey such drainage away from track drainage ditches, calculations demonstrating the ability of the ditch to carry the additional runoff shall be provided to the Transit Agency for approval.

Approval of the drainage plan does not relieve Developer or GDOT of ultimate responsibility and liability for a satisfactory drainage design.

24.1.6 Erosion Control

Developer's plans shall indicate the proposed methods of erosion control and shall specifically address means to prevent silt accumulation in the railroad drainage system. If the plans do not show erosion control, Developer must submit a proposed method of erosion control and must

have the method approved by the Transit Agency prior to beginning any grading on the Project site.

Approval of the Erosion Control Plan does not relieve Developer and/or GDOT of ultimate responsibility and liability for satisfactory erosion control.

24.1.7 Utilities

Developer's plans shall show dimensioned locations of all existing and proposed utilities within the Transit Agency ROW. Plans shall define the responsibility for locating, marking, or installing and protecting such utilities. Transit Agency shall not be responsible for these activities.

If fiber optic cables are presently buried on the Transit Agency ROW or if such installations are scheduled during the course of the Project, then the presence of such facilities shall be considered in the design and appropriate measures for protection of the fiber optic cables shall be addressed on the plans and in the contract documents.

24.1.8 Miscellaneous

Developer shall furnish "As-Built" drawings to the Transit Agency showing actual clearances and depth, size, and location of all foundation components.

Cast-in-place girders or pier caps will not be permitted in bridge spans crossing over operated track or in spans of bridges adjacent to and within thirteen feet (13'-0") of the centerline of operated track.

Developer shall coordinate design and construction of any Elements of the Work as appropriate with the Transit Agency, including any falsework, temporary shoring, temporary crossings, or structures, etc.

24.2 Project Work Affecting Transit Agency Operations

Developer shall coordinate Work performed under this section with the Transit Agency as appropriate.

24.2.1 Agreements

Unless otherwise specified in the DBF Documents, Developer shall be responsible for all costs for ascertaining and obtaining all required approvals, permits, and agreements for performance of the Work, including any railroad-related Work. Developer is responsible for all costs of the railroad Work, whether incurred by Developer or by the Transit Agency, including costs of acquiring Transit Agency property interests and costs with respect to relinquishment of existing or acquisition of new Transit Agency property interests.

24.2.1.1 *Permanent Transit Agency ROW Encroachment Agreement(s)*

Developer shall prepare all documentation required to establish permanent Transit Agency ROW encroachment agreements between the Transit Agency and GDOT. Where such efforts involve revisions to existing agreements, GDOT agrees to furnish copies of those agreements to Developer for the latter's use in preparing revisions.

24.2.1.2 *Transit Agency Agreement(s)*

Developer shall enter into a multi-party agreement (GDOT, Transit Agency, and Developer) with each affected transit agency to define the design, material, construction, inspection, and acceptance standards and procedures necessary to complete any and all necessary Work to complete the Project. Developer shall prepare all documentation required to obtain the memorandum of understanding (MOU) on behalf of GDOT. Such documentation shall include, but not be limited to: plans, specifications, and cost estimates required for establishment of the Transit Agency Agreement.

Developer shall submit the draft Transit Agency Agreement to GDOT for transmittal to the Transit Agency. After all comments have been incorporated or satisfactorily resolved by Developer, Transit Agency, or GDOT, Developer shall submit a complete and final Transit Agency Agreement to GDOT for execution.

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

Prior to entering or encroaching upon Transit Agency ROW to perform the Work, Developer shall secure a Right of Entry Agreement from the Transit Agency and shall coordinate directly with the Transit Agency the arrangements of said agreement, which may include an outline of specific and general conditions with which Developer must comply. For purposes of securing this agreement, Developer shall furnish to Transit Agency a schedule for all Work impacting Transit Agency ROW.

The Transit Agency's Right of Entry Agreement shall include the names, addresses, and telephone numbers of the Transit Agency's representatives for notification purposes. Where more than one representative is designated, area of responsibility of each representative shall be specified.

Developer shall furnish a copy of the fully executed Right of Entry Agreement to GDOT as proof of compliance with this provision. Developer shall not enter or impact Transit Agency ROW prior to furnishing this proof of compliance to GDOT.

24.2.2 Operation Safety

Developer shall arrange and conduct its Work so that there will be no interference with railroad operations, including train and communication services, nor damage to the facilities or property of the Transit Agency or tenants on the Transit Agency ROW. Whenever Work is liable to affect such operations, safety, facilities, or property, the method of doing such Work shall first be

submitted to the Transit Agency for review and approval, but such approval shall not relieve Developer from liability. Developer shall coordinate construction detour routes affecting Transit Agency bus service lines within the construction area at least three (3) months prior to detour implementation.

Whenever Work within Transit Agency ROW is of such a nature that impediment to railroad operations is unavoidable, Developer shall schedule and conduct its operations so that such impediment is reduced to the absolute minimum. Should such conditions arise from or in connection with the Work, Developer is required to make immediate provisions to protect operations, facilities, and property of the Transit Agency. If in the judgment of the Transit Agency (or GDOT if the Transit Agency is unavailable for such judgment), such provision is insufficient, either may require or make such provisions as deemed necessary. In any event, such unusual provisions shall be at Developer's expense and without cost to the Transit Agency or GDOT.

Developer shall comply with the Transit Agency's requirements for contractor safety training and criminal background checks prior to entering Transit Agency ROW.

24.3 Construction Requirements

Developer shall comply with all construction requirements and specifications set forth by the Transit Agency.

Developer shall be responsible for scheduling the Work, if any, to be completed by Transit Agency as well as Work to be completed by its own forces.

24.3.1 General

Construction Work and operations by Developer on Transit Agency ROW shall be:

- Subject to the inspection and approval of the Transit Agency;
- In compliance with the Transit Agency's written outline of specific conditions;
- In compliance with the Transit Agency's general rules, regulations, and requirements including those relating to safety, fall protection, and personal protective equipment. Safety guidelines are provided in Section 24.10;
- In accordance with DBF Documents; and
- In accordance with any executed agreement, License Agreement, and Right of Entry.

24.3.2 Track Clearances

The minimum track clearances to be maintained by Developer during construction are included in the DBF Documents. Clearances less than these will not be permitted unless specifically authorized by the Transit Agency. If minimum clearances are not stated in the DBF Documents, then such clearances shall be specified by the Transit Agency.

24.3.3 Temporary Excavation

The substructure of any railroad shall not be undermined.

24.3.4 Excavation for Structures

Developer shall take special precaution and care in connection with excavation for construction of bridges, walls, footings, drainage pipes, utilities, etc. under or adjacent to tracks, and any other structures or construction, including the driving of piles or sheeting adjacent to tracks, to provide adequate lateral and vertical support for the tracks and the loads they carry. Such precautions and their associated operations shall be taken without disturbance of track alignment and surface, and so as to avoid obstructing track clearances with working equipment, tools, or other material. The procedure for doing such Work, including need of and plans for excavation and shoring, shall first be approved by the Transit Agency, but such approval shall not relieve Developer from liability. Before submission of plans to the Transit Agency for approval, such plans shall first be reviewed by GDOT's Office of Bridge and Structural Design or its authorized representative. Shoring plans submitted must be prepared, signed, and sealed by a Professional Engineer registered in the state of Georgia.

Developer shall submit excavation plans and calculations that have been prepared and signed by a Professional Engineer registered in the State of Georgia. Developer shall be responsible for the accuracy of all controlling dimensions as well as the selection of soil design values which will accurately reflect the actual field conditions. Developer's plans shall contain details of the shoring system showing sizes of all structural members, connection details, and embedment depths. A plan view showing layout of all proposed excavations and distances from centerline of track(s) to faces of excavations shall be included. Plans shall show a section normal to the track(s) showing the shoring location relative to the centerline of track(s) and showing the height of shoring and track elevation(s) in relation to the bottom of excavation. The plans shall be complete and shall accurately describe the nature of the Work.

Excavation plans and calculations shall address all falsework, shoring, excavation supports, etc., adjacent to railroad track(s) and shall be certified to be complete and satisfactory by GDOT prior to being submitted to the Transit Agency for review. Four (4) copies of sealed plans and calculations shall be submitted. A minimum of thirty (30) days shall be allowed for the Transit Agency's review of such submittals. No excavation will be allowed until the plans and calculations are reviewed and approved by the Transit Agency. All excavations on or adjacent to the Transit Agency ROW shall be reviewed by the Transit Agency before excavation begins.

Safety railings shall be constructed around all excavations on Transit Agency's property, and shall conform to applicable OSHA requirements. Layout and details of safety railings shall be submitted to the Transit Agency for review and approval prior to construction. Walkways required to be constructed over open excavation on Transit Agency's property shall be constructed with safety railings. Walkways shall have a minimum clear width of two feet, six inches (2'-6") and shall be capable of supporting an applied gravity live load of 100 PSF in addition to their own weight. Safety railings shall have a six inch (6") tall continuous kick plate at the base.

The Transit Agency's approval of Developer's excavation plan does not relieve Developer and/or GDOT of ultimate responsibility and liability for the excavation plan.

24.3.5 Demolition, Erection, Hoisting

Transit Agency ROW and facilities shall be protected from damage during demolition, erection, and hoisting procedures.

Developer is required to submit a plan showing the location of cranes horizontally and vertically with respect to Transit Agency's facilities, crane operating radii, and delivery or disposal locations. The location of all railroad facilities as well as all obstructions such as wire lines, poles, adjacent structures, etc., shall be shown.

Crane rating sheets showing cranes to be adequate for 150 percent of the actual weight of the pick shall be submitted, along with a complete set of crane charts including crane, counterweight, and boom nomenclature.

Plans and calculations showing the weight of the pick shall be submitted. Calculations shall be made from plans of the existing and/or proposed structure showing complete and sufficient details with supporting data for the demolition or erection of the proposed structure. If plans do not exist, lifting weights must be calculated from field measurements. The field measurements are to be made under the supervision of the Registered Professional Engineer submitting the procedure and calculations.

A data sheet must be submitted listing the type, size, and arrangements of all rigging and connection equipment. A complete procedure shall also be submitted, including the order of lifts, time required for each lift, and any repositioning or re-hitching of the crane or cranes.

All erection or demolition plans, procedures, data sheets, etc., submitted must be prepared, signed, and sealed by a Professional Engineer registered in the State of Georgia. All such submittals must be reviewed and approved in writing by the Transit Agency prior to Developer performing any of the associated Work.

The Transit Agency's representative must have a minimum of thirty (30) days' notice to determine if a presence at the site during the entire demolition and erection procedure period is required.

24.3.6 Blasting

Developer shall obtain advance approval from the Transit Agency and GDOT for use of explosives on or adjacent to Transit Agency property. The request for permission to use explosives shall include a detailed Blasting Plan. If permission for use of explosives is granted, Developer shall be required to comply with the following:

- Blasting shall be done with light charges under the direct supervision of a responsible officer or employee of Developer;

- Electric detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way train radios;
- No blasting shall be done without the presence of an authorized representative of the Transit Agency. At least seventy two (72) hours advance notice to the person designated in the Transit Agency's notice of authorization to proceed will be required to arrange for the presence of an authorized Transit Agency representative and such flagging the Transit Agency may require;
- Have at the job site adequate equipment, labor, and materials and allow sufficient time to clean up debris resulting from the blasting without delay to trains. Correction of any track misalignment or other damage to Transit Agency property resulting from the blasting shall be done as directed by the Transit Agency's authorized representative at Developer's expense. If its actions result in delay of trains, Developer shall bear the entire cost thereof;
- Storage of explosives on Transit Agency property will not be permitted; and
- Furnish satisfactory evidence of explosion-collapse-underground damage (XCU) insurance coverage.

The Transit Agency will:

- Determine the approximate location of trains and advise Developer of the approximate amount of time available for the blasting operation and clean-up; and
- Have the authority to order discontinuance of blasting if, in its opinion, blasting is too hazardous or is not in accordance with the DBF Documents.

Other Requirements:

- Each transit agency has its own requirements for blasting, which may include provisions in addition to the above. It is Developer's responsibility to contact the Transit Agency before performing any blasting and shall determine and comply with the Transit Agency's requirements. Developer shall handle all matters relating to blasting with the Transit Agency and pay for all costs involved.

24.3.7 Maintenance and Repair of Transit Agency Facilities

Developer shall also repair, or cause to be repaired, any other damage to the property or facilities of the Transit Agency or its tenants.

All such maintenance and repair of damages due to Developer's operations shall be done at Developer's expense.

24.3.8 Storage of Materials and Equipment

Materials and equipment shall not be stored where they will interfere with Transit Agency operations, nor on Transit Agency ROW without first having obtained permission from the Transit Agency, and such permission will be with the understanding that the Transit Agency will not be liable for damage to such material and equipment from any cause and that the Transit

Agency may move or require Developer to move, at Developer's expense, such material and equipment. All grading or construction machinery that is left parked unattended near the track or on the Transit Agency ROW shall be effectively immobilized so that it cannot be moved by unauthorized persons. Safety guidelines are given in Section 24.7 herein.

24.3.9 Cleanup

Upon completion of the Work, Developer shall remove from within the limits of the Transit Agency ROW, all machinery, equipment, surplus materials, falsework, temporary erosion measures, rubbish, or temporary buildings of Developer and shall leave Transit Agency ROW in a neat condition satisfactory to the Transit Agency.

24.4 Damages

Developer shall assume all liability for any and all damages to its Work, employees, servants, equipment, and materials caused by railroad traffic.

Any cost incurred by the Transit Agency for repairing damages to its property or to property of its tenants, caused by or resulting from the operations of Developer, shall be paid directly to the Transit Agency by Developer.

24.5 Flagging Services

24.5.1 When Required

Transit Agency has sole authority to determine the need for flagging required to protect its operations and facilities. In general, the requirements for flagging will be whenever Developer's personnel or equipment are, or are likely to be, working in the Transit Agency ROW, or within distances as may be specified in the DBF Documents or by the railroad, or across, over, adjacent to, or under a track, or when such work has disturbed or is likely to disturb a railroad structure or the railroad roadbed or surface and alignment of any track to such extent that the movement of trains must be controlled by flagging. These requirements include situations where a crane or other piece of equipment is located such that its boom, or extremity, could move and pass within twenty (20) feet of the centerline of a track or within a distance as may otherwise be specified by the railroad. Safety guidelines are provided in this Section 24. Normally the railroad will assign one flagman to a Project, based on an eight- (8) hour workday and forty- (40) hour workweek, but in some cases more than one flagman may be necessary depending upon the activities of the construction.

24.5.2 Scheduling and Notification

Not later than the time that approval is initially requested to begin work on Transit Agency ROW, Developer shall furnish to the Transit Agency and GDOT a schedule for all work required to complete the portion of the Project within Transit Agency ROW.

Developer will be required to give the Transit Agency representative at least twenty one (21) calendar days of advance notice of intent to begin work within Transit Agency ROW. Once

begun, when such work is then suspended at any time, or for any reason, Developer will be required to give the Transit Agency representative at least five (5) calendar days of advance notice before resuming work on Transit Agency ROW. Such notices shall include sufficient details of the proposed work to enable the Transit Agency representative to determine if flagging will be required. If such notice is in writing, Developer shall furnish GDOT a copy; if notice is given verbally, it shall be confirmed in writing with copy to GDOT. If flagging is required, no work shall be undertaken until the flagman is, or flagmen are, present at the job site. It may take up to thirty (30) days to obtain flagging initially from the Transit Agency. When flagging begins, the flagman is usually assigned by the Transit Agency to work at the Project site on a continual basis until no longer needed and cannot be called for an on-a-spot basis. If flagging becomes unnecessary and is suspended, it may take up to thirty (30) days to again obtain flagging from the Transit Agency. Due to Transit Agency practices, in some cases it may be necessary to give five (5) days' notice before flagging service may be discontinued and payment stopped.

If, after the flagman is assigned to the Project site, unusual circumstances or conditions arise which require the flagman's presence elsewhere, then Developer shall delay work on Transit Agency ROW until such time as the flagman is again available. Any additional costs resulting from such delays shall be borne by Developer and not GDOT or the Transit Agency.

24.5.3 Payment

Developer will be responsible for paying the Transit Agency directly for any and all costs of flagging which may be required to accomplish the construction. Developer shall not delegate this responsibility to any subcontractor or any other party. GDOT will not reimburse the Transit Agency for any costs of the flagging required by Developer's work. The cost of flagging is based on an eight- (8) hour work day and forty- (40) hour work week. This cost includes the base pay for the flagman, overhead, and generally includes travel expenses, meals, lodging, equipment, etc. The Transit Agency will charge Developer for the actual flagging cost based on the rate of pay for the Transit Agency's employees who are available for flagging service at the time the service is required. Work by a flagman in excess of 8 hours per day and 40 hours per week will result in overtime pay at one and one half (1½) times the appropriate rate. Also, holiday work will result in overtime pay at two (2) times the appropriate rate. Transit Agency work involved in preparing and handling bills will also be charged to Developer. Charges to Developer by the Transit Agency shall be in accordance with Federal-Aid Highway billing procedures and requirements as contained in applicable provisions of Part 140, Subpart I, and Part 646, Subpart B, of Title 23, Highways, of the *Code of Federal Regulations*, and shall further be on the same basis as GDOT would be billed by the Transit Agency if GDOT was paying for the charges.

Developer will be billed for flagging services on a periodic basis directly by the Transit Agency. Developer will promptly pay such bills within thirty (30) days after each bill is rendered. Should Developer fail to pay the Transit Agency within sixty (60) days after any bill is rendered, GDOT may pay directly to the Transit Agency any amounts due and deduct the amount of such payments from any funds due to Developer or all Work requiring flagging shall cease until such

payment is made. This provision does not affect the obligation of Developer under his bond or the rights of the Transit Agency or GDOT under the bond.

24.5.4 Verification

Developer will review and sign the Transit Agency flagman's time sheet, or other similar documentation, attesting that the flagman was present during the time recorded.

The Transit Agency flagman assigned to the Project will be responsible for notifying GDOT and Developer upon arrival at the job site on the first day (or as soon thereafter as possible) that flagging services begin and on the last day that he performs such services for each separate period that services are provided. Developer will document such notification in the Project records. When requested, Developer will also sign the flagman's time sheets showing daily time spent at the Project site.

24.6 Transporting Materials and Equipment Across Tracks

Any temporary grade crossings, work mats, or other means needed during construction by Developer for transporting materials of any nature, or equipment across railroad tracks or property of Transit Agency, will be the responsibility of Developer to handle directly with the Transit Agency, make all necessary arrangements, and obtain all required approvals. Developer shall execute a written agreement with the Transit Agency to cover such matters, and appropriate time shall be allowed for the preparation and handling of such agreement. Developer shall bear all costs incidental to such matters including flagging services by Transit Agency personnel. Safety guidelines are given in Section 24.10 herein.

24.7 Work for Benefit of Developer

All temporary or permanent changes in wire lines or other facilities that are considered necessary to the Project shall be contemplated in the agreement between Developer and the Transit Agency.

Should Developer desire any changes in addition to the above, then it shall make separate arrangements with the Transit Agency for same to be accomplished, including any required flagging service, at Developer's expense.

24.8 Cooperation and Delays

It shall be Developer's responsibility to coordinate a schedule with the Transit Agency for accomplishing stage construction involving Work by the Transit Agency or tenants of the Transit Agency. In coordinating the schedule, Developer shall ascertain from the Transit Agency the lead time required for assembling crews and materials and shall make due allowance.

No charge or claims of Developer against either GDOT or the Transit Agency will be allowed for hindrance or delay on account of: railway traffic; any work performed or to be performed by the Transit Agency; other delay incident to or necessary for safe maintenance of railway traffic and facilities; or for any other possible delays.

24.9 Safety Guidelines

24.9.1 Guidelines for Personnel on Transit Agency ROW

No one is allowed within the Maintenance of Way of the Transit Agency-secured service envelope without a Transit Agency-authorized escort.

All welders and cutting torches working within twenty-five (25) feet of the track must stop when a train is passing.

24.9.2 Guidelines for Equipment on Transit Agency ROW

No crane or boom equipment will be allowed to set up to work or park within boom distance plus fifteen (15) feet of the centerline of track unless specifically authorized by the Transit Agency and flagman.

No crane or boom equipment will be allowed to foul track or lift a load over the track without flag protection and track time.

Developer shall provide a minimum of thirty (30) days' notice to request wayside track access and coordinate with the Transit Agency's Representative for scheduling availability.

All employees will stay with their machines when crane or boom equipment is pointed toward track.

All cranes and boom equipment under load will stop work while a train is passing.

Swinging loads must be secured to prevent movement while a train is passing.

No loads will be suspended above a moving train.

No equipment will be allowed within twenty-five (25) feet of centerline of track unless specifically authorized by the flagman.

All operating equipment within twenty-five (25) feet horizontal of track must halt operations when a train is passing.

All equipment, loads, and cables are prohibited from touching rails.

No equipment or materials will be parked or stored on Transit Agency's property unless specific authorization is granted from the Transit Agency.

All unattended equipment that is left parked on Transit Agency property shall be effectively immobilized so that it cannot be moved by unauthorized persons.

All cranes and boom equipment will be turned away from track at the end of each work day or whenever unattended by an operator.

24.10 Insurance Requirements

Prior to executing any Work impacting existing Transit Agency ROW, Developer shall procure insurance policies naming GDOT and Transit Agency as insured parties. Such policies shall be maintained throughout the duration of Work performed under this section.

Developer shall obtain insurance in sufficient amounts to cover requirements set forth by all named insured parties. The following types of insurance are typically required, though the specific requirements of the named insured parties shall also be required to be covered:

- Worker's Compensation Insurance;
- Employer's Liability Insurance;
- Commercial General Liability Insurance;
- Automobile Liability Insurance; and
- Errors & Omissions and/or Professional Liability Insurance.

All insurance policies shall be in a form acceptable to the Transit Agency. Copies of all insurance policies accompanied by written approval from the Transit Agency of such policies shall be submitted to GDOT prior to any entry by Developer upon Transit Agency ROW.

In addition to the above forms of insurance, or insurance and bonds required under the terms of the DBF Documents, Developer will be required to carry Liability Insurance as detailed below.

24.10.1 Developer's Liability Insurance

Developer shall furnish to the Transit Agency and copy to GDOT the certificate of insurance in TRIPLICATE as evidence with respect to the operations it performs that it carries regular Developer's Public Liability Insurance and regular Developer's Property Damage Liability Insurance both providing for limits of at least two million dollars (\$2,000,000.00).

Developer shall also furnish the Transit Agency and copy to GDOT the certificate of insurance in TRIPLICATE as evidence with respect to the operations performed for it by any subcontractor that it carries on its own behalf regular Developer's Protective Public Liability Insurance and regular Developer's Protective Property Damage Liability Insurance both providing for limits of at least two million dollars (\$2,000,000.00).

24.10.2 Transit Agency Protective Liability Insurance

Developer shall furnish to the Transit Agency and copy to GDOT the ORIGINAL AND TWO (2) COPIES of Transit Agency Protective Insurance Policy with limits of liability as follows:

Coverage	Minimum Combined Limits Of Liability
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Bodily Injury Liability:	\$2,000,000.00 per occurrence \$6,000,000.00 aggregate
Property Damage Liability:	
Physical Damage to Property:	

The Standards for this protective insurance shall follow the requirements of Part 646, Subpart A, of Title 23, Highways, of the *Code of Federal Regulations*.

Transit Agency Protective Insurance shall be provided on “ISO-RIMA” (Insurance Services Office – Transit Agency Insurance Management Association) policy form No. CG 00 35 01 96. ISO Amendatory Endorsement No. CG 28 31 10 93 should also be included if a policy form number other than the foregoing is used. The equivalent of the foregoing will also be acceptable.

Binders are not acceptable for this coverage.

24.10.3 Evidence of Insurance

Evidence of insurance as required in Section 24.11 shall be furnished to the address shown in Volume 2, Section 24.11.3, for review and approval by the Transit Agency and copied to GDOT.

The Project number, description of the work, and designation of the job site shall be shown on all insurance certificates and policies.

24.10.4 Subletting

If any part of the work is sublet, similar insurance and evidence thereof in the same amounts as required of Developer shall be provided by or on behalf of Developer to cover its operations. Endorsements to Developer’s policies specifically naming subdevelopers and describing their operations will be acceptable for this purpose.

24.10.5 Cancellation

All insurance specified herein shall be carried until all Work required to be performed under the terms of the DBF Documents has been satisfactorily completed within the limits of the Transit Agency ROW as evidenced by formal acceptance by GDOT and the Transit Agency. Insuring companies may cancel insurance by permission of GDOT and the Transit Agency or on thirty (30) days written notice to GDOT and Transit Agency. See Volume 2, Section 24.11.5 for specific parties to be notified.

24.11 Failure to Comply

In the event Developer violates or fails to comply with any of the requirements herein, the Transit Agency may require that Developer vacate Transit Agency property, and GDOT may withhold all monies due Developer on monthly statements.

Any such orders shall remain in effect until Developer has remedied the situation to the satisfaction of the Transit Agency and GDOT.