GEORGIA DEPARTMENT OF TRANSPORTATION

DESIGN-BUILD AGREEMENT

PROJECT NUMBER

P.I. NOS. 0014895 & 0014899

BIBB COUNTY

THE SR 247 & COLLEGE STREET BRIDGES OVER NS RAILWAY DESIGN-BUILD PROJECT

Dated Advertisement: April 19, 2019

Amendment 1 Issued: May 23, 2019

Amendment 2 Issued: June 28, 2019

Letting Date: August 16, 2019
DESIGN-BUILD AGREEMENT

FOR

THE SR 247 & COLLEGE STREET BRIDGES OVER NS RAILWAY DESIGN-BUILD PROJECT

PI No. 0014895 & 0014899

BIBB COUNTY

Between

Georgia Department of Transportation,

State of Georgia

and

Wright Brothers Construction Company, Inc.
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DESIGN BUILD AGREEMENT
THE SR 247 & COLLEGE STREET BRIDGES OVER NS RAILWAY DESIGN BUILD PROJECT

This Design-Build Agreement for the SR 247 & College Street Bridges over NS Railway Design-Build Project (this “Agreement”, or “DB Agreement”, or the “DBA”) is entered into and effective as of 10/9/2019 by and between the Georgia Department of Transportation (“GDOT”), an agency of the State of Georgia, and Wright Brothers Construction Company, Inc. (“DB Team”).

RECITALS

A. Pursuant to Section 32-2-81 (c) of the Official Code of Georgia Annotated (the “Code”), GDOT is authorized to “combine any or all of the environmental services, utility relocation services, right of way services, design services, and construction phases of a public road or other transportation purpose project into a single contract using a design-build procedure.”

B. Pursuant to Section 32-2-81 of the Code, “the term ‘design-build procedure’” means a method of contracting under which the Department contracts with another party for the party to both design and build the structures, facilities, systems, and other items specified in the contract.” GDOT “may use the design-build procedure for buildings, bridges and approaches, rail corridors, technology deployments, and limited or controlled access projects or projects that may be constructed within existing rights of way where the scope of work can be clearly defined or when a significant savings in project delivery time can be attained.”

C. Pursuant to the provisions of the Code and Chapter 672-18 of the Rules of the State Department of Transportation (the “Rules”), GDOT issued a Request for Qualifications (“RFQ”) on January 25, 2019, as amended, requesting submittals of a Statement of Qualifications (“SOQ”) from respondents desiring to develop the SR 247 & College Street Bridges over NS Railway Design-Build Project (the “Project”) through a Design-Build Agreement.

D. GDOT received three responsive SOQs by February 28, 2019, and subsequently shortlisted or qualified three responsive Proposers.

E. On April 19, 2019, GDOT issued to the shortlisted or qualified Proposers an RFP with respect to the Project.

F. On July 25, 2019, GDOT received responses to the RFP, as amended, including the response of DB Team (the “Proposal”).

G. As part of the RFP, GDOT required that shortlisted or qualified Proposers commit to entering into an Agreement with GDOT for the design and construction of the Project.

H. GDOT evaluated and determined the DB Team was the Proposer which best met the selection criteria contained in the RFP.

NOW, THEREFORE, in consideration of the Work to be performed by DB Team, and DB Team’s obligations with respect thereto, the foregoing premises and the covenants and agreements set forth herein, the Parties hereby agree as follows:
Article 1  DEFINITIONS; DB DOCUMENTS; ORDER OF PRECEDENCE; PRINCIPAL PROJECT DOCUMENTS

1.1 Acronyms and Definitions

Acronyms and definitions for certain terms used in this Agreement and the other DB Documents are contained in Exhibit 1. Other definitions may be identified within the text of the DB Documents.

1.2 DB Documents; Order of Precedence

Each of the DB Documents is an essential part of the agreement between the Parties. The DB Documents are intended to be complementary and to be read together with this Agreement as a complete agreement. Each of the DB Documents (other than this Agreement) is hereby expressly incorporated herein by reference.

1.2.1 Subject to Article 1.2.2, in the event of any conflict, ambiguity or inconsistency among the DB Documents, the order of precedence, from highest to lowest, shall be as follows:

1.2.1.1 Supplemental Agreements, Agreement amendments, and all exhibits, riders, and attachments thereto;

1.2.1.2 The Agreement (also referred to as Volume 1) and all exhibits thereto (other than Exhibit 2, Exhibit 3 and Exhibit 5);

1.2.1.3 Volume 1 Exhibit 2, Exhibit 3 and Exhibit 5;

1.2.1.4 Volume 2 “Technical Provisions for Design-Build Agreement” amendments, and all exhibits and attachments to such amendments;

1.2.1.5 Volume 2 “Technical Provisions for Design-Build Agreement”, and all exhibits and attachments to the Technical Provisions;

1.2.1.6 Volume 2, Attachment 3-1 “Manuals” (Technical Documents) amendments; provided that GDOT in its sole discretion may designate that such amendments or portions thereof take precedence over the Technical Provisions to the extent provided in Article 7.2.5;

1.2.1.7 Volume 2, Attachment 3-1 “Manuals” (Technical Documents);

1.2.1.8 The DB Team’s Proposal, including DB Team’s Schematic Plan of Project and related Early Portions of the Work; provided that certain provisions therein shall supersede the specified provisions of the other DB Documents.

1.2.2 If the Proposal, including DB Team’s Schematic Plan of Project, includes statements, offers, terms, concepts or designs that can reasonably be interpreted as offers to provide higher quality items than otherwise required by the other DB Documents or to perform services or meet standards in addition to or better than those otherwise required, or otherwise contains terms or designs which are more advantageous to GDOT than the requirements of the other DB Documents, as reasonably determined in its sole discretion by GDOT, then DB Team’s obligations hereunder shall include compliance with all such statements, offers, terms,
concepts and designs, which shall have the priority of Agreement amendments (Article 1.2.1.1) and Technical Provisions amendments (Article 1.2.1.4), as applicable.

1.2.3 If the DB Documents contain differing provisions on the same subject matter, the provisions that establish the higher quality manner or method of performing the Work or use more stringent standards will prevail. Additional details in a lower priority DB Document shall be given effect except to the extent they irreconcilably conflict, as determined at GDOT’s sole discretion, with requirements, provisions and practices contained in the higher priority DB Document.

1.2.4 Where there is an irreconcilable conflict among any standards, criteria, requirements, conditions, procedures, specifications or other provisions applicable to the Project set forth in one or more manual(s) or publication(s) referenced within a DB Document or set of DB Documents with the same order of priority (including within documents referenced therein), the standard, criterion, requirement, condition, procedure, specification or other provision offering higher quality or better performance will apply, unless GDOT in its sole discretion approves otherwise in writing. If there is an irreconcilable conflict between manuals or publications referenced in DB Document of differing priorities, the order of precedence set forth in Article 1.2.1 will apply. If either Party becomes aware of any such conflict, it shall promptly notify the other party of the conflict in writing. If the DB Team notifies GDOT of a potential conflict, GDOT shall determine if a conflict does exist and if the order of precedence does not determine which takes precedence, GDOT shall promptly issue a written determination respecting which of the conflicting provisions is to be applied.

1.3 Construction and Interpretation of the DB Documents

1.3.1 The headers or captions of the Articles of this Agreement and Sections in the other DB Documents are for convenience only and shall not be deemed part of this Agreement or the DB Documents or considered in construing this Agreement or the DB Documents.

1.3.2 The language in all parts of the DB Documents shall in all cases be construed simply, as a whole and in accordance with its fair meaning and not strictly for or against any Party. The Parties hereto acknowledge and agree that the DB Documents are the product of an extensive and thorough, arm's length exchange of ideas, questions, answers, information and drafts during the Proposal preparation process, that each Party has been given the opportunity to independently review the DB Documents with legal counsel, and that each Party has the requisite experience and sophistication to negotiate, understand, interpret and agree to the particular language of the provisions of the DB Documents. Accordingly, in the event of an ambiguity in or Dispute regarding the interpretation of the DB Documents, the DB Documents shall not be interpreted or construed against the Party preparing it, and instead other rules of interpretation and construction shall be utilized. GDOT's final answers to the questions posed during the Proposal preparation process for this Agreement shall in no event be deemed part of the DB Documents and shall not be relevant in interpreting the DB Documents except as they may clarify provisions otherwise considered ambiguous.

1.3.3 Reserved

1.3.4 All terms defined in the DB Documents shall be deemed to have the same meanings in all riders, exhibits, addenda, attachments or other documents affixed to or expressly incorporated by reference in this Agreement unless the context thereof clearly requires the contrary.
1.3.5 Unless otherwise stated in this Agreement or the other DB Documents, words that have well-known technical or construction industry meanings are used in this Agreement or the other DB Documents in accordance with such recognized meaning.

1.3.6 Wherever the word “including,” “includes” or “include” is used in the DB Documents, it shall be deemed to be followed by the words “without limitation”.

1.3.7 Wherever reference is made in the DB Documents to a particular Governmental Entity, it includes any public agency succeeding to the powers and authority of such Governmental Entity.

1.3.8 As used in this Agreement and the other DB Documents and as the context may require, the singular includes the plural and vice versa, and the masculine gender includes the feminine and vice versa.

1.4 Reserved

1.5 Reference Information Documents

1.5.1 DB Team acknowledges that GDOT has provided and disclosed to DB Team the Reference Information Documents (“RIDs”). The RIDs are not mandatory or binding on DB Team. DB Team is not entitled to rely on the RIDs as presenting design, engineering, operating or maintenance solutions or other direction, means or methods for complying with the requirements of the DB Documents, Governmental Approvals or Law.

1.5.2 Except as expressly set forth herein, DB Team acknowledges that GDOT neither represents nor warrants that the information contained in the RIDs is complete or accurate or that such information is in conformity with the requirements of the DB Documents, Governmental Approvals or Laws, and GDOT is neither responsible or liable in any respect for any causes of action, claims or Losses whatsoever suffered by DB Team or any DB Team-Related Entity by reason of any use of information contained in, or any action or forbearance in reliance on, the RIDs.

1.6 Errata to the GDOT Standards

In interpreting standards, policies and specifications referenced in the latest edition of the GDOT Standard Specifications, Construction of Transportation Systems, as well as the Manuals listed in Volume 2, Attachment 3-1, the following apply:

(a) References to the “Department” shall mean GDOT.

(b) References to the “Contractor” shall mean the DB Team.

(c) References to “Resident Engineer” or “Engineer” in the context of the provider of compliance judgment may mean the Design Quality Assurance Manager or Engineer of Record, as applicable, or it may mean a GDOT representative, or any combination thereof, depending on the context, and as determined by GDOT in its sole discretion and without recourse for the DB Team.

(d) References to the “Contract” shall mean the DB Documents.
(e) References to “plan(s)” shall mean the DB Documents.

(f) References to “The Work” shall mean the Work.

(g) Cross-references to measurement and payment provisions contained in the referenced standards, policies and specifications shall be deemed to refer to the measurement and payment provisions contained in the DB Documents.

(h) Any conflicts, ambiguities, or lack of clarity in regard to items included in the provisions, terms, or definitions used will be interpreted and defined by GDOT in its sole discretion. The DB Team shall not take advantage of any apparent conflict, omission, ambiguity, inconsistency, inaccuracy, deficiency, or inadequacy related to the application of a requirement, action to be taken, or the definition of roles and responsibilities in the execution of the Work. Should it appear that any definition of roles and responsibilities is contrary to the philosophy of those established by the Agreement, it is the responsibility of the DB Team to request a determination by GDOT related to the respective roles and responsibilities of the DB Team and GDOT.

2.1 Grant of Authority for Undertaking

2.1.1 GDOT hereby grants to DB Team the revocable right, and DB Team accepts the obligation, to design and construct (including any maintenance obligations during such period as required pursuant to the DB Documents) the Project in accordance with the requirements of this Agreement and the other DB Documents.

2.2 Right of Way; Construction Easement; Ownership

2.2.1 The Project shall be constructed on and within the property as identified in the NEPA Approval and any amendment thereto (the “Property”). GDOT shall provide DB Team with access rights to the Property, together with the Existing Right of Way as set forth in this Article 2.2.

2.2.1.1 Reserved

2.2.1.2 GDOT reserves the right to enter upon, possess, control and utilize the Property with or without payment of compensation to DB Team in accordance with this Agreement.

2.2.1.3 GDOT has granted, and has further reserved the right to grant, to other parties, utility and other permits and easements and modifications thereto and rights of use to the Property subject to the limitations of the DB Documents.

2.2.2 Existing Right of Way, State Proposed/State Acquired Right of Way

2.2.2.1 Upon the terms and conditions of this Agreement, including as set forth in this Article 2.2, and subject to the terms and conditions of the DB Documents, as of the Effective Date, GDOT shall and does, subject to and upon issuance of NTP 1:
grant to DB Team a non-exclusive right of access, ingress and egress (and the right to grant to DB Team-Related Entities a non-exclusive right of access, ingress and egress) to all real property comprising the Existing Right of Way as more particularly described and designated in Exhibit 4, subject to the exclusions and reservations set forth in this Agreement, in accordance with the terms described in the DB Documents, and

(b) as and to the extent that GDOT, has acquired a right of access or interest in State Proposed/State Acquired Right of Way as described and designated in Exhibit 4, grant to DB Team a non-exclusive right of access, ingress and egress (and the right to grant other DB Team-Related Entities a non-exclusive right of access, ingress and egress) to such State Proposed/State Acquired Right of Way.

2.2.2.2 DB Team represents that it has reviewed the Existing Right of Way and confirmed that the access rights to the property and timing for the grant of such rights as identified therein are sufficient and complete so as to allow DB Team access to all areas of the Property as required for the performance and completion of the Work.

2.2.3 Reserved

2.2.3.1

2.2.4 Reserved

2.2.4.1

Article 3 CONTRACT TIME

3.1 Term of Agreement

This Agreement shall remain in effect until Final Acceptance, subject to the survival of all such obligations as expressly provided herein, including without limitation, any warranty periods (the "Term"); provided that this Agreement shall be subject to earlier termination in accordance with the terms of this Agreement and the DB Documents.

3.2 Project Schedule

3.2.1 As a material consideration for entering into this Agreement, DB Team hereby commits, and GDOT is relying upon DB Team’s commitment, to develop, design and fully construct the Project in accordance with the milestones and time periods set forth in this Agreement and the other DB Documents, including without limitation, in the Technical Provisions, the Project Schedule and Completion Deadlines, including Interim Completion Deadlines, subject only to delays caused by Relief Events specifically provided hereunder.

3.2.2 The time limitations set forth for DB Team’s performance of its covenants and obligations as required pursuant to the DB Documents, including without limitation performance of the Work as required pursuant to the Completion Deadlines, including Interim Completion Deadlines, and Project Schedule, are of the essence, and except where this Agreement expressly provides for extension of time due to a Relief Event or Compensation Event, DB Team waives any right at law or in equity to tender or complete performance beyond the
applicable time period, or to require GDOT to accept such performance. All references to days shall mean Calendar Days unless otherwise specified.

3.2.3 DB Team shall achieve the Interim Completion Date of each Early Portion of the Work on or before each of the applicable Interim Completion Deadlines, Substantial Completion on or before the Substantial Completion Deadline and Final Acceptance on or before the Final Acceptance Deadline, time being of the essence.

3.2.4 DB Team hereby represents and warrants that the Project Schedule is in the form described in the Technical Provisions, has been developed in accordance with Section 2.5 of the Technical Provisions, and is consistent with the Milestone Deadlines set forth in Exhibit 9 to this Agreement. DB Team shall use the Proposal Schedule as a foundation to prepare the Baseline Project Schedule for GDOT's review and approval, as set forth in Section 2.5 of the Technical Provisions. The Parties shall use the Proposal Schedule for planning and monitoring the progress of the Work until such time that the Baseline Project Schedule is approved by GDOT. The proposed Baseline Project Schedule shall be consistent with the Proposal Schedule and Milestone Deadlines except to the extent adjustments are allowed as provided in the DB Documents and as approved by GDOT.

3.2.5 All Float contained in the Project Schedule shall be considered a shared resource among GDOT and the DB Team, available to any or all such parties as needed to absorb delay caused to the Critical Path components as set forth in the Project Schedule or Milestone Deadlines, whether on account of Relief Events or other events of delay not constituting Relief Events. All Float shall be shown as such in the Project Schedule on each affected schedule path. GDOT shall have the right to examine the identification of (or failure to identify) Float on the Project Schedule in determining whether to approve or accept the Project Schedule. Once identified, DB Team shall monitor and account for Float in accordance with Critical Path methodology.

3.3 Contract Time, Date of Commencement, and Notice to Proceed

3.3.1 DB Team’s time period for completion of the Work is the period from the day after issuance of NTP 1 through the Final Acceptance Date, as may be adjusted for any Relief Event as expressly provided in the Agreement (the “Contract Time”). All Work shall be performed in accordance with the Milestone Deadlines attached as Exhibit 9.

3.3.1.1 GDOT anticipates issuing NTP 1 promptly following the Effective Date, and shall in any case provide for issuance of NTP 1 within 30 days from DB Team’s satisfaction of the conditions for execution of the Agreement. Issuance of NTP 1 authorizes DB Team to commence preliminary design activities in accordance with 23 CFR § 636.103. Prior to completion of the Environmental Documents review process, any such preliminary engineering and other activities and analyses are at the DB Team’s sole risk and shall not materially affect the objective consideration of alternatives in the Environmental Documents review process. Preliminary design activities shall be completed in accordance with the Management Plans, the Technical Provisions, and other activities anticipated to be performed after NTP 1, including satisfying the conditions to issuance of NTP 3 under Article 3.3.1.3.

3.3.1.2 Issuance of NTP 2 authorizes the DB Team to perform all NTP 1 activities, Final Design activities, and any other activities required for start of the Construction Work in accordance with 23 CFR § 636.103. NTP 2 will be issued once the
Environmental Documents are approved, or with NTP 1 if the Environmental Documents have been approved by the Agreement execution date.

3.3.1.3 Issuance of NTP 3, also referred to as Released for Construction ("RFC"), authorizes DB Team to perform all other Work and activities pertaining to the Project, subject to conforming RFC Plans as may be related to commencement of any Element of the Construction Work. DB Team may not proceed to commence any construction activity with respect to the Project except as authorized pursuant to an RFC. An RFC may be issued for the entire Project or any Construction Phase of the Project. GDOT anticipates issuing NTP 3 after GDOT’s issuance of Right of Way certification and within five Business Days from DB Team’s satisfaction of the following conditions:

(a) Submittal by DB Team to GDOT and acceptance by GDOT of the Quality Management Plan in accordance with Article 9 of this Agreement and Section 2.3 of the Technical Provisions;

(b) Submittal by DB Team to GDOT and acceptance by GDOT of DB Team’s Safety Plan under Section 2.4 of the Technical Provisions;

(c) Submittal by DB Team to GDOT and acceptance by GDOT of DB Team’s Released for Construction Plans for the phases of the Project under Section 3 of the Technical Provisions;

(d) Submittal by DB Team to GDOT and acceptance by GDOT of DB Team’s proposed Schedule of Values under Section 2.6 of the Technical Provisions;

(e) Submittal by DB Team to GDOT and acceptance by GDOT of the DB Team’s proposed Baseline Project Schedule under Section 2.5 of the Technical Provisions;

(f) Submittal by DB Team to GDOT and acceptance by GDOT of DB Team’s Traffic Control Plan under Section 18.3 of the Technical Provisions for the approved Project Phase;

(g) Submittal by DB Team to GDOT and acceptance by GDOT of DB Team’s Transportation Management Plan under Section 18.2 of the Technical Provisions;

(h) Submittal by DB Team to GDOT and acceptance by GDOT of DB Team’s Construction Phasing and Staging Plan of Project, as applicable, under Section 2.2.4 of the Technical Provisions;

(i) Submittal by DB Team to GDOT and acceptance by GDOT of DB Team’s Construction Maintenance Limits Plan under Section 19.2 of the Technical Provisions;

(j) Submittal by DB Team to GDOT and acceptance by GDOT of DB Team’s Comprehensive Environmental Protection Plan (CEPP) under Section 4.3 of the Technical Provisions;
(k) Submittal by DB Team to GDOT and acceptance by GDOT of DB Team’s Right of Way Acquisition Plan, as applicable, under Section 5.3.5 of the Technical Provisions;

(l) Submittal by DB Team to GDOT and acceptance by GDOT of DB Team’s Demolition and Abandonment Plan, as applicable, under Section 10.2 of the Technical Provisions;

(m) Submittal by DB Team to GDOT and acceptance by GDOT of DB Team’s Maintenance Management Plan under Section 19.3 of the Technical Provisions;

(n) Evidence by DB Team of all required Government Approvals as required under Article 6.2 for the approved Project Phase;

(o) Reserved;

(p) Submittal by DB Team to GDOT and acceptance by GDOT of all Standard Utility Agreements, Utility Encroachment Permits, Emergency Utility Response Plan, Utility Relocation Plans, and/or Certification of “No-Conflict” for the approved Project Phase, if required, under Article 7.5 of the Agreement and Section 6 of the Technical Provisions;

(q) Submittal by DB Team to GDOT of qualified Worksite Utility Control Supervisor (WUCS), Worksite Erosion Control Supervisor (WECS), and Worksite Traffic Control Supervisor (WTCS); and

(r) Submittal by DB Team to GDOT and acceptance by GDOT of all other Management Plans and other submittals required by the DB Documents to be submitted and/or accepted or approved prior to NTP 3 or start of the Construction Work for that Element of the Project.

3.3.1.4 Notwithstanding any provision to the contrary in this Article 3.3, DB Team shall not perform, nor be obligated to perform, any portion of the Work prior to issuance of approval of the Environmental Documents, except for Work authorized under 23 C.F.R. 636.103, Preliminary Work.

3.3.2 DB Team shall satisfy all conditions prior to issuance of NTP 3. DB Team shall satisfy all conditions to commencement of the Construction Work and commence such Construction Work with diligence and continuity, by the deadlines therefor set forth in Milestone Deadlines attached as Exhibit 9, and any adjustments set forth therein, all as the same may be extended pursuant to this Agreement.

3.3.3 Prior to the start of any Construction Work, the DB Team shall satisfy conditions set forth in Section 2 and Section 3 of the Technical Provisions.
Article 4  CONTROL OF THE WORK

4.1 DB Team Quality Management

The DB Team shall perform the quality control, that is all operation techniques and activities performed or conducted to fulfill the contract requirements, and quality management necessary to meet its obligations under the DB Documents and in accordance with GDOT Standard Specification 105.

4.2 Reserved

4.3 Reserved

4.4 Limitations on DB Team’s Right to Rely

4.4.1 No review, comment, objection, rejection, acceptance, disapproval, certification (including certificates of Substantial Completion and Final Acceptance), concurrence, monitoring, testing, verification sampling, inspection, spot checking, auditing or other oversight by or on behalf of GDOT or their representatives or agents, or lack thereof by GDOT, or their representatives or agents, shall constitute acceptance of materials or Work or waiver of any legal or equitable right under the DB Documents, at Law, or in equity. GDOT shall be entitled to remedies for Nonconforming Work and to identify additional Work which must be done to bring the Work and Project into compliance with requirements of the DB Documents, regardless of whether previous review, comment, objection, rejection, acceptance, disapproval, certification, concurrence, monitoring, testing, inspection, spot checking, auditing or other oversight were conducted or given by GDOT, or their representatives or agents. Regardless of any such activity or failure to conduct any such activity by GDOT, or its representatives or agents, DB Team at all times shall have an independent duty and obligation to fulfill the requirements of the DB Documents. DB Team agrees and acknowledges that any such activity or failure to conduct any such activity by GDOT, or their representatives or agents:

(a) is solely for the benefit and protection of GDOT;

(b) does not relieve DB Team of its responsibility for the selection and the competent performance of all DB Team-Related Entities;

(c) does not create or impose upon GDOT any duty or obligation toward DB Team to cause it to fulfill the requirements of the DB Documents;

(d) shall not be deemed or construed as any kind of warranty, express or implied, by GDOT;

(e) may not be relied upon by DB Team or used as evidence in determining whether DB Team has fulfilled the requirements of the DB Documents;

(f) may not be asserted by DB Team against GDOT as a defense, legal or equitable, to, or as a waiver of or relief from, DB Team’s obligation to fulfill the requirements of the DB Documents; and

(g) shall not be deemed or construed as any assumption of risk by GDOT as to the quality of Work or materials.
4.4.2 DB Team shall not be relieved or entitled to reduction of its obligations to perform the Work in accordance with the DB Documents, or any of its other liabilities and obligations, including its indemnity obligations, as the result of any activity identified in Article 4.4.1 or failure to conduct any such activity by GDOT. Such activity by GDOT shall not relieve DB Team from liability for, and responsibility to cure and correct Nonconforming Work or DB Team Defaults.

4.4.3 To the maximum extent permitted by Law, DB Team hereby releases and discharges GDOT from any and all duty and obligation to cause DB Team’s Work or the Project to satisfy the standards and requirements of the DB Documents. GDOT is an intended third-party beneficiary of this Article 4.4.

4.4.4 Notwithstanding the provisions of Articles 4.4.1, 4.4.2 and 4.4.3:

(a) DB Team shall be entitled to rely on written approvals, acceptances, lack of responses from GDOT (i) for the limited purpose of establishing that the approval, acceptance or lack of response occurred or (ii) that are within its sole discretion, but only to the extent that DB Team is prejudiced by a subsequent decision of such party to rescind such approval or acceptance;

(b) DB Team shall be entitled to rely on the certificates of Substantial Completion and Final Acceptance from GDOT for the limited purpose of establishing that Substantial Completion and Final Acceptance, as applicable, have occurred, and the respective dates thereof;

(c) GDOT is not relieved from any liability arising out of a knowing and intentional material misrepresentation under any written statement GDOT delivers to DB Team; and

(d) GDOT is not relieved from performance of its express responsibilities under the DB Documents in accordance with all standards applicable thereto.

4.5 Reserve

4.6 Oversight by GDOT

4.6.1 GDOT shall independently have the right at all times to monitor, inspect, sample, measure, attend, observe or conduct tests and investigations, and conduct any other oversight respecting any part or aspect of the Project or the Work, to the extent necessary or advisable (to verify on an audit basis DB Team’s compliance with the DB Documents and Management Plans as provided in Article 22.2).

4.6.2 DB Team acknowledges and agrees that GDOT will have the right to audit, monitor and inspect DB Team and its Contractors compliance with Good Industry Practice and its responsibilities and obligations under the DB Documents.

4.6.3 GDOT will not conduct formal prior reviews of Design Documents except to the extent necessary or advisable, provided that the aforementioned shall not limit GDOT’s rights pursuant to this Agreement. GDOT reserve the right to conduct “over-the-shoulder” reviews of
Design Documents or other Submittals as they may deem necessary or appropriate, including pursuant to Article 17.3.8, provided that they shall not have any obligation to conduct such reviews nor assume any responsibility for DB Team’s Work, regardless of whether or not electing to perform or performing any such “over-the-shoulder” reviews.

4.6.4 Nothing in the DB Documents shall preclude, and DB Team shall not interfere with, any review, audit or oversight of Submittals, Work or books and records that the GDOT may desire to conduct.

4.7 Rights of Cooperation and Access; Increased Oversight

4.7.1 DB Team shall coordinate and cooperate, and require its Contractors to coordinate and cooperate, with GDOT and any such parties as provided in Article 4.5 and Article 4.6 to facilitate the full, efficient, effective and timely performance of all such monitoring, inspection, sampling, measuring, testing, reporting, auditing, and other oversight functions. DB Team shall cause its representatives to be available at all reasonable times for consultation with GDOT and such other parties as required.

4.7.2 Without limiting the foregoing and subject to GDOT complying with DB Team’s reasonable safety requirements, DB Team shall afford GDOT:

(a) safe and unrestricted access to the Project at all times,

(b) safe access during normal business hours to DB Team’s Project offices and operations buildings,

(c) safe access during normal business hours to the Project Specific Locations and

(d) unrestricted access to data respecting the Project design, construction, operations and maintenance, and the Utility Adjustment Work.

Without limiting the foregoing, DB Team shall deliver to GDOT upon request accurate and complete books, records, data and information regarding Work, the Project and the Utility Adjustment Work, in the format required by the Technical Provisions.

4.7.3 GDOT shall have the right to increase the type and level of their oversight as provided in Article 4.6 and Article 17.3.8.

4.8 Limits of Responsibility for Oversight, Review, Recommendations, Inspection and Acts by GDOT

4.8.1 Although GDOT, and its representatives and agents, may consult with DB Team during the course of the Work, no such party shall have control over, charge of, or responsibility for any of the Work, including without limitation, any design or engineering thereof, or means, methods, techniques, sequences or procedures in connection therewith, nor shall any such party be responsible for DB Team’s failure to perform the Work in accordance with the requirements of the DB Documents. Any such review is not for the purpose of determining the accuracy and completeness of information or work product, all of which are DB Team’s responsibility. Any review, recommendation, acceptance, inspection, response, act or omission with respect to any Submittals, or with respect to the Project, the Work (whether Construction
Work or Design Work), or the Construction Documents shall be pursuant to, and solely in
furtherance of the inspection powers as set forth in O.C.G.A. § 50-21-24(8).

4.8.2 DB Team shall, at all times and notwithstanding any such acts or omissions by
GDOT as provided in this Article 4 or elsewhere in this Agreement, be fully responsible for all
architectural design and engineering required for the Project. DB Team expressly waives and
releases (a) all claims for right of contribution against either GDOT, or its respective
representatives and agents, other than for such parties’ sole negligence, arising from or related
to any third-party claims, including without limitation for personal injury, death, or property
damage, and (b) all claims and defenses by DB Team against either GDOT, or its respective
representatives and agents in derogation of the limitations of this Article 4, including this
Article 4.8, and/or that any or all of such parties otherwise have, or by their acts or omissions,
assumed any responsibility for, or related to, the design or construction of the Project, or any
means, methods, or techniques in respect thereof. DB Team hereby further expressly waives
any claim or defense the basis of which is to assert that GDOT may not delegate the
responsibility for any Element of the design and construction of the Project involving public
roadways, signs, or traffic controls to DB Team as provided in this Agreement.

Article 5 CONTRACT SUM, PAYMENTS, AND PUBLIC FUNDS

5.1 Payment of Contract Sum

5.1.1 GDOT shall pay DB Team the Contract Sum for Work properly performed in
accordance with the DB Documents. DB Team, in consideration for all Work performed in
accordance with the DB Documents, shall be entitled to receive the Contract Sum, which
amount is inclusive of all fees, overhead, profit, insurance and bond premiums, labor and
material costs, installations, delivery, warehouse and handling charges, duties, taxes and other
assessments.

5.2 Reserved

5.3 Reserved

5.4 GDOT Monetary Obligations and Overall Limitation of Liability

5.4.1 Notwithstanding anything to the contrary in the DB Documents, in no event
shall GDOT’s outstanding liability to DB Team under the DB Documents, including liability
related to Compensation Events and Compensation Amounts, exceed the amount of
compensation that would be payable to DB Team pursuant to a Termination for Convenience
under Article 19.1.

5.4.2 The payment of any moneys owed by GDOT under the DB Documents,
including without limitation amounts payable in connection with a termination, upon the
occurrence of a GDOT Event of Default, or in any suit for monetary damages alleging breach of
this Agreement by GDOT, shall be limited to funds available to GDOT for such payments.

5.4.3 Reserved

5.4.4 Reserved
Article 6 PROJECT PLANNING AND ACCEPTANCES; PROJECT ADMINISTRATION, REVIEW
AND OVERSIGHT; PUBLIC INFORMATION

6.1 Preliminary Planning and Engineering Activities; Site Conditions

6.1.1 DB Team shall perform or cause to be performed all architectural and engineering activities appropriate for design and construction of the Project in accordance with Good Industry Practice and the DB Documents, which may include, subject to the scope of Work set forth in the DB Documents or as required by GDOT by Supplemental Agreement or Directive Letter:

(a) Utility Adjustments;
(b) technical studies and analyses;
(c) geotechnical investigations;
(d) right of way mapping, surveying and appraisals;
(e) Subsurface Utility Engineering (SUE) investigations and mapping;
(f) Hazardous Materials investigations; and
(g) design and construction surveys.

6.1.2 Except to the extent that DB Team is entitled to a Relief Event and/or a Compensation Event under this Agreement, DB Team shall bear the risk of any incorrect or incomplete review, examination and investigation by it of the Site or the Existing Improvements and surrounding locations, and of any incorrect or incomplete information resulting from preliminary architectural and engineering activities conducted by DB Team, GDOT, or any other Person. DB Team acknowledges and agrees that GDOT makes no warranties or representations as to any surveys, data, reports or other information provided by GDOT or other Persons concerning surface conditions and subsurface conditions, including the presence of Utilities, Hazardous Materials, contaminated groundwater, archeological, paleontological and cultural resources, and Threatened or Endangered Species, affecting the Site, the Existing Improvements, or surrounding locations. DB Team acknowledges that such information is for DB Team’s reference only and has not been verified.

6.1.3 Except to the extent that DB Team is entitled to a Relief Event and/or a Compensation Event under this Agreement, DB Team shall bear the risk of all conditions occurring on, under or at the Site and the Existing Improvements, including (a) physical conditions of an unusual nature, differing materially from those ordinarily encountered in the area, (b) changes in surface topography, (c) variations in subsurface moisture content, (d) Utility facilities, (e) the discovery at, near or on the Property of any archeological, paleontological or cultural resources, and (f) the discovery at, near or on the Property of any Threatened or Endangered Species.

6.2 Governmental Approvals and Third-Party Agreements

6.2.1 GDOT retains responsibility for obtaining all Provided Approvals based on the design schematic contained in the NEPA Approvals. GDOT shall deliver to DB Team true and
complete copies of all Provided Approvals. DB Team shall obtain all other Governmental Approvals and, except to the extent the DB Documents expressly provide GDOT is responsible therefor, all third-party approvals and agreements required in connection with the Project or the Work, including any modifications, renewals and extensions of the Provided Approvals (including those required in connection with a Compensation Event). DB Team shall deliver to GDOT true and complete copies of all new or amended Governmental Approvals and third-party approvals and agreements. In no event shall GDOT be responsible or liable for any delays in obtaining Provided Approvals to the extent such delays are caused by differences between the schematic contained in the NEPA Approvals and DB Team’s Final Design, unless such differences are due to a GDOT Change.

6.2.2 Prior to submitting to a Governmental Entity any application for a Governmental Approval (or any proposed modification, renewal, extension or waiver of a Governmental Approval or provision thereof), DB Team shall submit the same, together with any supporting environmental studies and analyses, to GDOT (a) for acceptance or (b) for review and comment, as specified in the Technical Provisions in Table 4-2.

6.2.3 Except as expressly set forth in this Agreement to the contrary, in the event DB Team’s design differs from the schematic contained in the approved Environmental Documents upon which the Provided Approvals were based, as among GDOT and DB Team, DB Team shall support necessary actions, and shall bear all risk of delay, resulting from or arising out of any associated change in the Project location and design, including (a) conducting all necessary environmental studies and preparing all necessary Environmental Documents in compliance with applicable Environmental Laws, and (b) obtaining and complying with all necessary new Governmental Approvals (including any modifications, renewals and extensions of the Provided Approvals, and other existing Governmental Approvals). GDOT will independently evaluate all environmental studies and documents.

6.2.4 Subject to clauses of Article 14.2 for Compensation Events and clauses of Article 14.1 for Relief Events and except to the extent required under the Technical Provisions, in the event DB Team is unable to obtain necessary Governmental Approvals for any design that differs from the schematics contained in the approved Environmental Documents upon which Provided Approvals were based, DB Team shall be obligated to design and construct the Project according to a design in compliance with the requirements of the Provided Approvals, and no such circumstance shall constitute a Relief Event or Compensation Event.

6.2.5 At DB Team’s request, GDOT shall reasonably assist and cooperate with DB Team in obtaining from Governmental Entities the Governmental Approvals (including any modifications, renewals and extensions of existing Governmental Approvals from Governmental Entities) required to be obtained by DB Team under the DB Documents.

6.2.5.1 GDOT and DB Team shall work jointly to establish a scope of work and budget for GDOT Recoverable Costs related to the assistance and cooperation GDOT will provide as contemplated herein, subject to any rights of DB Team in the case of a Compensation Event.

6.2.5.2 Such costs and expenses shall be subject to the limitations for GDOT Recoverable Costs provided however that, notwithstanding the limitations of subpart (a) in the definition of GDOT Recoverable Costs, such reimbursable amounts shall expressly include costs and expenses incurred to conduct further or supplemental
environmental studies as a result of (i) any DB Team Proposed Right of Way, or (ii) DB Team Release(s) of Hazardous Material.

**6.2.6** DB Team shall comply with all conditions imposed by and undertake all actions required by and all actions necessary to maintain in full force and effect all Governmental Approvals, including performance of all environmental mitigation measures required by the DB Documents or Governmental Approvals and including payment of mitigation credits and any other fees required for Governmental Approvals, except to the extent that responsibility for performance of such measures and payment is expressly assigned to GDOT in the DB Documents.

**6.2.7** In the event that any Governmental Approvals required to be obtained by DB Team must formally be issued in GDOT’s name, DB Team shall undertake necessary efforts to obtain such approvals subject to GDOT’s reasonable cooperation with DB Team, as the case may be, at DB Team’s expense (except in connection with a Compensation Event), in accordance with Article 6.2.5, including execution and delivery of appropriate applications and other documentation in form accepted by GDOT. Refer to Section 4.2 of the Technical Provisions for more specific provisions on applications in GDOT’s name for Environmental Approvals.

**6.2.8** In the event that GDOT must act as the lead agency and directly coordinate with a Governmental Entity in connection with obtaining Governmental Approvals which are the responsibility of DB Team, DB Team shall provide all necessary support to facilitate the approval, mitigation or compliance process. Such support may include conducting necessary field investigations, surveys, and preparation of any required reports, documents and applications.

**6.2.9** DB Team shall be responsible for compliance with all applicable Laws in relation to Project Specific Locations and Additional Properties for obtaining any Environmental Approval or other Governmental Approval required in connection with Project Specific Locations.

**6.2.10** DB Team shall not enter into any agreement with any Governmental Entity, Utility Owner, railroad, property owner or other third party having regulatory jurisdiction over any aspect of the Project or Work or having any property interest affected by the Project or the Work that in any way purports to obligate GDOT, or the State or an agency or department thereof, or states or implies that GDOT has an obligation, to the third party to carry out any installation, design, construction, maintenance, repair, operation, control, supervision, regulation or other activity after the end of the Term, unless GDOT otherwise accepts in writing in its sole discretion. DB Team has no power or authority to enter into any such agreement with a third party in the name or on behalf of GDOT.

**6.3** Review and Oversight

**6.3.1** Submittal, Review and Acceptance Terms and Procedures
6.3.1.1 This Article 6.3 sets forth uniform terms and procedures that shall govern all Submittals pursuant to the DB Documents and component plans thereunder. In the event of any irreconcilable conflict between the provisions of this Article 6.3 and any other provisions of the DB Documents and component plans thereunder concerning submission, review and acceptance, rejection, or approval procedures, this Article 6.3 shall exclusively govern and control, except to the extent that the conflicting provision expressly states that it supersedes this Article 6.3.

6.3.2 Time Periods

6.3.2.1 Except as expressly set forth elsewhere in the DB Documents or as provided below, whenever GDOT is entitled to review and comment, or accept a Submittal, GDOT shall promptly respond within 30 days from the date it receives an accurate and complete Submittal, accuracy and completeness shall be at GDOT’s sole discretion, together with a completed transmittal form, in form to be mutually agreed upon, and all necessary information and documentation concerning the subject matter included. Any period of review by GDOT more than 30 days, or as specifically set forth elsewhere in the DB Documents providing for a different time period, may be deemed a GDOT Caused-Delay and give rise to Relief Event, subject to the provisions and satisfying all DB Document requirements for Relief Events. The time periods set forth in the DB Documents for GDOT’s review and acceptance or approval of Submittals, as and to the extent required shall apply to and restart with all re-submittals or if additional information or documentation is required to complete a Submittal which DB Team may be required to provide.

6.3.2.2 The time periods set forth herein with respect to GDOT’s review and acceptance, rejection, or approval, or comment on Submittals shall be subject to adjustment as provided in Section 3 of the Technical Provisions for multiple concurrent Submittals.

6.3.2.3 All time periods for GDOT to act upon Submittals shall be extended by the period of any delay caused by any Relief Event impacting same, including as set forth in clauses of Article 14.1 for Relief Event or otherwise as and to the extent of any delay of DB Team or any DB Team-Related Entity.

6.3.2.4 During any time that GDOT is entitled under Article 17.3.8 to increase the level of its auditing, monitoring, inspection, sampling, measuring, testing and oversight of the Project, the Utility Adjustments and DB Team’s compliance with its obligations under the DB Documents, the applicable period for GDOT to act on any Submittals received during such time and not related to curing the DB Team Default(s) that instigated the Article 17.3.8 action shall automatically be extended by 14 days.

6.3.2.5 GDOT shall endeavor to reasonably accommodate a written request from DB Team for expedited action on a specific Submittal, within the practical limitations on availability of personnel appropriate for acting on the types of Submittal in question; provided DB Team sets forth in its request specific, abnormal circumstances demonstrating the need for expedited action. This provision shall not apply, however, during any time described in Articles 6.3.2.3 and Article 6.3.2.4.

6.3.3 GDOT Discretionary Acceptances
If the Submittal is one where the DB Documents indicate approval or acceptance is required from GDOT in its sole discretion or good faith discretion, then GDOT’s lack of approval, acceptance, determination, decision, or other action within the applicable time period under Article 6.3.2 shall be deemed non-acceptance. If the approval is subject to good faith discretion of GDOT, then its decision shall be binding unless it is finally determined by clear and convincing evidence that such decision is determined to be arbitrary and capricious and causes delay; when so determined, it will then constitute and be treated as a GDOT-Caused Delay.

6.3.4 Other GDOT Acceptances

6.3.4.1 Whenever the DB Documents indicate that a Submittal or other matter is subject to GDOT’s approval or acceptance, and no particular standard therefor is stated, then the standard shall be reasonableness.

6.3.4.2 If the reasonableness standard applies to GDOT’s right of approval or acceptance of a Submittal, and GDOT delivers no approval or acceptance within the applicable time period under Article 6.3.2, then DB Team may deliver to GDOT a written notice stating the date within which GDOT was to have decided or acted. If GDOT does not respond or act within seven days after receipt of the notice, then a delay may constitute GDOT-Caused Delay under Article 14, subject to the provisions and satisfying all DB Document requirements for Relief Events and Compensation Events. Regardless of the actual days of delay, the start of any GDOT-Caused Delay shall be measured from 14 days from the end of the last review period for that Submittal. DB Team hereby agrees to plan for and account for such notice periods within the Project Schedule.

6.3.4.3 If GDOT requires an approval of a Submittal, such approval is a formal conditional determination in writing by GDOT that a particular matter, Submittal, or item is good or satisfactory for the Project. Such determination may be based on requirements or commitments beyond those set forth in the DB Documents and may reflect preferences of GDOT.

6.3.5 GDOT Review and Comment

6.3.5.1 Whenever the DB Documents indicate that a Submittal or other matter is subject to GDOT’s review, comment, review and comment, disapproval or similar action not entailing a prior approval or acceptance and GDOT delivers no comments, exceptions, objections, rejections or disapprovals within the applicable time period under Article 6.3.2, then DB Team may proceed thereafter at its election and risk, without prejudice to GDOT’s rights to later object, reject, or disapprove.

6.3.5.2 No such failure or delay by GDOT in delivering comments, exceptions, objections, rejections or disapprovals within the applicable time period under Article 6.3.2 shall constitute a GDOT-Caused Delay, GDOT Change, Relief Event or Compensation Event.

6.3.5.3 When used in the DB Documents, the phrase “completion of the review and comment process” or similar terminology means either (a) GDOT has reviewed, provided comments, exceptions, objections, rejections or disapprovals, and all the same have been resolved, or (b) the applicable time period has passed without GDOT providing any comments, exceptions, objections, rejections or disapprovals.
6.3.6 Submittals Not Subject to Prior Review, Comment or Acceptance

Whenever the DB Documents indicate that DB Team is to deliver a Submittal to GDOT but express no requirement for GDOT review, comment, disapproval, prior acceptance or other GDOT action, then DB Team is under no obligation to provide GDOT any period of time to review the Submittal or obtain acceptance of it before proceeding with further Work, and GDOT shall have the right, but is not obligated, to at any time review, comment on, take exception to, object to, reject or disapprove the Submittal. No failure or delay by GDOT in delivering comments, exceptions, objections, rejections or disapprovals with respect to any Submittal as set forth in this Article 6.3 shall constitute a Relief Event or Compensation Event.

6.3.7 Resolution of GDOT Comments and Objections

6.3.7.1 If the Submittal is one not governed by Article 6.3.3 or Article 6.3.6, GDOT’s exception, objection, rejection or disapproval shall be deemed reasonable, valid and binding if based on any of the following grounds:

(a) The Submittal or subject provision thereof fails to comply with any applicable covenant, condition, requirement, commitment, term, or provision of the DB Documents or Management Plans thereunder;

(b) The Submittal or subject provision thereof is not to a standard equal to or better than the requirements of Good Industry Practice;

(c) DB Team has not provided all content or information required in respect of the Submittal or subject provisions thereof, provided that GDOT assumes no duty, obligation or liability regarding completeness or correctness of any Submittal, including a Submittal that is to be delivered to a Governmental Entity as a proposed Governmental Approval, or in order to obtain, modify, amend, supplement, renew, extend, waive or carry out a Governmental Approval;

(d) Adoption of the Submittal or subject provision thereof, or of any proposed course of action thereunder, would result in a conflict with or violation of any Law or Governmental Approval; or

(e) In the case of a Submittal that is to be delivered to a Governmental Entity as a proposed Governmental Approval, or in order to obtain, modify, amend, supplement, renew, extend, waive or carry out a Governmental Approval, it proposes commitments, requirements, actions, terms or conditions that are not arrangements that GDOT offers or accepts for addressing similar circumstances affecting its own projects.

6.3.7.2 DB Team shall timely and promptly respond to all of GDOT’s comments and objections to a Submittal and, except as provided below, make modifications to the Submittal as necessary to fully reflect and resolve all such comments and objections, in accordance with the review processes set forth in this Article 6.3. DB Team acknowledges that GDOT may provide comments and objections which reflect concerns regarding interpretation or preferences of the commenter or which otherwise do not directly relate to grounds set forth in Article 6.3.7.1. DB Team agrees to undertake reasonable efforts to accommodate or otherwise resolve any such comments or objections through the review processes described in this Article 6.3.
6.3.7.3 If DB Team fails to notify GDOT within such time period, GDOT may deliver to DB Team a written notice stating the date by which DB Team was to have responded to GDOT’s comments and that if DB Team does not respond to those comments within five Business Days after receipt of this notice, then that failure shall constitute DB Team’s agreement to make all changes necessary to accommodate and resolve the comment or objection and full acceptance of all responsibility for such changes without right to a Relief Event or Compensation Event.

6.3.7.4 The foregoing shall in no way be deemed to obligate DB Team to incorporate any comments or resolve objections that would render the Submittal erroneous, defective or less than Good Industry Practice, except pursuant to a GDOT Change.

6.3.7.5 After GDOT receives DB Team’s explanation as to why the modifications are not required as provided in Article 6.3.7.2, Article 6.3.7.3 and Article 6.3.7.4, the Parties shall attempt in good faith to resolve the Dispute. If they are unable to resolve the Dispute, it shall be resolved according to Article 17.7 except (a) as provided otherwise in Article 6.3.3, and (b) if GDOT elects to issue a Directive Letter pursuant to Article 13.1 with respect to the disputed matter, the DB Team shall proceed in accordance with GDOT’s directive while retaining any claim as to the disputed matter.

Article 7 DEVELOPMENT OF THE PROJECT

7.1 General Obligations of DB Team

DB Team, in addition to performing all other requirements of the DB Documents, shall:

7.1.1 Furnish all design, engineering and other services, provide construction management and all work, including all materials, equipment, labor, and installations, and undertake all efforts necessary or appropriate (excluding only those materials, services and efforts which the DB Documents expressly specify will be undertaken by GDOT or other Persons) to construct the Project and maintain it during construction, so as to achieve Substantial Completion and Final Acceptance by the applicable Milestone Deadlines;

7.1.2 At all times provide a Project Manager approved by GDOT who:

(a) will have full responsibility for the prosecution of the Work, including Design Work and Construction Work,

(b) will act as agent and be a single point of contact in all matters on behalf of DB Team,

(c) will be present (or his/her designee approved by GDOT will be present) at the Site at all times that Design Work or Construction Work is performed, and

(d) will be available to respond to GDOT;

7.1.3 Comply with, and require that all Contractors comply with, all requirements of all applicable Laws;
7.1.4 Cooperate with GDOT and Governmental Entities with jurisdiction in all matters relating to the applicable portions of the Work, including Design Work and Construction Work for the Project, including their review, inspection and oversight of the design and construction; and

7.1.5 Use commercially reasonable efforts to mitigate delay to design and construction of the Project and mitigate damages due to delay in all circumstances, to the extent possible, including by re-sequencing, reallocating, or redeploying DB Team's and its Contractors' forces to other work.

7.2 Performance, Design and Construction Standards

7.2.1 DB Team shall furnish all aspects of the Design Work and all Design Documents, and shall construct the Project and perform the Construction Work as designed, free from Defects, and in accordance with (a) Good Industry Practice, (b) the requirements, terms and conditions set forth in the DB Documents, (c) the Project Schedule, (d) all Laws, (e) the requirements, terms and conditions set forth in all Governmental Approvals, and (f) the requirements of the accepted Quality Management Plan (QMP) or to be prepared thereunder, in each case taking into account the Existing Right of Way, Required Right of Way, and any Additional Property limits and other constraints affecting the Project and the Property.

7.2.2 Reserved

7.2.3 DB Team acknowledges that prior to the Effective Date it had the opportunity to identify any provisions of the Technical Provisions or Technical Documents that are erroneous or create a potentially unsafe condition, and the opportunity and duty to notify GDOT in writing of such fact and of the changes to the provision that DB Team believed were the minimum necessary to render it correct and safe. If it is reasonable or necessary to adopt changes to the Technical Provisions or Technical Documents after the Effective Date to make the provisions correct and safe, such changes shall not be grounds for a Relief Event or Compensation Event unless (a) DB Team neither knew nor had reason to know prior to the Effective Date that the provision was erroneous or created a potentially unsafe condition or (b) DB Team knew of and reported to GDOT the erroneous or potentially unsafe provision prior to the Effective Date and GDOT did not adopt reasonable and necessary changes. Except for a circumstance as set forth under (b) herein, if DB Team commences or continues any Design Work or Construction Work affected by such a change after the need for the change was discovered or suspected, or should have been discovered or suspected through the exercise of reasonable care, DB Team shall bear any additional costs associated with redoing the Work already performed.

Inconsistent or conflicting provisions of the DB Documents shall not be treated as erroneous provisions under this Article 7.2.3, but instead shall be governed by Article 1.2.

7.2.4 References in the Technical Provisions or Technical Documents to manuals or other publications governing the Design Work or Construction Work prior to the Substantial Completion Date shall mean the most recent editions in effect at the date of the RFP advertisement, unless expressly provided otherwise. Any changes to the Technical Provisions and Technical Documents, including Safety Standards, respecting Design Work or Construction Work prior to the Substantial Completion Date shall be subject to the Supplemental Agreement process for a GDOT Change in accordance with Article 13. Safety Compliance changes shall be in accordance with Article 12.1.

7.2.5 The Parties anticipate that from time to time after the Effective Date, GDOT will adopt, through revisions to existing manuals and publications or new manuals and publications,
changed, added or replacement standards, criteria, requirements, conditions, procedures, specifications and other provisions, including Safety Standards, relating to Design Work and Construction Work. GDOT shall have the right to add such changed, added or replacement standards, criteria, requirements, conditions, procedures, specifications and other provisions, including Safety Standards, to Volume 2 by notice to DB Team, whereupon they shall constitute amendments, and become part, of the Technical Documents. If such changed, added or replacement Technical Documents or Safety Standards encompass matters that are addressed in the Technical Provisions or Technical Documents as of the Effective Date, they may, upon inclusion in Volume 2, replace and supersede inconsistent provisions of the Technical Provisions and Technical Documents to the extent designated by GDOT in its sole discretion. GDOT will identify the superseded provisions in its notice to DB Team. Notwithstanding the foregoing, in the absence of a GDOT Change and except as provided otherwise in Article 7.5.3 with respect to Adjustment Standards, if GDOT adopts the changed, added or replacement standards, criteria, requirements, conditions, procedures, specifications and other provisions, including changed, added or replacement Safety Standards, prior to the Final Acceptance Date, DB Team shall not be obligated to (but may) incorporate the same into its design and construction of the Project prior to the Final Acceptance Date.

7.3 Design Implementation and Submittals

7.3.1 DB Team, through the appropriately qualified and licensed design professionals identified in DB Team’s Key Personnel as identified in Exhibit 2 and in accordance with Section 2 of the Technical Provisions, shall prepare designs, Plans and specifications in accordance with the DB Documents. DB Team shall cause the Engineer of Record for the Project to sign and seal all Released for Construction Documents, any revisions to the Released for Construction Documents, all design changes, all Shop Drawings; and for conformance, the Record Drawings (As-Builts).

7.3.2 DB Team shall deliver to GDOT accurate and complete duplicates of all Interim Design, and Preliminary and Final Plans and Construction Documents within the time and in the form required by the Technical Provisions.

7.3.3 The Engineer of Record shall initiate or sign-off on all requests for information prior to the requests being submitted to GDOT.

7.4 Reserved

7.5 Utility Adjustments

7.5.1 DB Team’s Responsibility

7.5.1.1 DB Team is responsible for causing, in accordance with the Project Schedule, all Utility Adjustments necessary to accommodate construction, operation, maintenance and/or use of the Project. DB Team shall coordinate, monitor, and otherwise undertake the necessary efforts to cause Utility Owners performing Utility Adjustment Work to perform such work timely, in coordination with the Work, and in compliance with the standards of design and construction and other applicable requirements specified in the DB Documents.

7.5.1.2 In addition to GDOT’s Project administration, GDOT shall independently have the right at all times to approve Utility Adjustments as provided
herein. DB Team shall coordinate and be required to procure GDOT approval as required.

7.5.1.3 Regardless of the arrangements made with the Utility Owners, the DB Team shall continue to be the responsible party to GDOT for timely performance of all Utility Adjustment Work so that upon completion of the Work, all Utilities that might impact the Project or be impacted by it (whether located within or outside the Construction Maintenance Limits) are compatible with the Project. GDOT will provide to DB Team the benefit of any provisions in recorded utility or other easements affecting the Project.

7.5.2 Standard Utility Agreements

The DB Team will be responsible for completion of all required Standard Utility Agreements. The DB Team, working with the Utility Owner, will provide the cost estimate and supporting documents to the District Utilities Manager for review and acceptance. Upon the acceptance by the District, the approved cost estimate and supporting documents shall be forwarded to the State Utilities Preconstruction Manager for processing, final acceptance, and preparation of the Standard Utility Agreement. As described in the GDOT Utility Accommodation Policy and Standards Manual ("UAM"), Chapter 4.2.F Agreements cover all requirements for Standard Utility Agreements.

7.5.3 Requirements

Each Utility Adjustment (whether performed by DB Team, Subcontractor or by the Utility Owner) shall comply with the Adjustment Standards in effect at the date of the RFP advertisement, unless expressly provided otherwise, together with any subsequent amendments and additions to those standards that (a) are necessary to conform to applicable Law, or (b) are adopted by the Utility Owner and affect the Utility Adjustment pursuant to the applicable Standard Utility Agreement(s). In addition, all Utility Adjustment Work shall comply with all applicable Laws, the applicable Standard Utility Agreement(s), and all other requirements specified in Section 6 of the Technical Provisions.

7.5.4 Failure of Utility Owners to Cooperate/Escalation

DB Team shall use diligent efforts to obtain the cooperation of each Utility Owner as necessary for Utility Adjustments. It shall be the DB Team’s responsibility to coordinate and track each Utility Owner’s progress in relation to the Utility Work Plan or Revised Utility Work Plan previously accepted by GDOT. Once the DB Team has determined that the Utilities work progress is at least 20% behind the accepted Utility Work Plan; the DB Team will notify the Utility Owner, and GDOT of such apparent delay through written correspondence. Such written correspondence shall detail the delay in question and request the Utility to submit a proposal on how the Utility Owner plans to rectify such delay and maintain the Project’s schedule prescribed by the previously accepted Utility Work Plan. The Utility will respond to this letter within 10 Business Days. The response shall include a proposal to cure the delay identified by the DB Team. In some cases, the complexity of the Project may require that a utility coordination meeting be held to address the issues identified by the DB Team. If the Utility determines that this is the case, then the Utilities response letter shall include a request to hold a utility coordination meeting with the DB Team, the Office of Innovative Delivery Utility Liaison, the District Utility Manager and the Construction Manager for utility delay resolution. If the utility delay cannot be resolved through the coordination efforts described above after 20 Business
Days from the date provided in the DB Team’s original written correspondence; the said Dispute shall escalate to the State Construction Engineer for further consideration. If additional escalation is required, DB Team shall follow escalation procedures as outlined in the UAM, Chapter 672-19 of the Rules, and O.C.G.A. § 32-6-171.

7.5.5 Utility Permits (GUPS)

7.5.5.1 It is anticipated that during the design and construction phases of the Work, from time to time Utility Owners will apply for utility permits to install new Utilities that would cross or longitudinally occupy the Property, or to modify, upgrade, repair, relocate or expand existing Utilities within the Property for reasons other than accommodation of the Project.

7.5.6 Unexpected Utility Adjustments

Within 120 days after the initial NTP 2, DB Team shall conduct an investigation for any unidentified Utility. If DB Team finds an unidentified Utility during the 120-day timeframe, DB Team may be entitled to a Compensation Event or a Relief Event. If DB Team finds an unidentified Utility after the 120-day timeframe, DB Team shall not be entitled to a Compensation Event or a Relief Event. If a Utility is shown on the SUE Plans and not to be impacted by DB Team’s Final Design, but is later identified by DB Team as needing to be relocated, DB Team shall not be entitled to a Compensation Event or a Relief Event. Notwithstanding the foregoing, DB Team shall not be entitled to a Compensation Event or a Relief Event for any Utility whose location, size and dimensions were reasonably accurate and shown on the SUE Plans.

7.5.7 Early Adjustments

If any Adjustments are designated as Early Adjustments in Section 6 of the Technical Provisions, such Adjustments are anticipated to be completed by the Utility Owner prior to the deadline therefore set forth in the Technical Provisions. DB Team’s obligation to provide Protection in Place for Utilities includes any Early Adjustments, whether or not timely completed. DB Team shall coordinate with GDOT and the Utility Owner as may be necessary for orderly completion of any Early Adjustments, and DB Team shall conduct its Work without interfering with or hindering the progress or completion of any Early Adjustments.

7.6 Conditions to Commencement of Construction Work

7.6.1 Construction Work Generally

Except to the extent expressly permitted in writing by GDOT, DB Team shall not commence or permit or suffer commencement of construction of the Project, or applicable portion thereof, until GDOT issues NTP 3 and all of the conditions of Article 3.3.1.3 have been met.

7.6.2 Utility Adjustments
DB Team shall not commence or permit or suffer commencement of construction of a Utility Adjustment included in the Construction Work until GDOT issues NTP 3, and the requirements of Article 7.5 have been met.

7.7 Substantial Completion, Punch List, Final Acceptance; Early Opening of Portions of the Project

7.7.1 Substantial Completion

7.7.1.1 GDOT will issue a written certificate of Substantial Completion at such time as Substantial Completion occurs which shall be subject to the terms and conditions of this Article 7.7.1.

7.7.1.2 Substantial Completion shall occur upon satisfactory completion of the requirements of GDOT Standard Specification 108.07.G.

7.7.1.3 All comments from EPD on the Post-Construction Stormwater Report have been addressed by the DB Team, and the EPD’s 90-day Post-Construction Stormwater Report disapproval period has expired.

7.7.1.4 DB Team shall provide GDOT with not less than 20 days prior written notification of the date DB Team determines it will achieve Substantial Completion. A written request for Substantial Completion will not be taken into consideration unless the requirements of the DB Documents have been met, and the request has been approved in writing by GDOT confirming Substantial Completion requirements of Article 7.7 are met. During such notice period, DB Team and GDOT shall meet and confer and exchange information on a regular cooperative basis with the goal being GDOT’s orderly, timely inspection and review of the Project per the applicable Final Plans and Construction Documents, and GDOT’s issuance of a written certificate of Substantial Completion.

7.7.1.5 During the period specified in Article 7.7.1.4, GDOT shall conduct an inspection of the Project and its components, a review of the applicable Final Plans and Construction Documents and such other investigation as may be necessary to evaluate whether Substantial Completion is achieved. GDOT shall deliver a Punch List to the DB Team following such inspection, review and investigation within five Business Days. GDOT shall then either (a) issue the written certificate of Substantial Completion or (b) notify DB Team in writing setting forth, as applicable, why the Project has not reached Substantial Completion. If GDOT and DB Team cannot agree that the Substantial Completion has been completed by the Substantial Completion Date defined in Exhibit 9, such Dispute shall be resolved according to Article 17.

7.7.2 Punch List

7.7.2.1 GDOT will prepare and maintain the final Punch List. Each participant shall have the right to add items to the Punch List and none shall remove any item added by any other without such other’s express permission. If DB Team objects to the addition of an item by GDOT, the item shall be noted as included under protest, and if the Parties thereafter are unable to reconcile the protest, the Dispute shall be resolved according to Article 17.
7.7.2.2  DB Team shall immediately commence work on the Punch List items and diligently prosecute such work to completion, consistent with the DB Documents, prior to issuance of Final Acceptance.

7.7.3  Final Acceptance

7.7.3.1  Promptly after achieving Substantial Completion, DB Team shall perform all remaining Work for the Project, including completion of all Punch List items, all landscaping other than vegetative ground cover, and aesthetic features. DB Team shall prepare and adhere to a timetable for planting and establishing the vegetative ground cover landscaping, taking into account weather conditions necessary for successful planting and growth, which timetable shall in any event provide for vegetative ground cover landscaping to be planted and established by 12 months after Substantial Completion.

7.7.3.2  GDOT will issue a written certificate of Final Acceptance at such time as all of the following have occurred for the Project:

(a) All requirements for Substantial Completion have been satisfied;

(b) All Punch List items have been completed and delivered to the reasonable satisfaction of GDOT;

(c) GDOT has received a complete set of the Record Drawings in form and content required by Section 2.7.1.2 of the Technical Provisions;

(d) All Utility Adjustment Work and other work that DB Team is obligated to perform for or on behalf of third parties has been accepted by such third parties, and DB Team has paid for all work by third parties that DB Team is obligated to pay for, other than disputed amounts;

(e) DB Team has paid in full all Liquidated Damages that are due to GDOT pursuant to this Agreement and are not in Dispute, and has provided to GDOT reasonable security for the full amount of Liquidated Damages that may then be the subject of an unresolved Dispute;

(f) There exist no uncured DB Team Defaults that are the subject of a Warning Notice, or with the giving of notice or passage of time, or both, could become the subject of a Warning Notice (except any DB Team Default for which Final Acceptance will affect its cure);

(g) DB Team has received, and paid all associated fees for, all applicable Governmental Approvals and other applicable third-party approvals required pursuant to the DB Documents, and there exists no uncured material violation of the terms and conditions of any such Governmental Approval or other third-party approvals;

(h) DB Team has delivered to GDOT all warranties, manuals and other Deliverables as required pursuant to the Technical Provisions; and
(i) DB Team has delivered to GDOT verification of all required post construction period, including completed operations, Insurance Policies required under the DB Documents.

7.7.3.3 DB Team shall provide GDOT with written notification when DB Team determines it has achieved Final Acceptance. During the 15-Business Day period following receipt of such notification, DB Team and GDOT shall meet and confer and exchange information on a regular cooperative basis with the goal being GDOT’s orderly, timely inspection and review of the Project and the Record Drawings, and GDOT’s issuance of a written certificate of Final Acceptance.

7.7.3.4 During such 15-Business Day period, GDOT shall conduct an inspection of the Punch List items, a review of the Record Drawings and such other investigation as may be necessary to evaluate whether the conditions to Final Acceptance are satisfied. GDOT shall deliver a written report of findings and recommendations to DB Team following such inspection, review and investigation and in any case by the end of such 15-Business Day period.

7.7.3.5 Within five Business Days after expiration of such 15-Business Day period GDOT shall either (a) issue a certificate of Final Acceptance or (b) notify DB Team in writing setting forth, as applicable, why Final Acceptance has not been achieved. If GDOT and DB Team cannot agree as to the date of Final Acceptance, such Dispute shall be resolved according to Article 17.

7.7.4 Early Opening of Portions of the Project

If the DB Team determines that a portion of the Work, including any Interim Completion Deadline, is safe to open to traffic, that portion must include the following prior to being considered safe to open: all lanes in that direction paved to final pavement surface layer, permanent striping (temporary tape may be used in lane drop tapers), temporary signing, and temporary barrier wall installed. When it determines that that portion of Work is safe to open, the DB Team may notify GDOT thereof through written notice identifying the portion of the Work and asserting that the DB Team, including the EOR, believes that it is safe to open.

The DB Team and GDOT together will inspect that portion of the Work asserted to be safe to open. GDOT will respond within five Business Days after the agreed-upon date of the inspection. If GDOT concurs, GDOT will provide written notice to the DB Team that such portion of the Segment is safe to open. If GDOT does not concur, it will provide the DB Team a list of the items that need to be corrected or completed prior to opening that portion of the Work. This process will repeat until GDOT concurs and provides written notice that that portion of the Work is safe to open and will identify the date when GDOT’s determination was made. The date so identified is the Interim Completion Date for that portion of the Work.

If the Interim Completion Date is later than the Interim Completion Deadline, as identified in Exhibit 9 to the Agreement, the DB Team is liable for Liquidated Damages per Article 17.4.1.

The DB Team remains responsible for all repair or replacement for portions of the Work released prior to Final Acceptance. Maintenance responsibilities remain with the DB Team until GDOT issues Final Acceptance. Designation of safe to open for any portion of the Project shall not start a warranty period for any portion of the Work or void or alter any terms of the Agreement.
Opening of portions of the Project prior to Substantial Completion or Final Acceptance does not constitute acceptance of the Work or a waiver of any provisions of the DB Documents.

### 7.8 Hazardous Materials Management

DB Team shall comply with all requirements set forth in GDOT Standard Specification 107.22 and Exhibit 11.

### 7.9 Environmental Compliance

Throughout the course of the Design Work and Construction Work, DB Team’s Work shall take into account, be coordinated to allow for, and be performed in accordance with all environmental mitigation measures required under the Environmental Document approvals, including but not limited to the NEPA/GEPA Approval and any other Governmental Approvals for the Project or under the DB Documents, and shall comply with all other conditions and requirements of the Environmental Approvals in accordance with Section 4 of the Technical Provisions, provided that the foregoing shall not require nor imply any requirement for DB Team to perform any remediation or disposal of Pre-existing Hazardous Materials or GDOT Release(s) of Hazardous Materials.

### 7.10 Meetings

**7.10.1** DB Team shall conduct regular progress meetings with GDOT during the course of Design Work and Construction Work. These meetings shall be attended by the DB Team’s Lead Contractor’s project manager and the Engineer of Record or Authorized Representatives of each and any other Key Personnel and other personnel as needed for productive use of the meetings.

**7.10.2** In addition, GDOT and DB Team, through their respective Authorized Representatives, shall meet from time to time at the other Party’s request to discuss and resolve matters relating to the Work or the Project.

**7.10.3** DB Team shall schedule all meetings with GDOT at a date, time, and place reasonably convenient to both Parties and, except in the case of urgency, shall provide GDOT with written notice and a meeting agenda at least one Business Day in advance of each meeting, in the absence of any timeframe specified in the Technical Provisions.

**7.10.4** DB Team shall be responsible to document and maintain the full subject matter of all meetings and shall distribute copies of meeting minutes to GDOT not later than the timeframes specified in the Technical Provisions, and in the absence of any specified timeframe, within five days following such meetings.

### 7.11 Contractor Warranties and Correction of Non-Conforming and Defective Work

**7.11.1** DB Team shall obtain customary and reasonable warranties from all Contractors with respect to design, materials, workmanship, installations, equipment, tools, supplies, software or services, all of which DB Team shall cause to be expressly extended and assigned to GDOT, or its designee; provided that the foregoing requirement shall not apply to standard, pre-specified manufacturer warranties of mass-marketed materials, products (including software products), equipment or supplies where the warranty cannot be extended to GDOT using commercially reasonable efforts. To the extent that any Contractor warranty would
be voided by reason of DB Team’s negligence in incorporating material or equipment into the Work, DB Team shall be responsible for correcting such defect.

7.11.2 Contractor warranties (if any) are in addition to all rights and remedies available under the DB Documents or applicable Law or in equity, and shall not limit DB Team’s liability or responsibility imposed by the DB Documents or applicable Law or in equity with respect to the Work, including liability for design defects, latent construction defects, strict liability, breach, negligence, willful misconduct or fraud.

7.11.3 When any act, omission, or other action of DB Team occurs that violates the requirements, conditions, or terms of the DB Documents, or affects the health, safety, or welfare of the public or natural resources, GDOT shall have the right, but not the obligation, to require and direct DB Team to take prompt action to replace, repair, or restore such damage, injury or condition within a time frame established by GDOT, at DB Team’s sole cost and expenses and without entitlement to a Relief Event or Compensation Event.

7.12 Maintenance During Construction Work

7.12.1 GDOT shall be responsible for the operation and maintenance of the Existing Right of Way and any acquired right or interest in any Required Right of Way until the Construction Commencement Date. Upon NTP 3, DB Team shall assume full responsibility for maintenance of all Elements within the Construction Maintenance Limits in accordance with the Construction Maintenance Limits Plan and the requirements of the DB Documents.

7.12.2 Upon Final Acceptance, GDOT will assume responsibility for the operation and maintenance of the entire Project, provided that where GDOT has opened any portion of the Project to the public prior to Final Acceptance, GDOT shall then assume responsibility for the operations and maintenance of such portions of the Project at such earlier time, provided, however that in all cases, DB Team shall remain responsible for all Work until Final Acceptance and nothing contained herein shall otherwise limit any warranty obligations of DB Team with respect to any Defect or non-conforming Work.

7.13 For Best Value Projects Only: Impact of ATCs on the Project

7.13.1 In the event DB Team elects to incorporate any previously-approved ATCs acquired from unsuccessful Proposers for possible inclusion in the Project, a Supplemental Agreement is required following the change management procedures of Article 13. The Supplemental Agreement will document (i) any change in the Contract Sum relating to the ATC Costs (informed by a comparison of the DB Team’s cost estimate, the unsuccessful Proposer’s cost estimate, and GDOT’s Cost Estimate) and (ii) any schedule adjustments including, without limitation, to the Project Schedule and/or Milestone Deadlines, as applicable (informed by the related estimated schedule impact as developed by the DB team and validated by GDOT).

GDOT does not make any representation or guarantee as to the accuracy, completeness, or fitness of any unsuccessful Proposer’s ATCs for DB Team’s design concept. GDOT does not take any responsibility for the unsuccessful Proposer’s ATCs and DB Team is responsible for any conclusions they may draw from the unsuccessful Proposer’s ATCs.

7.13.2 If implementation of an ATC forming part of the Project requires the approval or consent of any Government Entity (other than GDOT) or other third party, then (a) DB Team will have full responsibility for, and bear the full risk of, obtaining any such approval or consent, and
(b) if such approval or consent is not granted, or there is an unreasonable and unjustified delay in obtaining such approval or consent (subject to Article 13) (i) DB Team shall perform the Work as if such ATC had never formed part of the Project, and (ii) shall not be entitled to any additional time or compensation as a result thereof. The foregoing shall not limit DB Team’s rights under Article 14.2 (i) for Compensation Events or under Article 14.1.1 (s) for Relief Event on account of delays or impact costs solely related to the re-evaluation of the NEPA Approval after expiration of the GDOT Re-evaluation Period.

7.13.3 If the DBA incorporates any ATCs and either (a) DB Team does not comply with one or more GDOT conditions of pre-approval for the ATC, or (b) DB Team does not obtain the required third-party approval for the ATC, then DB Team shall comply with the requirements in the RFP that would have applied in the absence of such ATC. Such compliance shall be without any increase in the Contract Sum, extension of Completion Deadline or any other Supplemental Agreement.

Article 8 SECURITY AND INCIDENT RESPONSE

8.1 Security and Incident Response

8.1.1 DB Team is responsible for the safety and security of the applicable portion of the Project that is under the control of any DB Team-Related Entity and the workers and public thereon during the performance of the Work.

8.1.2 DB Team shall comply with all rules, directives and guidance of the U.S. Department of Homeland Security and comparable State agency, and shall coordinate and cooperate with all Governmental Entities providing security, first responder and other public emergency response services, including, without limiting the foregoing, whenever the National Terrorism Advisory System (NTAS) or successor system issues an “Imminent” or “Elevated” Threat Alert or comparable level of threat or alert for any region in which the Project is located or which the Project serves. Unless directed otherwise by GDOT, DB Team, at its expense, shall assign management personnel with decision-making authority to be personally present at the relevant emergency operations center serving the region, including during a disaster affecting the Project proclaimed by the Governor of Georgia, the President of the United States, or their respective designees. DB Team shall provide such service 24 hours a day, seven days a week, until such level or threat or alert has expired, or until the lead agency at the operations center determines such staffing level is no longer necessary.

8.1.3 DB Team shall perform and comply with the provisions of the Technical Provisions concerning Incident Response, safety and security.

Article 9 MANAGEMENT SYSTEMS AND OVERSIGHT

9.1 Project Management

9.1.1 DB Team is responsible for all activities necessary to manage the Work, including the Utility Adjustment Work. DB Team shall undertake all required aspects of for the Project and Work in accordance with the DB Documents and Good Industry Practice.
9.1.2  DB Team shall develop the necessary plans and documentation in accordance with the Proposal, this Agreement, and Section 2 and Section 3 of the Technical Provisions, and Good Industry Practice.

9.1.3  DB Team shall submit to GDOT for acceptance in its good faith discretion in accordance with the procedures described in Article 6.3 of this Agreement and the Technical Provisions each component part, plan and any proposed changes or additions to or revisions of any such component part, plan or other documentation identified in the DB Documents. Each component part, plan and other documentation of the Management Plans or any submittal identified in this Agreement, Section 3 of the Technical Provisions, including in Table 3-1, and the DB Documents, and each proposed change or addition to or revision of any such component part, plan or other documentation shall constitute a separate Submittal for purposes of Article 6.3. GDOT may propose any change required to comply with Good Industry Practice or to reflect a change in working practice to be implemented by DB Team.

9.1.4  DB Team shall not commence or permit the commencement of any aspect of the design or construction before the relevant component parts, plans and other documentation of the Management Plans applicable to such Work have been submitted to and accepted by GDOT.

9.1.5  Reserved

9.1.6  DB Team shall carry out internal audits of the Management Plans at the times prescribed in the Management Plans.

9.1.7  DB Team shall cause each of its Contractors at every level to comply with the applicable requirements of the DB Documents.

9.1.8  The DB Team shall designate a Quality Assurance Manager who shall, irrespective of their other responsibilities, have defined authority for ensuring the establishment and maintenance of the Management Plans and reporting to GDOT on the performance of the Management Plans.

9.2  Traffic Management

9.2.1  Upon GDOT issuance of NTP 3 and until Final Acceptance of the Project, DB Team shall be responsible for the general management of traffic on the applicable portion of the Project under the control of any DB Team-Related Entity. DB Team shall manage traffic to preserve and protect safety of traffic on such portions and Related Transportation Facilities and, to the maximum extent practicable, to avoid disruption, interruption or other adverse effects on traffic flow, throughput or level of service on the Related Transportation Facilities. DB Team shall conduct and carry out traffic management in accordance with all applicable Technical Provisions, Technical Documents, Laws and Governmental Approvals, and in accordance with the Transportation Management Plan, as well as any directives as may be required pursuant to Article 8.1.2.

9.2.2  DB Team shall prepare and submit to GDOT, for GDOT acceptance, a Transportation Management Plan by Project Phase for managing traffic on the Project and Related Transportation Facilities, during the period of construction (from the period from NTP 3 to Final Acceptance), addressing (a) orderly and safe movement and diversion of traffic on the Project and Related Transportation Facilities, and (b) orderly and safe diversion of traffic on the...
Related Transportation Facilities necessary in connection with field maintenance and repair work in response to Incidents, Emergencies and lane closures. The Transportation Management Plan shall promote safe and efficient operation of the Project and Related Transportation Facilities at all times during construction of the Project, including during Utility Adjustment Work. DB Team shall prepare the Transportation Management Plan according to the schedule set forth in Section 18 of the Technical Provisions. The Transportation Management Plan shall comply with the Technical Provisions and Technical Documents concerning traffic management and traffic operations.

9.2.3 GDOT shall have at all times, without obligation or liability to DB Team, the right to:

9.2.3.1 Issue a Directive Letter to DB Team regarding traffic management and control (with which DB Team shall comply), or directly assume traffic management and control, of the Project during any period that:

(a) GDOT designates the Project or portion of the Project for immediate use as an emergency evacuation route or a route to respond to a disaster proclaimed by the Governor of Georgia, the President of the United States, or by any other federal or State agency, or any of the aforementioned respective designees, including reversing the direction of traffic flow during such period,

(b) GDOT designates the Project or a portion of the Project for immediate use as an alternate route for diversion of traffic from any interstate or Highway temporarily closed to all lanes in one or both directions due to Incident or Emergency, or

(c) the Commissioner determines such action will be in the public interest as a result of an emergency or natural disaster; and

9.2.3.2 Provide on the Project, via message signs or other means consistent with Good Industry Practice, non-discriminatory traveler and driver information, and other public information (e.g. AMBER alerts), provided that the means to disseminate such information does not materially interfere with the Work.

Article 10 CONTRACTING AND LABOR PRACTICES

10.1 Reserved

10.2 Responsibility for Work, Contractors and Employees

10.2.1 DB Team shall retain or cause to be retained only Contractors that are qualified, experienced and capable in the performance of the portion of the Work assigned. DB Team shall assure that each Contractor has at the time of execution of the Contract, and maintains at all times during performance of the assigned Work, all licenses required by applicable Laws. DB Team shall require all Contractors to adhere to the requirements herein with respect to Subcontractors.

10.2.2 The retention of Contractors by DB Team will not relieve DB Team of its responsibilities hereunder or for the quality of the Work or materials or services provided by it.
10.2.3 Each Contract shall include terms and conditions sufficient to ensure compliance by all Contractors and Subcontractors, all parties performing any Work on behalf thereof, with the requirements of the DB Documents, and shall include those terms that are specifically required by the DB Documents to be included therein, including, to the extent applicable, those set forth in Exhibit 8 and any other applicable Federal Requirements.

10.2.4 Nothing in the DB Documents will create any contractual relationship between GDOT and any Subcontractor. No Contract entered into by or under DB Team shall impose any obligation or liability upon GDOT to any Subcontractor, or any of their respective employees.

10.2.5 DB Team shall supervise and be fully responsible for the actions, omissions, negligence, willful misconduct, or breach of applicable Law or contract by any Contractor or DB Team-Related Entity, or their respective members, officers, directors, partners, and employees, as though DB Team directly employed all such individuals.

10.3 Reserved

10.4 Key Personnel

10.4.1 DB Team shall retain, employ and utilize the individuals specifically listed in Exhibit 2 to fill the corresponding Key Personnel positions listed therein. DB Team shall not change or substitute any such individuals except due to retirement, death, disability, incapacity, or voluntary or involuntary termination of employment, or as otherwise accepted by GDOT pursuant to Article 10.4.2. In such circumstances, DB Team shall promptly propose a replacement with comparable experience for such position.

10.4.2 DB Team shall notify GDOT in writing of any proposed replacement for any Key Personnel position. Any proposed replacement for a Key Personnel position must be equal or better than the original Key Personnel. GDOT shall have the right to review the qualifications and character of each individual to be appointed to a Key Personnel position (including personnel employed by Contractors to fill any such position) and to accept or disapprove use of such individual in such position prior to the commencement of any Work by such individual. If DB Team fails to provide a proposed replacement that is sufficiently qualified, in GDOT’s sole discretion, within 30 days after notifying GDOT of a proposed replacement for any Key Personnel position, then such failure may, at GDOT’s sole discretion, constitute a DB Team Default pursuant to Article 17.1.1.

10.4.3 DB Team shall cause each individual filling a Key Personnel position to dedicate the full amount of time necessary for the proper prosecution and performance of the Work.

10.4.4 DB Team shall provide to GDOT the phone numbers and email addresses for all Key Personnel. GDOT requires the ability to contact Key Personnel 24 hours per day, seven days per week.

10.5 Reserved

10.6 Labor Standards

10.6.1 In the performance of its obligations under the DB Documents, DB Team at all times shall comply, and require by contract that all Contractors and vendors comply, with all
applicable federal and State labor, occupational safety and health standards, rules, regulations and federal and State orders.

10.6.2 All individuals performing the Work shall have the skill and experience and any licenses or certifications required to perform the Work assigned to them.

10.6.3 If any individual employed by DB Team or any Contractor is not performing the Work in a proper, safe and skillful manner, then DB Team shall, or shall cause such Contractor to, remove such individual and such individual shall not be re-employed on the Work. If, after notice and reasonable opportunity to cure, such individual is not removed or if DB Team fails to ensure that skilled and experienced personnel are furnished for the proper performance of the Work, then GDOT may suspend the affected portion of the Work by delivering to DB Team written notice of such suspension. Such suspension shall in no way relieve DB Team of any obligation contained in the DB Documents or entitle DB Team to any additional compensation or time extension hereunder.

10.6.4 DB Team and its Contractors shall comply with the Georgia Immigration & Compliance Act ("Immigration Act"), O.C.G.A. § 13-10-90, et seq. DB Team must certify compliance with the Immigration Act using the form attached as Exhibit 19. The required certificates and affidavits must be filed with GDOT and copies maintained by DB Team and each Contractor as of the Effective Date, recertified as of July 15 of each year, and again recertified upon final completion of the Work under the applicable Contract. State officials, including officials of the Georgia Department of Labor and GDOT, retain the right to inspect and audit the Project and employment records of DB Team and all Contractors without notice during normal working hours until the Work under the applicable Contract is complete, and as otherwise specified by Law.

10.7 Reserved

10.8 Non-Discrimination; Equal Employment Opportunity

10.8.1 DB Team shall not, and shall cause the Contractors to not, discriminate on the basis of race, color, national origin, sex, age, religion or handicap in the performance of the Work under the DB Documents. DB Team shall carry out, and shall cause the Contractors to carry out, applicable requirements of 49 CFR Part 26. Failure by DB Team to carry out these requirements is a material breach of this Agreement, which may result in a Default Termination Event and the termination of this Agreement or such other remedy permitted hereunder as GDOT deems appropriate (subject to DB Team’s rights to notice and opportunity to cure set forth in this Agreement), but is not limited to (1) withholding monthly progress payments; (2) assessing sanctions; (3) liquidated damages; and/or (4) disqualifying the Contractor from future bidding as non-responsive.

10.8.2 DB Team shall include the immediately preceding paragraph in every Contract (including purchase orders and in every Contract of any DB Team-Related Entity for Work), and shall require that they be included in all Contracts at lower tiers, so that such provisions will be binding upon each Contractor.

10.9 Disadvantaged Business Enterprise

10.9.1 General
10.9.1.1 DB Team shall comply with 49 CFR Part 26 and GDOT’s Disadvantaged Business Enterprise (DBE) policy and program. The purpose of GDOT’s DBE policy and program is to ensure that DBEs shall have an equal opportunity to participate in the performance of contracts financed in whole or in part with federal funds. DB Team shall comply with all applicable requirements set forth in GDOT’s DBE policy and program.

10.9.1.2 DB Team shall include provisions to effectuate GDOT’s DBE policy and program in every Contract to which it is a party (including purchase orders and task orders for Work), and shall require that they be included in all Contracts at lower tiers (including purchase orders and task orders for Work), so that such provisions will be binding upon each Contractor. The DB Team shall ensure that all contracts and subcontracts (including purchase orders and task orders for Work) with DBEs to supply labor or materials are required to be performed in accordance with 49 CFR § 26.53.

10.9.1.3 DB Team shall maintain a dedicated DBE manager throughout the Term of the Agreement. The DBE manager must be approved by GDOT and cannot be replaced except by prior GDOT approval.

10.9.2 DBE Participation Goals

10.9.2.1 The DBE Project goal is zero percent of the overall Project cost (including design, construction, professional services, management and administration, and inspection) with respect to the race conscious participation by the DB Team.

10.10 Reserved

10.11 Reserved

10.12 Prompt Payment to Contractors and Pay When Paid Provisions

DB Team shall comply with the Georgia Prompt Payment Act, Code Section 13-11-1 et seq. Further, neither DB Team, the Design-Build Contractor or Contractor, nor any Subcontractor shall impose retainage upon any consultant, laborer, subcontractor, vendor, materialman, or supplier with whom any of them have contracted.

10.13 Suspension and Debarment

DB Team shall deliver to GDOT, not later than January 31 of each year through Final Acceptance, and upon Final Acceptance, signed certifications regarding suspension, debarment, ineligibility, voluntary exclusion, convictions and civil judgments from DB Team, from each affiliate of DB Team (as “affiliate” is defined in 29 CFR 98.905 or successor regulation of similar import), and from each Contractor whose Contract amount equals or exceeds $100,000. The annual certification shall be substantially in the form of paragraphs 1.a through 1.d of Attachment 7 to Exhibit 8 (Federal Requirements).

10.14 DB Team Identification

Any uniforms, badges, logos and other identification worn by personnel of DB Team-Related Entities or on DB Team Vehicles used to access the Project Site shall bear contrasting colors, lettering, design or other features, clearly visible from a distance, to ensure clear differentiation from those of GDOT and its employees.
Article 11 RELATED AND OTHER FACILITIES

11.1 Integration with Related Transportation Facilities

11.1.1 DB Team shall locate, configure, design, and construct the termini, interchanges, entrances and exits of the Project so that the Project will be compatible and integrated with the location, configuration, design, operation and maintenance of, and provide a smooth, safe transition of traffic to and from, Related Transportation Facilities, as set forth in Section 1 and Section 11 of the Technical Provisions. The design for the Project shall include and provide for such compatibility, integration and transition. The design and construction of the Project, shall satisfy all provisions of the Technical Provisions and Management Plans relating to compatibility, integration and transition with or at Related Transportation Facilities, including those concerning signage, signaling and communications with Users.

11.1.2 Without limiting the foregoing, DB Team shall cooperate and coordinate with GDOT and any third party that owns, constructs, manages, operates or maintains a Related Transportation Facility with regard to the construction, maintenance and repair programs and schedules for such Related Transportation Facilities, in order to minimize disruption to the operation thereof.

11.1.3 To assist DB Team, GDOT shall provide to DB Team during normal working hours, reasonable access to plans, surveys, drawings, as-built drawings, specifications, reports and other documents and information in the possession of GDOT or its contractors and consultants pertaining to Related Transportation Facilities. DB Team, at its expense, shall have the right to make copies of the same. DB Team, at its expense, shall conduct such other inspections, investigations, document searches, surveys and other work as may be necessary to achieve compatibility, integration and transition with those Related Transportation Facilities identified in Section 11 of the Technical Provisions.

11.1.4 GDOT shall provide reasonable assistance to DB Team, upon its request and at its expense, in obtaining cooperation and coordination from third parties that own, manage, operate or maintain Related Transportation Facilities and in enforcing rights, remedies and warranties that DB Team may have against any such third parties. Such assistance may include GDOT’s participation in meetings and discussions. In no event shall GDOT be required to bring any legal action or proceeding against any such third party.

11.1.5 GDOT shall have at all times, without obligation or liability to DB Team, the right to conduct traffic management activities on GDOT’s Related Transportation Facilities and all other facilities of the State transportation network in the area of the Project in accordance with its standard traffic management practices and procedures in effect from time to time.

Article 12 SAFETY COMPLIANCE

12.1 Safety Compliance

12.1.1 DB Team shall take all reasonable precautions and be solely responsible for the safety of, and shall provide protection to prevent damage, injury, or loss to, all persons on the Site or who would reasonably be expected to be affected by the Work, including individuals performing Work, employees of GDOT and its consultants, visitors to the Site and members of the traveling public who may be affected by the Work. DB Team shall at all times comply with
all health and safety requirements contained in the DB Documents and DB Team’s Safety Plan and all such requirements under applicable Law.

12.1.2 Safety Compliance Orders

12.1.2.1 GDOT shall use good faith efforts to inform DB Team at the earliest practicable time of any circumstance or information relating to the Project which in GDOT’s reasonable judgment is likely to result in unsafe conditions for the public, which may result in the issuance of a Safety Compliance Order. Except in the case of Emergency, GDOT shall consult with DB Team prior to issuing a Safety Compliance Order concerning the risk to public safety, alternative compliance measures, cost impacts, and the availability of DB Team resources to fund the Safety Compliance work.

12.1.2.2 GDOT’s duties shall include monitoring and inspecting for the purpose of determining whether any circumstances exist that warrant issuance of a Safety Compliance Order with respect to the Design Work and the Construction Work, and giving reports and recommendations to DB Team with respect thereto.

12.1.2.3 Subject to conducting such prior consultation, GDOT may issue Safety Compliance Orders to DB Team at any time from and after the Effective Date.

12.1.3 Duty to Comply

12.1.3.1 Subject to Article 12.1.1, DB Team shall implement all Safety Compliance as expeditiously as reasonably possible following issuance of the Safety Compliance Order. DB Team shall diligently prosecute the work necessary to achieve such Safety Compliance until completion, subject to any remedies allowed from the occurrence of a Relief Event.

12.1.3.2 DB Team shall perform all work required to implement Safety Compliance at DB Team’s sole cost and expense. Without limiting the foregoing and for the avoidance of doubt, in no event shall DB Team be entitled to (a) issue a Change Request, or (b) except as provided in Article 12.1.3, claim that a Compensation Event or Relief Event has occurred or resulted from the existence of a Safety Compliance Order.

12.1.4 Contesting Safety Compliance Orders

DB Team may contest a Safety Compliance Order by delivering to GDOT written notice setting forth (a) DB Team’s claim that no Safety Compliance conditions exist to justify the Safety Compliance Order, (b) DB Team’s explanation of its claim in reasonable detail and (c) DB Team’s estimate of impacts on costs and schedule attributable to the contested Safety Compliance Order. If GDOT does not receive such written notice prior to issuance of a Safety Compliance Order, or within 15 days after GDOT issues an emergency Safety Compliance Order, then DB Team thereafter shall have no right to contest. If DB Team timely contests a Safety Compliance Order, DB Team nevertheless shall implement the Safety Compliance Order, but if it is finally determined under the Dispute Resolution Procedures that Safety Compliance conditions did not exist, then the Safety Compliance Order shall be treated as a Directive Letter for a GDOT Change.
Article 13  GDOT CHANGES; DB TEAM CHANGES; DIRECTIVE LETTERS

This Article 13 sets forth the requirements for obtaining all Supplemental Agreements under this Agreement. DB Team hereby acknowledges and agrees that the Contract Sum is full and adequate compensation for performance of all of the Work, subject only to those exceptions specified in Article 14 and this Article 13.

DB Team unconditionally and irrevocably waives the right to any monetary compensation or other relief in addition to that specifically provided under the terms of this Agreement, except in accordance with Article 14 and this Article 13. The foregoing waiver encompasses all theories of liability, whether in contract, tort (including negligence), equity, quantum meruit or otherwise, and encompasses all theories to extinguish contractual obligations, including impracticability, mutual mistake, and frustration of purpose. Nothing in the Technical Provisions or Technical Documents shall have the intent or effect or shall be construed to create any right of DB Team to any Supplemental Agreement or additional monetary compensation or other relief, any provision in the Technical Provisions or Technical Documents to the contrary notwithstanding.

13.1 Directive Letters

13.1.1 GDOT may at any time issue a Directive Letter to DB Team regarding any matter for which a Supplemental Agreement can be issued or in the event of any Dispute regarding the interpretation of requirements, scope of the Work, or whether DB Team has performed in accordance with the requirements of the DB Documents. The Directive Letter will state that it is issued under this Article 13.1, will describe the Dispute or Work in question, articulate GDOT’s position, provide direction, and will state the basis for determining compensation, if any. If applicable and subject to Article 13.2.5, DB Team shall proceed immediately as directed in the letter, pending the execution of a formal Supplemental Agreement (or, if the letter states that the Work is within DB Team’s original scope of Work or is necessary to comply with the requirements of the DB Documents, DB Team shall proceed with the Work as directed but shall have the right to assert that a GDOT Change has occurred).

13.1.2 The fact that a Directive Letter was issued by GDOT shall not be considered evidence that in fact that a GDOT Change occurred. The determination whether a GDOT Change in fact occurred shall be based on an analysis of the original requirements of the DB Documents and a determination as to whether the Directive Letter in fact constituted a change in those requirements.

13.1.3 In the event that a Directive Letter is issued, which results in a Force Account, the procedures of Article 14.4 will be followed.

13.2 GDOT Changes

GDOT may, at any time and without notice to any Surety, authorize, cause and/or require, pursuant to a Request for Change Proposal or Directive Letter, changes in the Work, including additions or deletions, or in terms and conditions of the Technical Provisions or Technical Documents (including changes in the standards applicable to the Work).

13.2.1 GDOT’s Request for Change Proposal

13.2.1.1 If GDOT desires to initiate a GDOT Change or to evaluate whether to initiate such a change, then GDOT may, at its discretion, issue a Request for Change
Proposal. The Request for Change Proposal shall set forth the nature, extent and details of the proposed GDOT Change.

13.2.1.2 Within seven days after DB Team receives a Request for Change Proposal, or such longer period to which the Parties may mutually agree, GDOT and DB Team shall consult to define the proposed scope of the change. Within seven days after the initial consultation, or such longer period to which the Parties may mutually agree, GDOT and DB Team shall consult concerning the estimated financial and schedule impacts.

13.2.2 Within 30 days following GDOT’s delivery to DB Team of the Request for Change Proposal, DB Team shall provide GDOT with a written response as to whether, in DB Team’s opinion, the proposed change constitutes a GDOT Change, will impact DB Team’s costs and/or will cause a delay to a Completion Deadline, and if so, a detailed assessment of the cost and schedule impact of the proposed GDOT Change, including the following:

13.2.2.1 DB Team’s detailed estimate of the impacts on costs of carrying out the proposed GDOT Change;

13.2.2.2 The effect of the proposed GDOT Change on the Project Schedule, including achievement of the Milestone Deadlines, taking into consideration DB Team’s duty to mitigate any delay to the extent reasonably practicable; and

13.2.2.3 Any other relevant information related to carrying out the proposed GDOT Change.

13.2.3 GDOT shall be entitled, but not required, to obtain, from a qualified independent consultant of GDOT’s choosing, a report prepared in accordance with Good Industry Practice as to the proposed GDOT Change related to the Design Work or the Construction Work, including recommendations and comments concerning DB Team’s estimate of the cost impacts and projected impact on the Project Schedule and Milestone Deadlines. GDOT shall pay for the work of any such consultant.

13.2.4 GDOT and DB Team, giving due consideration to any such report and study as may be commissioned by GDOT, shall exercise good faith efforts to negotiate a mutually acceptable Supplemental Agreement, including adjustment of the Project Schedule and Completion Deadlines, any Compensation Amount to which DB Team is entitled, and the timing and method for payment of any Compensation Amount, in accordance with Article 14.

13.2.5 If GDOT and DB Team are unable to reach agreement on a Supplemental Agreement, GDOT may, in its sole discretion, deliver to DB Team a Directive Letter pursuant to Article 13.1 directing DB Team to proceed with the performance of the Work in question notwithstanding such disagreement under Force Account provisions. Upon receipt of such Directive Letter, (a) DB Team shall implement and perform the Work in question as directed by GDOT and (b) GDOT will make interim payment(s) to DB Team on a monthly basis for the costs of the Work in question subject to Article 5, to the extent they satisfy Force Account provisions.

13.2.6 GDOT shall be responsible for payment of the Compensation Amount agreed upon, or under Force Account provisions, or determined through the Dispute Resolution Procedures, through one of the payment mechanisms set forth in Articles 13.4 and 13.5 and the Project Schedule and Milestone Deadlines shall be adjusted as agreed upon or determined.
through the Dispute Resolution Procedures, and in accordance with this Article 13 to reflect the effects of the Supplemental Agreement.

13.3 DB Team Changes

13.3.1 DB Team’s Change Requests

13.3.1.1 DB Team may request GDOT to accept modifications to the Technical Provisions or Technical Documents by submittal of a written Change Request using a form approved by GDOT. The Change Request shall set forth DB Team’s detailed estimate of impacts on costs and schedule attributable to the requested change.

13.3.1.2 GDOT, in its sole discretion, may accept or reject any Change Request proposed by DB Team, provided that GDOT will accept a Change Request necessary to bring the Technical Provisions or Technical Documents into compliance due to an applicable Change in Law per Article 14.2(a). GDOT may condition its acceptance on new or a modification of compensation for GDOT under this Agreement in order to benefit equally in the estimated net cost savings and revenue benefit, if any, attributable to the proposed change. If GDOT accepts such change, DB Team shall execute a Supplemental Agreement and shall implement such change in accordance with the Supplemental Agreement, applicable Technical Provisions, Technical Documents, the Management Plans, Good Industry Practice, and all applicable Laws.

13.3.1.3 DB Team shall be solely responsible for payment of any increased costs and for any Project Schedule delays or other impacts resulting from a DB Team proposed Change Request. If the Change Request results in a decrease in the costs of designing, constructing or operating the Project, the savings in costs shall be allocated between DB Team and GDOT as set forth in the Supplemental Agreement.

13.3.1.4 DB Team may implement and permit a Utility Owner to implement, without a Change Request or Supplemental Agreement, changes to a Utility Adjustment design that do not vary from the Technical Provisions or Technical Documents, but such changes are subject to GDOT’s acceptance as part of a Utility Work Plan as provided in Section 6.3.2.5 of the Technical Provisions.

13.3.1.5 No Change Request shall be required to implement any change to the Work that is not specifically regulated or addressed by the DB Documents or applicable Law.

13.3.1.6 Certain minor changes without significant cost savings or revenue benefits may be accepted in writing by GDOT, and in such event, shall not require a Supplemental Agreement. Any other change in the requirements of the DB Documents shall require a Supplemental Agreement.

13.3.2 DB Team’s Notice of Compensation Event and/or Relief Event

13.3.2.1 Except as otherwise expressly provided in this Agreement, if at any time DB Team determines that a change to the work has occurred or is imminent, and that change creates a Compensation Event or Relief Event, DB Team shall submit a written notice of Compensation Event and/or Relief Event to GDOT per this Article 13 stating that a Relief Event, Compensation Event, or both has occurred or will occur. The
first notice shall be labeled “Compensation/Relief Event No. 1” and subsequent notices shall be numbered sequentially.

13.3.2.2 Time is of the essence in DB Team’s delivery of its written notice of Compensation Event or written notice of a Relief Event. Accordingly, if for any reason DB Team fails to deliver a notice of Compensation Event and/or Relief Event in strict accordance with this Article 13.3.2:

(a) Within seven days following the date (herein the “starting date”) on which DB Team first became aware (or should have been aware, using all reasonable due diligence) of the Relief Event, DB Team shall be deemed to have irrevocably and forever waived and released the right to relief for adverse effect attributable to the Relief Event accruing after such seven-day deadline and until the date DB Team submits the written notice of Compensation Event and/or Relief Event for the Relief Event; and

(b) Within 90 days following the starting date, DB Team shall be deemed to have irrevocably and forever waived and released any and all right to relief (including extension of time for performance of Design Work or Construction Work) for any adverse effect attributable to such Relief Event.

13.3.2.3 Notices for Compensation Events shall include:

(a) a description of the Compensation Event and its date of occurrence in reasonable detail;

(b) the reasons why the DB Team believes additional compensation will or may be due;

(c) a detailed statement of the basis that the work is not required by the Agreement;

(d) identify particular elements of performance for which additional compensation may be sought;

(e) DB Team’s current estimate of the anticipated adverse and beneficial effects of the Compensation Event on the Project and on DB Team’s ability to perform any of its obligations under the DB Documents;

(f) a written analysis and calculation of DB Team’s current estimate of the estimated increase or decrease in costs, (including a separate breakdown of costs that impact design and those that impact construction activities) the extent applicable to the Compensation Event: and

(g) provide an estimate of the time within which a response to the notice is required to minimize cost or delay of performance.

13.3.2.4 If, following issuance of the notice of Compensation event, DB Team receives or becomes aware of any further information relating to the Compensation Event, it shall submit such further information to GDOT not later than seven days of DB
Team’s receipt or knowledge, as the case may be. GDOT may request from DB Team any further information that GDOT may reasonably require, and DB Team shall supply the same within a reasonable period but not later than seven days after such GDOT request.

13.3.2.5 Notices of Relief Events shall include:

(a) a statement of the Relief Event upon which the delay or inability to perform is based, including its nature, the reasons why the DB Team believes additional time will or may be due, and the date of its occurrence and its actual or, if it has not concluded, its anticipated duration;

(b) the effect of the Relief Event on DB Team’s ability to perform any of its obligations under the DB Documents, including details of the relevant obligations,

(c) an impacted delay analysis meeting the requirements of Section 2.5 of the Technical Provisions regarding a Time Impact Analysis and indicating all affected activities on any Critical Path, with activity durations, predecessor and successor activities and resources; and showing Float available pursuant to Article 3.2.5, the likely duration of that effect, and identify any potential impact to the Critical Path affecting a Completion Deadline; and

(d) an explanation of the measures that DB Team proposes to undertake to mitigate the delay and other consequences of the Relief Event.

13.3.2.6 Within seven days of the conclusion of an asserted Relief Event, DB Team shall update its notice of a Relief Event with the date of its actual or estimated conclusion. If, following issuance of a notice of Relief Event, but prior to its conclusion, DB Team receives or becomes aware of any further information relating to the Relief Event and/or any delay in performance or failure to perform, it shall submit such further information to GDOT not later than seven days after DB Team’s receipt or knowledge of the additional information. GDOT may request from DB Team any further information that GDOT may reasonably require, and DB Team shall supply the same within a reasonable period but not later than seven days after such GDOT request.

13.3.2.7 If any notice of Compensation or Relief Event concerns any hazardous condition or material described in Article 7.8, the DB Team shall be deemed to have waived the right to collect any and all costs incurred in connection therewith to the extent that GDOT is not afforded the opportunity to inspect such material or condition before it is disturbed.

13.3.3 Proposed Supplemental Agreement Procedure

13.3.3.1 The DB Team shall deliver a Proposed Supplemental Agreement under this Article 13.3.3 to GDOT within 30 days (or longer time period if acceptable to GDOT) after delivery of the notice of Compensation and/or Relief Event in a form acceptable to GDOT. GDOT may require design and construction costs to be covered by separate Supplemental Agreements. If the DB Team requests a time extension, then GDOT, in its sole discretion, may require the DB Team to provide two alternative Proposed Supplemental Agreements, one of which shall provide for a time extension
and any additional costs permitted thereunder, and the other of which shall show all acceleration costs associated with meeting an original Completion Deadline, as well as any additional costs permitted hereunder. If it is not feasible to recover to the original Completion Deadline or if the DB Team believes that the costs associated with such a recovery are prohibitive, then the DB Team shall recommend a date to be shown in the alternative Supplemental Agreement form.

13.3.3.2 DB Team shall prepare a scope of work, cost estimate, Time Impact Analysis, if any, and other information as required by the DB Documents for each Proposed Supplemental Agreement. All Proposed Supplemental Agreements shall satisfy the requirements of Article 14 and shall be sufficient in detail to enable GDOT to ascertain the basis and the amount of each Proposed Supplemental Agreement. The Proposed Supplemental Agreement shall at a minimum include:

(a) A scope of work describing in detail satisfactory to the GDOT all activities associated with the asserted change event.

(b) A cost estimate that sets out the estimated costs in such a way and in sufficient detail that a fair evaluation can be made. It shall be in a form approved by GDOT and shall include as separate items: labor, materials, equipment, overhead (which includes all indirect costs) and profit, as and to the extent allowed under Article 14 and this Article 13. If the work is to be performed by Subcontractors and if the work is sufficiently defined to obtain Subcontractor quotes, DB Team shall obtain quotes (with breakdowns showing cost of labor, materials, equipment, overhead and profit) on the Subcontractor’s stationery and shall include such quotes as back-up for the DB Team estimate.

(c) If the DB Team claims that a Relief Event has occurred affecting the Critical Path and a Completion Deadline, it shall provide or update a prior submitted Time Impact Analysis indicating all activities represented or affected by the asserted change in accordance with this Article 13 and Section 2.5 of the Technical Provisions. The impacted delay analysis shall only modify the Activities that have been impacted by the event that justifies the extension.

(d) The DB Team shall provide such other supporting documentation as may be required by the Department.

(e) All Proposed Supplemental Agreements shall include a narrative justification detailing all causes of the asserted change, making specific reference and cite to the applicable provisions of the Agreement and DB Documents that permit a Supplemental Agreement to be issued, and describing the data and documents that establish the necessity of such asserted change.

13.3.3 Each lump sum and force account Proposed Supplemental Agreement shall meet all applicable requirements of Article 14 and this Article 13. The Proposed Supplemental Agreement submitted by DB Team will address any and all costs and delays and meet all requirements of this Article 13.3. GDOT shall review the Proposed Supplemental Agreement, and after negotiation and upon agreement of the
terms and verification that all applicable requirements of Article 14 and this Article 13 are met, the DB Team and GDOT shall execute a Supplemental Agreement.

13.3.3.4 DB Team Representation

Each Proposed Supplemental Agreement shall contain a sworn certification in form acceptable to GDOT by the DB Team (and Subcontractor(s), for any Subcontractor involved in the Work or event contemplated by the Supplemental Agreement) that the Proposed Supplemental Agreement is made in good faith and in accordance with the terms of the DB Documents, the amount of time and/or compensation requested accurately reflects the appropriate adjustments and includes all known and anticipated impacts or amounts whatsoever that may be incurred as a result of the event or matter giving rise to such proposed change and that the DB Team (and Subcontractor(s), as applicable) has no reason to believe and does not believe that the factual basis for the Supplemental Agreement is falsely represented.

13.4 Final Relief Event and Compensation Event Determinations

Any final Relief Event Determination and/or final Compensation Event Determination that has been mutually accepted by GDOT and DB Team shall be set forth in a Supplemental Agreement in accordance with Article 13.3. Such Supplemental Agreement shall provide for modification of the Contract Time and the Project Schedule, including to the extent so established by such Relief Event Determination, the Milestone Deadlines, and modification of the Contract Sum pursuant to any such Compensation Event Determination, as the case may be. All Supplemental Agreements shall be all-inclusive, comprehensive, and complete, and shall not include any conditions with respect to pricing or schedule or any other matters. The DB Team is not entitled to any additional costs or time whether deriving from or related to a Supplemental Agreement.

13.5 Reserved

Article 14 RELIEF EVENTS; COMPENSATION EVENTS

14.1 Relief Events

14.1.1 A Relief Event is one or more of the following events, subject to any limitations, claims, submission requirements, and other conditions set forth in the Agreement, provided that no relief will be available to the extent that (i) the events are within DB Team’s control or are due to any wrongful act, wrongful omission, negligence, recklessness, willful misconduct, breach of contract or Law or violation of a Governmental Approval of any of the DB Team-Related Entities; or (ii) the events (or the effects of such events) could have been avoided by the exercise of reasonable caution, due diligence, or other reasonable efforts by Design-Build Team:

(a) Force Majeure Event;
(b) Latent defects in Existing Improvements;
(c) Change in Law;
(d) Discriminatory Action;
(e) GDOT’s failure to perform or observe any of the covenants or obligations of GDOT under the Agreement or other DB Documents;

(f) GDOT Change;

(g) GDOT-Caused Delay;

(h) Performance of work in the Construction Maintenance Limits or Operations and Maintenance Limits, by Separate Contractors within the ROW, carried out by or on behalf of GDOT or a Governmental Entity, excluding any Utility Adjustment Work by a Utility Owner, that directly disrupts DB Team’s onsite Work, and delays the Critical Path of the Work;

(i) Discovery at, near or on the Existing Right of Way or Property of (a) any Pre-existing Hazardous Materials or Hazardous Materials not otherwise constituting a DB Team Release of Hazardous Materials, provided that where such condition was identified in the existing Phase 1 Hazardous Materials Investigation in the RIDs, in which case DB Team shall account for same in the Project Schedule and impacts shall be limited to such conditions not identified therein (whether in type or quantity), or (b) any archeological, paleontological or cultural resources not known or which could not have reasonably been known to the DB Team prior to the Proposal Due Date;

(j) Discovery at, near or on the Existing Right of Way or Property of any Threatened or Endangered Species (regardless of whether the species is listed as threatened or endangered as of the Proposal Due Date), excluding any such presence of species known to DB Team prior to the Proposal Due Date or that would become known to DB Team by undertaking reasonable investigation prior to the Proposal Due Date;

(k) Any spill of Hazardous Material by a third party who is not acting in the capacity of a DB Team-Related Entity which (i) occurs after the Proposal Due Date, (ii) is required to be reported to a Governmental Entity and (iii) renders use of the roadway or construction area unsafe or potentially unsafe absent assessment, containment and/or remediation;

(l) Issuance of a temporary restraining order or other form of injunction by a court that prohibits prosecution of any material portion of the Work, unless the injunction is the result of an action or inaction by the Design-Build Team;

(m) Suspension, termination or interruption of an approval of Environmental Documents, except to the extent that such suspension, termination or interruption results from failure by any DB Team-Related Entity to locate or design the Project or carry out the work in accordance with the approval of Environmental Documents or other Governmental Approval (which failure may include (i) modification by or on behalf of Design-Build Team of the design concept included in the Environmental Documents approval, (ii) means or methods used by any Design-Build Team-Related
Entity for carrying out the Work, or (iii) decision or action by or on behalf of Design-Build Team to use or acquire Additional Property);

(n) Any change in the design concept of the Project or any portion thereof resulting from judicial or administrative action taken with respect to a legal challenge to any approval of Environmental Documents as compared to the design concept indicated in the alternative that was the subject of the approval of Environmental Documents, except to the extent the change in design concept had already been incorporated into Design-Build Team’s design schematics assumed in connection with the Contract Sum;

(o) Subject to clause (s) of this Article 14.1.1, failure to obtain, or unreasonable and unjustified delay in obtaining or otherwise maintaining once issued, a Governmental Approval from any Governmental Entity, except to the extent that such failure or delay results from failure by any Design-Build Team-Related Entity to locate or design the Project or carry out the work in accordance with the approval of Environmental Documents or other Governmental Approval (which failure may include (i) modification by or on behalf of Design-Build Team of the design concept included in the approval of Environmental Documents, (ii) means or methods used by any Design-Build Team-Related Entity for carrying out the Work, or (iii) decision or action by or on behalf of Design-Build Team to use or acquire Additional Property);

(p) GDOT’s (i) lack of good and sufficient title to any parcel in the Existing Right of Way or the Property, to the extent it interferes with or adversely affects performance of Work, (ii) inability or failure to obtain an interest (including by easement or other right of access) to real property not identified in the Proposed Right of Way and required for construction of the Project as demonstrated by Design-Build Team, exclusive of any Additional Properties, Project Specific Locations, or parcels that are solely for the convenience of Design-Build Team, to the extent it interferes with or adversely affects performance of Work, or (iii) the existence at any time following issuance of NTP 3 of any title reservation, condition, easement or encumbrance on any parcel in the Existing Right of Way or Property owned by GDOT, of record or not of record, to the extent it interferes with or adversely affects performance of Work, except any title reservations, conditions, easements or encumbrances concerning Utilities otherwise caused, permitted or suffered by a Design-Build Team-Related Entity;

(q) Unreasonable and unjustified delay by a Utility Owner with whom Design-Build Team has been unable to enter into a Utility Agreement in connection with a Utility Adjustment, or failure or delay of any Utility in obtaining any required easement, right of way, or other property interest as may be required, provided that all of the “conditions to assistance” described in Article 7.5.4 of the Agreement have been satisfied;

(r) Failure to obtain, or unreasonable and unjustified delay in obtaining, an approval from GDOT with respect to a Permitted Design Exception, except to the extent that such failure or delay in obtaining the GDOT
approval results from failure by any Design-Build Team-Related Entity to carry out the Work in accordance with the DB Documents;

(s) Failure to obtain, or unreasonable and unjustified delay in obtaining, a Governmental Approval required for a re-evaluation of an approval of Environmental Documents due to an approved ATC; provided that Design-Build Team shall only be entitled to relief for such failure or delay after expiration of the applicable GDOT Re-evaluation Period;

(t) Material delays as a result of any modification to the approval of Environmental Documents, as a result of the Environmental Documents, and all approved supplements and re-evaluations pertaining to the Project as of the Effective Date provided that any such modifications are not the result of an ATC, Additional Properties, or attributable to Design-Build Team’s design; or

(u) Material delays as a result of the removal of the flagman from the Project site by the Railroad, if the flagman’s unavailability on the Project causes delay impacts to the Critical Path, provided that:

i. Flagman’s removal from site Project site is not a result of DB Team’s failure to perform the Work in accordance with the requirements of the DB Documents;

ii. DB Team has complied with the flagman scheduling notification requirements per Volume 2, Section 14.3.12.1, and Volume 2, Attachment 14-1; and

iii. No charge or claims of the DB Team against either GDOT or the Railroad will be allowed for hindrance or delay on account of railway traffic, any work performed or to be performed by the Railroad, or other delay incident to or necessary for safe maintenance of railway traffic and facilities, or for any delays due to compliance with the Special Provision for the Protection of Railroad Interests contained in Volume 2, Attachment 14-1.

14.1.2 Extensions of Time for Relief Events

14.1.2.1 If DB Team complies with the notice and information requirements in this Article 14.1, then within 60 days after receiving the Proposed Supplemental Agreement (and, if applicable, any required updates thereto) GDOT, acting reasonably, and with consideration given recommendations made by GDOT, shall issue a Relief Event Determination. GDOT shall specify in the Relief Event Determination (a) the relevant obligations for which relief is given, (b) the period of time that Milestone Deadlines or periods set forth in the Project Schedule will be extended based on the number of days of delay affecting a Critical Path, after consumption of Float available pursuant to Article 3.2.5, that is directly attributable to the Relief Event and that cannot be avoided through reasonable mitigation measures and (c) if applicable, the period of time, if any, that the Contract Time will be extended. DB Team shall be relieved from the performance of obligations to the extent specified in the Relief Event Determination.
14.1.2.2 DB Team shall not be excused from compliance with applicable Laws, Technical Provisions or Technical Documents due to the occurrence of a Relief Event, except temporary inability to comply as a direct result of a Relief Event.

14.1.2.3 If GDOT is obligated to but does not provide a Relief Event Determination within such 30-day period or if DB Team disagrees with the length of the extension of the Contract Time or other relief set forth in the Relief Event Determination, DB Team shall have the right to assert a claim against GDOT for the relevant Relief Event and have such claim determined according to the Dispute Resolution Procedures. Any Dispute regarding the occurrence of a Relief Event, the terms of the Relief Event Determination or waiver of DB Team’s right to relief shall be resolved according to the Dispute Resolution Procedures.

14.1.2.4 Without limiting DB Team’s rights with respect to monetary relief for Compensation Events as set forth in this Agreement, the extensions of time as provided, if any, pursuant to this Article 14.1 are DB Team’s sole remedy for a Relief Event.

14.1.3 Limitations on Time Extensions

The DB Team shall be required to demonstrate to GDOT’s satisfaction that the change in the Work or other event or situation which is being asserted as a Relief Event will result in or has caused an identifiable and measurable delay of the Work which will impact or has impacted the Critical Path affecting a Completion Deadline.

Any extension of a Completion Deadline allowed hereunder shall exclude any delay to the extent that it did not impact the Critical Path affecting a Completion Deadline or was a concurrent delay with any other delay for which the DB Team is not entitled to an extension.

14.2 Compensation Events

14.2.1 A Compensation Event is any of the following events, subject to any limitations, claims submission requirements, and other conditions set forth in the Agreement, provided that no relief will be available to the extent that (i) the events are within Design-Build Team’s control, or are due to any wrongful act, wrongful omission, negligence, recklessness, willful misconduct, breach of contract or Law or violation of a Governmental Approval of any of the Design-Build Team-Related Entities; (ii) the events (or the effects of such events) could have been avoided by the exercise of reasonable caution, due diligence, or other reasonable efforts by Design-Build Team:

(a) Change in Law;

(b) Discriminatory Action;

(c) Material breach by GDOT of its material obligations under the Agreement or other DB Documents, including unreasonable failure to issue a certificate of Substantial Completion or a certificate of satisfaction of conditions precedent to Final Acceptance after Design-Build Team satisfies all applicable conditions and requirements for obtaining such certificates;
(d) GDOT-Caused Delay, other than with respect to GDOT’s failure to provide response to Design-Build Team Submittals as provided under clause (d) of the definition of a GDOT-Caused Delay;

(e) GDOT Change;

(f) A GDOT Release of Hazardous Material or remediation of Pre-Existing Hazardous Materials, but excluding the extent of any Design-Build Team Release of Hazardous Materials;

(g) Issuance by a court in a legal proceeding challenging any approval of Environmental Documents or a temporary restraining order or other form of temporary injunction that prohibits prosecution of any material portion of the Work, unless the injunction is the result of an action or inaction by the Design-Build Team;

(h) Any change in the design concept of the Project or any portion thereof resulting from judicial or administrative action taken with respect to a legal challenge to any approval of Environmental Documents as compared to the design concept indicated in the alternative that was the subject of the approval of Environmental Documents, except to the extent the change in design concept had already been incorporated into Design-Build Team’s design schematics as approved pursuant to this Agreement;

(i) Subject to clause (n) of this Article 14.2, failure to obtain, or unreasonable and unjustified delay in obtaining or otherwise maintaining once issued, a Governmental Approval from any Governmental Entity, except to the extent that such failure or delay results from failure by any Design-Build Team-Related Entity to locate or design the Project or carry out the work in accordance with the approval of Environmental Documents or other Governmental Approval (which failure may include (i) modification by or on behalf of Design-Build Team of the design concept included in the approval of Environmental Documents, (ii) means or methods used by any Design-Build Team-Related Entity for carrying out the Work, or (iii) decision or action by or on behalf of Design-Build Team to use or acquire Additional Property);

(j) GDOT’s (i) lack of good and sufficient title to any parcel in the Existing Right of Way or the State Proposed/State Acquired Right of Way or Property owned by GDOT, to the extent it interferes with or adversely affects performance of Work, (ii) inability or failure to obtain an interest (including by easement or other right of access) to real property not identified in the State Proposed/State Acquired Right of Way and required for construction of the Project as demonstrated by Design-Build Team, exclusive of any Additional Properties, Project Specific Locations, or parcels that are solely for the convenience of Design-Build Team, to the extent it interferes with or adversely affects performance of Work, or (iii) the existence at any time following issuance of NTP 3 of any title reservation, condition, easement or encumbrance on any parcel in the Existing Right of Way or Property owned by GDOT, of record or not of record, to the extent it interferes with or adversely affects performance of Work, except any title reservations,
conditions, easements or encumbrances (A) concerning Utilities or (B) caused, permitted or suffered by a Design-Build Team-Related Entity;

(k) Failure to obtain, or unreasonable and unjustified delay in obtaining, an approval from GDOT with respect to a Permitted Design Exception, except to the extent that such failure or delay in obtaining the GDOT approval results from failure by any Design-Build Team-Related Entity to carry out the Work in accordance with the DB Documents;

(l) Failure to obtain, or unreasonable and unjustified delay in obtaining, a Governmental Approval required for a re-evaluation of an approval of Environmental Documents due to an approved ATC; provided that Design-Build Team shall only be entitled to compensation for such failure or delay after expiration of the applicable GDOT Re-evaluation Period;

(m) Performance of work in the Construction Maintenance Limits or Operations and Maintenance Limits, by Separate Contractors within the ROW, carried out by or on behalf of GDOT or a Governmental Entity, excluding any Utility Adjustment Work by a Utility Owner, that directly disrupts DB Team’s onsite Work; or

(n) Material delays as a result of any modification to the approval of Environmental Documents, as a result of the Environmental Documents, and all approved supplements and re-evaluations pertaining to the Project as of the Effective Date provided that any such modifications are not the result of an ATC, Additional Properties, or attributable to Design-Build Team’s design.

14.2.2 Determining Compensable Amounts

The Compensation Amount, if any, for design or construction shall be determined by applying the following provisions.

14.2.2.1 Cost impacts shall:

(a) Exclude (i) third-party entertainment costs, lobbying and political activity costs, costs of alcoholic beverages, costs for first class travel in excess of prevailing economy travel costs, and costs of club memberships, in each case to the extent that such costs would not be reimbursed to an employee of GDOT in the regular course of business, and (ii) unallowable costs under the following provisions of the federal Contract Cost Principles, 48 CFR 31.205: 31.205-8 (contributions or donations), 31.205-13 (employee morale, health, welfare, food service, and dormitory costs and credits), 31.205-14 (entertainment costs), 31.205-15 (fines, penalties, and mischarging costs), 31.205-27 (organization costs), 31.205-34 (recruitment costs), 31.205-35 (relocation costs), 31.205-43 (trade, business, technical and professional activity costs), 31.205-44 (training and education costs), and 31.205-47 (costs related to legal and other proceedings);
(b) Exclude amounts paid or to be paid to Affiliates in excess of the pricing DB Team could reasonably obtain in an arms' length, competitive transaction with an unaffiliated Contractor;

(c) Exclude those costs incurred in asserting, pursuing, or enforcing any Compensation Event, Relief Event or Dispute;

(d) Be reduced by any savings in costs resulting from the Compensation Event;

(e) Be subject to DB Team’s obligation to mitigate cost increases and augment cost decreases in accordance with this Article 14.2.

(f) Exclude costs caused by the breach of contract or fault or negligence, or act or failure to act of any DB Team-Related Entity.

(g) Exclude costs, which could reasonably, and in accordance with Good Industry Practice, have been avoided by the DB Team, including by resequencing, reallocating, or redeploying its forces to other portions of the Work (including any additional costs reasonably incurred in connection with such reallocation or redeployment) or to other activities unrelated to the Work.

(h) Exclude costs for any rejected Work that failed to meet the requirements of the DB Documents and any necessary remedial Work.

(i) Exclude damages or expenses barred under Section 105.13 of the latest edition of GDOT Standard Specifications: Construction of Transportation Systems.

14.2.2.2 In all cases the Compensation Amount shall be net of all insurance available to DB Team including deductibles, or deemed to be self-insured by DB Team under Article 16, with respect to cost or revenue impacts of the Compensation Event.

14.2.2.3 The Compensation Amount shall not include any amount on account of federal, State, or local income taxes. Further and notwithstanding anything to the contrary herein, the Compensation Amount shall not include, under any circumstances, costs incurred by DB Team or any Contractors on account of charges or expenses due to (a) the business organization existence or maintenance of its business of any DB Team-Related Entity or (b) labor or employment matters as a result of any Change in Law.

14.2.3 If the Compensation Event is under clause (g) of Article 14.2, then the Compensation Amount shall be limited to the incremental increase in costs of initial design and construction due to delay and disruption directly attributable to the court order.

14.2.4 DB Team shall share with GDOT all data, documents, and information pertaining to bids for any work that is the subject of a Compensation Amount, and all of the aforementioned shall be on an Open Book Basis.
14.2.5 Any Dispute between GDOT and the DB Team regarding occurrence of a Compensation Event, determination of the Compensation Amount or waiver of DB Team’s right to compensation shall be resolved according to the Dispute Resolution Procedures. The dispute resolution body(ies) shall apply the provisions of this Article 14.2 in determining the Compensation Amount.

14.2.6 Following a determination of the Compensation Amount by mutual agreement or the Dispute Resolution Procedures, GDOT shall pay such Compensation Amount (a) through periodic payments of the Compensation Amount in accordance with the scheduling and payment provisions in Section 2 of the Technical Provisions, (b) in a lump sum, payable as determined by mutual agreement or through the Dispute Resolution Procedures, or (c) in such other manner as agreed upon by the Parties. GDOT, in its sole discretion, shall be entitled to select one or any combination of the foregoing methods of compensation.

14.2.7 Without limiting DB Team’s rights with respect to non-monetary relief for Relief Events as set forth in this Agreement, the Compensation Amount shall represent the sole right to compensation and damages for the adverse financial effects of a Compensation Event. As a condition precedent to GDOT’s obligation to pay any portion of the Compensation Amount, DB Team shall execute a full, unconditional, irrevocable release, in form reasonably acceptable to GDOT, of any claims, Losses or other rights to compensation or other monetary relief associated with such Compensation Event, except for the right to the subject Compensation Amount, DB Team’s right to non-monetary relief for a Relief Event, and the right to terminate this Agreement in accordance with Article 19.4 and to receive any applicable Termination Compensation.

14.2.8 Limitations on Acceleration Costs

Acceleration costs shall be compensable hereunder only with respect to Supplemental Agreements issued by GDOT.

Acceleration costs are those fully documented increased costs reasonably incurred by the DB Team (i.e., costs over and above what the DB Team would otherwise have incurred) which are directly attributable to increasing the performance level of the Work in an attempt to complete necessary activities of the Work earlier than otherwise anticipated, such as for additional equipment, additional crews, overtime and shift premiums, increased supervision, and any unexpected movement of materials, equipment, or crews necessary for resequencing in connection with acceleration efforts. Acceleration costs do not include any costs for disruption damages as described below in Article 14.2.9.

14.2.9 No Disruption Damages

Disruption damages, whether from a single event or continual, multiple or repetitive events, are not allowed or recoverable under the Agreement. Disruption damages include costs of (i) rearranging the DB Team’s Work plan not associated with an extension of a Completion Deadline, and (ii) loss of efficiency, momentum or productivity.

14.2.10 Limitations on Delay Damages

14.2.10.1 Delay damages are compensable and are limited to the provisions of GDOT Standard Specifications 105.13.B.
14.2.10.2 Before the DB Team may obtain any increase in the Contract Sum to compensate for any delay damages or acceleration costs, the DB Team shall have demonstrated to GDOT’s satisfaction that:

(a) The Project Schedule in fact sets forth a reasonable method for completion of the Work;

(b) The change in the Work or other event or situation that is the subject of the requested Supplemental Agreement has caused or will result in an identifiable and measurable delay of the Work and impact the Critical Path affecting milestones listed in Exhibit 9;

(c) The delay damage was not due to any breach of contract or fault or negligence, or act or failure to act of any DB Team-Related Entity, and could not reasonably have been avoided by the DB Team, including by resequencing, reallocating or redeploying its forces to other portions of the Work (subject to reimbursement for additional costs reasonably incurred in connection with such reallocation or redeployment) or other activities unrelated to the Work;

(d) The delay for which compensation is sought is not concurrent with any other delay for which the DB Team is not entitled to delay damages; and

(e) The DB Team has suffered or will suffer actual costs due to such delay, each of which costs shall be justified and documented in a manner satisfactory to GDOT.

14.2.10.3 Delay damages shall only be available for delays to the Completion Deadline for Substantial Completion. For delays to any other Completion Deadline the only relief available is suspension of Liquidated Damages for the duration of the proven delay.

14.3 Lump Sum Compensation

The preferred approach by both parties is that Supplemental Agreements will be paid on a lump sum basis, if the parties can agree on a lump sum amount. Lump sum prices shall be based on the original allocations of the Contract Sum to comparable activities. If reference to price allocations is inappropriate, or when requested by GDOT or the DB Team, negotiation for lump sum Supplemental Agreements shall be on an Open Book Basis and may also be based on Subcontractors’ bid prices.

If the parties cannot agree on a lump sum amount for Supplemental Agreements, the Supplemental Agreements will be paid as Force Account Supplemental Agreements described in Article 14.4.

14.4 Force Account Compensation

14.4.1 GDOT may at its discretion issue a Directive Letter or Force Account Supplemental Agreement whenever the Parties cannot agree to a lump sum Supplemental Agreement or GDOT determines that a Force Account Supplemental Agreement is advisable.

14.4.2 The Force Account shall instruct the DB Team to perform the Work, indicating expressly the intention to treat the items as changes in the Work, and setting forth the kind, character, and limits of the Work as far as they can be ascertained, the terms under which
changes to the Contract Sum will be determined, and the estimated total change in the Contract Sum anticipated thereunder.

14.4.3 Force Account work is subject to the provisions of 109.05.B of the latest edition of GDOT Standard Specifications: Construction of Transportation Systems. No other direct or indirect compensation will be allowed, including for other miscellaneous costs for which no specific allowance is provided.

14.4.4 Upon final determination of the allowable costs, GDOT shall issue a modified Supplemental Agreement setting forth the final adjustment to the Contract Sum.

14.4.5 Force Account Records

14.4.5.1 Unless and until a lump sum Supplemental Agreement is issued, or in the case that a Directive Letter or Supplemental Agreement is issued directing work be performed under Force Account provisions, the DB Team shall maintain its records in such a manner as to provide a clear distinction between: (i) the direct cost of Work for which it is entitled (or for which it believes it is entitled) to an increase in the Contract Sum; and (ii) the costs of all other operations.

14.4.5.2 The DB Team shall contemporaneously collect, record in writing, segregate, and preserve: (a) all data necessary to determine the costs described in this Article 14.4 with respect to all Work which is the subject of a requested Supplemental Agreement, specifically including costs associated with Design Work (for which a negotiated Supplemental Agreement has not been issued); and (b) all data necessary to show the actual impact (if any) of any change on the Critical Path affecting a Completion Deadline with respect to all Work which is the subject of a Supplemental Agreement or a Proposed Supplemental Agreement, if the impact on the Critical Path affecting a Completion Deadline is in dispute.

14.4.5.3 Such data shall be provided on forms approved by GDOT. The cost of furnishing such reports is included in the DB Team’s predetermined overhead and profit.

14.4.5.4 The DB Team shall furnish daily, on forms approved by GDOT, reports of all Force Account Work. The cost of furnishing such reports shall be included in the DB Team’s overhead and profit percentages. The reports shall include:

(a) Name, classification, date, daily hours, total hours, rate, and extension for each laborer, equipment operator, and supervisor, excluding superintendents.

(b) Designation, dates, daily hours, total hours, rental rate, and extension for each unit of machinery and equipment.

(c) Quantities of materials, prices and extensions.

(d) Transportation costs of materials, machinery, and equipment.

(e) Invoices for materials used and for transportation charges.
(f) Cost of property damage, liability, and worker’s compensation insurance premiums, unemployment insurance contributions, and Social Security tax.

The reports shall also state the total costs to date for the Force Account Work.

14.4.5.5 Labor costs for Project management and administration, and construction field management above but not including the Superintendent, according to the DB Team’s organization and standard work practices, are included in the markup as provided in Standard Specification 109.05.B.1.

14.4.5.6 The cost of labor for non-construction-related Work, whether provided by the DB Team or a Subcontractor, will equal the sum of the following: (i) actual wages (i.e. the base wage paid to the employee exclusive of any fringe benefits); plus (ii) an overhead based on the audited Federal Acquisition Regulations (FAR) field rates. The DB Team will also be paid for profit on non-construction labor of five percent of labor costs plus overhead.

14.4.5.7 If materials used on the Force Account Supplemental Agreement Work are not specifically purchased for the Work but are taken from the DB Team’s stock, the DB Team shall furnish an affidavit certifying that such materials were taken from the DB Team’s stock, that the quantity claimed was actually used, and that the price and transportation costs claimed represent actual costs to the DB Team.

14.4.5.8 All Force Account Supplemental Agreement reports shall be signed by the Project Manager. GDOT will compare its records with the DB Team’s reports, make the necessary adjustments, and compile the costs of Force Account Supplemental Agreement Work. When such reports are agreed upon and signed by both parties, they will become the basis of payment and may be billed in the next Payment Request, but shall not preclude subsequent adjustment based on a later audit.

Article 15 REPRESENTATIONS AND COVENANTS

15.1 DB Team Representations and Covenants

DB Team hereby represents to and covenants with GDOT as follows:

15.1.1 During all periods necessary for the performance of the Work, DB Team and its Contractor(s) will maintain all required authority, license status, professional ability, skills and capacity to perform the Work.

15.1.2 As of the Effective Date, DB Team has evaluated the constraints affecting design and construction of the Project, including the Property, the Existing Right of Way and Required Right of Way limits as well as the conditions of the Environmental Documents, and has reasonable grounds for believing and does believe that the Project can be designed and built within such constraints.

15.1.3 Except as to parcels that GDOT lacked title or access to prior to the Effective Date, DB Team, in accordance with Good Industry Practice and the requirements of the DB Documents, shall have examined the Site and surrounding locations, performed appropriate field studies and geotechnical investigations of the Site, investigated and reviewed available
public and private records, and undertook other activities sufficient to familiarize itself with surface conditions and subsurface conditions, including the presence of Utilities, Hazardous Materials, contaminated groundwater, archeological, paleontological and cultural resources, and Threatened or Endangered Species, affecting the Site or surrounding locations; and as a result of such review, inspection, examination and other activities DB Team is familiar with and accepts the physical requirements of the Work, subject to GDOT’s obligations regarding Hazardous Materials under Article 7.8 and Exhibit 11 and DB Team’s rights to seek relief under Article 14.

15.1.4 DB Team has familiarized itself with the requirements of any and all applicable Laws, including with limitation O.C.G.A. §48-13-30, et. seq., and the conditions of any required Governmental Approvals prior to entering into this Agreement. Except as specifically permitted under Article 13 or Article 14, DB Team shall be responsible for complying with the foregoing at its sole cost and without any additional compensation or time extension on account of such compliance, regardless of whether such compliance would require additional time for performance or additional labor, equipment and/or materials not expressly provided for in the DB Documents. As of the Effective Date, DB Team has no reason to believe that any Governmental Approval required to be obtained by DB Team will not be granted in due course and thereafter remain in effect so as to enable the Work to proceed in accordance with the DB Documents.

15.1.5 All Work furnished by DB Team will be performed by or under the supervision of Persons who hold all necessary, valid licenses to practice in the State, by personnel who are skilled, experienced and competent in their respective trades or professions, who are professionally qualified to perform the Work in accordance with the DB Documents and who shall assume professional responsibility for the accuracy and completeness of the Design Documents, Construction Documents and other documents prepared or checked by them.

15.1.6 As of the Effective Date, DB Team is a corporation duly organized and validly existing under the laws of Tennessee, has the requisite power and all required licenses to carry on its present and proposed activities, and has full power, right and authority to execute and deliver the DB Documents, Principal Project Documents as and to the extent applicable, and to perform each and all of the obligations of DB Team provided for herein and therein. DB Team is duly qualified to do business, and is in good standing, in the State as of the Effective Date, and will remain duly qualified and in good standing throughout the term of this Agreement and for as long thereafter as any obligations remain outstanding under the DB Documents.

15.1.7 The execution, delivery and performance of the DB Documents, and all other Principal Project Documents to which DB Team is (or will be) a party have been (or will be) duly authorized by all necessary corporate action of DB Team; each Person executing the DB Documents and all other such Project related documents, on behalf of DB Team has been (or at the time of execution will be) duly authorized to execute and deliver each such document on behalf of DB Team; and the DB Documents, and all such other Project related documents have been (or will be) duly executed and delivered by DB Team.

15.1.8 Neither the execution and delivery by DB Team of the DB Documents and the Principal Project Documents to which DB Team is (or will be) a party, nor the consummation of the transactions contemplated hereby or thereby, is (or at the time of execution will be) in conflict with or has resulted or will result in a default under or a violation of the governing instruments of DB Team.
15.1.9 As of the Effective Date, each of the DB Documents, the Principal Project Documents to which DB Team is (or will be) a party constitutes (or at the time of execution and delivery will constitute) the legal, valid and binding obligation of DB Team, enforceable against DB Team and, if applicable, each member of DB Team, in accordance with its terms, subject only to applicable bankruptcy, insolvency and similar laws affecting the enforceability of the rights of creditors generally and the general principles of equity.

15.1.10 As of the Effective Date, there is no action, suit, proceeding, investigation or litigation pending and served on DB Team which challenges DB Team’s authority to execute, deliver or perform, or the validity or enforceability of, the DB Documents, and all other Project related documents to which DB Team is a party, or which challenges the authority of DB Team official executing the DB Documents, or the Principal Project Documents. DB Team has disclosed to GDOT prior to the Effective Date any pending and unserved or threatened action, suit, proceeding, investigation or litigation with respect to such matters of which DB Team is aware.

15.1.11 As of the Proposal Due Date, DB Team disclosed to GDOT in writing all organizational conflicts of interest of DB Team and its Contractors of which DB Team was actually aware; and between the Proposal Due Date and the Effective Date, DB Team has not obtained knowledge of any additional organizational conflict of interest, and there have been no organizational changes to DB Team or its Contractors identified in its Proposal, which have not been accepted in writing by GDOT. For this purpose, organizational conflict of interest has the meaning set forth in Section 1.6 of the RFP (Instructions to Proposers).

15.1.12 To the extent the Design-Build Contractor is not the DB Team, DB Team represents and warrants, as of the effective date of the Design-Build Contract, as follows: (a) the Design-Build Contractor is duly organized, validly existing and in good standing under the laws of the state of its organization; (b) with respect to Persons that individually hold more than ten percent (10%) of the capital stock of the Design-Build Contractor (including options, warrants and other rights to acquire capital stock), such stock is owned by the Persons whom DB Team has set forth in a written certification delivered to GDOT prior to the Effective Date; (c) the Design-Build Contractor has the power and authority to do all acts and things and execute and deliver all other documents as are required to be done, observed or performed by it in connection with its engagement by DB Team; (d) the Design-Build Contractor has all necessary expertise, qualifications, experience, competence, skills and know-how to perform the design and construction of the Project in accordance with the DB Documents; and (e) the Design-Build Contractor is not in breach of any applicable Law that would have a material adverse effect on the design and construction of the Project.

15.1.13 The execution and delivery by DB Team of this Agreement and all other Project related documents to which DB Team is a party will not result, at the time of execution, in a default under any other agreement or instrument to which it is a party or by which it is bound.

15.1.14 The execution and delivery by DB Team of the DB Documents and performance by DB Team of its obligations thereunder will not conflict with any Laws applicable to DB Team that are valid and in effect on the Effective Date.

15.1.15 The Design-Build Contractor shall comply in full with the provisions of Code Sections 50-24-1 through 50-24-6 of the Official Code of Georgia Annotated, relating to the “Drug-free Workplace Act”. 
15.1.16 No event which, with the passage of time or the giving of notice, would constitute a DB Team Default has occurred and has not yet been cured.

15.1.17 Reserved

15.1.18 DB Team certifies, by entering into this Agreement, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from entering into this Agreement by any federal agency or by any department, agency or political subdivision of the State, including GDOT. For purposes of this Article 15.1.18, the term “principal” means an officer, director, owner, partner, Key Personnel, employee, or other person with primary management or supervisory responsibilities, or a person who has a critical influence on or substantive control over the operations of DB Team.

15.1.19 DB Team represents, warrants and certifies by entering into this Agreement, that neither it nor its Affiliates is presently in arrears in payment of Taxes, permit fees or other statutory, regulatory or judicially required payments to GDOT or the State.

15.1.20 DB Team acknowledges and agrees, that as a requirement to enter into the DB Documents, the Proposal documents delivered pursuant to the RFP constitute all the information used in the preparation of the Proposal, and that no other Proposal preparation information will be considered in the resolution of Disputes. The DB Team also agrees that nothing in the Proposal documents delivered pursuant to the RFP shall change or modify the terms or conditions of the DB Documents.

15.2 GDOT Representations and Covenants

GDOT hereby represents to and covenants with DB Team as follows:

15.2.1 As of the Effective Date, GDOT has full power, right and authority to execute, deliver and perform the DB Documents and the Principal Project Documents to which GDOT is a party and to perform each and all of the obligations of GDOT provided for herein and therein.

15.2.2 As of the Effective Date, each of the DB Documents and the Principal Project Documents to which GDOT is (or will be) a party constitutes (or at the time of execution and delivery will constitute) the legal, valid and binding obligation of GDOT, enforceable against GDOT in accordance with its terms, subject only to applicable bankruptcy, insolvency and similar laws affecting the enforceability of the rights of creditors generally and the general principles of equity.

15.2.3 The execution and delivery by GDOT of this Agreement and the Principal Project Documents to which GDOT is a party will not result, at the time of execution, in a default under any other agreement or instrument to which it is a party or by which it is bound.

15.2.4 The execution and delivery by GDOT of the DB Documents and performance by GDOT of its obligations thereunder will not conflict with any Laws applicable to GDOT that are valid and in effect on the Effective Date.

15.2.5 Reserved

15.2.6 As of the Effective Date, there is no action, suit, proceeding, investigation or litigation pending and properly served on GDOT, or, to GDOT’s knowledge, without obligation to
investigate, threatened, which challenges GDOT’s authority to execute, deliver or perform, or the validity or enforceability of, the DB Documents, and all other Project related documents to which GDOT is a party.

15.3 Survival of Representations and Covenants

The representations and covenants of DB Team and GDOT contained herein shall survive expiration or earlier termination of this Agreement.

15.4 Special Remedies for Mutual Breach of Representations and Covenants

Notwithstanding any other provision of this Agreement, if there exists or occurs any circumstance or event that constitutes or results in a concurrent breach of any of the representations or covenants set forth in this Article 15 by both DB Team and GDOT but does not also constitute or result in any other breach or default by either Party, then such breaches shall not form the basis for a Compensation Event by the DB Team or damage claim by GDOT against DB Team. Instead, the only remedies shall be for the Parties to take action to rectify or mitigate the effects of such circumstance or event, to pursue severance and reformation of the DB Documents and Principal Project Documents as set forth in Article 24.13, or Termination by Court Ruling as set forth in Article 19.11 and Exhibit 20.

Article 16 INSURANCE; PERFORMANCE SECURITY; INDEMNITY

16.1 Insurance Policies and Coverage

16.1.1 Insurance Certificates and Additional Insured Endorsements Requirements

16.1.1.1 Certificates of Insurance. The DB Team shall procure the insurance coverages identified below at the DB Team’s expense and shall furnish GDOT an insurance certificate listing GDOT as the certificate holder, and as an additional insured where required. Certificates of insurance shall be on a form approved for use in the State of Georgia by the Commissioner of Insurance that provides the following:

(a) Name and address of authorized insurance agent
(b) Name and address of insured
(c) Name of insurance company(ies)
(d) Description of policies
(e) Policy number(s)
(f) Policy Period(s)
(g) Limits of liability
(h) Name and address of GDOT as certificate holder
(i) Project Name and Number
16.1.2 Insurer Qualifications, Insurance Requirements. Each of the insurance coverages required below (i) shall be issued by a company licensed or authorized by the Insurance Commissioner to transact the business of insurance in the State of Georgia for the applicable line of insurance, and (ii) shall be an insurer (or, for qualified self-insureds or group self-insureds that hold a certificate of self-insurance with the appropriate agencies within the State of Georgia, a specific excess insurer providing statutory limits) with a Best Policyholders Rating of “A-” or better and with a financial size rating of Class V or larger. Each such policy shall contain the following provisions:

16.1.2.1 The insurance company agrees that the policy shall not be canceled, reduced, or allowed to expire until 30 days, except 10 days for non-payment of premium, after GDOT has received written notice thereof, as evidenced by return receipt of certified mail or statutory mail, or until such time as other insurance coverage providing protection equal to protection called for in this Contract shall have been received, accepted and acknowledged by GDOT. Such notice shall be valid only as to the Project as shall have been designated by Project Number and Name in said notice.

16.1.2.2 The policy shall not be subject to invalidation as to any insured by reason of any act or omission of another insured or any of its officers, employees, agents or other representatives (“Separation of Insureds”), except Professional Liability (Errors and Omissions).

16.1.2.3 Each Insurer is hereby notified that the statutory requirement that the Attorney General shall represent and defend the Indemnified Parties remains in full force and effect and is not waived by issuance of any policy of insurance. In the event of litigation, any settlement on behalf of the Indemnified Parties must be expressly approved by the Attorney General. The DB Team and its insurance carrier may retain, but are not obligated to retain, counsel to assist with the defense of the Indemnified Parties, in which case there will be mutual cooperation between the Attorney General and such counsel. See O.C.G.A. §45-15-12.

16.1.2.4 All deductibles shall be paid for by the DB Team.

16.1.2.5 The maximum deductible, except for Worker’s Compensation qualified self-insurers or group self-insurers, in any policy shall not exceed $250,000.00 per claim, provided, however, that the maximum deductible requirement shall not apply to self-insurers or group self-insurers that hold a certificate of self-insurance with the appropriate agencies within the State of Georgia.

16.1.3 Required Insurance Coverages. The DB Team also agrees to purchase insurance and have the authorized agent state on the insurance certificate that the DB Team has purchased the following types of insurance coverages, consistent with the policies and requirements of O.C.G.A. §50-21-37. The minimum required coverages and liability limits are as follows:
16.1.3.1 Workers’ Compensation Insurance. The DB Team agrees to provide at a minimum Workers’ Compensation coverage in accordance with the statutory limits as established by the General Assembly of the State of Georgia. A group insurer must submit a certificate of authority from the Insurance Commissioner approving the group insurance plan. A self-insurer must submit a certificate from the Georgia Board of Workers’ Compensation stating the DB Team qualifies to pay its own workers’ compensation claims. The DB Team shall require all Subcontractors performing work under this Agreement to obtain an insurance certificate showing proof of Workers’ Compensation Coverage and shall submit a certificate on the letterhead of the DB Team in the following language:

This is to certify that all subcontractors performing work on this Project are covered by their own workers’ compensation insurance or are covered by the DB Team’s workers’ compensation insurance. DB Team further certifies that additional subcontractors performing work on the Project will be covered by their own workers’ compensation insurance or will be covered by the DB Team’s workers’ compensation insurance.

16.1.3.2 Employers’ Liability Insurance. The DB Team shall also maintain Employer’s Liability Insurance Coverage with limits of at least:

(a) Bodily Injury by Accident - $1,000,000 each accident; and
(b) Bodily Injury by Disease - $1,000,000 each employee.

The DB Team shall require all Subcontractors performing work under this Contract to obtain an insurance certificate showing proof of Employers Liability Insurance Coverage and shall submit a certificate on the letterhead of the DB Team in the following language:

This is to certify that all subcontractors performing work on this Project are covered by their own Employers Liability Insurance Coverage or are covered by the DB Team’s Employers Liability Insurance Coverage. DB Team further certifies that additional subcontractors performing work on this Project will be covered by their own Employers Liability Insurance Coverage or will be covered by the DB Team’s Employers Liability Insurance Coverage.

16.1.3.3 Commercial General Liability (CGL) Insurance. The DB Team shall provide Commercial General Liability Insurance (2004 ISO Occurrence Form or equivalent) that shall include, but need not be limited to, coverage for bodily injury and property damage arising from premises and operations liability, products and completed operations liability, blasting and explosion, collapse of structures, underground damage, personal injury liability and contractual liability. The CGL policy must include separate aggregate limits per Project and shall provide at a minimum the following limits:

<table>
<thead>
<tr>
<th>Coverage</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Premises and Operations</td>
<td>$ 1,000,000.00 per Occurrence</td>
</tr>
<tr>
<td>2. Products and Completed Operations</td>
<td>$ 1,000,000.00 per Occurrence</td>
</tr>
<tr>
<td>3. Personal Injury</td>
<td>$ 1,000,000.00 per Occurrence</td>
</tr>
<tr>
<td>4. Contractual</td>
<td>$ 1,000,000.00 per Occurrence</td>
</tr>
<tr>
<td>5. General Aggregate</td>
<td>$ 2,000,000.00 per Project</td>
</tr>
</tbody>
</table>
16.1.3.4 **Commercial Business Automobile Liability Insurance.** The DB Team shall provide Commercial Business Automobile Liability Insurance that shall include coverage for bodily injury and property damage arising from the operation of any owned, non-owned, or hired automobile. The Commercial Business Automobile Liability Insurance Policy shall provide not less than $1,000,000 Combined Single Limits for each occurrence.

16.1.3.5 **Commercial Umbrella Liability Insurance.** The DB Team shall provide a Commercial Umbrella Liability Insurance to provide excess coverage above the Commercial General Liability and Commercial Business Automobile Liability to satisfy the minimum limits set forth herein. The umbrella coverage shall follow form with the Umbrella limits required as follows:

<table>
<thead>
<tr>
<th>Contract Amount</th>
<th>Per Occurrence</th>
<th>Aggregate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Than $5,000,000:</td>
<td>$2,000,000</td>
<td>$4,000,000</td>
</tr>
<tr>
<td>Equal to or Greater than $5,000,000 and Less than $30,000,000:</td>
<td>$2,000,000</td>
<td>$10,000,000</td>
</tr>
<tr>
<td>Equal to or Greater than $30,000,000:</td>
<td>$4,000,000</td>
<td>$20,000,000</td>
</tr>
</tbody>
</table>

16.1.3.6 **Additional Requirements for Commercial Policies in Articles 16.1.3.3 through 16.1.3.5**

(a) The DB Team shall cause its insurer to issue an Additional Insured Endorsement naming the officers, members, and employees of GDOT as additional Insureds.

(b) Each policy must be written on an “occurrence” basis.

16.1.3.7 **Professional Liability (Errors and Omissions) Insurance.** Limits shall not be less than the following:

(a) Reserved

(b) Professional Liability (Errors and Omissions): Insurance in an amount not less than one million dollars ($1,000,000.00) per claim and annual aggregate must be maintained or caused to be maintained during the agreement term with a retroactive date no later than the date that design services commenced, and must be maintained for a period of at least five years following Substantial Completion. Such policy or policies shall cover all the DB Team’s professional liabilities, whether occasioned by the DB Team, its employees, subconsultants, subcontractors or other agents arising out of design and engineering services performed under or in accordance with this Agreement.

16.1.3.8 **Reserved.**

16.1.3.9 **Disposition of Insurance Documents.** Original certificate(s) of insurance with all required endorsements must be provided to GDOT evidencing the minimum insurance required. Renewal certificates for all required insurance must be provided to GDOT 30 days prior to the expiration/renewal date. If requested, copies of required insurance policies must be provided to GDOT within 10 Business Days of such request.
16.1.4 Termination of Obligation to Insure. Unless otherwise expressly provided to the contrary, the obligation to insure as provided herein shall not terminate until GDOT shall have executed the certificate of Final Acceptance.

16.1.5 Failure of Insurers. The DB Team is responsible for any delay resulting from the failure of its insurance carriers to furnish proof of proper coverage in the prescribed form.

16.1.6 Inadequacy of Required Coverages. GDOT makes no representation that the scope of coverage and limits of liability specified for any Insurance Policy to be carried pursuant to this Agreement or approved variances therefrom are adequate to protect the DB Team or its Contractors against its undertakings under this Agreement to GDOT, or its liabilities to any third party. It is the responsibility of the DB Team and each Contractor to determine if any changes or additional coverages are required to adequately protect their interests. No such limits of liability or approved variances therefrom shall preclude GDOT from taking any actions as are available to it under the DB Documents, or otherwise at Law.

16.2 Performance and Payment Security

DB Team shall furnish Performance & Payment Bonds (“P&P Bonds”) meeting the requirements of this Article 16.2 as performance and payment security for the Work.

16.2.1 P&P Bonds

16.2.1.1 The DB Team shall furnish, or cause the furnishing of, P&P Bonds. DB Team shall obtain and deliver P&P Bonds in such amount as required pursuant to the terms set forth in the Standard Specification Section 103.05, identifying DB Team as the P&P Obligor, securing DB Team’s obligations to perform the Work and to ensure that payments owing to Claimants are made with respect to such Work.

16.2.1.2 The P&P Bonds shall be issued by a properly licensed and U.S. Treasury listed surety(ies) that have not less than “A” or better and Class VIII by A.M. Best and Company’s Insurance Reports Key Rating Guide, and listed on Treasury Department Circular 570, and be on the list of companies approved by the State for at least three of the last five years from the date of the proposed bond issuance. If P&P Bonds are issued by more than one surety, such P&P Bonds shall be executed on a joint and several basis.

16.3 Prosecution of Claims

16.3.1 Unless otherwise directed by GDOT in writing with respect to GDOT’s insurance claims and subject to the requirements of Articles 16.5 and 16.6 below, DB Team shall be responsible for reporting and processing all potential claims by GDOT or DB Team against the Insurance Policies required hereunder. DB Team agrees to report timely to the insurer(s) under such Insurance Policies any and all matters which may give rise to an insurance claim by DB Team or GDOT or another Indemnified Party and to promptly and diligently pursue such insurance claims in accordance with the claims procedures specified in such Insurance Policies, whether for defense or indemnity or both. DB Team shall enforce all legal rights against the insurer under the applicable Insurance Policies and applicable Laws in order to collect thereon, including pursuing necessary litigation and enforcement of judgments, provided that DB Team shall be deemed to have satisfied this obligation if a judgment is not collectible through the exercise of lawful and diligent means.
16.3.2  GDOT agrees to promptly notify DB Team of GDOT's incidents, potential claims against GDOT, and matters which may give rise to an insurance claim against GDOT, to tender to the insurer GDOT's defense of the claim under such Insurance Policies, and to cooperate with DB Team as necessary for DB Team to fulfill its duties hereunder.

16.3.3  If in any instance DB Team has not performed its obligations respecting insurance coverage set forth in the DB Documents or is unable to enforce and collect any such insurance for failure to assert claims in accordance with the terms of the Insurance Policies or to prosecute claims diligently, then for purposes of determining DB Team's liability and the limits thereon or determining reductions in compensation due from GDOT to DB Team on account of available insurance, DB Team shall be treated as if it has elected to self-insure up to the full amount of insurance coverage which would have been available had DB Team performed such obligations and not committed such failure. Nothing in this Article 16.3.3 or elsewhere in this Article 16.3 shall be construed to treat DB Team as electing to self-insure where DB Team is unable to collect due to the bankruptcy or insolvency of any insurer which at the time the Insurance Policy is written meets the rating qualifications set forth in this Article 16.3.

16.3.4  DB Team shall not settle or accept any settlement of any insurance claim which is in excess of $100,000 or which involves any claim that has been asserted against GDOT, the State, or any agency or department thereof, without prior written approval of GDOT, provided that DB Team shall not be required to obtain GDOT approval for workers compensation claims.

16.3.5  If in any instance DB Team has not promptly performed its obligation to report to applicable insurers and process any potential insurance claim tendered by GDOT or another Indemnified Party, then GDOT or the other Indemnified Party may, but is not obligated to, (a) notify DB Team in writing of GDOT's intent to report the claim directly with the insurer and thereafter process the claim, and (b) proceed with reporting and processing the claim if GDOT or the other Indemnified Party does not receive from DB Team, within 10 days after so notifying DB Team, written proof that DB Team has reported the claim directly to the insurer. GDOT or the other Indemnified Party may dispense with such notice to DB Team if GDOT or the other Indemnified Party has a good faith belief that more rapid reporting is needed to preserve the claim.

16.4  Reserved

16.5  Indemnity by DB Team

16.5.1  Subject to Article 16.5.2, DB Team shall release, protect, defend, indemnify and hold harmless the Indemnified Parties from and against any and all Third-Party Claims and Third-Party Losses arising out of, relating to or resulting from:

16.5.1.1  The breach or alleged breach of the DB Documents by DB Team;

16.5.1.2  The failure or alleged failure by any DB Team-Related Entity to comply with the Governmental Approvals, any applicable Environmental Laws or other Laws (including Laws regarding Hazardous Materials Management);

16.5.1.3  Any alleged patent or copyright infringement or other allegedly improper appropriation or use by any DB Team-Related Entity of trade secrets, patents, proprietary information, know-how, copyright rights or inventions in performance of the Work, or arising out of any use in connection with the Project of methods, processes,
designs, information, or other items furnished or communicated to GDOT or another Indemnified Party pursuant to the DB Documents; provided that this indemnity shall not apply to any infringement resulting from GDOT’s failure to comply with specific written instructions regarding use provided to GDOT by DB Team;

16.5.1.4 The actual or alleged culpable act or omission, culpable error or misconduct of any DB Team-Related Entity in or associated with performance of the Work;

16.5.1.5 Any and all claims by any governmental or taxing authority claiming taxes based on gross receipts, purchases or sales, the use of any property or income of any DB Team-Related Entity with respect to any payment for the Work made to or earned by any DB Team-Related Entity;

16.5.1.6 Any and all stop notices, liens and claims filed in connection with the Work, including all expenses and attorneys’, accountants’ and expert witness fees and costs incurred in discharging any stop notice, lien or claim, and any other liability to Contractors, laborers and Suppliers for failure to pay sums due for their work, services, materials, goods, equipment or supplies, including interest and attorney’s fees, provided that GDOT is not in default in payments owing (if any) to DB Team with respect to such Work;

16.5.1.7 Any actual or threatened DB Team Release of Hazardous Materials;

16.5.1.8 The claim or assertion by any other developer or contractor that any DB Team-Related Entity interfered with or hindered the progress or completion of work being performed by the other contractor or developer, or failed to cooperate reasonably with the other developer or contractor, so as to cause inconvenience, disruption, delay or loss, except where the DB Team-Related Entity was not in any manner engaged in the management, prosecution, protection or performance of the Work;

16.5.1.9 Any dispute or claim by a Utility Owner related to any DB Team-Related Entity’s performance of, or failure to perform, the obligations under any Standard Utility Agreement;

16.5.1.10 (a) Any DB Team breach of or failure to perform an obligation that GDOT owes to a third Person, including, but not limited to, Governmental Entities, under Law or under any agreement between GDOT and a third Person, where GDOT has delegated performance of the obligation to DB Team pursuant to the terms of the DB Documents, or (b) the negligent or willful acts or omissions of any DB Team-Related Entities which render GDOT unable to perform or abide by an obligation that GDOT owes to a third Person, including, but not limited to, Governmental Entities, under any agreement between GDOT and a third Person, where the agreement is previously disclosed or known to DB Team;

16.5.1.11 The fraud, bad faith, arbitrary or capricious acts, willful misconduct, negligence or violation of Law or contract by DB Team or Design-Build Contractor or any Affiliate of either in connection with DB Team’s performance of real property acquisition services under the DB Documents;
16.5.1.12 Inverse condemnation, trespass, nuisance, interference with use and enjoyment of property or similar taking of or harm to real property by reason of (a) the failure of any DB Team-Related Entity to comply with Good Industry Practice, requirements of the DB Documents, Management Plans or Governmental Approvals, (b) the intentional misconduct or negligence of any DB Team-Related Entity, or (c) the entry onto or encroachment upon another’s property by any DB Team-Related Entity.

16.5.1.13 If applicable, any violation of any federal or state securities or similar law by any DB Team-Related Entity;

16.5.1.14 Errors, inconsistencies or other defects in the design or construction of the Project and/or of Utility Adjustments, or the Work, included in the Design Work and/or Construction Work; or

16.5.1.15 Any claim asserted or alleged against GDOT in contradiction of Article 4.8.1.

16.5.2 Subject to the releases and disclaimers herein, including all the provisions set forth in Article 4.4, DB Team’s indemnity obligation shall not extend to any Third-Party Claims and Third-Party Losses to the extent caused or contributed to by:

16.5.2.1 The sole negligence, recklessness or willful misconduct, bad faith or fraud of the Indemnified Party;

16.5.2.2 GDOT’s breach of any of obligations under the DB Documents; or

16.5.2.3 An Indemnified Party’s violation of any Laws or Governmental Approvals;

16.5.2.4 Any material defect inherent in a prescriptive design, or construction specification included in the DB Documents that was not drafted or provided by DB Team under this Agreement, but only where prior to occurrence of the Third-Party Loss DB Team complied with such specification and did not actually know, or would not reasonably have known, while exercising reasonable diligence, that it was deficient or, if DB Team actually knew of the deficiency, unsuccessfully sought GDOT’s waiver or acceptance of a Change Request from such specification; or

16.5.2.5 Any Compensation Event or Relief Event.

16.5.3 In claims by an employee of DB Team, a Contractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Article 16.5 shall not be limited by a limitation on the amount or type of damages, compensation or benefits payable by or for DB Team or a Contractor under workers’ compensation, disability benefit or other employee benefits laws.

16.5.4 For purposes of this Article 16.5, “Third-Party Claim” includes a claim, dispute, disagreement, cause of action, demand, suit, action, judgment, investigation, or legal or administrative proceeding which (a) is asserted, initiated or brought by any Indemnified Party’s employee, agent or contractor against an Indemnified Party, (b) is within the scope of the indemnities and (c) is not covered by the Indemnified Party’s worker’s compensation program.
For purposes of this Article 16.5, “Third-Party Loss” includes any actual or alleged Loss sustained or incurred by such employee, agent or contractor.

16.6 Defense and Indemnification Procedures

16.6.1 If any of the Indemnified Parties receives notice of a claim that it believes is within the scope of the indemnities under Article 16.5, GDOT shall by writing as soon as practicable after receipt of the claim, (a) inform DB Team of the claim, (b) send to DB Team a copy of all written materials GDOT has received asserting such claim and (c) notify DB Team that no insurer accept defense of the claim, the Indemnified Party will conduct its own defense unless DB Team accepts the tender of the claim in accordance with Article 16.6.3. As soon as practicable after DB Team receives notice of a claim or otherwise has actual knowledge of a claim, it shall tender the claim in writing to the insurers under all potentially applicable Insurance Policies and comply with all notice requirements contained in such Insurance Policies. GDOT and other Indemnified Parties also shall have the right to tender such claims to such insurers.

16.6.2 Subject to Article 16.6.4, if the insurer under any applicable Insurance Policy accepts the tender of defense, GDOT and DB Team shall cooperate in the defense as required by the Insurance Policy. If no insurer under potentially applicable Insurance Policies provides defense, then Article 16.6.3 shall apply.

16.6.3 If the defense is tendered to DB Team, then within 30 days after receipt of the tender it shall notify the Indemnified Party whether it has tendered the matter to an insurer and (if not tendered to an insurer or if the insurer has rejected the tender) shall deliver a written notice stating that DB Team:

16.6.3.1 Accepts the tender of defense and confirms that the claim is subject to full indemnification hereunder without any “reservation of rights” to deny or disclaim full indemnification thereafter;

16.6.3.2 Accepts the tender of defense but with a “reservation of rights” in whole or in part, with a detailed statement as to the reasons for the “reservation of rights”; or

16.6.3.3 Rejects the tender of defense based on a determination that it is not required to indemnify against the claim under the terms of this Agreement, with a detailed statement as to the reasons for the denial.

16.6.4 If DB Team accepts the tender of defense under Article 16.6.3.1, DB Team acknowledges and agrees (and has caused the insurer to be so notified of the statutory requirements) that the Attorney General shall represent and defend the State, GDOT, and any officer, director, commissioner or employee of such Indemnified Parties; but GDOT will request that the Attorney General, without limiting the authority of the Attorney General, consider attorneys recommended by DB Team for appointment as Special Assistant Attorney General to represent and defend the referenced Indemnified Parties. DB Team may, at the option of the Attorney General, have the right to participate in the defense of the Indemnified Parties. In the event of litigation, any settlement on behalf of the Indemnified Parties must be expressly approved by the Attorney General. The foregoing shall not relieve DB Team’s obligation to bear the fees and costs of defending and settling such claim. During such defense:
16.6.4.1 DB Team shall fully and regularly inform the Indemnified Party and the Attorney General of the progress of the defense and of any settlement discussions; and

16.6.4.2 Each Indemnified Party shall fully cooperate in said defense, provide to DB Team all materials and access to personnel it requests as necessary for defense, preparation and trial and which or who are under the control of or reasonably available to the Indemnified Party, and maintain the confidentiality of all communications between it and DB Team concerning such defense.

16.6.5 If DB Team responds to the tender of defense as specified in Article 16.6.3.2 or Article 16.6.3.3, such Indemnified Parties shall also be represented by the Attorney General who shall otherwise control the defense of such claim, including settlement. The foregoing shall not relieve DB Team from its obligations to bear the fees and costs of defending and settling such claim.

16.6.6 Even if the Attorney General has appointed counsel selected by DB Team to represent any of the Indemnified Parties, the Attorney General may assume the defense of the applicable Indemnified Parties by delivering to DB Team written notice of such election and the reasons therefor, if the Indemnified Parties, at the time it gives notice of the claim or at any time thereafter, reasonably determines that:

16.6.6.1 A conflict exists between it and DB Team which prevents or potentially prevents DB Team from presenting a full and effective defense;

16.6.6.2 DB Team is otherwise not providing an effective defense in connection with the claim; or

16.6.6.3 DB Team lacks the financial capacity to satisfy potential liability or to provide an effective defense.

16.6.7 If any of the Indemnified Parties is entitled and elects to conduct its own defense pursuant hereto of a claim for which it is entitled to indemnification, DB Team shall reimburse on a current basis all reasonable costs and expenses any such Indemnified Parties incurs in investigating and defending, including, but not limited to, attorney’s fees. In the event the Indemnified Parties are entitled to and elect to conduct their own defense, then:

16.6.7.1 In the case of a defense conducted under Article 16.6.3.1, it shall have the right to settle or compromise the claim with DB Team’s prior written consent, which shall not be unreasonably withheld or delayed;

16.6.7.2 In the case of a defense conducted under Article 16.6.3.2, it shall have the right to settle or compromise the claim with DB Team’s prior written consent, which shall not be unreasonably withheld or delayed, or with approval of the court following reasonable notice to DB Team and opportunity to be heard and without prejudice to the Indemnified Party’s rights to be indemnified by DB Team; and

16.6.7.3 In the case of a defense conducted under Article 16.6.3.3, it shall have the right to settle or compromise the claim without DB Team’s prior written consent and without prejudice to its rights to be indemnified by DB Team.
16.6.8 A refusal of, or failure to accept, a tender of defense, as well as any Dispute over whether an Indemnified Party which has assumed control of defense is entitled to do so under Article 16.6.6, shall be submitted in accordance with the Dispute Resolution Procedures. DB Team shall be entitled to contest an indemnification claim and pursue, through the Dispute Resolution Procedures, recovery of defense and indemnity payments it has made to or on behalf of the Indemnified Party.

16.6.9 In determining responsibilities and obligations for defending suits pursuant to this Article 16.6, specific consideration shall be given by the Parties to the following factors: (a) the party performing the activity in question; (b) the location of the activity and Incident; (c) contractual arrangements then governing the performance of the activity; and (d) allegations of respective fault contained in the claim.

16.6.10 Notwithstanding anything to the contrary set forth in Article 16.5 or this Article 16.6, the Attorney General is the only counsel authorized to represent GDOT or any State affiliated agencies or departments. In the event that there is any potential conflict of interest that could reasonably arise in the representation of any Indemnified Party and DB Team in the defense of any action, suit or proceeding pursuant to Article 16.5 above or in the event that state or local law requires the use of specific counsel, (i) such Indemnified Party may elect in its sole and absolute discretion whether to waive such conflict of interest, and (ii) unless such Indemnified Party elects to waive such conflict of interest, or in any event if required by state or local law, then the counsel designated by the Indemnified Party shall solely represent such Indemnified Party and, if applicable, DB Team shall retain its own separate counsel, each at DB Team’s sole cost and expense. The Attorney General will consider counsel recommended by DB Team for appointment as a Special Assistant Attorney General.

16.6.11 If a suit or proceeding based on a claimed infringement of a patent or copyright is brought against any of the Indemnified Parties, DB Team shall, at its own expense, defend or settle any such suit or proceeding if authorized to do so in writing by the Attorney General subject to the obligations of indemnification as set forth in Article 16.5.

16.6.12 DB Team, subject to this Article 16.6, may settle the claim without the consent or agreement of the Indemnified Parties, unless the settlement (i) would result in injunctive relief or other equitable remedies or otherwise require the Indemnified Parties to comply with restrictions or limitations that adversely affect or materially impair the reputation and standing of the Indemnified Parties, (ii) would require the Indemnified Parties to pay amounts that DB Team or its insurer does not fund in full, (iii) would not result in the Indemnified Parties full and complete release from all liability to the plaintiffs or Claimants who are parties to or otherwise bound by the settlement, or (iv) directly involves any such Indemnified Parties (in which case the Attorney General shall be the only counsel authorized to represent such parties with respect to any such settlement).

Article 17 DEFAULT; REMEDIES; CLAIM FOR ADJUSTMENTS AND DISPUTES

17.1 Default by DB Team; Cure Periods

17.1.1 DB Team Default

Subject to relief from its performance obligations pursuant to Article 14.1.2.1 and Article 13.3.2.4, DB Team shall be in breach under this Agreement upon the occurrence of any one or more of the following events or conditions (each a “DB Team Default”):
17.1.1.1 DB Team (a) fails to begin the applicable Work within 30 days following issuance of NTP 1; (b) fails to satisfy all conditions to issuance of NTP 3 under Article 3.3.1 by the NTP 3 Conditions Deadline; or (c) fails to satisfy all conditions to commencement of the applicable Construction Work, and fails to commence such Construction Work with diligence and continuity, as the same may be extended pursuant to this Agreement;

17.1.1.2 An Abandonment;

17.1.1.3 DB Team fails to achieve Substantial Completion by the Substantial Completion Deadline, as the same may be extended pursuant to this Agreement;

17.1.1.4 DB Team fails to achieve Final Acceptance by the Final Acceptance Deadline, or fails to achieve such required Elements of the Work by any applicable Milestone Deadline, as any such dates may be extended pursuant to this Agreement;

17.1.1.5 Any representation or covenant in the DB Documents made by DB Team, or any certificate, schedule, report, instrument or other document delivered by or on behalf of DB Team to GDOT pursuant to the DB Documents is materially false, materially misleading or materially inaccurate when made or omits material information when made;

17.1.1.6 DB Team fails to obtain, provide and maintain any insurance, bonds, or other performance security as and when required under this Agreement for the benefit of relevant parties, or fails to comply with any requirement of this Agreement pertaining to the amount, terms or coverage of the same;

17.1.1.7 DB Team makes or attempts to make or suffers a voluntary or involuntary assignment or transfer of all or any portion of this Agreement, the Project or DB Team’s Interest, or there occurs a Change of Control, in violation of Article 21;

17.1.1.8 DB Team materially fails to timely observe or perform or cause to be observed or performed any other material covenant, agreement, obligation, term or condition required to be observed or performed by DB Team under the DB Documents (including material failure to perform the Design Work, Construction Work, or any material portion thereof in accordance with the DB Documents); provided that this Article 17.1.1.8 shall not apply to DB Team Defaults specifically addressed by other provisions of Article 17.1.1;

17.1.1.9 After exhaustion of all rights of appeal, there occurs any suspension or debarment (distinguished from ineligibility due to lack of financial qualifications), or there goes into effect an agreement for voluntary exclusion, from bidding, proposing or contracting with any federal or State department or agency of (a) DB Team, (b) any member of DB Team with a material financial obligation owing to DB Team for equity or shareholder loan contributions, (c) any Affiliate of DB Team for whom transfer of ownership would constitute a Change of Control, or (d) any Key Contractor whose work is not completed;

17.1.1.10 DB Team fails to (a) deliver to GDOT any remedial plan as may be required pursuant to Article 17.3.5 or (b) otherwise fails to fully comply with the schedule or specific elements of, or actions required under, any such accepted remedial plan;
17.1.1.11 DB Team (a) commences a voluntary case seeking liquidation, reorganization or other relief with respect to itself or its debts under any U.S. or foreign bankruptcy, insolvency or other similar Law now or hereafter in effect, (b) seeks the appointment of a trustee, receiver, liquidator, custodian or other similar official of it or any substantial part of its assets; (c) becomes insolvent, or generally does not pay its debts as they become due; (d) admits in writing its inability to pay its debts; (e) makes an assignment for the benefit of creditors; or (f) takes any action to authorize any of the foregoing; or

17.1.1.12 An involuntary case is commenced against DB Team (a) seeking liquidation, reorganization, dissolution, winding up, a composition or arrangement with creditors, a readjustment of debts or other relief with respect to DB Team or DB Team’s debts under any U.S. or foreign bankruptcy, insolvency or other similar Law now or hereafter in effect; (b) seeking the appointment of a trustee, receiver, liquidator, custodian or other similar official of DB Team or any substantial part of DB Team’s assets; (c) seeking the issuance of a writ of attachment, execution, or similar process; or (d) seeking like relief; and such involuntary case shall not be contested by DB Team in good faith or shall remain undismissed and unstayed for a period of 60 days.

17.1.2 Forbearance and Cure Periods

For the purpose of GDOT’s exercise of other remedies, subject to Article 17.2.2 and subject to remedies that this Article 17 expressly states may be exercised before lapse of a cure period, DB Team shall have the following cure periods with respect to the following DB Team Defaults:

17.1.2.1 Respecting a DB Team Default under Article 17.1.1.10, a period of five days after GDOT delivers to DB Team written notice of the DB Team Default;

17.1.2.2 Respecting a DB Team Default under Article 17.1.1.6 or Article 17.1.1.7, a period of 15 days after GDOT delivers to DB Team written notice of the DB Team Default; provided that GDOT shall have the right, but not the obligation, to effect cure, at DB Team’s expense, if a DB Team Default under Article 17.1.1.6 continues beyond five days after such notice is delivered;

17.1.2.3 Respecting a DB Team Default under Article 17.1.1.1 or Article 17.1.1.2, a period of 30 days after GDOT delivers to DB Team written notice of the DB Team Default; provided that as to a DB Team Default under Article 17.1.1.1, such cure period shall not preclude or delay GDOT’s immediate exercise, without notice or demand, of its right, but not the obligation, to effect cure, at DB Team’s expense;

17.1.2.4 Respecting a DB Team Default under Article 17.1.1.5, Article 17.1.1.8 or Article 17.1.1.9, a period of 30 days after GDOT delivers to DB Team written notice of the DB Team Default; provided that (a) if the DB Team Default is of such a nature that the cure cannot with diligence be completed within such time period and DB Team has commenced meaningful steps to cure immediately after receiving the default notice, DB Team shall have such additional period of time, up to a maximum cure period of 180 days, as is reasonably necessary to diligently effect cure, (b) as to Article 17.1.1.5, cure will be regarded as complete when the adverse effects of the breach are cured, and (c) as to Article 17.1.1.9, if the debarred or suspended Person is a managing member, general partner or controlling investor of DB Team, cure will be regarded as complete
when DB Team proves it has removed such Person from any position or ability to manage, direct or control the decisions of DB Team or to perform Work;

17.1.2.5 Respecting a DB Team Default under Article 17.1.1.11 or Article 17.1.1.12, no cure period, and there shall be no right to notice of a DB Team Default under Article 17.1.1.11 or Article 17.1.1.12; and

17.1.2.6 Respecting a DB Team Default arising from DB Team’s failure to achieve any Milestone Deadline other than the Substantial Completion Deadline or Final Acceptance Deadline, a forbearance period of 30 days from the date of such DB Team Default shall apply, provided that DB Team shall, as a condition to such forbearance period, be required to (a) deliver to GDOT a remedial action plan within 10 days after written notice of such DB Team Default, pursuant to Article 17.3.5 (without further demand or notice by GDOT), and (b) with the delivery of such remedial action plan, acknowledge any associated Liquidated Damages that are accruing. Where such remedial action plan has been accepted by GDOT in writing, then such forbearance period as provided herein shall be extended or abbreviated as required by such remedial action plan, acknowledge any associated Liquidated Damages that are accruing. Where such forbearance period as provided herein shall be extended or abbreviated as required by such remedial action plan, subject to DB Team’s diligent prosecution of the Work in accordance therewith. Any such DB Team Default shall be deemed cured upon satisfaction of the conditions set forth in such accepted remedial action plan and any Liquidated Damages shall cease to accrue upon the date of such satisfaction. Notwithstanding anything to the contrary herein, Liquidated Damages accruing during such forbearance period, as may be extended, shall not be waived by this Article 17.1.2.6 and shall be payable pursuant to the terms of this Agreement.

17.1.3 Certain Curative Actions; Status Report

17.1.3.1 If the DB Team Default consists of failure to give GDOT a required prior notice and opportunity to complete an applicable review and comment or acceptance procedure under Article 6.3 before action is taken by DB Team, such DB Team Default shall be curable only by reversing or suspending the action until the notice and review and comment or acceptance procedures are followed and completed, unless DB Team finished the action before receiving the notice of DB Team Default or unless waived by GDOT.

17.1.3.2 If the DB Team Default consists of any DB Team activity or failure to act which constitutes a change from DB Team’s activities immediately prior to the DB Team Default, such DB Team Default shall be curable only by reinstating the activity as it was being performed immediately prior to the DB Team Default.

17.1.3.3 For any DB Team Default for which a Warning Notice has been delivered by GDOT to DB Team, DB Team may request from GDOT a status report as to DB Team’s progress in effecting a cure, by delivering to GDOT a written request accompanied by DB Team’s own report as to its progress in effecting a cure. GDOT shall provide its response within 10 Business Days after receipt of DB Team’s written request and report. The response shall be provided solely for purposes of informing DB Team as to GDOT’s view of the progress in effecting a cure for the DB Team Default, shall not constitute an admission of any fact, shall not be admissible in evidence for any purpose, shall not form the basis for any Dispute, and shall not limit in any way GDOT’s right to terminate this Agreement in accordance with Article 19.3 should cure not be effected within the relevant period.
17.2 Warning Notices

17.2.1 Warning Notice Events

Without prejudice to any other right or remedy available to GDOT, GDOT may, but in no case shall be required to, deliver a written notice (a “Warning Notice”) to DB Team, stating explicitly that it is a “Warning Notice” and stating in reasonable detail the matter or matters giving rise to the notice and, if applicable, amounts due from DB Team, and reminding DB Team of the implications of such notice, whenever there occurs any of the following:

17.2.1.1 Any DB Team Default under Article 17.1.1.1, 17.1.1.2, 17.1.1.7, 17.1.1.8, or 17.1.1.10;

17.2.1.2 Delay or failure to achieve any Milestone Deadline; or

17.2.1.3 Any other material DB Team Default.

17.2.2 Effect of Warning Notice on DB Team Cure Period

17.2.2.1 Any notice of a DB Team Default issued under Article 17.1 may, if it concerns a matter under Article 17.2.1, also be issued as a Warning Notice. In such case, the cure period available to DB Team, if any, shall be as set forth in Article 17.1.2.

17.2.2.2 If GDOT issues a Warning Notice under Article 17.2.1 for any DB Team Default after it issues a notice of such DB Team Default, then the cure period available to DB Team, if any, for such DB Team Default before GDOT may seek to appoint a receiver for DB Team, remove DB Team or terminate this Agreement on account of such DB Team Default shall be extended by the time period between the date the notice of such DB Team Default was issued and the date the Warning Notice is issued. No later issuance of a Warning Notice shall extend the time when GDOT may exercise any other remedy respecting such DB Team Default.

17.2.3 Other Effects of Warning Notice

17.2.3.1 The issuance of a Warning Notice shall entitle GDOT to increase the level of oversight as provided in Article 17.3.8.

17.2.3.2 The issuance of a Warning Notice may trigger a Default Termination Event as provided in Article 19.3.

17.3 Remedies for DB Team Default

17.3.1 Termination

In the event of any DB Team Default that is or becomes a Default Termination Event set forth in Article 19.3.1, GDOT may terminate this Agreement and GDOT thereupon may take control of the Work, which termination shall, among other things, automatically terminate all of DB Team’s rights under Article 2, whereupon DB Team shall take all action required to be taken by DB Team under Article 19.5.
17.3.2 Remedies for Failure to Meet Safety Standards or Perform Safety Compliance

17.3.2.1 Subject to Article 17.3.2.4, if at any time DB Team fails to meet any Safety Standard or timely perform Safety Compliance or GDOT and DB Team cannot reach an agreement regarding the interpretation or application of a Safety Standard or the valid issuance of a Safety Compliance Order within a period of time acceptable to GDOT, acting reasonably, GDOT shall have the absolute right and entitlement to undertake or direct DB Team to undertake any work required to ensure implementation of and compliance with Safety Standards as interpreted or applied by GDOT or with the Safety Compliance Order.

17.3.2.2 To the extent that any work done pursuant to Article 17.3.2.1 is undertaken by GDOT and is reasonably necessary to comply with Safety Standards or perform validly issued Safety Compliance Orders, DB Team shall pay to GDOT on demand GDOT Recoverable Costs in connection with such work, and GDOT (whether it undertakes the work or has directed DB Team to undertake the work) shall have no obligation or liability to compensate DB Team for any Losses DB Team suffers or incurs as a result thereof.

17.3.2.3 To the extent that any work done pursuant to Article 17.3.2.1 is undertaken by GDOT and is not reasonably necessary to comply with Safety Standards or perform validly issued Safety Compliance Orders, GDOT shall compensate DB Team only for Losses DB Team suffers or incurs as a direct result thereof.

17.3.2.4 To the extent that any Safety Compliance Order work pursuant to Article 17.3.2.1 is undertaken by DB Team under written protest delivered prior to starting the work and it is finally determined that the Safety Compliance work was not necessary, the unnecessary work under the Safety Compliance Order shall be treated as a GDOT Change.

17.3.2.5 Notwithstanding anything to the contrary contained in the DB Documents, if in the good faith judgment of GDOT, DB Team has failed to meet any Safety Standards or perform Safety Compliance and the failure results in an Emergency or danger to persons or property, and if DB Team is not then diligently taking all necessary steps to rectify or deal with such Emergency or danger, GDOT may, without notice and without awaiting lapse of the period to cure any breach, and in addition and without prejudice to its other remedies, (but is not obligated to) (a) immediately take such action as may be reasonably necessary to rectify the Emergency or danger, in which event DB Team shall pay to GDOT on demand the cost of such action, including GDOT Recoverable Costs, or (b) suspend Construction Work and/or close or cause to be closed any and all portions of the Project affected by the Emergency or danger. So long as GDOT undertakes such action in good faith, even if under a mistaken belief in the occurrence of such failure or existence of an Emergency or danger as a result thereof, such action shall not be deemed unlawful or a breach of this Agreement, shall not expose GDOT to any liability to DB Team and shall not entitle DB Team to any other remedy, it being acknowledged that GDOT has a high priority, paramount public interest in protecting public and worker safety at the Project and adjacent and connecting areas. GDOT’s good faith determination of the existence of such a failure, Emergency or danger shall be deemed conclusive in the absence of clear and convincing evidence to the contrary. Immediately following rectification of such Emergency or danger, as
determined by GDOT, acting reasonably, GDOT shall allow the Construction Work to continue or such portions of the Project to reopen, as the case may be. The foregoing shall not, however, protect GDOT from DB Team’s lawful claims to indemnity or contribution for third-party bodily injury or property damage arising out of any such GDOT action, if and to the extent (i) GDOT was mistaken in believing such a DB Team Default occurred, (ii) the third-party liability is not insured and not required to be insured under the DB Documents, and (iii) such injury or property damage was caused by GDOT’s negligence, recklessness or intentional misconduct.

17.3.3 Step-in Rights

Upon the occurrence of a DB Team Default and expiration, without full and complete cure, of the cure period, if any, available to DB Team, without necessity for a Warning Notice, and without waiving or releasing DB Team from any obligations, GDOT shall have the right, but not the obligation, for so long as such DB Team Default remains uncured by GDOT or DB Team, to pay and perform all or any portion of DB Team’s obligations and the Work that are the subject of such DB Team Defaults, as well as any other then-existing breaches or failures to perform for which DB Team received prior written notice from GDOT but has not commenced diligent efforts to cure provided, that (i) except with respect to DB Team’s lawful claims for third-party bodily injury or property damage arising out of such GDOT action, GDOT will not incur any liability to DB Team for any act or omission of GDOT or any other Person in the course of remediying or attempting to remedy any DB Team Default and (ii) GDOT’s cure of any DB Team Default will not waive or affect GDOT’s rights against DB Team by reason of the DB Team Default.

17.3.3.1 In connection with such action, GDOT may, to the extent and only to the extent reasonably required for or incident to curing the DB Team Default or such other breaches or failures to perform for which DB Team received prior written notice from GDOT but has not commenced and continued diligent efforts to cure:

(a) Employ security guards and other safeguards to protect the Project;

(b) Spend such sums as are reasonably necessary to employ and pay such architects, engineers, consultants and contractors and obtain materials and equipment as may be required, without obligation or liability to DB Team or any Contractors for loss of opportunity to perform the same Work or supply the same materials and equipment;

(c) Draw on and use proceeds from payment and performance bonds and other performance security to the extent available under the terms thereof to pay such sums;

(d) Execute all applications, certificates and other documents as may be required;

(e) Make decisions respecting, assume control over and continue Work as may be reasonably required;

(f) Meet with, coordinate with, direct and instruct contractors and suppliers, process invoices and applications for payment from contractors and suppliers, pay contractors and suppliers, and resolve claims of contractors, subcontractors and suppliers, and for this purpose DB Team
irrevocably appoints GDOT as its attorney-in-fact with full power and authority to act for and bind DB Team in its place and stead;

(g) Take any and all other actions as may be reasonably required or incident to curing; and

(h) Prosecute and defend any action or proceeding incident to the Work undertaken.

17.3.3.2 DB Team shall reimburse GDOT on demand, GDOT Recoverable Costs in connection with the performance of any act or Work authorized by this Article 17.3.3.

17.3.3.3 GDOT and any of their Authorized Representatives, contractors, subcontractors, vendors and employees shall not be liable to DB Team in any manner for any inconvenience or disturbance arising out of its entry onto the Project or Project Specific Locations in order to perform under this Article 17.3.3, unless caused by the gross negligence, recklessness, willful misconduct or bad faith of such Person. If any Person exercises any right to pay or perform under this Article 17.3.3, it nevertheless shall have no liability to DB Team for the sufficiency or adequacy of any such payment or performance, or for the manner or quality of design, or construction unless caused by the gross negligence, recklessness, willful misconduct or bad faith of such Person.

17.3.3.4 The rights under this Article 17.3.3 are subject to the right of any Surety under payment and performance bonds to assume performance and completion of all bonded work.

17.3.3.5 In the event GDOT takes action described in this Article 17.3.3 and it is later finally determined that GDOT lacked the right to do so because there did not occur a DB Team Default and expiration, without full and complete cure, of the cure period, if any, available to DB Team, then GDOT’s action shall be treated as a Directive Letter for a GDOT Change.

17.3.4 Damages; Offset

17.3.4.1 Subject to Article 17.3.10 and Article 17.3.11 and the provisions on Liquidated Damages set forth in Article 17.4, GDOT shall be entitled to recover any and all damages available at Law (subject to the duty at Law to mitigate damages and without duplicate recovery) on account of the occurrence of a DB Team Default, including, to the extent available at Law, (a) loss of any compensation due GDOT under the DB Documents proximately caused by the DB Team Default, (b) actual and projected costs to remedy any defective part of the Work, (c) actual and projected costs to rectify any breach or failure to perform by DB Team and/or to bring the condition of the Project to the standard it would have been in if DB Team had complied with its obligations to carry out and complete the Work in accordance with the DB Documents, (d) actual and projected costs to GDOT to terminate, take over the Project, re-procure and replace DB Team, and (e) actual and projected increases in costs to GDOT to complete the Project if not completed, together with interest thereon at the Default Interest Rate commencing from the date any amount becomes due to GDOT until paid. DB Team shall owe any such damages that accrue after the occurrence of the DB Team
Default and the delivery of notice thereof, if any, required by this Agreement regardless of whether the DB Team Default is subsequently cured.

17.3.4.2 GDOT may deduct and offset any claim amount owing to it, provided such claim amount has been liquidated through Dispute Resolution Procedures or otherwise, from and against any amounts GDOT may owe to DB Team or any Affiliate pursuant to this Agreement; provided that GDOT shall first draw on all amounts held in respect of the claim in the GDOT Claims Account.

17.3.4.3 If the claim amount is not liquidated, GDOT may elect to exercise its right to direct a payment from DB Team up to the disputed portion of the claim which payment shall be deposited into the GDOT Claims Account. Upon liquidation, the disputed portion of the claim shall be satisfied first from the amounts held in the GDOT Claims Account, and then through GDOT’s right of offset with respect to the liquidated claim amounts.

17.3.5 Remedy Action Plan Delivery and Implementation

17.3.5.1 Upon the occurrence of a DB Team Default, GDOT shall have the right, but is not obligated, to demand that DB Team shall, within 10 days after written notice of such DB Team Default, be required to prepare and submit a remedial action plan for GDOT approval.

17.3.5.2 The remedial action plan shall set forth a schedule and specific actions to be taken by DB Team to improve its performance and cure the DB Team Default. Such actions may include improvements to DB Team’s quality management practices, plans and procedures, revising and restating components of the Management Plans, changes in organizational and management structure, increased monitoring and inspections, changes in Key Personnel and other important personnel, replacement of Contractors, corrective measures necessary to expedite the progress of construction and to demonstrate ability to achieve any Milestone Deadline including, without limitation, (i) working additional shifts or overtime and/or (ii) supplying additional manpower, equipment and facilities, and delivery of security to GDOT.

17.3.5.3 DB Team’s failure to diligently prosecute the Work in accordance with any such approved remedial action plan shall be deemed a further DB Team Default.

17.3.6 Performance Security

17.3.6.1 Upon the occurrence of a DB Team Default and expiration, without full and complete cure, of the applicable cure period, if any, under Article 17.1.2, without necessity for a Warning Notice, and without waiving or releasing DB Team from any obligations, and subject to Article 16 as applicable, GDOT shall be entitled to make demand upon and enforce any bond, and make demand upon, draw on and enforce and collect any guaranty or other payment or performance security available to GDOT under this Agreement with respect to the DB Team Default in question in any order in GDOT’s sole discretion. Where access to a bond or other payment or performance security is to satisfy damages owing, GDOT shall be entitled to make demand, draw, enforce and collect regardless of whether the DB Team Default is cured subsequent to such draw. GDOT will apply the proceeds of any such action to the satisfaction of DB Team’s obligations under the DB Documents, including payment of amounts due GDOT.
foregoing does not limit or affect any other right of GDOT to make demand upon and enforce any bond, and make demand upon, draw on and enforce and collect any guaranty or other payment or performance security, immediately after GDOT are entitled to do so under the bond, guaranty or other payment or performance security.

17.3.7 Suspension of Work

17.3.7.1 Upon GDOT’s delivery of notice of DB Team Default for any of the following breaches or failures to perform and DB Team’s failure to fully cure and correct, within the applicable cure period, if any, available to DB Team under Article 17.1.2, GDOT shall have the right and authority to suspend any affected portion of the Work by written order to DB Team:

(a) Performance of Nonconforming Work;

(b) Failure to comply with any Law or Governmental Approval (including failure to handle, preserve and protect archeological, paleontological or historic resources, or failure to handle Hazardous Materials, in accordance with applicable Laws and Governmental Approvals);

(c) Certain failures to remove and replace personnel as set forth in Article 10.6.3;

(d) Failure to provide proof of required insurance coverage as set forth in Article 16.1.1.1;

(e) Failure to carry out and comply with Directive Letters;

(f) Failure to satisfy any condition to commencement of construction set forth in Article 7.6; and

(g) Failure to maintain, extend or replace performance and payment security required under the Agreement, including any P&P Bonds, unless a drawing has been made under same in the amount of the required coverage provided for in Article 16.2 and the proceeds of such drawing are held by GDOT.

GDOT will lift the suspension order promptly after DB Team fully cures and corrects the applicable breach or failure to perform.

17.3.7.2 In addition, GDOT shall have the right and authority to suspend any affected portion of the Work by written notice to DB Team for the following reasons:

(a) To comply with any court order or judgment (although it may qualify as a Compensation Event under Article 14.2.1(g) or a Relief Event under Article 14.1.1(l));

(b) GDOT’s performance of data recovery respecting archeological, paleontological or cultural resources (although it may qualify as a Relief Event under Article 14.1.1(l)).
(c) The existence of conditions unsafe for workers, other Project personnel or the general public, including certain failures to comply with Safety Standards or perform Safety Compliance as set forth in Article 17.3.2.5; or

(d) DB Team has failed to (i) pay in full when due sums owing any Contractor for services, materials or equipment, except only for amounts in dispute, or (ii) deliver any certificate, release, certified payroll or affidavit of wages paid required with any Payment Request or required under this Agreement.

17.3.7.3 DB Team shall promptly comply with any such written suspension order, even if DB Team disputes the grounds for suspension. DB Team shall promptly recommence the Work upon receipt of written notice from GDOT directing DB Team to resume Work.

17.3.7.4 In addition to the protections from liability under Article 17.3.2.5, neither GDOT shall not have any liability to DB Team, and DB Team shall have no right to a Relief Event or Compensation Event, in connection with any suspension properly founded on any of the other grounds set forth in this Article 17.3.7 (except potential Relief Events or Compensation Events in the case of suspensions under Articles 17.3.7.2(a) and 17.3.7.2(b)). If GDOT orders suspension of Work on one of the foregoing grounds but it is finally determined under the process set forth under Dispute Resolution Procedures that such grounds did not exist, or if GDOT orders suspension of Work for any other reason, it shall be treated as a Directive Letter for a GDOT Change, except as provided in Article 17.3.2.5.

17.3.8 Increased Oversight, Testing, and Inspection

17.3.8.1 Upon GDOT’s delivery of notice of DB Team Default for any of the following breaches or failures to perform and DB Team’s failure to fully cure and correct, within the applicable cure period, if any, available to DB Team under Article 17.1.2, GDOT shall have the right and authority to suspend any affected portion of the Work by written order to DB Team.

17.3.8.2 If GDOT cannot confirm that a portion of the Design Work or the Construction Work is in accordance with the requirements of the DB Documents, GDOT shall have the right but not the obligation to provide increased monitoring, inspection, sampling, measuring, testing and oversight. If the increased monitoring, inspection, sampling, measuring, testing and oversight reveal: (i) a failure to perform such Work in accordance with the Quality Management Plan, (ii) that the Quality Management Plan does not comply with the DB Documents, or (iii) that such Work is not in accordance with the DB Documents, DB Team shall be responsible for the costs of such increased monitoring, inspection, sampling, measuring, testing and oversight as described in this Article 17.3.8. DB Team shall correct such deficiencies and the increased monitoring, inspection, sampling, measuring, testing and oversight will continue until those deficiencies have been corrected. If such Work was performed in accordance with the DB Documents, the costs of the increased monitoring, inspection, sampling, measuring, testing and oversight shall be borne by GDOT.

17.3.8.3 If GDOT increases the level of monitoring, inspection, sampling, measuring, testing, auditing and oversight under Article 17.3.8.2 and Liquidated
Damages are not provided for under this Agreement in connection with such action, then DB Team shall pay and reimburse GDOT within 30 days after receipt of written demand and reasonable supporting documentation for all increased costs and fees GDOT incurs in connection with such action, including GDOT Recoverable Costs.

17.3.8.4 The foregoing does not preclude GDOT, at its sole discretion and expense, from increasing its level of monitoring, inspection, sampling, measuring, testing, auditing and oversight at other times.

17.3.9 Other Rights and Remedies

Subject to Article 17.3.11, Article 17.4.5.2 and Article 19.9, GDOT shall also be entitled to exercise any other rights and remedies available under this Agreement or any other DB Documents, or available at law or in equity.

17.3.10 Cumulative, Non-Exclusive Remedies

Subject to Articles 17.3.11, 17.4.5.2 and 19.9, each right and remedy of GDOT hereunder shall be cumulative and shall be in addition to every other right or remedy provided herein or now or hereafter existing at Law or in equity or by statute or otherwise, and the exercise or beginning of the exercise by GDOT of any one or more of any of such rights or remedies shall not preclude the simultaneous or later exercise by GDOT of any or all other such rights or remedies.

17.3.11 Limitation on Consequential Damages

17.3.11.1 Notwithstanding any other provision of the DB Documents and except as set forth in Article 17.3.11.2, to the extent permitted by applicable Law, DB Team shall not be liable for punitive damages or special, indirect or incidental, or consequential damages, whether arising out of breach of this Agreement, tort (including negligence) or any other theory of liability, and GDOT releases DB Team from any such liability, other than for Liquidated Damages for delay, as provided pursuant to this Agreement or otherwise to the extent recoverable from insurance.

17.3.11.2 The foregoing limitation on DB Team’s liability for consequential damages shall not apply to or limit any right of recovery GDOT may have respecting the following:

(a) Losses (including defense costs) to the extent (i) covered by the proceeds of insurance required to be carried pursuant to Article 16.1, (ii) covered by the proceeds of insurance actually carried by or insuring DB Team under policies solely with respect to the Project and the Work, regardless of whether required to be carried pursuant to Article 16.1, or (iii) DB Team is deemed to have self-insured the Loss pursuant to Article 16.3.3;

(b) Losses arising out of fraud, criminal conduct, intentional misconduct (which does not include any intentional DB Team Default), recklessness, bad faith or gross negligence on the part of DB Team or Contractor or any Affiliate of either;

(c) DB Team’s obligation to pay Liquidated Damages in accordance with Article 17.4 or any other provision of the DB Documents;
(d) Losses arising out of DB Team Releases of Hazardous Materials;

(e) Reserved;

(f) Amounts DB Team may be obligated to reimburse to GDOT or that are otherwise due from DB Team to GDOT under the express provisions of the DB Documents, including GDOT Recoverable Costs;

(g) Interest, late charges, fees, transaction fees and charges, penalties and similar charges that the DB Documents expressly state are due from DB Team to GDOT; and

(h) Any credits, deductions or offsets that the DB Documents expressly provide to GDOT against amounts owing DB Team.

17.4 Liquidated Damages and Nonrefundable Deductions

17.4.1 Liquidated Damages for Delayed Interim Completion Deadline(s), Substantial Completion Deadline, or Final Acceptance; Incident Based Liquidated Damages

17.4.1.1 DB Team shall be liable for and pay to GDOT Liquidated Damages with respect to any failure to achieve an Interim Completion(s) by the Interim Completion Deadline(s), Substantial Completion by the Substantial Completion Deadline, or any failure to achieve Final Acceptance by the Final Acceptance Deadline, as the same may be extended pursuant to this Agreement, or for any other breach of the requirements of the DB Documents as set forth pursuant to Section 1.1 of Exhibit 18. Such liability shall apply even though (a) a cure period remains available to DB Team under Article 17.1.2 or (b) cure occurs. The amounts of such Liquidated Damages are set forth in Exhibit 18. Such Liquidated Damages shall commence on the Substantial Completion Deadline or the Final Acceptance Deadline, as applicable, or upon the date of breach for each such incident based default pursuant to Section 1.2 of Exhibit 18, as the same may be extended pursuant to this Agreement, and shall continue to accrue until the date of Substantial Completion, the date of Final Acceptance, the cure of any such incident based breach, all as applicable, or until termination of this Agreement.

17.4.1.2 Reserved

17.4.2 Incident Based Nonrefundable Deductions

17.4.2.1 DB Team shall be liable for and pay to GDOT Nonrefundable Deductions with respect to the occurrence of the incidents listed or other breach of the requirements of the DB Documents as set forth pursuant to Section 1.3 of Exhibit 18. Unless otherwise stated in Article 17.4 nonrefundable deductions shall be applied at the time of the incident. The amounts of such Incident Based Nonrefundable Deductions are set forth in Exhibit 18.

17.4.2.2 Within 10 Business Days prior to GDOT issuing any nonrefundable deductions as set forth pursuant to Section 1.3 and excluding Section 1.3.1 of Exhibit 18, GDOT shall execute the following:
(a) Issuance of a warning via email to the DB Team to correct the incident within seven days of receipt of the email; and

(b) Issuance of a formal written warning to the DB Team to correct the incident within three days. If the DB Team has failed to comply with subsection (a) to correct the incident at the end of the third day, then DB Team shall be liable for and shall pay GDOT the Nonrefundable Deduction.

17.4.3 Acknowledgements Regarding Liquidated Damages

DB Team further agrees and acknowledges that:

17.4.3.1 In the event that DB Team fails to achieve Substantial Completion by the Substantial Completion Deadline or Final Acceptance by the Final Acceptance Deadline, GDOT will incur substantial damages;

17.4.3.2 In the event that DB Team causes occurrence of the incidents listed pursuant to Sections 1.2 and 1.3 of Exhibit 18, GDOT will incur substantial damages;

17.4.3.3 Such damages are incapable of accurate measurement and difficult to prove for the reasons stated in this Article 17.4;

17.4.3.4 As of the Effective Date, the amounts of Liquidated Damages under this Article 17.4 represent good faith estimates and evaluations by the Parties as to the actual potential damages that GDOT would incur as a result of late Substantial Completion or late Final Acceptance or should the incidents listed occur, and do not constitute a penalty or to otherwise operate as a deterrent for the breach of any obligations of DB Team under this Agreement;

17.4.3.5 The Parties have agreed to such Liquidated Damages in order to fix and limit DB Team’s costs and to avoid later Disputes over what amounts of damages are properly chargeable to DB Team;

17.4.3.6 Such sums are reasonable in light of the anticipated or actual harm caused by delayed Substantial Completion or delayed Final Acceptance or should the incidents listed occur, the difficulties of the proof of loss, and the inconvenience or infeasibility of otherwise obtaining an adequate remedy;

17.4.3.7 DB Team acknowledges that such Liquidated Damages are reasonable, as determined as of the Effective Date, in light of the respective injuries and damages that may be caused by DB Team’s breach and given that such injuries and damages, which include but shall not be limited to, public inconvenience, increased administration and oversight by GDOT (and any other related agencies), and other damages to the general public, GDOT (and other related agencies); and

17.4.3.8 Such Liquidated Damages are not intended to, and do not, liquidate DB Team’s liability under the indemnification provisions of Article 16.5, even though Third-Party Claims against Indemnified Parties may arise out of the same event, breach or failure that gives rise to such Liquidated Damages.

17.4.4 Payment; Satisfaction; Waiver
17.4.4.1 GDOT shall withhold Liquidated Damages owing under this Article 17.4 from the subsequent DB Team pay application. Liquidated damages shall be withheld by GDOT without right of offset, deduction, reduction or other charge, except as provided in Article 17.6.3.

17.4.4.2 GDOT shall have the right to deduct and offset Liquidated Damages from any amounts owing DB Team to the extent provided in Article 17.3.4. GDOT also shall have the right to draw on any bond, certificate of deposit, or other security provided by DB Team pursuant to this Agreement, to satisfy Liquidated Damages not paid when due.

17.4.4.3 Permitting or requiring DB Team to continue and finish the Work or any part thereof after the Substantial Completion Deadline or Final Acceptance Deadline shall not act as a waiver of GDOT’s right to receive Liquidated Damages hereunder or any rights or remedies otherwise available to GDOT.

17.4.5 Non-Exclusive Remedy

17.4.5.1 Each item of Liquidated Damages provided under this Article 17.4 is in addition to, and not in substitution for, any other item of Liquidated Damages assessed under this Article 17.4.

17.4.5.2 GDOT’s right to, and imposition of, Liquidated Damages are in addition, and without prejudice, to any other rights and remedies available to GDOT under the DB Documents, at law or in equity respecting the breach, failure to perform or DB Team Default that is the basis for the Liquidated Damages or any other breach, failure to perform or DB Team Default, except for recovery of the monetary damage for delay that the Liquidated Damages are intended to compensate and for which Liquidated Damaged shall be the only amount recoverable on account of delay damages.

17.5 Default by GDOT; Cure Periods

17.5.1 GDOT Default

GDOT shall, subject to any applicable cure period as set forth in Article 17.5.2 below, be in breach under this Agreement upon the occurrence of any one or more of the following events or conditions (each a “GDOT Default”):

17.5.1.1 GDOT fails to make any payment due DB Team under this Agreement within 30 days of the date that any such payment shall be due;

17.5.1.2 Any representation or covenant made by GDOT in this Agreement is false or materially misleading or materially inaccurate when made or omits material information when made;

17.5.1.3 GDOT fails to observe or perform any covenant, agreement, term or condition required to be observed or performed by GDOT under the DB Documents;

17.5.1.4 GDOT makes an assignment other than as permitted pursuant to Article 21.3; or
17.5.1.5 GDOT or other State Governmental Entity confiscates or appropriates the Project or any other material part of DB Team’s Interest, excluding a Termination for Convenience or any other exercise of a right of termination set forth in this Agreement.

17.5.2 Cure Periods

GDOT shall have the following cure periods with respect to the any of the conditions set forth in Article 17.5.1 above:

17.5.2.1 Respecting a GDOT Default under Article 17.5.1.1, a period of 30 days after DB Team delivers to GDOT written notice of the GDOT Default;

17.5.2.2 Respecting a GDOT Default under Article 17.5.1.2 or Article 17.5.1.3, a period of 60 days after DB Team delivers to GDOT written notice of the GDOT Default; provided that (a) if the GDOT Default is of such a nature that the cure cannot with diligence be completed within such time period and GDOT has commenced meaningful steps to cure immediately after receiving the default notice, GDOT shall have such additional period of time, up to a maximum cure period of 180 days, as is reasonably necessary to diligently effect cure, and (b) as to Article 17.5.1.2, cure will be regarded as complete when the adverse effects of the breach are cured;

17.5.2.3 Respecting a GDOT Default under Article 17.5.1.4, a period of 45 days after DB Team delivers to GDOT written notice of the GDOT Default; and

17.5.2.4 Respecting a GDOT Default under Article 17.5.1.5, a period of 30 days after DB Team delivers to GDOT written notice of the GDOT Default; provided that if the GDOT Default is of such a nature that the cure cannot with diligence be completed within such time period and GDOT has commenced meaningful steps to cure immediately after receiving the default notice, GDOT shall have such additional period of time, up to a maximum cure period of 120 days, as is reasonably necessary to diligently effect cure.

17.6 DB Team Remedies for GDOT Default

17.6.1 Termination and Suspension

17.6.1.1 Subject to Article 19.9, DB Team will have the right to suspend performance of the Work on account of a GDOT Default subject to any applicable notice and cure periods as set forth in Article 17.5.2.

17.6.1.2 Further, DB Team may upon written notice of not less than 15 days to GDOT following expiration of such applicable cure period, where such GDOT Default is continuing, exercise the right to terminate this Agreement and recover termination damages as more particularly set forth in, and subject to the terms and conditions of, Article 19.4.

17.6.2 Damages and Other Remedies

DB Team shall have and may exercise the following remedies upon the occurrence of a GDOT Default and expiration, without cure, of the applicable cure period:
17.6.2.1 If DB Team does not terminate this Agreement, then, subject to Article 17.6.4, DB Team may treat the GDOT Default as a Compensation Event on the terms and conditions set forth in Article 14.2 and GDOT shall pay the full Compensation Amount and interest in accordance with Articles 14.2.7 and 14.2.8;

17.6.2.2 If the GDOT Default is a failure to pay when due any undisputed portion of a progress payment owing under a Supplemental Agreement and GDOT fails to cure such GDOT Default within 30 days after receiving from DB Team written notice thereof, DB Team shall be entitled to suspend the Work under the Supplemental Agreement until the default is cured; and

17.6.2.3 Subject to Articles 17.6.4 and 19.9, DB Team also shall be entitled to exercise any other remedies available under this Agreement or at Law or in equity, including offset rights to the extent and only to the extent available under Article 17.6.3. Subject to Articles 17.6.4 and 19.9, each right and remedy of DB Team hereunder shall be cumulative and shall be in addition to every other right or remedy provided herein or now or hereafter existing at Law or in equity or by statute or otherwise, and the exercise or beginning of the exercise by DB Team of any one or more of any of such rights or remedies shall not preclude the simultaneous or later exercise by DB Team of any or all other such rights or remedies.

17.6.3 Offset Rights

DB Team may deduct and offset any claim amount owing to it, provided such claim amount has been liquidated through the Dispute Resolution Procedures, as provided in Article 17.7 or otherwise, from and against any amounts DB Team may owe to GDOT pursuant hereto.

17.6.4 Limitations on Remedies

17.6.4.1 Notwithstanding any other provision of the DB Documents and except as forth in Article 17.6.4.2, to the extent permitted by applicable Law, GDOT shall not be liable for punitive damages or any indirect, incidental or consequential damages, whether arising out of breach of this Agreement or any DB Documents, tort (including negligence) or any other theory of liability, and DB Team releases GDOT from any such liability.

17.6.4.2 The foregoing limitation on GDOT’s liability for consequential damages shall not apply to or limit any right of recovery DB Team may have respecting the following:

(a) Losses arising out of fraud, criminal conduct, intentional misconduct (which does not include any intentional GDOT Default), recklessness, bad faith or gross negligence on the part of GDOT;

(b) Losses arising out of GDOT Release(s) of Hazardous Materials or Pre-Existing Hazardous Materials;

(c) Any amounts GDOT may owe or be obligated to reimburse under the express provisions of this Agreement for Compensation Events or events of termination;
(d) Any other specified amounts GDOT may owe or be obligated to reimburse to DB Team under the express provisions of the DB Documents;

(e) Interest and charges that the DB Documents expressly state are due from GDOT to DB Team; and

(f) Any credits, deductions or offsets that the DB Documents expressly provide to DB Team against amounts owing GDOT.

17.6.4.3 The measure of compensation available to DB Team as set forth in this Agreement for a Compensation Event or an event of termination shall constitute the sole and exclusive monetary relief and damages available to DB Team from the State or GDOT arising out of or relating to such event; and DB Team irrevocably waives and releases any right to any other or additional damages or compensation from the State or GDOT. No award of compensation or damages shall be duplicative.

17.6.4.4 Without limiting the effect of Article 17.6.4.3, in the event GDOT wrongfully withholds an acceptance or consent required under this Agreement, or wrongfully issues an objection to or disapproval of a Submittal or other matter under this Agreement, DB Team’s sole remedies against GDOT shall be extensions of time to the extent provided in Article 14.1 for a Relief Event and damages to the extent provided in Article 14.2 for a Compensation Event.

17.6.5 Procedure for Payment of Judgments

Promptly after any final, non-appealable order or judgment awarding compensation or damages to DB Team, GDOT shall institute payment procedures as set forth in applicable Law.

17.7 Dispute Resolution Procedures

17.7.1 The Parties shall endeavor to resolve any Dispute that may arise between them through good faith negotiations and/or partnering in accordance with Section 2.1.3 of the Technical Provisions. If the Dispute is not resolved to the mutual satisfaction of all Parties within 30 days after written notification of such Dispute, or such longer time as is mutually agreed, the dispute shall next be submitted in accordance with Article 17.7.2.

17.7.2 If, despite good faith negotiations between the Parties, any Disputes are not resolved within 30 days after written notification of such Dispute, then the Dispute shall be submitted administratively to mediation as set forth below.

17.7.2.1 The Parties shall mutually select a private mediator to formally mediate the Disputes. If the Parties cannot mutually select a private mediator, GDOT shall select a mediator. Mediation shall normally be scheduled within 45 Calendar Days of notification of the decision by either party to submit the Dispute to mediation. GDOT and DB Team shall each pay one-half of the fees and administrative costs charged by the selected mediator.

17.7.2.2 The Parties, to provide economies of scale, may mutually agree in writing to submit one or more Disputes, whether or not factually related, to a single mediation. In such event, time periods may be extended by mutual written agreement to facilitate preparation for the mediation.
17.7.2.3 If the Dispute has not been settled within 45 Calendar Days following written notification of the Dispute to mediation or within such other period that the Parties may agree in writing, such Dispute may be submitted to litigation by either party in accordance with Article 17.7.4.

17.7.3 No litigation may be filed by either Party concerning any Dispute prior to using the procedure described in Article 17.7.2. This procedure is a condition precedent for any Party to commence a civil action for resolution of a Dispute.

17.7.4 All litigation between the Parties arising out of or pertaining to this Agreement or its breach shall be filed, heard and decided in the Superior Court of Fulton County, Georgia, which shall have exclusive jurisdiction and venue pursuant to O.C.G.A. § 50-21-1. Each Party shall bear its own attorney’s fees and costs in any dispute or litigation arising out of or pertaining to this Agreement, and no Party shall seek or accept an award of attorney’s fees or costs.

18.0 RESERVES

19.0 TERMINATION

19.1 Termination for Convenience

19.1.1 GDOT may terminate this Agreement, if GDOT determines, in its sole discretion, that a termination is in GDOT’s best interest (a “Termination for Convenience”). Termination of this Agreement shall not relieve GDOT, DB Team or any Guarantor or Surety of its obligation for any claims arising prior to termination.

19.1.2 GDOT may exercise Termination for Convenience by delivering to DB Team a written notice of termination for Convenience specifying the election to terminate. Termination for Convenience shall be effective as and when provided in Exhibit 20.

19.1.3 In the event of a Termination for Convenience, DB Team will be entitled to compensation determined in accordance with Exhibit 20. Payment will be due and payable as and when provided in Exhibit 20.

19.1.4 If GDOT terminates this Agreement on grounds or in circumstances beyond GDOT’s termination rights specifically set forth in this Agreement, such termination shall be deemed a Termination for Convenience for the purpose of determining the Termination Compensation due.

19.2 Reserved

19.3 Termination for DB Team Default

19.3.1 DB Team Defaults Triggering GDOT Termination Rights

The following DB Team Defaults (each a “Default Termination Event”), and no other DB Team Defaults, shall entitle GDOT, at its sole election, to terminate this Agreement, effective immediately upon delivery of written notice of termination to DB Team. DB Team agrees and acknowledges and stipulates that any of the following DB Team Defaults would result in material and substantial harm to GDOT’s rights and interests under this Agreement and therefore
constitute a material DB Team Default justifying termination if not cured within the applicable cure period, if any.

19.3.1.1 The DB Team fails to achieve Substantial Completion by the Substantial Completion Deadline, as the same may be extended pursuant to this Agreement;

19.3.1.2 There occurs any other DB Team Default for which GDOT issues a Warning Notice under Article 17.2 or 17.3, and such DB Team Default is not fully and completely cured within the applicable cure period, if any, set forth in Article 17.2.2.1 or 17.3;

19.3.1.3 There occurs any DB Team Default under Article 17.1.1.11 or 17.1.1.12; or

19.3.1.4 The DB Team fails to diligently prosecute and adhere to the requirements of any remedial action plan as provided and accepted by GDOT pursuant to Article 17.3.5.

19.3.2 Compensation to DB Team

If GDOT issues notice of termination of this Agreement due to a Default Termination Event, or if DB Team terminates this Agreement on grounds or in circumstances beyond DB Team’s termination rights specifically set forth in this Agreement, DB Team will be entitled to compensation to the extent, and only to the extent, provided in Exhibit 20. Payment shall be due and payable as and when provided in Exhibit 20.

19.3.3 Finality

If GDOT issues notice of termination of this Agreement due to a Default Termination Event, termination shall be effective and final immediately upon delivery of written notice as provided in Article 19.3.1 regardless of whether GDOT is correct in determining that GDOT has the right to terminate for DB Team Default. In the event it is determined that GDOT lacked such right, then such termination shall be treated as a Termination for Convenience as provided in Article 19.1.4 for the purpose of determining the Termination Compensation due.

19.4 Termination for GDOT Default, Suspension of Work, Force Majeure Event, or Materially Delayed Notice to Proceed

19.4.1 In the event of a material GDOT Default under Article 17.5.1.1 (failure to pay money due) that remains uncured following notice and expiration of the applicable cure period under Article 17.5.2, DB Team may deliver to GDOT a further written notice setting forth such GDOT Default and warning GDOT that DB Team may elect to terminate this Agreement and if GDOT does not cure such GDOT Default within 60 days after the delivery of such notice with respect to a GDOT Default under Article 17.5.1.1. GDOT may avoid termination by effecting cure within such 60-day period. Failing such cure, DB Team shall have the right to terminate this Agreement, effective immediately upon delivery of written notice of termination to GDOT. In the event of such termination, DB Team will be entitled to compensation determined in accordance with Exhibit 20. Payment shall be due and payable as and when provided in Exhibit 20. Any Dispute arising out of the determination of such compensation shall be resolved according to the Dispute Resolution Procedures.
19.4.2 In the event (i) GDOT orders DB Team to suspend Work on all or any material portion of the Project for a reason other than those set forth in Article 17.3.7.1, or (ii) as a result of a Force Majeure Event, and such suspension of Work continues for a period of 180 consecutive days or more, DB Team shall have the right to terminate this Agreement, effective immediately upon delivery of written notice of termination to GDOT. In the event of such termination, DB Team will be entitled to compensation determined in accordance with Exhibit 20. Payment shall be due and payable as and when provided in Exhibit 20. Any Dispute arising out of the determination of such compensation shall be resolved according to the Dispute Resolution Procedures.

19.4.3 In the event GDOT, due to no fault of a DB Team-Related Entity or other than because the NEPA Finality Date has not occurred, does not issue NTP 1, NTP 2, or NTP 3 within 365 days after the anticipated issuance date set forth in Article 3.3, DB Team shall have the right to terminate this Agreement, effective immediately upon delivery of written notice of termination to GDOT. In the event of such termination, DB Team will be entitled to compensation determined in accordance with Exhibit 20. Payment shall be due and payable as and when provided in Exhibit 20. Any Dispute arising out of the determination of such compensation shall be resolved according to the Dispute Resolution Procedures.

19.4.4 If DB Team issues notice of termination of this Agreement due to a material GDOT Default under Article 17.5.1.1, termination shall be effective and final immediately upon delivery as provided in Article 19.4.1 regardless of whether DB Team is correct in determining that it has the right to terminate for such GDOT Default. In the event it is determined that DB Team lacked such right, then such termination shall be treated as a termination due to material DB Team Default and Article 19.3.2 shall govern the measure of the Termination Compensation.

19.5 Termination Procedures and Duties

19.5.1 Upon expiration of the Term or any earlier termination of this Agreement for any reason, including due to GDOT Default, the provisions of this Article 19.5 shall apply. DB Team shall timely comply with such provisions independently of, and without regard to, the timing for determining, adjusting, settling and paying any amounts due DB Team or GDOT on account of termination.

19.5.2 In any case where notice of termination precedes the effective Early Termination Date:

19.5.2.1 DB Team shall continue performing the Work in accordance with, and without excuse from, all the standards, requirements and provisions of the DB Documents, and without curtailment of services, quality and performance;

19.5.2.2 Reserved

19.5.2.3 At GDOT’s option, GDOT may increase the level of its monitoring, inspection, sampling, measuring, testing, auditing and oversight of the Project and DB Team’s compliance with the obligations under the DB Documents, to such level as GDOT reasonably sees fit to protect against curtailment of services, quality and performance; and
19.5.2.4 Within three days after receipt of a notice of termination, DB Team shall meet and confer with GDOT for the purpose of developing an interim transition plan for the orderly transition of Work, demobilization and transfer of the Project control to GDOT. The Parties shall use diligent efforts to complete preparation of the interim transition plan within 15 days after the date DB Team receives the notice of termination. The Parties shall use diligent efforts to complete a final transition plan within 30 days after such date. The transition plan shall be in form and substance acceptable to GDOT in its good faith discretion and shall include and be consistent with the other provisions and procedures set forth in this Article 19.5, all of which procedures DB Team shall immediately follow, regardless of any delay in preparation or acceptance of the transition plan.

19.5.3 On the Termination Date, or as soon thereafter as is possible, DB Team shall relinquish and surrender full control and possession of the Project to GDOT, and shall cause all persons and entities claiming under or through DB Team to do likewise, in at least the condition required by the Termination turnover requirements.

19.5.4 On the later of the Termination Date or the date DB Team relinquishes full control and possession, GDOT shall assume responsibility, at its expense, for the Project, subject to any rights to damages that GDOT has against DB Team where the termination is due to a Default Termination Event.

19.5.5 Reserved

19.5.6 Reserved

19.5.7 Within 30 days after notice of termination is delivered, DB Team shall provide GDOT with a true and complete list of all materials, goods, machinery, equipment, parts, supplies and other property in inventory or storage (whether held by DB Team or any Person or entity on behalf of or for the account of DB Team) for use in or respecting the Work or the Project, or on order or previously completed but not yet delivered from Suppliers for use in or respecting the Work or the Project. In addition, on or about the Termination Date, DB Team shall transfer title and deliver to GDOT or GDOT’s Authorized Representative, through bills of sale or other documents of title, as directed by GDOT, all such materials, goods, machinery, equipment, parts, supplies and other property.

19.5.8 DB Team shall take all action that may be necessary, or that GDOT may direct, for the protection and preservation of the Project, the Work and such materials, goods, machinery, equipment, parts, supplies and other property.

19.5.9 On or about the Termination Date, DB Team shall execute and deliver to GDOT the following, together with an executed bill of sale or other written instrument, in form and substance acceptable to GDOT, acting reasonably, assigning and transferring to GDOT all of DB Team’s right, title and interest in and to the following:

19.5.9.1 All completed or partially completed drawings (including plans, elevations, sections, details and diagrams), specifications, designs, Design Documents, as-built and Record Drawings, surveys, and other documents and information pertaining to the design or construction of the Project or the Utility Adjustments;
19.5.9.2 All samples, borings, boring logs, geotechnical data and similar data and information relating to the Project;

19.5.9.3 All books, records, reports, test reports, studies and other documents of a similar nature relating to the Work, the Project;

19.5.9.4 All data and information relating to the use of the Project, including all studies, reports, and other information provided that the transfer of any Intellectual Property shall be subject to Article 22.4; and

19.5.9.5 All other work product and Intellectual Property used or owned by DB Team or any Affiliate relating to the Work, the Project, provided that the transfer of any Intellectual Property shall be subject to Article 22.4.

19.5.10 Reserved

19.5.11 On or about the Termination Date, DB Team shall execute and deliver to GDOT a written assignment, in form and substance acceptable to GDOT, acting reasonably, of all DB Team’s right, title and interest in and to all warranties, claims and causes of action held by DB Team against third parties in connection with the Project or the Work.

19.5.12 DB Team shall otherwise assist GDOT in such manner as GDOT may require prior to and for a reasonable period following the Termination Date to ensure the orderly transition of the Project and its management to GDOT.

19.6 Reserved

19.7 Contracts and Agreements

19.7.1 Regardless of GDOT’s prior actual or constructive knowledge thereof, no contract or agreement to which DB Team is a party (unless GDOT is also a party thereto) as of the Termination Date shall bind GDOT, unless GDOT elects to assume such contract or agreement in writing. Except in the case of GDOT’s express written assumption, no such contract or agreement shall entitle the contracting party to continue performance of work or services respecting the Project following DB Team’s relinquishment to GDOT of possession and control of the Project, or to any claim, legal or equitable, against GDOT.

19.8 Liability After Termination; Final Release

19.8.1 No termination of this Agreement shall excuse either Party from any liability arising out of any default as provided in this Agreement that occurred prior to termination. Notwithstanding the foregoing, any termination of this Agreement shall automatically extinguish any claim of DB Team to payment of Compensation Amounts for adverse cost and revenue impacts accruing after the Early Termination Date from Compensation Events that occurred prior to termination.

19.8.2 If this Agreement is terminated under Article 19.1, 19.3.1, 19.4, or 19.11, then GDOT’s payment to DB Team of the amounts required thereunder (if any) shall constitute full and final satisfaction of, and upon payment GDOT shall be forever released and discharged from, any and all claims, causes of action, suits, demands and Losses, known or unknown, suspected or unsuspected, that DB Team may have against GDOT arising out of or relating to
this Agreement or termination thereof, or the Project, are unresolved at the time of such payment and are not related to termination or Termination Compensation. Upon such payment, DB Team shall execute and deliver to GDOT all such releases and discharges as GDOT may reasonably require to confirm the foregoing, but no such written release and discharge shall be necessary to give effect to the foregoing satisfaction and release.

19.9 Exclusive Termination Rights

This Article 19, together with the express provisions on termination set forth in Articles 17.3.1 and 17.6.1, contain the entire and exclusive provisions and rights of GDOT and DB Team regarding termination of this Agreement, and any and all other rights to terminate at law or in equity are hereby waived to the maximum extent permitted by Law.

19.10 Access to Information

DB Team shall conduct all discussions and negotiations to determine any Termination Compensation, and shall share with GDOT all data, documents and information pertaining thereto, on an Open Book Basis.

19.11 Termination by Court Ruling

19.11.1 Except in the circumstances described in Exhibit 20, Termination by Court Ruling means, and becomes effective upon, (a) issuance of a final order by a court of competent jurisdiction to the effect that this Agreement is void and/or unenforceable or impossible to perform in its entirety, (b) issuance of a final order by a court of competent jurisdiction upholding the binding effect on DB Team or GDOT of a Change in Law that causes impossibility of performance of a fundamental obligation by DB Team or GDOT under the DB Documents or impossibility of exercising a fundamental right of DB Team or GDOT under the DB Documents, (c) occurrence of the circumstances described in Article 24.13.2, or (d) issuance of a final order by a court of competent jurisdiction to the effect that a material provision under the DB Documents is void and/or unenforceable so as to deprive DB Team of its ability to exercise a fundamental right granted to DB Team under the DB Documents and such inability resulting from such order cannot be otherwise remedied through a Compensation Event, Relief Event or other contractual remedy. The final court order shall be treated as the notice of termination.

19.11.2 Once Termination by Court Ruling becomes effective, GDOT and DB Team shall cooperate to implement Articles 19.5, 19.8, and 19.10.

19.11.3 Notwithstanding Article 19.11.2, if a Termination by Court Ruling occurs, DB Team shall be entitled to compensation to the extent, and only to the extent, provided in Exhibit 20. Payment shall be due and payable as and when provided in Exhibit 20. Any Dispute arising out of the determination of such compensation shall be resolved according to the Dispute Resolution Procedures.
Article 20   RESERVED

Article 21   ASSIGNMENT AND TRANSFER

21.1  Restrictions on Assignment, Subletting and Other Transfers

21.1.1  DB Team shall not voluntarily or involuntarily sell, assign, convey transfer, pledge, mortgage or otherwise encumber the DB Team’s Interest or any portion thereof without GDOT’s prior written acceptance (including under any Direct Agreement), except:

21.1.1.1  To any entity that is under the same ultimate management control as DB Team.

21.1.2  DB Team shall not grant any other special occupancy or use of the Project to any other Person that is not in the ordinary course of DB Team performing the Work, without GDOT’s prior written acceptance.

21.1.3  Any sale, assignment, conveyance, transfer, pledge, mortgage, encumbrance, or grant of other special occupancy or use in violation of this provision shall be null and void ab initio and GDOT may, by Warning Notice, declare any such attempted action to be a material DB Team Default.

21.2  Standards and Procedures for GDOT Acceptance

21.2.1  Where GDOT’s prior acceptance is required for a proposed sale, assignment, conveyance, transfer, pledge, mortgage, encumbrance, sublease or grant of other special occupancy or use, or for any proposed Change of Control, GDOT may withhold or condition its acceptance in its sole discretion. Any such decision of GDOT to withhold consent shall be final, binding and not subject to the Dispute Resolution Procedures.

21.2.2  Thereafter, GDOT shall not unreasonably withhold its acceptance thereto. Among other reasonable factors and considerations, it shall be reasonable for GDOT to withhold its acceptance if:

21.2.2.1  DB Team fails to demonstrate to GDOT’s reasonable satisfaction that the proposed assignee, sublessee, grantee or transferee, or the proposed transferee of rights and/or equity interests that would amount to a Change of Control (for purposes of these Articles 21.2 through 21.5, collectively the “Transferee”), and its proposed contractors (a) have the financial resources, qualifications and experience to timely perform DB Team’s obligations under the DB Documents and Principal Project Documents and (b) are in compliance with GDOT’s rules, regulations and adopted written policies regarding organizational conflicts of interest;

21.2.2.2  Less than all of DB Team’s Interest is proposed to be assigned, conveyed, transferred, pledged, mortgaged, encumbered, or granted; or

21.2.2.3  At the time of the proposed sale, assignment, conveyance, transfer, pledge, mortgage, encumbrance, sublease or grant of other special occupancy or use requiring GDOT’s prior acceptance, or of any proposed Change of Control, there exists any uncured DB Team Default or any event or circumstance that with the lapse of time, the giving of notice or both would constitute a DB Team Default, unless GDOT receives
from the proposed Transferee assurances of cure and performance acceptable to GDOT in its good faith discretion.

**21.2.3** GDOT will accept or disapprove within 30 days after it receives from DB Team a Submittal consisting of a request for acceptance together with (a) a reasonably detailed description of the proposed transaction, (b) such information, evidence and supporting documentation as GDOT may request concerning the identity, financial resources, qualifications, experience and potential conflicts of interest of the proposed Transferee and its proposed contractors and (c) such evidence of organization and authority, and such incumbency certificates, certificates regarding debarment or suspension, and other certificates, representations and warranties as GDOT may reasonably request. GDOT will evaluate the identity, financial resources, qualifications, experience and potential conflicts of interest using the same standards and criteria that it is then currently applying, or if there is no current application, then the same standards and criteria it most recently applied, to the evaluation of Persons responding to GDOT requests for qualifications for concession or similar agreements for comparable projects and facilities.

**21.2.4** If for any reason GDOT does not act within such 30-day period, or any extension thereof by mutual agreement of the Parties, then the provisions of Article 6.3.4.2 shall apply.

**21.3 Assignment by GDOT**

GDOT may assign all or any portion of its rights, title and interests in and to the DB Documents, payment and performance bond(s), guarantees, and other security for payment or performance, (a) without DB Team’s consent, to any other Person that succeeds to the governmental powers and authority of GDOT, and (b) to others with the prior written consent of DB Team.

**21.4 Notice and Assumption**

**21.4.1** Assignments and transfers of the DB Team’s Interest permitted under this Article 21 (other than pursuant to Article 21.1.1.1) or otherwise accepted in writing by GDOT shall be effective only upon GDOT’s receipt of written notice of the assignment or transfer and a written recordable instrument executed by the Transferee, in form and substance acceptable to GDOT, in which the Transferee, without condition or reservation, assumes all of DB Team’s obligations, duties and liabilities under the DB Documents and agrees to perform and observe all provisions thereof applicable to DB Team.

**21.4.2** Each Transferee, including any Person who acquires the DB Team’s Interest pursuant to foreclosure, transfer in lieu of foreclosure or similar proceeding, shall take the DB Team’s Interest subject to, and shall be bound by, the Management Plans, the Key Contracts, the Standard Utility Agreements, all agreements between the transferor and railroads, the Governmental Approvals, and all agreements between the transferor and Governmental Entities with jurisdiction over the Project or the Work, except to the extent otherwise accepted by GDOT in writing in its good faith discretion.

**21.4.3** Except with respect to assignments and transfers pursuant to foreclosure, transfer in lieu of foreclosure or similar proceeding, the transferor and Transferee shall give GDOT written notice of the assignment not less than 30 days prior to the effective date thereof.
21.5 Change of Organization or Name

21.5.1 DB Team shall not change the legal form of its organization in a manner that adversely affects GDOT’s rights, protections and remedies under the DB Documents without the prior written acceptance of GDOT, which consent may be granted or withheld in GDOT’s sole discretion.

21.5.2 In the event either Party changes its name, such Party agrees to promptly furnish the other Party with written notice of change of name and appropriate supporting documentation.

Article 22 RECORDS AND AUDITS; INTELLECTUAL PROPERTY

22.1 Maintenance and Inspection of Records

22.1.1 DB Team shall keep and maintain at a single location as approved by GDOT all books, records and documents relating to the Project, Utility Adjustments or Work, including copies of all original documents delivered to GDOT. DB Team shall keep and maintain such books, records and documents in accordance with applicable provisions of the DB Documents, Section 2 of the Technical Provisions, and of the Management Plans, and in accordance with Good Industry Practice. DB Team shall notify GDOT where such records and documents are kept.

22.1.2 DB Team shall make all its books, records and documents available for inspection by GDOT, its representatives and legal counsel at DB Team’s principal offices in Georgia, at all times during normal business hours, without charge. GDOT may conduct any such inspection upon 48 hours’ prior written notice, or unannounced and without prior notice where there is good faith suspicion of fraud. The right of inspection includes the right to make extracts and take notes. The provisions of this Article 22.1.2 are subject to the following:

22.1.2.1 DB Team reserves the right to assert exemptions from disclosure for information that would be exempt under applicable State Law from discovery or introduction into evidence in legal actions; and

22.1.2.2 Unless otherwise lawfully required by federal Law or the Open Government Laws, DB Team may make available copies of books, records and documents containing trade secrets and confidential proprietary information with such information redacted. Unless otherwise lawfully required by federal Law or the Open Government Laws, GDOT shall have no right to make extracts of such trade secrets and confidential proprietary information except in connection with resolution of Disputes.

22.1.2.3 DB Team shall retain records and documents for a minimum of five years after the date the record or document is generated; provided that if the DB Documents or applicable Law specify any longer time period for retention of particular records, such time period shall control. With respect to records and documents generated prior to Final Acceptance, the time period for retention shall commence upon Final Acceptance. Notwithstanding the foregoing, all records which relate to any actions brought forth under the Dispute Resolution Procedures shall be retained and made available until any later date that such actions are finally resolved.
22.2 Audits

22.2.1 GDOT shall have such rights to review and audit DB Team, its Contractors and their respective books and records as and when GDOT deems necessary for purposes of verifying compliance with the DB Documents and applicable Law. Without limiting the foregoing, GDOT shall have the right to audit DB Team’s Management Plans and compliance therewith, including the right to inspect Work and/or activities and to verify the accuracy and adequacy of the Management Plans and its component parts, plans and other documentation. GDOT may conduct any such audit of books and records upon 48 hours’ prior written notice, or unannounced and without prior notice where there is good faith suspicion of fraud.

22.2.2 All claims filed against GDOT shall be subject to audit at any time following the filing of the claim. The audit may be performed by employees of GDOT or by an auditor under contract with GDOT. Notice shall not be required before commencing any audit prior to 60 days after the expiration of the term of this Agreement. Thereafter, GDOT shall provide 20 days’ notice to DB Team, any Contractors or their respective agents before commencing an audit. DB Team, Contractors or their agents shall provide adequate facilities, acceptable to GDOT, for the audit during normal business hours. DB Team, Contractors or their agents shall cooperate with the auditors. Failure of DB Team, Contractors or their agents to maintain and retain sufficient books and records to allow the auditors to verify all or a portion of the claim or to permit the auditor access to such books and records shall constitute a waiver of the claim and shall bar any recovery thereunder. At a minimum, the auditors shall have available to them the following documents relating to the claim:

(a) Daily time sheets and supervisor’s daily reports;
(b) Union agreements;
(c) Insurance, welfare, and benefits records;
(d) Payroll registers;
(e) Earnings records;
(f) Payroll tax forms;
(g) Material invoices and requisitions;
(h) Material cost distribution work sheet;
(i) Equipment records (list of company equipment, rates, etc.);
(j) Contractors’ (including Suppliers’) invoices;
(k) Contractors’ and agents’ payment certificates;
(l) Canceled checks (payroll and Suppliers);
(m) Job cost report;
(n) Job payroll ledger;
(o) General ledger;

(p) Cash disbursements journal;

(q) All documents that relate to each and every claim together with all documents that support the amount of damages as to each claim; and

(r) Work sheets used to prepare the claim establishing (a) the cost components of the claim, including labor, benefits and insurance, materials, equipment, Contractors, all documents that establish the time periods, individuals involved, the hours for the individuals, and the rates for the individuals, and (b) the lost revenue components of the claim.

22.2.3 Full compliance by DB Team with the provisions of this Article 22.2 is a contractual condition precedent to DB Team’s right to seek relief on a Dispute under Article 17.7.

22.2.4 Reserved

22.2.5 GDOT’s right of audit include the right to observe the business operations of DB Team and its Contractors to confirm the accuracy of books and records.

22.2.6 DB Team represents and warrants the completeness and accuracy in all material respects of all information it or its agents provides in connection with GDOT audits, and shall cause all Contractors other than Governmental Entities acting as Contractors to warrant the completeness and accuracy in all material respects of all information such Contractors provide in connection with GDOT audits.

22.2.7 Nothing in the DB Documents shall in any way limit the constitutional and statutory powers, duties and rights of elected State officials, including the independent rights of the State Auditor, in carrying out his or her legal authority. DB Team understands and acknowledges that (a) the State auditor may conduct an audit or investigation of any entity receiving funds from the State directly under this Agreement or indirectly through a Contract, (b) acceptance of funds directly under this Agreement or indirectly through a Contract acts as acceptance of the authority of the State auditor to conduct an audit or investigation in connection with those funds, and (c) an entity that is the subject of an audit or investigation must provide the State auditor with access to any information the State auditor considers relevant to the investigation or audit.

22.3 Open Government Laws and Freedom of Information Act

22.3.1 DB Team acknowledges and agrees that all Submittals, records, documents, drawings, Plans, specifications and other materials in GDOT’s possession, including materials submitted by DB Team to GDOT (whether directly or indirectly), are subject to the provisions of the Open Government Laws, subject only to certain exceptions and exemptions contained therein. DB Team also acknowledges that, pursuant to O.C.G.A. § 50-18-70(a), “records received or maintained by a private person, firm, corporation, or other private entity in the performance of a service or function for or on behalf of an agency, a public agency, or a public office shall be subject to disclosure to the same extent that such records would be subject to disclosure if received or maintained by such agency, public agency, or public office.” If DB Team believes information or materials submitted or otherwise made available to GDOT
constitute trade secrets, proprietary information or other information that is not subject to the Open Government Laws or is excepted from disclosure under the Open Government Laws, DB Team shall be solely responsible for specifically and conspicuously designating that information by placing “CONFIDENTIAL” in the center header of each such document or page affected, as it determines to be appropriate. Any specific proprietary information, trade secrets or confidential commercial and financial information shall be clearly identified as such, and shall be accompanied by a concise statement of reasons supporting the claim. Nothing contained in this Article 22.3.1 shall modify or amend requirements and obligations imposed on GDOT by the Open Government Laws or other applicable Law, and the provisions of the Open Government Laws or other Laws shall control in the event of a conflict between the procedures described above and the applicable Law. DB Team is advised to contact legal counsel concerning such Law and its application to DB Team.

22.3.2 If GDOT receives a request for public disclosure of materials marked “CONFIDENTIAL,” GDOT (as the case may be) will endeavor to notify DB Team of the request. DB Team may seek a protective order or other appropriate remedy. If GDOT determines in good faith that the materials identified as “CONFIDENTIAL” are not exempt from the Open Government Laws, GDOT will release the requested information within the applicable statutory time period, unless otherwise directed by an order of a court of competent jurisdiction. GDOT shall make the final determination regarding whether the requested information is to be disclosed or withheld.

22.3.3 In the event of any proceeding or litigation concerning the disclosure of any material submitted by DB Team to GDOT, DB Team shall be fully responsible for otherwise prosecuting or defending any action concerning the materials at its sole cost and risk; provided, however, that the Attorney General shall represent GDOT, which will participate in the litigation in such manner as they each may deem necessary or desirable. Except in the case of GDOT’s voluntary intervention in litigation, DB Team shall pay and reimburse GDOT (as the case may be) within 30 days after receipt of written demand and reasonable supporting documentation for all costs and fees, including attorneys’ fees and costs, GDOT incurs in connection with any litigation, proceeding or request for disclosure.

22.3.4 DB Team further acknowledges and agrees that all Submittals, records, documents, drawings, Plans, specifications and other materials in FHWA’s possession may also be subject to disclosure under federal Law, including the Freedom of Information Act. DB Team’s rights and obligations with respect to such disclosure shall be in accordance with such federal Law.

22.4 Intellectual Property

22.4.1 All Proprietary Intellectual Property, including with respect to Technology Enhancements, Source Code and Source Code Documentation, shall remain exclusively the property of DB Team or its Affiliates or Contractors that supply the same, notwithstanding any delivery of copies thereof to GDOT.

22.4.2 GDOT shall have and is hereby granted a nonexclusive, transferable, irrevocable, fully paid up right and license to use, reproduce, modify, adapt and disclose, and sublicense others to use, reproduce, modify, adapt and disclose, the Proprietary Intellectual Property of DB Team, including with respect to Technology Enhancements, Source Code and Source Code Documentation, solely in connection with the Project and any Highway, tolled or not tolled, owned and operated by GDOT or a State or regional Governmental Entity.
22.4.3 Subject to the license and rights granted to GDOT pursuant to Article 22.4.2, GDOT shall not at any time sell any Proprietary Intellectual Property of DB Team or use, reproduce, modify, adapt and disclose, or allow any party to use, reproduce, modify, adapt and disclose, any such Proprietary Intellectual Property for any other purpose not consistent with Article 22.4.2 above.

22.4.4 The right to transfer the license is limited to any Governmental Entity that succeeds to the power and authority of GDOT generally or with respect to the Project.

22.4.5 The right to sublicense is limited to State or regional Governmental Entities that own or operate a Highway or other road, tolled or not tolled, and to the concessionaires, contractors, subcontractors, employees, attorneys, consultants and agents that are retained by or on behalf of GDOT or any such State or regional Governmental Entity in connection with the Project or another Highway or other road, tolled or untolled. All such sublicenses shall be subject to Article 22.4.6.

22.4.6 Subject to Article 22.3, GDOT shall:

22.4.6.1 Not disclose any Proprietary Intellectual Property of DB Team to any Person other than authorized transferees and sublicensees who agree to be bound by any confidentiality obligations of GDOT relating thereto;

22.4.6.2 Enter into a commercially reasonable confidentiality agreement if requested by DB Team with respect to the licensed Proprietary Intellectual Property; and

22.4.6.3 Include, or where applicable require such State or regional Governmental Entity to include, in the contract with the sublicensee its covenant to employ sound business practices no less diligent than those used for its own confidential information, and no less diligent than required by commercially reasonable standards of confidentiality, to protect all Proprietary Intellectual Property of DB Team and other materials provided under the sublicense against disclosure to third parties not in receipt of a sublicense, and to use the sublicense only for the permitted purposes.

22.4.7 Notwithstanding any contrary provision of the DB Documents, in no event shall GDOT or any of their respective directors, officers, employees, consultants or agents be liable to DB Team, any Affiliate or any Contractor for any damages, including loss of profit, arising out of breach of the duty of confidentiality set forth in Article 22.4.6 if such breach is not the result of gross negligence or intentional misconduct or is required under the provisions of the Open Government Laws or a court order or other legal requirement.

22.4.8 DB Team shall continue to have a full and complete right to use any and all duplicates or other originals of its Proprietary Intellectual Property in any manner it chooses.

22.4.9 With respect to any Proprietary Intellectual Property, including with respect to Technology Enhancements, Source Code and Source Code Documentation, owned by a Person other than DB Team, including any Affiliate, and other than GDOT or a Governmental Entity acting as a Contractor, DB Team shall obtain from such owner, concurrently with execution of any contract, subcontract or purchase order with such owner or with the first use or adaptation of the Proprietary Intellectual Property in connection with the Project, for DB Team and GDOT, nonexclusive, transferable, irrevocable, fully paid up licenses to use, reproduce, modify, adapt and disclose such Proprietary Intellectual Property solely in connection with the
Project and any Highway, tolled or not tolled, owned and operated by GDOT or a State or regional Governmental Entity, of at least identical scope, purpose, duration and applicability as the license granted under Article 22.4.1. The foregoing requirement shall not apply, however, to mass-marketed software products (sometimes referred to as “shrink wrap software”) owned by such a Person where such a license cannot be extended to GDOT using commercially reasonable efforts. The limitations on sale, transfer, sublicensing and disclosure by GDOT set forth in Articles 22.4.3 through 22.4.6 shall also apply to GDOT’s licenses in such Proprietary Intellectual Property.

22.5  Reserved

Article 23  FEDERAL REQUIREMENTS

23.1  Compliance with Federal Requirements

DB Team shall comply and require its Contractors to comply with the Federal Requirements set forth in Exhibit 8. In the event of any conflict between any applicable Federal Requirements and the other requirements of the DB Documents, the Federal Requirements shall prevail, take precedence and be in force over and against any such conflicting provisions.

23.2  Reserved

Article 24  MISCELLANEOUS

24.1  Taxes

DB Team shall pay, prior to delinquency, all applicable Taxes. DB Team shall have no right to a Compensation Event or a Relief Event due to its misinterpretation of Laws respecting Taxes or incorrect assumptions regarding applicability of Taxes.

24.2  Amendments

The DB Documents may be amended only by a written instrument duly executed by the Parties or their respective successors or assigns, except to the extent expressly provided otherwise in this Agreement.

24.3  Waiver

24.3.1  No waiver of any term, covenant or condition of this Agreement or the other DB Documents shall be valid unless in writing and signed by the obligee Party.

24.3.2  The exercise by a Party of any right or remedy provided under this Agreement or the other DB Documents shall not waive or preclude any other or further exercise thereof or the exercise of any other right or remedy. No waiver by any Party of any right or remedy under this Agreement or the other DB Documents shall be deemed to be a waiver of any other or subsequent right or remedy under this Agreement or the other DB Documents. The consent by one Party to any act by the other Party requiring such consent shall not be deemed to render
unnecessary the obtaining of consent to any subsequent act for which consent is required, regardless of whether similar to the act for which consent is given.

24.3.3 Except as provided otherwise in the DB Documents, no act, delay or omission done, suffered or permitted by one Party or its agents shall be deemed to waive, exhaust or impair any right, remedy or power of such Party hereunder, or to relieve the other Party from the full performance of its obligations under this Agreement or the other DB Documents.

24.3.4 Either Party’s waiver of any breach or failure to enforce any of the terms, covenants, conditions or other provisions of the DB Documents at any time shall not in any way limit or waive that Party’s right thereafter to enforce or compel strict compliance with every term, covenant, condition or other provision, any course of dealing or custom of the trade notwithstanding. Furthermore, if the Parties make and implement any interpretation of the DB Documents without documenting such interpretation by an instrument in writing signed by both Parties, such interpretation and implementation thereof will not be binding in the event of any future Disputes.

24.3.5 Subject to Article 14.2.7, the acceptance of any payment or reimbursement by a Party shall not waive any preceding or then-existing breach or default by the other Party of any term, covenant or condition of this Agreement or the other DB Documents, other than the other Party’s prior failure to pay the particular amount or part thereof so accepted, regardless of the paid party’s knowledge of such preceding or then-existing breach or default at the time of acceptance of such payment or reimbursement. Nor shall such acceptance continue, extend or affect: (a) the service of any notice, any Disputes or final judgment; (b) any time within which the other Party is required to perform any obligation; or (c) any other notice or demand.

24.4 Independent Contractor

24.4.1 DB Team is an independent contractor, and nothing contained in the DB Documents shall be construed as constituting any relationship with GDOT other than that of an independent contractor under this Agreement.

24.4.2 Nothing in the DB Documents is intended or shall be construed to create any partnership, joint venture or similar relationship between GDOT and DB Team; and in no event shall either Party take a position in any tax return or other writing of any kind that a partnership, joint venture or similar relationship exists. While the term “public-private partnership” may be used on occasion to refer to contractual relationships of the type hereby created, the Parties do not thereby express any intention to form or hold themselves out as a de jure or de facto partnership, joint venture or similar relationship, to share net profits or net losses, or to give GDOT control or joint control over DB Team’s financial decisions or discretionary actions concerning the Project and Work.

24.4.3 In no event shall the relationship between GDOT and DB Team be construed as creating any relationship whatsoever between GDOT and DB Team’s employees. Neither DB Team nor any of its employees is or shall be deemed to be an employee of GDOT. Except as otherwise specified in the DB Documents, DB Team has sole authority and responsibility to employ, discharge and otherwise control its employees and has complete and sole responsibility as a principal for its agents, for all Contractors and for all other Persons that DB Team or any Contractor hires to perform or assist in performing the Work.
24.5 Successors and Assigns

The DB Documents shall be binding upon and inure to the benefit of GDOT and DB Team and their permitted successors, assigns and legal representatives.

24.6 Designation of Representatives; Cooperation with Representatives

24.6.1 GDOT and DB Team shall each designate an individual or individuals who shall be authorized to make decisions and bind the Parties on matters relating to the DB Documents (“Authorized Representative”). In addition, for purposes of Project administration and oversight to be performed by GDOT as provided in this Agreement, GDOT shall designate an individual or individuals who shall be authorized to make decisions and bind GDOT and upon such person(s) direction DB Team may rely. Exhibit 22 provides the initial Authorized Representative designations. A Party may change such designations by a subsequent writing delivered to the other Party in accordance with Article 24.11. For purposes of this Agreement, the Parties, except where expressly stated to the contrary, all communications and deliveries, including submittals, shall be through the respective Authorized Representative for each party.

24.6.2 DB Team shall cooperate with GDOT and all representatives of GDOT designated as described above.

24.7 Survival

DB Team’s and GDOT’s representations, covenants, warranties, the dispute resolution provisions contained in Article 17.7, the express obligations of the Parties following termination, and all other provisions which by their inherent character should survive expiration or earlier termination of this Agreement and/or completion of the Work shall survive the expiration or earlier termination of this Agreement and/or the completion of the Work. The provisions of Article 17.7 shall continue to apply after expiration or earlier termination of this Agreement to all Disputes between the parties arising out of the DB Documents.

24.8 Limitation on Third-Party Beneficiaries

24.8.1 It is not intended by any of the provisions of the DB Documents to create any third-party beneficiary hereunder or to authorize anyone not a Party hereto to maintain a suit for personal injury or property damage pursuant to the terms or provisions hereof, except to the extent provided in Article 24.9.2 and other specific provisions (such as the warranty and indemnity provisions) that identify third parties and state that they are entitled to benefits hereunder. Except as otherwise provided in this Article 24.8, the duties, obligations and responsibilities of the Parties to the DB Documents with respect to third parties shall remain as imposed by Law. The DB Documents shall not be construed to create a contractual relationship of any kind between GDOT and a Contractor or any Person other than DB Team.

24.8.2 GDOT shall be a third-party beneficiary, and entitled to the benefits, with respect to the rights under the DB Documents related to the following:

24.8.2.1 Oversight, review, inspection, testing, monitoring, acceptance, and enforcement of DB Team’s obligations to perform the design and construction of the Project in accordance with the DB Documents and applicable Law.
24.8.2.2 Review, audit, inspection and copying of data, information, documents, books and records of DB Team and any other DB Team-Related Entity.

24.8.2.3 Step in rights upon the occurrence of a DB Team Default.

24.9 No Personal Liability of GDOT Employees; No Tort Liability

24.9.1 GDOT’s officers, employees, representatives are acting solely as agents and representatives of such respective entities, as applicable, when carrying out the provisions of or exercising the power or authority granted to them under this Agreement and the DB Documents. They shall not be liable either personally or as employees of GDOT for actions in their ordinary course of employment.

24.9.2 The Parties agree to provide to each other with written notice of any claim which such Party may receive from any third party relating in any way to the matters addressed in this Agreement, and shall otherwise provide notice in such form and within such period as is required by Law.

24.10 Governing Law

The DB Documents shall be governed by and construed in accordance with the laws of the State of Georgia.

24.11 Notices and Communications

24.11.1 Notices under the DB Documents shall be in writing and: (a) delivered personally; (b) sent by certified mail, return receipt requested; (c) sent by a recognized overnight mail or courier service, with delivery receipt requested, or (d) sent by facsimile or email communication followed by a hard copy and with receipt confirmed by telephone, to the following addresses (or to such other address as may from time to time be specified in writing by such Person):

24.11.2 All notices, correspondence and other communications to DB Team shall be delivered to the following address or as otherwise directed by DB Team’s Authorized Representative:

J. Mitchell Simpson, PE
Vice President/COO
Wright Brothers Construction Company, Inc.
1500 Lauderdale Memorial Highway
Charleston, Tennessee 37310
Telephone: (423) 605-0881
Facsimile: (423) 336-2079
E-mail: msimpson@wbcci.com

24.11.3 All notices, correspondence, submittals, transmittals and any other communications shall be directed to GDOT’s Authorized Representative. All notices, correspondence, submittals, transmittals, and other communications to GDOT shall be marked as regarding the “The SR 247 & College Street Bridges over NS Railway Design-Build Project” and shall be delivered to the following addresses or as otherwise directed by GDOT’s Authorized Representative:
In addition, copies of all notices regarding Disputes, and termination and default notices shall be delivered to the following person:

Georgia Department of Transportation
Office of General Counsel
600 West Peachtree Street, Suite 2300
Atlanta, Georgia 30308
E-mail: mcline@dot.ga.gov

24.11.4 Notices shall be deemed received when actually received in the office of the addressee (or by the addressee if personally delivered) or when delivery is refused, as shown on the receipt of the U.S. Postal Service, private carrier or other Person making the delivery. Notwithstanding the foregoing, notices sent by facsimile after 12:00 p.m. Eastern Standard or Daylight Time (as applicable) and all other notices 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.). Any technical or other communications pertaining to the Work shall be conducted by DB Team’s Authorized Representative and technical representatives designated by GDOT.

24.12 Integration of DB Documents

GDOT and DB Team agree and expressly intend that, subject to Article 24.13, this Agreement, and other DB Documents constitute a single, non-severable, integrated agreement whose terms are interdependent and non-divisible.

24.13 Severability

24.13.1 If any clause, provision, section or part of this Agreement or the other DB Documents or any other Principal Project Document is ruled invalid (including invalid due to Change in Law) by a court having proper jurisdiction, then the Parties shall: (a) promptly meet and negotiate a substitute for such clause, provision, section, or part, which shall, to the greatest extent legally permissible, effect the original intent of the Parties; and (b) if necessary or desirable, apply to the court or other decision maker (as applicable) which declared such invalidity for an interpretation of the invalidated portion to guide the negotiations. The invalidity or unenforceability of any such clause, provision, section, or part shall not affect the validity or enforceability of the balance of the DB Documents or such other Principal Project Documents, which shall be construed and enforced as if the DB Documents or such other Principal Project Documents did not contain such invalid or unenforceable clause, provision, section, or part.

24.13.2 If after the efforts required by Article 24.13.1, the Parties mutually agree that without the section or part of the DB Documents or such other Principal Project Documents that the court ruled to be invalid, there is no interpretation or reformation of the DB Documents or such other Principal Project Documents that can reasonably be adopted which will return the
Parties to the benefits of their original bargain, the Parties can mutually agree to treat the court order as a Termination by Court Ruling pursuant to Article 19.11.

24.14 Usury Savings

The DB Documents are subject to the express condition that at no time shall either Party be obligated or required to pay interest on any amount due the other Party at a rate which could subject the other Party to either civil or criminal liability as a result of being in excess of the maximum non-usurious interest rate permitted by Georgia Law (the “maximum legal rate”), if any. If, by the terms of the DB Documents either Party at any time is obligated to pay interest on any amount due in excess of the maximum legal rate, then such interest shall be deemed to be immediately reduced to the maximum legal rate and all previous payments in excess of the maximum legal rate shall be deemed to have been payments in reduction of the principal amount due and not on account of the interest due. All sums paid or agreed to be paid to a Party for the use, forbearance, or detention of the sums due that Party under the DB Documents shall, to the extent permitted by applicable Georgia Law, be amortized, prorated, allocated, and spread throughout the full period over which the interest accrues until payment in full so that the rate or amount of interest on account of the amount due does not exceed the maximum legal rate in effect from time to time during such period. If after the foregoing adjustments a Party still holds interest payments in excess of the maximum legal rate, it shall promptly refund the excess to the other Party.

24.15 Boycott of Israel

Pursuant to O.C.G.A. Sec. 50-5-85, DB Team certifies that it is not currently engaged in, and agrees that for the duration of the Project, it will not engage in a boycott of Israel.

24.16 Entire Agreement

This Agreement and the other DB Documents contain the entire understanding of the Parties with respect to the subject matter thereof and supersede all prior agreements, understandings, statements, representations and negotiations between the Parties with respect to their subject matter.
24.17 Counterparts

This instrument may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

<table>
<thead>
<tr>
<th>CONTRACT IDENTIFICATION NUMBER</th>
<th>DATE CONTRACT EXECUTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>B3IPD1902060-0</td>
<td>10/9/2019</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>PROJECT NUMBER(S)</th>
<th>COUNTY(IES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0014895 &amp; 0014899</td>
<td>Bibb County</td>
</tr>
</tbody>
</table>

CONTRACTOR
Wright Brothers Construction Company, Inc.

DESCRIPTION OF IMPROVEMENTS AND FACILITY
The SR 247 & College Street Bridges over NS Railway Design-Build Project

CONTRACT SUM
$14,350,000.00

[Signature Page Immediately Follows]
IN WITNESS WHEREOF, the Parties intending to be legally bound, have set their hands and affixed their seals, and have executed this Agreement, including the requirements of the DB Documents, as of the date first above written.

WRIGHT BROTHERS CONSTRUCTION COMPANY, INC.

By: __________________________
Name: J. Mitchell Simpson
Title: Executive Vice President

GEORGIA DEPARTMENT OF TRANSPORTATION

By: __________________________
Name: Russell R. McMurry, PE
Title: Commissioner

Attested By: _________________________
Name: Angela O. Whitworth
Title: Treasurer
Form O-2 Nonresident Contractor Payment and Performance Bond Form

DEPARTMENT OF TRANSPORTATION
PERFORMANCE, PAYMENT, AND NONRESIDENT CONTRACTOR’S TAX BONDS
(NONRESIDENT CONTRACTOR)

KNOW ALL MEN BY THESE PRESENTS, That we,

WRIGHT BROTHERS CONSTRUCTION COMPANY, INC.

as Principal, and the Corporation or Corporations hereinafter designated as Surety A or Surety A to Surety ______ inclusive, as Surety or Sureties, are held and firmly bound, both “jointly and severally” as well as “severally” only, unto the Department of Transportation in the penal sum of 120% of the Original Contract Amount of:

Fourteen Million three hundred fifty thousand dollars and zero cents
$14,350,000.00

for the use of the obligee herein named and of all persons doing work or furnishing skill, tools, machinery, or materials under or for the purpose of this contract hereinafter described, and for the use of the State and all political subdivisions thereof for all taxes (including contributions due under the employment security law), together with penalties and interest collectible as taxes, which may accrue during the period of this bond on account of the execution and performance of this contract hereinafter described; Provided, that it is mutually understood and agreed between the Principal and Surety and/or Sureties and the Obligee herein named that this bond is to be construed as being in compliance with and subject to the provisions of Sections 13-10-1, 36-82-101, and 48-13-30 through 48-13-38 of the Official Code of Georgia Annotated, as well as the other applicable provisions, and that in compliance with the aforesaid sections this instrument is intended and is to be construed as three separate bonds, namely, as a “performance bond” in the full penal sum heretofore set forth, and as a “payment bond”, in the full penal sum heretofore named, and as a “tax bond” in the amount of ten percent of the full penal sum heretofore named and that all bonds shall be construed to be in full force and effect at the same time, as the case may be, and that the obligations shall be several as to each type of bond; and for the payment of which sums well and truly to be made we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents; Provided, that the Sureties bind themselves in such sums “jointly and severally”, as well as “severally” only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, and with each other, for 210 percent of the penal sum of this bond, and provided further that, while each Surety binds itself, jointly and severally with the Principal, for 210 percent of penal sum herein provided for, the total liability of all Sureties shall not exceed the total penal sum heretofore provided for as to each of the respective obligations herein provided for.
Signed and sealed this day of 10/4/2019.

Surety & Name and State of incorporation  Name and Address of Bonding Agent  Agent Name: D-Ann Kleidosty
A  

B  Agent Address: 3560 Lenox Road, Suite 2400 Atlanta, GA 30326

C  Agent Phone Number: 404-995-2658

D  *PLEASE PRINT ALL INFORMATION*

Bond # 018223650

Note: The Surety Company for Performance and Payment Bonds shall be a company acceptable as Surety on Federal Bonds and listed in the current Federal Register and licensed in the State of Georgia.

THE CONDITIONS OF THE FOREGOING OBLIGATIONS is such that whereas the above named Principal has entered into a contract with said Department of Transportation bearing even date herewith for the Construction of:

Design and construction services for providing a minimum 21’-0” vertical clearance from the bottom of beam to top of rail for the SR 247/Pio Nono Avenue bridge and complete replacement of the CR 5813/College Street bridge, both over the Norfolk Southern Railway (NSRR) in Macon, Bibb County, Georgia. PI No. 0014895 and 0014899.

The surety hereby binds itself to provide performance bond and payment bond for work added by Supplemental Agreement(s) and/or Extension Agreement(s), whereby the original Contract amount or the total Project length may be increased by as much as twenty (20) percent without the written assent of the Surety.

Now, therefore, the condition of these obligations is such that if the above named bound Principal shall in all respects comply with the terms and conditions of said contract, including all modifications or extensions thereof, and his obligations thereunder, including the notice to contractors, the plans, general conditions, specifications, special provisions and proposals, therein referred to and made a part thereof, and shall complete the said contract in accordance with its terms and shall save obligee free from all cost and charge that may accrue on account of the doing of the work specified, then this bond, construed as a “performance bond” shall be void, otherwise of full force and effect.

Provided further, that upon the failure of the said Principal to promptly and efficiently prosecute said work, in any respect, in accordance with the contract, the above bound Surety or Sureties shall take charge of said work and complete the contracts at its own expense, pursuant to its terms, receiving, however, any balance of funds in the hands of said Department of Transportation under said contract.

And, further, the condition of these obligations is such that if the above bound Principal shall make prompt payment to all subcontractors and all other persons supplying labor, materials, machinery and equipment furnished for the performance of the work provided for in said contract, as well as all duly authorized modifications thereof which may hereafter be made, including any extension of time to complete the same, then this bond, as a “payment bond”, shall be void, otherwise of full force and effect.

It is agreed that, in the event that this bond is executed by more than one surety company, the term “Surety” as used in this bond shall be construed to mean any one or all of such surety companies executing this bond. It is further agreed
that such surety companies herein named and executing this bond as surety for the Principal, by mutual agreement between themselves, and with the Principal, and with the obligee herein named, do hereby designate and authorize:

Liberty Mutual Insurance Company – MA

as the “controlling surety”

It is further agreed that the term, “controlling surety”, shall be defined as that one of such sureties herein designated and authorized by all of such sureties, upon whom any notice or other demand may be made by the obligee herein named, or other person having a claim against the Principal under the provisions of this bond, or with whom such obligee, or other such person, may negotiate or deal as to any matter pertaining to the obligations of this bond, and against whom any right of action growing out of this bond may be enforced, as provided for by Sections 36-82-102 through 36-82-105 of the Official Code of Georgia Annotated as fully and effectively as though the same were had or done with each of such named sureties individually, and with the right upon the part of such “controlling surety” to vouch such co-sureties into court to defend any action against it or them arising out of the obligations of this bond, as provided by Section 9-10-13 of the Official Code of Georgia Annotated, or to call upon such co-sureties, in accordance with the terms of any notice, demand, suit, suit at law, or other action, commenced or brought against it by the obligee named herein, or any other person having a claim against the Principal under the conditions and provisions of this bond, or in accordance with any private contract between the sureties executing this bond on behalf of said Principal, it being the purpose and intent of this contract that the obligee named in this bond, or such other person having a claim under the provisions of this bond, may enforce any right that it or they may have growing out of this bond by notice, demand, negotiation, suit, or other appropriate action against the controlling surety only, and such action shall be deemed to be binding upon all the sureties named herein; Provided however, the foregoing notwithstanding, the obligee, or such other person having a claim under this bond, at its or their option, may take such action against any or all of said surety companies.

It is agreed by the parties hereto that in the event the Department of Transportation in making the contract with the Principal herein shall be acting as Agent for the United States Government, or for the Bibb County

or for both, as well as for itself, then the said Department of Transportation shall have the right in the event of a breach of the contract resulting in loss to the said County or to the United States Government; or to itself, to maintain a suit hereon for the use of itself, or the United States Government, or said County as well as for itself; or said County and said United States Government shall have the right in their own names to maintain a suit herein in the same manner and to the same extent as the Department of Transportation has by virtue of Sections 36-82-104 and 36-82-105 of the Official Code of Georgia Annotated.
IN WITNESS WHEREOF THE PARTIES HAVE SET THEIR HANDS AND AFFIXED THEIR SEALS

Wright Brothers Construction Company, Inc.

Signature of Contractor (SEAL)

J. Mitchell Simpson

Printed Name of Signee:

Liberty Mutual Insurance Company

Signature of Attorney-In-Fact (SEAL)

D-Ann Kleidosty

Printed Name of Signee:
EXHIBIT 1

ACRONYMS AND DEFINITIONS

Unless otherwise specified, wherever the following abbreviations or terms are used in this Agreement and the Technical Provisions, they have the meanings set forth below:

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AASHTO</td>
<td>American Association of State Highway and Transportation Officials</td>
</tr>
<tr>
<td>ADA</td>
<td>Americans with Disabilities Act</td>
</tr>
<tr>
<td>AGC</td>
<td>Associated General Contractors of America</td>
</tr>
<tr>
<td>AMRL</td>
<td>AASHTO Materials Reference Laboratory</td>
</tr>
<tr>
<td>ANSI</td>
<td>American National Standards Institute</td>
</tr>
<tr>
<td>APE</td>
<td>Area of Potential Effects</td>
</tr>
<tr>
<td>ARC</td>
<td>Atlanta Regional Commission</td>
</tr>
<tr>
<td>AREMA</td>
<td>American Railway Engineering and Maintenance of Way Association</td>
</tr>
<tr>
<td>ASTM</td>
<td>American Society of Testing and Materials</td>
</tr>
<tr>
<td>ATC</td>
<td>Alternative Technical Concept</td>
</tr>
<tr>
<td>BFI</td>
<td>Bridge Foundation Investigation</td>
</tr>
<tr>
<td>AWS</td>
<td>American Welders Society</td>
</tr>
<tr>
<td>BMP</td>
<td>Best Management Practice</td>
</tr>
<tr>
<td>CAD</td>
<td>Computer Aided Design</td>
</tr>
<tr>
<td>CAPWAP</td>
<td>Case Pile Wave Analysis program</td>
</tr>
<tr>
<td>CCTV</td>
<td>Closed Circuit Television</td>
</tr>
<tr>
<td>CE</td>
<td>Categorical Exclusion</td>
</tr>
<tr>
<td>CEI</td>
<td>Construction Engineering and Inspection</td>
</tr>
<tr>
<td>CEPP</td>
<td>Comprehensive Environmental Protection Plan</td>
</tr>
<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
</tr>
<tr>
<td>CIA</td>
<td>Contract Item Agreement</td>
</tr>
<tr>
<td>CMS</td>
<td>Changeable Message Sign</td>
</tr>
<tr>
<td>CPI</td>
<td>Consumer Price Index</td>
</tr>
<tr>
<td>CQAM</td>
<td>Construction Quality Assurance Manager</td>
</tr>
<tr>
<td>CQMP</td>
<td>Construction Quality Management Plan</td>
</tr>
<tr>
<td>CSJ</td>
<td>Control Section Job</td>
</tr>
<tr>
<td>CWA</td>
<td>Clean Water Act</td>
</tr>
<tr>
<td>DB</td>
<td>Design-Build</td>
</tr>
<tr>
<td>DBA</td>
<td>Design-Build Agreement</td>
</tr>
<tr>
<td>DBE</td>
<td>Disadvantaged Business Enterprise, as set forth in 49 CFR Part 26</td>
</tr>
<tr>
<td>DEIS</td>
<td>Draft Environmental Impact Statement</td>
</tr>
<tr>
<td>DMS</td>
<td>Dynamic Message Signs</td>
</tr>
<tr>
<td>DNR</td>
<td>Georgia Department of Natural Resources</td>
</tr>
<tr>
<td>DQAM</td>
<td>Design Quality Assurance Manager</td>
</tr>
<tr>
<td>DQMP</td>
<td>Design Quality Management Plan</td>
</tr>
<tr>
<td>Acronym</td>
<td>Full Form</td>
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<tr>
<td>---------</td>
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</tr>
<tr>
<td>DSS</td>
<td>Decent, Safe and Sanitary</td>
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<tr>
<td>EA</td>
<td>Environmental Assessment</td>
</tr>
<tr>
<td>ECM</td>
<td>Environmental Compliance Manager</td>
</tr>
<tr>
<td>EDG</td>
<td>GDOT Electronic Data Guidelines</td>
</tr>
<tr>
<td>EP</td>
<td>Extraction Procedure (toxicity)</td>
</tr>
<tr>
<td>EPA</td>
<td>Environmental Protection Agency</td>
</tr>
<tr>
<td>EPD</td>
<td>Georgia Department of Natural Resources, Environmental Protection Division</td>
</tr>
<tr>
<td>EPIC</td>
<td>Environmental Permits Issues and Commitments</td>
</tr>
<tr>
<td>ESA</td>
<td>Endangered Species Act of 1973, 16 U.S.C. §§ 1531 et seq., as amended from time to time</td>
</tr>
<tr>
<td>EUC</td>
<td>Emergency Utility Coordinator</td>
</tr>
<tr>
<td>FAA</td>
<td>Federal Aviation Administration</td>
</tr>
<tr>
<td>FAPG</td>
<td>Federal-Aid Policy Guide</td>
</tr>
<tr>
<td>FEMA</td>
<td>Federal Emergency Management Agency</td>
</tr>
<tr>
<td>FHWA</td>
<td>U.S. Federal Highway Administration</td>
</tr>
<tr>
<td>FEIS</td>
<td>Final Environmental Impact Statement</td>
</tr>
<tr>
<td>FONSI</td>
<td>Finding of No Significant Impact</td>
</tr>
<tr>
<td>FTP</td>
<td>File Transfer Protocol</td>
</tr>
<tr>
<td>FWCA</td>
<td>Fish and Wildlife Coordination Act, 16 U.S.C. §§661 et seq., as amended from time to time</td>
</tr>
<tr>
<td>GDOT</td>
<td>Georgia Department of Transportation</td>
</tr>
<tr>
<td>GEPA</td>
<td>Georgia Environmental Policy Act, Section 12-16-1, et seq. of the Official Code of Georgia Annotated</td>
</tr>
<tr>
<td>GIS</td>
<td>Geographical Information System</td>
</tr>
<tr>
<td>HEC-FFA</td>
<td>Hydraulic Engineering Circular – Flood Frequency Analysis</td>
</tr>
<tr>
<td>HCR</td>
<td>Highway Conditions Report</td>
</tr>
<tr>
<td>ICD</td>
<td>Interface Control Document</td>
</tr>
<tr>
<td>ID</td>
<td>Form of Identification</td>
</tr>
<tr>
<td>IH</td>
<td>Interstate Highway</td>
</tr>
<tr>
<td>IRI</td>
<td>International Roughness Index</td>
</tr>
<tr>
<td>ISO</td>
<td>International Organization for Standardization</td>
</tr>
<tr>
<td>ITS</td>
<td>Intelligent Transportation System</td>
</tr>
<tr>
<td>IVHS</td>
<td>Intelligent Vehicle Highway System</td>
</tr>
<tr>
<td>IWP</td>
<td>Investigative Work Plan</td>
</tr>
<tr>
<td>MDS</td>
<td>Microwave Detection System</td>
</tr>
<tr>
<td>MOA</td>
<td>Memorandum of Agreement</td>
</tr>
<tr>
<td>MOT</td>
<td>Maintenance of Traffic</td>
</tr>
<tr>
<td>MOU</td>
<td>Memorandum of Understanding</td>
</tr>
<tr>
<td>MPH</td>
<td>Miles Per Hour</td>
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<tr>
<td>MPO</td>
<td>Metropolitan Planning Organization</td>
</tr>
<tr>
<td>MS4</td>
<td>Municipal Separate Storm Sewer System</td>
</tr>
</tbody>
</table>
RFC  Release for Construction
RFI  Request for Information
RFQ  Request for Qualifications
RFP  Request for Proposals
RLM  Residual Life Methodology
ROD  Record of Decision
ROW  Right of Way
ROW AM  Right of Way Acquisition Manager
ROWIS  Right of Way Information System
RTF  Related Transportation Facilities
SDPP  Special Deposit and Possession Procedure
SDEIS  Supplemental Draft Environmental Impact Statement
SH  State Highway
SHPO  State Historic Preservation Officer
SME  Subject Matter Expert
SOQ  Statement of Qualifications
SOV  Schedule of Values
SSTR  Single Slope Traffic Railing
STA  State Transportation Agency
SUA  Standard Utility Agreement
SUE  Subsurface Utility Engineering
TCLP  Toxicity Characteristic Leaching Procedure
TIR  Traffic Interruption Request
TMC  Traffic Management Center
TMP  Transportation Management Plan
UAM  Utility Accommodation Manual
UAT  Utility Adjustment Team
UCS  User Classification Subsystem
UDC  Utility Design Coordinator
UJUA  Utility Joint Use Acknowledgment or Utility Joint Use Agreement
UM  Utility Manager
US  United States
USACE  United States Army Corps of Engineers
U.S. DOT  United States Department of Transportation
USFWS  United States Fish and Wildlife Service
U.S. GAAP  U.S. Generally Accepted Accounting Principles
USPAP  Uniform Standard of Professional Appraisal Practices
UST  Underground Storage Tank
UTM  Universal Transverse Mercator
VDS  Video Detection System
VES  Video Exception Sub-system
<table>
<thead>
<tr>
<th>WBS</th>
<th>Work Breakdown Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>WFI</td>
<td>Wall Foundation Investigation</td>
</tr>
<tr>
<td>WECS</td>
<td>Worksite Erosion Control Supervisor</td>
</tr>
<tr>
<td>WTCS</td>
<td>Worksite Traffic Control Supervisor</td>
</tr>
<tr>
<td>WUCS</td>
<td>Worksite Utility Coordination Supervisor</td>
</tr>
</tbody>
</table>
**Abandonment** means that Design-Build Team abandons all or a material part of the Project, which abandonment shall have occurred if (a) Design-Build Team demonstrates through acts or omissions an intent not to continue, for any reason other than a Relief Event that materially interferes with ability to continue, to construct or operate all or a material part of the Project and (b) no significant Work (taking into account the Project Schedule, if applicable, and any Relief Event) on the Project or a material part thereof is performed for a continuous period of more than 45 days.

**Addenda/Addendum/Amendment** means supplemental additions, deletions, and modifications to the provisions of the RFP after the release of the draft RFP.

**Adjust** means to perform a Utility Adjustment.

**Adjustment** means a Utility Adjustment.

**Adjustment Standards** means the standard specifications, standards of practice, and construction methods that a Utility Owner customarily applies to facilities (comparable to those being Adjusted on account of the Project) constructed by the Utility Owner (or for the Utility Owner by its contractors), at its own expense. Unless the context requires otherwise, references in the DB Documents to a Utility Owner’s “applicable Adjustment Standards” refer to those that are applicable pursuant to Article 7.5.3 of the Agreement.

**Administrative Information Submittals** means those submittals Proposers are required to submit with their respective Proposal.

**Affidavit of Property Interest** means the form of documentation of Existing Utility Property Interests described in Section 6.2.2 of the Technical Provisions.

**Affiliate** means:

(a) any shareholder, member, partner or joint venture member of Design-Build Team,

(b) any Person which directly or indirectly through one or more intermediaries controls, or is controlled by, or is under common control with, Design-Build Team or any of its shareholders, members, partners or joint venture members; and

(c) any Person for which ten percent (10%) or more of the equity interest in such Person is held directly or indirectly, beneficially or of record by (i) Design-Build Team, (ii) any of Design-Build Team’s shareholders, members, partners or joint venture members or (iii) any Affiliate of Design-Build Team under clause (b) of this definition.

For purposes of this definition the term “control” means the possession, directly or indirectly, of the power to cause the direction of the management of a Person, whether through voting securities, by contract, family relationship or otherwise.

**Age** means the elapsed time since an Element was first constructed or installed or, if applicable, last reconstructed, rehabilitated, restored, renewed or replaced.
Agreement, DBA, Design-Build Agreement, or DB Agreement means this certain Design-Build Agreement executed by GDOT and Design-Build Team, including any and all exhibits, attachments, riders, and amendments thereto.

Allowable Design Exceptions means design exceptions identified in Section 11.3.2 of the Technical Provisions that are allowed to be implemented on the Project.

Alternative Technical Concept (ATC) means a Proposer’s suggested change or variance to the requirements of the RFP that results in performance and quality of the end product that is equal to or better than the performance and quality of the Project on an overall basis with the proposed change or variance. GDOT’s determination of any Proposer’s ATC is conclusive as to the acceptability of an ATC for inclusion in the Proposal.

Apparent Successful Proposer means the Proposer with the apparent Successful Proposal, taking into consideration the evaluation criteria and procedures.

Area of Potential Effects (APE) means the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of Historic Properties, if such properties exist.

Attorney General means the Attorney General of the State of Georgia.

Authorized Representative has the meaning set forth in Article 24.6.1 of the Agreement, and shall be applicable person(s) and/or party(ies) authorized to act on behalf of GDOT and the Design-Build Team respectively, as initially set forth pursuant to Exhibit 22 of the Agreement. All notices, deliveries, responses, approvals, and other communications among GDOT and/or the Design-Build Team shall be directed to the respective Authorized Representative for each of the aforementioned, unless expressly provided to the contrary in this Agreement.

Baseline Project Schedule shall have the meaning set forth in Section 2.5 of the Technical Provisions.


Best Value Proposal means the Proposal meeting the standards set by the RFP that GDOT determines, through the evaluation process and evaluation criteria described in this ITP, to present the best value and to be in the best interest of GDOT and the State.

Betterment has, with respect to a given Utility being Adjusted, the meaning (if any) set forth in the Utility Agreement(s) applicable to the Utility; in all other cases, “Betterment” means any upgrading of the Utility in the course of such Utility Adjustment that is not attributable to the construction of the Project and is made solely for the benefit of and at the election of the Utility Owner, including an increase in the capacity, capability, efficiency or function of an Adjusted Utility over that which was provided by the existing Utility. Notwithstanding the foregoing, the following are not considered Betterments unless otherwise provided in the applicable Utility Agreement(s):

(a) any upgrading which is required for accommodation of the Project;

...
(b) replacement devices or materials that are of equivalent standards although not identical;

(c) replacement of devices or materials no longer regularly manufactured with an equivalent or next higher grade or size;

(d) any upgrading required by applicable Law;

(e) replacement devices or materials that are used for reasons of economy (e.g., non-stocked items may be uneconomical to purchase); and

(f) any upgrading required by the Utility Owner’s applicable Adjustment Standards.

With respect to any Replacement Utility Property Interest, “Betterment” has the meaning (if any) set forth in the applicable Utility Agreement(s). In all other cases, a Replacement Utility Property Interest shall be considered a Betterment, except to the extent that reinstallation of a Utility in the Replacement Utility Property Interest (i) is necessary in order to meet the requirements of the DB Documents, or (ii) is called for by Design-Build Team in the interest of overall economy for the Project.

**Business Day, work day, or working day** means any Calendar Day less Saturday, Sunday and State of Georgia holidays.

**Calendar Day** means any day shown on the calendar, beginning and ending at midnight.

**Change in Law** means (a) the adoption of any Law after the date that is 90 days prior to the Proposal Due Date, or (b) any change, amendment to, repeal or revocation of any Law or in the interpretation or application thereof by any Governmental Entity after the date that is 90 days prior to the Proposal Due Date, in each case that is materially inconsistent with Laws in effect 90 days prior to the Proposal Due Date; excluding, however, any such Change in or new Law that also constitutes or causes a change in or new Adjustment Standards, as well as any change in or new Law passed or adopted but not yet effective as of the date that is 90 days prior to the Proposal Due Date.

**Change of Control** means any assignment, sale, financing, grant of security interest, transfer of interest or other transaction of any type or description, including by or through voting securities, asset transfer, contract, merger, acquisition, succession, dissolution, liquidation or otherwise, that results, directly or indirectly, in a change in possession of the power to direct or control or cause the direction or control of the management of Design-Build Team or a material aspect of its business. A change in the power to direct or control or cause the direction or control of the management of a shareholder, member, partner or joint venture member of Design-Build Team may constitute a Change of Control of Design-Build Team if such shareholder, member, partner or joint venture member possesses the power to direct or control or cause the direction or control of the management of Design-Build Team. Notwithstanding the foregoing, the following shall not constitute a Change of Control:

(a) A change in possession of the power to direct or control the management of Design-Build Team or a material aspect of its business due solely to a bona fide open market transaction(s) in securities effected on a recognized public stock exchange, including such transactions involving an initial public offering;
(b) A change in possession of the power to direct or control the management of Design-Build Team or a material aspect of its business due solely to a bona fide transaction involving beneficial interests in the ultimate parent organization of a shareholder, member, partner or joint venture member of Design-Build Team, (but not if the shareholder, member, partner or joint venture member is the ultimate parent organization), unless the transferee in such transaction is at the time of the transaction suspended or debarred or subject to a proceeding to suspend or debar from bidding, proposing or contracting with any federal or State department or agency;

(c) An upstream reorganization or transfer of direct or indirect interests in Design-Build Team so long as there occurs no change in the entity with ultimate power to direct or control or cause the direction or control of the management of Design-Build Team;

(d) A transfer of interests between managed funds that are under common ownership or control other than a change in the management or control of a fund that manages or controls Design-Build Team;

(e) The exercise of minority veto or voting rights (whether provided by applicable Law, by Design-Build Team’s organizational documents or by related member or shareholder agreements or similar agreements) over major business decisions of Design-Build Team, provided that if such minority veto or voting rights are provided by shareholder or similar agreements, GDOT has received copies of such agreements; or

**Change Order** means a written approval by GDOT, counter-signed by Design-Build Team, with respect to a GDOT Change or Change Request, which shall set forth any adjustments to the Contract Sum and/or the Contract Time, including on account of a Relief Event or Compensation Event, as provided in the Agreement.

**Change Request** means a written request from Design-Build Team seeking to change the character, quantity, quality, description, scope or location of any part of the Work, to modify the DB Documents.

**Chief Executive Officer of the Design-Build Team** means the chief executive officer, president or other senior officer of the Design-Build Team, or the governing body of Design-Build Team, in each case having authority to negotiate and resolve a Dispute with the Commissioner and bind Design-Build Team by his or her decision in regard to such Dispute.

**Claimant** means any Person that would be entitled to protection of payment bond under Code Section 13-10-63, including any P&P Bonds.

**Code** means the Official Code of Georgia Annotated.

**Commissioner** means the Commissioner of GDOT appointed by the State Transportation Board and any successor thereto having substantially similar powers and authority.

**Communications Support Plan** has the meaning set forth in Section 2.2.3 of the Technical Provisions.
Compensation Amount means the amount of compensation to be paid to Design-Build Team for a Compensation Event as set forth and subject to the limitations of the Agreement, including Article 14.2 therein.

Compensation Event means the written notice submitted by Design-Build Team in accordance with Article 14.2 of the Agreement.

Compensation Event Notice means the written notice submitted by Design-Build Team in accordance with Article 13.3.2 of the Agreement.

Completion Date means the date the Design-Build Team has satisfied all conditions and requirements of and for a Completion Deadline, including Interim Completion Deadlines, the Substantial Completion Deadline, and Final Acceptance, as may be adjusted pursuant to any Supplemental Agreement, including on account of any Relief Events.

Completion Deadline means the critical milestones for commencement or completion of the Work as set forth in Exhibit 9 to the Agreement, including without limitation Interim Completion Deadlines, the Substantial Completion Deadline, and Final Acceptance Deadline, as may be adjusted upon approval of the Baseline Project Schedule as set forth in Article 3.2 of the Agreement, and as further adjusted pursuant to any Supplemental Agreement, including on account of any Relief Events.

Conceptual Layout Plan means the schematic layout which provides alignment and lane configuration information necessary to verify lane continuity and general scope compliance for the entire Project.

Construction Commencement Date means for the date on which Design-Build Team first commences construction of the Project or such relative phase thereof.

Construction Documents means all shop drawings, working drawings, fabrication plans, material and hardware descriptions, specifications, construction quality control reports, construction quality assurance reports and samples necessary or desirable for construction of the Project and/or the Utility Adjustments included in the Construction Work, in accordance with the DB Documents.

Construction Maintenance Limits Plan means the deliverable to identify the physical boundaries of Design-Build Team’s maintenance responsibilities for the Construction Work.

Construction Phase has the meaning set forth in Section 2.2.4 of the Technical Provisions.

Construction Phasing and Staging Plan has the meaning set forth in Section 2.2.4 of the Technical Provisions.

Construction Work means all portions of the Work necessary to build or construct, make, form, manufacture, furnish, install, supply, deliver or equip the Project and/or the Utility Adjustments. Construction Work includes landscaping.

Contract means any agreement, and any supplement or amendment thereto, by either (a) Design-Build Team with any other Person or Contractor, or (b) any Contractor with any Person or Subcontractor, to perform any part of the Work or provide any materials, equipment
or supplies for any part of the Work, or any such agreement, supplement or amendment at a lower tier, between a Subcontractor and its lower tier sub-subcontractor or supplier. The term “Contract” excludes Utility Agreements and any agreement with GDOT.

**Contract Item Agreement (CIA)** means an Agreement used for including Utility work in the Department’s project and performed by the Department’s Contractor awarded by competitive bid.

**Contract Sum** means the total contract sum to be paid to Design-Build Team on account of the fully and properly performed Work as set forth in the Agreement (preceding signatures under Article 24), as adjusted pursuant to Supplemental Agreements (including to reflect adjustments for Compensation Events or Change Orders as provided in the Agreement), including without limitation all of Design-Build Team’s profit, fees, financing costs and interest expense for Design-Build Team Debt, all costs of work and services, materials, equipment, supplies, general conditions costs, overhead and administrative expenses, professional fees and subconsultant costs, acquisition and other costs associated with acquisition of any Approved Properties, insurance and bond premiums, sales taxes, assessments, tariffs, permit, license and registration fees, and all other related costs and expenses.

**Contract Time** means the time period provided for Design-Build Team’s completion of the Work as provided in Article 3.3.1 of the Agreement.

**Contractor** means any Person, including any Subcontractor with whom Design-Build Team has entered into any Contract to perform any part of the Work or provide any materials, equipment or supplies for the Project and/or the Utility Adjustments included in the Construction Work, on behalf of Design-Build Team. The term “Contractor” excludes GDOT.

**Cost to Cure** means an appraisal method applied to estimate a proper adjustment for damages to a property that can be physically and economically corrected, as described in further detail in the GDOT ROW Manual.

**Critical Path** means the sequence of activities that must be completed on schedule for the entire Project to be completed in accordance with the Milestone Deadlines. This is the longest duration path through the work plan, in terms of time, of logically connected activities on the Baseline Project Schedule ending with the relative Milestone Deadline in respect thereof.

**Customer Groups** means groups, Persons and entities having a perceived stake or interest in the Project, including: the media, elected officials, Governmental Entities, general public residing or working within the general vicinity of the Project or traveling within or across the limits of the Project, business owners within or adjacent to the Project corridor, Utility Owners, railroads, transportation authorities and providers, community groups, local groups (neighborhood associations, business groups, chambers of commerce, convention and visitors bureaus, contractors, etc.) and other Persons or entities affected by the Project.

**Day** or **day** means calendar day unless otherwise expressly specified.

**DBE Commitments List** means Design-Build Team’s commitment for meeting the Disadvantaged Business Enterprises (DBE) participation goals set forth in Article 10.9.2 of the Agreement and Exhibit 14 to the Agreement.
Decent, Safe and Sanitary (DSS) means the condition of a dwelling such that it meets applicable housing and occupancy codes.

Default Interest Rate means the statutory interest rate applicable to GDOT for contract payment defaults.

Default Termination Event means each of the Design-Build Team Defaults listed in Article 19.3.1 of the Agreement.

Defect means any Work that does not otherwise conform with the DB Documents, or otherwise is a defect, whether by design, construction, installation, affecting the condition, use, functionality or operation of any portion of the Work which, ordinary wear and tear excepted, would cause or have the potential to cause one or more of the following:

(a) a hazard, nuisance or other risk to public or worker health or safety, including the health and safety of Users;

(b) a structural deterioration of the affected Element or any other part of the Project;

(c) damage to a third party’s property or equipment;

(d) damage to the Environment;

(e) failure of the affected Element or any other part of the Project to meet a Performance Requirement; or

(f) failure of an Element to meet the Target for a measurement record as set forth in the columns headed “Target” and “Measurement Record” in the Performance and Measurement Table Baseline.

Design-Build Agreement, DB Agreement, DBA - see definition for Agreement.

Design-Build Documents or DB Documents means those documents as set forth in Article 1.2 of the Agreement and all such other agreements entered into by GDOT and Design-Build Team or any Design-Build Team-Related Entity, or otherwise executed by Design-Build Team or a Design-Build Team-Related Entity and delivered to GDOT, with respect to or in connection with this Agreement, including without limitation Supplemental Agreements.

Design-Build Period means the period commencing with NTP 1 and ending when Design-Build Team achieves Final Acceptance.

Design-Build Team or DB Team means the party identified as such in the opening paragraph of this Agreement, together with its permitted successors and assigns.

Design-Build Team Default or DB Team Default has the meaning set forth in Article 17.1.1 of the Agreement.

Design-Build Team’s Interest or DB Team’s Interest means all right, title, and interest of Design-Build Team in, to, under or derived from the Agreement and the other DB Documents.
Design-Build Team Proposed/ Design-Build Team Acquired Right of Way means Additional Properties; see Section 7 of the Technical Provisions.

Design-Build Team-Related Entities or DB Team-Related Entities means (a) Design-Build Team, (b) Design-Build Team’s shareholders, partners, joint venture members and/or members, (c) the Contractor and all other Subcontractors (including Suppliers), (d) any other Persons performing any of the Work, (e) any other Persons for whom Design-Build Team may be legally or contractually responsible, and (f) the employees, agents, officers, directors, shareholders, representatives, consultants, successors and assign of any of the foregoing; provided, however, that GDOT shall not be considered Design-Build Team-Related Entities.

Design-Build Team Release(s) of Hazardous Material or DB Team Release(s) of Hazardous Material means (a) Release(s) of Hazardous Material, or the exacerbation of any such release(s), attributable to the culpable actions, culpable omissions, negligence, willful misconduct, or breach of applicable Law or contract by any Design-Build Team-Related Entity; (b) Release(s) of Hazardous Materials arranged to be brought onto the Site or elsewhere by any Design-Build Team-Related Entity; regardless of cause, or (c) use, containment, storage, management, handling, transport and disposal of any Hazardous Materials by any Design-Build Team-Related Entity in violation of the requirements of the DB Documents or any applicable Law or Governmental Approval.

Design-Build Team Vehicle or DB Team Vehicle means any vehicle authorized by Design-Build Team performing construction, maintenance or operation of the Project, or other related activity.

Design Deviation means any deviation from criteria defined in the GDOT Design Policy Manual as a "guideline". Failure to adhere to the “10 Controlling Criteria” mandated by FHWA and/or the GDOT Standard Design Criteria mandated by GDOT does not qualify as a Design Deviation.

Design Documents means all drawings (including plans, profiles, cross-sections, notes, elevations, typical sections, details and diagrams), specifications, reports, studies, calculations, electronic files, records and submittals necessary for, or related to, the design of the Project and/or the Utility Adjustments included in the Design Work and/or the Construction Work.

Design Speed means the speed used to determine the various geometric design features of the roadway.

Design Work means all Work of design, engineering or architecture for the Project or Utility Adjustments.

Deviation means any proposed or actual change, deviation, modification, alteration or exception from this Agreement, the Technical Provisions, Technical Documents or Governmental Approvals.

Directive Letter means the letter described in Article 13.1 of the Agreement.

Disadvantaged Business Enterprise or DBE has the meaning set forth 49 CFR 23 and further described in Attachment 6 to Exhibit 8 to the Agreement.
Discipline Groups has the meaning set forth in Section 3.3.7.10 of the Technical Provisions.

Discriminatory or Discriminatory Action means (a) materially more onerous application to Design-Build Team or the Project of changes or additions to Technical Provisions or Technical Documents than the application thereof to other Comparable Limited Access Highways, or (b) selective application of changes or additions to Technical Provisions or Technical Documents to Design-Build Team or the Project and not to other Comparable Limited Access Highways. Notwithstanding the foregoing, the following actions are not Discriminatory or Discriminatory Actions: (i) any such application in response to any act or omission by or on behalf of Design-Build Team in violation of Law or the DB Documents; (ii) Safety Compliance; (iii) any such application in response to a directive by the U.S. Department of Homeland Security or comparable State agency, unless such directive is directed solely at or solely affects the Project and such application requires specific changes in Design-Build Team’s normal design, construction, operation or maintenance procedures in order to comply; and (iv) any other actions necessary to address potential safety concerns arising from a specific condition or feature peculiar to the Project.

Dispute means any claim, dispute, disagreement or controversy between GDOT and Design-Build Team concerning their respective rights and obligations under the DB Documents, including concerning any alleged breach or failure to perform and remedies.

Dispute Resolution Procedures means the procedures for resolving Disputes set forth in Article 17.7 of the Agreement.

Early Adjustment means a Utility identified as such in Section 6 of the Technical Provisions.

Early Portions of the Work means those usable portions of the Project, which should be opened so that they are contiguous; each of which must be completed within the Interim Completion Deadline identified in Exhibit 9 to the Agreement.

Early Termination Date means the effective date of termination of the Agreement for any reason prior to the stated expiration Final Acceptance Deadline, as specified in the relevant provisions of Article 19.

Effective Date means the date of the Agreement or such other date as shall be mutually agreed upon in writing by GDOT and Design-Build Team.

Element means an individual component, system or subsystem of the Work.

Emergency means an unforeseen event affecting the Project whether directly or indirectly which (a) causes or has the potential to cause disruption to the free flow of traffic on the Project or a threat to the safety of the public; (b) is an immediate or imminent threat to the long term integrity of any part of the infrastructure of the Project, to the Environment, to property adjacent to the Project or to the safety of Users or the traveling public; or (c) is recognized by the Georgia Department of Public Safety as an emergency.

Engineer of Record means a Professional Engineer as defined in this Exhibit 1 on the Design-Build Team who is responsible and liable for the adequacy and safety of the design.
This individual will sign and seal the Released for Construction plans, as well as revisions on construction and shop drawings.

**Environment** means air, soils, surface waters, groundwater, land, stream sediments, surface or subsurface strata, biological resources, including endangered, threatened and sensitive species, natural systems, including ecosystems, and historic, archeological and paleontological resources.

**Environmental Approvals (also Environmental Document Approvals)** means all Governmental Approvals arising from or required by any Environmental Law in connection with development of the Project, including approvals and permits required under NEPA/GEPA.

**Environmental Commitment (also Environmental Permits, Issues and Commitments)** means an environmental requirement that must be fulfilled before, during or after construction. Environmental Commitments include commitments to avoid impacts in specified areas, complete environmental investigations before construction impacts, or to perform specified actions after completion of construction.

**Environmental Documents** means all required documents and submittals pertaining to either federal or state laws and permits which are necessary to complete the Project. This may include but not be limited to NEPA, GEPA, and/or other state and federal environmental laws.

**Environmental Law** means any Law applicable to the Project or the Work regulating or imposing liability or standards of conduct that pertains to the Environment, Hazardous Materials, contamination of any type whatsoever, or environmental health and safety matters, and any lawful requirements and standards that pertain to the Environment, Hazardous Materials, contamination of any type whatsoever, or environmental health and safety matters, set forth in any permits, licenses, approvals, plans, rules, regulations or ordinances adopted, or other criteria and guidelines promulgated, pursuant to Laws applicable to the Project or the Work, as such have been or are amended, modified, or supplemented from time to time (including any present and future amendments thereto and reauthorizations thereof) including those relating to:

(a) The manufacture, processing, use, distribution, existence, treatment, storage, disposal, generation, and transportation of Hazardous Materials;

(b) Air, soil, surface and subsurface strata, stream sediments, surface water, and groundwater;

(c) Releases of Hazardous Materials;

(d) Protection of wildlife, Threatened or Endangered Species, sensitive species, wetlands, water courses and water bodies, historical, archeological, and paleontological resources, vegetative buffers, and natural resources;

(e) The operation and closure of underground storage tanks;

(f) and safety of employees and other persons; and

(g) Notification, documentation, and record keeping requirements relating to the foregoing.
Without limiting the above, the term “Environmental Laws” shall also include the following:

(i) The National Environmental Policy Act (42 U.S.C. §§ 4321 et seq.), as amended;

(ii) The Georgia Environmental Policy Act (Section 12-16-1, et seq. of the Official Code of Georgia Annotated), as amended;

(iii) State species laws, including Georgia Endangered Wildlife Act and/or, Georgia Wildflower Preservation Act;


(v) The Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (42 U.S.C. §§ 6901 et seq.);


(vii) The Clean Air Act (42 U.S.C. §§ 7401 et seq.), as amended;

(viii) The Federal Water Pollution Control Act, as amended by the Clean Water Act (33 U.S.C. §§ 1251 et seq.);


(xii) The Oil Pollution Act (33 U.S.C. §§ 2701, et seq.), as amended;


(xv) The Federal Radon and Indoor Air Quality Research Act (42 U.S.C. §§ 7401 et seq.); as amended;

(xvi) The Occupational Safety and Health Act (29 U.S.C. §§ 651 et seq.);


(xviii) The Fish and Wildlife Coordination Act (16 U.S.C. §§ 661 et seq.), as amended;


(xx) The Coastal Zone Management Act (33 U.S.C. §§ 1451 et seq.), as amended;
(xxi) Georgia Water Quality Act (O.C.G.A. § 12-5-20);

(xxii) Georgia Erosion and Sedimentation Act (O.C.G.A. § 12-7-1), as amended;

(xxiii) Best Management Practices (O.C.G.A. § 12-7-6(b)(15)); and

(xxiv) Georgia Underground Storage Act (O.C.G.A. § 12-13-1)).

**Evaluation Score** means the numerical score resulting from the adjectival evaluation and numerical conversion of a particular portion of the Proposals.

**Exhibits** means all exhibits, riders, and other attachments to the DB Documents, including without limitation Volume 1 and Volume 2, as well as, any of the aforementioned, which are incorporated into any DB Documents by reference, and all amendments, modifications, and supplements thereto.

**Existing Improvements** means the existing highway, bridge, and related improvements as of the date that are in effect at the date of the RFP advertisement within the Construction Maintenance Limits.

**Existing Right of Way** or **Existing ROW** means any real property (which term is inclusive of all estates and interests in real property), improvements and fixtures (i) as provided in Article 2.2 of the Agreement and more specifically described and identified as “Existing ROW” within Exhibit 4, in which GDOT has a leasehold estate and interest pursuant to the Estate for Years or other property right or interest, and (ii) any Proposed Right of Way, which GDOT at any time after the Effective Date, shall acquire a leasehold estate or other property interest. The term specifically includes all air space, surface rights and subsurface rights within the limits of the Existing Right of Way.

**Existing Utility Property Interest** means any right, title or interest in real property (e.g., a fee or an easement) claimed by a Utility Owner as the source of its right to maintain an existing Utility in such real property, which is compensable in eminent domain.

**Federal Requirements** means the provisions required to be part of federal-aid construction contracts, including the provisions set forth in Exhibit 8 to the Agreement.

**Final Acceptance** means the occurrence of all the events and satisfaction of all the conditions set forth in Article 7.7.2 of the Agreement, as and when confirmed by GDOT’s issuance of a certificate in accordance with the procedures and within the timeframe established in Article 7.7.2 of the Agreement.

**Final Acceptance Date** means the date upon which Design-Build Team has satisfied all conditions of and for Final Acceptance and GDOT has certified same.

**Final Acceptance Deadline** means the deadline for achieving Final Acceptance, as set forth in Exhibit 9, as such deadline may be extended for any Relief Event or Change Order as and to extend provided in the Agreement.

**Final Design** shall have the meaning set forth in Article 3.3.1.2 of the Agreement.
**Final Plans** means the Design Documents which provide the complete and final documents necessary for the construction, operations, and maintenance of the Project or any portion thereof including any Utility Adjustments required by the Project.

**Final ROW Lines** means the final location of all Right of Way within the project limits.

**Fiscal Year** means the 12 month fiscal year used by GDOT for budgeting purposes.

**Float** means the amount of time that any given activity or logically connected sequence of activities shown on the Project Schedule, as the case may be, may be delayed before it will affect completion of any Work as required to achieve any Milestone Deadlines, including the Substantial Completion Deadline and Final Acceptance Deadline.

**Force Majeure Event** means the occurrence of any of the following events that materially and adversely affects performance of Design-Build Team’s obligations, provided that such events (or the effects of such events) could not have been avoided by the exercise of caution, due diligence, or reasonable efforts by Design-Build Team: (a) war (including civil war and revolution), invasion, armed conflict, violent act of foreign enemy, military or armed blockade, or military or armed takeover of the Project, in each case occurring within the State; (b) any act of terrorism or sabotage that causes direct physical damage to the Project; (c) nuclear explosion or contamination, in each case occurring within the State; (d) riot and civil commotion on or in the immediate vicinity of the Project; (e) fire, explosion, flood, earthquake, hurricane, or tornado, in each case that causes direct physical damage to the Project; or (f) national or statewide (i.e., State of Georgia) strike that has a direct adverse impact on Design-Build Team’s ability to obtain materials, equipment or labor for the Project.

**Formal Consultation** means during Section 7 Consultation (Endangered Species Act) that a Federal agency determines, through a biological assessment or other review, that its action is likely to adversely affect a listed species.

**GDOT** means the Georgia Department of Transportation, as set forth in the recitals of the Agreement, and any entity succeeding to the powers, authorities and responsibilities of GDOT invoked by or under the DB Documents.

**GDOT-Caused Delay** means any of the following events, to the extent they result in a material delay or interruption in performance of any material obligation under the Agreement, and provided such events are beyond Design-Build Team’s control and are not due to any act, omission, negligence, recklessness, willful misconduct, breach of contract or Law of any of the Design-Build Team-Related Entities, solely to the extent not concurrent or overlapping with any delay attributable to Design-Build Team, and further provided that such events (or the effects of such events) could not have been avoided by the exercise of caution, due diligence, or reasonable efforts by Design-Build Team, and with respect to any Compensation Event, solely to the extent that the cumulative effect of any such delays as set forth below have or shall result in delays, after taking into account any available Float, in excess of 90 days:

(a) Failure of GDOT to issue NTP 1 as provided pursuant to Article 3.3.1.1 of the Agreement and/or failure to issue NTP 2 or NTP 3 as provided pursuant to Article 3.3.1.2 and Article 3.3.1.3 of the Agreement;

(b) GDOT Changes;
(c) Failure of GDOT to provide the GDOT-Provided Approvals within the time periods set forth in Section 4.3.2 of the Technical Provisions, subject to Article 6.2.1 of the Agreement; or

(d) Failure of GDOT to provide responses to proposed schedules, plans, Design Documents, condemnation and acquisition packages, and other Submittals and matters submitted to GDOT after the Effective Date for which response is required under the DB Documents as an express prerequisite to Design-Build Team’s right to proceed or act, within the time periods (if any) indicated in the DB Documents, or if no time period is indicated, within a reasonable time, taking into consideration the nature, importance and complexity of the submittal or matter, following delivery of written notice from Design-Build Team requesting such action in accordance with the terms and requirements of the DB Documents;

(e) Failure of GDOT to provide Design-Build Team with access to the Right of Way as required; or


Any proper suspension of Work pursuant to Article 17.3.7 of the Agreement shall not be considered a GDOT-Caused Delay.

**GDOT Change** means:

(a) Any change in the scope of the Work or terms and conditions of the Technical Provisions or Technical Documents (including changes in the standards applicable to the Work) that GDOT has directed Design-Build Team to perform through a Supplemental Agreement as described in Article 13 of the Agreement or a Directive Letter pursuant to Article 13.1 of the Agreement; and

(b) Any other event that the DB Documents expressly state shall be treated as a GDOT Change.

**GDOT Claims Account** means the designated account for the benefit of GDOT and Design-Build Team to be administered and maintained by GDOT for payments on account of claims as required by GDOT pursuant to Article 17.3.4 of the Agreement.

**GDOT Default** has the meaning set forth in Article 17.5.1 of the Agreement.

**GDOT Recoverable Costs** means:

(a) The costs of any assistance, action, activity or Work undertaken by GDOT which Design-Build Team is liable for or is to reimburse under the terms of the DB Documents, including the charges of third-party contractors, and reasonably allocated wages, salaries, compensation and overhead of GDOT staff and employees, performing such action, activity or Work (exclusive of ordinary and customary administration and review activities by GDOT employees or consultants, except for such consultant fees and expenses as expressly reserved in the Agreement); plus

(b) Third-party costs GDOT incurs to publicly procure any such third-party contractors; plus
(c) Reasonable fees and costs of attorneys (including the reasonably allocable fees and costs of the Georgia Attorney General’s Office), financial advisors, engineers, architects, insurance brokers and advisors, investigators, traffic and revenue consultants, risk management consultants, other consultants, and expert witnesses, as well as court costs and other litigation costs, in connection with any such assistance, action, activity or Work, including in connection with defending claims by and resolving disputes with third-party contractors; plus

(d) Any expense or cost for which GDOT is to be reimbursed by Design-Build Team pursuant to the express terms of the Agreement; plus

(e) Interest on all the foregoing sums at the Default Interest Rate from the date due under the applicable terms of the DB Documents and continuing until paid.

**GDOT Re-evaluation Period (Re-evaluation Period)** means the specified amount of time set forth as a condition in an approved ATC for GDOT to obtain the applicable Governmental Approval required for a re-evaluation of the NEPA/GEPA Approval, prior to Design-Build Team being entitled to a Relief Event or Compensation Event; provided, however, that such time shall commence upon the date that GDOT has received a full and complete document package from Design-Build Team required for GDOT to process such re-evaluation.

**GDOT Release(s) of Hazardous Materials** means, except as provided below, the introduction in, on or under the Construction Maintenance Limits or Operation and Maintenance Limits of Hazardous Material directly by GDOT, and their respective agents and contractors (excluding Design-Build Team). GDOT Release(s) of Hazardous Material excludes, however, (i) any Hazardous Materials so introduced that are in or part of construction materials and equipment incorporated into the Project and (ii) any Hazardous Materials identified in the phase 1 investigation and report described in clause (i) of the definition of Pre-Existing Hazardous Materials.

**GDOT Standard Specifications** means the Georgia Department of Transportation Standard Specifications, Construction of Transportation Systems, current edition and all supplements thereto.

**General Purpose Lanes** means Limited Access Highway lanes within the Existing Right of Way other than the Managed Lanes.

**Geotechnical Engineering Reports** means the reports which meet the requirements described in Section 8.3 of the Technical Provisions.

**GEPA** means the Georgia Environmental Policy Act, as amended and as it may be amended from time to time.

**GEPA Approval** means the (a) GEPA document as approved by GDOT including any studies, reports, Environmental Commitments, and all other procedural requirements and documents required for the Project or a portion of the Project, as (b) may be modified pursuant to all Georgia EPD, USACE, USFWS approvals, and approved supplements and re-evaluations pertaining to the Project.

**Good Industry Practice** means the exercise of the degree of skill, diligence, prudence and foresight which would reasonably and ordinarily be expected from time to time from a skilled and experienced designer, engineer, or constructor, seeking in good faith to comply with
its contractual obligations, complying with the DB Documents, all applicable Laws and
Governmental Approvals, and engaged in the same type of undertaking in the United States
under similar circumstances and conditions.

**Governmental Approval** means any permit, license, consent, concession, grant,
franchise, authorization, waiver, variance or other approval, guidance, protocol, mitigation
agreement, special provision, or memoranda of agreement/understanding, and any amendment
or modification of any of them provided by Governmental Entities including State, local, or
federal regulatory agencies, agents, or employees, which authorize or pertain to the Project or
the Work.

**Governmental Entity** means any federal, State or local government and any political
subdivision or any governmental, quasi-governmental, judicial, public or statutory
instrumentality, administrative agency, authority, body or entity other than GDOT.

**Guarantor** means any Person that is the obligor under any guaranty in favor of GDOT
required under the Agreement, including any Design-Build Guaranty.

**Hazardous Materials** means any element, chemical, compound, material or substance,
whether solid, liquid or gaseous, which at any time is defined, listed, classified or otherwise
regulated in any way under any Environmental Laws, or any other such substances or
conditions (including mold and other mycotoxins or fungi) which may create any unsafe or
hazardous condition or pose any threat to human health and safety. “Hazardous Materials”
includes the following:

(a) Hazardous wastes, hazardous material, hazardous substances, hazardous
constituents, and toxic substances or related materials, whether solid, liquid, or gas, including
substances defined as or included in the definition of “hazardous substance”, “hazardous
waste”, “hazardous material”, “extremely hazardous waste”, “acutely hazardous waste”,
“contaminant”, “restricted hazardous waste”, “infectious waste”, “toxic substance”, “toxic waste”,
“toxic material”, or any other term or expression intended to define, list or classify substances by
reason of properties harmful to health, safety or the indoor or outdoor environment (including
harmful properties such as ignitability, corrosivity, reactivity, carcinogenicity, toxicity,
reproductive toxicity, “TCLP” toxicity” or “EP toxicity” or words of similar import under any
applicable Environmental Laws);

(b) Any petroleum, including crude oil and any fraction thereof, and including any
refined petroleum product or any additive thereto or fraction thereof or other petroleum derived
substance; and any waste oil or waste petroleum byproduct or fraction thereof or additive
thereof;

(c) Any drilling fluids, produced waters and other wastes associated with the
exploration, development or production of crude oil, natural gas or geothermal resources;

(d) Any flammable substances or explosives;

(e) Any radioactive materials;

(f) Any asbestos or asbestos-containing materials;
(g) Any lead and lead-based paint;
(h) Any radon or radon gas;
(i) Any methane gas or similar gaseous materials;
(j) Any urea formaldehyde foam insulation;
(k) Electrical equipment which contains any oil or dielectric fluid containing regulated levels of polychlorinated biphenyls;
(l) Pesticides;
(m) Any other chemical, material or substance, exposure to which is prohibited, limited or regulated by any Governmental Entity or which may or could pose a hazard to the health and safety of the owners, operators, Users or any Persons in the vicinity of the Project or to the indoor or outdoor Environment; and
(n) Soil, or surface water or ground water, contaminated with Hazardous Materials as defined above.

**Hazardous Materials Management** means procedures, practices and activities to address and comply with Environmental Laws and Environmental Approvals with respect to Hazardous Materials encountered, impacted, caused by or occurring in connection with the Project or the Work, as well as investigation and remediation of such Hazardous Materials. Hazardous Materials Management may include sampling, stock-piling, storage, backfilling in place, asphalt batching, recycling, treatment, clean-up, remediation, transportation and/or off-site disposal of Hazardous Materials, whichever approach is effective, most cost-efficient and authorized under applicable Law.

**Highway** means a travel way for vehicular traffic that is included in the State or federal highway system.

**Highway Service Systems** means GDOT’s or a Governmental Entity’s lighting and electrical systems, traffic control systems, communications systems and irrigation systems serving street or highway purposes (including ITS and Intelligent Vehicle Highway System facilities).

**Historic Property** means any prehistoric or historic district, site, building, structure or object included in, or eligible for inclusion in, either the National Register of Historic Places or the Georgia Register of Historic Places.

**Immigration Act** means the Georgia Immigration & Compliance Act, O.C.G.A. § 13-10-90, et seq. as set forth in Article 10.6.4 of the Agreement.

**Incident** means any unplanned event during the course of construction.

**Incident Management Plan** means Design-Build Team’s plan for detection and response to Incidents or Emergencies, as part of the PMP.
**Indemnified Parties** means GDOT, the State, the State Transportation Board, and their respective successors, assigns, officeholders, officers, directors, commissioners, agents, representatives, consultants and employees. Indemnified Party shall mean any of the aforementioned.

**Informal Consultation** means during Section 7 Consultation (Endangered Species Act) that a Federal agency determines that its action may affect a listed species.

**Instructions to Proposers (ITP)** means the document that provides instructions to be followed by Proposers in their responses to the RFP.

**Insurance Policies** means all of the insurance policies Design-Build Team is required to carry pursuant to Article 16.1 of the Agreement.

**Intellectual Property** means all current and future legal and/or equitable rights and interests in know-how, patents (including applications), copyrights (including moral rights), trademarks (registered and unregistered), service marks, trade secrets, designs (registered and unregistered), utility models, circuit layouts, plant varieties, business and domain names, inventions, solutions embodied in technology, and other intellectual activity, and applications of or for any of the foregoing, subsisting in or relating to the Project, Project design data or Project traffic data. Intellectual Property includes toll-setting and traffic management algorithms, and software used in connection with the Project (including but not limited to software used for management of traffic on the Project), and Source Code. Intellectual Property also includes the trade secret information contained in proprietary pricing information. Intellectual Property is distinguished from physical construction and equipment itself and from drawings, plans, specifications, layouts, depictions, manuals and other documentation that disclose Intellectual Property.

**Intelligent Transportation System (ITS)** has the meaning set forth in Section 17 of the Technical Provisions.

**Intelligent Vehicle Highway System (IVHS)** means smart vehicle and smart highway technologies to improve the safety, efficiency and environmental impact of highway facilities.

**Interim Completion** means satisfaction of the criteria for opening an Early Portion of the Work so that it is safe to open to the traveling public.

**Interim Completion Date** means the date upon which Design-Build Team has satisfied all conditions for opening an Early Portion of the Work so that it is safe to open to the traveling public.

**Interim Completion Deadline** means the deadline and required date for each of the Early Portions of the Work Interim Completion Deadlines are set forth in the Milestone Deadlines shown on Exhibit 9 to the Agreement, as such deadline(s) may be extended for Relief Events pursuant to the Agreement.

**Interim Design** means any submittal of Design Documents after the Preliminary Plans have been accepted but prior to submittal of Final Plans for the entire Project or any approved Project segment. Interim Designs are intended to resolve conflicts and unresolved comments from the Preliminary Plans submittal.
Joint Project Inspection has the meaning set forth in Section 19.3.2 of the Technical Provisions.

Key Contract means any one of the following Contracts for Work that Design-Build Team or Design-Build Team’s Contractor’s causes to be performed:

(a) All prime construction Contracts;

(b) All project or program management services, architectural design, or engineering Contracts; and

(c) All other Contracts with a single Contractor or Subcontractor which individually or in the aggregate total in excess of $25 million.

Key Contractor means any Contractor or Subcontractor, as the case may be, under any Key Contract.

Key Personnel or Key Team Members means those individuals appointed by Design-Build Team and approved by GDOT from time to time to fill the “Key Personnel” positions. The specific individuals appointed by Design-Build Team and approved by GDOT to initially fill certain of the Key Personnel positions are identified in Exhibit 2 to the Agreement.

Landscape Enhancement Plan has the meaning set forth in Section 15.3.1 of the Technical Provisions.

Law or Laws means (a) any statute, law, code, regulation, ordinance, rule or common law, (b) any binding judgment (other than regarding a Dispute), (c) any binding judicial or administrative order or decree (other than regarding a Dispute), (d) any written directive, guideline, policy requirement or other governmental restriction (including those resulting from the initiative or referendum process, but excluding those by GDOT within the scope of its administration of the DB Documents or in the normal course of its adoption of new or revised technical standards pursuant to Article 7.2.5 of the Agreement) or (e) any similar form of decision of or determination by, or any written interpretation or administration of any of the foregoing by, any Governmental Entity, in each case which is applicable to or has an impact on the Project or the Work, whether taking effect before or after the Effective Date, including Environmental Laws. “Laws”, however, excludes Governmental Approvals.

Lead Contractor shall mean the entity designated as a Proposer’s “Lead Contractor” in its SOQ. There may only be one Lead Contractor per Proposer team.

Lead Engineering Firm shall mean the entity designated as a Proposer’s “Lead Engineering Firm” in its SOQ. There may only be one Lead Engineering Firm per Proposer team.

Line or line means, in the context of Utilities or Highway Service Systems, a line, pipeline, conduit or cable used for utility purposes, including underground, surface or overhead facilities.

Liquidated Damages means such liquidated damages as may accrue and be due and payable by Design-Build Team to GDOT as set forth under Article 17.4 of the Agreement and as set forth under Exhibit 18 thereto.
Loss or Losses means any loss, damage, injury, liability, obligation, cost, response cost, expense (including attorneys’, accountants’ and expert witnesses’ fees and expenses (including those incurred in connection with the enforcement of any indemnity or other provision of the Agreement)), fee, charge, judgment, penalty or fine. Losses include injury to or death of persons, damage or loss of property, and harm or damage to natural resources.

Major Culvert means a culvert that provides an opening of more than 35 square feet in a single or multiple installations. A Major Culvert may consist of a single round pipe, pipe arch, open or closed-bottom box, bottomless arch, or multiple installations of these structures placed adjacent or contiguous as a unit. Certain Major Culverts are classified as bridges when they provide an opening of more than 20 feet, measured parallel to the roadway; such culverts may be included in the bridge inventory.

Major Non-Participating Member means a Proposer’s Lead Contractor and Lead Engineering Firm. If any of these entities qualify as a Participating Member, then that entity shall not be treated as a Major Non-Participating Member. Major Non-Participating Members are not considered Contractors to Proposer regardless of their role in the performance of Project-related services.

Major River Crossing means a crossing with a 100-year storm event flow in excess of 10,000 cubic feet per second (cfs).

Management Plans means all of the management plans identified in Section 2 of the Technical Provisions.

Memorandum of Understanding (MOU) means a formal agreement between GDOT and one or more agencies, organizations or providers.

Milestone Deadline shall have the same meaning as Completion Deadline.

Minor Culvert means any culvert not classified as a Major Culvert.

Mobilization means Work performed to establish and remove (demobilization) offices, plants, and facilities; and to move personnel, equipment, and supplies to and from the Project site to begin Construction Work or complete Construction Work.

NaviGAtor Contractor means that certain Separate Contractor engaged by GDOT to provide the NaviGAtor System to be included and integrated into the ITS to be incorporated into the Project, if such system is identified in Section 17 of the Technical Provisions to be incorporated into the Project.

NaviGAtor System means the “NaviGAtor” advanced transportation management system to be included as a part of the ITS as set forth pursuant to Section 17.1.3 of the Technical Provisions.

NaviGAtor Work means the work to be provided by the NaviGAtor Contractor, coordinated with the Work, for completion of the NaviGAtor System for the Project.

NEPA means the National Environmental Policy Act, 42 U.S.C. § 4321 et seq., as amended and as it may be amended from time to time.
NEPA Approval means the (a) NEPA document as approved by FHWA including any studies, reports, Environmental Commitments, and all other procedural requirements and documents required for FHWA approval for the Project or a portion of the Project, as (b) may be modified pursuant to all approved supplements and re-evaluations pertaining to the Project.

NEPA Finality Date means the date NEPA Approval becomes final and non-appealable and the federal statute of limitations for commencing legal action to challenge the validity of any NEPA Approval has expired.

Nonconforming Work means Work that does not conform to the requirements of the DB Documents, the Governmental Approvals, applicable Law or the Design Documents.

Nonrefundable Deductions means such nonrefundable deductions as may accrue and be due and payable by Design-Build Team to GDOT as set forth under Article 17.4 of the Agreement and as set forth under Exhibit 18 thereto.

Notice of Award means formal acceptance of the Apparent Successful Proposer.

Notice of Termination for Convenience means written notice issued by GDOT to Design-Build Team terminating the Agreement in whole or in part for convenience.

NTP means a written notice issued by GDOT to Design-Build Team authorizing Design-Build Team to proceed with the portion or phase of the Work as being designated as subject to such notice to proceed in the Proposal Schedule, Project Schedule, or otherwise in the Agreement Documents, including without limitation NTP 1, NTP 2, and NTP 3.

NTP 1 means a written notice issued by GDOT to Design-Build Team authorizing Design-Build Team to proceed with the portion of the Work described in Article 3.3.1.1 of the Agreement.

NTP 1 Conditions Deadline means the outside date set forth in the Milestone Deadlines (or the Baseline Project Schedule as to the extent such outside date is adjusted thereby) by which Design-Build Team is obligated under the Agreement to satisfy all conditions to issuance of NTP 1, as such deadline may be extended for Relief Events from time to time pursuant to the Agreement.

NTP 2 means a written notice issued by GDOT to Design-Build Team authorizing Design-Build Team to proceed with the portion of the Work described in Article 3.3.1.2 of the Agreement.

NTP 2 Conditions Deadline means the outside date set forth in the Milestone Deadlines (or the Baseline Project Schedule as to the extent such outside date is adjusted thereby) by which Design-Build Team is obligated under the Agreement to satisfy all conditions to issuance of NTP 2, as such deadline may be extended for Relief Events from time to time pursuant to the Agreement.

NTP 3 means a written notice issued by GDOT to Design-Build Team pursuant to Article 3.3.1.3 of the Agreement authorizing Design-Build Team to proceed with the remaining Work and other activities pertaining to the Project.
NTP 3 Conditions Deadline means the outside date set forth in the Milestone Deadlines (or the Baseline Project Schedule as to the extent such outside date is adjusted thereby) by which Design-Build Team is obligated under the Agreement to satisfy all conditions to issuance of NTP 3, as such deadline may be extended for Relief Events from time to time pursuant to the Agreement.

Open Book Basis means allowing the relevant Party to review all underlying assumptions and data associated with the issue in question, including, but not limited to, assumptions as to costs of the Work, schedule, composition of equipment spreads, equipment rates, labor rates, productivity, estimating factors, design and productivity allowance, contingency and indirect costs, risk pricing, discount rates, interest rates, inflation and deflation rates, and other items reasonably required by the relevant Party.


Optical Character Recognition (OCR) means the process of converting an image to text.

P&P Bonds or Performance and Payment Bonds means the bonds meeting the requirements of Article 16.2.1 of the Agreement.

P&P Obligor means the Person identified as the obligor or account party in the P&P Bonds, as applicable.

Participating Agency means a public, quasi-public, or private agency that has agreed to cooperate with and assist Design-Build Team during an Emergency.

Participating Member means (a) if the Proposer is a joint venture, partnership, or limited liability company, each member of the joint venture, partnership or limited liability company; or (b) if the Proposer is a corporation or other corporate entity, the Proposer.

Party means Design-Build Team or GDOT, as the context may require, and “Parties” means Design-Build Team and GDOT, collectively.

Payment Activity shall have the meaning set forth in Section 2.6 of the Technical Provisions.

Payment for Work Product means the Stipulated Fee to be paid to unsuccessful responsive Proposers for their Work Product as described in Form N to the ITP.

Payment Request means the request for payment on account of the Work all in accordance with Section 2.6 of the Technical Provisions, and with the terms and conditions set forth in GDOT Standard Specification 109.03.

Permanent Works are permanent structures and parts thereof required of the completed DB Documents.
**Person** means any individual, corporation, joint venture, limited liability company, company, voluntary association, partnership, trust, unincorporated organization, Governmental Entity, or GDOT.

**Phase 1 Hazardous Materials Investigation** means an environmental assessment conducted in accordance with the DB Documents and ASTM E-1527-05, or any future revision or replacement thereof, to identify Recognized Environmental Conditions and potential Recognized Environmental Conditions.

**Plans** means (only where capitalized) contract drawings, working drawings, supplemental drawings, detail sheets or exact reproductions thereof, which show the location, character, dimensions and details of the Construction Work to be done.

**Pre-existing Hazardous Materials** means Hazardous Materials that meet all the following criteria:

(a) The Hazardous Materials are in, on or under the Right of Way as of the date GDOT makes available to Design-Build Team the affected parcel; or

(b) The Hazardous Materials are not located in, on or under any Project Specific Locations or Additional Properties, except Additional Properties required due to GDOT Changes (including GDOT Changes regarding the initial construction).

For purposes of determining whether Hazardous Materials were in, on or under the Right of Way or any Additional Properties required by GDOT to be included in the Property as a result of GDOT Changes, as of the date on which GDOT makes available to Design-Build Team the affected parcel, Design-Build Team shall have the burden of proof to demonstrate it was not a Design-Build Team Release of Hazardous Materials:

(i) As to any Hazardous Materials not identified as being present as of such date in the Phase 1 investigations of the Project conducted by GDOT prior to the Effective Date or any Phase 1 Hazardous Materials Investigation or Phase 2 Hazardous Materials Investigation supplementing the foregoing report prepared prior to the Effective Date; and

(ii) As to any Additional Properties required by GDOT to be included in the Property as a result of GDOT Changes, any Phase 1 Hazardous Materials Investigation thereof prepared and delivered prior to the Effective Date.

For the purpose of this definition, “makes available” means:

(i) The Effective Date, except for parcels not yet acquired as of the Effective Date; and

(ii) As to parcels not yet acquired as of the Effective Date and as to Additional Properties required by GDOT to be included in the Property as a result of GDOT Changes, the date Design-Build Team first receives the right to take and maintain possession of the parcel for all purposes for the remainder of the Term in accordance with the DB Documents, including commencement of construction, as the result of GDOT’s having secured title or right of possession by contract or title instrument or by a special commissioners’ award through the eminent domain process or otherwise.
**Preliminary Plans** means the Design Documents which provide the preliminary design necessary for the related to construction, operations, and maintenance of the entire Project including any Utility Adjustments required by the Project.

**Presidential Disaster Declaration** means a declaration of a major disaster by the President of the United States triggering assistance from FEMA pursuant to the Disaster Relief Act of 1974 (Pub.L. No. 93-288, as amended).

**Price Proposal** means the price component of the Proposal evaluation as described in the ITP.

**Price Proposal Score** means the score calculated in accordance with the Price Proposal formula as described in the ITP.

**Principal Project Documents** means the Security Instruments and the Design-Build Contract.

**Professional Engineer** means a person who is duly licensed and registered by the Georgia State Board of Registration for Professional Engineers and Land Surveyors to engage in the practice of engineering in the State of Georgia.

**Professional Land Surveyor** means a person registered by the Georgia State Board of Registration for Professional Engineers and Land Surveyors to practice the profession of land, boundary, or property surveying or other similar professional practices.

**Project** means the Project as defined in the RFP, that is the subject of this Agreement, and which shall include the transportation facilities and all related structures, and improvements, including integration of the ITS, and communications systems used in connection with operation of such transportation facilities, to be designed and constructed pursuant to the terms of the DB Documents.

**Project Extension** means a linear addition to the original Project by Design-Build Team, including any at either terminus of the original Project and any linear improvement that interconnects with the original Project.

**Project Information Contact** means the person designated by Design-Build Team to manage Design-Build Team’s public information activities as more particularly described in Section 2.2.3 of the Technical Provisions.

**Project Manager** means the individual designated by Design-Build Team and approved in writing by GDOT in the position to take full responsibility for the prosecution of the Work and will act as a single point of contact on all matters on behalf of Design-Build Team.

**Project Schedule** shall have the meaning set forth in Section 2.5 of the Technical Provisions.

**Project Schedule Narrative** shall have the meaning set forth in Section 2.5 of the Technical Provisions.

**Project Specific Locations** means any additional temporary property interests or rights, other than ROW or Additional Properties, which are not contiguous to the Property, that Design-
Build Team may require for performance of the Work, including for temporary activities in connection with the Construction Work, such as construction work sites, temporary work areas, staging areas, storage areas, and earthwork material borrow sites.

**Project Schedule Update** shall have the meaning set forth in Section 2.5 of the Technical Provisions.

**Property** has the meaning set forth in Article 2.2.1 of the Agreement and shall include only such property as identified in the Environmental Document Approval.

**Proposal** means the complete response to the RFP which may include, but is not limited to the Proposer's Administrative Information Submittals, Technical Proposal for the Project, and Price Proposal for the Project.

**Proposal Bond** means the security that Proposers submit to GDOT with their Proposals.

**Proposal Due Date** means the deadline for submission of the Proposal to GDOT as defined in the ITP Section 1.4.

**Proposal Revisions** has the meaning set forth in Section 5.4 of the ITP.

**Proposal Schedule** means the high level, logic based, critical path schedule representing Design-Build Team’s plan to complete performance of the Work beginning on the date of NTP 1 to Final Acceptance of the Work, submitted with the Proposal.

**Proposed Right of Way or Proposed ROW** means the State Proposed/DB Team Acquired Right of Way and the State Proposed/State Acquired Right of Way.

**Proposed Supplemental Agreement** has the meaning set forth in Article 13 of the Agreement.

**Proposer** or **Proposers** has the meaning set forth in Section 1.1 in the ITP.

**Proprietary Intellectual Property** means Intellectual Property created, used, applied or reduced to practice in connection with the Project or the Work that derives commercial value from its protection as a trade secret under applicable Law or from its protection under patent law.

**Protection in Place** means any action taken to avoid damaging a Utility which does not involve removing or relocating that Utility, including staking the location of a Utility, exposing the Utility, avoidance of a Utility’s location by construction equipment, installing steel plating or concrete slabs, encasement in concrete, temporarily de-energizing power lines, and installing physical barriers. The term includes both temporary measures and permanent installations meeting the foregoing definition.

**Provided Approvals** means the Governmental Approvals for the Project obtained or to be obtained by GDOT, as specifically listed in Section 4.3 of the Technical Provisions (including any such approvals as may be required from GDOT independent of GDOT’s Project administration pursuant to Article 6.2 of the Agreement).
Public Information and Communications Plan (PICP) has the meaning set forth in Section 2.2.3 of the Technical Provisions.

Punch List means an itemized list of Construction Work that remains to be completed following Substantial Completion but as a condition to Final Acceptance, provided that the nature of any such incomplete Work, and the correction and completion of same, will have no material or adverse effect on the normal and safe use and operation of the Project.

Punch List Period means the time provided for Design-Build Team’s completion of Punch List Work, which shall be the time between Substantial Completion and Final Acceptance as provided in the Project Schedule.

QA means quality assurance.

QA/QC means quality assurance and quality control.

Quality Management Plan (QMP) means the set of GDOT-approved plans for quality management and control of the Project and Work, as set forth in Section 2.3 of the Technical Provisions.

Quality Assurance Manager (QAM) means the individual retained by Design-Build Team as the Key Personnel with the authority and responsibility for ensuring establishment and maintenance of, and compliance with, the Quality Management Plan. The Quality Assurance Manager shall be a Professional Engineer as defined in this Exhibit 1.

Quitclaim Deed means a quitclaim deed to be executed by a Utility Owner relinquishing its rights to maintain a Utility in a particular location, as more particularly described in Section 6.2.2.2 of the Technical Provisions.

Railroad means, depending on the context, either the right of way, tracks, and systems used for rail traffic in the vicinity of the Project, or the owners and/or operators of such rail systems.

Railroad Right of Entry Agreement has the meaning described in Section 14.2.2.2 of the Technical Provisions.

Recognized Environmental Condition has the meaning set forth in ASTM E-1527-00.

Record Drawings (also known as As-Builts, as-builts, or as-built drawings) means construction drawings and related documentation revised to show as-built changes to the Project at Final Acceptance. Interim marked-in-the-field or red-lined drawings to be provided during the progress of the Work as required pursuant to the Technical Provisions shall not constitute the final Record Drawings.

Reference Information Documents (RIDs) means the collection of information, data, documents and other materials that GDOT has provided to Design-Build Team for general or reference information only.

Related Transportation Facility(ies) means all existing and future highways, streets and roads, including upgrades and expansions thereof, that is/are or will be adjacent to,
connecting with or crossing under or over the Project, as specifically identified in the Technical Provisions.

**Release for Construction** or RFC means the written authorization by GDOT to proceed with any designated phase of the Construction Work based on the approved Final Plans.

**Release of Hazardous Materials** means any spill, leak, emission, release, discharge, injection, escape, leaching, dumping or disposal of Hazardous Materials into the soil, air, water, groundwater or environment, including any exacerbation of an existing release or condition of Hazardous Materials contamination.

**Relief Event** has the meaning set forth in Article 14.1.1 of the Agreement.

**Relief Event Determination** has the meaning set forth in Article 14.1.1 of the Agreement.

**Relief Event Notice** means the written notice required to be provided by Design-Build Team under Article 13.3.2 of the Agreement.

**Replacement Housing Calculation** means the opportunity to provide the displaced person with the financial assistance to purchase or rent and occupy a comparable replacement dwelling without involuntarily incurring additional financial means due to the displacement.

**Replacement Utility Property Interest** means any permanent right, title or interest in real property outside of the Property (e.g., a fee or an easement) that is acquired for a Utility being reinstalled in a new location as a part of the Utility Adjustment Work. The term specifically excludes any statutory right of occupancy or permit granted by a Governmental Entity for occupancy of its real property by a Utility.

**Request for Change Proposal** means a written notice issued by GDOT to Design-Build Team setting forth a proposed GDOT Change and requesting Design-Build Team’s assessment of cost, and Project Schedule impacts thereof, as set forth in Article 13.2.1 of the Agreement.

**Request for Information (RFI)** means a written request by the Design-Build Team to GDOT requesting clarification of the DB Document requirements.

**Request for Proposals (RFP)** means all documents, whether attached or incorporated by reference, utilized for soliciting proposals. The RFP is the only solicitation utilized by the Department in the One Phase Low Bid selection method. The RFP is the second phase utilized by the Department for the Two Phase Low Bid and Best Value selection methods.

**Request for Qualifications (RFQ)** means all documents, whether attached or incorporated by reference, utilized by the Department for soliciting interested Proposers to apply for prequalification including instruction for submitting a Statement of Qualification (SOQ), evaluation criteria and minimum qualifications required of a Design-Build Team. The RFQ is the first phase of a two-phase process utilized by the Department for the Two Phase Low Bid and Best Value selection methods.

**Reserved** means a section of the DB Documents (Design-Build Agreement, Technical Provisions, or Programmatic Provisions) that is not being utilized for this contract. Sections
marked Reserved have no requirements and references to sections marked Reserved shall mean that there are no additional requirements beyond the reference point.

**Revised Baseline Project Schedule** shall have the meaning set forth in Section 2.5 of the Technical Provisions.

**Right of Way** (ROW) means the Existing Right of Way and Proposed Right of Way.

**Right of Way Acquisition Plan** or **ROW Acquisition Plan** has the meaning set forth in Section 5 of Volume 2.

**Rules** means Chapter 672-18 of the Rules of the State Department of Transportation, Governing the Design-Build Procedures.

**Safety Compliance** means any and all improvements, repair, reconstruction, rehabilitation, restoration, renewal, replacement and changes in configuration or procedures respecting the Project to correct a specific safety condition or risk of the Project that GDOT has reasonably determined to exist by investigation or analysis and that is in violation of the requirements of the DB Documents.

**Safety Compliance Order** means a written order or directive from GDOT to Design-Build Team to implement Safety Compliance measures.

**Safety Standards** means those provisions of the Technical Provisions or Technical Documents that GDOT, FHWA, OSHA, or AASHTO considers to be important measures to protect public safety or worker safety. As a matter of clarification, provisions of Technical Provisions or Technical Documents primarily directed at durability of materials or equipment, where the durability is primarily a matter of life cycle cost rather than protecting public or worker safety, are not Safety Standards.

**Schedule of Values (SOV)** shall have the meaning set forth in Section 2.6 of the Technical Provisions.

**Schematic Plan of Project** means Design-Build Team’s Schematic Plan specific to the preliminary roadway plans showing the concept and technical solutions in accordance with the provisions of Exhibit C of the ITP. A Schematic Plan may include but is not limited to standard design plan sheets, roll plots, and conceptual drawings.

**Security Document** means any mortgage, deed of trust, pledge, lien, indenture, trust agreement, hypothecation, assignment, collateral assignment, financing statement under the Uniform Commercial Code of any jurisdiction, security instrument or other charge or encumbrance of any kind, including any lease in the nature of a security instrument, given to any Person as security for Design-Build Team Debt or Design-Build Team’s obligations pertaining to Design-Build Team Debt and encumbering the Design-Build Team’s Interest.

**Selection Recommendation Committee** means the group of individuals authorized by GDOT (if any) to recommend the Best Value Proposer to the Steering Committee.

**Separate Contractor(s)** means each and any separate contractor or vendor engaged by GDOT or any other governmental authority or agency of the State to perform, provide, and/or
supply work, services, labor or materials for the Project that is expressly excluded from Design-Build Team’s Work pursuant to the DB Documents.

**Service Line** means a Utility line, the function of which is to directly connect the improvements on an individual property to another Utility line located off such property, which other Utility line connects more than one such individual line to a larger system. However, unless otherwise noted in the Technical Provisions, the term “Service Line” excludes any line that supplies an active feed from a Utility Owner’s facilities to supply, activate or energize GDOT’s or a Governmental Entity’s Highway Service System. Such line, including its actual connection to the Utility facility, shall instead be considered to be part of the applicable Highway Service System.

**Site** means the Property and any temporary rights or interests that Design-Build Team may acquire in connection with the Project or the Utility Adjustments included in the Construction Work, including Project Specific Locations.

**Source Code** and **Source Code Documentation** mean software written in programming languages including all comments and procedural code, such as job control language statements, in a form intelligible to trained programmers and capable of being translated into object or machine readable code for operation on computer equipment through assembly or compiling, and accompanied by documentation, including flow charts, schematics, statements of principles of operations, architectural standards, and commentary, explanations and instructions for compiling, describing the data flows, data structures, and control logic of the software in sufficient detail to enable a trained programmer through study of such documentation to maintain and/or modify the software without undue experimentation. Source Code and Source Code Documentation also include all modifications, additions, substitutions, updates, upgrades and corrections made to the foregoing items.

**Staged Design Submittals** shall have the meaning set forth in Section 3.3.7.1 in the Technical Provisions.

**Standard Utility Agreement (SUA)** means an Agreement providing for relocation or adjustment work to be performed by the Utility and/or its consultant or contractor and modification of easement limited provisions, if applicable. To the extent practical, reimbursement by the Department will be made based upon the Department’s specifications, agreements and forms or consultant and construction contract work. The payment method may be actual cost, unit price, or lump sum as appropriate.

**State** means the State of Georgia.

**State and Local Government Series (SLGS) Index** means the State and Local Government Series (SLGS) Index published and maintained by the United States Department of the Treasury.

**State Highway** means a highway designated as part of the state highway system under Code 32-4-21.

**Statement of Qualifications** or **SOQ** has the meaning set forth in Section 1.1 of the ITP.
**Stipulated Fee** means the amount GDOT will pay unsuccessful responsive Proposers for their Work Product.

**Subcontractor** means any other Person, including any Supplier with whom any Contractor has further subcontracted, purchased or procured any part of the Work, at all tiers.

**Submittal** means any document, work product or other written or electronic end product or item required under the DB Documents to be delivered or submitted to GDOT, as applicable.

**Substantial Completion** means satisfaction of the criteria for completion of Construction Work as set forth in Article 7.7 of the Agreement, as and when confirmed by GDOT’s issuance of a certificate in accordance with the procedures and within the time frame established in Article 7.7.1 of the Agreement.

**Substantial Completion Date** means the date upon which Design-Build Team has satisfied all conditions of and for Substantial Completion.

**Substantial Completion Deadline** means the deadline and required date for Substantial Completion of the Project as set forth in Exhibit 9, as such deadline may be extended for Relief Events from time to time pursuant to the Agreement, time being of the essence.

**Subsurface Utility Engineering (SUE)** means an engineering process for accurately identifying the quality of overhead/underground utility information needed for highway plans, and for acquiring and managing that level of information during the development of a highway project, as more particularly described at the FHWA website [http://www.fhwa.dot.gov/programadmin/sueindex.cfm](http://www.fhwa.dot.gov/programadmin/sueindex.cfm).

**Supplemental Agreement** means a mutual agreement between GDOT and Design-Build Team for changes in the Work under Article 13 of the Agreement, including on account of any Relief Event Determination and/or Compensation Event Determination as set forth under Article 13.4 of the Agreement.

**Supplier** means any Person not performing work at or on the Site that supplies machinery, equipment, materials, hardware, software, systems or any other appurtenance to the Project to Design-Build Team or to any Contractor in connection with the performance of the Work. Persons who merely transport, pick up, deliver or carry materials, personnel, parts or equipment or any other similar items or persons to or from the Site shall not be deemed to be performing Work at the Site.

**Surety** means each properly licensed surety company, insurance company or other Person approved by GDOT, which has issued any of the P&P Bonds.

**Taxes** means federal, State, local or foreign income, margin, gross receipts, sales, use, excise, transfer, consumer, license, payroll, employment, severance, stamp, business, occupation, premium, windfall profits, environmental (including taxes under Section 59A of the Internal Revenue Code of 1986, as amended), customs, permit, capital stock, franchise, profits, withholding, social security (or similar), unemployment, disability, real property, personal property, registration, value added, alternative or add-on minimum, estimated or other taxes, levies, imposts, duties, fees or charges imposed, levied, collected, withheld or assessed at any time, whether direct or indirect, relating to, or incurred in connection with, the Project, the
performance of the Work, or act, business, status or transaction of Design-Build Team, including any interest, penalty or addition thereto, and including utility rates or rents, in all cases whether disputed or undisputed.

**Technical Documents** means all the standards, criteria, requirements, conditions, procedures, specifications and other provisions set forth in the manuals and documents identified in the DB Documents, as such provisions may (a) have been generally revised from time to time up to the RFP advertisement date, or (b) be changed, added to or replaced pursuant to the Agreement.

**Technical Proposal** means the technical component of the Proposal evaluation as described ITP.

**Technical Provisions** means Volume 2 as such documents may (a) have been generally revised from time to time that are in effect at the date of the RFP advertisement, or (b) be changed, added to or replaced pursuant to the Agreement.

**Temporary Works** is 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.

**Term** has the meaning set forth in Article 3.1 of the Agreement.

**Termination by Court Ruling** has the meaning set forth in Article 19.11 of the Agreement.

**Termination Compensation** means each of the measure of compensation owing from GDOT to Design-Build Team upon termination of the Agreement prior to the stated expiration of the Term, pursuant to Article 19, and as set forth in Exhibit 20 to the Agreement.

**Termination Date** means (a) the date of expiration of the Term or (b) if applicable, the Early Termination Date.

**Termination for Convenience** has the meaning set forth in Article 19.1.1 of the Agreement.

**Third-Party Claim** means, subject to Article 16.5.4 of the Agreement, any and all claims, disputes, disagreements, causes of action, demands, suits, actions, investigations, or legal or administrative proceedings asserted, initiated or brought by a Person that is not an Indemnified Party or Design-Build Team with respect to any Third-Party Loss.

**Third-Party Loss** means, subject to Article 16.5.4 of the Agreement, any actual or alleged Loss sustained or incurred by a Person that is not an Indemnified Party or Design-Build Team.

**Threatened or Endangered Species** means any species listed by the USFWS as threatened or endangered pursuant to the Endangered Species Act, as amended, 16 U.S.C. §§ 1531, et seq.

**Time-Impact Analysis (TIA)** shall have the meaning set forth in Section 2.5 of the Technical Provisions.
Traffic Management Center is a center for the management and distribution of information to Users on a regional or statewide basis.

Transferee means any party as defined pursuant to Article 21.2.2.1 of the Agreement, solely for purposes of Articles 21.2 through 21.5 of the Agreement.

Transportation Management Plan means Design-Build Team’s plan for transportation management throughout the Term, as more particularly described in Article 9.2.2 the Agreement and Section 18.3.1 of the Technical Provisions.

Travel Lane means the portion of roadway for the movement of vehicles, exclusive of shoulders.

Two-Week Detail Schedule shall have the meaning set forth in Section 2.5 of the Technical Provisions.


Uninsurable Risk means a risk, or any component of a risk, against which Design-Build Team or a Contractor is required to insure pursuant to the Agreement and for which, at any time after the Effective Date, either:

(a) the insurance coverage required under the Agreement is not available in relation to that risk from insurers that meet the qualifications set forth in Article 16.1.2 of the Agreement; or

(b) the terms and conditions for insuring that risk are such that the risk is not generally being insured against in the insurance market under commercially reasonable terms from insurers that meet the qualifications set forth in Article 16.1.2 of the Agreement.

Utility or utility means any of the following:

(a) a public, private, cooperative, municipal and/or government line, facility or system used for the carriage, transmission and/or distribution of cable television, electric power, telephone, telegraph, water, gas, oil, petroleum products, steam, chemicals, hydrocarbons, telecommunications, sewage, and similar commodities, that directly or indirectly serves the public;

(b) a line, facility or system which (i) carries or transmits a commodity referenced in clause (a) above but does not directly or indirectly serve the public, and (ii) is designated in Volume 1 or Volume 2 to be treated, for purposes of the DB Documents only, in the same manner as a line, facility or system that qualifies as a Utility under clause (a) above; and

(c) a radio tower or transmission tower (including cellular) that directly or indirectly serve the public.

Notwithstanding the foregoing, the term “Utility” or “utility” excludes:

(a) all storm water lines, facilities, and systems that are part of the drainage system for the Property or connect to that system; and
(b) GDOT’s or a Governmental Entity’s Highway Service Systems.

The necessary appurtenances to each Utility facility shall be considered part of such Utility. Any Service Line connecting directly to a Utility shall be considered an appurtenance to that Utility, regardless of the ownership of such Service Line.

**Utility Accommodation Manual (UAM)** means the Utility Accommodation Manual issued by GDOT, as the same may be amended, supplemented or replaced by GDOT from time to time.

**Utility Adjustment Field Modification** means any horizontal or vertical design change to a Utility Adjustment required by Design-Build Team or proposed by a Utility Owner due either to roadway design or to conditions not accurately reflected in the corresponding Utility Work Plan for which the review and comment/approval process has been completed, that alters the design included in the approved Utility Work Plan. An example would be shifting the alignment of an 8” water line to miss a roadway drainage structure. A minor change (e.g., an additional water valve, an added Utility marker at ROW line, a change in vertical bend, etc.) will not be considered a Utility Adjustment Field Modification, but shall be shown in the Record Drawings.

**Utility Adjustment** means each relocation (temporary or permanent), abandonment, Protection in Place, removal (of previously abandoned Utilities as well as of newly abandoned Utilities), replacement, reinstallation, and/or modification of existing Utilities necessary to accommodate construction, operation, maintenance and/or use of the Project; provided, however, that the term “Utility Adjustment” shall not refer to any of the work associated with facilities owned by any railroad. For any Utility crossing the Property, the Utility Adjustment Work for each crossing of the Property by that Utility shall be considered a separate Utility Adjustment. For any Utility installed longitudinally within the Property, the Utility Adjustment Work for each continuous segment of that Utility located within the Property shall be considered a separate Utility Adjustment.

**Utility Adjustment Work** means all efforts and costs necessary to accomplish the required Utility Adjustments, including all coordination, design, design review, permitting, construction, inspection, maintenance of records, relinquishment of Existing Utility Property Interests, preparation of Utility Joint Use Acknowledgements, and acquisition of Replacement Utility Property Interests, whether provided by Design-Build Team or by the Utility Owners. The term also includes any reimbursement of Utility Owners, which is Design-Build Team’s responsibility pursuant to Article 7.5 of the Agreement. Any Utility Adjustment Work furnished or performed by Design-Build Team is part of the Work; any Utility Adjustment Work furnished or performed by a Utility Owner is not part of the Work.

**Utility Enhancement** means a Betterment or a Utility Owner Project, as referenced in Section 6.3.6.1 of the Technical Provisions.

**Utility Joint Use Acknowledgment** or **Utility Joint Use Agreement** means an agreement between GDOT and a Utility Owner that establishes the rights and obligations of GDOT and the Utility Owner with respect to occupancy of the Property by such Utility Owner’s Utility.

**Utility Manager (UM)** means the senior staff person designated by Design-Build Team to be responsible for coordination and oversight of Utility Adjustment operations during the
planning, design, and construction phases of the Work, as more particularly described in Section 6.3 of the Technical Provisions.

**Utility Owner** means the owner or operator of any Utility (including both privately held and publicly held entities, cooperative utilities, and municipalities and other governmental agencies).

**Utility Owner Project** means the design and construction by or at the direction of a Utility Owner (or by Design-Build Team) of a new Utility installation other than (a) as part of a Utility Adjustment or (b) to provide service to the Project. Betterments are not Utility Owner Projects. Utility Owner Projects are entirely the financial obligation of the Utility Owner.

**Utility Tracking Report** means the report regarding Utilities likely to be impacted by the Project, which Design-Build Team shall maintain on a current basis, as more particularly described in Section 6.3 of the Technical Provisions.

**Utility Work Plan** has the meaning set forth in Section 6.3.8.5 of the Technical Provisions. Depending on the context, the term also refers to Supplemental Utility Work Plans and Utility Work Plan Retention Requests (both also described in Section 6.3.8.5 of the Technical Provisions).

**Utility Work Plan Checklist** means a checklist listing the required components of a Utility Work Plan, as referenced in Section 6.3.8.5 of the Technical Provisions.

**Utility Work Plan Retention Request** means the collection of plans and other information and materials which Design-Build Team is required to submit to GDOT in connection with each Utility proposed to remain at its original location within the Existing Right of Way or Property, as more particularly described in Section 6.3.2.2 of the Technical Provisions; a single Utility Work Plan Retention Request may address more than one such Utility.

**Volume 1** means the Design-Build Agreement or the Agreement.

**Volume 2** means the project-specific and programmatic GDOT technical provisions entitled “Technical Provisions - Volume 2”.

**Warning Notice** means a written notice that GDOT delivers to Design-Build Team pursuant to Article 17.2 of the Agreement.

**Work** means all of the work required to be furnished and provided by Design-Build Team under the DB Documents for the Project, including without limitation, all administrative, management, design, engineering, other professional services, construction, Utility Adjustment, utility accommodation, support services, ETCS and software integration, and coordination, except for those efforts which such DB Documents expressly specify will be performed by Persons other than Design-Build Team-Related Entities.

**Work Breakdown Structure (WBS)** means a deliverable-oriented hierarchical structure that breaks the Work into elements that have distinct identification and that contain specific scope characteristics. Each descending WBS level represents an increasingly detailed delineation of elements of the total Project scope. The WBS will contain all elements of the Work.
**Work Code** means a code assigned to a contract line item. Example: 400 is asphalt paving, 653 is highway traffic striping. The Work Codes were established and predefined by a GDOT Committee comprised of the Office of EEO, Construction, Bidding Administration, and Prequalification, in 2012. Not every item has a work code, only those items that are predominantly used on Highway construction projects. Contractors and Subcontractors in the GDOT directories are assigned work codes based upon their work description. Work codes are the most refined data available.

**Work Product** means any design files, concepts, ideas, technology, techniques, methods, processes, drawings, reports, plans and specifications used in the development of the Proposal including the proposal and any ATCs being acquired by GDOT from unsuccessful responsive Proposers.
EXHIBIT 2

KEY PERSONNEL AND OTHER PROPOSAL COMMITMENTS

The following Proposal documents are attached hereto and incorporated by reference:

- Organization Chart
- Form G – Form of Participating Members, Major Non-Participating Members, Contractors and Key Personnel Commitment
- Form K – Use of Contract Funds for Lobbying Certification
- Form L – Debarment and Suspension Certification
- Proposal Commitments as set forth in the Proposal as defined in the Agreement and attached hereto, subject to the provisions of Article 1.2.2
FORM G

Form of Participating Members, Major Non-Participating Members, Contractors and Key Personnel Commitment

Proposer's Name: Wright Brothers Construction Company, Inc. (the "Proposer")

The Proposer hereby commits that, if awarded the SR 247 & College Street Bridges over NS Railway Design-Build Project (the "Project"), the Proposer will use the entities and individuals listed below for their stated positions and that, to the extent within the Proposer's control, such entities and individuals will be available to fulfill their Project-related responsibilities.

Lead Contractor: Wright Brothers Construction Company, Inc.

Participating Member: ______________________________________

Lead Design Consultant: Neel-Schaffer, Inc.

Key Personnel (Participating Members and Major Non-Participating Members, as appropriate):

- Lead Contractor Project Manager: Brian Charlesworth, PE
- Lead Design Consultant Project Manager: Jay Simone, PE
- Engineer of Record: Justin Wood, PE
- Contractor Superintendent: Jose Soto
- Construction Quality Assurance Manager: Joshua Reeser
- Lead Utility Coordinator: Reece Schuler, PE, PLS

Signed: [Signature]
Printed Name: J. Mitchell Simpson
Title: Vice President
Date: 7/15/2019
FORM K

Use of Contract Funds for Lobbying Certification

The undersigned Proposer certifies on behalf of itself and all contractors (at all tiers) the following:

1. The Proposer certifies, to the best of its knowledge and belief, that:
   a. No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.
   b. If any funds (other than federal appropriated funds) received by the Proposer under the RFP or DBA have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions, and shall include a copy of said form in its proposal or bid, or submit it with the executed DBA or any or Subcontract.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The Proposer shall require that the language of this certification be included in all lower tier subcontracts which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

4. The undersigned certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the undersigned understands and agrees that the provisions of 31 U.S.C. §3801, et seq., apply to this certification and disclosure, if any.

[Note: Pursuant to 31 U.S.C. §1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each expenditure or]
failure.]

Date: 2/15/2019

Proposer: Wright Brothers Construction Company, Inc.

Signature: [Signature]

Title: Vice President
FORM L

Debarment and Suspension Certification

The undersigned Proposer certifies on behalf of itself, and all Participating Members, Major Non-Participating Members and Contractors identified by such Proposer as of the date hereof, as follows:

The undersigned certifies to the best of its knowledge and belief, that it and its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or agency;

b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, State or local) transaction or contract under a public transaction; violation of federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and

d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (federal, State or local) terminated for cause or default.

Where the Proposer is unable to certify to any of the statements in this certification, it shall attach a certification to its proposal or bid stating that it is unable to provide the certification and explaining the reasons for such inability.

Date: 7/5/2019

Proposer: Wright Brothers Construction Company, Inc.

Signature: [Signature]

Title: Vice President
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<td>Submit Preliminary Roadway Plans to NS - College Street</td>
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<td>Mar-14-20</td>
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<td>NS Review and Approve Final Roadway Plans - College Street</td>
<td>Mar-17-20</td>
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</table>
EXHIBIT 3

RESERVED
EXHIBIT 4

RIGHT OF WAY (Existing Right of Way and Required Right of Way)

See Attachment 5-1 for Right of Way (Existing Right of Way and Required Right of Way)
EXHIBIT 5

PROPOSAL SOV
FORM F
Design-Build Price Proposal

Proposer Name: Wright Brothers Construction Company, Inc.

The Proposer shall complete the required fields of Section A below. See Exhibit D for additional explanation and requirements.

The Proposer shall indicate its proposed Contract Sum on this Form F.

A. Proposal Schedule of Values (SOV)

All items shall be provided as Lump Sum amounts. If there are any differences between the sum of the individual line amounts and totals, the individual line amounts will prevail.
<table>
<thead>
<tr>
<th>Payment Activity Description</th>
<th>PI 0014895 Scheduled Value</th>
<th>PI 0014899 Scheduled Value</th>
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<tr>
<td><strong>DESIGN</strong></td>
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<tr>
<td>1. Design</td>
<td>$ 500,000.00</td>
<td>$ 835,000.00</td>
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<td><strong>CONSTRUCTION</strong></td>
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<tr>
<td>1. Field Office</td>
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<td>2. Work Zone Law Enforcement</td>
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<td>3. Structure Demolition</td>
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<td>4. Foundations</td>
<td>$ 4,750,000.00</td>
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<td>5. Substructure Concrete</td>
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<td>6. Superstructure</td>
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<td>7. Beams</td>
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<td>8. Approach Slabs</td>
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<td>9. Walls</td>
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<td>12. Grading</td>
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<td>15. Barrier and Guardrail</td>
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<td>16. Aggregate Base Course</td>
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<td>17. Asphalt Paving</td>
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<td>18. Concrete Paving</td>
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<td>20. Striping and Signing</td>
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<td>21. ITS</td>
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<td>22. Lighting</td>
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<td>23. Utilities</td>
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<td>1. General Conditions and Administration*</td>
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<td>2. Mobilization (not including demobilization) (Not to exceed 2.5% of DESIGN + CONSTRUCTION)</td>
<td>$ 180,000.00</td>
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<td>3. Record Drawings, Punch List, Demobilization, and Final Close-out (No less than 1.0% of DESIGN + CONSTRUCTION)</td>
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<td><strong>Subtotal MISCELLANEOUS ACTIVITIES</strong></td>
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<td><strong>CONSTRUCTION COMPLETE</strong></td>
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<td><strong>Subtotal CONSTRUCTION COMPLETE (CONSTRUCTION + MISCELLANEOUS ACTIVITIES)</strong></td>
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<td><strong>CONTRACT SUM</strong></td>
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<td><strong>CONTRACT SUM (DESIGN + CONSTRUCTION COMPLETE)</strong></td>
<td>$ 14,350,000.00</td>
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* Includes all management, management plans, payment and performance bond, insurance, project management and coordination, home office overhead and support, and quality management.

BY SIGNATURE BELOW AND SUBMITTAL OF THIS FORME WITH THE PROPOSAL SCHEDULE, THE PROPOSER HEREBY CERTIFIES IT HAS REVIEWED ITS PROPOSAL SCHEDULE AND PROPOSAL ESTIMATES FOR THE PROJECT AND THAT ALL WORK, INCLUDING EARLY PORTIONS OF THE WORK, CAN BE COMPLETED WITHIN THE MILESTONE DEADLINES, INCLUDING ANY INTERIM COMPLETION DEADLINES, SUBSTANTIAL COMPLETION DEADLINE AND FINAL ACCEPTANCE DEADLINE.

Date: 7/15/2019

Signature: [Signature]

Design-Build Team: Wright Brothers Construction Company, Inc.
EXHIBIT 6

RESERVED
EXHIBIT 7

RESERVED
## EXHIBIT 8

### FEDERAL REQUIREMENTS

<table>
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<th>Exhibit Description</th>
<th>No. of Pages</th>
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<td>Attachment 7 – Debarment and Suspension Certification</td>
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<td>Attachment 8 – Certification Regarding Use of Contract Funds For Lobbying</td>
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<td>Attachment 9 – Reserved</td>
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<td>Attachment 10 – Reserved</td>
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<td>Attachment 11 – Reserved</td>
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<td>Attachment 12 – Reserved</td>
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ATTACHMENT 1 TO EXHIBIT 8

RESERVED
ATTACHMENT 2 TO EXHIBIT 8

RESERVED
ATTACHMENT 3 TO EXHIBIT 8

RESERVED
ATTACHMENT 5 TO EXHIBIT 8

RESERVED
ATTACHMENT 6 TO EXHIBIT 8

RESERVED
ATTACHMENT 7 TO EXHIBIT 8

DEBARMENT AND SUSPENSION CERTIFICATION

1. By signing and submitting its proposal or bid, and by executing the Agreement or Contract, each prospective Design-Build Team member (at all tiers) shall be deemed to have signed and delivered the following certification:

   The undersigned certifies to the best of its knowledge and belief, that it and its principals:

   a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or agency;

   b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state or local) transaction or contract under a public transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

   c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (federal, state or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and

   d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (federal, state or local) terminated for cause or default.

2. Where the prospective Design-Build Team member is unable to certify to any of the statements in this certification, such Person shall attach a certification to its proposal or bid, or shall submit it with the executed Agreement or Contract, stating that it is unable to provide the certification and explaining the reasons for such inability.
CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

By signing and submitting its proposal or bid, and by executing the Agreement or any Contract, each prospective Design-Build Team and Contractor (at all tiers) shall be deemed to have signed and delivered the following:

1. The prospective Design-Build Team/Contract certifies, to the best of its knowledge and belief, that:
   a. No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of ANY federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.
   b. If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any federal agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with THIS Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, “Disclosure Form to Report Lobbying,” in accordance with its instructions, and shall include a copy of said form in its proposal or bid, or submit it with the executed Agreement or Contract.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. § 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. Design-Build Team/Contractor shall require that the language of this certification be included in all lower tier Contracts which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

4. The undersigned certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the undersigned understands and agrees that the provisions of 31 U.S.C. §3801, et seq., apply to this certification and disclosure, if any.

[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each expenditure or failure.]

NOTE: DESIGN-BUILD TEAM AND EACH CONTRACTOR IS REQUIRED, PURSUANT TO FEDERAL LAW, TO INCLUDE THE ABOVE LANGUAGE IN CONTRACTS OVER $100,000 AND TO OBTAIN THIS LOBBYING CERTIFICATE FROM EACH CONTRACTOR BEING PAID $100,000 OR MORE.
Reserved
ATTACHMENT 10 TO EXHIBIT 8

RESERVED
ATTACHMENT 11 TO EXHIBIT 8

RESERVED
ATTACHMENT 12 TO EXHIBIT 8

RESERVED
EXHIBIT 9

MILESTONE DEADLINES
C.3. Closure Durations, Interim Completion, Substantial Completion, and Final Acceptance Proposal - Form M

<table>
<thead>
<tr>
<th>Milestone Deadlines</th>
<th>Duration</th>
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<tbody>
<tr>
<td>Duration of full roadway closure of SR 247/Pio Nono Avenue for bridge modifications</td>
<td>25 days (Not to exceed 30 days, and must be open to traffic no later than June 30, 2020.)</td>
</tr>
<tr>
<td>Duration of full roadway closure of Roff Avenue west of Pio Nono Avenue</td>
<td>25 days (Not to exceed 30 days, and must be open to traffic no later than June 30, 2020.)</td>
</tr>
<tr>
<td>Duration of full roadway closure of Roff Avenue east of Pio Nono Avenue</td>
<td>Not to exceed 60 days</td>
</tr>
<tr>
<td>Duration of full roadway closure for CR5813/College Street and Appleton Lane for bridge demolition and construction</td>
<td>129 days (Not to exceed 180 days, and demolition to establish required vertical clearance must be completed no later than June 30, 2020.)</td>
</tr>
<tr>
<td>Substantial Completion Deadline</td>
<td>No later than 500 Days after NTP 1</td>
</tr>
<tr>
<td>Final Acceptance Deadline</td>
<td>No later than 90 Days after Substantial Completion</td>
</tr>
</tbody>
</table>

Date: 7/15/2019

Proposer: Wright Brothers Construction Company, Inc.

Signature: [Signature]

Title: Vice President
EXHIBIT 10

RESERVED
EXHIBIT 11

HAZARDOUS MATERIALS RISK ALLOCATION TERMS

1. Design-Build Team shall be solely responsible for Hazardous Materials Management, including all required remediation and disposal of Hazardous Materials that constitute Design-Build Team Releases of Hazardous Materials or which are otherwise with respect to any Additional Properties or Project Specific Locations. Design-Build Team shall be responsible for all Hazardous Materials Management for Design-Build Team Release(s) of Hazardous Materials or with respect to Additional Properties, even if the required Hazardous Materials Management extends beyond the end of the Term or Final Acceptance of the Work.

2. Other than a Design-Build Team Releases of Hazardous Materials or with respect to any Project Specific Locations, GDOT shall, at its own expense shall manage, treat, handle, store, remediate, remove, transport (where applicable), investigate, oversee and dispose of such Hazardous Materials in accordance with applicable Law and Governmental Approvals or otherwise enter into a Supplement Agreement with the Design-Build Team, or order such Work pursuant to Directive Letter (provided that GDOT may not require any long term monitoring of Hazardous Materials under any such Directive Letter), with respect to same.

3. Notwithstanding the aforementioned or anything to the contrary in the Agreement, none of the following costs and expenses shall be chargeable to or reimbursed by GDOT:

   (a) Costs and expenses to the extent attributable to Design-Build Team Releases of Hazardous Materials;

   (b) Delay and disruption costs and expenses, except to the extent expressly set forth under the Agreement;

   (c) Costs and expenses that could be avoided by the exercise of commercially reasonable efforts to mitigate and reduce cost; and

   (d) Attorney’s fees or other expenses incurred by Design-Build Team in demonstrating or determining the proportionate responsibility between the parties as to Design-Build Team Releases of Hazardous Materials, GDOT Releases of Hazardous Materials, Pre-existing Hazardous Materials, and/or Hazardous Materials due to any third party.

4. Nothing contained herein shall be interpreted to limit Design-Build Team’s obligations with respect to Articles 7.8 or 7.9 of the Agreement.
EXHIBIT 12

RESERVED
EXHIBIT 13

RESERVED
EXHIBIT 14

RESERVED
EXHIBIT 15

RESERVED
EXHIBIT 16

RESERVED
EXHIBIT 17
RESERVED
EXHIBIT 18

MEASURES OF LIQUIDATED DAMAGES and NONREFUNDABLE DEDUCTIONS

1.1 For Late Substantial Completion and Late Final Acceptance

   (a) Liquidated damages for late Substantial Completion for the Project shall equal $713 per day for each day that the Substantial Completion Date is later than the Substantial Completion Deadline, as the Substantial Completion Deadline may be extended pursuant to this Agreement.

   (b) Liquidated damages for late Final Acceptance shall equal $713 per day for each day that the date of Final Acceptance is later than the Final Acceptance Deadline, as the Final Acceptance Date may be extended pursuant to this Agreement.

   (c) Liquidated damages on account of any failure to achieve Final Acceptance by the Final Acceptance Date shall not be cumulative and in addition to Liquidated Damages under subpart (a) above where Substantial Completion is not achieved by the Substantial Completion Deadline, provided that where any such Liquidated Damages under subpart (a) cease to then accrue as a result of achieving Substantial Completion, and the Final Acceptance Date, as may thereafter be revised is not met, subpart (b) shall then apply.

1.2 Incident Based Liquidated Damages

   Liquidated Damages upon the occurrence of the following, which shall not be cumulative, for any single occurrence. Where there are multiple incidents as set forth below contributing to a single occurrence, the highest applicable incident based Liquidated Damages relative to such occurrence shall apply.

   1  Failure to reopen lanes specified in Volume 2, Section 18.3.2.1.3.A $1,000 per hour*

   2  Failure to cover milled surfaces specified in Volume 2, Section 18.4.1 $713 per day*

   3  Failure to reopen all lanes of the Pio Nono Avenue bridge within the full roadway closure period specified in Exhibit 9 $2,000 per hour*

   4  Failure to reopen all lanes of the College Street bridge within the full roadway closure period specified in Exhibit 9 $200 per hour*

   5  Failure to reopen all lanes of Roff Avenue within the full roadway closure periods specified in Exhibit 9 $50 per hour*

   6  Failure to reopen all lanes of the Appleton Lane within the full roadway closure period specified in Exhibit 9 $50 per hour*

   7  Failure to achieve required vertical clearance of the Pio Nono Avenue Bridge on or before June 30, 2020. $500 per hour*

   8  Failure to achieve required vertical clearance of the College Street Bridge on or before June 30, 2020. $500 per hour*
*In addition to liquidated damages, DB Team shall be liable for any fines assessed against GDOT.

### 1.3 Incident Based Nonrefundable Deductions

Nonrefundable Deductions upon the occurrence of the following, which shall not be cumulative, for any single occurrence. Where there are multiple incidents as set forth below contributing to a single occurrence, the highest applicable incident based liquidated damages relative to such occurrence shall apply.

<table>
<thead>
<tr>
<th>Incident</th>
<th>Deduction ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Replacement of an individual in a Key Personnel position after submission of the Proposal or any reason, except as allowed under Article 10.4.1 of the Agreement</td>
<td>$ 5,000 per occurrence</td>
</tr>
<tr>
<td>2. Unreasonable failure to comply with any of its responsibilities per the requirements of Section 2 of the Technical Provisions including Project Management, Quality Management, Schedule, etc.</td>
<td>$ 5,000 per occurrence*</td>
</tr>
<tr>
<td>3. Causing environmental damage in contravention of Section 4 of the Technical Provisions and the latest approved Environmental Documents</td>
<td>$ 2,500 per occurrence*</td>
</tr>
<tr>
<td>4. A failure to follow the approved procedures outlined in the Utility Emergency Procedures Plan as required in Section 6 of Technical Provisions</td>
<td>$ 5,000 per occurrence*</td>
</tr>
<tr>
<td>5. Failure to respond to GDOT direction regarding changeable message signs as specified in Section 18.3.2 of the Technical Provisions.</td>
<td>$ 1,250 per occurrence*</td>
</tr>
<tr>
<td>6. Damage caused by the DB Team to GDOT ITS device (camera, radar, etc.) or enclosure. Or damage caused or loss of use to an existing ITS device.</td>
<td>$ 2,500 per occurrence**</td>
</tr>
<tr>
<td>7. Failure to bring the GDOT ITS system (electrical power, ITS device, etc.) back on line within 24 hours after damage or failure caused by DB Team.</td>
<td>$ 13,700 per occurrence**</td>
</tr>
</tbody>
</table>

*In addition to Nonrefundable Deductions, the DB Team shall be liable for any fines assessed against GDOT.

**In addition to Nonrefundable Deductions, the DB Team shall be liable for all costs of repairs of ITS equipment. ITS repairs will be done in accordance with Section 17.4.7 of Volume 2.
EXHIBIT 19

GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT AFFIDAVIT
FORM R

GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT AFFIDAVIT

Contract No. and Name: Design-Build Agreement for the SR 247 & College Street Bridges over NS Railway Design-Build Project (the "Project")
Name of Contracting Entity: Wright Brothers Construction Company, Inc.

By executing this affidavit, the undersigned person or entity verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm, or corporation which is contracting with the Georgia Department of Transportation has registered with, is authorized to participate in, and is participating in the federal work authorization program commonly known as E-Verify,¹ in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91.

The undersigned person or entity further agrees that it will continue to use the federal work authorization program throughout the contract period, and it will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the undersigned with the information required by O.C.G.A. § 13-10-91(b).

The undersigned person or entity further agrees to maintain records of such compliance and provide a copy of each such verification to the Georgia Department of Transportation at the time the subcontractor(s) is retained to perform such service.

134270
EEV/E-Verify™ User Identification Number

BY: Authorized Officer or Agent
(Name of Person or Entity)

Vice President
Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME
ON THIS THE 15TH DAY OF July 2019

Notary Public

My Commission Expires:

07/07/08
Date of Authorization

J. Mitchell Simpson
Printed Name of Authorized Officer or Agent

¹ or any subsequent replacement operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 (IRCA), P.L. 99-603.
EXHIBIT 20

TERMS FOR TERMINATION COMPENSATION

A. Compensation on Termination for Convenience, for GDOT Default, or for GDOT Suspension of Work

1. In the event of termination of the Agreement under Article 19.1 (Termination for Convenience) or Article 19.4 (Termination for GDOT Default or Suspension of Work), the Termination Compensation shall equal:

   (i) That portion of the Contract Sum on account of (a) Work performed that has not already been paid; plus

   (ii) The amount necessary to reimburse reasonable and documented out-of-pocket costs of third party and Affiliate Contractors to demobilize and terminate under Contracts between Design-Build Team and third parties or Affiliates for performance of Work, excluding Design-Build Team’s non-contractual liabilities and indemnity liabilities (contractual or non-contractual) to third parties or Affiliates; plus

   (iii) If termination occurs prior to Substantial Completion, Design-Build Team’s own reasonable and documented out-of-pocket costs to demobilize (without duplication) and carry out termination obligations as may be directed by GDOT or required pursuant to the Agreement; minus

   (iv) The sum of (i) the greater of (A) the proceeds received from insurance (including casualty insurance and business interruption insurance) that is required to be carried pursuant to Article 16.1 of the Agreement and provides coverage to pay, reimburse or provide for any of the costs and losses attributable to any Force Majeure Event, and (B) the proceeds received from insurance that is actually carried by or insuring Design-Build Team under policies solely with respect to the Project and the Work, regardless of whether required to be carried pursuant to Article 16.1 of the Agreement, and that provides coverage to pay, reimburse or provide for any of the costs and losses attributable to any Force Majeure Event (exclusive of payments on account of replacement Work performed and to be reimbursed under the builder’s risk insurance coverage), plus (ii) the foregoing costs and losses that Design-Build Team is deemed to have self-insured pursuant to Article 16.3.3 of the Agreement; minus

   (v) The portion of any Compensation Amounts previously paid to (or charged against) Design-Build Team that compensated Design-Build Team for Work attributable to the period after the Early Termination Date.

2. In the event of termination of the Agreement under Article 19.1 (Termination for Convenience) or Article 19.4 (Termination for GDOT Default or Suspension of Work), any such Termination Compensation shall be payable by GDOT as follows:

   (i) For Termination for Convenience

      (a) Termination for Convenience shall be valid and effective on the date set forth in the Notice of Termination for Convenience, which date shall not be more than three (3) months after the date the notice is delivered.
(b) GDOT shall deliver to Design-Build Team, in immediately available funds, within sixty (60) days after the Early Termination Date, the Termination Compensation due, less a holdback amount equal to GDOT’s reasonable estimate of the costs Design-Build Team will thereafter incur to perform and complete its post-termination obligations under Article 19.5 of the Agreement, subject to Sections (ii)(b) - (d) below.

(ii) For Termination for GDOT Default or Suspension of Work

(a) If the Agreement is terminated due to Design-Build Team’s exercise of its right to terminate under Article 19.4 of the Agreement, termination shall be valid and effective on the date notice of termination is delivered; and, subject to Articles 19.3.2 and 19.4.4, GDOT shall deliver to Design-Build Team, in immediately available funds, within sixty (60) days after the Early Termination Date, the Termination Compensation due, less a holdback amount equal to GDOT’s reasonable estimate of the costs Design-Build Team will thereafter incur to perform and complete its post-termination obligations under Article 19.5 of the Agreement. In the event that the Termination Compensation is negative, then the Design-Build Team shall deliver the Compensation Payment due to GDOT within sixty (60) days after the Early Termination Date.

(b) GDOT shall pay the holdback amount to Design-Build Team within ten (10) days after Design-Build Team completes all its post-termination obligations under Article 19.5 of the Agreement.

(c) If as of the date GDOT tenders payment under clause (a) above the Parties have not agreed upon the amount of Termination Compensation due, then:

(i) GDOT shall proceed with such payment to Design-Build Team;

(ii) Within thirty (30) days after receiving such payment Design-Build Team shall deliver to GDOT written notice of the additional amount of Termination Compensation that Design-Build Team in good faith determines is still owing (the “disputed portion”);

(iii) GDOT shall pay the disputed portion of the Termination Compensation to Design-Build Team in immediately available funds within thirty (30) days after the disputed portion is determined by settlement, final order or final judgment, and also shall pay interest thereon, at the Default Interest Rate from the Early Termination Date until paid; and

(iv) A failure by GDOT to effect payment by such date shall not entitle Design-Build Team to reinstatement of the Design-Build Team’s Interest or to rescission of the termination.

(d) From and after the Early Termination Date until the Termination Compensation is finally determined and paid, the provisions of Article 19.10 of the Agreement shall apply.
(e) If it is determined by settlement or final judgment that the Termination Compensation due from GDOT is less than the payment previously made by GDOT, then within thirty (30) days after the date of settlement or final judgment Design-Build Team shall reimburse the excess payment, together with interest thereon at the Default Interest Rate from the date of overpayment until the date of reimbursement.

(f) Any amounts to be paid by GDOT pursuant hereto shall be subject to Default Interest Rate from the date that such payment shall be due until paid.

B. Compensation on Termination for Design-Build Team Default

1. Design-Build Team shall not be entitled to receive any compensation where the Agreement is terminated by GDOT pursuant to Article 19.3 as a result of a Design-Build Team Default if it has been determined by GDOT that the damages incurred by GDOT and costs to complete the Work as a result of the Design-Build Team Default exceed the unpaid balance of the Contract Sum. In no event shall Design-Build Team be entitled to any direct costs, including demobilization, associated with a termination by GDOT pursuant to Article 19.3. In the event that the Termination Compensation is negative, then the Design-Build Team shall deliver the Compensation Payment due to GDOT within sixty (60) days after the Early Termination Date.

C. Claims

1. Notwithstanding anything to the contrary herein, Termination Compensation shall include and be adjusted on account of any outstanding Compensation Event that is independent of the event of termination and which is not otherwise resolved as of the effective date of such termination. The Parties shall adjust the Termination Compensation by the amount of the unpaid award, if any, on the Compensation Event.

2. At GDOT’s sole election, it may hold back from payment of the Termination Compensation for deposit into the GDOT Claims Account the amount of any claim of GDOT against Design-Build Team not resolved prior to payment. GDOT shall provide written notice to Design-Build Team of any such election, the subject claim and the amount deposited or to be deposited, prior to or concurrently with tendering payment of the Termination Compensation.

3. If as of the date GDOT tenders payment under clause (a) above the Parties have not agreed upon the amount of Termination Compensation due, then:

   (i) GDOT shall proceed with such payment to Design-Build Team;

   (ii) Within thirty (30) days after receiving such payment Design-Build Team shall deliver to GDOT written notice of the additional amount of Termination Compensation that Design-Build Team in good faith determines is still owing (the “disputed portion”);

   (iii) GDOT shall pay the disputed portion of the Termination Compensation to Design-Build Team in immediately available funds within thirty (30) days after the disputed portion is determined by settlement, final order or final judgment, together with interest thereon at the Default Interest Rate from the later of the two dates set forth in clause (a) above until paid; and
(iv) Failure by GDOT to effect payment by such date shall not entitle Design-Build Team to reinstatement of the Design-Build Team’s Interest or to rescission of the termination.

4. If it is determined by settlement or final judgment that the Termination Compensation due from GDOT is less than the payment previously made by GDOT, then within thirty (30) days after the date of settlement or final judgment Design-Build Team shall reimburse the excess payment, together with interest thereon at the Default Interest Rate from the date of overpayment until the date of reimbursement.
EXHIBIT 21

Non-Collusion Affidavit
Form B

Non-Collusion Affidavit*

STATE OF Tennessee) SS:
COUNTY OF Bradley)

Each of the undersigned, being first duly sworn, deposes and says that:

A. J. Mitchell Simpson [name] is the Vice President [title] of Wright Brothers Construction Company, Inc. and Thomas L. Turner [name] is the Principal in Charge [title] of Neel-Schaffer, Inc. [firm], which entity(ies) are the [relationship to Proposer] of ____________, the entity making the foregoing Proposal.

B. The Proposal is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, joint venture, limited liability company or corporation; the Proposal is genuine and not collusive or a sham; the Proposer has not directly or indirectly induced or solicited any other Proposer to put in a false or sham Proposal, and has not directly or indirectly colluded, conspired, connived or agreed with any Proposer or anyone else to put in a sham Proposal or refrained from proposing; the Proposer has not in any manner, directly or indirectly, sought by agreement, communication or conference with anyone to fix the prices of the Proposer or any other Proposer, or to fix any overhead, profit or cost element included in the Proposal, or of that of any other Proposer, or to secure any advantage against GDOT or anyone interested in the proposed DBA; all statements contained in the Proposal are true; and, further, the Proposer has not, directly or indirectly, submitted its prices or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, joint venture, limited liability company, organization, Proposal depository or any member, partner, joint venture member or agent thereof to effectuate a collusive or sham Proposal.

C. The Proposer will not, directly or indirectly, divulge information or data regarding the price or other terms of its Proposal to any other Proposer, or seek to obtain information or data regarding the price or other terms of any other Proposal, until after award of the DBA or rejection of all Proposals and cancellation of the Request for Proposals.

* Initially capitalized terms not otherwise defined herein shall have the meanings ascribed thereto pursuant to the Instructions to Proposers within the Request for Proposals for the Project.

[signature page follows]
Georgia Department of Transportation
P.I. No. 0014895 and 0014899 – Macon Bridges over NS Railway DB Project

Instructions to Proposers
Amendment 2: June 28, 2019

(Signature)
J. Mitchell Simpson
(Name Printed)
Vice President
(Title)

(Signature)
Thomas L. Turner
(Name Printed)
Principal In Charge
(Title)

Subscribed and sworn to before me this 5th day of July, 2019.

[Seal]
KELLY A. ROAN
Notary Public in and for said County and State

My commission expires: June 24, 2020.

[Proposers shall duplicate or modify this form as necessary so that it accurately describes the entity making the Proposal and so that it is signed on behalf of all partners, members, joint venture members, Participating Members and Major Non-Participating Members.]
EXHIBIT 22

INITIAL DESIGNATION OF AUTHORIZED REPRESENTATIVES

GDOT’s Authorized Representative:

GDOT hereby designates the persons from time to time serving as the Commissioner of GDOT as its Authorized Representatives and such other persons as the Commissioner may from time to time designate by delivering written notice thereof to Design-Build Team. Any such designations by the Commissioner may be limited in scope and duration and may be revoked at any time by delivery of written notice thereof to Design-Build Team pursuant to Article 24.11 of the Agreement.

Design-Build Team’s Authorized Representative:

Design-Build Team hereby designates the persons from time to time serving as the Chief Executive Officer of Design-Build Team as its Authorized Representatives and such other persons as the Chief Executive Officer may from time to time designate by delivering written notice thereof to GDOT. Any such designations by the Chief Executive Officer may be limited in scope and duration and may be revoked at any time by delivery of written notice thereof to GDOT pursuant to Article 24.11 of the Agreement.
EXHIBIT 23

Drug Free Workplace
FORM T

Drug Free Workplace

STATE OF Tennessee

COUNTY OF Bradley

Each of the undersigned, being first duly sworn, deposes and says that:

J. Mitchell Simpson is the Vice President of Neel-Schaffer, Inc., which entity(ies) are the Lead Design Consultant of Neel-Schaffer, Inc., and Thomas L. Turner is the Principal In Charge of Wright Brothers Constr. Co., Inc., the entity making the foregoing Proposal.

The undersigned certifies that the provisions of Code Sections 50-24-1 through 50-24-6 of the Official Code of Georgia Annotated, relating to the "Drug-free Workplace Act", have been complied with in full.

The undersigned further certifies that:

(1) A drug-free workplace will be provided for the Contractor's employees during the performance of the Contract; and

(2) Each Contractor who hires a Subcontractor to work in a drug-free workplace shall secure from that Subcontractor the following written certification:

"As part of the subcontracting agreement with (Contractor's name) Wright Brothers Constr. Co., Inc. (Subcontractor's name) Neel-Schaffer, Inc. certifies to the Contractor that a drug free workplace will be provided for the Subcontractor's employees during the performance of this Contract pursuant to paragraph (7) of subsection (b) of Code Section 50-24-3."

Also, the undersigned further certifies that he will not engage in the unlawful manufacture, sale distribution, dispensation, possession, or use of a controlled substance or marijuana during the performance of the Contract.

[signature page follows]
Georgia Department of Transportation
P.I. No. 0014395 and 0014899 – Macon Bridges over NS Railway DB Project

Instructions to Proposers
Amendment 1: May 23, 2019

J. Mitchell Simpson
(Vice President)

(Title)

Thomas L. Turner
(Principal In Charge)

(Title)

Subscribed and sworn to before me this 15th day of July, 2019.

Notary Public in and for said County and State

My commission expires: June 24, 2020

[Proposers shall duplicate or modify this form as necessary so that it accurately describes the entity making the Proposal and so that it is signed on behalf of all partners, members, joint venture members, Participating Members and Major Non-Participating Members.]
EXHIBIT 24

Reserved
EXHIBIT 25

Reserved
Georgia Department of Transportation

VOLUME 2

Technical Provisions
For

Design-Build Agreement
P.I. No. 0014895 and 0014899

THE SR 247 AND COLLEGE STREET BRIDGES OVER NS RAILWAY DESIGN-BUILD PROJECT
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SP 865 Manufacture of Prestressed Concrete Bridge Members
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Attachment 13-2  Fence and Parapet Details
Attachment 13-3  Paving Rest Details
Attachment 14-1  Special Provision for Protection of Railway Interests
Attachment 15-1  MTA Bus Shelter
Attachment 17-1  NaviGAtor ATMS Integration
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  SP 935 Fiber Optic System
  SP 936 CCTV Camera System
  SP 939 Communication Electrical Equipment
Attachment 17-3  Surge Protection Systems and Devices
Attachment 18-1  Approved Detours
1 GENERAL

1.1 General Overview
This Section 1 provides a general description of the Project and certain requirements. Comply with all requirements set forth in the DB Documents. Ensure the Design Documents for the Project are consistent with the following:

1. Environmental Documents Approvals
2. Approved Concept Report

1.2 Administrative Requirements

1.2.1 Errata to the Technical Provisions
Interpret the Technical Provisions and GDOT standards, policies, and specifications in accordance with Volume 1, Article 1.6 (Errata to the GDOT Standard Specifications).

1.2.2 Naming Designations
Central of Georgia Railroad Company is a subsidiary of Norfolk Southern Railway Company. Both company designations may be used interchangeably in these DB Documents.

1.3 Design Requirements

1.3.1 General Design Requirements
Adhere to the requirements of the Agreement and the Technical Provisions for the general administration and management of the Project, specifically including those provisions in Section 2 (Project Management) and Section 3 (Design and Submittals).

Coordinate with GDOT, adjacent Governmental Entities, and other third parties as appropriate to determine the design criteria, standards, and specifications of those components of Work that are constructed by the DB Team but maintained by others. For components of Work that impact or may impact the infrastructure of any Governmental Entity or third-party entity, conform to the design requirements of such entity.

1.3.2 Project Scope
Design and construct the Project as required by the DB Documents, including design, design-related activities, permitting, Utility Adjustments, construction, and related Work.

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

The Work includes providing a minimum 21-foot vertical clearance from the bridge low chord to top of rail for Pio Nono Avenue bridge (Structure ID 021-0060-0), P.I. Number 0014895; and minimum 22.5-foot vertical clearance from the bridge low chord to top of rail for College Street bridge, P.I. Number 0014899.
To provide the required vertical clearance, the substructure of the existing SR 247/Pio Nono Avenue bridge may be utilized.

Replace the existing steel and masonry arch viaduct on CR 5813/College Street with a single-span structure.

Maintain traffic on an offsite detour during both bridge constructions. See Attachment 18-1 (Approved Detours) for acceptable detour routes.

### 1.3.3 Transitions to Adjacent Infrastructure, Roadways and Facilities

Design and construct Project transitions and interconnections with adjacent infrastructure, roadway, facilities, and related appurtenances for compatibility and uniformity with all interfaces. Coordinate with Persons, including other contractors performing Work at or adjacent to the Site, to provide seamless transitions from the Project to any Work proposed, being developed, or existing. Remove any temporary transitions that are not intended to accommodate permanent traffic operations connecting the proposed improvements to existing roadways, and restore all areas within the Work or impacted by the Work. Minimize disruption to traffic operations and adjacent property access throughout the performance of the Work.
2 PROJECT MANAGEMENT

2.1 General Requirements

2.1.1 Management Organization
Establish and maintain an organization that effectively manages all Elements of the Work. Operate an organization that communicates with GDOT to efficiently and effectively identify and resolve project delivery issues.

2.1.1.1 Project Meetings
Include all appropriate staff necessary at each meeting to make decisions regarding the subject matter to progress the Project and maintain the Project Schedule. Lead and facilitate the meetings; prepare and distribute meeting agendas a minimum of 24 hours in advance, and prepare and distribute meeting minutes within three Business Days after the meeting. Hold additional meetings and cause additional staff to attend all meetings if requested by GDOT or its representatives. At a minimum, hold, participate in, and prepare minutes for the following regular meetings with GDOT.

2.1.1.1.1 Weekly Meeting Requirements
No requirements.

2.1.1.1.2 Twice Monthly (every Two Weeks) Meeting Requirements
Design and construction progress meetings to address such items as design coordination, submittals review, ITS communications, and traffic interruption reports.

2.1.1.3 Monthly Meeting Requirements
1. Project Schedule Review Meeting (held the first week of each month)
2. Payment Request/Progress Status Team Meeting (held the first week of each month)
As the Project progresses, hold work sessions with GDOT on Project technical design elements; these may include roadways, structures, Utility relocations, drainage and MS4, and other disciplines as needed to facilitate timely input from GDOT.

2.1.2 Requirements for GDOT Office and Equipment
Provide a Type 3 Engineer’s Field Office as specified in Section 153 of the GDOT Standard Specifications. Provide high-speed internet connectivity per Section 2.1.4.

2.1.3 Partnering
No requirements.
2.1.4 Project Management Controls System (PMCS)

Use the Project Management Controls System (PMCS), provided by GDOT, throughout the Term of the Agreement for document management and transmittal, including workflows, file storage, communication, and correspondence.

This PMCS provides the following:

1. Centralized data that acts as a ‘single source of truth’
2. Access to Project information
3. Built-in work processes for certain administrative elements of the Work
4. Automated ball-in-court tracking for certain processes
5. Project reporting

Use this system for all submittals and official Project documentation, including:

1. Correspondence
2. Payment Requests
3. Relief Event notices and Compensation Event notices
4. Draft and executed Supplemental Agreements
5. Project Management Plans in accordance with Section 2.2 (Management Plans)
6. Meetings/Meeting Minutes/Action Items
7. Requests for Information (RFIs)
8. Submittals, including those listed in Section 3 (Design and Submittals)
9. Project Schedule submittals, including those listed in Section 2.5 (Project Schedule Requirements)
10. Audits and nonconformance reporting (NCRs)
11. Punch Lists
12. Project Reporting
14. Construction Drawing Management (including management markups, versions, and revisions)

Use the PMCS to perform Project responsibilities.

Additional requirements/guidelines of the system:

1. Use the PMCS to track and manage the Project and as an official record of all Project communication. Upload all Project-related information to the PMCS.
2. Designate a PMCS coordinator (an internal point of contact) and provide their name, phone, and e-mail to GDOT no later than seven Days after NTP 1.
3. Users of this PMCS must complete training prior to having access to the system provided by GDOT.
4. Provide high-speed internet connectivity (actual means to be agreed-on by GDOT) for GDOT to access the PMCS.
5. Upload, submit, track, and review submittals via the PMCS. Where physical samples are required, review and track the submittal via the system, and transmit the sample itself to the reviewer via traditional means.
6. Use the file naming convention provided in Section 2.1.4.1 (File Naming Convention). Upload all submittals to the PMCS. Ensure that Design Documents comply with the naming convention requirements of GDOT’s Electronic Data Guidelines (EDG). Ensure that Project documents transmitted via the system that are not specified in the EDG comply with the following electronic formats:

1. Submit documents generated in Computer Aided Design (CAD) applications (MicroStation V8 or InRoads) in Portable Document Format (PDF) generated by a PDF writer from the CAD application.
2. Scan documents that are marked up or unavailable in electronic format (drawings, sketches, correspondence, etc. generated by hand drafting methods) to Tagged Image Format version 6 [TIFF 6 (.TIF)] or latest update, Bitonal [or Black and White (or Line Art), on some scanners] (.tif) or PDF (.pdf), black and white with a resolution of 200 dpi using CCITT Group 4 (2d Fax) compression.
3. Submit documents that have been generated using PDF printer drivers (not scanned) via the system.
4. Submit electronic photographs in Joint Photographic Experts Group (JPEG) (.jpg) file format, sized at a minimum resolution of 1024 by 768 pixels.
5. Save grayscale or color photo images that are scanned in JPEG (.jpg) file format with medium to low quality compression at a resolution of 200 dpi.
6. Submit product data that is available for download from the manufacturer’s website that has been generated using PDF printer drivers (not scanned) via the system.
7. Submit all design drawings in compliance with GDOT EDG, latest revision, and all policies and guidelines on GDOT’s Design Manuals and Guides website:


Use GDOT’s PMCS for contract administration processes, including requests for information, Supplemental Agreements, Payment Requests, and DB Team official correspondence. Attend a training session(s) at GDOT’s office or other mutually agreeable location within 30 Days of the execution of the Agreement or such time as agreed to by GDOT. Contact GDOT’s project manager to schedule the training session(s).

Limited licenses will be provided by GDOT to the DB Team. Inquire with GDOT immediately after NTP 1 for the number of licenses assigned to the DB Team.

**2.1.4.1 File Naming Convention**

Use the file naming conventions shown in Table 2-1.

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>Project Number (i.e., 0014895 or 0014899 (7 digit))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracking No</td>
<td>PMCS-assigned process number, or user-defined tracking number</td>
</tr>
<tr>
<td>DocType</td>
<td>The 3-digit document type (e.g., LTR = Letter, TRN = Transmittal, RPT = Report)</td>
</tr>
</tbody>
</table>
Use the following file naming convention on all correspondence created or issued by the Project and for filing any document:

**PI#_Tracking-###__Type_Description_Date_Rev-##**

Clearly identify all FINAL versions of documents and save them in the Final Deliverables folder (where applicable) as follows:

**PI_Tracking Number_DocType_Desc_Date_File_Name_Final**

The following are file naming guidelines:

1. **Correspondence Files**: Include the name of the correspondent, an indication of the subject, the date of the correspondence, and whether it is incoming or outgoing correspondence in the file name.
2. **Dates**: Present dates ‘back to front’, with the year first (always given as a four-digit number), followed by the month (always given as a two-digit number), and the day (always given as a two-digit number).
3. **Keep file names short but meaningful**: Some words add length to a file name but do not contribute towards the meaning, for example words like “the”, “a”, and “and.”
4. **No spaces in file names**: Use an underscore “_”, a dash “-”, heading fields, and words for ease in sorting. Use caps to distinguish words (e.g., Document_Management_Plan).
5. **Numbers in file names**: Include the zero for numbers 0-9 to maintain the numeric order when file names include numbers. This helps to retrieve the latest record number (i.e., 01, 02 … 99), unless it is a year or another number with more than two digits.
6. **Special Characters**: Do not use special characters such as @ # $ % ^ & *.,? in file names, as they can cause problems with uploading, viewing, and downloading documents over the Internet.

**Table 2-2: File Type Identification Table**

<table>
<thead>
<tr>
<th>File Type ID</th>
<th>File Type</th>
<th>Contains</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHG</td>
<td>Change</td>
<td>Change Management folder items</td>
</tr>
<tr>
<td>CLS</td>
<td>Close-out</td>
<td>Close-out documents, including Record Documents.</td>
</tr>
<tr>
<td>CMP</td>
<td>Compliance</td>
<td>Contract compliance documents, DBA, GA, FHWA</td>
</tr>
<tr>
<td>CST</td>
<td>Construction</td>
<td>All construction docs, unless have own type code</td>
</tr>
<tr>
<td>DAR</td>
<td>Daily activity Reports</td>
<td>Daily activity reports</td>
</tr>
<tr>
<td>DBA</td>
<td>DB Agreement</td>
<td>All DB Documents, other than Reference Documents</td>
</tr>
</tbody>
</table>
### File Type ID

<table>
<thead>
<tr>
<th>File Type ID</th>
<th>File Type</th>
<th>Contains</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIR</td>
<td>Directive</td>
<td>Directive Letters</td>
</tr>
<tr>
<td>ENV</td>
<td>Environmental</td>
<td>Environmental documents, all types incl. submittals</td>
</tr>
<tr>
<td>FED</td>
<td>Federal</td>
<td>FHWA materials</td>
</tr>
<tr>
<td>FIN</td>
<td>Financial</td>
<td>Final design documents, all types</td>
</tr>
<tr>
<td>HLD</td>
<td>Hold</td>
<td>Hold Points, including notices</td>
</tr>
<tr>
<td>IMG</td>
<td>Images</td>
<td>All photos and videos as submitted</td>
</tr>
<tr>
<td>LTR</td>
<td>Letters</td>
<td>All letters, to/from DB Team</td>
</tr>
<tr>
<td>MAN</td>
<td>Management</td>
<td>All management items, other than PLN</td>
</tr>
<tr>
<td>MGT</td>
<td>Management</td>
<td>Management Submittals from DB Team</td>
</tr>
<tr>
<td>MTG</td>
<td>Meeting</td>
<td>Meeting-related documents, all types</td>
</tr>
<tr>
<td>NCR</td>
<td>Non-compliance Report</td>
<td>All NCRs, whether from design or construction</td>
</tr>
<tr>
<td>NOT</td>
<td>Notice</td>
<td>Notices from DB team</td>
</tr>
<tr>
<td>PAY</td>
<td>Pay</td>
<td>App payment applications, of any type</td>
</tr>
<tr>
<td>PLN</td>
<td>Plan</td>
<td>Project Team management plans</td>
</tr>
<tr>
<td>PRE</td>
<td>Preliminary</td>
<td>Preliminary designs, all types</td>
</tr>
<tr>
<td>PUB</td>
<td>Public</td>
<td>Public information documents, all types</td>
</tr>
<tr>
<td>QAL</td>
<td>Quality</td>
<td>All quality docs, except NCRs and inspectors daily reports</td>
</tr>
<tr>
<td>REF</td>
<td>Reference</td>
<td>Reference Documents (Attachment 3-1)</td>
</tr>
<tr>
<td>RFC</td>
<td>Released for Construction</td>
<td>Released for Construction docs, including revisions</td>
</tr>
<tr>
<td>RFI</td>
<td>Request for Information</td>
<td>Requests for information</td>
</tr>
<tr>
<td>ROW</td>
<td>Right of Way</td>
<td>All docs related to ROW</td>
</tr>
<tr>
<td>SAF</td>
<td>Safety</td>
<td>DB Team Safety-related documents</td>
</tr>
<tr>
<td>SCH</td>
<td>Schedule</td>
<td>All schedule and SOV submittals, of any type</td>
</tr>
<tr>
<td>UTL</td>
<td>Utility</td>
<td>Utility documents</td>
</tr>
</tbody>
</table>

### 2.1.5 Document Management

Maintain an electronic and/or hardcopy document control system to manage, store, catalog, and retrieve all Project-related documents as needed to document to DB Team work and respond to inquiries or audits for the purpose of claims. Ensure record retention complies with the requirements included in the Retention Schedules for State Government Paper and Electronic...
Records, State Agency Specific Schedules for GDOT, and any other applicable local, State, and federal guidelines unless otherwise directed by GDOT. Provide all documentation and content to GDOT at the time of the expiration or termination of the Agreement.

2.1.5.1 Backup of Electronic Files and Protection of Hardcopy Files

For documents retained by the DB Team, provide a secure, fireproof location with controlled access to store electronic and hardcopy backup files to protect them from loss, damage, and deterioration. For electronic files, provide off-Site backup.

2.2 Management Plans

Management plans are an essential part of effectively delivering the Project on time, on budget, and with high quality. Provide the required plans as set forth in this Section 2 and elsewhere in the DB Documents.

2.2.1 Management Plan Requirements

Submit the following management plans for GDOT review and acceptance, or as otherwise indicated:

1. Project Management Plan (PMP), pursuant to Section 2.2.2
2. Quality Management Plan (QMP), pursuant to Section 2.3.2
3. Safety Plan (for limited acceptance only), pursuant to Section 2.4.1
4. Incident Management Plan, pursuant to Section 2.4.6
5. Construction Phasing and Staging Plan, pursuant to Section 2.2.4
6. Project Schedule Workplan, pursuant to Section 2.5.8
7. Communications Support Plan, pursuant to Section 2.2.3
8. Comprehensive Environmental Protection Plan (CEPP), pursuant to Section 4.3.3
9. Hazardous Materials Management Plan (HMMP), pursuant to Section 4.3.4

2.2.2 Project Management Plan

Submit the Project Management Plan (PMP) that describes the organization, staffing, directing, and controlling the day-to-day operations necessary for effective decision-making and Project performance.

Include in the PMP the procedures and processes that ensure the dissemination of timely information to GDOT and the DB Team members to effectively manage the scope, costs, schedules, quality of, and the requirements applicable to the Project.

Also include in the PMP a Key Personnel organization chart, roles and responsibilities, approach to managing the design and construction phases, communications protocol, change/risk management process, and schedule development and updates.
2.2.3 Communications Support Plan

A critical objective for all projects is to maintain the trust, support, and confidence of the media and public throughout the life of the Project. In order to meet this objective, it is critical to proactively manage messages and communications to the media.

GDOT will prepare a Public Information and Communications Plan (PICP) and will coordinate specific communications strategies and tactics for the Project with the DB Team. GDOT is responsible for all communications with the media. Direct all inquiries from media to GDOT for responses.

Develop a Communications Support Plan that designates a member of the Project team to carry out the role of the Public Information Contact (PIC), who will be the point of contact to GDOT on behalf of the DB Team for public information and involvement activities throughout the Term of the Agreement. Make available the PIC or a designated DB Team member 24 hours a day, seven days a week.

The PIC shall ensure updated Project information is provided to GDOT in a timely manner.

When requested by GDOT, participate and provide necessary staff support in meetings with the public arranged and conducted by GDOT. During such meetings, be in attendance to assist GDOT in providing the public with an update on the progress the Project and discussing key issues as they emerge, or as requested by GDOT.

2.2.3.1 Disseminating Public Information

Led by the PIC, assist GDOT in the development of and review of public information materials. Activities shall include:

1. Assist in the review of materials regarding Project-related subjects, for use in meetings, news releases, telephone correspondence, newsletters, email, GDOT’s web-based information tool, overhead dynamic and changeable message board signs, web alerts, maps, displays, renderings, presentations, digital renderings/animations, photos, brochures, pamphlets, and any other relevant public information materials.
2. Provide weekly Traffic Interruption Request summaries for public information purposes. Provide draft press releases and detour maps of planned impacts to affected stakeholders or the traveling public. Provide any lane closure and detour requirements 72 hours in advance of closure and detour activities.
3. Provide narrative content, photos and graphic information for weekly social media posts and monthly Project e-newsletters.
4. Support the planning and implementation of special events, including a groundbreaking ceremony at commencement of construction and ribbon cutting at Project completion.
5. Supply high-quality construction progress photos and video (detail images and aerial) monthly and at major construction milestones.
6. Provide Project-related information for the GDOT Project website, including:
   a. Narrative Project updates
   b. Project maps
   c. Digital renderings and/or animations
Frequently asked questions (FAQs)
Current Project activities addressing design and construction
Timing of road and ramp closures and openings
Any utility disruptions
Recommended route alternatives during closures

2.2.3.2 Photography
Provide monthly aerial photo submittals (both high-resolution and low-resolution digital files) and a minimum of two photos total of the entire Project. Take photos from the same angle, elevation, and location as previously taken, in order to show the progress of the Work from commencement of construction to Substantial Completion.

GDOT claims all data as its property. The DB Team is responsible for any photography equipment installation, including power, and maintenance of the equipment at all times. Label and catalog all photographs with the date and time taken and a brief description of the location and view.

File the electronic copies of all photographs in a single folder on the PMCS, cataloged in a logical manner as approved by GDOT.

Provide and operate, at a minimum, one streaming camera at each bridge location to record the construction to begin on issuance of NTP 3 and continue through Substantial Completion. Submit the camera specifications and locations for GDOT’s review and acceptance. Ensure that cameras can provide a timeline navigation system for selecting specific images and times, time date overlay for instant viewing, downloading and embedding.

2.2.4 Construction Phasing and Staging Plan
Prepare a Construction Phasing and Staging Plan that represents the DB Team’s approach to perform the Work. A Construction Phase is a portion of the overall Project that provides logical termini for each proposed Phase of the Work, which may be comprised of multiple Stages. The Construction Phasing and Staging Plan shall align and be consistent with the DB Team’s Project Schedule including those Completion Deadlines shown in Exhibit 9. Construction Phasing and Staging Plan submittals shall be provided and reviewed in accordance with timing requirements and durations specified in Table 3-1. Include the following in the Construction Phasing and Staging Plan:

1. Narrative that describes how and in what order each Construction Phase and Stage will be accomplished to complete the Work as specified by the DB Documents. Identify any design submittals associated with each Construction Phase.
2. Construction Phasing and Staging layout (scale: 1 inch = 200 feet) including lane configuration and traffic management of the Project during the different Phases and Stages of Construction.
3. Additional supporting documentation as requested by GDOT.
2.3 Quality Management Requirements

2.3.1 Design-Build Team Responsibilities

Assume full responsibility for the quality of the Work. Ensure that the Work is delivered in accordance with DB Documents, including but not limited to the environmental and permit commitments, Released-for-Construction (RFC) plans, shop drawings, working drawings, and specifications.

Develop, implement, and update the QMP for the Term of the Agreement such that it describes the system, policies, and procedures that ensure the Work meets the requirements of the DB Documents and provides documented evidence of same.

2.3.2 Quality Management Plan

2.3.2.1 Quality Management Plan Requirements

Submit for GDOT review and acceptance as follows.

The QMP shall consist of three sections:

1. The Administration portion of the QMP shall include the following:
   a. A quality policy statement that contains a complete description of the quality policies and objectives that the DB Team will implement throughout its organization and demonstrates the DB Team senior management’s commitment to implement and continually improve the quality management system for the Work.
   b. Organizational requirements with contact information of the DB Team’s Organization as defined
   c. Roles and responsibilities of the quality personnel, their relationship to the production personnel, and the quality-specific responsibilities of production personnel
   d. A plan and written procedures for quality checks and reviews
   e. Document control and quality records management processes and procedures
   f. DB Team’s internal compliance auditing processes, procedures and documentation
   g. Quality training plan of relevant staff

2. The Design Quality Management Plan (DQMP) shall comply with the requirements set forth in the GDOT Design-Build Manual. The plan must also include a process for independent analytical checks and written procedures set forth in Section 1.3 of the GDOT Bridge and Structures Design Manual.

3. The Construction Quality Management Plan (CQMP) shall comply with the requirements set forth in the GDOT Design-Build Construction Management SOP, and the GDOT Construction Manual. In addition:
   a. Describe how the DB Team will develop and use forms and checklists to facilitate and document quality 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 or testing requirements.

b. Document approach to coordinate and maintain records for all required inspections and tests that will be performed by GDOT in accordance with GDOT Design-Build Construction Management SOP and the GDOT Construction Manual.

c. Describe the methods, processes, and procedures to provide for the effective implementation and documentation of the environmental protection, training, compliance, and monitoring program.

d. Describe approach to accommodate and coordinate with GDOT provided construction engineering acceptance inspection and testing.

e. Describe approach to accommodate and coordinate with GDOT provided plant inspection(s), testing and certification of plant produced materials at existing GDOT approved plant locations, such as for precast/pre-stressed concrete, asphalt, and structural steel fabrication.

f. Describe approach to accommodate and coordinate with GDOT in the Final Acceptance and project closeout process

2.3.2.2 Quality Management Plan Updates

The DB Team or GDOT may initiate changes to the QMP (including clarifications, modifications, additions, and deletions) after it has been approved. Changes initiated by GDOT are made under GDOT’s approval authority. Any revisions to the QMP initiated by the DB Team or CQAM require prior GDOT approval.

Maintain and update the QMP to ensure it is accurate and up-to-date, including the following information:

1. The organizational chart identifying all quality management personnel, their roles, authorities, and line reporting relationships.
2. Names and descriptions of the roles and responsibilities of all quality management personnel and including which personnel have the authority to stop Work.

Revise the QMP within 14 days of GDOT or DB Team detection of a substantial or systemic problem related to the Work as a result of audits, or as directed by GDOT. Include with submissions and all updates to the QMP both a clean copy and a copy tracking all changes since the previous approval.

2.3.3 Nonconforming Work and Corrective Action

A Nonconformance Report (NCR) process shall be required to document, report and track work that fails to conform to the requirements of the DB Documents. NCRs shall be issued as a result of such non-conformances. Examples of nonconformance’s include physical defects, test failures, incorrect or inadequate documentation or changes from the design processes, inspection or test procedures described in the Project QMP.

GDOT will implement a web-based management system that 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 DB Team, CQAM, or GDOT can initiate an NCR. Only the initiating party may close an NCR they initiated. The Originator closes the NCR document once all requirements have been met. An NCR cannot be closed until all requirements have been met and the disposition approved by GDOT.

Provide a full description of the NCR’s nature, date, location, and any other pertinent facts, and also indicate the root cause, corrective action(s), and other action(s) to prevent its recurrence. The responsible organization shall submit a proposed disposition to GDOT of the Nonconforming Work that has been reviewed and approved by the DB Team’s Quality Assurance Manager (QAM) and EOR. If the disposition is not accepted by GDOT, the NCR will remain opened until the disposition is accepted by GDOT.

Comply with the NCR requirements set forth in the GDOT Design-Build Manual including the GDOT Design-Build Construction Management SOP. In addition, the QAM shall maintain a log of all NCRs and submit a report upon request to GDOT providing the current status.

### 2.3.4 Quality Terminology

Quality terminology, unless defined or modified elsewhere in the DB Documents, has the meaning defined in ISO 9001.

### 2.3.5 Responsibility and Authority of DB Team Quality Personnel

Comply with the requirements set forth in GDOT Standard Specifications, and GDOT Design-Build Manual, including the GDOT Design-Build Construction Management SOP.

The DB Team’s QAM, Design Quality Assurance Manager (DQAM) and Construction Quality Assurance Manager (CQAM) shall have the authority to suspend all or a portion of the Work because of quality-related issues.

#### 2.3.5.1 Quality Assurance Manager

Designate a Quality Assurance Manager (QAM) whose responsibilities include developing and updating the QMP, ensuring that all Elements of Work are performed in accordance with the DB Documents, and ensuring adequate staffing and expertise is being utilized for the DB Team’s quality efforts.

The QAM shall have defined authority for ensuring the establishment and maintenance of the Management Plans and reporting to GDOT on the performance of the Management Plans.

The QAM reports directly to the person or group with overall Project management responsibilities, such as the Project Manager, an off-Site principal with binding authority for the DB Team, or an executive oversight committee established for the Project. The QAM can be an employee of the DB Team, the DQAM, or the CQAM, but cannot be both the DQAM and CQAM.

Ensure the QAM has recent experience in the management of a quality management program of similar size and complexity as the Project.
2.3.5.2 Design Quality Assurance Manager

Designate a Design Quality Assurance Manager (DQAM) who has overall responsibility for the DQMP. The DQAM is responsible for verifying and validating that the procedures required by the QMP are being administered. The DQAM reports to the QAM. The DQAM can also be the QAM, but cannot be the CQAM.

In accordance with this Section 2.3.5.2 and the QMP, the DQAM certifies that all Design Documents have been subjected to all required QC checking procedures; all documentation has been completed and filed in an acceptable manner; and all design packages have been subjected to a QA prior to submittal to GDOT or prior to release.

The DQAM shall monitor to ensure the DQMP results in Design Work that is:

1. Accurate
2. Conforming to professional standards of practice
3. Compliant with all legal requirements and standards mandated by the DB Documents
4. Fit for purpose and function as specified or implied in the DB Documents

Ensure the DQAM is a Licensed Professional Engineer in the State of Georgia and has recent experience in the design of highway or bridge projects of similar size and complexity as the Project. Generally, the DQAM must have equal or greater qualifications and experience as the EOR.

2.3.5.3 Construction Quality Assurance Manager

Employ a Construction Quality Assurance Manager (CQAM), who has overall responsibility for development and implementation of the CQMP. The CQAM is responsible for implementing, monitoring, and adjusting the processes to ensure acceptable quality. The CQAM reports directly to the QAM. The CQAM can also be the QAM but cannot be the DQAM.

The CQAM is the responsible for implementing quality planning and coordinating with GDOT’s testing and inspection requirements. Do not assign the CQAM to perform conflicting duties on the Project. The CQAM shall have the authority to stop any Work that does not meet the standards, specifications, or criteria established for the Project.

The CQAM or a designated assistant to the CQAM shall be on the Project at all times Construction Work is being performed. The CQAM shall be on the Project Site within two hours of being notified of a problem regarding the quality of any Work being performed by the DB Team, any of its Subcontractors, or agents. The CQAM or a designated assistant to the CQAM shall be on the Project Site when control points inspections by GDOT occur.

Ensure the CQAM has recent experience in construction quality management for highway or bridge projects of similar size and complexity as the Project.

2.3.5.4 Control Point Inspections

A control point is a point in time when construction has proceeded to a defined stage and at which representatives of the DB Team have determined that the Work is ready for GDOT inspection(s).
Notify GDOT 24 hours in advance of the actual inspection for the following activities: pre-pour conferences; pre-pour checks for footing rebar, cap rebar, column rebar, deck rebar, approach slab rebar, and barrier wall rebar; driving piles; setting beams; subgrade compaction; sub-base compaction; and compaction under the approach slabs.

The CQMP shall specify processes for monitoring the progression of Work through the tracking of control points. The process shall be designed to aid in progressing Work, verifying payments, and avoiding duplicate inspection, testing, and reporting. Provide this information on the Two-Week Detail Schedules required by Section 2.5.9 (Two-Week Detail Schedule Requirements) for all upcoming Work to be inspected.

GDOT or the DB Team may identify additional control points, subject to acceptance by GDOT, to be included at any time throughout the Project. Such additions, individually or in aggregate, shall not constitute a Compensation Event or Relief Event. GDOT will coordinate to define the procedures and criteria for additional control points.

2.3.6 Final Inspection

At the completion of constructed elements of the Work, the CQAM will jointly conduct a final inspection with GDOT and the DB Team.

During the inspection, GDOT, the CQAM, and the DB Team will jointly review Punch List items and an agreed date of correction of the items.

2.3.7 Quality Documentation

Maintain design quality records 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 Design-Build Documents requirements at any time. Upon completion of the Project, the quality records shall be turned over to GDOT.

At GDOT's discretion, GDOT may perform periodic audits of the DB Team's quality management process and related documentation.

2.4 Safety and Security

Assume sole responsibility for the safety of personnel and of the general public affected by the Project. See Section 2.4.1 (Safety Plan) regarding basic Safety Plan requirements.

Incorporate the following requirements into the Project and include them in the Safety Plan to ensure that the Project is a safe and secure environment for all individuals working on the Project. The prevention of accidents during execution of the Project shall be a primary concern of all participants and shall be the responsibility of all levels of the DB Team. Safety shall never be sacrificed for production, but shall be considered an integral part of an efficient and quality Project.

Safety and security procedures shall include and/or address the following:

1. Safety and health standards
2. Roles and responsibilities of the safety/security staff

Section 2—Project Management
3. Contractors (meaning prime Contractors and Subcontractors) having a Safety Director and an accepted safety manual (or plan) available to all employees
4. Contractors holding periodic on-Site safety meetings
5. Contractors conducting periodic on-Site safety inspections
6. Contractors providing safety training for all new employees and refresher training for all employees
7. Contractors conducting drug screening for all new hires
8. Contractors establishing daily housekeeping and clean-up procedures
9. Possible employee sharing of accident prevention savings
10. First-aid and medical kits readily available
11. Site security plan, possibly including such items as restricted parking near vulnerable structures, physical barriers (fences, barricades, etc.), coordinated efforts with local law enforcement officials during heightened threat levels, video surveillance, alarm systems, emergency telephones, etc.
12. Emergency preparedness and incident management plan, including roles and responsibilities, emergency evacuations, communications, first responder awareness training, and field drills
13. Establishment of an employee identification (ID) system
14. Level and frequency of audit and oversight safety/security reviews to be performed by GDOT, FHWA, independent consultants, and/or other agencies (as applicable)
15. Safety and security periodic reporting (no less than monthly)

In addition, conduct appropriate threat and vulnerability assessments and take into consideration throughout the Project’s life cycle. The transportation elements of the Project could have a significant impact on regional safety and security plans.

### 2.4.1 Safety Plan

Submit to GDOT for acceptance a comprehensive safety plan (Safety Plan) that is consistent with and expands upon any preliminary safety plan submitted with the Proposal. GDOT acceptance is limited to verifying the Safety Plan appears to be specific to the Project. In the Safety Plan, fully describe the DB Team policies, plans, training programs, Work Site controls, and Incident response plans to ensure the health and safety of personnel involved in the Project and the general public affected by the Project during the Term of the Agreement.

Include in the Safety Plan procedures for immediately notifying GDOT of all Incidents arising out of or in connection with the performance of the Work, whether on the Site or not.

Provide access to the Safety Plan and safety training to GDOT and their representatives prior to entry to the Project Site.

### 2.4.2 Safety Management

Provide health and safety leadership and promote and support a safe working environment. All DB Team management and Contractors shall support the DB Team’s safety personnel in the implementation and enforcement of the Safety Plan program.
Designate a Safety Manager responsible for the development of the Safety Plan and the enforcement of safety and health policies, procedures, and work practices. The Safety Manager shall provide Project direction to maintain a safe, healthy, and secure work environment for all employees, Contractors, GDOT personnel, and the general public. The Safety Manager shall have the authority to suspend all or a portion of the Work because of public or worker safety-related issues.

Field supervisors and managers shall be responsible for monitoring their direct hire employees and Subcontractors to ensure that the Work is being performed in a manner consistent with safety policies, procedures and work practices of the DB Team. They are responsible for promoting a safe, healthful and secure work environment for workers and visitors that is free from violence, threats, harassment, and intimidation, and protects the general public from harm in connection with jobsite operations.

All workers are responsible for planning and completing all work in a safe manner by following all applicable policies, procedures, and safe work practices.

### 2.4.3 Worksite and Jobsite Analysis

Conduct and require of each Contractor and Subcontractor a job hazard analysis to be performed at the beginning of each shift and whenever there is a change in the task or in the environmental conditions.

### 2.4.4 Hazard Prevention and Personal Safety

The prevention of accidents during execution of the Project shall be a primary concern of all participants and shall be the sole responsibility of all levels of DB Team’s management. Safety shall never be sacrificed for production and shall be considered an integral part of an efficient and quality Project.

### 2.4.5 Training

The Safety Manager shall ensure that all personnel on the Project are provided a thorough safety orientation and periodic refreshers on the Project site safety requirements. The safety orientation shall include:

1. Roles and responsibilities
2. Hazard communications
3. Job hazard analysis
4. Reporting of incidents and accidents
5. Drug and alcohol policies
6. Driving policies
7. Disciplinary procedures
8. General health and safety requirements including proper usage of personal protective equipment (PPE)
9. General Site safety rules
2.4.6 Incident and Emergency Management

Prepare for GDOT review and comment the Incident Management Plan for responding to Incidents and Project and Work Emergencies. Identify in the plans responsibilities and procedures for responding to Incidents and Emergencies, including coordination and cooperation with emergency responders in the performance of their normal duties.

The Incident and Emergency management plan(s) shall include:

1. The DB Team’s Incident response team availability.
2. The DB Team’s Incident response team training to effectively respond to accidents, incidents and Emergencies.
3. Incident Site security, including traffic control measures and eliminating hazards to other road users.
4. Debris clearing and site assessment for damage repair.
5. Reporting and evaluation protocol and procedures prior to the dispatch of the DB Team’s response crews or arrival of first responders.

2.5 Project Schedule Requirements

Comply with the Critical Path Method (CPM) Project Schedule requirements as defined in this Section 2.5 and in the publication *CPM in Construction Management*, latest edition, by James J. O’Brien and Fredric L. Plotnick. The DB Documents will govern in case of discrepancy between the DB Documents and *CPM in Construction Management*.

Prepare the Project Schedule as a computer-generated CPM graphic diagram that utilizes the Precedence Diagram Method (PDM) and clearly delineates the relationships between Work activities. Include and illustrate all significant Work activities that occur throughout the duration of the Agreement in sufficient detail to monitor and evaluate design and construction progress and to denote changes that occur from commencement of the Work to Final Acceptance of the Work. Indicate the duration of each activity, the order and interdependence of activities, and the sequence for accomplishing the Work. Define the timeframe for completion of the Project and achievement of all Completion Deadlines and durations specified in Volume 1, Exhibit 9 (Milestone Deadlines). Align the Project Schedule and Construction Phasing and Staging Plan to accurately reflect the latest approach and planning for the prosecution of the Work. Ensure that all Work sequences are logical and that the Project Schedule indicates the coordinated plan for performing the Work and accurately records the Work as it is completed. GDOT and Customer Groups will rely on the Project Schedule for timing of Owner-performed Work, reviews, and oversight activities; and for coordinating with, monitoring, and evaluating the DB Team’s progress.

Project Schedule refers to any of the following: Baseline Project Schedule, Revised Baseline Project Schedule, or Project Schedule Updates, as further defined in this Section 2.5 and as appropriate for the context in which they are used.

2.5.1 Baseline Project Schedule Requirements

The Baseline Project Schedule is the initial Project Schedule submittal representing the DB Team’s plan to complete performance of the Work beginning on the date of NTP 1 to Final...
Acceptance of the Work. In the Baseline Project Schedule, show the plan to complete the Project within the Completion Deadlines and durations specified in Exhibit 9. Do not show any Work activities with progress (no actual dates) in the Baseline Project Schedule. Comply with the following Baseline Project Schedule requirements:

1. Set the data date on or before the date of NTP 1 using a beginning of day convention.
2. Utilize a Work Breakdown Structure (WBS) and activity codes to plan, analyze, monitor, and organize all Work activities shown in the Project Schedule. Coordinate with GDOT prior to submittal of the Baseline Project Schedule to ensure an adequate WBS and activity codes have been developed and assigned to each activity to the satisfaction of GDOT. GDOT reserves the right to request additional WBS levels and activity codes be added and assigned throughout the duration of the Agreement. Comply with the following Project Schedule organization requirements:
   
a. Ensure activities are mapped to, organized by, and rolled-up to a deliverable-based, hierarchal WBS. Utilize the first level of the WBS as the Project itself. Include discrete nodes at the second level of the WBS for the following: Project Management, Environmental and Permitting, Design, Right of Way, Utilities, Procurement, Construction, and Close-out. Reflect the DB Team’s overall approach to the planning, scheduling, and execution of the Work in the organization and breakdown of the WBS. Include WBS levels for all Project-specific locations/alignments, Work Elements/Work packages, phasing, staging, sequencing, design, and deliverable requirements. Identify each design package required for construction phasing and sequencing and identify each stage of the design in the design phase WBS. Align the construction phase WBS with the DB Team’s Construction Phasing and Staging Plan. Remain consistent with the order and hierarchy number of each specific level of the WBS utilized. The DB Team may further develop and detail the WBS; however, any modifications cannot alter or interfere with these WBS requirements or the ability to summarize to the required WBS levels.
   
b. Include the following activity codes assigned to each activity: Work Element (each individual bridge, retaining wall, noise wall, drainage run, etc.), location/alignment (each mainline, connector-distributor, ramp, and crossing street and may be further defined by geometric limits such as sections for station-to-station, inside/outside, etc.), Work type (environmental, roadway, drainage, structures (bridges, retaining walls, noise walls), landscaping, etc.), responsibility (party responsible for each activity with individual Subcontractors identified), and construction phase/stage as specified by the DB Documents and pertinent to the DB Team’s Construction Phasing and Staging Plan, approach, means and methods. Use only Project-level (not global) activity codes. Include the PI number in the description of all activity code definitions (i.e. PI#### WORK Type; PI##### Responsibility; etc.).
   
3. Use standard and consistent activity identification numbers and activity textual descriptions (aka activity names) in a manner acceptable to GDOT. Comply with the following:
Use a coding structure for activity identification numbers with no spaces, hyphens, symbols, or special characters. Do not modify, reassign, or reuse activity identification numbers once assigned to an activity.

Ensure each activity is uniquely named and consists of a verb, noun, and location in the activity description (aka activity name) and is consistent with its WBS and activity code assignments. Include identifiable physical locations within definable geometric limits and Work features in each activity description such as location/alignment, station-to-station sectioning, and specific retaining wall or bridge, bent and span numbers, and drainage structure numbers. For design and preconstruction activities, include identifiable feature of Work, such as specific design package, submittal, ROW parcel, permit type, or procurement item in the activity description.

Fully detail all Work and activities necessary to complete the Work as specified by the DB Documents and pertinent to the DB Team’s approach, means, and methods. Break the Work into discrete activities associated with only one operation and into sufficient detail to readily identify, evaluate, and measure progress. Include activity sets for all preconstruction, design, construction, and post-construction Work, including:

a. NTP 1, NTP 2, NTP 3, and each Completion Deadline specified in Exhibit 9. Utilize a milestone activity type for each.

b. Design-phase Work and submittals shown in Table 3-1. Include distinct activities for the development, submittal, review, and approval of each submittal. Ensure the Staged Design Submittals, Construction Phasing and Staging Plan, and Project Schedule are aligned and consistent.

c. Environmental Document and Permit Acquisition Work including Work shown in Table 4-2 and Table 4-3. Include distinct activities for the development, submittal, review, and approval/issuance of each.

d. Right of Way (whether State Proposed/State Acquired or DB Team Proposed/DB Team Acquired), Right of Entry, and easements Work. Include distinct activities for the appraisals, negotiations, settlements or agreements, and acquisitions of each specific parcel.

e. Utilities and Utility Adjustment Work, as applicable and in accordance with the DB Documents. Include distinct activities for each adjustment and relocation.

f. Owner or other third-party scopes of Work and for interfaces with other projects, localities, municipalities, and other Governmental Entities.

g. Shop drawings and long-lead material and equipment items. Include distinct activities for preparation, submittal, review, and approval of all shop drawings and separate activities for fabrication and delivery.

h. Procurement of all major Subcontractors and trade packaging.

i. Project start-up, site setup and mobilization.

j. Permanent Construction Work, demolition of existing/selective demo, and major temporary work activities. Sufficient detail for Construction Work may be achieved as follows:
i. For bridge structures Work, indicate each element of individual bents (piles, footings, columns, caps, with separate activities for formwork, rebar, concrete placements, strip and cure times); each element of Work in individual spans (girders, strip seal joints, decks with separate activities for formwork, rebar, concrete placements, strip and cure times); individual approach slabs, railings, and miscellaneous other bridge Work.

ii. For cast-in-place retaining wall structure Work, indicate each broken-out by excavation, formwork, rebar, concrete placements, strip and cure times, and back-fill; and for mechanically-stabilized earth (MSE) walls, indicate each broken-out by excavation, leveling pad, lifts, settlement periods, wall caps, and related Work.

iii. For sound wall structures Work, indicate each broken-out by excavation, post piles/foundations, panel foundations, posts, panels, and related Work.

iv. For road Work, indicate individual runs of pipe and drainage structures; individual box culverts; individual detour roads; clearing and grubbing, embankment, excavation, base, paving layers, signing, striping, guardrail, water, sewer, roadway electrical and lighting; and other miscellaneous elements within definable geometric limits such as location/alignment and station-to-station sectioning.

v. For ITS and tolling, include structure foundations, structure supports, conduits, cabinets, power conductors, fiber optic, ITS equipment, cable splicing, testing, and start-up, and other related Work. Include activities for replacement Video Detection System (VDS) and new traffic detection installation, as applicable and in accordance with the DB Documents.

k. Submittal and execution of all Punchlist and Project Closeout Work.

5. Use durations in whole Calendar Days with a maximum duration of 20 Working Days, and not less than one day, except for long-lead procurement activities or as otherwise stipulated in the DB Documents or unless approved prior by GDOT. Ensure activity durations represent the anticipated work effort to complete the task, reflect planned production rates, and do not conflict with any time requirement in the DB Documents.

6. Include appropriate logic ties necessary to complete the Work as specified by the DB Documents and pertinent to the DB Team’s approach, means and methods. This includes sufficient hard logic (aka construction logic) and sufficient preferential logic (aka trade flow or soft logic). Include preferential logic ties that dictate the planned flow of Work on an early date basis, as well as sufficient logic ties to ensure the late date basis represents a reasonable plan, production rates, and resource constraints that can be met. Explicitly identify resource constraints using activity relationships and a detailed description in the Project Schedule Narrative. Comply with the following Project Schedule logic requirements:
a. Ensure all activities, except for NTP 1 start milestone and each Completion Deadline finish milestone, have a minimum of one predecessor activity and one successor activity. Ensure each activity has at least one “start” predecessor (i.e. FS0d, SS0d) and one “finish” successor (i.e. FS0d, FF0d).

b. Use finish-to-start (FS) relationship types with no leads or lags whenever possible. Finish-to-finish (FF) or start-to-start (SS) relationship types shall generally be avoided. Do not use start-to-finish (SF) relationship types.

c. Identify any lag proposed and provide an explanation in the Project Schedule Narrative for the purpose of the lag. All lags will be reviewed for approval by GDOT as part of the Baseline Project Schedule review. Use of lags with a negative value are not allowed. Do not use relationship lags when the creation of an activity will perform the same function, including:
   i. SS lags where lag is greater than predecessor’s original duration.
   ii. FF lags where lag is greater than successor’s original duration.
   iii. FS lags greater than zero days.

7. Constrain start milestone activity for NTP 1 with a “Start On or After” primary constraint date to reflect executed NTP 1 date using beginning of day convention.

8. Show Project Schedule float calculations based on each Completion Deadline specified in Exhibit 9. Use the following convention for each Completion Deadline. For clarity, the following example is shown for Substantial Completion Deadline:

   a. Include a finish milestone with activity name “Forecasted Substantial Completion Date”. This activity shall have as predecessors all the activities that must be completed prior to the Completion Deadline. Do not constrain this activity. Assign any suitable successors to the Completion Deadline to this activity.

   b. Include a finish milestone with activity name “Substantial Completion Deadline”. Constrain this activity with a “Mandatory Finish” primary constraint date reflecting the Completion Deadline shown as a Calendar Day using end of day convention. This activity shall have sole predecessor “Forecasted Substantial Completion Date” tied with a finish-finish relationship and zero lag value. Do not assign any successors to this activity.

   c. Assign activities “Forecasted Substantial Completion Date” and “Substantial Completion Deadline” to the same calendar, WBS node, and activity codes.

9. Do not sequester float calculations. Date constraints, other than those required by the DB Documents, will not be allowed unless approved in writing by GDOT. Identify any proposed constraints and provide an explanation for their purpose. Do not use “As late as possible” and “Mandatory” constraint types for any proposed constraints. Do not use or reference External Dates.

10. Utilize the Gregorian calendar and comply with the following requirements:

   a. Use only Project-level calendars. Do not use or reference global level calendars. Do not use “Inherit holidays and exceptions from Global Calendar” option.
b. Identify work days and non-work days and include identifiable P# in the description of each calendar (i.e. "P#-5-day work week"). Maintain the same hourly work/non-work times and same hours/day in each calendar utilized.

c. Satisfactorily account for anticipated adverse weather. Use calendar non-work days clearly defined for anticipated adverse weather or other equally effective means as approved by GDOT. With submittal of the Baseline Project Schedule, provide in writing the planned methodology to account for anticipated adverse weather.

11. Show maintenance of traffic/closure or restriction periods, self-imposed and regulatory non-Work periods for environmental or other restrictions, all non-Work periods, or any other time restrictions prescribed by the DB Documents. The DB Team may constrain Work scheduling in these periods by using special calendars or other equally effective means. Clearly identify such starts or completions imposed on the Project Schedule and include a detailed description of each in the Project Schedule Narrative.

12. Unless otherwise approved in writing by GDOT and for the purposes of the Project Schedule and conversion of hours into days by the scheduling software, a standard working day consists of eight work hours per day from 8:00 AM to 5:00 PM with a 1-hour non-work lunch at 12:00 PM - 1:00 PM. Remain consistent with these start and finish times in each calendar (5 day work week, 6-day work week, 7-day work week, etc.).

2.5.2 Project Schedule Update Requirements

Use the approved Baseline Project Schedule as the basis for subsequent Project Schedule Updates. Update monthly the previously approved or accepted Project Schedule to accurately reflect the current status of the Project. Utilize Project Schedule Updates for the primary purposes of reporting current progress of the Work and the forecasted plan to complete the Project in relation to the approved Baseline Project Schedule. Project Schedule Updates may include minor changes and adjustments to the Project Schedule (such as splitting activity sets and adjusting relationships to account for out-of-sequence progress). Identify all changes and the justification for each in the accompanying Project Schedule Narrative. All changes will be reviewed for acceptance by GDOT as part of the Project Schedule Update review. Comply with the following Project Schedule Update requirements:

1. Set the data date to the day immediately following close of the update period, so that if the period closes on the 31st at 11:59 p.m., set the data date to the 1st of the next month using a beginning of day convention.

2. Contemporaneously and accurately memorialize actual progress (not calculated progress), including actual start, actual finish, and physical percent complete (manually input) for activities progressed as of the data date. Limit the input of actual dates to the active update period. Do not show actual dates beyond the data date. Do not revise previously statused start and finish dates without prior written acceptance from GDOT.

3. Recalculate the Project Schedule utilizing the retained logic method. Revise, adjust, and recalculate Project Schedules to represent the current plan to complete the Work with no out-of-sequence progress activities.
4. Forecast remaining dates for all in-progress activities utilizing accurate physical percent complete and updated remaining duration. Do not use expected finish dates. Reforecast early dates and recalculate late dates for all remaining activities.

5. Do not use default mechanisms which may be included in the scheduling software system to automatically update the Project Schedule.

6. For interruptions after an activity has begun, add a separate activity so that the original activity is split into two activities. Mark the original activity as completed. Use a FS relationship between the original activity and the new activity and retain all existing successor relationships.

7. Do not delete any activities after the Baseline Project Schedule is approved. If an activity’s scope is eliminated, revise the description to include “- scope deleted,” reduce the duration to zero days, remove logic, and contemporaneously actualize dates to the day immediately preceding the data date.

8. Maintain the unique activity identification number, name, and scope of each activity. Activity identification numbers can only be used once. Do not modify or reassign activity identification numbers. Do not revise activity descriptions to represent different scope than originally intended.

9. If additional activities are incorporated to supplement or replace the scope of a single activity, the existing activity must maintain its activity identification number and be converted to a level of effort summary activity that spans the newly added detailed activities.

10. Contemporaneously incorporate changes to the Work upon authorization of a Supplemental Agreement by GDOT. Include the Supplemental Agreement number in the activity description or as approved by GDOT and describe the new activity scope in the Project Schedule Narrative for the reporting period in which the Supplemental Agreement was executed. Depending on the nature of such modifications, a Revised Baseline Project Schedule submittal may be required at the sole discretion of GDOT.

11. Depending on the nature of proposed changes and at the sole discretion of GDOT, a Project Schedule Update may be returned to the DB Team to be resubmitted for review and approval as a Revised Baseline Project Schedule.

12. Submit the final Project Schedule Update (aka As-Built Schedule) at Final Acceptance or as directed by GDOT. Show actual start and actual finish dates for all activities, reflective of those dates shown in the DB Team’s QA/QC documentation.

2.5.3 Revised Baseline Project Schedule Requirements

Major changes to the Project Schedule must be submitted for GDOT review and approval as part of a Revised Baseline Project Schedule submittal. Comply with all applicable requirements specified for a Baseline Project Schedule and a Project Schedule Update. Once approved by GDOT, use the Revised Baseline Project Schedule as the basis for subsequent Project Schedule Updates.

From time to time, GDOT may direct or the DB Team may request submittal of a Revised Baseline Project Schedule, subject to GDOT approval. GDOT direction or approval of the submittal of a Revised Baseline Project Schedule does not constitute a Relief Event or
Compensation Event. GDOT may direct the DB Team to develop and submit a Revised Baseline Project Schedule when any of the following occur:

1. Project scope has changed substantially due to Supplemental Agreement(s) or accepted Relief Events by GDOT, whether individual or in aggregate.
2. Within 30 days of completing Final Design or once 30% completion of the Construction Work is achieved, whichever occurs sooner.
3. The overall approach to Work, sequencing, and timing are fundamentally changed. This includes revisions to the Construction Phasing and Staging Plan, wholesale resequencing of the Work, and substantial changes to the DB Team’s means, methods, crew planning and staffing, field conditions, resource constraints, production rates, activity sets, original durations, calendar assignments, calendar work/non-work periods (work days or work hours/day), or constraints.
4. The Project Schedule forecasts a Completion Date that is more than 30 days later than the Completion Deadline.
5. If GDOT, in its sole discretion, determines that the current plan, as communicated by the Project Schedule, is insufficient or unreasonable, or that the DB Team’s execution of the current plan is deemed to be insufficient and unlikely to achieve the successful completion of the Project within the Completion Deadlines.

2.5.4 Time Impact Analysis (TIA) Requirements
When asserting that a Relief Event has occurred, provide supporting evidence including a Time Impact Analysis (TIA). Use a copy of the then-current and latest accepted Project Schedule Update at the time the asserted event occurred and submit a fragmentary network (“fragnet”) with supporting reports depicting the time impact basis of the request with the affected Project areas highlighted in the impacted Project Schedule. The submittal contents and process to submit, review, and approve a TIA request shall meet those specified for a Revised Baseline Project Schedule. Upon issuance of a Supplemental Agreement, or as otherwise directed in writing by GDOT, the impacted Project Schedule will be considered a Revised Baseline Project Schedule and will be used as the basis for subsequent Project Schedule Updates.

2.5.5 Project Schedule Narrative Requirements
With each Project Schedule submittal, include a separate Project Schedule Narrative meeting the requirements specified throughout Section 2.5 (Project Schedule Requirements) and Section 2.6 (Payment Requests and Payment) and as further detailed below. Update and correlate the Project Schedule Narrative with each Project Schedule submittal.

For Baseline Project Schedule and Revised Baseline Project Schedule submittals, include the following, separated into 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. Identify all resource constraints including list of crews/crew types and equipment.
2. If Project Schedule recovery efforts are required as part of a Revised Baseline Project Schedule or at the sole discretion of GDOT, the DB Team shall identify the composition of, and production rate for, each crew type.

3. 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 how the Project Schedule accommodates anticipated weather days for each month. Submit a list of the calendars used and a definition of their type.

4. A description of the Work to be completed each season (for multi-year projects).

5. A description of the critical path(s) and near-critical path(s).

6. An explanation of the use of any proposed constraints, including the reason and purpose for each constraint.

7. Clearly identify any non-work periods, starts or completions imposed on the Project Schedule.

8. Identify any lag proposed and provide an explanation for the purpose of the lag.

9. A statement describing the status of any required permits.

10. Reference the Construction Phasing and Staging Plan with which the Project Schedule submittal aligns. Clearly describe any discrepancies or deviations between the Project Schedule and the Construction Phasing and Staging Plan, and state the reasons and justification for each (if none; so state).

11. Include a detailed description of how the Project Schedule incorporates Work authorized by Supplemental Agreement, accepted Relief Events, or asserted Relief Events provided as part of a TIA. A discussion of delays in the Project Schedule Narrative does not constitute notice in accordance with Articles 13 and 14 of the DBA.

For Project Schedule Update submittals, include the following, separated into sections:

1. A description of the work performed since the last approved or accepted Project Schedule. If the Work performed does not match the Work scheduled to be performed, include a detailed description of why there is a discrepancy between the activities that should have been completed or progressed as indicated in the latest approved or accepted Project Schedule submittal.

2. A description of the status of the forecasted Completion Dates relative to each required Completion Deadline. Address any changes since the latest approved or accepted Project Schedule submittal and provide an explanation if any forecasted Completion Dates are projected to occur after the required Completion Deadlines.

3. A description of any problems encountered or anticipated since the latest approved or accepted Project Schedule submittal, inclusive of any unusual labor, shift, equipment or material conditions or restrictions encountered.

4. A description stating the dates which the DB Team could not work on activities identified on the critical path due to weather. If there were no weather delays experienced during the previous month the Project Schedule Narrative should state as such. Any such statements regarding weather delays does not constitute notice in accordance with Articles 13 and 14 of the DBA.

5. A detailed description of all proposed changes to the latest approved or accepted Project Schedule with justification for changes to any of the following: critical path, activity sets
(added, deleted, or modified), original durations, activity relationships (logic), calendar assignments, calendar work/non-work periods (work days or work hours/day), constraints, WBS, activity coding, software settings, or Work authorized by Supplemental Agreement. Identify any changes to the work crews (number and size of each crew), shifts, hours worked, days worked, or major equipment changes.

6. A description of the critical path(s) and near-critical path(s).

7. A statement describing the status of any required permits.

8. A description of any risks or issues that may potentially impact the Project Schedule. Identification does not constitute nor satisfy the notice requirements of Relief Events under the DBA.

9. A statement that identifies any delays. The statement should include identification of the delayed activity, the type of delay, the cause of the delay, the effect of the delay on other activities and Completion Dates and identification of actions required to mitigate the delay. A discussion of delays in the Project Schedule Narrative does not constitute notice in accordance with Articles 13 and 14 of the DBA.

2.5.6 Project Schedule Submittal Requirements

Project Schedule submittals shall be provided and reviewed in accordance with timing requirements and durations specified in Table 3-1. Include the following with all Project Schedule submittals:

1. Electronic Primavera P6 file format (XER or equivalent P6 Export file type subject to prior approval by GDOT) of the current Project Schedule submittal. Do not submit multiple P6 Projects in a singular XER file.

2. A full schedule plot (PDF format) in a layout acceptable to GDOT.

3. A critical path schedule plot (PDF format) in a layout acceptable to GDOT.

4. A Project Schedule Narrative (PDF or MS Word file format) meeting the requirements of this Section 2.5.

GDOT shall review Baseline Project Schedule submittals and Revised Baseline Project Schedule submittals and return them as approved, approved with comments, or returned to be revised and resubmitted. Project Schedule Updates will be accepted, accepted with comments, or returned to be revised and resubmitted.

GDOT’s approval or acceptance is for conformance to the requirements of the DB Documents and Good Industry Practice and represents that the submittal appears to meet the requirements of the DB Documents and appears to provide a valid Work plan for the Project, but in no way constitutes GDOT’s approval or acceptance of the sufficiency of DB Team’s planning, sequencing, means and methods and does not relieve the DB Team of sole responsibility for meeting DB Document requirements and Completion Deadlines.

Approval or acceptance does not expressly or by implication warrant, acknowledge, or admit the reasonableness of the logic, durations, resourcing, or any other element. If the DB Team fails to define any element of Work, activity, or logic and GDOT’s review does not detect this omission or error, the DB Team remains responsible for correcting the error or omission without qualification. GDOT approval does not waive any DB Document requirement unless such
approval includes specific, written statement of waiver of a requirement by GDOT subsequent to a written request for such waiver by the DB Team.

If the DB Team fails to submit a Project Schedule or if GDOT deems that any Project Schedule fails to meet the requirements of this Section 2.5 or the DB Documents, GDOT may withhold a portion of a Payment Request until the Project Schedule containing the required information is submitted and approved or accepted by GDOT, as applicable. Unapproved or unaccepted Project Schedules and associated data shall not be considered relevant or applicable for any purposes during or after completion of the Project and shall not be binding on GDOT.

2.5.7 Project Schedule Software Requirements

Provide Project Schedules in electronic Primavera P6 file format (XER or equivalent P6 Export file type subject to prior approval by GDOT) compatible with software version utilized by GDOT.

Coordinate with GDOT to ensure all Project-related Primavera P6 data is properly imported with each Project Schedule submittal. This includes which import configuration options will be utilized. Unless otherwise agreed to in writing by GDOT, the following data types will not be imported or considered for purposes of review, approval or acceptance by GDOT: Resource Codes, Resource Code Values, Shift Names, Work Products and Documents, Relationships to External Projects, Project Funding Assignments, Issues, Project Code Assignments, Thresholds, Activity Step Templates/Activity Steps, Timesheets, Risks, High Level Planning Assignments and Project Budget data (Budget Log, Spending Plans, Funding Sources, and Current Budget), User Defined Fields (UDF’s), Notebook Topics/Notebook Entries, Activity Discussion and Feedback tabs. Comply with the following software settings and defaults.

2.5.7.1 Software Admin Settings

Apply the following Primavera P6 software Admin Settings:

1. Use “Engineering and Construction” as the Industry to use for terminology and default calculation settings in the P6 Professional module.
2. Use “USD – Dollar” as Currency Type.
3. Define Time Periods as 8.0 Hours/Day. Check “Use assigned calendar to specify the number of work hours for each time period.”
4. Use “Activity % Complete” as the Earned Value Technique for computing performance percent complete.
5. Use “ETC = Remaining Cost for activity” as the Technique for computing estimate to complete (ETC).
6. Use “At Completion values with Current Dates” or “Planned values with Current Dates” when calculating earned value. Do not use “Planned Values with Planned Dates” option.

2.5.7.2 Project Settings and Defaults

Apply the following Project settings and defaults:

1. Clearly identify each Project Schedule submittal with a unique Project ID and Project Name prior to submission (prior to starting the export process).
2. Set the Project status to “Active.”
3. Leave blank the Project-level “Must Finish By” Date.
4. Use “.” as the character for separating code fields for the WBS tree.
5. Use “July” as the fiscal year begins on the 1st day of setting.
6. Use “Project baseline” as the baseline for earned value calculations.
7. Use “Longest Path” to define critical activities.
8. Set Default Price/Unit for activities without resource or role price/units to “$0.00/h.”
9. Uncheck “Activity percent complete based on activity steps.”
10. Check “Link Budget and At Completion for not started activities.”
11. Select “Reset Remaining Duration and Units to Original.”
12. Set the default calendar to the most common Project-specific production calendar.
   Calendar assignments may be changed at the activity level, as applicable.

2.5.7.3 Activity Settings and Defaults

Apply and ensure all Project Schedule activities conform to the following:

1. Use “Fixed Duration and Units” as Duration Type for all Task Dependent and Level of Effort activities; use “Fixed Duration and Units/Time” for Milestones.
2. Use “Physical” as Percent Complete Type for all activities.
3. Use “Task Dependent” as Activity Type for all activities except for applicable Milestones and Level of Effort activities. Do not use Resource Dependent or WBS Summary Activity Types.

2.5.7.4 WBS Default Settings

Apply the following WBS Default Settings:

1. Set the status for all WBS levels with activities assigned to “Active.”
2. Select “Activity percent complete” as the technique for computing performance percent complete. Uncheck “Use resource curves / future period buckets.”
3. Select “ETC = remaining cost for activity” as the technique for computing Estimate to Complete (ETC).

2.5.7.5 Software Schedule Options

Under Primavera P6 Tools, Schedule, apply the following Options:

1. Check “Ignore relationships to and from other projects.”
2. Uncheck “Make open-ended activities critical.”
3. Uncheck “Use Expected Finish Dates.”
4. Uncheck “Schedule automatically when a change affects dates.”
5. Uncheck “Level resources during scheduling.”
6. Uncheck “Recalculate assignment costs after scheduling.”
7. When scheduling progressed activities use “Retained Logic.”
8. Calculate start-to-start lag from “Early Start.”
9. Define critical activities as “Longest Path.”
10. Calculate float based on finish date of “Each project.”
11. Compute Total Float as “Finish Float = Late Finish - Early Finish.”
12. Calendar for scheduling Relationship Lag use “Predecessor Activity Calendar” or specify with the Baseline Project Schedule if lags are to be calculated on predecessor, successor, or 24-hour calendar, and do not change in future Project Schedule submittals.

2.5.8 Project Schedule Workplan Requirements

No requirements.

2.5.9 Two-Week Detail Schedule Requirements

Two-Week Detail Schedule submittals shall be provided and reviewed in accordance with timing requirements and durations specified in Table 3-1. Ensure Two-Week Detail Schedules:

1. Include a rolling period of at least two weeks ahead for planned activities and one week back (recording actual dates and durations for Work performed).
2. Are based on the current Project Schedule Update and provide a more detailed breakdown of the activities for the purpose of coordination of the Work, oversight planning, verification of Work completed, and materials inspection and testing.
3. Align accurately with and are derived from the current Project Schedule with any deviations clearly noted and explained.
4. Reference the applicable Project Schedule activity identification numbers and define subsequent specific daily operations for all Work activities scheduled to be performed during the look-ahead period.

2.6 Payment Requests and Payment

2.6.1 Schedule of Values (SOV)

Schedule of Values (SOV) means a detailed price breakdown structure of all Elements of the Work listed as discrete Payment Activities organized in a logical and hierarchal manner. The SOV shall be used as the mechanism for determining progress payments on a percent-complete basis with associated dollar amounts identified for each Payment Activity to justify monthly Payment Requests. Unless otherwise described in this Section 2.6, no payments will be made until the SOV is approved. Supplemental Agreements that include changes to the Contract Sum will be incorporated into the SOV.

Prepare the SOV and apportion the Contract Sum across Payment Activities such that the sum of the prices of all Payment Activities equals the Contract Sum. Payment Activities shall meet requirements described in Section 2.6.1.1.

Include for each Payment Activity shown on the SOV the following populated fields:

1. Unique and consistently labeled Payment Activity identification number
2. Unique and consistently labeled Payment Activity description
3. Scheduled Value (aka budgeted amount on price basis; include quantity, unit of measure, and unit price if applicable)
4. Previous amount paid to date (on price and percent-complete basis of Scheduled Value)
5. Amount requested for current period (on price and percent-complete basis of Scheduled Value)
6. Cumulative Total Completed to Date (on price and percent-complete basis of Scheduled Value)
7. Balance to Finish (aka Remaining amount on price and percent-complete basis of Scheduled Value)

SOV refers to any of the following: SOV or SOV Updates, as further defined in this Section 2.6 and as appropriate for the context in which they are used.

### 2.6.1.1 Payment Activities

Payment Activities are Elements of the Work for which payment on account of the Contract Sum shall be due, subject to the terms of this Agreement. Include subtotals for logical groupings of Payment Activities. Unless otherwise approved in writing by GDOT, structure the SOV to roll-up to those Payment Activities and associated Scheduled Values included in the Proposal SOV (Volume 1, Exhibit 5).

Further subdivide the Work into sufficiently detailed Payment Activities to the satisfaction of GDOT. Payment Activities shown on the SOV must be reasonably associated with and supported by the activities represented by the Project Schedule. The DB Team may elect to price-load the Project Schedule with the SOV upon prior GDOT approval. Upon GDOT request, provide further detail to accurately represent the value of the Work for the Payment Activities comprising the SOV prior to submittal of the first Payment Request or when directed by GDOT.

Payment Activities shown on the SOV shall meet the following criteria:

1. Payment Activities cannot be front-loaded.
2. No Payment Activity shall be greater than $200,000 without prior GDOT approval.
3. Once approved, Payment Activities cannot be modified in identification number, description or Scheduled Value without prior GDOT approval. GDOT intends for such modifications to occur rarely.
4. The Scheduled Value for each Payment Activity shall accurately represent the value of the Element of the Work identified.
5. Include separate Payment Activities for each of the following:
   a. Mobilization, which shall not exceed 2.5% of the sum of the Construction and Design Complete amount identified in the SOV.
   b. Record Drawings (As-Built) Submittal, which shall be no less than 0.1% of the sum of the Construction and Design Complete amount identified in the SOV.
   c. Completion of punch list items, which shall be no less than 0.5% of the sum of the Construction and Design Complete amount identified in the SOV.
   d. Final Close-out, which shall be no less than 0.2% of the sum of the Construction and Design Complete amount identified in the SOV.
   e. Demobilization, which shall be no less than 0.2% of sum of the Construction and Design Complete amount identified in the SOV.
2.6.1.2 SOV Submittal Requirements

The Proposal SOV (Volume 1, Exhibit 5) will be used to pay for Work performed during the first 90 days following NTP 1. Payment Requests based on the Proposal SOV are subject to Sections 2.6.1 through 2.6.10. After 90 days, no further payment will be made until the SOV is approved by GDOT and is progressed for the period in which the DB Team intends to be paid. The SOV shall be submitted by the DB Team and reviewed by GDOT for approval in accordance with timing requirements and durations specified in Table 3-1.

An SOV Update shall be submitted with and shall justify the DB Team's monthly Payment Requests. Provide SOV Updates in accordance with Section 2.6.4 (Payment Request Approval and Processing) and Section 2.6.5 (Documents Required to be Provided with the Payment Request). The DB Team and GDOT will agree upon the progress percent complete and the associated dollar amount for Work in place related to each Payment Activity shown on the SOV. Progress shown on Payment Activities must be reasonably associated with and supported by the activity status information as represented by the corresponding Project Schedule Update submittal.

2.6.2 Draft Payment Request

Submit a draft Payment Request to GDOT containing the amount asserted to be payable for each Payment Activity shown on the SOV and other amounts due under approved Supplemental Agreements. The draft Payment Request, lien release, and certification shall be submitted on forms provided or approved by GDOT, which approval shall be secured prior to the Payment Request Review Meeting.

Upon receipt of a draft Payment Request, GDOT will review the submitted Payment Request and provide comments to the DB Team listing any discrepancies and amounts intended to be withheld or deducted.

2.6.3 Payment Request Review Meeting

Schedule and hold a Payment Request review and progress status meeting with GDOT, if requested by GDOT, after submitting a draft Payment Request and prior to submitting a final Payment Request each month. The Payment Request review meeting is to obtain GDOT's comments or the changes necessary to the draft Payment Request to allow a final Payment Request to be submitted by the DB Team. The meeting shall address and finalize the status of the following:

1. Excepting allowable Payment Requests based on the Proposal SOV, for each Payment Activity with progress provide supporting Project Schedule Update activity information including actual start dates, actual finish dates, and percent completes.
2. Incorporation of and summary list of all Supplemental Agreements.
3. Each Payment Activity which includes Nonconforming Work.
4. Any other payment requested, such as for mobilization, demobilization, insurance and bonding, or unincorporated materials.
2.6.4 Payment Request Approval and Processing

Submit a final Payment Request to GDOT by the fifth day of each month, containing the amount asserted to be payable for each Payment Activity and amounts due under approved Supplemental Agreements. The final Payment Request will address all comments provided by GDOT to the DB Team at the Payment Request review meeting.

Payment Request shall be submitted both electronically using forms provided by GDOT and shall include supporting documentation for the amount claimed payable when requested by GDOT.

GDOT will review the Payment Request within five Business Days of receipt from the DB Team. If GDOT disagrees with the amounts requested or unresolved items remain, submit a revised Payment Request to address any outstanding issues identified by GDOT. If the DB Team includes items for payment that remain unresolved, GDOT will either: i) notify the DB Team that unresolved items in the Payment Request remain, and request a resubmittal of a revised Payment Request; or ii) deduct those amounts GDOT asserts are not eligible for payment, and process the Payment Request. In such case, GDOT shall notify the DB Team of any such deductions.

2.6.5 Documents Required to be Provided with the Payment Request

The following documents shall be submitted with each final Payment Request application. No Payment Request will be processed without such documents properly completed, signed, and dated:

1. SOV Update meeting the requirements of this Section 2.6 progressed through the month for which payment is being requested.
2. Excepting allowable Payment Requests based on the Proposal SOV, a Project Schedule Update submittal required by Section 2.5 (Project Schedule Requirements) progressed through the month for which payment is being requested.
3. All required insurance certificates.
4. Any other document or submittal required by the DB Documents to be provided.

2.6.6 Limitations on Progress Payments

GDOT will not pay for Work unless the following conditions are met with respect to such Work:

1. Accepted Released for Construction Documents and any supporting design documentation are on Site for the Work being performed and for which payment is being requested.
2. Nonconforming Work Items are corrected and/or resolved to the satisfaction of GDOT for Payment Activities that are asserted as complete.
3. Payment will be made based upon the approved Scheduled Value multiplied by the total percentage of the Work completed for that reporting period. Payment Activities shall not be fully paid (100% of the Scheduled Value) until that portion of the Work is completed and all applicable required documentation is received and accepted by GDOT.
4. The amount payable to the DB Team for insurance and bond premiums will be their actual cost, which will be paid (reimbursed) upon proof of payment by the DB Team. Where an activity requires submittal of a bond, the activity is complete when the bond has been provided in the amount and under the terms required in the Agreement.

5. For Mobilization Payment Activity:
   a. The first Payment Request after NTP 3 may include up to 50% of the amount for Mobilization set forth in the approved SOV.
   b. After 5% of the Construction total set forth in the approved SOV is incurred, the next Payment Request may include up to 100% of the amount of Mobilization set forth in the approved SOV, minus any previous payments.

2.6.7 Price Reductions for Nonconforming Work

On any Payment Request, GDOT may suspend or deduct amounts otherwise due to the DB Team for that period’s apportionment for any continuing activity for any of the items identified in Volume 1, Exhibit 18.

If the DB Team fails to completely prosecute Work or correct Nonconforming Work or incorrectly progressed Work for which that Payment Activity was paid in full, GDOT may deduct amounts from the next successive month for that Work until the Nonconforming Work is resolved to the satisfaction of GDOT.

Nonconforming Work, if accepted by GDOT, will result in reductions of the Contract Sum as specified herein. The DB Team shall be provided the opportunity to either accept a reduction offered by GDOT or to remove and replace the Nonconforming Work at no additional cost to GDOT.

Where provided for in the GDOT Standard Specifications, unit prices for deductions may be applied by GDOT, including pay factors, daily deductions, and rejection values. Amounts for reductions of Nonconforming Work allowed to remain in place by GDOT that are not covered by GDOT Standard Specifications shall be determined by GDOT.

Girder defects will be assessed for price reductions based on long-term durability and maintenance concerns.

2.6.8 Other Deductions

GDOT may deduct from any amounts otherwise owing to the DB Team, including for each monthly progress payment and the final payment, the following:

1. Any anticipated or accrued losses, liability, liquidated damages, fees, or other damages for which the DB Team is responsible.
2. The estimated or actual cost, as determined by GDOT, of remedying any Nonconforming Work or otherwise remedying any breach of contract by the DB Team.
3. The disputed amount of any outstanding claim relating to the Work.
4. The estimated amount, as determined by GDOT, or the amount identified in the SOV, whichever is greater, for Work that the DB Team is obligated to perform that the DB Team has failed to perform.
5. Any other sums which GDOT is entitled to withhold, deduct, or recover from the DB Team under the terms of the Contract.

6. With regard to final payment, in addition to the above, the amount GDOT deems advisable to retain to cover any existing or threatened Disputes, Claims, Liens, and stop notices relating to the Project, and the cost of any uncompleted Work (including uncompleted Warranty Work).

GDOT’s failure to deduct from a progress payment or final payment any amount that GDOT is entitled to recover from the DB Team under the Contract shall not constitute a waiver of GDOT’s right to such amounts.

### 2.6.9 Processing and Payment

Once GDOT reviews and approves a final or revised Payment Request acceptable to GDOT and in accordance with Sections 2.6.4 (Payment Request Approval and Processing) and 2.6.5 (Documents Required to be Provided with the Payment Request), GDOT will sign and date and return a copy of the Payment Request cover sheet with any corrections noted and proceed with processing the Payment Request.

### 2.6.10 Payment to Contractors and Subcontractors

Upon receipt of payment, promptly pay all Contractors out of the amount paid to the DB Team on account of the respective Work performed by such Contractors as and to the extent that such Contractors are entitled to same under the respective Contracts and applicable law. Require Contractors by appropriate agreement with the Subcontractors to require all such Subcontractors to make payments to all downstream sub-subcontractors and suppliers in a similar manner. GDOT shall have no obligation to pay or to see to the payment of money to the Contractors or Subcontractors, except as may otherwise be required by Law, provided however, that GDOT reserves the right to make payments to the DB Team and jointly payable to any such parties where the DB Team has failed to remit payments properly due and as required.

In no event shall the DB Team include in any Payment Request amount any request for payment on account of Work performed by any Contractor or Subcontractor that shall not be remitted to such parties in accordance with the terms of the DB Documents and applicable Law.

In no event shall either the DB Team or any Contractor or Subcontractor withhold or impose retainage on any Subcontractor or Supplier, or any downstream sub-subcontractors or suppliers of any tier. With each Payment Request, provide GDOT with details regarding the withholding or deduction of any payments to Contractors or Subcontractors, including specificity as to amounts and the basis for such withholding or deductions and if any such Contractors or Subcontractors are included within the DB Team’s DBE Commitments List.

### 2.6.11 Application for Final Payment

Final payment will be made in accordance with Section 2.6.12 (Final Payment).

On or about the date of delivery of GDOT’s issuance of the certificate of Final Acceptance, prepare and submit an application for final payment (“Final Payment”) to GDOT showing the proposed total amount due the DB Team. In addition to meeting all other requirements for
invoices hereunder, the application for Final Payment shall include (i) the executed release and affidavit described below; (ii) a list of any asserted, outstanding, or pending Relief Events or Compensation Events and all existing or asserted claims, liens, and stop notices by Subcontractors, laborers, Utility Owners, or other third parties relating to the Project, including any notices filed or to be filed with the Affidavit of Final Completion, stating the amount at issue associated with each such notice; (iii) the written consent by the Surety to such payment; and (iv) such other documentation as GDOT may reasonably require.

GDOT will review the DB Team's proposed application for Final Payment, and changes or corrections will be forwarded to the DB Team for correction. If no changes or corrections are required, GDOT will approve the Application for Final Payment.

2.6.12 Final Payment

As a condition to its obligation to make payment to the DB Team based on the application for Final Payment, GDOT shall have received an executed release from the DB Team, releasing and waiving any claims against the Indemnified Parties, excluding only those matters identified in any asserted, outstanding, or pending Relief Event or Compensation Event Notices listed as outstanding in the application for Final Payment, and otherwise satisfactory in form and content to GDOT.

The executed release shall be accompanied by an affidavit from the DB Team certifying the following:

1. All Work has been performed in strict accordance with the requirements of the DB Documents.
2. The DB Team has resolved any claims made by Subcontractors, Suppliers, Utility Owners, laborers, and others against the DB Team, GDOT, or the Project, except for those claims identified in the Application for Final Payment or those claims for which the Subcontractor has executed a release against GDOT, the Project, and the Payment Bond.
3. The DB Team has followed GDOT’s procedures for Final Acceptance and has provided complete lien releases from all Subcontractors and Suppliers, except for those with claims listed above, in a form and with language provided by GDOT.
4. The DB Team has no reason to believe that any Person has a valid claim against the DB Team, GDOT, or the Project that has not been communicated in writing by the DB Team to GDOT as of the date of the certificate.

All prior partial estimates and payments shall be subject to correction in the Final Payment.

The executed release and the affidavit shall survive Final Payment. The payment amount will be reduced by any amounts deductible under these DB Documents.

The DB Team’s acceptance of Final Payment shall constitute a waiver of affirmative claims by the DB Team, except such claims previously made in writing and identified in writing as outstanding and unsettled at the time of the application for Final Payment.
2.6.13 No Waiver

No payments shall be construed as an acceptance of any defective work or improper materials nor shall any such payments be conclusive evidence of the performance of this Agreement.

2.7 Project Closeout

2.7.1 Record Drawings and Project Closeout

The EOR will perform a Site visit at no more than 30 days following NTP 3, and subsequent Site visits no less than every 90 days thereafter until Substantial Completion is achieved. Additionally, an EOR Site visit will take place at the midpoint of each and every individual bridge construction. The purpose of the Site visits is for the EOR to visually inspect the progression of the Work for compliance to the RFC Documents. The EOR will prepare a Site observation compliance report to document elements of the Work that are compliant and non-compliant with the RFC Documents. If elements of the Work are not compliant with the RFC Documents, the EOR will coordinate with the DB Team to determine corrective action and describe the corrective action in the Site observation compliance report. The Site observation compliance report will be submitted within seven days of the Site visit and stamped by the EOR.

2.7.1.1 Engineer of Record Final Inspection

The EOR and CQAM will participate in any final inspection and prepare a final Site observation compliance report to document elements of the Work that are compliant and non-compliant with the RFC Documents. If elements of the Work are not compliant with the RFC Documents, the EOR will coordinate with the DB Team to determine corrective action and describe the corrective action in the final Site observation compliance report. This process will be repeated until no non-compliance items remain. The final Site observation compliance report(s) will be submitted within seven days of the Site visit, and the last one submitted, once all non-compliance items are corrected and meet the DB Requirements. Final Acceptance cannot be achieved until this process is complete and the final Site observation compliance report, stamped by the EOR and certified by the CQAM as accurate and complete, is received by GDOT.

2.7.1.2 Record Drawings

Submit to GDOT a complete set of Final Design documents and Record Drawings for all the Construction Phases of the Project within 30 days of Substantial Completion and upon completion of the Construction Work, organized by Construction Phase, as a condition to Final Acceptance. Ensure the Record Drawings and documentation are an organized, complete record of Work performed and supporting calculations and details that accurately represent what the DB Team constructed. Ensure that the Record Drawings reflect the actual condition of the constructed Work.

Submit prior to any portion of the Project being opened to traffic Record Drawings for that portion of the Project in hardcopy and electronic format with a signed statement by the EOR and CQAM that the Record Drawings reflect the actual condition of the constructed Work.

Provide, in accordance with Section 3, in a portable flash drive containing:
1. All electronic design files, electronic calculations, etc.
2. Full-size 24-by-36-inch .pdf of each plan sheet and the entire plan set

Provide the following in hardcopy format:

1. Full-size 24-by-36-inch set of bound prints, or smaller size as may be agreed to by GDOT

Provide these Record Drawings not as field sketches or redlines, but as CAD generated drawings that compile all field changes, redlines, plan revisions, and all Nonconforming Work into a single strike-through format set of plans. Where appropriate, new drawings may be inserted in to the plans to depict portions of the as-built Work.

Ensure all files conform to the criteria for the design platform (e.g., InRoads, MicroStation, CAD) found in GDOT’s Electronic Data Guidelines (EDG).

The DB Team is responsible for all production and delivery of materials needed for GDOT review.

Final Acceptance cannot be achieved until a complete set of Record Drawings is received and accepted by GDOT.
3 DESIGN AND SUBMITTALS

3.1 General
Provide Project Submittals in both electronic and hardcopy format.

3.2 Administrative Requirements

3.2.1 Software
Proprietary structural design software may be used in lieu of GDOT specific computer software products. All alternative software products are subject to prior GDOT approval, and upon such approval may be used to design the following structural elements:

1. Prestressed concrete beams
2. Steel girders (both curved and straight)
3. Concrete decks
4. Bridge substructure, including end bents and intermediate bents
5. Foundations, including pilings and drilled caissons
6. Bearings

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

Spreadsheets or MathCad-type programs may be used to develop hand calculations for repetitive design elements.

Ensure all software, spreadsheets, and MathCad output is present in design documentation so that it can be verified to be compliant with design requirements by an independent checker. Provide the input, formulas (with code references shown), and output for hand calculations developed using software so that it can be verified. Ensure that proprietary software output is not a black box type output, and all code checks are visible to be verified by an independent checker. GDOT may require further verification of results of any design software using GDOT bridge design programs, hand calculations, or structural analysis software. Seek GDOT determination of any such reviews, and account for any additional GDOT review time in the Project Schedule, which additional time shall not constitute a Relief Event.

Use of any software does not relieve the designer of their responsibility to perform required QA/QC of designs performed using this software. Errors or deficiencies that exist in any proprietary or commercial software that produce errors in the design or construction will be the responsibility of the DB Team.

InRoads output and Microsoft Excel spreadsheets may be subject to verification of results using GDOT’s bridge geometry program.
3.2.2  GDOT Standards and Manuals

Ensure that all Work complies with all applicable Manuals and Guidelines developed for and including AASHTO, FHWA, GDOT, and additional requirements stated in Attachment 3-1 (Manuals) and reasonably inferred therefrom.

Reference Section 1 (General) regarding applicability of GDOT standards and specifications and manuals.

Ensure that all requirements of the AASHTO Manual for Assessing Safety Hardware (MASH), 2nd Edition, 2016, are met. Ensure that its designs and installation meet the required MASH implementation dates during the life of the contract, except as superseded by the requirements in Section 13.3.5 (Bridge Railing and Barriers).

3.2.3  Detailed Estimate of Quantities

Provide a detailed estimate with the RFC Plans that identifies GDOT Pay Items, pay item descriptions, units, and estimated quantities for the Project. Provide quantities in the Final Bridge Plans in accordance with the GDOT Bridge and Structures Design Manual.

3.3  Design Requirements

3.3.1  Design Workshop

The DB Team’s Engineer of Record (EOR) shall organize and facilitate the design review kick-off workshop with GDOT, no later than 30 days from NTP 1, to discuss the DB Team’s approach to design the Project, any phasing, design packages, and related design Submittals. Ensure that the Designer’s personnel, GDOT, and the Utility Adjustment Team (UAT) are in attendance. The purpose is to familiarize involved personnel with the design concepts, issues, status, and review procedures. Jointly develop the workshop agenda with GDOT and agree upon how it will be organized (such as by GDOT department and engineering discipline). During the design workshop, discuss with GDOT any application of Interim Design reviews to reach resolution for Project Elements that pose complex constraints or entail additional review effort. The workshop will also discuss the extent of GDOT and UAT reviews. The primary goal of the workshop is to make the design review process more effective and efficient for all parties. Agreements made regarding design review times are aspirational only and do not override the durations stipulated in the DB Documents.

3.3.2  Design Coordination Meetings

The DB Team’s EOR shall schedule and facilitate design coordination meetings. Ensure that the DQAM, the DB Team’s independent design reviewer(s), and any design professionals having significant input into the design under review are present. Notify and invite GDOT and the UAT to participate in all design reviews. Schedule design coordination review meetings no less frequently than monthly, or to the frequency determined by GDOT, until all Submittals have been accepted and Final Design is completed.

GDOT may also invite additional stakeholders to attend. GDOT’s participation in design coordination meetings does not relieve the DB Team of its responsibility for the satisfactory completion of the Work in accordance with all requirements of the DB Documents.
The EOR or designated design leads shall provide the meeting agendas at least three Business Days in advance of the meetings. Include in each agenda a detailed summary status of all submittals provided to GDOT that are the subject of the meeting. In addition, prepare and distribute minutes from the review meetings within three Business Days of the meeting.

Maintain design quality records in an auditable format according to the QMP procedures. GDOT has the right to audit the quality records for compliance with the QMP and DB Document requirements. Turn over all quality records to GDOT upon completion of the Project.

GDOT will facilitate a field plan review of the Final Design. At a minimum, the DB Team’s Engineer of Record (EOR) or design project manager and a representative of the DB Team’s contractor will attend.

### 3.3.3 Changes Subsequent to Design Review

Re-check and re-certify the design as an additional design review if the design is amended subsequent to design review and acceptance by GDOT. Substantive changes to plans and specifications initiated by the DB Team, and already checked by the EOR and certified by the DQAM, are subject to the design review process as an entirely new design.

### 3.3.4 Other Agency Approvals

#### 3.3.4.1 Federal Aviation Administration

Coordinate with the Federal Aviation Administration (FAA) in accordance with CFR Title 14 Part 77.9 due to the proximity to the Macon Downtown Airport and medical center heliport. Coordinate and ensure all construction equipment and proposed structures meet the conditions defined by the FAA (applicable to both permanent and temporary construction, including construction equipment).

For PI 0014895:

The Project is in proximity to a navigation facility and has the potential to exceed an instrument approach area. Prepare an aeronautical study to determine if the standard of subpart C of 14CFR Part 77 is exceeded. Prepare and submit an Obstruction Evaluation/Airport Airspace Analysis (OE/AAA) on FAA Form 7460-1, Notice of Proposed Construction or Alteration. Notice must be filed at least 60 days prior to beginning construction.

For PI 0014899:

The Project is in proximity to a navigation facility and may impact the assurance of navigation signal reception. Prepare and submit an Obstruction Evaluation/Airport Airspace Analysis (OE/AAA) on FAA Form 7460-1, Notice of Proposed Construction or Alteration. Notice must be filed at least 60 days prior to beginning construction.

### 3.3.5 Design Data Book

Document all design criteria and design decisions in a Project Design Data Book submitted for acceptance, and keep it with the Project files. Include in the Project Design Data Book complete and up-to-date design parameters and decisions (as applicable to the Project) as presented in
3.3.6 Design Submittals and Progress of Design Work

Documents received after 12:00 p.m. (noon) Eastern Standard or Daylight Savings Time (as applicable), including all notices, correspondence, communications (including e-mail and facsimile), or other Submittals received after 12:00 p.m. (noon), are deemed received on the first Business Day following delivery (for example, 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.).

Deliver each required Submittal to GDOT in conformance of the review times provided in Volume 1, Article 6.3.2 and in Table 3-1 (Master Submittal List). The times provided in Table 3-1 are specifically for the review period required for GDOT to comment and GDOT to subsequently accept. Accuracy, completeness, and time spent to address GDOT comments and resubmit for re-review are the responsibility of the DB Team.

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.

Ensure all design Submittals are complete along with all the supporting information necessary for review. The Submittal and supporting information 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 or as a result of design development is solely at the DB Team’s risk, regardless of GDOT acceptance.

Provide Project Submittals included in Table 3-1. Table 3-1 may not be all-inclusive or exhaustive. It is the DB Team’s responsibility to determine and submit all items required by the DB Documents. Deliver each required Submittal to GDOT in compliance with the review times provided. The times provided are specifically for the review period required for GDOT to comment and subsequently accept (if all requirements of the DB Documents are met) or approve, as applicable. Not all Submittals listed in Table 3-1 may be required for the Project, and some Submittals may be combined into a single Submittal, such as the Project Management Plans; coordinate with GDOT prior to combining any Submittals and receive GDOT approval prior to omitting any listed Submittals.
### Abbreviations for Table

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASC</td>
<td>Point File for Survey Data</td>
</tr>
<tr>
<td>AR</td>
<td>As Required (no quantity shown in table)</td>
</tr>
<tr>
<td>DTM</td>
<td>Digital Terrain Model</td>
</tr>
<tr>
<td>FS</td>
<td>Full-size paper – meets GDOT Plan Presentation Guide</td>
</tr>
<tr>
<td>HC</td>
<td>Hardcopy – 8 ½ x 11 unless otherwise noted</td>
</tr>
<tr>
<td>HS</td>
<td>Half-size paper – meets GDOT Plan Presentation Guide</td>
</tr>
<tr>
<td>MP</td>
<td>Microsoft Project</td>
</tr>
<tr>
<td>MS</td>
<td>MicroStation File – Electronic</td>
</tr>
<tr>
<td>NA</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>NTP</td>
<td>Notice to Proceed</td>
</tr>
<tr>
<td>P6</td>
<td>Primavera P6</td>
</tr>
<tr>
<td>PAS</td>
<td>Per Approved Schedule</td>
</tr>
<tr>
<td>PDF</td>
<td>Adobe PDF – One complete file and individual plan sheet files that meet</td>
</tr>
<tr>
<td></td>
<td>GDOT Electronic Plans Process requirements</td>
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## Table 3-1: Master Submittal List

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<thead>
<tr>
<th>Section</th>
<th>Submittal Item</th>
<th>Format</th>
<th>Quantity</th>
<th>Delivery Date</th>
<th>Review Period* (Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 3</td>
<td>Design and Construction Quality Records</td>
<td>AR</td>
<td>1</td>
<td>Always auditable; Submit at project completion</td>
<td>NA</td>
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<tr>
<td>3</td>
<td>Project Design Data Book (and updates)</td>
<td>HC, PDF</td>
<td>3, 1</td>
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<tr>
<td>3</td>
<td>Meeting minutes</td>
<td>PDF</td>
<td>1</td>
<td>Within 3 days of each meeting</td>
<td>7</td>
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<tr>
<td>2</td>
<td>Management Plans (updates)</td>
<td>PDF</td>
<td>1</td>
<td>As needed</td>
<td>14</td>
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<tr>
<td>2</td>
<td>Quality Management Plan (QMP) including Administrative portion and the DQMP</td>
<td>PDF</td>
<td>1</td>
<td>Within 30 days from NTP 1 prior to the start of design</td>
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<td>2</td>
<td>Construction Quality Management Plan</td>
<td>PDF</td>
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<td>See Section 2</td>
<td>14</td>
</tr>
<tr>
<td>2</td>
<td>Safety Plan</td>
<td>PDF</td>
<td>1</td>
<td>See Section 2</td>
<td>14</td>
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<tr>
<td>2</td>
<td>Monthly Status Reports (includes cost, schedule, quality, status, etc.)</td>
<td>PDF</td>
<td>1</td>
<td>5th of each Month</td>
<td>NA</td>
</tr>
<tr>
<td>2</td>
<td>Non-conformance Reports</td>
<td>PDF</td>
<td>1</td>
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<td>2, 10</td>
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<td>PDF</td>
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<td>Within 90 days from NTP 1</td>
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<td>2.5</td>
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<td>P6, PDF</td>
<td>1, 1</td>
<td>Within 60 days from NTP 1</td>
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<td>2.5</td>
<td>Revised Baseline Project Schedule</td>
<td>P6, PDF</td>
<td>1, 1</td>
<td>Within 14 days of being directed or as required</td>
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<tr>
<td>2.5</td>
<td>Baseline and Revised Baseline Project Schedule resubmittals</td>
<td>P6, PDF</td>
<td>1, 1</td>
<td>Within 14 days of being directed</td>
<td>14</td>
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<td>Project Schedule Update</td>
<td>P6, PDF</td>
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<td>5th of each Month or as otherwise agreed</td>
<td>14</td>
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<td>P6, PDF</td>
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<td>Within 7 days of being directed</td>
<td>7</td>
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<td>Two-Week Detail Schedule</td>
<td>PDF</td>
<td>1</td>
<td>Same day every week in which Construction Work occurs</td>
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<td>PDF</td>
<td>1</td>
<td>Within 60 days from NTP 1</td>
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<td>2.6</td>
<td>SOV resubmittals</td>
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<td>Within 14 days of being directed</td>
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<tr>
<td>Section</td>
<td>Submittal Item</td>
<td>Format</td>
<td>Quantity</td>
<td>Delivery Date</td>
<td>Review Period* (Days)</td>
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<td>19</td>
<td>Construction Maintenance Limits Plan including Joint Project Inspection submittal</td>
<td>FS, HS, PDF</td>
<td>1</td>
<td>Within 150 days from NTP 1</td>
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<td>19</td>
<td>Maintenance Management Plan</td>
<td>PDF</td>
<td>2, 6, 1</td>
<td>Within 150 days from NTP 1</td>
<td>21</td>
</tr>
<tr>
<td>2</td>
<td>Construction Progress Photos and Video</td>
<td>AR, PDF</td>
<td>12</td>
<td>Monthly or as needed based on construction milestones or events</td>
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<td>2</td>
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<td>PDF</td>
<td>1</td>
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<td>Within 60 days from NTP 1 and within 14 days of being directed</td>
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<td>4</td>
<td>Information to support GDOT - Led Governmental Approvals</td>
<td>PDF</td>
<td>1</td>
<td>As needed</td>
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<td>Hazardous Materials Management Plan (HMMP)</td>
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<td>4</td>
<td>UST and Hazardous Waste Site Investigation Report</td>
<td>AR, PDF</td>
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<td>Within 180 days from NTP 1 and 30 days Prior to NTP 3</td>
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<td>4</td>
<td>Water Quality Certification (concurrently with the USACE Permit)</td>
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<td>4</td>
<td>Applications to Regulatory Agencies, Application revisions, supplements</td>
<td>AR, PDF</td>
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<td>As needed</td>
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<td>Supplemental verification of Overhead/Subsurface Utility Engineering (SUE) Investigations - QL-B</td>
<td>MS, PDF</td>
<td>1, 1</td>
<td>NTP (1) + 45 Calendar days (Or as Determined by State Subsurface Utilities Engineer at the SUE Kick-Off meeting which is concurrent with the first utility coordination meeting)</td>
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<td>Section</td>
<td>Submittal Item</td>
<td>Format</td>
<td>Quantity</td>
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<td>Review Period* (Days)</td>
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<td>SUE Utility Impact Analysis (UIA)</td>
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<td>1</td>
<td>NTP 1 + 120 Calendar days (Or as Determined by State Subsurface Utilities Engineer at the SUE Kick-Off meeting which is concurrent with the first utility coordination meeting)</td>
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<td>Overhead/Subsurface Utility Engineering (SUE) Investigations - QL-A as required</td>
<td>MS, PDF</td>
<td>Plans: 2 for each Utility Owner +3 for Dept. and MS files</td>
<td>UIA + 45 Calendar days</td>
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<tr>
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<td>Overhead/Subsurface Utilities Engineering (SUE) Information to Utilities for Review (URPN Letter 1a - SUE Submit to Utility Companies Revise)</td>
<td>FS, HS, PDF, MS</td>
<td>Plans: 2 for each Utility Owner +3 for Dept. and MS files</td>
<td>NTP 1 + 5 Calendar days (Or as Determined by District Utilities Manager at SUE Kick-Off meeting)</td>
<td>5 days for Dept. + 30 days for each Utility Owner</td>
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<td>6</td>
<td>Relocated Utility Plans (URPN Letter 2 - 2nd Submission Letter (Existing and Proposed))</td>
<td>FS, HS, PDF, MS</td>
<td>3, 3, 1,1</td>
<td>Concurrently with Accepted SUE Verification by Utility Owner</td>
<td>5 days for Dept. + 90 days for each Utility Owner</td>
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<td>6</td>
<td>Utility Retention Request</td>
<td>PDF</td>
<td>1</td>
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<td>14</td>
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<tr>
<td>Section</td>
<td>Submittal Item</td>
<td>Format</td>
<td>Quantity</td>
<td>Delivery Date</td>
<td>Review Period* (Days)</td>
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<td>----------------------</td>
</tr>
<tr>
<td>6</td>
<td>Preliminary Utility Status Report</td>
<td>HC, PDF</td>
<td>Agreements: 3 hardcopy, 1 electronic pdf Plans: 2 for each Utility Owner + 3 for Dept. and MS files</td>
<td>NTP 1 + 180 days Concurrently with Accepted Relocated Utility Plans and (URPN Letter 6 - Notice to Proceed with Permit)</td>
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<td>Agreements: 30 days for Dept. + 60 days for each Utility Owner Plans: 30 days</td>
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<td>1</td>
<td>See Section 6</td>
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<td>Utility Adjustment Field Modification Procedure</td>
<td>PDF</td>
<td>1</td>
<td>Prior to submittal of any Utility Work Plan</td>
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<td>6</td>
<td>Utility Emergency Response Plan</td>
<td>PDF</td>
<td>1</td>
<td>30 days Prior to NTP 3</td>
<td>14</td>
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<tr>
<td>6</td>
<td>Intermediate Utility As-Built Plans</td>
<td>PDF</td>
<td>1</td>
<td>Within 30 days of completed utility adjustment, installation, relocation or abandonment</td>
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<td>6</td>
<td>Final Utility Record Drawings (As-Built Plans)</td>
<td>FS, HS, PDF, MS</td>
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<td>Concurrently w/Accepted Construction Record Drawings (As-Built Plans)</td>
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<td>All Utility Meeting Minutes</td>
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<td>Property Owner Notification Letters</td>
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<td>Prior to Project Completion</td>
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<td>Bound Field Notes</td>
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<td>Prior to Project Completion or upon GDOT request</td>
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<td>Topographic Mapping</td>
<td>DTM, PDF</td>
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<td>Within 120 days from NTP 1 and 30 days prior to NTP 3</td>
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<tr>
<td>12</td>
<td>Drainage Design Report (Phased)</td>
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<td>Stormwater System Report(s)</td>
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<td>Annual Outfall Inspection Report</td>
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<td>Post-Construction Stormwater Report</td>
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<td>Preliminary Wall Layouts</td>
<td>FS, HS, PDF</td>
<td>2, 6, 1</td>
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<td>Final Bridge Plans first submittal</td>
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<td>Submittals as required per railroad requirements</td>
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<td>As required by the railroad</td>
<td>As required by the railroad, unless listed below</td>
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<tr>
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<td>Preliminary Bridge Layouts (30% Package per the NS Public Projects Manual)</td>
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<td>Final Bridge Plans (100% Package per the NS Public Projects Manual)</td>
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<tr>
<td>Section</td>
<td>Submittal Item</td>
<td>Format</td>
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<td>Delivery Date</td>
<td>Review Period* (Days)</td>
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<td>Final Wall Plans (100% Package per the NS Public Projects Manual)</td>
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<tr>
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<td>Plan Revisions during Construction</td>
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<td>Construction Excavation and Shoring</td>
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<tr>
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<tr>
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<td>Debris Shielding or Containment</td>
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<td>Emergency Action Plan</td>
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<tr>
<td>16</td>
<td>Preliminary Signing and Marking, Signal Plan Layout</td>
<td>FS, HS, PDF</td>
<td>2, 6, 1</td>
<td>As needed</td>
<td>21</td>
</tr>
<tr>
<td>16</td>
<td>Traffic Signal Permit/Engineering Study</td>
<td>PDF</td>
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<td>Format</td>
<td>Quantity</td>
<td>Delivery Date</td>
<td>Review Period* (Days)</td>
</tr>
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<td>Traffic Control Plans (each Phase)</td>
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<td>1</td>
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<td>2, 6, 1</td>
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<td>14</td>
</tr>
<tr>
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<td>Temporary Works - where public safety may be affected</td>
<td>PDF</td>
<td>1</td>
<td>**</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
<td>Plan Revisions During Construction</td>
<td>AR, PDF</td>
<td>1</td>
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</tr>
<tr>
<td>3</td>
<td>Record Drawings (As-Built Plans)</td>
<td>AR, PDF</td>
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<td>**</td>
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<td>2, 6, 1</td>
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<td>16</td>
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<td>PDF</td>
<td>1</td>
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<td>14</td>
</tr>
<tr>
<td>3</td>
<td>Final Design Specifications, Reports, Whitepapers, etc.</td>
<td>AR, PDF</td>
<td>1</td>
<td>**</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
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<td>PDF</td>
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<td>Subcontracts</td>
<td>PDF</td>
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<td>In accordance with the Construction Manual</td>
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</table>

*Review period is the period required for the generation of comments or the review time to determine the state or status of the document. Plan for multiple review periods that may be required for any submittal to secure Accepted or Approved status from GDOT.

If a submittal is not listed, the review time shall be 30 days per Volume 1, Article 6.3.2.
** Based upon the approved Baseline Project Schedule

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

**** See Technical Provisions
3.3.7 Additional Submittal Requirements

Obtain any Government Approvals or other approvals required to allow for implementation and construction of the Construction Phasing and Staging Plan.

3.3.7.1 Staged Design Submittals

The DB Team may submit Staged Design Submittals (components) for the Project. 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, a Staged Design Submittal 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. Ensure the Staged Design Submittals, Construction Phasing and Staging Plan, and Project Schedule are aligned and consistent. Ensure that Staged Design Submittals also includes all reports, specifications, studies, calculations, and supporting documents and information.

For each Construction Phase shown in the Construction Phasing and Staging Plan, 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 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.).

3.3.7.2 Changes to Accepted and Released for Construction Submittals

After a design package has been Released for Construction (RFC), any subsequent design changes must be submitted to GDOT with documentation from the EOR sufficient to justify the reasoning behind the change request. The DB Team must obtain written acceptance prior to its implementation as a plan revision, and prior to any related subsequent construction activity. Minor field adjustments or redline revisions do not require EOR approval or prior written acceptance.

3.3.7.3 Plan Presentation Requirements

Provide all plan submittals as required by and in accordance with the GDOT Plan Development Process (PDP), Electronic Data Guidelines (EDG) and the Plan Presentation Guide (PPG).

Ensure the Plans are fully dimensioned in English units and all elevations necessary for construction are shown similar to GDOT’s normal practice. Prepare all plans on the scales according to GDOT’s PPG.

Include details for all civil elements and calculations within proximity of the Site, for each location, so that these locations can be reviewed holistically and connections with communication and electrical networks are clearly understood.

3.3.7.4 Construction Plans Organization and Sheet Index

Assemble construction plans according to GDOT’s PPG.
### 3.3.7.5 Computations

Record all design computations and computer printouts neatly on 8.5- by 11-inch sheets, fully titled, numbered, indexed, dated, and signed by the designer/Project manager and checker. Submit the computer files and one copy of the computations fully checked and appropriately bound to GDOT with the plans.

Submit a complete tabulation of the drainage analysis along with the calculations used to determine the size of drainage structures to GDOT.

### 3.3.7.6 Submittal Formats

Ensure each design submittal, in addition to electronic delivery in .pdf format on the PMCS, consists of scalable 11-by-17-inch or 12-by-18-inch drawings, full size 24-by-36-inch design drawings, and calculations. Provide a portable flash drive of the submittal including all InRoads and MicroStation V8 format files upon GDOT request.

Ensure documents for all Final Plan submittals (plans, calculations, specifications, reports, etc.) is sealed by a qualified Professional Engineer. In addition to written design review comments (if any), design drawings may be returned to the DB Team with any remarks indicated.

### 3.3.7.7 Additional Specifications

Prepare and submit specifications for Construction Work included in the plans which are not covered by GDOT’s Standard Specifications, the Supplemental Specifications, and/or the Special Provisions as required in Attachment 3-1 in addition to the design drawings that include Georgia standards and details.

### 3.3.7.8 Submittals Process

Review of the Design Documents by GDOT may be limited to the basic requirements of the DB Documents, relating to design compliance and material types and may not include detailed review or checking of design of components and related details or the accuracy with which such designs are depicted on the design drawings.

Review or acceptance by GDOT or other Persons of any Design Documents does not relieve the DB Team of responsibility under the Contract, including the overall correctness of Design Documents, such as engineering mathematical computations. Submit all Design Documents, including plans, specifications, reports, calculations, shop drawings (where public safety is affected), and Permit documents to GDOT.

Provide all copies for distribution. GDOT will be responsible for distributing the submittals to all required parties of the contract.

Include with all submittals a cover letter describing the submittal, review period, and the due date for any GDOT response.

Include in all Submittals the DB Team’s QA certification statement (in addition to the design consultant’s QA certification statement for all design-related submittals) including a certification statement that the submittal complies with all terms and conditions of the Agreement, signed by the EOR. GDOT will reject any submittal if the QA certification statement is not included.
3.3.7.9 Required Participants of the Process

The QAM and DQAM, except as otherwise required in the DB Documents, will be primarily responsible for verifying that the accepted Design Quality Management Plan process as required in Section 2.3 (Quality Management Requirements) has been followed, verifying that the submittal meets all DB Document requirements, ensuring that all necessary Governmental Approvals have been obtained by the DB Team, and performing any review(s) as provided for in this Section 3.

Provide all required Submittals in compliance with the DB Documents.

3.3.7.10 GDOT Design Review Process

Provide the submittal to GDOT via the PMCS and the required copies in accordance with the DB Documents. Categorize submittals into Discipline Groups as follows:

1. Right of Way, Railroad, and Utilities (RRU Group)
2. Roadway, Drainage, and Maintenance of Traffic (RDMOT Group)
3. Bridge, Structures, Retaining Walls, and Aesthetics (BSRA Group)
4. ITS, Traffic (includes signing, pavement marking, signals, and lighting) (ITSTT)
5. All types (ALL Group)
6. Other (OTH)

GDOT will log in the submittal and distribute to the required review participants.

The review period begins the following Business Day after any submittal is received for the period prescribed in Volume 1 Article 6.3.2 and Table 3-1, except where there is a maximum number of concurrent submittals of a particular type specifically noted in this Section 3. In cases 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 this Section 3, an additional seven days will be added to the prescribed review period whenever there are more than five concurrent submittals in review in the subject document's particular Discipline Group. Further, an additional seven days will be added for each additional increment of five concurrent submittals in review in a Discipline Group. For example, if there are six to 10 submittals in concurrent review in a Discipline Group, then an additional seven days are added; and if there are 11 to 15 submittals in concurrent review in a Discipline Group, then an additional 14 days are added, etc. For purposes of calculating the number of submittals, the accepted Project Schedule will generally be used as a guide, except that complementary documents, for example bridge plans and bridge calculations, will be considered a single Submittal. Documents that fully integrate multiple disciplines in the presentation, for example roadway and drainage plans, together with the respective calculations would be counted as one submittal. For documents or packages that include multiple bridges, each individual bridge will be counted as a separate submittal. For documents or packages that include multiple retaining walls, noise barriers, BFIs, or WFIs, GDOT determine the number of Submittals to be counted.

Once a review is complete, the drawings or Submittal will be designated by GDOT as either:
1. Accepted
2. Accepted with Comments
3. Rejected

The terms Accepted and Accepted with Comments mean that the design process may proceed, and 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 or Submittal via PMCS or hardcopy to the DB Team.

If Rejected: the GDOT representative will deliver the rejected drawings or Submittal via PMCS or hardcopy to the DB Team. Address the specific comments and resubmit. The resubmittal is a new Submittal and follows the same time period as provided in Volume 1, Article 6.3.2 and Table 3-1. Drawings or Submittals may be rejected without review if the submission is incomplete.

3.3.8 Shop Drawings and Temporary Works Submittals

3.3.8.1 General

Shop drawings include all working, shop, and erection drawings, associated trade literature, calculations, schedules, manuals, and similar documents submitted by the DB Team 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 DB 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, and the like. Falsework includes any temporary Construction Work used to support the permanent structure until it becomes self-supporting. Falsework includes 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 Professional Engineer designing the specialized components (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 not intended to support the structure. Shoring is a component of falsework such as horizontal, vertical, or inclined support members. 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 the DB Team’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 this Section 3.3.8, the term Shop Drawing Engineer means a Professional Engineer as defined in Exhibit 1 of Volume 1 and applies to the initiator or producer of shop drawings regardless of whether or not that party is normally the lead Professional Engineer for the design or the EOR; and the term Shop Drawing Checking Engineer means a Professional Engineer as defined in Exhibit 1 of Volume 1 and applies to the shop drawing checker and certifier regardless of whether or not that party is normally the EOR, the Shop Drawing Engineer, or the lead Professional Engineer for the design.

### 3.3.8.2 Work Items Requiring Shop Drawings

In general, GDOT requires shop drawings for items of work not fully detailed in the plans which require additional drawings and coordination prior to constructing the item, including:

1. Bridge components not fully detailed in the plans (i.e., segments, steel girder details, post-tensioning details, handrails, etc.)
2. Retaining wall systems
3. Precast box culverts
4. Non-standard drainage structures, attenuators, and other nonstructural items
5. Building structures
6. Drainage structures, attenuators, and other nonstructural items
7. Design and structural details furnished by the DB Team in compliance with the DB Documents
8. Temporary Works affecting public safety

Submit erection plans for curved steel bridges.

### 3.3.8.3 Schedule of Submittals

Include shop drawings in the required Project Schedule. For each planned shop drawing submittal, define the type and approximate number of drawings or other documents that are included and the planned submittal date, considering the processing requirements herein. Coordinate subsequent submittals with Project Schedule to allow sufficient time for review and re-submittal as necessary.

### 3.3.8.4 Style, Numbering, and Material of Submittals

#### 3.3.8.4.1 Drawings

Submit the shop drawings electronically in .pdf format on the PMCS. Furnish four sets of shop drawings to GDOT for review in addition to the electronic delivery. Consecutively number each sheet in the submittal series, and indicate the total number in the series (i.e., 1 of 12, 2 of 12, 12 of 12), and include on each sheet the following items as a minimum requirement:
1. Bridge Numbers
2. Drawing title and number
3. A title block showing the names of the fabricator or producer and the DB Team for which the work is being done
4. The initials of the persons responsible for the drawing
5. The date on which the drawing was prepared
6. The location of the items within the Project
7. The DB Team’s approval stamp with date and initials
8. The signature and seal of the Specialty Engineer when applicable

A re-submittal will be requested when any of the required information is not included.

3.3.8.4.2 Other Documents

Provide four 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 in addition to electronic delivery in .pdf format on the PMCS.

Clearly label and number each sheet in the submittal to indicate the total number of sheets in the series (i.e., 1 of 12, 2 of 12, . . . 12 of 12), and provide an additional three sets of documentation for items involved with precast pre-stressed components and an additional two sets of documentation for items involving structural steel components.

Bind and submit all documents with a table of contents cover sheet, and list on the cover sheet the total number of pages and appendices. Include a title referencing the submittal items, the name of the firm and persons responsible for the preparation of the document, the DB Team’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, and include on the internal sheets the initials of the persons responsible for preparing and checking the document.

Clearly label trade literature and catalogue information on the front cover with the title, date, and name of the firm and persons responsible for that document.

3.3.8.4.3 Qualified Products List

Shop drawings are not required for Qualified Products accepted by GDOT and included on the Qualified Product Lists as specified in Attachment 3-1. Submit shop drawings to GDOT after the Shop Drawing Checking Engineer has reviewed and accepted for conformance with the DB Documents and compliance to the design intent for non-Qualified Products. 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.
3.3.8.4.4 DB Team-Originated Design
Submit shop drawings and applicable calculations to the Shop Drawing Checking Engineer for review, and ensure that each sheet of the shop drawings and the cover sheet of the calculations are signed and sealed by the Shop Drawing Engineer.

3.3.8.4.5 Temporary Works
For construction affecting public safety, submit shop drawings and the applicable calculations for the design of special erection equipment, false-work, scaffolding, etc. to the Shop Drawing Checking Engineer, and ensure that each sheet of the shop drawings and the cover sheet of the applicable calculations is signed and sealed by the Shop Drawing Engineer.

3.3.8.4.6 Formwork and Scaffolding
The DB Team 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.

3.3.8.4.7 Other Miscellaneous Design and Structural Details
Submit shop drawings and the applicable calculations to the Shop Drawing Checking Engineer, and ensure that each sheet of the shop drawings and the cover sheet of the applicable calculations is signed and sealed by the Shop Drawing Engineer.

3.3.8.5 Processing of Shop Drawings

3.3.8.5.1 Responsibility for Accuracy and Coordination of Shop Drawings
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. Also coordinate, review, date, stamp, accept, and sign all shop drawings prepared by the DB Team, Contractors, or DB Team-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 RFC plans to which the submission applies, indicate on the shop drawings all changes from the RFC drawings, and itemize all changes in the letter of transmittal. Likewise, whenever a submittal conforms to the RFC plans, clearly state so in the transmittal letter. Schedule the submission of shop drawings to allow a GDOT review period as specified in the DB 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 the DB Team. The DB Team is discouraged from transmitting voluminous submittals of shop drawings at one time. For submittals transmitted in this manner, allow for additional review time. Only shop drawings distributed by GDOT with the red ink stamps are
valid and all Work that the DB Team performs in advance of GDOT’s release of shop drawings will be at the DB Team’s risk.

### 3.3.8.5.2 Scope of Review by the Shop Drawing Checking Engineer

The Shop Drawing Checking Engineer’s review of the shop drawings is for conformity to the requirements of the DB Documents and to the intent of the design. The Shop Drawing Checking Engineer’s review of shop drawings, which includes means, methods, techniques, sequences, and construction procedures, is limited to the effects on the permanent works. The Shop Drawing Checking Engineer’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.

### 3.3.8.5.3 Special Review by the Shop Drawing Checking Engineer

For construction affecting public safety, the Shop Drawing Checking Engineer will make an independent design review of all relevant shop drawings and similar documents. Do not proceed with construction of the permanent works until receiving the Shop Drawing Checking Engineer’s approval. 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.

### 3.3.8.6 Other Requirements for Shop Drawings for Bridges

#### 3.3.8.6.1 Shop Drawings for Structural Steel and Miscellaneous Metals

Furnish shop drawings for structural steel and miscellaneous metals. Ensure shop drawings 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.

#### 3.3.8.6.2 Shop Drawings for Concrete Structures

Furnish shop drawings for concrete components that are not cast-in-place and are not otherwise exempted from submittal requirements, also furnish shop drawings for all details that are required for the effective prosecution of the concrete work and are not included in the DB 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.

#### 3.3.8.6.3 Special Construction Submittals

No requirements.

#### 3.3.8.6.4 Shop Drawings Requiring Railroad Coordination

GDOT 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 14 for coordination and duration of shop drawing reviews for Construction Work being performed on or over the right of way of the railroad. Direct coordination between GDOT (including the GDOT Bridge Office and/or Utilities Office) and the railroad will be necessary to ensure that all necessary approvals from the railroad are in place prior to beginning of construction activities in these areas.

### 3.3.8.6.5 Modifications on Construction

Where GDOT allows the DB Team to make modifications to the permanent works for the purposes of expediting the DB Team’s chosen construction methods, submit proposals to the EOR for review and approval prior to modifying the works. Submit proposals for minor modifications under the shop drawing process. Indicate on all drawings the changes from the DB 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 GDOT’s sole discretion, 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 sole 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 spacings, changing material strength or type, and the like. 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.

### 3.3.9 Release for Construction Documents

Provide sufficient review and revision time 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.

For final Submittals, after updating the documents to resolve all comments (as applicable) and receiving written notice from GDOT that the drawings or Submittal are Released for Construction, stamp the accepted set Released for Construction and distribute copies to GDOT within three Business Days.
4 ENVIRONMENTAL

4.1 General
Comply with all Environmental Law and policies set forth by the federal, state, and local agencies with jurisdiction over the construction activities associated with the Project and as described in the approved Environmental Document and permits. Follow all pertinent policies and procedures as described in the O.C.G.A. 12-16-1, and the most recent version of the GDOT Environmental Procedures Manual.

If the Environmental Documents have not yet been approved, the alternative has not yet been selected; therefore, the No-Build option will still be a viable alternative for the Project. However, if the No-Build alternative is selected, the Project will be terminated according to Volume 1, Article 19 of the Design-Build Agreement (DBA).

4.2 Administrative Requirements

4.2.1 Standards
Conduct activities in this Section 4 in accordance with Environmental Law, GDOT’s Environmental Procedures Manual, other Attachment 3-1 (Manuals), and other provisions of the DB Documents.

4.2.2 Personnel Requirements

4.2.2.1 Environmental Compliance Manager
Designate an Environmental Compliance Manager (ECM) who will work through an environmental team (ET), as detailed in this Section 4.2.2, to prevent, minimize, and/or correct any violation of or noncompliance with Environmental Approvals. The ET may include the following persons (some persons may serve multiple roles, provide the required qualifications are met):

- GEPA Specialist
- Archeologist
- Historian
- Natural Resource Biologist
- Water Quality Specialist
- Air Quality Specialist
- Noise Specialist
- Hazardous Materials Manager
- Worksite Erosion Control Supervisor (WECS)

The ECM reports and coordinates all issues directly with GDOT and the DB Team’s Project Manager. In the event the ECM, in consultation with the DB Team’s Project Manager and GDOT, is unable to reach satisfactory resolution of environmental issues, the ECM will provide written notification to the DB Team and GDOT outlining the concerns, actions taken in attempt to correct the concerns, and recommend a course of action.
The ECM reports immediately to GDOT and DB Team any violation or non-compliance and includes with any such report the appropriate recommendations for corrective action including stoppage of Work.

The ECM coordinates with GDOT, the DB Team, and appropriate Governmental Entities. The ECM also submits 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 will be an employee or subcontractor of the DB Team. The DB Team will not have the ability to relieve the ECM of his or her duty without the written approval of GDOT. Should the DB Team desire to replace the ECM, submit the résumé of a replacement candidate. The replacement candidate will be available to the Project within 30 days after delivery of GDOT’s written acceptance. In the absence of the ECM, the DB Team’s Hazardous Materials Manager may act as an interim ECM with GDOT approval.

Qualifications: The ECM candidate must have at least five years of experience successfully managing environmental compliance of a similar type of project as the Project. This person or firm must be prequalified by GDOT. Ensure all costs associated with the ECM are included in the Proposal. The qualifying experience required of an ECM candidate must include the following:

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

The ECM’s qualifying experience must demonstrate familiarity with the following:

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

**4.2.2.2 Reserved**

**4.2.2.3 Reserved**

**4.2.2.4 GEPA Specialist**

The ECM designates a GEPA Specialist to provide expertise in the State of Georgia’s environmental law, regulations, and policies during the course of the Work. The GEPA Specialist will be able to address environmental justice (EJ) issues related to the Project, if applicable.
The ECM designates personnel if a need arises for renewed activities to comply with environmental laws.

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

### 4.2.2.5 Cultural Resource Management Personnel

The ECM designates 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 designates personnel if a need arises for renewed activities to comply with cultural resources laws.

Qualifications: The Cultural Resource Management Personnel meets 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](http://www.nps.gov/history/local-law/Prof_Qual_83.htm).

### 4.2.2.6 Natural Resource Biologist

The ECM designates a Natural Resource Biologist to provide expertise in monitoring impacts on wildlife and the natural environment during the course of the Work. The ECM designates personnel if a need arises for renewed activities to comply with natural resources laws.

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

### 4.2.2.7 Water Quality Specialist

The ECM designates 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 must 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 must meet the certification requirements of GDOT Transportation Planning Prequalification Category 1.06(e) and 1.06(g).

### 4.2.2.8 Air Quality Specialist

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

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

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

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

4.2.2.10 Hazardous Materials Manager

The ECM designates 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 conducts appropriate activities such as the following:

1. Schedule and/or conduct training for the DB Team’s employees
2. Verify all employee certifications prior to and required for any handling of Hazardous Materials
3. 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 must meet the certification requirements of GDOT Soils, Foundation and Material Testing, Hazardous Waste Site Assessment Studies 6.05, and be a qualified professional with 40 hours of HAZWOPER certification. In addition, the Hazardous Material Manager must have at least five years of experience on similar projects in the following areas:

1. Development of 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
2. Investigation and remediation of Hazardous Materials following GDOT Environmental Procedures Manual guidelines

4.2.2.11 Worksite Erosion Control Supervisor (WECS)

Before beginning Work, designate a Worksite Erosion Control Supervisor (WECS) to initiate, install, maintain, inspect, and report the condition of all erosion control devices as described in GDOT Standard Specifications Sections 160 through 171 or in the DBA and erosion, sedimentation, and pollution control plan (ESPCP) documents. The designee must submit their qualifications on the GDOT provided resume form for consideration and approval. The DB Team may utilize additional persons having WECS qualifications to facilitate compliance, however, only one WECS will be designated at a time.

The WECS and alternates must:

1. have at least one year of experience in erosion and sediment control, including the installation, inspection, maintenance and reporting of BMPs;
2. successfully completed the Georgia Soil and Water Conservation Commission Certification Course Level IA and GDOT’s WECS Certification Course; and
3. provide phone numbers where the WECS can be located 24 hours a day.

The WECS’ duties include the following:

1. Be available or have an approved representative available 24-hours a day and have access to the equipment, personnel, and materials needed to maintain erosion control and flooding control.
2. Inform GDOT in writing whenever the alternate WECS assumes project responsibilities.
3. Ensure that erosion control deficiencies are corrected within 72 hours or immediately during emergencies. Deficiencies that interfere with traffic flow, safety, or downstream turbidity are to be corrected immediately.
4. During heavy rain, have the construction area patrolled day and night, any day of the week to quickly detect and correct erosion or flooding problems before they interfere with traffic flow, safety, or downstream turbidity.
5. Be on the site within three hours after receiving notification of an emergency prepared to positively respond to the conditions encountered. GDOT may handle emergencies without prior notice to the DB Team. GDOT will recover costs for emergency maintenance work according to GDOT Standard Specifications Subsection 105.15, Failure to Maintain Roadway or Structures.
6. Maintain and submit for the Project records, as-built Erosion and Sedimentation Control Plans that supplement and graphically depict EC-1 reported additions and deletions of BMPs. The as-built plans are to be accessed and retained at a GDOT facility at all times.
7. The WECS must maintain a current certification card for the duration of the Project. Recertification of the WECS is required prior to the expiration date shown on the Certification card in order to maintain certification and the WECS position for the Project.
8. Ensure that both the WECS and the alternate meet the criteria of this Section 4.2.2.11.

Failure of the WECS or alternate to perform the duties specified in the Contract, or whose performance has resulted in a citation being received from a State or Federal Regulatory Agency (e.g., the Georgia Environmental Protection Division) will result in one or more of the following:

1. Suspension of the WECS’ certification for a period of not less than 30 days
2. Removal of the Contractor’s Project superintendent in accordance with GDOT specification subsections 105.05 and 108.05 for a period not less than 14 days
3. GDOT-wide revocation of the WECS certification for a period of 12 months
4. Removal of the Contractor’s Project superintendent in accordance with GDOT Standard Specifications subsections 105.05 and 108.05

4.3 Environmental Approvals

4.3.1 Responsibilities Regarding Environmental Documents
The DB Team is responsible for coordination with GDOT and other required approval agencies to ensure that commitments made during the environmental review are being met. The DB Team is responsible to reassess Project impacts and for additional associated costs incurred
due to any changes in the Project impacts as described in the approved Environmental Document. This may require resubmittal of environmental studies for approval by applicable agencies.

GDOT is responsible for completing and resubmitting environmental documentation. The DB Team is not allowed to complete the environmental documentation or reevaluation.

Execute the Environmental Commitments required by the approved Environmental Documents, DB Documents, Governmental Entities, Governmental Approvals, and all applicable federal and State Law.

Limits of the Existing and Proposed Right of Way will be described in the approved Environmental Document.

Ensure Work complies with approved Environmental Documents, permits, and compliance requirements for any additional actions throughout the Term of the DB Documents. Monitor and document Work activities so that documents providing evidence for compliance are available to Governmental Entities (as applicable) and GDOT for inspection at any time. Evidence of compliance activities may include photo documentation and other appropriate methods to demonstrate compliance. Execute the Environmental Mitigation Plan, which lists responsible parties for Environmental Commitments detailed in the approved Environmental Document as agreed to by GDOT and/or other approval agencies.

Consider the use of environmentally sustainable practices and/or materials in the development of the Project.

Environmental Documents were prepared and approved by GDOT prior to the Effective Date. During the Term, such approvals may require re-evaluation, amendment, or supplement as the Work progresses or in order to accommodate actions not identified in the approved Environmental Document or not covered specifically by existing resource agency coordination and permits. The DB Team is responsible to validate and provide design information to support additional environmental studies (cultural resources, ecology, traffic, noise, and/or air) conducted by GDOT or on behalf of GDOT by others. Comply with the Environmental Commitments identified in the approved Environmental Document within the final limits of the Project and subsequent approved Environmental Documents as updated to incorporate the DB Team’s Conceptual Layout Plan of Project or Design Documents or due to regulatory or policy changes. Follow GDOT policies and procedures when conducting these activities for the Project.

Any changes to the Project as described in the GEPA Approval may require the DB Team to reassess impacts and submit information to GDOT for incorporation into reevaluation reports and studies. Follow all pertinent policies and procedures as described in the GDOT Environmental Procedures Manual. GDOT will provide the costs to prepare and finalize the GEPA Re-evaluation documents. The DB Team is responsible to prepare and pay for supporting documentation for any design changes proposed by the DB Team that differ from the GEPA Approval at the time of the Proposal Due Date.
If the DB Team’s Conceptual Layout Plan of the Project or Design Documents deviate from the plan set incorporated into the approved Environmental Documents, then GDOT and/or Governmental Entities will need to conduct an assessment to determine whether the approved Environmental Documents remain valid. Provide information to support evaluation of the deviations from the plan set incorporated into the approved Environmental Documents. Facilitate a meeting with GDOT within 45 days of NTP 1 to discuss potential deviations from the approved Environmental Document. The following terms define GDOT required documentation needed to assess impacts to the approved Environmental Document:

1. **No Change Reevaluation**: No design or regulatory changes have occurred since the last approved Environmental Document.

2. **Change Reevaluation (design modifications)**: The Conceptual Layout Plan for the Project or Design Documents contain modifications to the design in the plan set incorporated into the approved Environmental Documents; the Project corridor in the area of the changes (or as applicable) must be considered for additional or reduced environmental impacts. There may be a need for additional agency coordination as a result of the design modifications.

3. **Change Reevaluation (regulatory/policy changes)**: Changes in Law or regulatory practice may require additional survey or technical analysis, environmental condition changes over time, and associated agency coordination. The additional analysis may be required regardless of design changes, construction staging, etc. (There may be no action taken by the design team that would trigger the additional technical analysis).

Ensure compliance with the conditions and schedules set forth in amendments to any approved Environmental Documents due to deviations in the plan set incorporated into the approved Environmental Documents in the Conceptual Layout Plan for the Project and/or the Design Documents.

Assume all risk arising out of or related to deviations from the plan set incorporated into the approved Environmental Documents. The DB Team is encouraged to minimize deviations from the plan set incorporated into the approved Environmental Documents. The DB Team is responsible to provide all information reasonably required to support evaluation of deviations from the plan set incorporated into the approved Environmental Documents and to comply with all policies and procedures of GDOT and Governmental Entities having jurisdiction over the Project. GDOT is responsible for all coordination of environmental studies with appropriate Governmental Entities. The DB Team is responsible to provide GDOT with the information reasonably required for coordination with Governmental Entities.

Implement the commitments per the Environmental Document and Environmental Commitments and adhere to the Special Provision 107.13.J requirements provided in Attachment 4-3. Place Orange Barrier Fence in general conformance with Attachment 4-4. The graphic depiction shown in Attachment 4-4 is an approximation of the location for the Orange Barrier Fence (OBF) based on the written description. Comply with the requirements of the Environmental Commitments Table regarding the OBF. The DB Team is not entitled to rely on GDOT’s depiction of the OBF as complete or accurate. Do not affix or fasten Temporary Barrier Fence to
any structure, including buildings or walls which are located outside of the right-of-way. This supporting information is listed in Table 4-1.

Table 4-1: Environmental Documentation Contained in Section 4 Attachments

<table>
<thead>
<tr>
<th>Attachment</th>
<th>Document</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attachment 4-1</td>
<td>Environmental Commitments Table PI 0014895 (includes identification of responsible parties)</td>
</tr>
<tr>
<td>Attachment 4-2</td>
<td>Environmental Commitments Table PI 0014899 (includes identification of responsible parties)</td>
</tr>
<tr>
<td>Attachment 4-3</td>
<td>Special Provision PI 0014899, Section 107.13.J</td>
</tr>
<tr>
<td>Attachment 4-4</td>
<td>Orange Barrier Fence Locations</td>
</tr>
</tbody>
</table>

4.3.2 GDOT Review and Approval of Environmental Documents and Permits

The approval time frames for Environmental Documents are listed in Table 4-2 and Table 4-3. The tables below do not include any required public comment period and time for responding to the public comments. Upon receipt of Final Plans covering the technical report study area established in the GEPA Approval, GDOT will be responsible for developing the technical report addenda and GEPA Approval reevaluations as provided in Table 4-2 and Table 4-3. GDOT will coordinate and provide approved documentation to the appropriate Governmental Entities. The review and issuance time periods listed in Table 4-2 and Table 4-3 are per agency and may not occur concurrently. GDOT reserves the right to request revisions to the tables as needed to meet Governmental Entity approval. The timeframe for the development of the technical studies is subject to the extent of change proposed by the DB Team; therefore, GDOT reserves the right to modify schedule durations as appropriate after receipt of the DB Team’s Preliminary Plans.

Table 4-2: GDOT-Led Environmental Preparation and Approval

<table>
<thead>
<tr>
<th>Document</th>
<th>Governmental Entity Approval Time Frame</th>
<th>Reviewing Governmental Entity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecology Report and Addendum</td>
<td>Prepare Survey and Report Addendum: 30 days (from receipt of DB team’s preliminary design plans, change description, and calculated impacts to resources)</td>
<td>GDOT</td>
</tr>
<tr>
<td></td>
<td>Revise Addendum: 7 days</td>
<td>GDOT</td>
</tr>
<tr>
<td></td>
<td>Review period 1: 30 days</td>
<td>GDOT</td>
</tr>
<tr>
<td></td>
<td>Review period 2: 14 days</td>
<td>GDOT</td>
</tr>
<tr>
<td>Document</td>
<td>Governmental Entity Approval Time Frame</td>
<td>Reviewing Governmental Entity</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>30 days</td>
<td></td>
<td>USACE</td>
</tr>
<tr>
<td>45 days (informal Section 7)</td>
<td></td>
<td>USFWS</td>
</tr>
<tr>
<td>135 days (for formal Section 7)</td>
<td></td>
<td>USFWS</td>
</tr>
<tr>
<td>45 days (for protected species - for Fish and Wildlife Coordination Act concurrence)</td>
<td></td>
<td>USFWS</td>
</tr>
<tr>
<td>45 days (Informal Section 7)</td>
<td></td>
<td>NMFS</td>
</tr>
<tr>
<td>Section 106 AOE Addendum</td>
<td>Prepare AOE Addendum: 21 days</td>
<td>GDOT</td>
</tr>
<tr>
<td>30 days</td>
<td></td>
<td>GDOT</td>
</tr>
<tr>
<td>Revise AOE Addendum: 7 days</td>
<td></td>
<td>GDOT</td>
</tr>
<tr>
<td>14 days</td>
<td></td>
<td>GDOT</td>
</tr>
<tr>
<td>Noise Report and Addendum</td>
<td>Prepare Document: 30 days (from acceptance of Preliminary Plans, approval of horizontal/vertical roadway plans for Traffic Noise Model (TNM))</td>
<td>GDOT</td>
</tr>
<tr>
<td>60 days</td>
<td></td>
<td>GDOT</td>
</tr>
<tr>
<td>Revise noise report: 21 days</td>
<td></td>
<td>GDOT</td>
</tr>
<tr>
<td>Air Quality Report and Addendum</td>
<td>Prepare Document: Memo to file for no change: 7 days</td>
<td>GDOT</td>
</tr>
<tr>
<td>30 days</td>
<td></td>
<td>GDOT</td>
</tr>
<tr>
<td>Traffic Report and Addendum</td>
<td>Prepare Document: 60 days</td>
<td>GDOT</td>
</tr>
<tr>
<td>45 days</td>
<td></td>
<td>GDOT</td>
</tr>
</tbody>
</table>

Assume responsibility for preparing required permits and permit modifications as stated in Table 4-3 and will pay all fees required. Provide to GDOT copies of receipts of delivery of the applications and paid fees to the permitting agencies. For Notices of Termination (NOT), provide a copy of the acknowledgement of receipt of the NOT by EPD.

Assume responsibility to obtain all other permits not included in Table 4-3 to meet the requirements of the DB Documents. GDOT is responsible for reviewing the permits and permit modifications, and submitting to the appropriate Governmental Entities, unless the applicant is
listed as the DB Team. Documentation not meeting current submission standards or requirements of Governmental Entities will be returned to GDOT and revised by a qualified independent consultant approved by GDOT at DB Team’s cost. GDOT reserves the right to review, comment on, require revisions to, and reject for resubmission documentation submitted to GDOT by the independent consultant or the DB Team for environmental compliance or approval. The agency review time frame for permits is specified in Table 4-3. The review and issuance time periods listed in Table 4-3 for DB Team-led approvals do not apply to any revisions of the new permit applications proposed by the DB Team’s Conceptual Layout Plan of Project.

Table 4-3: DB Team-Led Environmental Permit Approval

<table>
<thead>
<tr>
<th>Permit Required</th>
<th>Agency Review and Issuance Time Period (Calendar Days)</th>
<th>Listed Applicant</th>
<th>Preparer of Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subsurface testing of all Underground Storage Tanks and Hazardous Materials</td>
<td>150</td>
<td>GDOT</td>
<td>DB Team</td>
</tr>
<tr>
<td>National Pollutant Discharge Elimination System (NPDES) Construction General Permit (GAR100002), Notice of Intent (NOI)</td>
<td>14</td>
<td>DB Team</td>
<td>DB Team</td>
</tr>
</tbody>
</table>

1 Information on the permit including Notice of Intent (NOI) and Notice of Termination (NOT) and changes that went into effect on August 1, 2018 can be found at https://epd.georgia.gov/npdes-construction-storm-water-general-permits. A Fact Sheet on the permits can be found at https://epd.georgia.gov/sites/epd.georgia.gov/files/related_files/site_page/Factsheet - NPDES Construction General Permits - May 2018.pdf.

2 The review and issuance time periods will commence once a completed permit package that complies with the requirements of the DB Documents is accepted by GDOT and submitted to the issuing agency and end once the permit is issued by the appropriate Governmental Entity. Therefore, schedule several review periods to ensure proper planning to accomplish the entire process for each required permit. Each GDOT review period is 30 days. Should the Submittal not be complete or rejected as provided in Section 3 (Design and Submittals), each subsequent review period will be 15 days and is excluded from the timeframe in Table 4-3 above.

The above permits and review times do not contemplate offsite plant or other offsite activity that the DB Team may propose for use in construction or other non-permanent construction.

Assume responsibility for payment of any fees to obtain any necessary permits or approvals, and of any fines incurred as a result from failure to obtain any necessary permits or approvals, and/or for any fines levied as a result of inadequate or improper installations.

4.3.3 Comprehensive Environmental Protection Plan

No requirements.
4.3.4 Hazardous Materials Management Plan

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 the DB Team, a third party, or otherwise, during the term of the Agreement.

Submit the final HMMP to GDOT for review and approval within 60 days of NTP 1; approval of the Plan by GDOT is a condition of commencement of Construction Work. 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.

Ensure the HMMP includes procedures compliant with all applicable environmental laws and the following at a minimum:

1. Updated Material Safety Data Sheets (MSDS) for all chemicals to be used on the Project, per OSHA requirements, for the term of the Agreement
2. Designated individuals responsible for implementation of the plan
3. Procedures for identifying and documenting potential contaminated sites that might impact Project development
4. Procedures for mitigation of known contaminated sites anticipated to impact construction
5. Procedures for mitigation of unanticipated contaminated sites encountered during construction
6. Procedures for developing a detailed Spill Response Plan for the term of the Agreement
7. Process for training personnel for responding to and mitigating incidents involving contamination or waste
8. Provisions for appropriate storage and disposal of all waste encountered or disposed of on the Project for the term of the Agreement
9. Procedures for preparing Underground Storage Tank/Hazardous Waste (UST/HW) site investigation reports, 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
10. Identification and contact information for designated responsible individuals

Ensure the HMMP includes 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. Ensure the HMMP requires the DB Team to provide any non-DB Team personnel who visits the Project area with the appropriate personal protection equipment.

Ensure the HMMP requires that all personnel of the DB Team-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 must also include procedures for ensuring that all applicable certifications, licenses, authorizations, and Governmental Approvals for DB Team personnel handling Hazardous Materials are current and valid through the duration of the Work.
5 RIGHT OF WAY (ROW) – DB TEAM ACQUISITIONS

5.1 General

This section sets forth the activities assigned to the DB Team, including pre-acquisition and acquisition activities, and it designates which activities GDOT will conduct.

GDOT will provide the DB Team with Right-of-Way Plans identifying the Proposed ROW and Easements. The existing and required right of way plans are included as Attachment 5-1 (Existing Right of Way and Required Right of Way).

For PI 0014895:

Parcels 1,2,3,4,6,7, and 8 will be available for release by GDOT to DB Team by January 31, 2020. Parcel 5 will be available for release by GDOT to DB Team 30 Days after execution of Railroad Construction Agreement. Release of Parcel 5 will be subject to Attachment 14-1 (Special Provision for Protection of Railway Interests).

For PI 0014899:

Parcels 1,3, and 4 will be available for release by GDOT to DB Team by January 31, 2020. Parcel 2 will be available for release by GDOT to DB Team 30 Days after execution of Railroad Agreement. Release of Parcel 2 will be subject to Attachment 14-1 (Special Provision for Protection of Railway Interests).
6 UTILITY ADJUSTMENTS

6.1 General
By Georgia Statutes, Utilities, whether publicly or privately owned, aerial or underground, are permitted by GDOT to be accommodated within the ROW. To this end, make every effort to avoid Utilities. Design/construction techniques that minimize or avoid Utility conflicts may involve increased upfront costs; however, those costs may be offset by savings during construction, in addition to the total cost savings for the Project, GDOT, and the respective Utility Owners. This Section establishes procedures and requirements for Utility Adjustments including such processes as coordination with Utility Owners, administration of engineering, construction, other activities necessary for Utility Adjustments and required documentation.

6.2 Administrative Requirements

6.2.1 Standards

6.2.2 Communications

6.2.2.1 Communication with Utility Owners: Meetings and Correspondence
Hold meetings and otherwise communicate with each Utility Owner, Subcontractor, Utility Owner’s pre-approved design consultant, and Utility Owner’s construction contractor as necessary to efficiently accomplish the Utility Adjustments in compliance with the DB Documents. GDOT may participate in these meetings if requested by the Utility Owner or the DB Team or otherwise as GDOT deems appropriate.

Provide a notice and an agenda for the meeting separately to GDOT and the appropriate Utility Owner at least seven days in advance of each scheduled meeting. Prepare and distribute minutes of all meetings within seven days of the meeting with Utility Owners and keep copies of all correspondence with any Utility Owner.

Coordinate with Utility Companies for early coordination of Utility Adjustments.

6.2.2.2 Real Property Matters
GDOT will determine the ROW required for construction of the Project and will endeavor to provide adequate ROW for the existing or typical Utility facilities that will be permitted to be accommodated within that ROW. Services must be performed in accordance with Section 7 (ROW - Additional Properties).
Provide the services described below in connection with existing and future occupancy of property by Utilities.

1. **Determination of Utility Right-of-Way and Easement**: The determination as to the need for replacement right of way or easement for Utilities will be made as follows:
   a. If additional right of way or easement will be required for the construction of the Project, coordinate with the Utility Owner to verify such circumstances and obtain a written statement as to whether the Utility Owner desires that the DB Team acquire such additional right of way or easement or the Utility Owner plans to acquire its own right-of-way or easement.

2. **Interest to be Acquired**: If the Utility Owner agrees for the DB Team to acquire replacement right of way or easement, step (a) must be followed. If Utility Owner intends to acquire its own right of way or easement step (b) must be followed.
   a. If the Utility Owner agrees for the DB Team to acquire replacement right-of-way or easement:
      i. Recommend to GDOT what interest will be required and the instrument (i.e., deed, quitclaim deed, easement limited agreement, etc.) to be used to acquire and/or transfer such interests. The recommendation must be reviewed, and concurrence provided by GDOT.
      ii. An Easement Limited Agreement (ELA) may be utilized to transfer rights in accordance with UAM 4.2.F.2 and as determined by GDOT. GDOT will be responsible for the establishment of the ELA with the Utility Owner.
      iii. If the DB Team is unable to acquire the needed right of way or easement and request assistance from GDOT to acquire the needed right of way or easement, the DB Team will be required to reimburse GDOT for the costs in acquiring the right of way or easement. There will be no schedule relief for the DB Team if this occurs.
   b. If the Utility Owner intends to acquire its own ROW or easement:
      i. Obtain written notification from the Utility Owner of such a decision and include this in a Utility Owner’s Work Plan.
      ii. Notify the GDOT Project Manager of said decision and provide a copy of the Utility Owner’s Work Plan to GDOT.

3. **Methods of Acquisition**: The method of acquisition described in Section 4.1.C.6 of the UAM will apply.
   a. Adjustment on Projects:
      i. **Reimbursable Cases**: When the Utility Owner is entitled to reimbursement for the cost of acquisition of replacement right of way or easements, GDOT will request permission from the Utility Owner, which must be obtained in writing, to acquire necessary Utility right of way or easements concurrently with State Proposes State Acquired acquisitions. If the Utility Owner has some particular reason for insisting on acquiring the right of way or easement, this will be included in the Standard Utility Agreement.
      ii. **Non-Reimbursable Cases**: If the cost of acquisition of replacement right of way or easement is not reimbursable, GDOT will, at the written request of the Utility Owner, acquire such right of way or easement under written agreement and the Utility Owner will reimburse GDOT for such cost in accordance with State Law. Any acquisition by GDOT will comply with all requirements pertaining to GDOT’s acquisition of its own right of way and easement.
6.2.2.3 Documentation of Existing Utility Property Interests – Affidavits

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

6.2.2.4 Acquisition of Replacement Utility Property Interests

Each Utility Owner will be responsible for acquiring any Replacement Utility Property Interests necessary for its Utility Adjustments if the DB Team is not responsible as outlined in the MOU. For acquisitions that are not the responsibility of the DB Team, the DB Team shall have the following responsibilities:

1. Coordinate with, and provide the information to, each Utility Owner as necessary for the Utility Owner to acquire any Replacement Utility Property Interests required for its Utility Adjustments.

2. If any of the DB Team-Related Entities assists a Utility Owner in acquiring a Replacement Utility Project Interest, such assistance shall be by separate contract, and the DB Team shall ensure that the following requirements are met:
   a. The files and records must be kept separate and apart from all acquisition files and records for the Proposed Right of Way and Additional Properties on the Project.
   b. 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 Proposed Right of Way and Additional Properties on the Project.
   c. Any DB Team Related Entity personnel negotiating the acquisition of Replacement Utility Property Interests must be different from those negotiating the acquisition of Project Right of Way.

The DB Team is not responsible for Utility Owner condemnation proceedings.

6.2.2.4.1 Georgia Utility Permitting System (GUPS)

Ensure that each Utility Owner submits Utility permit requests through GUPS for the following:

1. Each Utility proposed to be relocated or installed within the Existing ROW, Proposed ROW and Additional Properties.

2. Each Utility proposed to remain in its existing location within the Existing ROW, Proposed ROW and Additional Properties.

6.2.2.4.2 Documentation Requirements

Prepare, negotiate (to the extent permitted by Section 6.2.2.2 (Real Property Matters), and obtain execution by the Utility Owner (and record in the appropriate jurisdiction, if applicable) all agreements and deeds described in this section, including all necessary exhibits and information concerning the Project (e.g., reports, Plans, and surveys). Each agreement or deed
will identify the subject Utility or Utilities by the applicable Utility Permit Number, and identify any real property interests by parcel number or highway station number, or by other identification acceptable to GDOT.

6.2.2.4.3 Record Keeping
Maintain design, construction and inspection, and other Utility related records to ascertain that Utility Adjustment Work is accomplished as required by the Design-Build Documents and the applicable Utility agreements.

6.3 Design Requirements

6.3.1 Memorandum of Understanding (MOU)
The allocation of responsibility for the Utility Adjustment work will be specified in the MOU.

GDOT has executed MOUs between GDOT and each Utility Owner. Copies of the MOUs can be found in the attachments. If a Utility is impacted by the Project and the impact requires a relocation of the Utility, refer to the executed MOU for the Party responsible for the cost of the relocations.

Ensure Utility Adjustments will occur either by coordinating the relocation with the Utility Owner self-performing the relocation work, performing the work with its own forces or by using the Utility Owner’s Pre-Approved Design Consultants or Contractors. See Attachment 6-2 (Memorandums of Understanding) for requirements related to coordination and relocations for all Utility owners within the Project Limits.

6.3.2 Responsibilities of the DB Team
Ensure all Utility Adjustments necessary to accommodate the Project.

See Attachment 6-4 (AT&T Design Plans) for AT&T Corp. facilities maintenance and relocation plans.

1. Construct AT&T facilities according to the AT&T provided Attachment 6-4.
2. Maintain service and do not shut down AT&T services at any time.
3. Coordinate with AT&T on splicing activities; splicing to be done by AT&T.
4. Schedule construction such that AT&T relocation should be initiated no later than 90 days after NTP 1.
5. The following items are required for issuance of NTP 3 for the relocation of AT&T facilities:
   a. Submittal by DB Team to GDOT and acceptance by GDOT of DB Team’s Safety Plan under Section 2.4 of the Technical Provisions;
   b. Submittal by DB Team to GDOT and acceptance by GDOT of DB Team’s Traffic Control Plan under Section 18.3 of the Technical Provisions for the approved Project Phase;
c. Submittal by DB Team to GDOT and acceptance by GDOT of DB Team’s Construction Phasing and Staging Plan of Project, as applicable, under Section 2.2.4 of the Technical Provisions;

d. Submittal by DB Team to GDOT of qualified Worksite Utility Control Supervisor (WUCS), Worksite Erosion Control Supervisor (WECS), and Worksite Traffic Control Supervisor (WTCS);

e. Submittal by DB Team to GDOT and acceptance by GDOT of DB Team’s Emergency Utility Response Plan under Section 6.4.7 of the Technical Provisions; and

f. Submittal by DB Team to GDOT and acceptance by GDOT of DB Team’s Construction Quality Management Plan under Section 2.3.2 of the Technical Provisions.

6. Early coordination efforts have been completed by GDOT. Early coordination utility submittals, such as the URPN Letter 1 and URPN Letter 2, will not be required.

Provide reasonable effort to coordinate the pulling of fiber and copper cables and splicing after the completion of the relocation of the AT&T facilities. AT&T will be responsible to complete pulling and splicing work within 90 days of receipt of written notification from the DB Team of the completion of AT&T facilities construction. AT&T will be responsible for the costs of pulling the fiber and copper cables and for splicing.

Provide reasonable effort to coordinate the protection of and relocation of in-conflict facilities. Underground telecommunication facilities within the railroad right of way in conflict are the responsibility of the Utility Owners to relocate.

6.3.2.1 DB Team Pre-Construction Coordination

Communicate, cooperate, and coordinate with GDOT, the Utility Owners, Utility Owner’s design consultants and construction contractors, property owners, local Governmental Entities, locally impacted businesses, and potentially affected third parties, as necessary for performance of the Utility Adjustment Work. Provide advance notification to all impacted local Governmental Entities, business and property owners for and planned disruption of service. Coordinate with GDOT for any public outreach for planned Utility disruptions as required. The DB Team is responsible for assisting in the preparation of all Standard Utility Agreements (SUA) and Contract Item Agreements (CIA) as required. Utility agreement templates can be acquired from the State Pre-Construction Utility Manager. As part of the Pre-construction coordination, the DB team is required to coordinate with all Utility permitting agencies within the Project limits to ensure that any Utility permits issued by any agency are reviewed and approved by the DB Team. Notify the Utility Owners that a Georgia Utility Permitting System (GUPS) permit is required for any facilities located inside the Project limits.

Perform all Utility coordination to GDOT standards by a prequalified firm in Area Class 3.10 - Utility Coordination. Refer to the following website for a list of current prequalified firms:

http://www.dot.ga.gov/PS/Business/Prequalification/PrequalConsultants
Include the following in Utility coordination:

1. Schedule and meet with the following for a Utility kick-off meeting within 15 Calendar Days of NTP 1: (a) all Utility Owners with facilities located within the Project limits; (b) GDOT’s District Utilities Office; and (c) the State Subsurface Utilities Engineer (or designee). Discuss schedule, provide a Project overview, and provide Utility Owners with a clear understanding of Design-Build Utility Coordination processes and what the Utility Owners can expect for the duration of the Project.

2. Contact each Utility Owner to advise of the proposed Project, and obtain supplemental verification of the locations of existing Utility facilities (including the employment of additional Overhead/Underground Subsurface Utility Engineering (SUE) investigations as needed in determining requirements for the relocation or adjustment of facilities.

3. Perform all coordination necessary for Utility Adjustments.

6.3.2.2 DB Team Design Activities

The DB Team is responsible for the following design activities:

1. Collect the following from each Utility Owner self-performing their relocation work within the Project limits: Utility relocation plans, approved GUPS permits, Utility agreements if required, and cost estimates and letters of no conflict where the Utility Owner’s facilities will not be impacted by the Project.

2. Prepare all engineering design, plans, and technical specifications required to perform the necessary Utility relocations.

3. Coordinate the design work of Subcontractors, Utility Owners, and/or Utility Owners’ contractors; including any required inspection, permitting, testing, and monitoring to ensure that the Work is properly performed in accordance with approved design plans.

4. The resolution of any conflicts between Utilities and the construction of the Project.

5. No additional compensation will be allowed for any delays, inconveniences, or damage sustained by the DB Team or its Subcontractors due to interference from Utilities or the operation of relocating Utilities.

6. Provide each Utility Owner with roadway design plans and preliminary Utility plans as soon as the plans have reached a level of completeness adequate to allow the Utility Owner to fully understand the Project impacts.

7. Assist Utility Owners in the preparation and submittal to GDOT a Utility Work Plan Retention Request for any Utility that is to remain under the roadway within the construction limits.

8. If a party other than the Utility Owner prepares Utility relocation plans, provide a concurrence box on the plans where the Utility Owner signs and accepts the Utility relocation plans as shown.

9. Review the Utility plans to identify that there are no conflicts with the Project, and ensure that there are no conflicts between each of the Utility Owner’s relocation plans.

10. Show all existing and proposed Utilities on the cross-sections and drainage profiles.
11. Furnish the final Utility relocation plans to each Utility owner to incorporate into the GUPS Project permit. Once the GUPS Project permit is submitted, GDOT will forward to the DB Team for concurrence.

12. Review all Utility relocation plans, Utility agreements, Utility estimates, and certificates of eligibility to ensure that relocations comply with GDOT’s UAM.

13. Certify to GDOT that Utility relocation design plans have been reviewed and accepted by the respective Utility Owner.

6.3.2.3 Delays
Under no circumstances will the DB Team be entitled to any additional compensation or time extension hereunder as the result of any Utility Adjustment, whether performed by the DB Team or by the Utility Owner, except as provided in Article 14 of the DBA.

6.3.3 General Responsibilities of GDOT
GDOT will provide guidance to the DB Team in the Utility Adjustment process to the extent as described in the Design-Build Documents and the Utility Accommodation Policy and Standards Manual.

6.3.4 Utility Adjustment Relocation
The DB Team is responsible for all Utility Adjustment Work associated with the Project, with the exception of items explicitly excluded within the MOU’s.

6.3.5 When Utility Adjustment is Required
Utility Adjustment may be necessary to accommodate the Work for either or both of the following reasons: (i) a physical conflict between the Work and the Utility, and/or (ii) an incompatibility between the Work and the Utility, even though there may be no physical conflict. The physical limits of all Utility Adjustments will extend as necessary to replace the existing Utility, whether inside or outside of the Existing ROW and Proposed ROW. Section 6.2.2.4 (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 Proposed ROW.

6.3.6 Certain Components of the Utility Adjustment Work

6.3.6.1 Betterments
Replacements for existing Utilities will 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 or unless a larger size is required to meet current Law, industry standards, or Code. Services include equal access and ability to maintain the facility at its current level of functionality; in other words, like for like in-kind replacement and in accordance with the UAM and GDOT Design Policies.

Any Betterment work furnished or performed by the DB Team as part of a Utility Adjustment will be deemed added to the Work. That proportion of the costs representing improvement or
Betterment in a facility will be excluded from the costs eligible for payment by the DB Team or participation by GDOT, unless required to meet Law, industry standards, or Code.

Pay the in-kind replacement costs or larger facility costs if required to meet current Law, industry standards, or Code for removing, adjusting, and relocating those facilities that are physically in place and in conflict with proposed construction and where replacement is necessary.

6.3.6.2 Protection in Place

Assist the Utility Owner in the submission of Retention Request to GDOT for review and acceptance for each Utility that will remain in place in accordance with GDOT’s Utility Accommodation Policy and Standards Manual. The DB Team is responsible for Protection in Place using a GDOT approved Utility Work Plan Retention Request of all Utilities impacted by the Project as necessary for their continued safe operation and structural integrity.

Ensure the protection of any T-Cubed facilities during all demolition and construction activities.

6.3.6.3 Early Adjustments

6.3.7 DB Team’s Responsibility for Utility Identification

All Design Documents for Utility Adjustment Work, whether furnished by the DB Team, or by the Utility Owner or pre-approved design consultant, must be consistent and compatible with the following:

1. The applicable requirements of the DB Documents, including Section 6.2.1 (Standards)
2. Any Utilities remaining in, or being installed in, the same vicinity
3. All applicable Governmental Approvals
4. Private approvals of any third parties necessary for such work

Ensure that the Design Documents are complete and include all Utility adjustment schedules (required only if the Utility Owner self performs), Utility relocation plans, approved GUPS permits, and associated agreements (if required) necessary to address all foreseeable Utility impacts that might affect the Project. This includes Utility issues affecting ROW acquisition, environmental clearances, Project staging, and Project constructability.

Endeavor to design the Project to avoid conflicts with Utilities when feasible and minimize impacts where conflicts cannot be avoided. Submit to GDOT a SUE Utility Impact Analysis (UIA) in GDOT’s prescribed format as specified in Section 3, Table 3-1.

Research and verify any compensable prior right claimed in the MOU that would result in reimbursement to the Utility Owner for any relocation design, construction or material cost when a Utility Owner claims prior rights in the MOU and does not include either design or construction in the Design-Build Documents. If there is a dispute over property interests with a Utility Owner, the DB Team is responsible for resolving the dispute. Meet with GDOT’s District Utilities Manager to present the property interests information gathered. This information must be sufficient for the District Utilities Manager (or designee) to certify the extent of the Utility Owner’s property interests. GDOT has final approval authority as to the DB Team’s determination of
whether the Utility Owner has property interests. The DB Team is responsible for all design, construction and material costs when the design and construction are included in the Design-Build Documents.

### 6.3.8 Utility Relocation Plans

#### 6.3.8.1 Plans Prepared by the DB Team

Where the DB Team and the Utility Owner have agreed that the DB Team will furnish a Utility Adjustment design, prepare final Utility Relocation Plans and have an authorized representative of the Utility Owner sign the plans as “reviewed and approved for construction.” Attach the Utility Work Plan (as approved by the Utility Owner) to the applicable Utility Agreement (if required) for GDOT’s approval.

Unless otherwise specified in the applicable Utility Agreements, all changes to final Utility Relocation Plans previously approved by the Utility Owner (excluding estimates, if the Utility Owner is not responsible for any costs) require written Utility Owner approval. Transmit any GDOT comments to the Utility Owner, and coordinate any modification, re-approval by the Utility Owner, and re-submittal to GDOT as necessary to obtain GDOT’s approval.

#### 6.3.8.2 Plans Prepared by the Utility Owner

Coordinate with the Utility Owner as necessary to confirm compliance with the applicable requirements for all Utility Adjustments to be furnished by a Utility Owner. Attach those Utility Adjustments to the applicable Utility Agreement (if required), and include them in the appropriate Utility Work Plan for GDOT’s acceptance. Transmit any GDOT comments to the Utility Owner, and coordinate any modification, review by the DB Team, and re-submittal to GDOT as necessary to obtain GDOT’s acceptance.

#### 6.3.8.3 Design Documents

Each proposed Utility Adjustment must be shown in the Design Documents, regardless of whether the Utility Relocation Plan is prepared by the DB Team, Utility Owner or Utility Owner’s pre-approved design consultant.

**Required Information**

1. Preliminary Utility Relocation Plans:
   a. Preliminary Utility Relocation Plan sheets are typically comprised of preliminary roadway plan sheets with the inclusion of all existing Utility facility locations (overhead and underground) found within a Project’s limits. The degree of effort exerted on the part of GDOT and the Utility Owner varies with the type and location of the Utility. GDOT has classified these degrees of effort into different quality levels of SUE information.
   b. Produce and use Preliminary Utility Relocation Plans in the Utility coordination/relocation design activities outlined here. The following minimum information must be shown on the Preliminary Utility Plans:
      i. Construction centerlines with Project stations and begin/end Project limits
      ii. Curb and gutter or edge of pavement (proposed and existing)
iii. Road and street names
iv. Existing and required ROW limits, property lines, environmentally sensitive area limits, and property owners
v. All proposed and existing easements (including existing Utility easements)
vi. Proposed and existing drainage structures/features (excluding drainage text)
vii. Proposed construction limits (C/F lines)
viii. Topographical planimetrics (i.e., existing buildings/structures, existing tree/vegetation limits)
ix. All proposed bridges, walls, other structures and landscape hardscapes
x. All proposed and existing strain poles (signal, sign, lighting)
xii. Utilities Legend
xiii. Miscellaneous General Notes
xiv. Existing overhead and underground Utilities found within the Project’s limits, including size and material if known
xv. Sanitary sewer manhole top, and invert elevations. Sanitary Sewer pipe flow directions
xvi. Railroad mainline and spur tracks with their respective property/easement limits
xvii. Project survey control point locations

2. Final Utility Relocation Plans
   a. The final Utility Relocation Plans must clearly show all existing Utilities on the plans and clearly indicate all existing Utilities to remain and all proposed relocations necessary to avoid construction conflicts.
   b. In addition to the information required for the Preliminary Utility Relocation Plans, the final Utility Relocation Plans must include Miscellaneous General Notes required for coordination of Utility facilities with roadway construction.

Sheet Layout

1. Remove any information and graphic data that is not necessary to depict the disposition of Utilities found within the Project’s limits by turning off the appropriate CAD levels on which the data is stored. This will help ensure that information pertinent to Utility facilities can be clearly seen in the Utility Plan sheets. Examples of extraneous information would be items such as horizontal curve data, superelevation data, roadway dimensions, misc. text, etc. Ensure all background information such as pavement limits, existing structures, etc. is screened back, and ensure all text, line work, details, and symbols are clear and legible when plans are reduced to half-size (typically, 11-by-17 inches).

2. To maintain plan clarity, all applicable general notes, tables, details, and the Utility Legend must be placed separately from the Utility Plan sheets. Provide a Utility Plan Cover Sheet for both preliminary and final Utility Relocation Plans. A recommended example Utility sheet schedule is provided below:
   a. Utility Sheet 1 (Cover Sheet) – Utility General Notes, Utility Legend, Miscellaneous Details
   b. Utility Sheet 2 (required as needed) – Additional Miscellaneous Details, Pole Data Table
c. Utility Plan Sheets – Display Utilities shown in plan view with respect to Project on 24 Series Plan Sheets.

d. Utility Profile and Cross-Sections Sheets - Proposed Utility facility profiles and cross-sections (as required)

e. Miscellaneous Utilities Sheets – Miscellaneous proposed Utility details (as required)

Follow the above sheet schedule for all separate Utility relocation plans (i.e., water and sewer plans) included in the Project plans.

Note on the Utility Relocation Plans whose responsibility it is for Utility adjustment. Ensure the plans have made accommodations for Utility crossings and attachments for bridge plans, if applicable. Include the size, weight, and type of Utility for any new Utility crossings requests. In addition, fully detail the method of attachment to the bridge. Review such requests to ensure adequacy and constructability and obtain final acceptance from GDOT. Follow the approval process within this specification. Ensure that all proposed and existing Utilities are coordinated with the respective Project’s Construction Staging Plans and Erosion Control Plans.

Address any additional environmental impacts due to Utilities in the Project’s Environmental Document and/or Permit upon completion of the Utility relocation plans.

6.3.8.4 Certain Requirements for Underground Utilities

Use casing as specified in the Utility Accommodation Policy and Standards Manual for all underground Utilities crossing the Existing ROW, Proposed ROW and/or Additional Properties.

The Worksite Utility Coordination Supervisor (WUCS) shall ensure compliance with all Georgia 811 requirements.

6.3.8.5 Utility Work Plan

Utility Work Plan means the combination of the Utility Relocation Plans and the Utility Adjustment Schedule (if required), and any required agreements, specifications, cost estimates (if required), and any other information and materials which the Design-Build Team is required to submit to GDOT in connection with each Utility Relocation. The Utility Work Plan also includes the Utility Owner’s approval of plans, specifications, GUPS project permit, and cost estimates (if required). The term Utility Work Plan also refers to Supplemental Utility Work Plans and Utility Work Plan Retention Requests.

Prepare a Utility Work Plan that addresses each Utility Adjustment (as well as each Utility remaining in place and not requiring any Protection in Place or other Utility Adjustment) and submit it to GDOT for its review and acceptance. Provide Utility Work Plans for each individual Utility Owner in accordance with the Utility Accommodations Policy and Standards Manual.

Coordinate preparation of all components of each Utility Work Plan with the Utility Owner or Utility Owner’s design consultant. Complete the review and comment process for the applicable Utility Work Plan, including the issuance of any required GDOT acceptances, 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.
Address all Utility Adjustments covered by the same initial Utility Agreement in a single full Utility Work Plan.

### 6.3.8.6 Utility Adjustment Schedule (UAS)

The purpose of the UAS is to provide the DB Team with the pertinent information when Utility Owners are self-performing. When the DB Team is performing the relocation work or if the relocation work has been included in the contract to be accomplished by the Utility Owner pre-approved contractor, no UAS will be required, unless there is a dependent activity by the Utility Owner to facilitate this work.

Schedule all Utility relocations, adjustments, and obtain a written schedule from the Utility Owner or a Utility Owner pre-approved contractor.

### 6.3.8.7 Revised Work Plan Acceptance

Obtain a revised Utility Work Plan from the Utility (if self-performing) within 30 days after becoming aware of, or upon receipt of written notification of, previously unforeseen Utility removal, relocation, or adjustment found necessary by either the DB Team or the Utility after the start of construction of the Project.

The incorporation of this revised Utility Work Plan into the overall Project Schedule is not intended to correct errors and omissions with the original or current accepted Utility Work Plans submitted to GDOT. If such errors or omissions occur, it is the Utility's responsibility to adhere to the original or current Utility Work Plan submitted and approved. However, when a revised Utility Work Plan is deemed appropriate to be submitted, use the following procedure for its acceptance:

1. Review all revised Utility Work Plans submitted by the Utility found within the Project limits.
2. Submit the revised Work Plan after review and acceptance, to GDOT for review and acceptance. If, upon review, GDOT determines a revised Work Plan is unreasonable based on the required scope of Utility Adjustment and/or relocation required to accommodate the Project, GDOT will initiate the escalation process to resolve such disputes involving the revised Utility Work Plan, if disputes occur.

### 6.3.8.8 Post-Let Utility Certification

Develop the Preliminary Utility Status Report. Include a listing of all Utility Owners located within the Project limits and a recommendation as to the extent of each Utility Owner's property interests. Include copies of easements, plans, or other supporting documentation that substantiates any property interests of the Utility Owners in the report. Ensure the report lists each Utility Owner with contact information, any Utility Agreements, current UIA, and a preliminary assessment of the impact to each Utility Owner.

Upon receipt of the accepted Utility relocation plans, approved GUPS permits, and the Preliminary Utility Status Report review and forward that information to GDOT for review. GDOT will review the information and will perform the post-let Utility certification and issue notice to proceed (NTP 3) released for construction.
6.4 Construction Requirements

6.4.1 Reserved

6.4.2 General Construction Criteria

Notify GDOT that the Project has reached Substantial Completion and certify at that time that all Utilities have been identified, and that those Utility Owners with property interests or other claims related to relocation or coordination with the Project have been relocated or their claims otherwise satisfied or will be satisfied.

In addition to the above, comply with all provisions set forth under subsection 107.21 of the GDOT Standard Specifications, Construction of Transportation Systems, current edition.

Ensure all Utility Adjustment construction performed by the DB Team conforms to the requirements listed below. All construction engineering and contract supervision is the responsibility of the DB Team. Ensure that all Utility relocation work included in the contract is accomplished in accordance with the Contract Special Provisions, MOU and the Utility Owner approved final design plans and specifications. Consult with the Utility Owner before authorizing any changes that affect the Utility Owners facilities. For Work included in the DB Team’s Contract, the Utility Owner or Utility Owner’s contractor has the right to visit and inspect the work at any time and advise the DB Team and GDOT of any observed discrepancies or potential issues. Notify the Utility Owner when all Utility relocation work is completed and ready for final inspection and acceptance. The DB Team is responsible for verifying that all Utility Adjustment construction performed by each Utility Owner conforms to the requirements described below. In case of nonconformance, the DB Team will 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:

1. All criteria identified in Section 6.3
2. The Utility Work Plans approved by GDOT (other than Utility Adjustment Field Modifications complying with Section 6.4)
3. All safety and environmental requirements
4. Overall Project Schedule or proposed ROW schedule described in Sections 2, 5 and 7
5. Ensure that the installed, abandoned, excavated, or relocated Utilities within the Project limits are all locatable. Locatable means that the line can be field located using SUE QL-B methodology

The DB Team is responsible for performing all Utility installation, removal, relocation, and adjustments required to accommodate the proposed Project in accordance with the MOU and any required Utility Agreements. This includes any required inspection, permitting, testing, and monitoring to ensure that all the work is properly performed to the approved design plans. The resolution of any conflicts between Utilities and the construction of the Project is be the responsibility of the DB Team. No additional compensation will be allowed for any delays, inconveniences, or damage sustained by the DB Team or its Subcontractors due to interference from Utilities or the operation of relocating Utilities.
6.4.3 Construction Activities

Ensure Utility Adjustments are performed either by the Utility Owner, the Utility Owner’s pre-approved contractors or by self-performing the construction Work.

The DB Team Utility Work construction management will be performed by the Worksite Utility Coordination Supervisor.

6.4.4 Inspection of Utility Owner Construction

Set forth procedures for inspection of all Utility Adjustment Work performed by Utility Owners (and/or their pre-approved contractors) to verify compliance with the applicable requirements described in Section 6.4.2 and to ensure the work is being accomplished in accordance with the GDOT approved Utility Relocation Plan.

6.4.5 Scheduling Utility Adjustment Work

The Utility Adjustment Work (other than construction) may begin at any time following issuance of NTP 1. Refer to Article 7.6.2 of the Agreement for the conditions to commencement of Utility Adjustment Construction Work by the DB Team. Do not arrange for any Utility Owner to begin any demolition, removal, or other construction Work for any Utility Adjustment until all the following conditions are satisfied:

1. The Utility Adjustment is covered by an executed Utility Agreement (if required) (and any conditions to commencement of such activities that are included in the Utility Agreement have been satisfied).
2. Availability and access to affected Replacement Utility Property Interests have been obtained by the Utility Owner (and provided to the DB Team, if applicable).
3. Proposed ROW and/or Additional Properties have been obtained in accordance with the applicable requirements of the DB Documents.
4. The review and comment process has been completed and required approvals have been obtained for the Utility Work Plan covering the Utility Adjustment.
5. All third-party approvals (such as railroad, governmental, etc.) necessary for the Utility Adjustment construction have been obtained, and any pre-construction requirements contained in those approvals have been satisfied.

All other conditions to that Work stated in the DB Documents have been satisfied.

6.4.6 Standard of Care Regarding Utilities

Carefully and skillfully carry out all Work impacting Utilities and 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 Facility Protection Act). At the completion of the Work, ensure the condition of all Utilities is at least as safe and permanent as before.

6.4.7 Emergency Procedures

The WUCS shall prepare and submit to GDOT an Emergency Utility Response Plan (EURP) at least 30 days prior to NTP 3. The EURP shall indicate the Project location (which includes street address and or major intersections / major highway route, if possible with a land mark) that
would be reported in case of an emergency, WUCS, Emergency Utility Coordinator (EUC), Utility company name, Utility company emergency contact information to include emergency phone number, response time for emergency, working condition of devices needed to facilitate prompt shut off, and primary point of contact name and phone number for the Project.

The Emergency Utility Coordinator (EUC) must be an employee of the DB Team and is responsible for notifying the appropriate Utility company and/or Utility subcontractors in case of an emergency. EURP must include the contact details of the EUC, if WUCS is not the primary emergency Utility coordinator for this Project.

The plan will also include a means of reporting emergencies and the Utility Emergency Response Information for each company. Post the EURP in an area readily accessible to GDOT and Project personnel. Distribute the copies of EURP by e-mail and hard copy to GDOT, DB Team’s Project Manager, superintendent, and all approved Subcontractors whose work can be in conflict with Utility facilities, and personnel of each facility/owner/operator who has facilities within the Project limits. Keep a copy in close proximity to active construction.

In the event of interruption to gas, water, or other Utility services as a result of accidental breakage or as a result of being exposed or unsupported, promptly notify the appropriate emergency officials, the Georgia Utilities Protection Center, and the appropriate Utility facility company or operator, if known. Do not engage in excavating or blasting activities that may cause further damage to the Utility facility until the damage has been repaired.

Include an item in the agenda of Utility Coordination meeting about the updates/changes in the EURP plan to ensure the contact information provided in the EURP (name and phone numbers) is kept up-to-date.

The Emergency Utility Response Plan and Emergency Utility Response Information template can be found at the State of Georgia, Office of Utilities Webpage.

6.4.8 Switch Over to New Facilities

After a newly adjusted, relocated or installed Utility has been accepted by the Utility Owner and is otherwise ready to be placed in service, 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 Traffic Control

The DB Team is responsible for, and the Construction Traffic Control Plan will cover, all traffic control made necessary for Utility Adjustment Work, whether performed by the DB Team or by the Utility Owner. Traffic control for Adjustments or installations will be coordinated with GDOT. Traffic control must comply with the guidelines of the Manual on Traffic Control Devices (MUTCD), current edition, and of Section 18.
6.5 Deliverables

Time all Submittals described in this Section 6 to meet the Baseline Project Schedule, considering GDOT’s applicable review and response times designated in this Section, or if not stated therein, then as stated in Article 6.3 of the Design-Build Agreement (Volume 1).

Upon GDOT review and acceptance, provide a copy of the accepted final Utility plans to all Utility Owners whose Utility relocation work was performed by the DB Team.

6.5.1 Utility Work Plan Submittals

Transmit any GDOT comments to the Utility Owner, and coordinate any modification, review, and approval by the Utility Owner and re-submittal to GDOT, as necessary to resolve all GDOT comments and/or obtain GDOT’s acceptance, as applicable.

6.5.2 Preliminary Utility Status Report

Prepare and submit to GDOT a Preliminary Utility Status Report concurrently with accepted relocated Utility plans in accordance with Section 3.

6.5.3 Subsurface Utility Engineering (SUE) Requirements

Compile and submit to GDOT all SUE deliverables, Utility relocation plans, SUE Utility Impact Analysis, Utility Adjustment Schedules (if required), Utility Agreements (if required), Utility Estimates (if required) (if estimates are provided by the Utility owners), and Letters of no conflict, as set forth above for the Project.

Ensure each Utility Agreement and Utility relocation plan submitted is accompagnied by a certification from the DB Team stating that the proposed relocation will not conflict with the proposed highway improvement and will not conflict with another Utility Owner's relocation plan.

6.5.4 Utility As-Built Standard

6.5.4.1 General As-Built Utility Requirements

The DB Team is responsible for managing, ensuring the accuracy of, and delivering all Utility Record Drawings, which must be submitted for intermediate review and approval within 30 days after Utility relocations are completed.

Ensure the following:

1. All underground Utilities that are relocated, adjusted or newly installed within the Project limits will be surveyed by a certified licensed surveyor at the time of installation to determine the exact location and position of the Utility line, including:
   a. The outside diameter of pipe or width of duct banks and configuration of either cased or non-encased multi-conduit systems
   b. The Utility’s structural material composition and condition
   c. Identification of benchmarks used to determine elevations
   d. All bored in facilities will require bore logs, which is part of the required as-built record information
e. Elevations with an accuracy of +/- 0.05 feet and certified accurate to the benchmarks used to determine elevations
f. Horizontal data accurate to within +/- 0.2 feet or applicable survey standards, whichever is more precise
g. 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 – at 100 ft. intervals
   ii. For dry facilities – at 25-50 ft. intervals, depending on the vertical alignment

2. All resulting abandoned or excavated underground Utilities within the Project limits are clearly delineated and labeled as abandoned or removed.

3. All relocated, adjusted and newly installed aerial facilities are recorded to include the following:
   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)

6.5.4.2 As-Built Utility CADD Files and Plans Preparation

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).

Ensure the as-built Utility information is submitted as follows:

CADD Files

1. All points/data are placed in one CADD file per Utility Owner.
2. DGN files are named using the naming convention “1234567UTLAB_XYZ.dgn” (where “1234567” represents the PI# and “XYZ” the Owner’s UPC code).
3. One empty, overall file using the naming convention “1234567UTLEAB.dgn” is created with all individual files named “1234567UTLAB_XYZ.dgn” attached as reference files.
4. All UTLAB files follow the conventions set forth in the EDG for the UTLE file.
5. Sheet files, using GDOT’s title block, are created for each Utility Owner in accordance with Section 24, and Section 44 (if required) of GDOT’s PPG; levels are correctly turned on/off/grayed back to enable future printing if needed.
6. The Project's scale is maintained.
7. Relocated poles are numbered and matched to a pole data table.
8. Pole data tables and point data tables are included.
9. All street names are labeled.
10. All easements and ROW are labeled.
11. The location and elevation of the referenced benchmark is 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., are be labeled.

PDF Files
1. Create PDFs of the CADD sheet files for each Utility Owner in accordance with Section 24, and Section 44 (if required) of the GDOT PPG; levels must 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 Professional Surveyor’s or Professional Engineer’s stamp and statement certifying that Record Drawings 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 “Record Drawing” on each sheet.

6.5.4.3 Utility Record Drawings Review and Submittal Process
1. Submit completed as-built CADD files and PDFs of the Record Drawings Utility plan sheets to the DB Team’s EOR for review and comments.
2. Record Drawings are not considered complete until the DB Team has responded to all comments from these reviews to the satisfaction of the DB Team's EOR.
3. Prior to submitting any Utility as-builts to Utility Owners, provide GDOT with one PDF copy of each of the major Utilities (Water/Sewer, Gas, Telecom and Electric) for preliminary review and comment. After comments have been addressed; no further preliminary review will be required.
4. Each Utility Owner, whose facilities were relocated, abandoned, adjusted, or installed will receive a PDF and CADD copy of their Record Drawings for review and acceptance within 90 days of the completed work.

5. Submit the combined final Utility as-built plans to GDOT as follows:
   a. One overall, final CADD file in GDOT’s current CADD Software with each Utility Owner’s file appropriately attached as a reference file per GDOT’s PPG and EDG
   b. One PDF set of Section 24 and Section 44 (if required) plans for each Utility Owner’s facilities

6. GDOT will perform Quality Assurance (QA) on all deliverables to determine compliance with GDOT’s EDG ad PPG before final acceptance by GDOT.

6.5.4.4 Utility Facility Relocation Acceptance Form

The Utility Facility Relocation Acceptance Form (see Attachment 6-3) shall be completed by the Contractor’s WUCS. It must also be signed by an authorized representative of the Utility Owner and by the GDOT Project Manager upon completion and acceptance of the final Utility as-built plans by the Utility Owner.

Execution of the Utility Facility Relocation Acceptance Form by the DB Team, Utility Owner, and GDOT provides acknowledgement that the Utility relocation work accomplished by the DB Team has been visually inspected and accepted by the Utility Owner and constructed in accordance with the Utility Owner approved relocation design plans, their current specifications, and the requirements of the Memorandum of Understanding (MOU) as executed by the Utility Owner. Further, the Contractor’s WUCS must provide the Utility Owner with a complete set of Record Drawings (CADD and PDF) reflecting the relocation work performed by the Contractor for review and approval. Upon completion of the Utility Facility Relocation Acceptance Form and the exchange of the final Utility Owner approved Record Drawings, all parties must agree that the Utility Owner will operate and maintain the installed facilities covered by the Utility Facility Relocation Acceptance Form going forward based on the date of execution by the GDOT Project Manager (PM). The DB Team, however, is responsible to correct any items inadvertently overlooked and subsequently identified in a Utility punch list and to provide up to date Record Drawings to the Utility Owner.

Execution of the Utility Facility Relocation Acceptance Form by GDOT does not confer legitimacy and accuracy or in any way transfers liability for errors or omissions made by the preparer.
7 RIGHT OF WAY (ROW) – Additional Properties

7.1 General
No additional property acquisitions will be allowed.
8 GEOTECHNICAL

8.1 General
Perform all geotechnical investigations, testing, research, and analysis necessary to effectively determine and understand the existing surface and subsurface geotechnical conditions. 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.

All geotechnical reports, provisions, and recommendations developed by the DB Team and accepted and/or concurred by GDOT will be part of the Project’s design and endorsed by the EOR.

8.2 Administrative Requirements

8.2.1 Standards
Construct and maintain roadway pavements in conformance to GDOT’s Pavement Design Manual and GDOT policies and procedures.

Perform all other geotechnical Work in general conformance with GDOT’s Geotechnical Engineering Manual and guidelines, AASHTO guidelines, and Attachment 3-1 (Manuals), and other provisions of the DB Documents.

8.3 Design Requirements

8.3.1 Subsurface Geotechnical Investigation by the DB Team
Determine the specific locations, frequency, and scope of all subsurface geotechnical investigations, testing, research, and any analysis the DB Team considers necessary to provide a safe and reliable roadway, pavement, foundation, structure, and other facilities for the Project.

Prepare and amend, as needed, Geotechnical Engineering Reports as described later in this Section 8 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 engineering and physical properties of soil and rock, 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 settlement/consolidation, strength tests and engineering properties; recording rock recovery and rock quality designation in the field in addition to laboratory tests to determine compressive and split tensile strength tests of rock cores.

A discussion of conditions and results with reference to specific locations on the Project, including a dewatering plan and impacts on near-by structures.
Design and construction parameters resulting from the geotechnical investigation and analysis, including parameters for the design of pavements, pipes, foundations, structures, slopes, and embankments.

Plan view locations of field sampling, profile of boring logs and other field data, laboratory test results, calculations, and analyses that support design decisions taking into consideration down-drag on piles and soil squeeze in high embankments.

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. Ensure the analysis considers the potential for long-term surficial slide failures common to high plasticity clays in Georgia, and specific recommendations are provided to minimize their occurrence. Internal and external stability analysis shall be considered for walls supporting fill/cut within the Project.

Submit each Geotechnical Engineering Report upon completion, along with back-up of calculations and input and output of GDOT recognized computer software 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, notify GDOT immediately. For hazardous materials, also follow the requirements in Article 7.8 of the DBA and in GDOT Standard Specification 107.22.

DB Team may choose to accept and use the boring information for the Project; however, the boring information is only provided as a RID and GDOT accepts no liability for the accuracy of the borings information.

8.3.2 Bridge Foundation Investigation (BFI)

For PI 0014895:
No requirements.

For PI 0014899:
Perform a BFI. The BFI report and all recommendations must be reviewed and endorsed by the EOR.

8.3.2.1 Pile Foundation

1. Design and construct the pilings in accordance with all related special provisions per the approved Bridge Foundation Investigation recommendations.

All piles must be embedded a minimum of 10 feet into natural ground with additional length determined by the lead Professional Engineer for geotechnical design.

Piles must have minimum embedment in the following materials:
Table 8-1: Pile Embedment Specifications

<table>
<thead>
<tr>
<th>Material and Density</th>
<th>Minimum Embedment</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 – to 20 – blow count soil</td>
<td>15 feet</td>
</tr>
<tr>
<td>40 – to 50 – plus blow count soil</td>
<td>10 feet</td>
</tr>
<tr>
<td>Hard rock (requires pilot holes)</td>
<td>5 feet</td>
</tr>
</tbody>
</table>

Pile tips must be set below any soft/loose soils that may settle/consolidate under the design load unless the soft/loose soils are at least deeper than five pile diameters below the pile tip.

When piles must penetrate rock to provide the minimum embedment, use pilot holes drilled a minimum of 5 feet into the rock.

Establish top of footing elevations to be in conformance with Norfolk Southern Railway specifications, policies and procedures, guidelines, and Attachment 3-1 (Manuals).

8.3.2.2 Drilled Caisson

1. Design and construct the drilled caissons in accordance with Special Provision 524 per the approved Bridge Foundation Investigation recommendations.

When sound rock is encountered, drilled caissons must be embedded a minimum of 10 feet into sound rock as defined by Special Provision 524.3 or per the approved Bridge Foundation Investigation (BFI) recommendations.

8.3.2.3 Spread Footings

Establish top of footing elevations to be in conformance with Norfolk Southern Railway specifications, policies and procedures, guidelines, and Attachment 3-1 (Manuals).

8.3.3 Dynamic Pile Testing

For PI 0014895:

No requirements.

For PI 0014899:

Perform dynamic pile testing using the Pile Driving Analyzer (PDA) to monitor the driving of piles with accelerometer and strain gauges attached to the piles. Perform a minimum of two PDAs (one for the abutment and one for the intermediate bents), but no less than 2 percent of the production piles, and additional PDAs will be required for a change in bent type, change in abutment, change in geotechnical material, or as determined by the EOR. Perform the dynamic pile testing in accordance with ASTM D4945-08 and Special Provision 523 per the approved Bridge Foundation Investigation recommendations.

Upon completion of a PDA test, provide a complete report consisting of but not limited to PDA field monitoring data, results of Case Pile Wave Analysis Program (CAPWAP) computer analyses, and the driving criteria recommendation from the geotechnical engineer who developed the BFI. The recommendation must be endorsed by the EOR. Submit the report electronically in PDF format and the electronic data files of the PDA analysis and CAPWAP to...
GDOT and allow seven days for review and acceptance before proceeding with driving production piles.

8.3.4 Soil Survey (SS)
Not required.

8.3.5 Pavement Design
Comply with the required minimum pavement design provided in Section 11 (Roadways).
If pavement design has not been previously approved by GDOT, then prepare a pavement design report that confirms or revises the required minimum pavement design provided in Section 11. Ensure the pavement design report documents the assumptions, considerations, and decisions contributing to the Project’s pavement design and meet all requirements of GDOT’s Pavement Design Manual.
For roadways adjacent to and crossing the Project that are disturbed by the construction activities of the Project:

1. Match the in-place surface type and structure of the existing roadways at a minimum.
   Construct all new shoulders as full-depth shoulders unless otherwise specified in Volume 2.
   Design all tie-in Work to avoid differential settlement between the existing and new surfaces.
   Coordinate the design and construction of all cross roads with the Governmental Entity having jurisdiction whether a municipality, county, or GDOT.

8.3.6 Wall Foundation Investigation (WFI)
Perform a WFI for each wall in the Project that includes wall structures in conformance with the GDOT Geotechnical Engineering Manual, AASHTO guidelines, and Attachment 3-1 (Manuals) for all new walls and wall extensions. The EOR shall endorse the WFI report and all recommendations.

8.3.7 High-Mast Lighting Foundation
Not required.

8.4 Construction
Ensure that materials used to construct the Project meet the minimum requirement as specified in GDOT specifications, policies and procedures, guidelines, and Attachment 3-1 (Manuals).
Ensure all materials used to construct the Project conform to the requirements of the GDOT Qualified Products List (QPL) or equivalent as approved by GDOT. Personnel possessing the requisite GDOT materials certifications will perform testing of materials.
Assume responsibility for obtaining and complying with all Governmental Approvals for construction of the Project.
Submit to GDOT for review and acceptance any blasting plan(s). Perform blasting in accordance with State Law, and in accordance with GDOT’s specifications, policies and procedures.
8.5 Deliverables

Refer to Section 3.
9  SURVEYING AND MAPPING

9.1  General
Provide accurate and consistent land surveying and mapping necessary to support ROW acquisition, design, and construction of the Project. The DB Team is responsible for all surveying responsibilities.

Review existing survey data and determine the requirements for updating or extending the existing survey and mapping data. The DB Team is responsible for the final precision, accuracy, and comprehensiveness of all survey and mapping.

9.2  Administrative Requirements

9.2.1  Standards
Provide surveying and mapping activities in accordance with the GDOT Automated Survey Manual and Attachment 3-1 (Manuals), and other provisions of the DB Documents.

9.2.2  Ownership
The documents produced by the DB Team surveyor or the surveyor’s subcontractors are the property of GDOT and release of any such document must be approved by GDOT.

9.2.3  Property Owner Notification
Prepare for GDOT review and acceptance 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
Perform all survey Work in US survey feet. Ensure the Work conforms to state plane coordinates.

Ensure the combined sea level and scale factor for the Project conforms to the GDOT Automated Survey Manual.

9.3.2  Survey Control Requirements
Ensure that all surveying conforms to the Georgia Professional Land Surveying Practices Act, follows the General Rules of Procedures and Practices of the Georgia Board of Professional Engineers and Land Surveying, and otherwise conforms to all applicable Law. Ensure that any person in charge of the survey is proficient in the technical aspects of surveying, and is a Professional Land Surveyor (Surveyor).

Establish all horizontal and vertical primary Project control from approved control provided by GDOT. Meet the guidelines as defined in the GDOT Automated Survey Manual if using GPS methods.
Establish and maintain additional survey control as needed and final ROW monumentation throughout the duration of the Project.

Tie any additional horizontal and vertical control for the Project to the established primary Project control network.

Set and/or verify by a Professional Land Surveyor all survey control points.

Establish and maintain a permanent horizontal and vertical primary survey control network. Ensure the control network consists of, at minimum, horizontal deltas coordinated and elevated set in intervisible pairs at spacing of no greater than 1 mile. Install control monuments per the GDOT Automated Survey Manual.

Provide to NOAA, in coordination with GDOT, notification of planned activities that will disturb or destroy any geodetic control monuments at least 90 days prior to construction. This provides time to plan for and execute relocation of geodetic monuments.

Replace all existing horizontal and vertical primary survey control points disturbed or destroyed. Perform all survey computations and observations necessary to establish the exact position and elevation of all other control points based on the primary survey control.

Deliver to GDOT a survey control package in accordance with the criteria in the GDOT Automated Survey Manual, as well as 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 & Vertical)

Meet the accuracy of the appropriate level of survey as defined in the GDOT Automated Survey Manual if using conventional methods to establish additional horizontal control.

9.3.3.1 Horizontal Accuracy Requirements for Conventional Surveys

Establish horizontal control on the Georgia State Plane Coordinate System of 1985 [NAD83 or GCS 85], at a minimum.

Upon request, GDOT will compile and provide to the DB Team 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

Establish vertical control on the North American Vertical Datum of 1988 (NAVD 1988) as shown in Table 9-1.
### Table 9-1: North American Vertical Datum of 1988

<table>
<thead>
<tr>
<th></th>
<th>1&lt;sup&gt;st&lt;/sup&gt; Order</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Order</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; Order</th>
<th>Remarks and Formulae</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error of Closure</td>
<td>0.013 feet √M</td>
<td>0.026 feet √M</td>
<td>0.049 feet √M</td>
<td>Loop or between control monuments</td>
</tr>
<tr>
<td>Maximum Length of Sight</td>
<td>250 feet</td>
<td>300 feet</td>
<td></td>
<td>With good atmospheric conditions</td>
</tr>
<tr>
<td>Difference in Foresight and Backsight Distances</td>
<td>±10 feet</td>
<td>±20 feet</td>
<td>±30 feet</td>
<td>Per instrument set up</td>
</tr>
<tr>
<td>Total Difference in Foresight and Backsight Distances</td>
<td>±20 feet per second</td>
<td>±50 feet per second</td>
<td>±70 feet per second</td>
<td>Per total section or loop</td>
</tr>
<tr>
<td>Recommended Length of Section or Loop</td>
<td>2.0 miles</td>
<td>3.0 miles</td>
<td>4.0 miles</td>
<td>Maximum distance before closing or in loop</td>
</tr>
<tr>
<td>Maximum Recommended Distance Between Benchmarks</td>
<td>2000 feet</td>
<td>2500 feet</td>
<td>3000 feet</td>
<td>Permanent or temporary benchmarks set or observed along the route</td>
</tr>
<tr>
<td>Level Rod Reading</td>
<td>± 0.001 foot</td>
<td>± 0.001 foot</td>
<td>± 0.001 foot</td>
<td></td>
</tr>
<tr>
<td>Recommended Instruments and Leveling Rods</td>
<td>Automatic or tilting w/ parallel plate micrometer precise rods</td>
<td>Automatic or tilting w/ optical micrometer precise rods</td>
<td>Automatic or quality spirit standard, quality rod</td>
<td>When two or more level rods are used, they should be identically matched</td>
</tr>
<tr>
<td>Principal Uses</td>
<td>Broad area control, subsidence or motion studies jig and tool settings</td>
<td>Broad area control, engineering projects basis for subsequent level work</td>
<td>Small area control, drainage studies, some construction and engineering</td>
<td></td>
</tr>
</tbody>
</table>

#### 9.3.4 Reserved

#### 9.3.5 Right of Way Surveys

Base all surveys on the primary horizontal and vertical control network established for the Project.
9.3.5.1 Accuracy Standard

Ensure the accuracy standards of the appropriate level of survey as defined in the following table are met when performing ROW surveys consisting of boundary locations.

<table>
<thead>
<tr>
<th></th>
<th>Rural</th>
<th>Urban</th>
<th>Remarks and Formulae</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error of Closure</td>
<td>1:20,000</td>
<td>1:25,000</td>
<td>Loop or between Control Monuments</td>
</tr>
<tr>
<td>Adjusted Mathematical Closure of Survey (No Less Than)</td>
<td>1:50,000</td>
<td>1:50,000</td>
<td></td>
</tr>
</tbody>
</table>

*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

Use electronic field books to collect and store raw data if necessary. Preserve original raw data and document any changes or corrections made to field data such as station name, height of instrument, or target, as well as raw and corrected field data in hardcopy output forms in a similar manner to conventional field books for preservation.

Record field survey data and sketches that cannot be efficiently recorded in the electronic field volume in a field note volume and store with copies of the electronic data.

Record all field notes in permanently bound books (loose leaf field notes are allowed). Deliver copies of any or all field note volumes to GDOT upon request.

Provide all created topographic mapping to GDOT in digital terrain model format using the software and version thereof being used by GDOT at the time of delivery.

9.4 Construction Requirements

9.4.1 Construction Surveys

Comply with the requirements in Section 9.3.

9.4.2 ROW Monuments

Comply with the requirements in Section 9.3.

Upon completion of the ROW acquisition and all Construction Work, such that the Final ROW monuments are disturbed by construction, set permanent and stable concrete ROW monuments (constructed according to current GDOT 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.
Set permanent and stable concrete ROW monuments (constructed according to current GDOT specifications) located on all final ROW lines where the distance between such significant ROW line points exceeds 1,500 feet at no more than 1,000-foot intervals.

Purchase all materials, supplies, and other items necessary for proper survey monumentation.

9.5 Deliverables

In addition to those listed in this Section, refer to Section 3.
10 GRADING

10.1 General
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; subgrade preparation and stabilization; dust control; aggregate surfacing; and earth shouldering.

10.2 Administrative Requirements

10.2.1 Standards
Provide grading activities in accordance with Attachment 3-1 (Manuals) and other provisions of the DB Documents.

10.3 Design Requirements
Ensure that all borrow, stockpile, and waste sites for this Project are environmentally approved prior to construction activities occurring in them. Place all common fill or excess material disposed of outside Project Right of Way in either a permitted solid waste facility, a permitted inert waste landfill, or in an engineered fill. See GDOT Standard Specifications Construction of Transportation Systems, Special Provisions, and Supplemental Specifications for additional information.

Do not dispose of existing bridge and construction debris within the Project. Provide an environmentally approved site to dispose of the existing bridge and/or construction debris at no additional cost to GDOT.

Notify GDOT of any non-permitted encroachment in the Existing Right of Way. Do not take any action to remove the encroachment without GDOT approval.

10.3.1 Removal and Disposal of Material
No additional requirements.

10.3.2 Demolition and Abandonment Plan
Develop, implement, and maintain, for the Term, a Demolition and Abandonment Plan for all existing structures, features, and Utilities, including types and sizes, as described in Section 10.4, that will be removed, abandoned, or partially abandoned during the Term. Ensure the plan provides that said structures are structurally sound after the abandonment procedure, and shows with sufficient detail for the Abandonment the locations of all existing features as listed in Section 10.4.

GDOT reserves the right to require the DB Team, at any time, to salvage equipment and/or material in an undamaged condition and to deliver to a location designated by GDOT within the GDOT District in which the Project is located. GDOT has first right of refusal to retain any salvage material or equipment. Take possession of, but do not reuse for the Project, any
material or equipment GDOT decides not to salvage. Ensure all material incorporated into the Project is new.

The material from structures designated for demolition is the DB Team’s property. Properly dispose of all material removed outside the limits of the Project.

### 10.3.3 Slopes and Topsoil

Comply with Attachment 3-1 regarding design limitations and roadside safety guidelines associated with the design of slopes along roadways. Adjust grading to avoid and minimize disturbance to the identified waters of the US. Ensure the grading plan is in accordance with the approved Environmental Documents. Secure all associated Governmental Approvals to meet the Released for Construction (RFC) plans.

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

Clear the entirety of cut slopes within the available Right of Way and remove debris.

### 10.3.4 Special Flood Hazard Areas Fill Mitigation

No requirements.

### 10.4 Construction Requirements

Remove 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) to the following depths:

1. **Abandoned pavements**: Obliterate, grade to drain, and grass existing pavement inside the Project that is no longer being used.
2. **Abandoned pipes**: Ensure abandoned pipes that are left in place are grout filled or filled with flowable fill.
3. **Under pavements**: Remove to a depth of at least 3 feet below the finished subgrade elevation.
4. **Underneath other structures**: Remove to at least 3 feet below the foundations of any proposed structure, including installations such as guard rail posts and utility poles.
5. **Elsewhere within the ROW and easement areas, remove as follows**: Remove to at least 3 feet below the finished surface of slopes and shoulders and 1 foot below natural ground outside construction lines.

Thoroughly crack or break abandoned structures that may impound water. These structures include concrete floors, basements, catch basins, and other structures within 10 feet of finished grade.

Break floors so that no section greater than 10 square feet remains intact.
For PI 0014895:

1. Do not place backfill or place other construction material onto the building structure or concrete slab on Parcel 3.
2. Replace in kind all privately owned signs damaged as a result of the Project.
3. Do not disturb or place construction material on or against the brick wall at the northwest corner of Pio Nono Avenue and the Norfolk Southern Railroad.
4. Do not disturb or place construction material on the building structure on Parcel 4.
5. Do not disturb vacuum/cleaning stations on Parcel 2.

For PI 0014899:

1. Do not disturb or place construction materials on the building structure on Parcel 1.
2. Do not disturb or place construction materials on the existing retaining wall located along the Appleton Lane right of way adjacent to Parcel 4.

10.5 Deliverables

In addition to those listed in this Section, refer to Section 3.
11 ROADWAYS

11.1 General
Coordinate roadway design, construction, maintenance, and operation with all other Work planned or under construction by GDOT and/or Governmental Entity.

11.2 Administrative Requirements

11.2.1 Standards
Provide activities in this section in accordance with GDOT Standard Specifications, Construction of Transportation Systems, other Attachment 3-1 (Manuals), and other provisions of the DB Documents.

11.3 Design Requirements

11.3.1 Overview
Coordinate roadway design with the design of all other components of the Project. Design the Project roadways to integrate with streets and roadways that are adjacent or connecting to the Project.

Design the Project roadways to incorporate roadway appurtenances, including 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's Construction Standards and Details. Should the existing type of fence not match the type provided in GDOT's Construction Standards and Details, the type of proposed fence shall be submitted to GDOT for approval prior to construction.

Design and construct any and all proposed intersection reconstruction or rehabilitation to meet the requirements of the Environmental Document Approvals and Attachment 3-1 Manuals.

11.3.2 Design Criteria Order of Precedence
Adhere to the following requirements for the design of the Project. The plans provided in the Reference Information Documents are provided for reference only and may contain or conform to some but not all of the design requirements herein. In the event of any conflict, ambiguity, or inconsistency among the following design criteria, the order of precedence, from highest to lowest, one being higher than two, is as follows:

1. Allowable Design Exceptions, Design Variances, and Design Deviations as set forth in Section 11.3.4
2. Attachments (Technical Provisions)

11.3.3 Typical Sections and Pavement Design
Comply with Attachment 11-1 (Roadway Design Criteria).
Ensure all new pavement for the Project, with the exception of SR 247, meets, at a minimum, the pavement designs identified in Attachment 11-2 (Guidelines for Minor Pavement Projects).

For PI 0014895:

Provide full-depth pavement construction for SR 247 that, at a minimum, meets the following:

<table>
<thead>
<tr>
<th>Material</th>
<th>Spread Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycled Asph Conc 12.5 mm Superpave, GP 1 Only, incl Bitum Matl &amp; H Lime</td>
<td>165 lb/sy</td>
</tr>
<tr>
<td>Recycled Asph Conc 19mm Superpave, GP 1 or GP 2, Incl Bitum Matl &amp; H Lime</td>
<td>220 lb/sy</td>
</tr>
<tr>
<td>Recycled Asph Conc 25mm Superpave, GP 1 or GP 2, Incl Bitum Matl &amp; H lim</td>
<td>330 lb/sy</td>
</tr>
<tr>
<td>GAB - 8 inches</td>
<td></td>
</tr>
</tbody>
</table>

Replace approach slabs. Place full-depth pavement a minimum of 50 linear feet from the approach slab limits on each side of the bridge. Beyond this requirement, design pavement for alignment tie-ins. Ensure approach slabs are reinforced concrete and 30 feet long.

For PI 0014899:

Place full-depth pavement a minimum of 50 linear feet from the approach slab limits on each side of the bridge. Beyond this requirement, design pavement for alignment tie-ins. Ensure approach slabs are reinforced concrete, 20 feet long, and adhere to GDOT Standard 9017L.

Mill existing asphalt in preparation of overlay for pavement sections that are not full depth reconstruction. Avoid damage to existing brick pavers that are to be overlaid. Prior to overlay construction and with GDOT, examine the exposed brick pavers for suitability to be resurfaced. Remove and replace pavers found to be loose, fractured or crumbling with Class B Concrete pavement to a minimum depth of 6 inches.

11.3.3.1 Crossing Streets
Coordinate, design, and construct the improvements on crossing streets in accordance with the requirements of the Governmental Entity having jurisdiction of said roadway.

11.3.3.2 Roadside Safety
Ensure that all roadside safety devices used on the Project meet current crash test and other safety requirements that meet or exceed current GDOT requirements.

11.3.3.3 Pavement Joints
Include in staged construction pavement construction widths that do not result in longitudinal joints in the wheel path of the final roadway.
Do not design or construct longitudinal pavement joints in the wheel path of the traveling public unless specifically approved by GDOT in writing.

Install fabric at all longitudinal joints and cracks where pavement is to be overlaid, in accordance with Standard Specification Section 446.

### 11.3.3.4 Intersection Reconstruction or Rehabilitation

Design and construct all proposed intersection reconstruction or rehabilitation to meet the requirements of the Environmental Document Approvals and Attachment 3-1 (Manuals).

### 11.3.3.5 Concrete Usage

Use colored textured concrete in all raised medians when designing and constructing hardscape elements at intersections. Monolithic concrete medians are not permitted. Only use stamped concrete where the DB Teams acquires written agreement, in a manner acceptable to GDOT, from local communities to maintain it, and where it meets the requirements in GDOT specifications, policies, procedures and Attachment 3-1 (Manuals).

Use concrete paving in hard to reach mowing areas or under structures (such as, but not limited to, areas near or 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.

### 11.3.3.6 Barriers

Remove and upgrade all existing guardrail within the limits of roadway construction that is not otherwise being removed or replaced.

See Attachment 11-1 (Roadway Design Criteria) for additional roadway design requirements.

### 11.3.4 Allowable Design Exceptions, Design Variances, and Design Deviations

The following Design Exceptions and Design Variances are allowable on the Project:

PI 0014895 – Design Variances:

1. Bicycle accommodation on SR 247: Bicycle accommodations may be omitted to match the existing condition. See the approved Design Variance for further details.

2. Bridge sidewalk width on SR 247: Bridge sidewalk width may be 5 feet along both east and west sides of the SR 247 at Norfolk Southern Railway bridge to match the existing condition. See the approved documentation for further details.

3. SR 247 and Roff Avenue guardrail protection: Guardrail may be omitted at the northwest, southwest, and southeast corners of the SR 247 at Norfolk Southern Railway bridge and along Roff Avenue East. See the approved Design Variance for further details.

4. SR 247 lateral offset distance: Minimum lateral offset may be seven feet along SR 247 to match the existing condition. See the approved Design Variance for further details.
5. Roff Avenue West horizontal curve radius: A minimum radius of 156.51 feet may be utilized for Roff Avenue West. This same curve may also be constructed using a normal crown section to match existing conditions. See the approved Design Variance for further details.

6. SR 247 bridge vertical clearance over Norfolk Southern Railway: The vertical clearance may be a minimum of 21 feet at the reconstructed SR 247 at Norfolk Southern Railway bridge. See the approved documentation for further details.

PI 0014899 – Design Variances:

1. College Street guardrail protection: Guardrail may be omitted at the southwest and northeast corners of the College Street at Norfolk Southern Railway bridge. See the approved Design Variance for further details.

2. College Street horizontal curve radius: A normal crown section may be used for College Street to match existing conditions. See the approved Design Variance for further details.

3. College Street (Spur) Intersection Skew Angle: The existing College Street (Spur) alignment may be retained at the intersection with College Street to match the existing intersection skew angle. See the approved Design Variance for further details.

4. College Street bridge vertical clearance over Norfolk Southern Railway: The vertical clearance may be a minimum of 22.5 feet at the reconstructed College Street at Norfolk Southern Railway bridge. See the approved documentation for further details.

For PI 0014895, comply with Table 44 – Basic Principles of Intersection Design to Accommodate Pedestrians of the GDOT Pedestrian and Streetscape Guide at the northern and eastern sides of the intersection of SR 247/Pio Nono Avenue and Roff Avenue to the extent possible. If ADA/PROWAG pedestrian compliant accommodations are not achieved, a Design Exception must be prepared by the Engineer of Record and must be approved by GDOT.

No additional Design Exceptions or Design Variances proposed by the DB Team are allowed. Upgrade any existing conditions within the Project limits that do not meet the requirements of either the AASHTO Controlling Criteria or the GDOT Design Policy Manual to meet the Project requirements.

Design Deviations that are present within the existing conditions may be retained. Present any existing Design Deviations that are identified within the Project limits and that are intended to be retained in the Project to GDOT.

11.3.5 Permanent Lighting
Submit all third-party requests for lighting within the Project Site to GDOT for approval.

For PI 0014895: No new lighting is required unless existing lighting is impacted.
For PI 0014899: Add one street light in the northwest quadrant along the sidewalk at the same station of the existing lightpost in the southwest quadrant closest to the bridge. Match lighting bases, poles, and fixtures to existing, similar in appearance and dimensions, and utilizing similar materials. Ensure the replacement lighting is interconnected with the existing lighting.

Design the lighting of the Project in accordance with Attachment 3-1 (Manuals) and published guidelines, manuals, policies, etc. by reference in the manuals listed in Attachment 3-1, the DB Documents, and at a minimum to match the existing lighting. Make all necessary enhancements or changes to the existing lighting system to maintain the existing illumination if diminished by the Project.

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

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 compress against the electrical wiring and prevents the wires from being easily pulled through the conduits. Install electrical pull box lids that contain locking mechanisms that work with the use of cams to prevent unauthorized access.

Design the lighting system to minimize or eliminate illumination of areas outside the Existing ROW. Ensure that Luminaires meet GDOT specifications, and that all luminaires are LED, unless removing and replacing an existing lighting system. Neither mercury vapor nor metal halide is allowed. All alternative energy efficient lighting technology can be considered, pending GDOT acceptance.

Design luminaire poles and breakaway bases in accordance with AASHTO’s Standard Specifications for Structural Supports for Highway Signs, Luminaire, and Traffic Signals. Install breakaway wiring connectors when using breakaway bases. Ensure the design incorporates breakaway devices that are pre-qualified by GDOT for all poles located within the clear zone of the roadways. Use appropriate safety measures if luminaire poles and breakaway bases are not used. Do not use breakaway bases when mounted on side barriers, median barriers or bridge structures.

Determine and design appropriate foundation types and lengths for permanent lighting structures. GDOT requires consistent footing designs and has minimum footing size criteria for caisson type footings as follows:

<table>
<thead>
<tr>
<th>Height of Pole</th>
<th>Diameter by Depth of Footing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than or equal to 40’</td>
<td>2’ by 6’</td>
</tr>
<tr>
<td>40’ to 50’</td>
<td>3’ by 7’</td>
</tr>
<tr>
<td>50’ to 60’</td>
<td>3’ by 9’</td>
</tr>
<tr>
<td>High Mast</td>
<td>See Section 8 (Geotechnical)</td>
</tr>
</tbody>
</table>

**NOTE:** Poles for barrier mounted have a minimum of 2-ft by 4-ft base
Do 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.

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

1. Placing mast arms on traffic signal poles
2. Placing pole bases on existing or proposed concrete traffic barrier
3. Placing poles behind existing or proposed concrete traffic barrier, guardrail or cable barrier

Ensure that lighting structures comply with Federal Aviation Administration (FAA) height restrictions within five miles of airport facilities. Coordinate with the FAA and GDOT to permit or relocate proposed or existing luminaries, mast arms, or poles that infringe into an airport’s or heliport’s base surface. Find alternative ways of providing the required level of lighting at no additional cost to GDOT if FAA restrictions prohibit lighting structures from being placed in certain areas near an airport Project.

Coordinate with the Utility Owner(s) and ensure power service is initiated and maintained for permanent lighting systems. Maintain the existing lighting as temporary lighting during construction and restore or replace prior to Substantial Completion where the Work impacts existing lighting.

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

Contact Utility Owners regarding their specific required working clearance requirements as depicted in Section 6 (Utility Adjustments).

Ensure that roadway lighting is provided for the safety of vehicles and pedestrians as they approach local intersections.

Affix an identification decal on each luminaire, ground box, and electrical service for inventory purposes and submit inventory information to GDOT in a GDOT-compatible format. Ensure this identification denotes that these are property of GDOT and provides a contact phone number and address in the event of emergency.

Remove lighting structures impacted by construction and replace them with new fixtures in the same perpendicular location to the centerline. Match lighting bases, poles, and fixtures to existing, similar in appearance and dimensions, and utilizing similar materials. Ensure the replacement lighting is interconnected with the existing lighting.

### 11.3.6 Replacement Fencing

Replace fence type in accordance with GDOT’s Construction Standards and Details. Submit to GDOT for approval prior to construction the type of proposed fence should the existing type of fence not match the type provided in GDOT’s Construction Standards and Details.
11.3.7 Related Transportation Facilities

No requirements.

11.3.8 Design Requests from Adjacent Property Owners

If the DB Team receives any design requests from adjacent property owners, produce a report to GDOT within 30 days of receipt of each design request that identifies the following:

1. The nature of the request
2. Any financial consequences to GDOT of compliance
3. The DB Team’s assessment of the feasibility of compliance
4. Any Change Requests from the Technical Provisions that would be required
5. Any potential risks to GDOT that may arise from implementation of the design request such as environmental and permitting risks

Proceed with the implementation of the design request at its option only if no financial consequences to GDOT, time impacts to the project, or Change Requests from the Technical Provisions exist, and if GDOT raises no objection within 30 days of the design request report. Advise GDOT in writing of the decision.

11.3.9 Additional Roadway Design Requirements

For PI 0014895:

1. Reconstruct all driveways, matching existing driveway widths.
2. Provide positive drainage toward the roadway for reconstructed driveways on Parcels 1, 2, 3, and 4.
3. Replace existing concrete parking space stops occurring within reconstructed parking areas.
4. Provide alternate parking for all parcels and ingress/egress to building structures when construction activities prevent access to existing parking and ingress/egress to buildings. Alternate parking locations and ingress/egress must be reviewed and accepted by GDOT prior to beginning construction activities that prevent access.
5. Match construction materials of driveways in kind unless otherwise approved by GDOT.

For PI 0014899:

1. Reconstruct all driveways, matching existing driveway widths.
2. During the full roadway closure of College Street, provide a temporary parking area for Parcel 1 along the frontage of the parcel to College Street. Provide parking space for a minimum of three vehicles if the driveway and parking area immediately adjacent to the railroad right of way is unavailable due to construction activities. Do not block any ingress/egress locations into the buildings on Parcel 1.
3. Provide alternate parking for all driveways and ingress/egress to building structures occurring on within the project area when construction activities prevent access to parking and ingress/egress to buildings. Alternate parking locations and ingress/egress must be reviewed and accepted by GDOT prior to beginning construction activities that prevent access.

4. Construct GDOT Standard Type 2, 6” Concrete Header Curb along the eastern length of driveway along Parcel 1.

5. Match construction materials of driveways in kind unless otherwise approved by GDOT.

6. Install all header curb placed along the roadway (not on the bridge) with 6-inch granite. Comply with Attachment 11-4 (SP 437 Granite Curb & SP 805 Rip Rap and Curbing Stone). Submit sample of finish for GDOT review and acceptance.

7. Permanently close the portion of Appleton Lane to the south of the mainline and remove all existing access and signage. If construction of adjacent retaining wall requires excavation of the existing section of Appleton Lane, backfill accordingly, grade to drain and grass.

11.4 Construction Requirements

11.4.1 Vibration Control
The DB Team is responsible for all vibration-related damages to existing structures or other facilities located in the vicinity of construction related activities. Evaluate potential impacts and develop a Vibration Control Plan for GDOT review and acceptance where vibration-inducing construction activities are to be performed in the vicinity of existing properties, structures, utilities, or other facilities. Include in the plan certain triggers of action to ensure no damage to existing structures occur, 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:

1. Use 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.

2. Conduct site reconnaissance of properties during site investigations to determine the sensitivity of each structure/facility to vibrations within the zone of potential vibration impacts.

3. List all properties that may be adversely affected by vibrations.

4. Conduct a preconstruction survey of each structure determined to be susceptible to vibrations.

5. Provide GDOT with recommendations to mitigate that may be adversely affected by vibrations.

6. Use the vibration monitoring records to develop attenuation curves for predicting vibrations at varying distances from the source.
7. Adhere to requirements in Attachment 11-3 (Special Provision 154 Construction Vibration Monitoring).

Adjust operations immediately if the threshold readings above are exceeded.

11.4.2 Blasting

No blasting is allowed.

11.4.3 Control of Access

Maintain all existing property accesses, including those not shown on the schematic, and do not revise control of access without GDOT review and the written agreement of the affected property owner. Ensure access control is in conformance with the GDOT Regulations for Driveway and Encroachment Control.

11.4.4 Pavement Cutting

Obtain prior approval from GDOT for any 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. Repair in kind any pavement that is open cut as described in this paragraph prior to the Travel Lane or ramp being opened to traffic.

11.4.5 Stockpiling

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 the DB Team to the Project Site, or other designated location in the vicinity of the Project and 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 this Project, and can be stockpiled for long periods without detriment. Use the procedure identified in GDOT Supplement Specifications 109.07.B to process a Material Allowance Request. Other provisions include:

1. Construct stockpiles in conformity with the provisions in the current GDOT Standard Specifications Construction of Transportation Systems. Place and maintain appropriate erosion control measures and restore the site to its original condition.

2. Store the stockpiled material in such a manner that security and inventory can be maintained. The DB Team is responsible for storage of said materials at no additional cost to GDOT.

3. Furnish the paid invoice or receipt for delivery within a reasonable time after receiving payment.

4. The material conforms with the requirements of the plans and specifications.

5. Assume risk for any damage to material due to the delay in incorporation of the material into the Final Plans.
6. Ensure the quantity of 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.

7. Adhere to proper erosion control measures if the stockpiled material is embankment or other erodible material.

11.5 Deliverables

In addition to those listed in this Section, refer to Section 3.
12 DRAINAGE

12.1 General
Effective performance of the drainage design and construction implemented for the Project (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 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.

12.2 Administrative Requirements

12.2.1 Standards
Provide activities in this section in accordance with GDOT’s Manual on Drainage Design for Highways (Drainage Manual), Attachment 3-1 (Manuals), and other provisions of the DB Documents.

12.2.2 Data Collection
Collect all necessary data, including those components outlined in this Section 12.2.2, to establish a Drainage System that complies with the requirements and accommodates the historical hydrologic flows within the Project limits.

Collect all available data identifying stormwater runoff obligations, including the following:

1. Water quality regulations as imposed by local, State, and federal governments
2. National Wetland Inventory and any other wetland/protected waters inventories
3. Any restrictions on discharging stormwater to environmentally sensitive areas, navigable waters, or coastal zones
4. Official documents concerning the Project, such as the Environmental Documents and any other drainage or environmental studies

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. Identify watershed boundaries, protected waters, areas classified as wetlands, floodplains, and boundaries between regulatory agencies (e.g., watershed districts and watershed management organizations).

Within the Project limits, acquire all applicable records, including:

1. Municipal drainage plans
2. Watershed management plans
3. Records of citizen concerns
4. Existing storm drain plans
5. Survey data
6. Data for all culverts, drainage systems, storm sewer systems, and bridges Identify existing drainage areas and calculate the estimated runoff to the Drainage System.

Obtain photogrammetric and/or geographic information system (GIS) data for the Project that depict any impaired waters as listed by EPD. Conduct surveys for information not available from other sources.

Video record and photograph components of the existing drainage system within the Project limits that are scheduled to remain in place, and for which documentation is not available, to determine condition, size, material, location, and other pertinent information. Refer to Section 19 (Maintenance During the Design-Build Period).

Take data collected into account in the Final Plans of the drainage facilities. This data will be made available to GDOT upon request.

**12.2.3 Coordination with Other Agencies**

Coordinate all stormwater runoff issues with GDOT, affected interested parties, and regulatory agencies, including EPD, USACE, and USFWS.

**12.3 Design Requirements**

Ensure the Drainage System meets the following requirements:

1. The analysis, design, and construction of all components of the Drainage System address the interim conditions during construction of the Project and the conditions depicted in the RFC Plans.

2. The Drainage System has adequate capacity to convey all stormwater through the Project without any adverse impacts to upstream and/or downstream adjacent properties.

Upgrade within the Construction Maintenance Limits all substandard drainage facilities where the design and construction of the Project propose to utilize or impact those facilities. A drainage facility utilized on the Project is any drainage facility receiving Project stormwater runoff and/or any drainage facility conveying stormwater through the Project. 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, is inadequate to carry additional stormwater generated by the Project. Include in the design of the Drainage System reconfiguration of the existing drainage systems within the Project limits and design of new storm drainage systems as required per the performance requirements defined in this Section 12.

Immediately repair damage to existing infrastructure due to the DB Team’s operation to maintain existing system capacity at all times. This permanent repair is DB Team’s expense.

Provide facilities compatible with the existing drainage system and all applicable municipal drainage plans or systems in adjacent properties. Preserve existing drainage patterns.

Use the existing drainage facilities, provided the overall drainage requirements for the Project are achieved. Do not modify existing systems or install new drainage systems to create in-
line/buried/subsurface/underground detention or stormwater runoff storage. Do not use blind junctions and/or non-accessible structures unless otherwise approved in writing by GDOT. Do not install and/or utilize longitudinal storm sewer pipe under travel lanes unless approved in writing by GDOT. Maintain the existing GDOT stormwater system, at a minimum, if no modification or upgrading is required. Include in this maintenance 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 is the DB Team's expense.

Base Final Plans on design computations and risk assessments for all aspects of Project drainage.

Ensure all areas of the Project comply with the Post-Construction Stormwater Design Guidelines contained in the Drainage Manual.

Place riprap energy dissipators, or approved equal, at the outlet/downstream end of the stormwater conveyance.

### 12.3.1 Surface Hydrology

#### 12.3.1.1 Design Frequencies


Use the design storm frequency as required for the corresponding facility in the Final Plans if a design storm frequency is not specified for a given component of the temporary Drainage System.

#### 12.3.1.2 Hydrologic Analysis

Design the Drainage System to accommodate the Project drainage areas. These areas may extend outside of the Project limits.

Perform hydrologic analyses for the design of drainage features during the staging of construction and for the Final Plans for the Project according to the Drainage Manual.

#### 12.3.2 Storm Sewer Systems

Design enclosed storm sewer systems to collect and convey runoff to appropriate discharge points where precluded from handling runoff with open channels or ditches. Do not allow stormwater to be conveyed to and/or through the bridge endroll nor released onto the bridge endroll located under a bridge.

Prepare storm sewer analyses and ensure it constitutes a section of the Drainage Design Report that contains, at a minimum, all pertinent items shown in Figure 3.5 in the Drainage Manual and the following:

1. Drainage area maps with each storm drain inlet and its pertinent existing and proposed data, such as delineated drainage area, topographic contours, runoff coefficients/design curve numbers, times of concentration, land uses, discharges, velocities and headwater elevations
2. Detailed tabulation of all existing and proposed storm drains. This includes conveyance size and class or gauge; catch basin spacing/location and detailed structure designs

3. Specifications for the pipe bedding material and structural pipe backfill on all proposed pipes and pipe material alternates

4. 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

Use GDOT Guidelines for Geotechnical Studies, Section 4.5.26-Pipe Culvert Material Alternates for selection of allowable pipe and culvert material. The EOR must demonstrate to GDOT the structural and hydraulic sufficiency of existing pipes/culverts, and their functionality, impacted by construction for them to remain in place. Include in the demonstration hydraulic site inspections, calculations, bridge inventory reports, and other methods as needed. Rehabilitation of pipes and box culverts will be allowed as long as hydraulic capacity, structural integrity, and functionality are achieved.

Ensure all inlets installed within bicycle lanes have bicycle safe grates and inlet openings per GDOT Standards.

### 12.3.2.1 Pipes

Design storm drains with design flow velocities greater than or equal to 3 feet per second (fps) or slopes greater than or equal to 0.0100 ft/ft to prevent sedimentation in the pipe.

Ensure minimum pipe inside diameter is 18 inches. GDOT acceptance is required for all existing pipes to be utilized with a diameter less than 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. Upgrade all existing systems impacted by the construction of the Project to meet the requirements of this Section 12.

Design the Drainage System such that there is no pressurized flow in the 10-year event or more frequent storms.

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

Follow requirements in the Drainage Manual for compliance with GDOT’s General NPDES Stormwater Permit No. GAR 041000 (MS4 Permit). The DB Team is directly responsible for the minimum control measures within the MS4 Permit, as required in Attachment 12-1 (MS4 Responsibilities - Design-Build Project). BMP details are available on GDOT’s website, and special grading sheets related to BMP details are posted in the RIDs.

Provide to GDOT annual report data covering the portion of GDOT’s MS4 within the Project limits 60 days prior to the end of each reporting period, as required in the MS4 Permit. Submit to GDOT a signed and sealed Post-Construction Stormwater Report prepared per the Drainage Manual for review and acceptance. Upon GDOT acceptance, GDOT will send the Report to EPD according to the permit requirements. EPD will have 60 days to disapprove the Report. GDOT will not issue substantial completion until after the 60-day EPD disapproval period ends.
Proceed with construction at your own risk prior to the 60 days expiring. GDOT will not issue reimbursement for any revisions to installed post construction BMPs as required by EPD.

Complete the following items:

1. Provide record of attendance of GDOT training courses.
2. Provide GIS data of the existing and proposed storm sewer systems and all ditches within the ROW. Ensure this GIS data complies with GDOT’s Supplemental Specification 156 – GPS Specifications for Conveyance Structures GIS Mapping (available on GDOT’s website as part of the Supplemental Specifications Modifying the 2013 Standard Specifications, Construction of Transportation Systems, 2016 Edition); contact GDOT to obtain the inventory standards and MS4 policy guidance prior to any data collection efforts.
3. 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 (Maintenance During the Design Build Period) for any proposed stormwater systems.

12.3.2.3 Gutter Spread/Ponding

Design pavement drainage systems, in both staging of construction and the Project, to limit ponding to the maximum gutter spread listed in Table 6.3 in the GDOT Drainage Manual. Limit ponding for all bridge decks according to GDOT Drainage Manual, Section 13.2.2 Design Spread and Frequency.

Ensure concentrated stormwater is not allowed/released to flow across any travel lane within the Project. The term shallow-concentrated is synonymous with concentrated with respect to flows across travel lanes. Only allow sheet flow to flow across travel lanes.

Confine ponding in areas where PEM/OGFC is utilized to the shoulder at the limit of the PEM/OGFC with zero depth at the limit of the PEM/OGFC.

12.3.3 Hydraulic Structures (Culverts/Bridges)

Analyze existing and proposed culverts impacted, replaced, or created by the Project design, for any flooding problems.

For all culverts, determine the allowable headwater depth (HWd) 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.

Ensure all hydraulic computations, designs, and recommendations are consistent with past studies and projects in the area performed by local, State, or federal agencies.

Consider in the design of the structure the analysis of the storage and/or the tidal surges where hydraulic design is influenced by upstream storage and/or tidal surges.
12.3.3.1 Method Used to Estimate Flows
Ensure the selected hydrologic method is appropriate for the watershed conditions by using methods detailed in Table 4.1 of the Drainage Manual.

Utilize as appropriate flow information within FEMA Flood Insurance Studies (FIS) and any subsequent Letters of Map Revision (LOMR).

Utilize the required method for calculating the design flows according to the Drainage Manual for crossings not located within a FEMA FIS or on a gauged waterway.

12.3.3.2 Design Frequency
Design culverts and storm drain systems for the Design Storm Event according to the Design Discharge Criteria in the Drainage Manual. Design bridges for the 50 and 100-year frequencies.

12.3.3.3 Hydraulic Analysis
Install protection in accordance with Section 15 (Landscape and Hardscape Enhancements) for bridge abutments in urban areas.

12.3.3.4 Riverine Bridge/Bridge Culvert Design
No requirements.

12.3.3.5 Bridge Deck Drainage
Ensure runoff from bridge decks is carried off the bridge and into the adjoining roadway drainage system. Include bridge approach drains to intercept gutter/shoulder flow at each end of the bridge in the roadway drainage design. Ensure stormwater flowing toward the bridge is intercepted upstream of the bridge.

Do not place open deck drains for bridges over environmentally sensitive areas, roadways, or railroads. In these situations, if ponding will exceed width limits, ensure runoff is collected in inlets and conveyed in a closed deck drain system before discharging outside of these areas.

12.4 Construction Requirements
Design the Drainage System to accommodate construction staging. Ensure the design includes temporary erosion control, sediment basins and other BMPs needed to satisfy the NPDES and other regulatory requirements. Include all environmental approval commitments related to drainage design and erosion control as notes on the plans for each stage of construction.

Obtain GDOT acceptance during the Term to utilize any existing stormwater system (all pipe, structure, ditch, detention/retention system or any other component necessary for the conveyance of stormwater) outside the Project limits. Note that maintenance responsibility and costs will be as follows during the Term:

1. Costs to reconstruct or upgrade the substandard drainage facilities outside the Project limits are the sole cost of the DB Team. Rehabilitation of substandard drainage facilities may be considered upon request from the DB Team. The rehabilitation will meet the useful life as if the substandard drainage system structure was replaced as new.
2. Maintain at the DB Team's expense any stormwater system accepted by GDOT and constructed for the sole purpose of the Project outside of the Project limits.

3. Maintain and restore at the DB Team's expense the existing system to its original intended purpose for any accepted existing stormwater system whether used jointly by the DB Team and GDOT or for the DB Team's sole use.

Maintenance work includes silt removal from any pipe, ditch, or structure, and removal of debris prior to the use of any existing GDOT stormwater system.

12.5 Deliverables

12.5.1 MS4 Annual Report Data
Report per the requirements of Attachment 12-1 (MS4 Responsibilities - Design-Build Project).

12.5.2 Drainage Report for Hydraulic Structures
No requirements.

12.5.3 Drainage Design Report
Submit to GDOT for review and acceptance, a Drainage Design Report, which is a complete documentation of all components of the Project's drainage system, per the accepted Construction Phasing and Staging Plan. Include the following in the report at a minimum:

1. A set of all drainage computations, both hydrologic and hydraulic, with all support data
2. Hydraulic notes, models, and tabulations
3. Pond designs, including a graphic display of treatment areas and maintenance guidelines for operation
4. A correspondence file
5. Drainage system data (location, type, material, size, and other pertinent information) in a suitable electronic format such as GIS
6. A post-Construction Stormwater Report with a Post-Construction BMP Infeasibility Report as applicable
7. 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

See Attachment 13-1 for Special Provisions.

13.2 Administrative Requirements

13.2.1 Design Specifications

Provide activities in this section in accordance with:

1. GDOT’s Bridge and Structures Design Manual (GDOT Bridge Design Manual),

2. AASHTO LRFD Bridge Design Specifications, 7th Edition - 2014 (AASHTO LRFD Specifications),


4. other Manuals listed in Attachment 3-1, and

5. other provisions of the DB Documents. The GDOT Bridge and Structures Design Manual requirements take precedence where AASHTO LRFD Specifications and GDOT Bridge and Structures Design Manual requirements contradict or conflict with one another.

Unless otherwise noted, use LRFD methodology for design and detailing of all structural elements to be constructed or rehabilitated and incorporated within the Project.

When modifying an existing bridge designed under the AASHTO Standard Specifications, the modified portion may be designed using the AASHTO Standard Specifications for Highway Bridges, 17th Edition – 2002.

13.2.2 Bridge and Wall Construction Plans Meeting

Arrange a meeting with GDOT to specifically discuss how the plans will be prepared prior to beginning plan preparation on the Project. After the preliminary bridge and wall layouts have been accepted by GDOT, prepare final plans.

13.3 Design Requirements

13.3.1 Design Parameters

For 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.

Do not place longitudinal expansion joints in any travel lanes, including turn lanes.

The DB Team may use GDOT Construction Standards and Details on the Project without updating to meet LRFD requirements. Ensure the design meets the design requirements for the structure if the DB Team modifies any of the standards and details.
For PI 0014895:

The existing substructure will remain in place and be modified to accommodate additional clearance.

For PI 0014899:

Do not use any portion of the existing bridge in the new bridge construction.

The twelve, 4-inch diameter conduits on the north bridge fascia are to remain in place at all times during demolition and reconstruction of the replacement structure. Provide temporary support to the conduits during construction until they are permanently attached to the replacement bridge. Maintain at a minimum the existing clearance between the bottom of the AT&T facilities and the top of rail for the temporary support structure.

Do not use culverts or bottomless culverts to replace the existing bridge.

If expanded polystyrene is added into precast concrete elements, ensure the expanded polystyrene is high density polystyrene foam bedding material conforming to the following specifications: compressive strength 60 psi min, water absorption 0.125 lb / ft² max and oxygen index 24 min. Ensure the expanded polystyrene meets the requirements of ASTM D-1621.

13.3.1.1 Vertical Clearances
See Section 14 for minimum vertical and horizontal clearances.

13.3.1.2 Bridge Design Live Loads and Load Ratings
Ensure that each bridge meets the load rating requirements for the design vehicle, as well as all current 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 current GDOT policy and practices.

13.3.1.3 Bridge Requirements
Replace or modify existing bridges in accordance with the requirements listed in this Section 13.

Table 13–1: Bridge Requirements

<table>
<thead>
<tr>
<th>Bridge</th>
<th>Bridge Location</th>
<th>Description</th>
</tr>
</thead>
</table>
| PI 0014895 Bridge 1 Structure ID 021-0060-0 | SR 247 (US 41) over Norfolk Southern Railway | Replace superstructure to increase permanent vertical clearance from existing Norfolk Southern track. Reuse or modify existing elements including substructure and retaining walls. Accommodate roadway travel lanes and sidewalks as defined in Table 13-2. Repair bridge according to the following:  
  * Replace bearing pads.  
Bridge  | Bridge Location | Description  
--- | --- | ---
PI 0014899 Bridge 1 Structure ID N/A | College Street (CR 5813) over Norfolk Southern Railway | Full replacement requiring new superstructure and substructure/abutment with foundations. Accommodate roadway travel lanes, bike lanes, and sidewalks as defined in Table 13-2.

Ensure that bridge typical sections comply with Table 13-2.

**Table 13–2: Bridge Typical Section Criteria Table**

<table>
<thead>
<tr>
<th>GENERAL REQUIREMENTS</th>
<th>PI 0014895</th>
<th>PI 0014899</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Lanes</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Travel Lane Width (min.)</td>
<td>12-ft</td>
<td>11-ft</td>
</tr>
<tr>
<td>Sidewalk (min.)</td>
<td>5-ft</td>
<td>8-ft</td>
</tr>
<tr>
<td>Bike Lane Width</td>
<td>n/a</td>
<td>4-ft</td>
</tr>
<tr>
<td>Gore Area Width between Bike Lane and Travel Lane (min.)</td>
<td>n/a</td>
<td>2.5-ft</td>
</tr>
<tr>
<td>Gutter</td>
<td>2-ft</td>
<td>n/a</td>
</tr>
<tr>
<td>Gutter to Gutter (min)</td>
<td>52-ft</td>
<td>35-ft</td>
</tr>
<tr>
<td>Parapet to Parapet (min)</td>
<td>62-ft</td>
<td>51-ft</td>
</tr>
<tr>
<td>Cross-Slope</td>
<td>Normal Crown</td>
<td>Normal Crown</td>
</tr>
</tbody>
</table>

Do not locate the low-point of a vertical curve on a bridge or approach slab.

Final Bridge Plan acceptance is contingent on EOR response to GDOT’s review of the BFI.

**13.3.2 Beam Shipping Weight**
The maximum weight of an Element that may be transported without analysis is limited. Submit shipping weights larger than 135,000 pounds, including the truck, to GDOT to determine if an acceptable route is available.

**13.3.3 Bridge Decks and Superstructures**
Timber bridges, masonry bridges, and structural plate arches are not permitted.

Ensure the girder spacing for beam bridges is 10.5 feet or less, with the exception of AASHTO Type I Mods that are limited to 9 feet or less. Provide a minimum of four beams in each span.
Ensure span lengths for cored slabs and box beams do not exceed the limits in Table 3.8.1-1 in the GDOT Bridge Design Manual. Ensure concrete overlay for cored slabs and box beams is at least 4.5 inches.

For AASHTO Type II Beams, the attachment of an 8-inch water main pipe diameter and/or its 12-inch diameter required encasement is allowed. Cast-in-place deck inserts supporting water main are not allowed.

The minimum steel beam flange thickness allowed is 1 inch. The maximum steel beam flange thickness allowed is 3 inches. The minimum steel beam flange width allowed is 18 inches.

Do not use of longitudinal stiffeners or transverse stiffeners.

Do not use cover plates on new steel beams.

Do not use Fracture Critical Members (FCMs) for bridges.

Adhere to the following conditions when using unpainted weathering steel on bridge superstructure:

1. Paint beam ends at expansion joints and ends of bridge for a distance of 1.5 times the beam depth. Paint to match color of weathering steel as approved by the Engineer.
2. Ensure the painting scheme is aesthetically consistent (i.e., partial painting of beams do not present to the travelling public a pronounced visual difference when compared with the unpainted portion).

Use of ASTM A709 Grade 50W Steel and Grade HPS 70W Steel is permitted for steel bridge superstructure. Paint both steel types as required by this Section 13 as they are considered weathering steel.

Blast clean steel bridge components that require painting to a near white surface condition according to SSPC-10 and paint per GDOT Standard Specifications.

Ensure steel-cross frame designs include a horizontal member.

Ensure the paving rest is 12 inches wide. Comply with Attachment 13-3 (Paving Rest Detail).

Groove the entire length of the bridges transversely as per subsection 500.3.05.T.9.C of the GDOT Standard Specifications.

Use shear connectors in the negative moment region of steel girders with the use of precast deck panels.

Do not prestress or post-tension precast deck panels.

If using precast deck panels, use Ultra High-Performance Concrete (UHPC) for closure pours. Ensure closure pour widths are at least 6 inches.

Use K-type cross frames when galvanized steel diaphragms are detailed.

Florida I-Beam (FIB) shapes are allowed. Design beams in accordance with Florida Department of Transportation (FDOT) Structures Design Guidelines, FDOT Standard Specifications, FDOT
FY 2018-19 Standard Plans index numbers 450-010 and 450-036 through 450-096 and FDOT standard practices, except as noted below:

1. Neglect elastic gains.
2. Do not use transformed section properties.
3. Cast beams with a bearing slot or hole for a dowel bar in accordance with the GDOT Bridge Design Manual.
4. Do not use temporary strands.
5. The Engineer of Record is responsible for providing a beam stability analysis for all span lengths.
6. Ensure maximum beam spacing of 10.5 feet.
7. Use diaphragms, edge beams, and endwalls as specified in the GDOT Bridge Design Manual.

13.3.4 Bridge/Retaining Wall Foundations

Perform LRFD bridge and wall foundation investigations for all proposed walls and bridges to be constructed on this Project. Base the foundation design on the recommendations of the accepted Bridge or Wall Foundation Investigation report and the requirements of Section 8 (Geotechnical). Except as provided in Section 8, 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.

Ensure bridge and wall foundations accommodate the existing and future Railroad ditches including allowance for a future track in accordance with the GDOT Bridge Design Manual and Public Projects Manual for Projects Which May Impact Norfolk Southern Railway Company.

Do not use Geosynthetic Reinforced Soils (GRS) Integrated Bridge System (IBS) technology.

13.3.5 Bridge Railing and Barriers

For PI 0014895:

Replace existing sidewalks and parapets in-kind. Five-foot sidewalks are allowed on the bridge. Provide a curved chain link fence, measuring 10 feet from the sidewalk to the top of fence. Arrange posts to miss supports for any gas line. Design parapet to support any attached Utilities. Design and detail all railings and parapets systems used on the bridge in the accordance with the GDOT Bridge Design Manual and AASHTO Standard Specifications.

For PI 0014899:

Provide parapet and a curved decorative fence, measuring 10 feet from the sidewalk to the top of fence and ensure all railings and parapets systems used on the bridge match the railing and parapet detailed in Attachment 13-2 (Fence and Parapet Details). Provide a two-foot-by-two-foot mockup of the brick to be approved by GDOT.
13.3.6 Retaining Walls

Do not use metal walls (including bin walls and sheet pile walls), recycled material walls, or timber walls.

If pipe culverts are to extend through cast-in-place retaining walls, install the pipe so that no wall expansion joints are located within two pipe diameters from centerline of the pipe.

If pipe culverts are under a cast-in-place retaining wall footing, provide a minimum of 1 foot of cover.

Locate weep holes through cast-in-place retaining walls no higher than 3 inches above proposed grade.

Do not use modular walls employing interlocking blocks where surcharge loads from vehicular traffic are present or as part of bridge abutments.

Do not use Mechanically Stabilized Earth (MSE) walls to support spread footing abutment foundations on the Project.

Design the top of wall to present a smooth profile with no sharp breaks, peaks, or valleys. For walls directly in front of bridge abutments, set the top of wall elevation one foot above the bottom of the adjacent abutment.

Final Wall Plan acceptance is contingent on EOR response to GDOT’s review of the WFI.

13.3.7 Aesthetics

Design retaining walls to be similar in color, texture, and style to other Elements present in the entire Project, such as structures, landscaping, and other highway components.

Coordinate all embellishments for structural Elements with the DB Team's structural design team to facilitate constructability and maintain safety requirements. Ensure that structural element surfaces exposed to public view meet the requirements of the GDOT Standard Specifications, Construction of Transportation Systems.

Do not allow exposed conduits, other than those required for lighting systems, on bents, columns, bridge beams, overhangs, or any other exposed surfaces. Lighting conduits may be attached to exterior surfaces of bent columns and caps to minimize exposure to the public.

Minimize drain pipe exposure to public view. It is allowable to place the gas line for PI 0014895 on the outside of the barrier similar to existing.

Ensure concrete finishes comply with Section 15 (Landscape and Hardscape Enhancements) and other requirements of the DB Documents.

13.3.8 Drainage Structures

Account for maximum anticipated loadings in developing the design of drainage structures. Do not utilize Step down design for any part of the proposed drainage system.

Consider energy dissipators, if used, as structural Elements.
13.3.9 Sign, Illumination, and Traffic Signal Supports
The DB Team is responsible for the design of traffic signal mast arms.

Do not mount traffic signal mast arms to any portion of the new or existing bridge. For a mast arm mounted to a foundation that is independent from the bridge, design the sign foundation in accordance with the LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 1st Edition, including 2016, 2017, and 2018 interims.

13.3.10 Widening/Modification of Existing Structure
Structures to be modified are listed in Table 13-1. Rehabilitate, strengthen, or replace that portion of the existing structure as specified in these Technical Provisions. Replace or repair any portion of the existing bridge damaged as a result of the modification operations at the DB Team’s cost, as determined by GDOT. Conduct an analysis prior to the commencement of Work of the existing substructure and foundations for load carrying capacity that compares the existing loads to the proposed loads. Analysis can be based on data from existing plans and must be signed off by the Engineer of Record. Evaluation of the current condition, remaining durability, and service life of the substructure/foundation are not required. Provide any studies, calculations, and plans required for GDOT review and acceptance prior to any bridge modification.

13.3.11 Reserved

13.4 Construction Requirements

13.4.1 General Construction Requirements
Refer to Section 18 (Traffic Control) for Traffic Control requirements related to bridge construction.

Accelerated bridge construction methods may be utilized to replace existing bridges on the Project. The chosen methods are subject to review and acceptance by GDOT to ensure compliance with Project specifications as well as no adverse safety and schedule impacts to the travelling public.

Ensure all welding is performed by certified welders that have in their possession a current welding certification card issued by the Office of Materials and Testing. Only use E70XX (excluding E7014 and E7024) low hydrogen electrodes for manual shielded metal arc welding.

Ensure welding is in accordance with the requirements of the American National Standards Institute (ANSI)/AASHTO/ American Welders Association (AWS) D1.5M/D1.5:2010 Bridge Welding Code.

Exercise care during the demolition or modification of the existing bridges so as not to disturb adjacent buildings and Utilities.

Verify all existing dimensions and elevations in the field prior to ordering materials and building forms.
13.4.2 Final Bridge Inspection Prior to Substantial Completion

GDOT will inspect all bridges constructed prior to Substantial Completion. GDOT will perform the initial bridge ratings as part of this Work. Bridges shall not be opened to traffic until accepted by GDOT.

Provide to GDOT an overall schedule of completion for each structure in accordance with the Construction Phasing and Staging Plan and coordinate an inspection schedule with GDOT that will meet the Substantial Completion Date.

13.5 Deliverables

13.5.1 Preliminary Bridge Plan Layouts

Prepare Preliminary Bridge Plan Layouts in accordance with the GDOT Bridge Detailing Manual guidelines.

Additionally, provide a typical section that indicates the following information:

1. The center-to-center spacing of girders
2. Overhang or distance from outside edge of slab to center of exterior girder
3. Cross slope of the deck
4. Deck thickness between girders and deck thickness at the centerline of girder measured from the top surface of deck to top of the flange
5. Barrier location, height and width
6. Gutter to gutter and out-to-out dimensions
7. Location of the profile grade

Also provide any drawing and 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

Prepare Preliminary Wall Plans in accordance with the GDOT Bridge Detailing Manual guidelines. The acceptable wall types are as follows:

1. MSE (Mechanically Stabilized Earth)
2. Cast-in place
3. Soil-nail (do not use directly adjacent to areas subject to roadway surcharge loads, including bridge end bents)
4. Modular block (do not use directly adjacent to areas subject to roadway surcharge loads, including bridge end bents)
5. Soldier pile
6. Tie-back

Other wall types may be considered by GDOT.
Any construction sequence requirements that will affect the construction of the walls need to be accounted for in the preparation of retaining wall plans.

### 13.5.3 Bridge and Wall Construction Plans

Provide Submittals as required in the following:

1. Section 3 (Design and Submittals)
2. Attachment 3-1 (Manuals)
3. DB Documents
4. Hardscape Enhancement Plan for bridges, retaining walls, noise barriers, sign structures, and other structure components as required in Section 15

### 13.5.4 Bridge Demolition

Demolish bridges or elements of bridges in accordance with the Public Projects Manual for Projects Which May Impact Norfolk Southern Railway Company, Section 14 requirements, and GDOT Standard Specifications.
14 RAIL

14.1 General
This section defines the criteria required for addressing impacts to established Railroad right of way (ROW) within or adjacent to the Project limits. Consider any activity that penetrates or encroaches on the horizontal plan limits of established Railroad ROW or other related limits as may be prescribed in the DB Documents as impacting the Railroad ROW. Such activities could include, but are not limited to:

1. Construction and/or removal of at-grade crossings (temporary or permanent)
2. Overhead or underground utility encroachments on Railroad ROW; including construction of temporary bore and jack pits
3. Protection of existing Railroad facilities during Project construction activities; including protection from crane booms or other equipment with potential for fouling live track(s)
4. Construction of Project facilities, such as bridges and/or roadways, across or adjacent to established Railroad ROW
5. Temporary and/or permanent modifications to existing Railroad facilities in connection with Project objectives

If the Project includes impacts to existing Railroad ROW as defined herein, set forth in the Project Management Plan (PMP) detailed procedures and methods for addressing those impacts meeting the requirements set forth in the DB Documents.

Understand the term Railroad in the DB Documents to mean the owning Railroad(s) and/or the operating Railroad(s), in the event that more than one such entity owns or operates within the impacted corridor.

The Railroad or its authorized representative has final authority in all matters affecting the safe maintenance of Railroad traffic and facilities including determining impacts to its ROW; determining adequacy of structures and foundations supporting Railroad 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 DB Documents.

Comply with Attachment 14-1 (Special Provision for Protection of Railway Interests).

Show the minimum horizontal and vertical temporary and permanent clearances on the plans. Per Public Projects Manual for Projects Which May Impact Norfolk Southern Railway Company, Appendix H1 (Overhead Grade Separation Design Criteria), Sections 2.A and 2.B, indicate the minimum allowable temporary clearances on the General Plan and Elevation sheet. Correlate the permanent clearance with the methods of construction so that temporary construction clearances are not less than the minimum allowed. Maintain the minimum temporary clearances shown in Table 14-1 at all times. Provide a minimum vertical permanent clearance shown in
Table 14-1 measured from top of high rail to the lowest point of structure, measured at a point offset 5.5 feet from centerline of track.

14.2 Administrative Requirements

14.2.1 Standards

These guidelines are provided for reference only and are subject to revision without notice. These guidelines cannot be taken as authority to construct. Execution of a preliminary engineering agreement, Railroad approval of construction documents, execution of a construction agreement, Railroad approval of insurance, and Railroad Contractor Right of Entry Agreement (if applicable) are required prior to beginning construction. These guidelines should be considered in addition to the current AREMA Manual for Railway Engineering, AASHTO, MUTCD, State Railroad Regulatory Body requirements, and other provisions of the DB Documents. Where these guidelines and the documents referenced in the preceding sentence differ, these guidelines will govern.

Conduct all Work on, over, under, or adjacent to Railroad right of way in accordance with the Public Projects Manual for Projects Which May Impact Norfolk Southern Railway Company, these specifications, and Attachment 14-1 (Special Provision for Protection of Railway Interests).

14.2.2 Railroad Agreements

Unless otherwise specified in the DB Documents, the DB Team is responsible for all costs for ascertaining and obtaining all required approvals, permits, and agreements for performance of the Work, including any Railroad related Work, excluding the Railroad Construction Agreement. The DB Team is responsible for all costs of the Railroad Work incurred by DB Team, excluding costs of acquiring Railroad property interests, and costs with respect to relinquishment or acquisition of existing Railroad property interests.

14.2.2.1 Permanent ROW Encroachment Agreement(s)

Comply with Section 5.1 and Attachment 14-1 (Special Provision for Protection of Railway Interests).

14.2.2.2 Railroad Contractor Right of Entry Agreement(s)

Prior to entering or encroaching upon Railroad ROW to perform the Work, secure a Contractor Right of Entry (CROE) agreement from the Railroad and coordinate directly with the Railroad the arrangements of said agreement which may include an outline of specific and general conditions with which DB Team must comply. For purposes of securing this agreement, furnish to the Railroad a schedule for all Work impacting Railroad ROW.

Include the names, addresses, and telephone numbers of the Railroad’s representatives in the Railroad’s CROE agreement for notification purposes. Where more than one representative is designated, specify the area of responsibility of each representative.
Furnish a copy of the fully executed CROE agreement to GDOT as proof of compliance with this provision. Do not enter or impact Railroad ROW prior to furnishing this proof of compliance to GDOT.

14.2.3 Insurance Requirements

Prior to executing any Work impacting existing Railroad ROW, procure insurance policies naming Railroad as the insured party. Maintain such policies throughout the duration of Work performed under this section.

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 be covered:

1. Worker’s Compensation Insurance
2. Employer’s Liability Insurance
3. Commercial General Liability Insurance
4. Automobile Liability Insurance
5. Errors and Omissions and/or Professional Liability Insurance

Ensure all insurance policies are in a form acceptable to the Railroad. Submit copies of all insurance policies accompanied by written approval from Railroad of such policies to GDOT prior to any entry upon Railroad ROW.

In addition to the above forms of insurance or insurance and bonds required under the terms of the DB Documents, also carry the kinds of insurance described in Attachment 14-1 (Special Provision for Protection of Railway Interests).

14.2.3.1 Subletting

If any part of the work is sublet, provide similar insurance and evidence thereof in the same amounts as required to cover his operations. Endorsements to the DB Team’s policies specifically naming subs and describing their operations will be acceptable for this purpose.

14.2.3.2 Cancellation

Carry all insurance hereinbefore specified until all work required to be performed under the terms of the DB Documents has been satisfactorily completed within the limits of the ROW of the Railroad as evidenced by formal acceptance by GDOT and the Railroad. Insuring companies may cancel insurance by permission of GDOT and Railroad or on 30 days written notice to GDOT and Railroad.

14.2.4 Cooperation and Delays

Coordinate a schedule with the Railroad for accomplishing stage construction involving work by the Railroad or tenants of the Railroad. In coordinating the schedule ascertain from the Railroad the lead time required for assembling crews and materials and make due allowance.

No charge or claims of the DB Team against either GDOT or the Railroad will be allowed for hindrance or delay on account of railway traffic, any work performed or to be performed by the
Railroad, or other delay incident to or necessary for safe maintenance of railway traffic and facilities, or for any delays.

14.2.5 Work for Benefit of DB Team
Document all temporary or permanent changes in wire lines or other facilities which are considered necessary to the Project in the agreement between the DB Team and the Railroad.

Make separate arrangements with the Railroad for changes in addition to the above, including any required flagging service.

14.2.6 Damages
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 Railroad for repairing damages to its property or to property of its tenants, caused by or resulting from the operations of the DB Team, shall be paid directly to the Railroad by the DB Team.

14.2.7 Failure to Comply
In the event the DB Team violates or fails to comply with any of the requirements herein, the following apply:

1. The Railroad may require that the DB Team vacate Railroad property.
2. GDOT may withhold all monies due the DB Team on monthly statements.

Any such orders shall remain in effect until the DB Team has remedied the situation to the satisfaction of the Railroad and GDOT.

14.3 Design Requirements

14.3.1 Railroad Design Standards
Design as a minimum to preserve the current operational characteristics of existing rail lines and be capable of accommodating the future operational needs of the Railroad.

At highway-rail grade crossings, maintain the roadway and drainage design parameters at the crossing, except that the cross slope of the pavement may be transitioned to match the grade across the rail line.

Comply with the NS Construction Submittal Requirements when developing construction related submittals for NS review. The NS Construction Submittal Requirements can be found within the Public Projects Manual for Projects Which May Impact Norfolk Southern Railway Company manual standards noted in Section 14.2.1.

14.3.2 Design Railroad Live Load
Design any permanent or temporary facilities that could be subjected to train loadings from existing or future tracks, including false work, temporary shoring, temporary crossings or structures, shooflies, culverts, bore and jack pits, etc., in accordance with applicable provisions.
of the current edition of the *Manual for Railway Engineering* as published by the *American Railway Engineering and Maintenance-of-Way Association* (AREMA Manual). The governing design Railroad live load for such facilities is the Cooper E-80 live load as specified in Chapter 15, Section 1.3.3 of the *AREMA Manual*.

Comply with Attachment 14-1 (Special Provision for Protection of Railway Interests).

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

Design permanent and temporary facilities supporting Railroad embankment excavation for lateral pressures resulting from Railroad live load surcharge. Refer to the Business equation as shown in Chapter 8, Part 20, Section C, Paragraph 2(b) of the *AREMA Manual* to determine lateral pressure values for Railroad live load surcharge loading.

### 14.3.4 Clearances

Wherever practicable, locate piers and abutments for overhead bridge structures outside the Railroad ROW. For all structures, provide the horizontal and vertical clearances specified herein for existing tracks and drainage ditches. If future tracks and drainage ditches have been designated by the Railroad in the Project area, the clearances specified herein shall apply to those tracks and ditches as well.

For PI 0014899: Accommodations for future tracks are required. Centerlines of future tracks shall be located seven feet to the east of the existing track centerline and seven feet to the west of the existing track centerline.

Provide minimum vertical and horizontal clearances shown in Table 14-1.

<table>
<thead>
<tr>
<th>Stages</th>
<th>Minimum Vertical Clearance</th>
<th>Minimum Horizontal Clearance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PI 0014895</td>
<td>PI 0014899</td>
</tr>
<tr>
<td>Permanent</td>
<td>21'-0&quot;</td>
<td>22'-6&quot;</td>
</tr>
<tr>
<td>Construction (Through Demolition)</td>
<td>20'-6&quot;</td>
<td>19'-3&quot;</td>
</tr>
</tbody>
</table>

Table 14-1: Minimum Clearances Criteria Table
14.3.5 Crashwalls
Chapter 8, Article 2.1.5 of the AREMA Manual covers requirements for crashwalls. Crashwalls are required when any portion of the face of a pier is closer than 25 feet to centerline of track (including future tracks), measured perpendicular or radial to the track, except that crashwalls are not required for PI 00014895.

Crashwalls may be omitted for piers of heavy construction as defined by the aforementioned AREMA Manual requirements.

14.3.6 Drainage
Indicate all proposed drainage encroachments on Railroad ROW in the bridge and roadway plans.

Include drainage plans with the bridge and roadway plans submitted to the Railroad for approval. Include in these plans 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 Railroad’s ditches and/or drainage structures, include in the plans a general note stating thus.

Submit cross sections perpendicular to the centerline of track along with the drainage plans. Ensure the maximum interval of cross sections is 20 feet along the affected length of track; however, submit at least five cross sections for each bridge site, and additional cross sections will be provided if warranted by special conditions. Furthermore, take one cross section at the centerline of each road crossing, one at each limit of construction, and one located midway between each end and the center. Show and locate the existing Railroad ditch and the proposed toe of slope for the end fill on all cross sections.

When the proposed Project will change the quantity and/or character of flow in the track ditches, modify the ditches as required to handle the drainage, or direct the flow away from the Railroad right of way. Submit the ditch design to the Railroad for approval.

Any increase in quantity or rate of flow should be mitigated by improvements to the Norfolk Southern ditches and under track drainage structures.

No scuppers or other deck drains, roadway drainage, catch basins, inlets or outlets are permitted to drain onto Railroad ROW. Obtain the prior written approval of the Railroad for any variance of this policy and maintenance responsibility, including maintenance during construction and any required maintenance agreements, for such drainage structures must be approved by GDOT. Convey drainage from bridge scuppers and deck drains through pipes to a location off of, and draining away from, Railroad ROW. If it is not practicable to convey such
drainage away from track drainage ditches, provide calculations demonstrating the ability of the
ditch to carry the additional runoff to the Railroad for approval.

Approval of the drainage plan does not relieve the DB Team of ultimate responsibility and
liability for a satisfactory drainage design.

14.3.7 Excavation for Structures
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 which they carry. Take such
precautions and their associated operations 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 Railroad, but such approval shall not relieve the DB Team or
GDOT from liability. Before submission of plans to the Railroad for approval, such plans shall
first be reviewed by GDOT’s Office of Bridges and Structures or its authorized representative.
Shoring Plans submitted must be prepared, signed, and sealed by a Professional Engineer
(registered in the State of Georgia).

Submit excavation Plans and calculations that have been prepared and signed by a
Professional Engineer. Ensure the accuracy of all controlling dimensions as well as the
selection of soil design values which will accurately reflect the actual field conditions. Ensure
plans contain details of the shoring system showing sizes of all structural members, connection
details, and embedment depths. Include a plan view showing layout of all proposed excavations
and distances from centerline of track(s) to faces of excavations. Ensure plans 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.
Ensure the Plans are complete and accurately describe the nature of the Work.

Address all false work, shoring, excavation supports, etc., adjacent to Railroad track(s) in the
Excavation Plans and calculations, which GDOT will certify to be complete and satisfactory prior
to being submitted to the Railroad for review. Submit four copies of sealed plans and
calculations to GDOT for review and submittal to Railroad. Allow a minimum of 21 days for the
Railroad’s review of such submittals. No excavation will be allowed until the Plans and
calculations are reviewed and approved by the Railroad. The Railroad will review all
excavations on or adjacent to the Railroad ROW before excavation begins.

Railroad’s approval of the excavation plan does not relieve the DB Team and/or GDOT of
ultimate responsibility and liability for the excavation Plan.

14.3.8 Utilities Considerations
All Utility installations or relocations on Norfolk Southern right of way that are required in
conjunction with this Project can be installed or relocated as part of the Project provided the
construction is performed by the DB Team or DB Team’s subcontractor. However, the Utility
must submit an application for the installation or relocation for appropriate handling for license
agreement and applicable fees. For Utility applications go to:

License agreement must be executed prior to Utility being installed or relocated.

Show in the plans dimensioned locations of all existing and proposed utilities within the Railroad ROW and define the responsibility for locating, marking, or installing and protecting such utilities. Railroad and GDOT are not responsible for these activities.

Encase pressurized and non-pressurized liquid carrier pipe lines under the Railroad ROW, suspended from overhead bridges that cross, or run adjacent to, Railroad ROW so as to protect Railroad ROW and facilities from free falling discharge in the event of a carrier rupture.

Consider the presence of fiber optic cables presently buried on the Railroad ROW or if such installations are scheduled during the course of the Project in the design, and address appropriate measures for protection of the fiber optic cables on the Plans and in the Contract Documents.

“One Call” services do not locate buried Railroad signal and communications lines. Contact the Railroad’s representative two Business Days in advance of those places where excavation, pile driving, or heavy loads may damage Railroad underground lines on Railroad property. Upon request from the DB Team or agency, Railroad signal forces will locate and paint mark or flag Railroad underground signal, communication, and power lines in the area to be disturbed for the DB Team. Avoid excavation or other disturbance of these lines which are critical to the safety of the Railroad and the public. If disturbance or excavation is required near a buried Railroad signal, communication, or power line, pothole the line manually with careful hand excavation and protect all facilities during the course of the disturbance under supervision and direction of a Railroad signal representative.

14.3.9 Miscellaneous
Furnish Record Drawings to Railroad showing actual clearances and depth, size, and location of all foundation components.

Do not use cast-in-place girders or pier caps in bridge spans crossing over operated track or in spans of bridges adjacent to and within 13 feet of centerline of operated track.

Provide pedestrian fencing for all structures designed to carry pedestrian or bicycle traffic. Consider providing pedestrian fencing on other structures where special circumstances, such as past history of vandalism, warrant such fencing.

Coordinate design and construction of any Elements of the Work as appropriate with the Railroad, including any falsework, temporary shoring, temporary crossings or structures, shooflies, etc.

Fence all bridges over Railroad tracks and ROW for the entire length of the bridge on both sides in compliance with Railroad criteria.

Comply with all construction requirements and specifications set forth by the Railroad.
The DB Team is responsible for scheduling the Work to be completed by the Railroad as well as Work to be completed by its own forces.

Position structure-mounted lighting and roadway signs so they are not in the spans directly over the Railroad tracks.

**14.3.10 General**

Construction Work and operations by the DB Team on Railroad ROW must comply with the following requirements:

- Subject to the inspection and approval of the Railroad.
- In accordance with the Railroad’s most current version prior to Project let date of the *Public Projects Manual for Projects Which May Impact Norfolk Southern Railway Company* and additional written outline of specific conditions.
- In accordance with the Railroad’s general rules, regulations, and requirements including those relating to safety, fall protection, and personal protective equipment. Safety guidelines are provided in Section 14.3.11.
- In accordance with DB Documents.
- In accordance with any executed agreement, license agreement, and right of entry.

**14.3.11 Safety Guidelines**

**14.3.11.1 Personnel on Railroad ROW**

Ensure all persons wear Personal Protective Equipment (PPE) consisting of hard hat, reflective vest, eye protection, hearing protection when appropriate, and hard sole, steel toed safety boots fitting snugly about the ankles via laces, zippers or cinched straps. Working in shorts is prohibited. Shirts must cover shoulders, back and abdomen. Working in tennis or jogging shoes, sandals, boots with high heels, cowboy and other slip-on type boots is prohibited.

No one is allowed within 25 feet of the centerline of track unless specifically authorized by the flagman.

All persons working near track while train is passing must look out for dragging bands, chains and protruding or shifted cargo.

No one is allowed to cross tracks unless specifically authorized by the flagman.

All welders and cutting torches working within 25 feet of the track must stop when train is passing.

Do not allow steel tape, chain, or other metal implement to cross or touch rails without permission.

**14.3.11.2 Equipment on Railroad ROW**

1. Do not allow crane or boom equipment to set up to work or park within boom distance plus 15 feet of the centerline of track unless specifically authorized by the Railroad and flagman.
2. Do not allow crane or boom equipment to foul track or lift a load over the track without flag protection and track time.

3. Ensure all employees will stay with their machines when crane or boom equipment is pointed toward track.

4. Ensure all cranes and boom equipment under load will stop work while train is passing (including pile driving).

5. Ensure swinging loads are secured to prevent movement while train is passing.

6. Do not suspend loads above a moving train.

7. Do not allow equipment within 25 feet of centerline of track unless specifically authorized by the flagman.

8. Do not allow trucks, tractors, or any equipment to touch ballast line unless specifically authorized by Railroad and flagman.

9. Do not allow equipment or load movement within 25 feet or above a standing train or Railroad equipment unless specifically authorized by the flagman.

10. Ensure all operating equipment within 25 feet of track halts operations when a train is passing. All other operating equipment may be halted by the flagman if the flagman views the operation to be dangerous to the passing train.

11. Prohibit all equipment, loads, and cables from touching rails.

12. Do not remove vegetation from Railroad embankment with heavy equipment without specific authorization from the Railroad and flagman while clearing and grubbing.

13. Do not park or store equipment or materials on Railroad’s property unless specific authorization is granted from the Railroad.

14. Effectively immobilize all unattended equipment that is left parked on Railroad property so that it cannot be moved by unauthorized persons.

15. Ensure all cranes and boom equipment are turned away from track after each work day or whenever unattended by an operator.

### 14.3.11.3 Operation Safety

Arrange and conduct Work that there will be no interference with Railroad operations, including train, signal, and communication services, or damage to the facilities or property of the Railroad or tenants on the ROW of the Railroad. Whenever Work is liable to affect such operations, safety, facilities, or property, first submit the method of doing such Work to the Railroad for review and approval, but such approval shall not relieve the DB Team from liability. Defer any Work which requires flagging and inspection by the Railroad until the flagging and inspection required by the Railroad is available at the job site.

Whenever Work within Railroad ROW is of such a nature that impediment to Railroad operations is unavoidable, e.g. Work requiring use of runaround or detour tracks or speed reductions (i.e., “slow orders”) on existing tracks, schedule and conduct operations so that such impediment is reduced to the absolute minimum.
Make any necessary provisions for conditions arising from or in connection with the Work that require immediate and unusual provisions to protect operations, facilities, and property of the Railroad.

If in the judgment of the Railroad, or GDOT, if the Railroad is unavailable for such judgment, such provision by DB Team is insufficient, either Party may require or make such provisions as deemed necessary. In any event, such unusual provisions shall be at the DB Team’s expense and without cost to the Railroad or GDOT. Comply with the Railroad’s requirements for contractor safety, training, and criminal background checks prior to entering Railroad ROW.

14.3.12 Flagging Services

Railroad flagging will be provided by the Railroad at no cost to the DB Team. Railroad has sole authority to determine the need for flagging required to protect its operations and facilities, and DB Team is required to coordinate flagging services with Railroad. In general, the requirements for flagging will be whenever the DB Team’s personnel or equipment are, or are likely to be, working on the Railroad’s ROW, or within distances as may be specified in the DB 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 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 14. Normally the Railroad will assign one flagman to a Project, based on an 8-hour workday and 40-hour workweek, but in some cases more than one may be necessary depending upon the activities of the construction.

14.3.12.1 Scheduling and Notification

Not later than the time that approval is initially requested to begin work on Railroad ROW, furnish to the Railroad and GDOT a schedule for all work required to complete the portion of the Project within Railroad ROW.

Give the Railroad representative at least 21 days of advance notice of intent to begin work within Railroad ROW. Once begun, when such work is then suspended at any time, or for any reason, give the Railroad representative at least five Business Days of advance notice before resuming work on Railroad ROW. Include sufficient details of the proposed work to enable the Railroad representative to determine if flagging will be required. If such notice is in writing, furnish GDOT a copy; if notice is given verbally confirm in writing with copy to GDOT. If flagging is required, do no work until the flagman is, or flagmen are, present at the job site. It may take up to 30 days to obtain flagging initially from the Railroad. When flagging begins, the flagman is usually assigned by the Railroad to work at the Project site on a continual basis until no longer needed and cannot be called for on a spot basis. If flagging becomes unnecessary and is suspended, it may take up to 30 days to again obtain flagging from the Railroad. Due to Railroad practices, in some cases it may be necessary to give six Business 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, delay work on Railroad ROW until such time as the flagman is again available. Any additional costs resulting from such delays shall be borne by the DB Team and not GDOT or Railroad.

14.3.12.2  Payment
No requirements.

14.3.12.3  Verification
Review and sign the Railroad flagman’s time sheet, or other similar documentation, attesting that the flagman was present during the time recorded.

The Railroad flagman assigned to the Project will be responsible for notifying GDOT and DB Team 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. Document such notification in the Project records. When requested, sign the flagman’s time sheets showing daily time spent at the Project site.

14.3.13  Erosion Control
Indicate in the DB Team’s plans the proposed methods of erosion control, and specifically address means to prevent silt accumulation in Railroad ditches and culverts and to prevent fouling the track ballast and sub-ballast. If the plans do not show erosion control, submit a proposed method of erosion control and have the method approved by the Railroad prior to beginning any grading on the Project Site.

Maintain existing track ditches at all times throughout the construction period. After the construction has been completed, remove all erosion control measures, all deposits of silt, and restore the ditches.

Approval of the erosion control plan does not relieve DB Team of ultimate responsibility and liability for a satisfactory erosion control plan.

14.3.14  Track Clearances
Maintain the minimum track clearances during construction that are included in Table 14-1. Clearances less than these will not be permitted unless specifically authorized by the Railroad.

14.3.15  Temporary Excavation
Maintain the subgrade of an operated track with edge of berm at least 10 feet from centerline of track and not more than 24 inches below top of rail. Maintain the existing section if it is substandard.

14.3.16  Demolition, Erection, Hoisting
Protect Railroad ROW and facilities from damage during demolition, erection, and hoisting procedures.
Pile driving submittal is required for review and approval on a case-by-case basis, depending on site conditions and space limitations.

Submit a Plan showing the location of cranes horizontally and vertically with respect to Railroad’s facilities, crane operating radii, and delivery or disposal locations. Show the locations of all Railroad facilities as well as all obstructions such as wire lines, poles, adjacent structures, etc.

Submit crane rating sheets showing cranes to be adequate for 150 percent of the actual weight of the pick along with a complete set of crane charts including crane, counterweight, and boom nomenclature.

Submit plans and calculations showing the weight of the pick. Make calculations from plans of the existing and/or proposed structure showing complete and sufficient details with supporting data for the demolition or erection of the structure in question. If Plans do not exist, calculate lifting weights from field measurements. Make the field measurements under the supervision of the Registered Professional Engineer submitting the procedure and calculations.

Submit a data sheet listing the type, size, and arrangements of all rigging and connection equipment. Also submit a complete procedure including the order of lifts, time required for each lift, and any repositioning or re-hitching of the crane or cranes.

Ensure all erection or demolition Plans, procedures, data sheets, etc. submitted are prepared, signed, and sealed by a Professional Engineer. The Railroad must review and approve in writing all such submittals prior to performing any of the associated work.

Do not perform demolition, erection procedures, or any other activities on Railroad property at any time unless the Railroad’s representative is actively present at the Site and engaged in the Work (i.e., monitoring, flagging, etc.) during the procedure.

Remove all substructure elements a minimum of 3 feet below the existing ground line.

### 14.3.17 Blasting

Blasting is not permitted.

### 14.3.18 Maintenance and Repair of Railroad Facilities

Maintain all ditches and drainage structures free of silt or other obstructions which may result from its operations and provide and maintain any erosion control measures as required by the DB Documents. Promptly repair eroded areas within Railroad ROW.

Repair, or cause to be repaired, any other damage to the property or facilities of the Railroad or its tenants.

All such maintenance and repair of damages due to the DB Team’s operations shall be done at the DB Team’s expense.
14.3.19 Storage of Materials and Equipment
Do not store materials and equipment where they will interfere with Railroad operations, nor on Railroad ROW without first having obtained permission from the Railroad, and such permission will be with the understanding that the Railroad will not be liable for damage to such material and equipment from any cause and that the Railroad may move or require the DB Team to move, at the DB Team’s expense, such material and equipment. Ensure all grading or construction machinery that is left parked unattended near the track or on the Railroad ROW is effectively immobilized so that it cannot be moved by unauthorized persons. Safety guidelines are provided in Section 14.3.11.

14.3.20 Cleanup
Upon completion of the Work, remove from within the limits of the Railroad ROW, all machinery, equipment, surplus materials, falsework, temporary erosion measures, rubbish, or temporary buildings of the DB Team, and leave said ROW in a neat condition satisfactory to the Railroad.

14.3.21 Transporting Materials and Equipment Across Tracks
Any temporary grade crossings, work mats, or other means needed during construction by the DB Team for transporting materials of any nature or equipment across Railroad tracks or property of Railroad will be the responsibility of the DB Team to handle directly with the Railroad and make all necessary arrangements and obtain all required approvals. Execute a written agreement with the Railroad to cover such matters and appropriate time should be allowed for the preparation and handling of such agreement. The DB Team shall bear all costs incidental to such matters including flagging services by Railroad personnel. Safety guidelines are provided in Section 14.3.11.

14.4 Deliverables
Provide all deliverables per the Public Projects Manual for Projects Which May Impact Norfolk Southern Railway Company, these specifications, and Attachment 14-1 (Special Provision for Protection of Railway Interests) including the items in the following sections.

DB Team may pursue concurrent reviews by GDOT and Norfolk Southern.

14.4.1 Construction Submission
Submit electronic (PDF) plans, supporting calculations, and detailed means and methods procedures for the specific proposed activity. All Plans, specifications, and supporting calculations shall be signed/sealed by a Professional Engineer who is licensed in State of Georgia.

14.4.2 Permanent Clearance Special Conditions
Furnish Record Drawings showing actual clearances as constructed. Show depth, size, and location of all foundation components.

14.4.3 Drainage Plans
If stormwater is drained on or to Railroad’s right of way, submit calculations to the Railroad to verify the 100-year storm event is properly handled.
14.4.4 Shoring Plans

Submit the following drawings and calculations for Railroad’s review and approval.

1. Three sets of detailed drawings of the shoring systems showing sizes of all structural members, details of connections, and distances from centerline of track to face of shoring. Include a section showing height of shoring and track elevation in relation to bottom of excavation.

2. One set of calculations of the shoring design. The drawings and calculations shall be prepared by a Licensed Professional Engineer in the State where shoring is to be constructed and shall bear his seal and signature. Shoring plans shall be approved by the Railroad’s construction engineering and inspection representative.

3. For sheeting and shoring within 18 feet of the centerline of the track, the live load influence zone, and in slopes, use sheet pile. Do not remove sheet pile in slopes or within 18 feet of the centerline of track. Cut off sheet piles 3 feet below the finished ground line. Backfill and compact the remaining 3 feet immediately after cut off.
15 LANDSCAPE AND HARDSCAPE ENHANCEMENTS

15.1 General
Design and construct aesthetic treatment enhancements for the roadway and landscaping Elements of the Project as defined in this Section 15 and 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 using comprehensive aesthetic treatments. This Section 15 presents minimum landscape and hardscape design requirements for the Project.

15.2.1 Traffic Signal
No requirements.

15.2.2 Landscape and Hardscape Enhancement Plans
For PI 0014899:
Construct a green space area to be placed along the north side of College Street and to the west of the bridge. Construct the green space area in the acute angle between College Street and the College Street Spur, to the immediate north of the proposed College Street sidewalk. Include accommodations for a Macon Transit Authority (MTA) bus stop.

The green space area will include, at a minimum, the following items:
- One MTA bus shelter
- Two benches
- One waste receptacle
- Two interpretive panels
- Brick paver hardscape incorporating salvaged brick from existing College Street viaduct, if possible
- One luminaire

MTA Bus Shelter: Provide a 96-inch high by 144-inch long by 72-inch deep bus shelter, consistent with Attachment 15-1 (MTA Bus Shelter) or as approved by GDOT, with a copper-colored corrugated metal roof and expanded metal back and side panels. Include two 72-inch by 48-inch single-sided advertising sign panels comprised of polycarbonate faces on the sides of bus shelter. Provide internal LED illumination of the sign panels and branch circuit power supply. Affix the MTA logo on the front and both sides of bus shelter. Design and construct a concrete pad, any required foundations, structural connections, and power supply in accordance with Attachment 3-1 (Manuals). Ensure intersection sight distance at the College Street-College Street Spur intersection is not violated by the placement of the bus shelter.

Benches: Provide two 48-inch wide backless steel benches with center vagrant guard capable of accommodating two occupants, as approved by GDOT. Install both benches inside the bus shelter.
Waste Receptacle: Provide one 22-inch by 22-inch square by 30-inch high steel waste receptacle with vertical slats or equal, as approved by GDOT.

Interpretive Panels: Fabricate and install two interpretive panels. Panel content to be developed by GDOT and provided to DB Team on or before December 31, 2019. Panels to be composed of high-pressure laminate, durable exterior grade, with special consideration for color content, weather resistance, and security features to abate vandalism. Provide a 10-year guarantee for the panels. Fabricate panels to measure 18-inches by 36-inches and mount on a framed, double pedestal base. Submit the panel design, location, orientation, and mounting details to GDOT for approval prior to installation.

Brick Paver Hardscape: Incorporate bricks collected from the demolished College Street viaduct into green space brick pavement, if possible. New brick pavers may be incorporated into the brick pavement as necessary. Utilize brick as described in Attachment 13-2 (Fence and Parapet Details) or equal, as approved by the Owner. The area of bricks to be used in the green space is not to be less than 1,200 square feet.

Luminaire: Provide illumination of the green space in accordance with Section 11.3.5.

15.2.3 Landscaping and Design Personnel
No additional requirements.

15.3 Design Requirements

15.3.1 Landscape and Hardscape Enhancement Principles and Strategies
No requirements.

15.3.2 Walls
Design retaining/structural walls to be similar in color, texture, and style to other Elements present in the entire Project such as structures, landscaping, and other highway components.

Apply aesthetic treatments to the vertical surfaces of retaining walls where the surface is visible from the roadway or adjacent houses.

Use consistent treatments for retaining walls that articulate the design themes established for the Project.

Use graffiti-proof coating that meets the requirements of GDOT Standard Specifications Section 838 on all visible walls.

15.3.3 Bridges and Other Structures
Coordinate all embellishments for structural Elements with the DB Team’s structural design team to facilitate constructability and maintain safety requirements. Refer to Section 13 for parapet and fence requirements.
15.3.4 Trees, Shrubs, and Other Plant Materials
Preserve existing trees, shrubs and other plant materials wherever possible. Replace any damaged or destroyed trees, shrubs, and other plant materials within existing Right of Way or easements with permanent grassing.

15.3.5 Lighting
See Section 11.

15.3.6 Corrosion Resistant Guardrail
For PI 0014899:
Use corrosion resistant (weathered) steel for new guardrail beam, posts, and hardware in the Project Right of Way. Meet requirements of GDOT Standard Specification 859. Guard rail parts must meet AASHTO M 180 and ASTM A 242 (A 242M) requirements and be Class A, Type IV beams of corrosion resistant steel.

15.3.7 Intersection Hardscape
No requirements.

15.3.8 Miscellaneous Concrete Paving
No requirements.

15.4 Construction Requirements
Provide GDOT samples, mock ups, or catalog cuts for review and approval prior to start of production of any embellishment element.

Provide GDOT sample panels of textured concrete surfaces a minimum of 60 days in advance of starting construction for review and approval.
16 SIGNING, PAVEMENT MARKING, SIGNALIZATION

16.1 General
Design and construct all signing, delineation, pavement markings, and signalization for the Project.

16.2 Administrative Requirements

16.2.1 Standards
Provide activities in this Section 16 in accordance with Attachment 3-1 (Manuals), Government Approvals, and other provisions of the DB Documents.

16.2.2 Meetings
Arrange and coordinate all meetings with local agencies that assume responsibility for maintaining and operating traffic control devices including traffic signals. Provide GDOT with notification of such meetings a minimum of ten Business Days prior to the start of the meeting. GDOT, in its discretion, may attend such meetings.

Arrange and coordinate all meetings with requesting agencies or individuals regarding special signs.

16.3 Design Requirements

16.3.1 Permanent Signing and Delineation
Include all new signs required for the Project and replace existing signs and structures impacted by the Project with new signs and structures that meet all applicable Attachment 3-1 requirements. Include in the design the locations of proposed ground-mounted 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. Locate signs in a manner that avoids conflicts with other signs, vegetation, CMS/VMS, lighting, and structures. Ensure that signs are clearly visible, provide clear direction and information for users, and comply with all applicable Attachment 3-1 requirements. Ensure that placement, construction, and installation activities of signage avoid impacts to all environmentally sensitive resources.

GDOT will provide to the DB Team four Your Dollars Building A Better Georgia logo signs in either 24-inch by 36-inch or 36-by-48-inch size. Install the signs on each end of the Project prior to beginning construction. Remove the signs when GDOT issues Substantial Completion on the Project. Return the signs to GDOT upon removal.

Ensure that all sign placements meet appropriate sight line requirements and standards. Design and locate all sign structures to ensure that they and any existing GDOT overhead signs have sight distance of at least 1,000 feet and meet any other MUTCD and GDOT Signing and Marking Design Guidelines and allowable sign spacing requirements.
Review with GDOT all requests for new signs, including traffic generators, or modifications of existing sign legend. Such requests are subject to GDOT's acceptance.

Replace any existing signs and sign structures impacted by the Project or in conflict with proposed signs with new signs and structures that comply with Attachment 3-1, or as otherwise approved by GDOT.

Place new W8-13 signs in advance of any bridge.

Remove signs that are no longer applicable prior to opening the bridge to traffic, including weight restriction signs and/or narrow bridge signs, even if outside of the proposed construction limits.

**16.3.2 Sign Support Structures**

No requirements.

**16.3.3 Permanent Pavement Marking**

Ensure that the design and installation of all pavement markings including Raised Pavement Markings (RPM) comply with the Attachment 3-1. Install RPMs where new pavement marking is provided.

Contrast pavement markings are required on all concrete surfaces.

**16.3.4 Permanent Signalization**

Coordinate with the Utility Owners and ensure necessary power service is initiated and maintained for permanent signal systems.

After implementing accepted timing plans, provide GDOT and Governmental Entities (maintaining agencies) responsible for operation and maintenance of the traffic signal system legible written documentation of all intersection characteristics and timing plan parameters.

**16.3.4.1 Traffic Signal Requirements**

Design and install fully-actuated permanent traffic signals at the GDOT-permitted intersection of SR 247 at Roff Avenue. In addition, modify, as appropriate, any existing traffic signals impacted by the Project. Coordinate with GDOT and the applicable local Governmental Entities to define appropriate traffic signal design requirements, local agency oversight of the Work, and final acceptance of traffic signals. Coordinate with local Governmental Entities for synchronization of traffic signal networks.

Provide interconnection systems between new or modified signals and any other signal system within the Project Site as required by GDOT or the applicable local Governmental Entity. Coordinate connection of the completed system to the Governmental Entity’s communications network with the Governmental Entity. Ensure continuous communication with the traffic signal system within the Project Site, and provide all communication hardware/equipment for GDOT or the applicable local Governmental Entity to communicate with the signal systems within the Project Site.
Provide both pedestrian and vehicle detectors at all traffic signals per GDOT and/or applicable local Governmental Entity’s (maintaining agency) requirements within the Project Site.

Coordinate with the GDOT TMC and the GDOT District Traffic Operations to ensure that all signalized locations are permitted prior to submission of Final Plans.

Maintain all existing traffic signals until Final Acceptance, which includes:

1. Control system adjustments
2. Temporary support pole locations required by the Project during the interim period through the installation of the permanent traffic signal locations
3. Vertical clearance requirements
4. Maintenance and repairs

Do not cause any part of the signals to be inoperable. The permanent traffic signal locations are to be checked and accepted by the District Traffic Signal Engineer and the County Traffic Engineer prior to Final Acceptance.

16.3.4.2 Traffic Signal Timing Plans

Traffic signal timing should be developed and implemented by a prequalified Contractor/Consultant. The new operating plan will provide safe and efficient operation of the Intersections defined in the 687. As a minimum, this work will include:

1. Coordination with local GDOT District and/or local government(s) to gather agency preferred timing parameters and expectations, and to facilitate a smooth transition from existing signal timing plans to new signal timing plans.
2. Evaluation of existing traffic operations, system equipment functionality, and inventory of assets.
3. Collection of two-hour turning movement counts (TMC’s) for the AM, mid-day, and PM peak periods at each Intersection. For contractor timing projects (if approved by the Engineer AND the signals reside in a rural area), one-hour TMC’s may be collected in lieu of two-hour TMC’s.
4. Collection of directional (tube) counts (7-day/24-hour) per control section, as appropriate or as recommended by the Engineer. A minimum of one directional count is required, and additional directional counts are needed if the number of intersections exceeds seven or if there are significant changes in traffic volumes along the corridor.
5. Development, implementation, and fine-tuning a minimum of four signal timing plans per control section, unless otherwise specified by the Engineer. In most cases, more than the minimum required will be needed to successfully complete the project.
6. Development of additional timing plans as needed, including holiday, seasonal, weekend, and other special plans as requested by the Engineer. The number of additional plans shall be discussed as part of the kickoff meeting. For contractor timing projects, the Consultant will need to address this item prior to providing a fee to the contractors.
7. Before/after studies and preparation of project performance measures to detail signal timing improvements.
16.3.4.3 **Traffic Signal Permit**
As part of the design process, obtain the necessary traffic signal permit or permit revisions by following applicable GDOT and/or local Governmental Entities’ signal permit processes prior to any new signal installation or existing signal modification.

16.3.4.4 **Traffic Signal Support Structures**
Obtain the maintaining agency’s acceptance of traffic signal support structures to be used on new signal installations.

### 16.4 Construction Requirements

16.4.1 **Permanent Pavement Marking**
Install full pattern pavement markings on all pavement courses before any roadway is opened to traffic. Place and maintain RPMs when the roadway is open to traffic.

Before placing any permanent pavement markings, provide GDOT a layout indicating the proposed location of such items.

For PI 0014899:

Place Shared Lane Marking so the center of marking is at least 11 feet from face of the curb or edge of pavement in areas with on-street parallel parking. In areas where on-street parking is not allowed, place No Parking signs (R8-3) and place the shared lane marking four feet from face of the curb or edge of the pavement. Do not place edge line on roadways with curb and gutter if parallel parking is permitted.

16.4.2 **Permanent Signing and Delineation**
Use established industry and utility safety practices when erecting or removing signs located near any overhead or underground utilities, and consult with the appropriate Utility Owners prior to beginning such work.

Maintain all applicable advance guide signs and any exit direction signs in place at all times and ensure they do not obstruct the view of the signs to the motorist. Replace any other removed signs before the end of the work day.

Ensure signing reflectivity conforms to the Attachment 3-1.

Before placing any permanent signs, delineation, third-party signs, or non-standard sign structures, provide GDOT a layout as part of the Final Plans indicating the proposed location of such items.

For PI 0014895:

Place a no turn on red (R13-A) sign for the Roff Avenue (east) to Pio Nono Avenue North turning movement.
16.4.3 Project Signs – Outside the Existing and Proposed ROW

For signs located outside the Existing ROW, Proposed ROW, and Additional Properties, but within a public ROW, install the signs in existing rights of way controlled by local or other Governmental Entities. Coordinate with applicable Governmental Entities for the design, approval, and installation of such signs, including any trailblazing signing required for the Project.

16.4.4 Specific Service Signs

No requirements.
17 INTELLIGENT TRANSPORTATION SYSTEMS

17.1 General
This Section 17 addresses the requirements for the GDOT General Purpose Lane Intelligent Transportation System (GDOT ITS) including requirements for traffic surveillance, traveler information dissemination, incident management, communication, and maintenance during construction.

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

17.2 Administrative Requirements

17.2.1 Standards

Provide activities in this Section 17 in accordance with GDOT's ITS Design Manual, GDOT's ITS Strategic Deployment Plan (SDP) for the Level I of ITS deployment, Attachment 3-1 (Manuals), and other provisions of the DB Documents.

Refer to Attachment 17-1 (Special Provision for Navigator ATMS Integration) and Attachment 17-2 (Supplemental Specifications) for installations to be furnished, installed, integrated, and tested.

17.2.2 Reserved

17.2.3 Reserved

17.2.4 Reserved

17.3 Design Requirements

17.3.1 General

For GDOT ITS, it is the DB Team’s responsibility to determine the number and specific locations of all ITS components to meet the requirements as outlined in GDOT’s ITS Strategic Deployment Plan (SDP) for the Level I of ITS deployment and the latest ITS Design Manual for design requirements unless specified elsewhere in the DB Contract. The DB Team has flexibility to offer alternatives for GDOT to consider; however, ensure the locations identified on the ITS layout include devices and infrastructure to meet the traffic management needs of the Project. Review suggested location modifications with GDOT during the ITS design workshop, which is conducted after roadway geometry is established and through the preliminary design process.

Prepare a preliminary and a final GDOT ITS layout, including network communication schematic diagrams and specification, for review and acceptance by GDOT to ensure adequate planning of the ITS implementation and components’ consistency and compatibilities with adjacent GDOT Projects. Ensure the plan provides horizontal and vertical plan location, proposed
equipment, proposed structures, and types of materials for the entire ITS. Follow the current version of the GDOT ITS Design Manual for its design.

Conduct all Work necessary to design, procure, furnish, install, integrate (as defined in this Section 17 and associated specifications), and maintain GDOT ITS on the Project, including gantries, electrical power, fiber-optic communications, ITS cabinets, maintenance access, junction boxes, and conduits, all in accordance with GDOT Standard Specifications, Construction of Transportation Systems and Special Provisions contained herein. Ensure each ITS device, regardless of its purpose, supports at a minimum National Transportation Communications for ITS Protocol (NTCIP)-compliant interface protocols so that integration of each device/controller with NaviGAtor is more efficiently supported.

Survey and locate the existing GDOT ITS equipment including all fiber trunk lines, conduit and duct banks, communication hubs, drop fiber and electrical lines, as well as ITS devices and communication devices. Because of the survey and location of existing GDOT ITS equipment, identify and notify GDOT of all ITS devices or communications devices needing repair no later than 60 days prior to NTP 3. GDOT will perform or cause to be performed repairs of those necessary ITS devices or communications devices identified as needing repair. The DB Team is responsible for the ITS system and all communication devices within the Project limits upon issuance of NTP 3. Perform preventative maintenance, respond to problem notifications from GDOT, make any needed repairs or upgrades as necessary, and repair ITS devices or communications damaged by any party during construction.

For each GDOT ITS system, the DB Team will coordinate with GDOT TMC on the GDOT ITS downtime to cutover the new GDOT ITS. Notify GDOT no less than two Business Days before proceeding with any GDOT ITS Work. Any downtime outside of the 24 hours may result a non-refundable deduction as listed in the Volume 1, Exhibit 18 (Measures of Liquidated Damages and Nonrefundable Deductions).

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

17.3.2 General Purpose Lane ITS
This Work includes GDOT ITS, communication network, power, structures, and other required elements within the Right-of-Way required to accommodate the Project. The GDOT ITS includes Closed Circuit Television (CCTV) Pan Tilt Zoom (PTZ) cameras, and the communication network including the fiber backbone.

17.3.3 Reserved

17.3.4 Closed Circuit Television (CCTV) Subsystem

17.3.4.1 CCTV General Requirements
Ensure CCTV is designed in accordance with the GDOT ITS Design Manual, latest edition.
Ensure CCTV is furnished, installed, integrated, and tested in accordance with GDOT Standard Specifications, Construction of Transportation Systems.

17.3.4.2 CCTV Applications

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

1. Incident verification and management
2. Highway Emergency Response Operator (HERO) dispatching
3. Traffic surveillance and traffic control

17.3.4.3 CCTV Design Requirements

Design CCTV cameras to be digital IP cameras with digital video streaming capability, and with on-board H.264 encoding in the camera housing to generate the digital video stream. Include ethernet cable for digital video stream.

Early in the preliminary design schedule, submit CCTV design for GDOT approval showing that the CCTV design provides overlapping, continuous coverage between adjacent cameras of the General Purpose Lanes, interchange ramps, and ramp intersections with each side street. The evidence may be a 3-dimensional (3D) view of the General Purpose Lanes as viewed from the proposed camera mounting heights above the roadway. Ensure the 3D views cover the entire Project limits and include all possible sight obstructions, including vegetation, existing signs, proposed signs, relocated signs, bridges and overpasses, and vertical and horizontal alignments.

Ensure CCTV poles are of sufficient height to cover the approved field of view by GDOT. Do not mount cameras more than 54 feet above the base of the pole or the area where a bucket truck can park for maintenance of the camera. Ensure the distance between the bucket truck parking location and the camera does not require a bucket truck arm length of greater than 70 feet.

Design any pole or upright with a CCTV camera mounted to it to be rigid with minimum vibration due to wind. Ensure total deflection at the CCTV mounting height meets the requirements set for strain poles for ATMS applications per Standard Specifications, Construction of Transportation Systems Section 639. Include deflection design calculations in the required structure design Submittals.

17.3.4.4 CCTV Detailed Technical Requirements / Specifications

GDOT CCTV technical requirements including Submittals, materials, construction, and testing are described in GDOT Standard Specifications, Construction of Transportation Systems Section 936 – Closed Circuit Television (CCTV). CCTV integration is described in GDOT Standard Specifications, Construction of Transportation Systems Section 940, NaviGAtor Advanced Transportation Management System Integration.
Ensure all GDOT CCTV cameras pan-tilt-zoom pressurized dome cameras meeting requirements described in GDOT Standard Specifications, Construction of Transportation Systems Section 936–Closed Circuit Television (CCTV).

GDOT CMS technical requirements are described in GDOT Standard Specifications, Construction of Transportation Systems 631–Permanent Changeable Message Signs.

17.3.5 Transportation Management Center (TMC) Improvements

If required, Transportation Management Center (TMC) improvements will be managed by GDOT and implemented by the Transportation Management Center System Integrator (TMC SI) and referred to as the NaviGAtor Contractor. The Transportation Management Center improvements include NaviGAtor System and software modifications, integration services, and other related improvements as necessary to connect, communicate with, and operate GDOT ITS.

Ensure that all software incorporated for any aspect of the Project is compatible with software used by GDOT as provided in the Technical Provisions. Prior to using any software or version of software not then in use by GDOT, obtain written acceptance from GDOT. In addition, provide to GDOT, and assume the cost of, any software, licenses, and training necessary to ensure that GDOT can implement compatible usage of all software. Compatible means that provided electronic files may be loaded or imported and manipulated by GDOT using its software with no modifications, preparations, or adjustments. Submit all electronic information to GDOT in native format or, if not available, alternate electronic format.

Ensure that the civil infrastructure is in place in accordance with established milestone dates, and coordinate Work as required to allow for the TMC System Integrator (SI) to complete their software development, installation, and integration responsibilities with DB Team installed devices.

17.3.6 Communications Network

17.3.6.1 Communications Network General Requirements

Design, furnish, install, integrate, and test the fiber-optic backbone and laterals for the ITS devices.

Ensure the backbone is single-mode fiber-optic cable for the GDOT networks. Ensure the long haul and distribution networks are Internet Protocol (IP) over Ethernet, and that communication drops to local GDOT ITS cabinets are also single-mode fiber-optic cable and IP over Ethernet. Design, furnish, and install communication between the ITS cabinets and the local devices attached to the cabinet based on the requirements of the device or devices.

The communication and network layout focuses on the existing and proposed Communication Hub buildings that will aggregate distribution layer Ethernet network for transmission to GDOT.

Verify that all existing ducts to be used are open, with no blockages, water, or breaks. Replace damaged conduits or install new duct banks around the blockage at no additional cost to GDOT.
Do not install a duct bank under any paved surface except when crossing ramps or other Travel Lanes. Install new conduit duct banks approximately 10 feet inside the existing or proposed Interstate Right-of-Way where feasible. Where vegetation or other obstructions hinder installation of the duct banks approximately 10 feet from the Right-of-Way line, the DB Team may modify the duct banks’ location for GDOT review and approval.

17.3.6.2 Communication Network Design Requirements

Design the communication infrastructure and network in accordance with the latest GDOT NaviGAtor ITS Design Manual.

Conduct a communication network design kick-off meeting with GDOT prior to beginning design efforts. Use the kick-off meeting to confirm GDOT communication network requirements.

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

GDOT ITS shall be served by physically and logically separate communication networks. All conduit, conduit access (such as Electrical Communication Boxes (ECBs) and pull boxes), fiber and communication cabling, cabinets, patch panels, network switches, and terminal servers shall be solely dedicated to GDOT. Dedicated conduit shall be within the same conduit duct bank. Every conduit in each duct bank shall have a unique color and/or striping pattern. The coloring shall be consistent through the Project corridor. Do not install fiber-optic, other data communication, or composite cable in the same conduit as an electrical power service cable.

Design the communication network for the GDOT ITS to be end-to-end, from the field device to the NaviGAtor TMC including the ITS cabinets and existing communication hub buildings.

Include in the design cabinet dimensions, communication shelf slots, network bandwidth capacity, conduit capacity, backbone fiber availability, and electrical circuit capacity.

Design the fiber-optic backbone along the General Purpose Lanes. Ensure all GDOT ITS data is aggregated to 1 GB backbone network at designated communication hub buildings.

All fibers installed under this project shall be terminated at communication hubs or termination points as designated for GDOT. This shall include terminating each fiber to a rack mounted fiber distribution center. Provide patch cords for each connection between fibers at a termination fiber distribution center.

Determine the link loss budget analysis for all fiber-optic links.

Design a backbone communication system with fiber-optic cables installed along the project area. Use lateral drop cabling to reach GDOT Sites. If GDOT provides ITS details during the design phase, adapt the communication network design to accommodate the GDOT communication network requirements.

General design criteria elements for GDOT ITS networks are as follows:

- Provide an internet protocol (IP) Ethernet based system with a fully redundant architecture, allowing automatic, self-healing, and cutover of data flow to a secondary
path or segment in the case of a primary equipment failure or fiber break. The ITS communication system backbone shall be rated for a Gigabit transfer rate, minimum. ITS field switches shall be rated for a 1-gigabit uplink transfer rate, minimum. Downlink ports at the field switches shall be 10/100BaseT.

- Provide Network Switch, Layer 3 Gig-E to connect the local ITS system to the GDOT wide area network (WAN) at the existing and proposed Communication Hub locations. The Layer 3 network switch shall be designed with adequate 1-gigabit and 10/100BaseT ports to support the network architecture and design.

- Provide field network switch, Layer 2 10/100BaseT in each ITS cabinet to support connectivity of the ITS devices connected to the cabinet. Each Layer 2 switch will be designed with adequate ports to support communication with all devices connected to the cabinet. A minimum of four spare ports shall be provided.

- Ensure each field network switch provides a primary and secondary fiber path from the field cabinet to the Communication Hub.

- The fiber layout for GDOT ITS shall provide a daisy-chain. The daisy-chain shall be confirmed with GDOT during the ITS design workshops and preliminary design efforts; The maximum number of Layer 2 field network switches forming a network path between an end device (GDOT ITS) and a Communication Hub based data aggregating Layer 3 network switch shall not exceed eight per fiber pair. The calculated data throughput assigned to any sub-network path shall not exceed one-third of the path's throughput capacity.

- New devices and existing devices shall not be assigned within the same network path or otherwise daisy-chained to avoid possible inconsistencies in communication protocols.

- The DB Team shall determine the quantity of fibers required for the backbone communication system and local connectivity. The DB Team shall provide all calculations required to support the design determination. Include capacity for 100 percent system expansion. The DB Team shall provide 100 percent spare fibers that shall be continuous along any section of the Project and continuous from end to end of the project. The number of fibers shall be rounded up to the next larger standard fiber cable size, for example, if the calculation determine 40 fibers are needed, 80 shall be provided rounded up to 96 which is the nearest standard cable size.

- All drop fiber shall be 12-fiber single mode cables, all the 12 fibers of the drop cable shall be spliced to the Trunk cable.

17.3.7 ITS Electrical Service (Power) Requirements
Coordinate with the electrical power companies and provide electrical power for all ITS included in the Project.

17.3.8 Electrical Design Requirements

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

Ensure that the electrical power company installs electrical usage meters for GDOT equipment at locations where electrical power service is provided to GDOT.

Design electrical loads for all ITS cabinets, hub buildings, and GDOT ITS devices.
Provide electrical power calculations to GDOT for review and approval during the design. Include in the power calculations power loading, transformers, and conductor sizes based on National Electrical Code (NEC) standards. Do not provide electrical service at a location less than 120-volt, 20 amps AC. Base electrical load at each ITS \ on a factor of two times the calculated load based on the equipment being provided for that cabinet to allow for future expansion and use of maintenance tools.

In addition to other requirements referenced herein, space electric pull boxes not more than 500 feet apart. Do not install fiber-optic or other data communication or composite cable in the same conduit or pull box as electrical power service cable.

Install mechanical theft deterrent devices in all Project electrical conduits and electrical pull boxes to prevent the removal of electrical wiring and to prevent unauthorized access. Use rubber stopper mechanical theft deterrent devices that compress against the electrical wiring and prevent the wires from being easily pulled through the conduits or alternate as acceptable to GDOT. Also install electrical pull box lids that contain locking mechanisms that works with the use of cams to prevent unauthorized access.

Ensure voltage design drop calculations comply with the suggested limits defined in NEC Article 210.19 (A) (1) Informational Note 4 and NEC Article 215.2 (A)(1)(b) Informational Note 2. Ensure these calculations define all service points, circuits emanating from those points, details of all loads on all circuits, the nominal voltage on each circuit, the voltage drop for each link of each circuit, the percent voltage drop for each circuit, and the wire size selected for each link of each circuit. Include sizing and ratings of all circuit breakers, transformers, fused switches, and transfer switches planned for installation. Submit these calculations with the preliminary and final design Submittals and with subsequent Submittals with all data appropriately updated. Include an allowance of 9.0 Amps at the end of the circuit for a convenience outlet. Provide transformers, where used, with ± 2.5% and ± 5% voltage taps. Do not use to fulfill the voltage drop and wire size requirements of these minimum technical requirements.

Ensure the circuits from a power service point are separate circuits (running either both north and south or east and west), each with its individual circuit breaker provided. Provide a main disconnect circuit breaker at each power service point.

17.3.8.2 Lightning Protection Design Requirements

Design all CCTV poles (including sign structures with ITS) to include lightning protection systems per the requirements of Attachment 17-3 (Surge Protection Systems and Devices) and as described herein. Ensure the top of the lightning rod is at least two feet above the highest point or top of all ITS devices attached near the top of the pole and is mounted within a 60-degree cone of protection measured from the top of the lightning rod or the one that provides the most protection for the ITS device.

Ensure each ITS cabinet and ITS pole has an exterior earth-ground ring consisting of a system of ground rods connected to a ring of a #2 AWG stranded bare copper ground wire. Ensure the earth ring includes a minimum of two ground rods for ITS cabinets and ITS poles. Place ground rods at least 40 feet from adjacent ground rods. Connect the rings with #2 AWG stranded bare
copper ground wire when ground rods adjacent installations are within 100 feet of each other. Include at each site lightning protection that is also connected to the site’s earth-ground ring. Measure and document the ground with a resistance of five ohms or less.

When new GDOT ITS devices are placed on an existing structure, update the structure’s lightning protection system to the lightning protection requirements for new structures.

17.3.8.3  Grounding Design Requirements

Design the grounding system so that the top of all grounding rods is installed in an electrical service Type 2 pull box to facilitate testing and periodic retesting of the grounding array at each ITS pole and ITS cabinet. Design the grounding conductor to be exothermically connected to the ground rod at an elevation of 12 inches below ground line. Ensure conformity by all ITS equipment and enclosures located at a communication hub site to the latest adopted NEC for bonding and grounding. Design grounding arrays to be interconnected for cabinets, poles, lightning systems, etc., that are within 40 feet of each other. Accurately show the actual locations of buried connections and ground rods in the Record Drawings.

When new GDOT devices are placed on an existing structure, update the grounding system to current specifications.

Ensure the grounding meets the minimum requirements of NEC.

17.3.8.4  Uninterruptable Power Supply (UPS) Design Requirements

For GDOT ITS locations, design the uninterruptable power supply (UPS) to meet the requirements in the GDOT ITS Design Manual, GDOT Standard Specifications, Construction of Transportation Systems Section 939.

17.3.9  Testing and Acceptance

Submit test plans to GDOT for review and acceptance for the various components of the ITS including CCTV, communications network, and electrical service.

Test specific ITS technologies, electrical components, communication network and infrastructure, communication hubs and equipment cabinets to the test requirements sections in the GDOT Standard Specifications, Construction of Transportation Systems/Special Provisions.

Conduct GDOT ITS, communication hub, and communication network testing and final acceptance processes according to the applicable GDOT Standard Specifications, Construction of Transportation Systems, Special Provisions, and as described herein.

Submit operational test results for each unit or system to GDOT for approval. Ensure the test results indicate that the unit or system conforms to the manufacturer’s specifications and the Contract Documents. Adjust, relocate, or modify items that do not conform to the manufacturer’s specifications and the Contract Documents as necessary to meet the requirements. Submit new test results after corrections have been made that bring the units or systems into conformity.
17.4 Construction Requirements

17.4.1 CCTV Implementation Requirements
For CCTV subsystems that are replacements for removed/relocated CCTV, furnish, install, integrate, test, and make available for GDOT’s use prior to deactivation and removal of the existing CCTV. Ensure all replacement CCTV equipment is new. No relocation of existing equipment is permitted as a part of this Project. Provide replaced and removed devices to GDOT.

Coordinate return of salvageable equipment with the GDOT State ITS Engineer at (404) 635-2849.

Place all salvaged equipment on pallets, containing a list of materials with the description of each item, their condition, and equipment serial numbers. Deliver salvaged equipment to the Traffic Signal Electrical Facility (TSEF) located at 935 United Avenue, SE, Building 5, Atlanta, GA 30316-2531.

Install camera system assemblies on new concrete strain poles unless installed on existing or other sign structures.

Prepare and implement a CCTV integration plan for GDOT’s approval. Ensure the integration plan meets the requirements of GDOT Standard Specifications, Construction of Transportation Systems Section 940 - NaviGAtor Advanced Transportation Management System Integration.

17.4.2 Reserved

17.4.3 Reserved

17.4.4 Reserved

17.4.5 Electrical Implementation Requirements
Furnish, install, and test the electrical systems as required to meet the power and UPS demand of each communication hub location and GDOT ITS cabinet location. Furnish, install, and test the electrical services as required by GDOT Specification 682, the approved Plans, and herein.

At locations (except hub buildings) where electrical power service is provided to GDOT ITS cabinets and devices, ensure that the electrical power company installs an electrical usage meters for GDOT equipment.

Ensure all voltage being provided to the cabinet is in accordance with the approved electrical design calculations. Test the power from the electrical service disconnect, to the transformer, to the meters, and into the cabinets.

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

Install and ensure electrical service is ready for connection before ITS cabinets are installed.
Connect and activate electrical services for all ITS cabinets within 24 hours of installation of the

17.4.6 Warranty
Provide all warranties as set forth in the DBA and specified in the GDOT Standard
Specifications, Construction of Transportation Systems, Special Provisions and contained
herein. In the event of conflicting warranty periods between the above, provide the longest
warranty period identified. All warranties commence upon Final Acceptance. Any additional
costs incurred by the DB Team to meet the warranty requirements are the sole responsibility of
the DB Team.

17.4.7 Protection of Existing ITS Signalization
Ensure the existing GDOT ITS are protected from damage. Damage caused by the DB Team to
GDOT ITS, due to failure to locate any existing or installed GDOT ITS within the Project limits, is
the responsibility of the DB Team. GDOT (or their respective maintenance contractors) will
repair or replace the damaged ITS field element or infrastructure; the DB Team is responsible
for the total repair or replacement cost along with all non-refundable deductions per Volume 1,
Exhibit 18.

Plan and coordinate with GDOT any necessary disruption to the existing GDOT ITS no less
than two Business Days before proceeding with the Work.

17.4.8 Existing System Inventory
Conduct a field survey and provide a complete inventory of all ITS components and
infrastructure in the Project limits within 30 Days of NTP 1. Include in the inventory components
and infrastructure to be removed and replaced, to be removed and relocated, and to be left in
place.

17.4.9 ITS Locates
Locate the electrical and fiber-optic conduits and cables within the construction limits. Obtain
available ITS as-built and location information from GDOT upon NTP 3 and be fully responsible
for locating all existing, temporary, and new ITS infrastructure and facilities until Final
Acceptance. Be responsible for providing ITS locates requested by other consultants,
contractors and/or utility companies within 48 hours of receiving requests from GDOT or from
any other source from NTP 3 to Final Acceptance. Notify GDOT of the date and location of each
locate request and the date at which the locate was completed.

Fully cooperate with all Utility Owners during the design, survey and construction activities of
the Project. Call Georgia 811 a minimum of 48 hours and a maximum of 96 hours before any
excavation work.
17.4.10 ITS Preventive Maintenance
GDOT (and their respective maintenance contractors) will continue to provide routine and on-call maintenance for all ITS equipment within the Project area during the Term. Cooperate with GDOT by accommodating access to the site for GDOT's maintenance contractor to perform routine or on-call maintenance.

17.4.11 ITS Repair and Replacement
Throughout the construction period until the Final Acceptance of the Project, notify GDOT of any damage to the existing ITS field element or infrastructure that is caused by the DB Team, either due to the negligence or direct action of the DB Team as soon as possible. GDOT (or their respective maintenance contractors) will repair or replace the damaged ITS field element or infrastructure; the DB Team is responsible for the total repair or replacement cost along with all non-refundable deductions per Volume 1, Exhibit 18.

If an existing ITS element or infrastructure needs to be taken out of service due to construction related relocation or interruption or as required by the Project specifications, provide GDOT written notice 72 hours in advance before taking control of the devices. Replace any impacted devices with an equivalent in new condition or per the Project specifications. All replacement devices are subject to the testing and acceptance requirements specified in the Project specifications.

17.5 Deliverables

17.5.1 CCTV Designs

17.5.1.1 CCTV Design Plans

17.5.1.2 Fiber Allocation Plans

17.5.1.3 CCTV & Signal Equipment Cut Sheets

17.5.1.4 3D CCTV Design Plans

17.5.2 Sign Structure Analysis
As indicated elsewhere in this Section.
18 TRAFFIC CONTROL

18.1 General
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.

18.2 Administrative Requirements

18.2.1 Standards
Provide activities in this section accordance with Attachment 3-1 (Manuals), Government Approvals, and other provisions of the DB Documents.

18.2.2 Worksite Traffic Control Supervisor (WTCS)
Designate a qualified individual as the WTCS. The WTCS is responsible for selecting, installing, and maintaining all traffic control devices in accordance with the Plans, Specifications, Special Provisions, and the MUTCD. Ensure the WTCS is currently certified by either the American Traffic Safety Services Association (ATSSA) Work Site Traffic Supervisor Certification program or the National Safety Council Certification program. On-line classes will not be accepted.

Ensure the WTCS is available on a 24-hour basis to perform duties. If the Work requires traffic control activities to be performed during the daylight and nighttime hours, designate an alternate WTCS if necessary. Ensure any alternate WTCS meets the same requirements and qualifications as the primary WTCS and is accepted by GDOT prior to beginning any traffic control duties. The WTCS’s traffic control responsibilities have priority over all other assigned duties.

The WTCS has full authority to act on behalf of the DB Team in administering the Traffic Control Plan. Ensure the WTCS has appropriate training in safe traffic control practices in accordance with Part 6 of the MUTCD. Ensure all other individuals making decisions regarding traffic control also meet the training requirements of Part 6 of the MUTCD.

Ensure the WTCS has a copy of Part 6 of the MUTCD and the Contract on the Site. Copies of the current MUTCD may be obtained from the FHWA web page at http://mutcd.fhwa.dot.gov.

The WTCS supervises the initial installation of traffic control devices. Prior to the beginning of construction, GDOT will review the initial installation. The WTCS reviews modifications to traffic control devices as required by sequence of operations or staged construction.

Ensure that any Work performed on highway right-of-way that requires traffic control is supervised by a submitted/approved certified WTCS. Perform no work requiring traffic control unless the certified WTCS is on the work site. Failure to maintain a Certified WTCS on the work site will be considered as non-performance under Volume 1, Exhibit 18 (Measures of Liquidated Damages and Nonrefundable Deductions).
Ensure the WTCS is available to maintain traffic control devices with access to all personnel, materials, and equipment necessary to respond effectively to an emergency within forty-five minutes of notification of the emergency.

Ensure the WTCS performs weekly traffic control inspections. The inspections will start with the installation of the advance warning signs and continue until a Maintenance Acceptance is issued or when the punch list is completed.

Ensure the WTCS includes both daytime and nighttime reviews in an inspection. Report the inspection to GDOT on a Traffic Control Inspection Report (TC-1). Correct routine deficiencies within a 24-hour period unless modified by the Technical Provisions or by GDOT. Failure to comply with these provisions are grounds for dismissal from the duties of WTCS and/or removal of the WTCS from the Project. Failure of the WTCS to execute his duties will be considered as non-performance. GDOT will periodically review the Work for compliance with the requirements of the Traffic Control Plan.

GDOT may allow the DB Team’s Project superintendent, foreman, subcontractor, or other designated personnel to serve as the WTCS on projects where traffic control duties do not require full time WCTS supervision, as long as the individual meets the requirements and performs the duties of a WTCS and satisfactory results are obtained.

18.3 Design Requirements

18.3.1 Transportation Management Plan

Prepare and implement a Transportation Management Plan (TMP), if required, that meets the requirements of the FHWA Work Zone Mobility and Safety Program which can be found at:

http://www.ops.fhwa.dot.gov/wz/resources-final_rule/tmp_examples/tmp_dev_resources.htm

Include in the TMP descriptions of the qualifications and duties of the Worksite Traffic Control Supervisor (WTCS) and other personnel with traffic control responsibilities. Also include the following:

1. 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

2. Procedures for obtaining acceptance of detours, road and lane closures, and other traffic pattern modifications from applicable Governmental Entities, as well as the implementation and maintenance of those modifications. Ensure these procedures encompass

   a. notification of the traveling public by placing CMSs a minimum of seven days in advance of actual roadway closure or major traffic modifications. When possible, coordinate and utilize overhead changeable message signs on the regional ITS system.

   b. utilization of workzone law enforcement for mainline lane closures.
3. Procedures for signing and marking transitions during construction from one stage to the next and from interim to permanent signing and marking
4. Procedures for maintenance and replacement of traffic control devices, including pavement markings and traffic barriers, if used
5. Procedures for regular evaluation and modification of traffic signal timings (including those affected by detours); and procedures for all affected signals to include implementation, testing, and maintenance, as well as GDOT acceptance and any necessary local Governmental entity acceptance
6. Procedures to coordinate with the appropriate Governmental Entities regarding 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
7. Procedures and processes for the safe ingress and egress of construction vehicles in the work zone
8. Provisions for continuous access to established truck routes and Hazardous Material (HazMat) routes, and for suitable detour routes, including obtaining any acceptances required by the appropriate Governmental Entities for these uses
9. Procedures for modification of plans as needed to adapt to current Project circumstances
10. Procedures for communication of TMP information, if required, to the DB Team’s public information personnel, and for public notification of maintenance of traffic issues in conjunction with the requirements of Section 2.7 (Public Information and Communications)
11. Descriptions of contact methods, personnel available, and response times for any deficiencies or Emergency conditions requiring attention during off-hours

Submit the TMP within 120 days from NTP 1. Obtain GDOT acceptance prior to NTP 3.

Ensure the safe, convenient passage of the traveling public at all times. Prepare contingency traffic control plans for use in relieving travel delays. If in GDOT’s sole opinion, sustained traffic control placement creates an unnecessary hindrance to the travelling public, implement contingency plans that will either alleviate traffic congestion or cease traffic interruptions immediately upon notification from GDOT.

Develop a detailed plan for all Project detours, including a narrative of all detour activities, schedules, timelines, and maps, and include it within the Transportation Management Plan (TMP). Include descriptions of the approach for communicating this information to the traveling public.

### 18.3.2 Traffic Control Plans

Use the procedures in the TMP (if applicable) and the guidelines of the MUTCD, AASHTO’s Roadside Design Guide, and comply with GDOT Special Provision Section 150, Traffic Control, to develop detailed traffic control plans which provide for all Construction Phases and construction stages, as well as all required traffic shifts procedures.
Produce a traffic control plan for every Construction Phase that impacts traffic. Submit each traffic control plan to GDOT for review a minimum of fourteen days prior to implementation. Include in the traffic control plan details for all detours, traffic control devices, striping, and signage applicable to each Construction Phase. Ensure information included in the traffic control plans is of sufficient detail to allow verification of design criteria and safety requirements, including typical sections, alignment, striping layout, drop off conditions, and temporary drainage. Clearly designate in the traffic control plans all temporary reductions in speed limits. Changes to posted speed limits are not allowed unless specific prior acceptance is granted by GDOT.

Separate opposing traffic on a divided roadway with appropriate traffic control devices in accordance with the MUTCD based on the roadway Design Speed and Attachment 3-1.

Maintain signing continuity on all active roadways within or intersecting the Project at all times.

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

Prepare public information notices, if required, in coordination with Section 2.7 in advance of the implementation of any lane closures or traffic switches. These notices are referred to as Traffic Advisories.

Provide a minimum of four changeable message signs to be placed along the roadway (two for PI 0014895 and two for 0014899) to notify the public at least 30 days prior to closing the roadway. Provide additional changeable message signs as needed for approved detours. Place and maintain messages on all message boards 24 hours a day, seven days a week, as directed by GDOT. Ensure the changeable message signs meet all requirements of Standard Specification Section 632, Changeable Message Sign, Portable Type 3. Failure to respond to the direction of GDOT within 45 minutes will result in the assessment of non-refundable deductions.

Provide written notification 60 days in advance of any full roadway closure to the following:

- Macon-Bibb County Fire Department
- Macon-Bibb County Sheriff’s Office
- Macon-Bibb County Board of Education Superintendent
- Macon-Bibb County Transit Authority
- Macon-Bibb County EMS and other first responders

### 18.3.2.1 Roadway Guidelines

Produce traffic control plans for periods of construction in accordance with Attachment 3-1 (Manuals), GDOT Special Provision Section 150, and the DB Documents.

#### 18.3.2.1.1 Design Parameters for Traffic Control

**Design Vehicle:** Accommodate a design vehicle via turning movements specified by the GDOT Design Policy Manual for specific road classifications. Turning movements on all other local streets and driveways will, at a minimum, provide similar characteristics as existing Geometry.
Work Zone Speed Limits: Ensure the work zone speed limits are in conformance with GDOT Special Provision Section 150. Maintain AASHTO stopping sight distances during construction.

Number of Lanes: Ensure the minimum number of lanes to be maintained is the number of lanes currently available on each controlled access facility except as allowed by this Section 18. Lane closures on other roadways may be considered as long as all traffic patterns and accesses are not reduced and are maintained.

Lane Widths: During construction, the minimum lane width for main lanes, frontage roads, and major crossing streets is 11 feet. For minor crossing streets, GDOT may, in its sole discretion, allow 10-foot lanes in limited circumstances during construction for short distances after reviewing the DB Team’s traffic control plan. See Section 18.3.2 (Traffic Control Plans) for additional information.

18.3.2.1.2 Allowable Shoulder/Lane/Roadway Closures and Traffic Stage Changes

Provide GDOT and appropriate Customer Groups a minimum of 2 weeks advance notice in writing for lane/shoulder closures and/or traffic stage changes planned to be in effect longer than twenty-four hours. Provide a minimum of 72 hours advance notice for lane closures that are planned to be in effect less than 24 hours, using all appropriate tools as needed. Coordinate the closure restrictions with GDOT on all lane/shoulder closures (or an event that results in lane closures) into GDOT’s ITS web-based information tool.

Coordinate closures with adjacent projects to ensure the safe and convenient passage of the traveling public. During construction of the Project, GDOT will facilitate coordination with all local entities for traffic control.

18.3.2.1.3 Lane and Shoulder Closure During Design-Build Period

A. Lane Closures

For PI 0014895:

1. SR 247/Pio Nono Avenue

Lane and shoulder closures and pacing will NOT be allowed between the following hours:

<table>
<thead>
<tr>
<th>Day</th>
<th>Southbound Lanes</th>
<th>Northbound lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday through</td>
<td>6:00 a.m. to 9:00 a.m.</td>
<td>6:00 a.m. to 9:00 a.m</td>
</tr>
<tr>
<td>Friday</td>
<td>4:00 p.m. to 7:00 p.m.</td>
<td>4:00 p.m. to 7:00 p.m</td>
</tr>
</tbody>
</table>
Single lane closures are permitted between the following hours:

<table>
<thead>
<tr>
<th>Day</th>
<th>Southbound Lanes</th>
<th>Northbound lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday through Friday</td>
<td>9:00 a.m. to 4:00 p.m. daily</td>
<td>9:00 a.m. to 4:00 p.m. daily</td>
</tr>
<tr>
<td></td>
<td>7:00 pm to 6:00 a.m. daily</td>
<td>7:00 pm to 6:00 a.m. daily</td>
</tr>
</tbody>
</table>

A minimum of two Travel Lanes shall remain open, one in each direction, to the traveling public at all times, except during the duration of the full roadway closure of SR 247/Pio Nono Avenue as set forth in Section 18.3.2.1.3.B below.

2. All other roadways:

Lane and shoulder closures and pacing will NOT be allowed between the following hours:

<table>
<thead>
<tr>
<th>Day</th>
<th>Southbound Lanes</th>
<th>Northbound lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday through Friday</td>
<td>6:00 a.m. to 9:00 a.m. daily</td>
<td>6:00 a.m. to 9:00 a.m. daily</td>
</tr>
<tr>
<td></td>
<td>3:00 pm to 6:00 p.m. daily</td>
<td>3:00 pm to 6:00 p.m. daily</td>
</tr>
</tbody>
</table>

Single lane closures are permitted between the following hours:

<table>
<thead>
<tr>
<th>Day</th>
<th>Southbound Lanes</th>
<th>Northbound lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday through Friday</td>
<td>9:00 a.m. to 3:00 p.m. daily</td>
<td>9:00 a.m. to 3:00 p.m. daily</td>
</tr>
<tr>
<td></td>
<td>6:00 pm to 6:00 a.m. daily</td>
<td>6:00 pm to 6:00 a.m. daily</td>
</tr>
</tbody>
</table>

When SR 247/Pio Nono is closed to through traffic across the bridge, do not close more than one lane on the travel way in either direction of SR 247 beyond the area of closure between the hours of 6:00 AM to 7:00 PM, Monday through Friday.

For PI 0014899:

1. CR 5813/College Street

Lane and shoulder closures and pacing will NOT be allowed between the following hours:

<table>
<thead>
<tr>
<th>Day</th>
<th>Southbound Lanes</th>
<th>Northbound lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday through Friday</td>
<td>6:00 a.m. to 9:00 a.m. daily</td>
<td>6:00 a.m. to 9:00 a.m. daily</td>
</tr>
<tr>
<td></td>
<td>4:00 pm to 7:00 p.m. daily</td>
<td>4:00 pm to 7:00 p.m. daily</td>
</tr>
</tbody>
</table>

A minimum of one Travel Lane shall remain open to the traveling public at all times (utilizing flagging per GDOT Special Provision Section 150) except during the duration of the full roadway closure of CR 5813/College Street as set forth in Section 18.3.2.1.3.B below.

2. All other roadways:
Lane and shoulder closures and pacing will NOT be allowed between the following hours:

<table>
<thead>
<tr>
<th>Day</th>
<th>Southbound Lanes</th>
<th>Northbound lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday through Friday</td>
<td>7:00 a.m. to 9:00 a.m. daily</td>
<td>7:00 a.m. to 9:00 a.m. daily</td>
</tr>
<tr>
<td></td>
<td>3:00 pm to 6:00 p.m. daily</td>
<td>3:00 pm to 6:00 p.m. daily</td>
</tr>
</tbody>
</table>

Chestnut Street shall remain open to the traveling public at all times during the duration of the full roadway closure of CR 5813/College Street.

**B. Full Roadway Closure**

Do not close any full roadway (all lanes and shoulders) unless the closure is accepted by GDOT and Governmental Entities having jurisdiction of roadways affected by the closure.

GDOT has the right to lengthen, shorten, or otherwise modify the foregoing restrictions as actual traffic conditions may warrant. Utilize workzone law enforcement for all detours.

Submit a Traffic Control Plan for any complete roadway closure for acceptance by GDOT and Governmental Entities having jurisdiction of roadways affected by the closure. Consider availability of local roads and detour distances in the design.

A full roadway closure, involving the simultaneous closure of all lanes, will be allowed for bridge demolition and construction for roadways and in accordance with the durations defined in Volume 1, Exhibit 9.

A full roadway closure shall be complete when the DB Team has constructed and installed final pavement, approach slabs, all guardrail, signing, and permanent striping, and it is determined to be safe to open per Volume 1, Article 7.7.4 of the DBA, and all lanes have been reopened to vehicular traffic.

**C. Holiday Restrictions**

For PI 0014895:

No Work that restricts or interferes with traffic on Pio Nono Avenue will be allowed during the periods specified in Table 18-1. Work on Roff Avenue will not be restricted for the holidays. GDOT has the right to lengthen, shorten, or otherwise modify these restrictions as actual or projected traffic conditions may warrant.

For PI 0014899:

No Work that restricts or interferes with traffic on College Street while the bridge is opened to traffic will be allowed during the periods specified in Table 18-1. Work on Appleton Lane will not be restricted for the holidays. GDOT has the right to lengthen, shorten, or otherwise modify these restrictions as actual or projected traffic conditions may warrant.
Table 18-1: Holiday and Event Restrictions Schedule

<table>
<thead>
<tr>
<th></th>
<th>Event Description</th>
<th>Restriction Begins</th>
<th>Restriction Ends</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Easter (Thursday through Monday)</td>
<td>Thursday at 6:00 a.m.</td>
<td>Monday at 10:00 p.m.</td>
</tr>
<tr>
<td>2.</td>
<td>Memorial Day Weekend (Friday through Monday)</td>
<td>Friday at 6:00 a.m.</td>
<td>Monday at 10:00 p.m.</td>
</tr>
<tr>
<td>3.</td>
<td>Independence Day</td>
<td>July 2 at 6:00 a.m.</td>
<td>Monday following July 4 at 10:00 p.m.</td>
</tr>
<tr>
<td>4.</td>
<td>Labor Day Weekend (Friday through Monday)</td>
<td>Friday at 6:00 a.m.</td>
<td>Monday at 10:00 p.m.</td>
</tr>
<tr>
<td>5.</td>
<td>Thanksgiving Holiday (Wednesday through Monday)</td>
<td>Wednesday at 6:00 a.m.</td>
<td>Monday at 10:00 p.m.</td>
</tr>
<tr>
<td>6.</td>
<td>Christmas/New Year Holiday</td>
<td>December 23 at 6:00 a.m.</td>
<td>January 3 at 10:00 p.m.</td>
</tr>
<tr>
<td>7.</td>
<td>Macon’s International Cherry Blossom Festival (typically in late March) (Friday before, Saturday through Saturday, Sunday)</td>
<td>Friday at 6:00 a.m.</td>
<td>Sunday at 10:00 p.m.</td>
</tr>
</tbody>
</table>

### 18.4 Construction Requirements

Ensure traffic control is in accordance with GDOT accepted TMP and applicable provisions of the MUTCD and GDOT Special Provision Section 150, Traffic Control.

#### 18.4.1 DB Team Responsibility

If at any time GDOT determines the DB Team’s traffic control operations do not meet the intent of the TMP, if applicable, or any specific traffic control plan, immediately revise or discontinue such operations to correct the deficient conditions.

Provide GDOT the names of the certified WTCS and support personnel, and the phone number(s) where they can be reached twenty-four hours per day, seven days per week.

Utilize workzone law enforcement equipped with a marked patrol vehicle and blue flashing lights to enforce traffic laws in construction workzones and administer this service. Deploy workzone law enforcement during lane closures, traffic pacing, and at all other times necessary for the safety of everyone within the Project limits. Coordinate and schedule the utilization of the workzone law enforcement.

Provide a daily work record compiled on a form provided by GDOT, signed by the workzone law enforcement, and signed by the WTCS attesting that the workzone law enforcement was utilized during the time recorded. No separate payment will be made for workzone law enforcement. Coordinate, schedule, and administer workzone law enforcement.

Ensure all milled surfaces are covered before they are opened to traffic.

Payment for workzone law enforcement to be included in Construction Complete.
18.4.2 Access

Maintain existing bicycle and pedestrian access and mobility across all cross streets. Maintain access to existing transit stop locations during construction or provide reasonable alternative locations if applicable.

For PI 0014895:

1. During closure, do not maintain pedestrian access across the bridge and along the closed portions of Roff Avenue, but continue to maintain pedestrian access in the Project areas not impacted by construction.

2. Do not block or impair ingress/egress for emergency response vehicles at Parcel 4 or where emergency response vehicles are parked on other parcels in the Project area. Coordinate with GDOT and the Macon/Bibb Fire Department prior to reconstruction of the driveway and parking area of Parcel 4 to determine alternative parking for vehicles.

3. Do not block access to driveway or parking on Parcels 7 and 9 without providing alternative parking. Coordinate with GDOT to determine acceptable alternate parking areas.

4. Coordinate with Macon-Bibb Transit Authority on transit route impacts along the detour route.
   - Route 1 Vineville/Zebulon Road overlaps portions of the Pio Nono Avenue detour route. The service runs from 6:20 AM through 6:35 PM during the weekdays.
   - Contact: Macon-Bibb County Transit Authority, 200 Cherry Street/Terminal Station, Macon, GA 31201

For PI 0014899:

1. During closure, do not maintain bicycle and pedestrian access across the bridge, but continue to maintain bicycle lanes and sidewalks in the Project area not impacted by construction.

2. Maintain pedestrian access to at least one sidewalk, except during the closure.

3. Do not maintain existing transit route or bus stop during construction. Coordinate with Macon-Bibb Transit Authority to provide a reasonable alternative transit stop location along the detour route.
   - Route 2 Bellevue/Log Cabin/Zebulon Road runs through the College Street corridor and also overlaps portions of the College Street detour route. The service runs from 5:45 AM through 10:58 PM during the weekdays and from 5:45 AM through 7:45 PM on Saturdays.
   - Route 9 Macon Mall/Chambers Road/Macon College overlaps portions of the College Street detour route. The service runs from 5:20 AM through 10:55 PM during the weekdays and from 5:50 AM through 7:55 PM on Saturdays.
   - Temporarily relocate the bus stop sign, trash can, and bench located on the northwest quadrant of the Project at the corner of College Street and College Street

•
(spur) during the construction to the alternate location. Relocate sign to permanent bus stop location after construction is complete.

- Contact: Macon-Bibb County Transit Authority, 200 Cherry Street/Terminal Station, Macon, GA 31201

4. Close Appleton Lane as needed for reconstruction and during the closure of College Street. Do not provide a detour route for Appleton Lane.

5. Do not block access to driveways on the Project, including those on College Street/College Street (spur) located inside the construction limits, without providing alternative parking locations. Coordinate with GDOT and Parcel owners/tenants to determine alternative parking areas. See Section 11.3.9 for Parcel 1 alternative parking.

### 18.4.3 Detours

Maintain all detours, see Attachment 18-1 (Approved Detours). Any proposed alternative alignments require GDOT approval. Provide 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, at all detour interfaces. No improvements associated with ADA will be required outside of the project limits along the detour routes.
19 MAINTENANCE DURING THE DESIGN-BUILD PERIOD

19.1 General
Assume full responsibility for maintaining the Project from NTP 3 through the remainder of the Design-Build Period in a manner that provides a safe and reliable transportation system.

19.2 Administrative Requirements

19.2.1 Standards
Provide activities in this section in accordance with GDOT Standard Specifications 104.05, 105.14, 105.15, Attachment 3-1 (Manuals), Government Approvals, and other provisions of the DB Documents.

19.3 Design Requirements

19.3.1 GDOT Obligation to Repair
GDOT or the appropriate local Governmental Entity will, between the effective date and NTP 3, reasonably perform the type of routine maintenance of each Element Category of the existing improvement that normally occurs in GDOT’s highway maintenance and repair program. Neither GDOT nor the appropriate local Governmental Entity is obligated to extend the residual life of any Element through reconstruction, rehabilitation, restoration, renewal, or replacement.

19.3.2 Joint Project Inspection
Conduct a Joint Project Inspection of the Project area within the Construction Maintenance Limits Plan and obtain GDOT approval no later than 150 days after NTP 1. Perform the physical in-field Joint Project Inspection with a GDOT-authorized representative and/or GDOT in attendance. 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 construction. The area encompasses the entire Project area including areas containing required elements outside of the limits of the Project.

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.

Include the following in the Joint Project Inspection submittal report:

1. 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.

2. 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. Provide a
sample report of a section of the Project to determine the level of expected accuracy and 
increments of the photo documentation.
3. Intermittent photographs along the pavement and shoulders to clearly depict the existing 
condition of the pavement and shoulders that will be utilized during construction. 
Maintain the existing pavement and shoulders to a condition equal to or better than 
existing conditions at all times during the Design-Build Period.
4. Pre-construction digital photographs and high-resolution digital video of existing bench 
marks, temporary bench marks, existing utilities, and trees and plants to remain.
5. Video recording storm sewers and drainage systems and structures prior to the 
beginning of construction within the Construction Maintenance Limits Plan or to the 
nearest structure outside the Construction Maintenance Limits Plan, whichever is 
greater.

19.3.3 Construction Maintenance Limits Plan

Provide a Construction Maintenance Limits Plan as a drawing or set of drawings that highlight 
the exact area of the proposed construction and maintenance responsibilities within the ROW, 
as well as the limits of any Additional Properties to be acquired for the Project. Use this plan as 
the boundary for construction Work and as the exact limits to maintain any element required to 
construct the Project beginning at NTP 3 and through Final Acceptance. Perform all 
maintenance activities within Plan limits in accordance with the GDOT Standard Specifications, 
Construction of Transportation Systems, including:

1. Pavement maintenance, including pothole patching, concrete patching, striping, etc.
2. Existing ITS system and Drainage System continuity
3. Landscaping repair
4. Utility Adjustments
5. Existing lighting system

Provide the final Construction Maintenance Limits Plan no later than 150 days after NTP 1. If 
the Project is broken into separate construction phases, provide and obtain approval of the final 
Construction Maintenance Limits Plan prior to the start of construction of that phase. Ensure the 
Plan shows hash marks or a method to clearly depict the area of the construction maintenance 
limits. Depict in the Construction Maintenance Limits Plan, and obtain prior GDOT approval for, 
all proposed staging and lay-down areas.

Perform all maintenance for any area(s) encroached on by the performance of the construction 
Work, notwithstanding GDOT’s approval of the Construction Maintenance Limits Plan. See 
Section 2 (Project Management) for additional requirements.

Maintain pavement markings including striping.

Maintenance constitutes continuous and effective work prosecuted day by day or at the 
direction of GDOT.
Section 19—Maintenance During the Design-Build Period

19.3.4 Maintenance Management Plan

In conjunction with the Construction Maintenance Limits Plan, prepare a Maintenance Management Plan that outlines the frequency of inspection and repair and/or maintenance of those items under the DB Team’s responsibility. Include in the plan at a minimum the following:

1. Pavement inspection and repair
2. Debris removal on the traveled way
3. Guardrail inspection and safety protections in place where guardrail has been damaged within 48 hours, and repair of damage within 7 days
4. Temporary striping restriping at no longer than 60-day intervals, or more frequently if required
20 BICYCLE AND PEDESTRIAN FACILITIES

20.1 General
Design and construct all bicycle and pedestrian facilities for the Project, if required, according to the requirements included in this section. Ensure the bicycle and pedestrian facilities of this Project support GDOT’s commitment to integrate bicycle and pedestrian travel into Project development. Coordinate the Elements of this Project with the existing and planned trails and other facilities of local and county administrations for pedestrians and cyclists. Design all bicycle and pedestrian facilities according to the documents located in Attachment 3-1 (Manuals).

20.2 Administrative Requirements

20.2.1 Standards
Provide activities in this section in accordance with Attachment 3-1, Government Approvals, and other provisions of the DB Documents.

20.3 Design Requirements

20.3.1 Bicycle Facilities
For PI 0014895:

No requirements.

For PI 0014899:

Ensure bicycle facilities are consistent with State, regional, and local bicycle and pedestrian plans, and accommodate proposed and existing bicycle paths, crossings, and on-street bicycle facilities. Coordinate the design with Governmental Entities design to ensure consistency of use with existing and accommodating proposed bicycle facilities. Refer to GDOT Design Policy Manual, Chapter 9.

20.3.2 Pedestrian Facilities
Design, construct, and maintain sidewalks where sidewalks currently exist and where required by State or Federal regulations. Ensure sidewalks comply with the Title II provisions of the Americans with Disabilities Act (ADA) Accessibility Standards. Install pedestrian signals and curb ramps at all existing and proposed signalized intersections. Design all pedestrian facilities to incorporate the ambulatory, visibility, and auditory needs of all users.

20.3.3 Final Plans
Incorporate the following elements relating to bicycle and pedestrian facilities consistent with the requirements of the DB Documents and all RIDs into the Preliminary and Final Plans:

1. Alignment, profile, cross-section, and materials
2. 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

3. Signing, signalization, and pavement markings

4. Methods of illumination, where applicable

5. Requirements of the Landscape Enhancement Plan and Hardscape Enhancement Plan
21 RESERVED
22 NOISE BARRIERS

No requirements.
23 Transit

23.1 General

See other sections for required coordination with the local transit agency.
Georgia Department of Transportation

Technical Provisions

For

Design-Build Agreement

P.I. Nos. 0014895 and 0014899

Attachment 3-1

MANUALS
Manuals

All Work shall conform with all applicable Manuals and Guidelines developed for and including AASHTO, FHWA, GDOT, and additional requirements stated in this document and reasonably inferred therefrom. It is the Design-Build Team’s responsibility to verify order of the precedence of any State or Federal manual requirement where any potential conflict may exist. The Design-Build Team shall coordinate with the appropriate State and/or Federal agency to confirm the policy and regulations to avoid any conflict of the following manuals prior to design and/or construction. Following is a list of manuals and guidelines that shall be used in the performance of the Work provided that the Work shall not be governed solely by such manuals and guidelines listed herein, and provided further that it is the Design-Build Team’s responsibility to locate and utilize the most current edition in effect at the date identified in Article 7.2.4 of Volume 1, including updates, of all such referenced materials for the Work required.

1. AASHTO – A Policy on Geometric Design of Highways and Streets
2. AASHTO – Guide for High-Occupancy Vehicle Facilities
   https://bookstore.transportation.org/Item_details.aspx?id=114
4. AASHTO – Roadside Design Guide
5. AASHTO – Roadway Lighting Design Guide
10. AASHTO – AWS D1.1/ANSI Structural Welding Code – Steel
    http://www.techstreet.com/cgi-bin/detail?doc_no=AWS%7CD1_1_D1_1M_2008&product_id=1519645
11. AASHTO – D1.5/AIDS D1.5 Bridge Welding Code
    http://www.techstreet.com/cgi-bin/detail?product_id=957255

15. AISC Manual of Steel Construction, referred to as “AISC Specifications”


17. America Disabilities Act Accessibility Guidelines (ADAAG)
   http://www.ada.gov/stdspdf.htm

18. FHWA - Manual on Uniform Traffic Control Devices (MUTCD)
   http://mutcd.fhwa.dot.gov/

19. GDOT – Signing and Marking Design Guidelines

   http://www.dot.ga.gov/PS/Utilities

21. GDOT - Guidelines on Geotechnical Studies [including updates to LRFD requirements dated 1/31/2018 and 2/16/2018]
    http://www.dot.ga.gov/PS/Materials

22. GDOT – STI (Sampling, Testing and Inspection) Quick Guide and Documents
    http://www.dot.ga.gov/PS/Materials

23. GDOT – Qualified Products List (QPL)
    http://www.dot.ga.gov/PS/Materials/QPL

24. GDOT – Pavement Design Manual
    http://www.dot.ga.gov/PS/Materials

25. GDOT – Pavement Type Selection Manual
    http://www.dot.ga.gov/PartnerSmart/DesignManuals/Pavement/Pavement%20Type%20Selection%20Manual.pdf#search=Pavement%20Type%20Selection

26. GDOT – Drainage Design for Highways

27. GDOT – Automated Survey Manual

28. GDOT – Regulations for Driveway and Encroachment Control

29. GDOT – Electronic Data Guidelines
    http://www.dot.ga.gov/PS/DesignManuals

30. GDOT – Plan Development Process

31. GDOT – Plan Presentation Guide
    http://www.dot.ga.gov/PS/DesignManuals

32. GDOT – Preliminary Field Plan Review Checklist
    http://www.dot.ga.gov/PS/DesignManuals/DesignResources
33. GDOT – Final Field Plan Review Checklist
   http://www.dot.ga.gov/PS/DesignManuals/DesignResources

34. GDOT – Design Policy Manual [Revision 5.3 dated 4/24/2018]

35. GDOT – ITS Design Manual

36. GDOT – NPDES General Permit Guidance

37. GDOT – MS4 Special Design Post-Construction Details
   http://www.dot.ga.gov/PartnerSmart/DesignManuals/NPDES/MS4_Special_Design_Details.zip

38. GDOT – Bridge and Structures Design Manual

39. GDOT – Environmental Procedures Manual
   http://www.dot.ga.gov/PS/DesignManuals/EnvironmentalProcedures

40. GDOT – Standard Specifications, Construction of Transportation Systems
    http://www.dot.ga.gov/PS/Business/Source

41. GDOT – Special Provisions and Supplemental Specifications
    http://www.dot.ga.gov/PS/Business/Source

42. GDOT – Construction Standards and Details
    http://mydocs.dot.ga.gov/info/gdotpubs/ConstructionStandardsAndDetails/Forms/AllItems.aspx

43. GDOT – Right of Way Manual

44. GDOT – Acquisition Guide for Local Public Agencies
    http://www.dot.ga.gov/PartnerSmart/DesignManuals/ROW/ROW-AcquisitionGuideforLocalPublicAgenciesSponsors.pdf

45. GDOT – Statewide MS4 Permit

46. GDOT – Design of Post-Construction BMPs

47. Georgia Soil and Water Conservation Commission - Manual for Erosion and Sediment Control in Georgia
    http://gaswcc.georgia.gov/manuals

48. GDOT – Facilities Stormwater Pollution Prevention Plan

49. GDOT – Stormwater System Inspection and Maintenance Manual

51. FHWA Diverging Diamond Interchange Informational Guide

52. FHWA Traffic Detector Handbook

53. FHWA Mitigation Strategies for Design Exceptions

54. FHWA Traffic Monitoring Guide

55. Occupational Safety and Health Administration Standards (OSHA)


57. U. S. Environmental Protection Agency Regulations
   http://www.epa.gov/lawsregs/

58. GDOT – Public Information Policy Manual
   http://www.dot.ga.gov/PartnerSmart/DesignManuals/Environmental/Public%20Involvement%20Plan/PublicInvolvePlan.pdf

59. American Railway Engineering and Maintenance-of-Way Association (AREMA)
   https://www.arema.org/

60. GDOT – Work Zone Safety and Mobility Policy

61. GDOT – Quality Control and Quality Assurance Manual
   http://www.dot.ga.gov/PS/DesignManuals/DesignResources

62. Federal Railroad Administration Regulations
   http://www.fra.dot.gov

63. Public Project Information for Construction and Improvement Projects That May Involve the Railroad (CSX)

64. Public Projects Manual for Projects Which May Impact Norfolk Southern Railway Company (NS)

65. MUTCD – Standards Highway Signs and Markings

   http://www.georgiastormwater.com/

67. Georgia EPD – Coastal Stormwater Supplement to the Stormwater management Manual

68. GDOT – ITS Strategic Deployment Plan (Posted on SharePoint)
69. ITE/AASHTO Traffic Management Data Dictionary (TMDD), Standards for Traffic Management Center to Center Communications Version 2.1

70. AASHTO – A Policy on Design Standards Interstate System

71. Georgia Traffic Incident Management Guidelines

72. GDOT – Construction Manual and Form Documents
   http://www.dot.ga.gov/PartnerSmart/Business/Source/Pages/ConstructionSpecs.aspx

   https://www.iccsafe.org/codes-tech-support/codes/2018-i-codes/ibc

74. Other manuals, documents, procedures and standards as referenced in the DB Documents
Georgia Department of Transportation

Technical Provisions

For

Design-Build Agreement

P.I. Nos. 0014895 and 0014899

Attachment 4-1

ENVIRONMENTAL COMMITMENTS TABLE

– PI 0014895
### A. Resources to be Delineated on the Plans and/or Listed in the Environmental Resource Impact Table (ERIT)

<table>
<thead>
<tr>
<th>Resource Name</th>
<th>Permitted Construction Activity</th>
<th>Refer to</th>
<th>Name and Date of Report or Transmittal</th>
<th>Correctly Shown?</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1</td>
<td>Vineville Historic District</td>
<td>Construction within existing and additional ROW, temporary, and permanent easement</td>
<td>C-1, C-2, C-3, C-4</td>
<td>Historic Resource Survey Report October 1, 2018 Cultural Resources AOE Incomplete</td>
</tr>
<tr>
<td>A-2</td>
<td>Central of Georgia Railway (Norfolk Southern Railroad)</td>
<td>Temporary and permanent easement for bridge modification construction</td>
<td>C-1, C-2, C-3, C-4, E-3, E-4</td>
<td>Survey Report March 5, 2019 ESA Transmittal February 27, 2019</td>
</tr>
<tr>
<td>A-3</td>
<td>Resource 1</td>
<td>No activity</td>
<td>C-1, C-3</td>
<td>Ecology Assessment of Effects April 11, 2019</td>
</tr>
<tr>
<td>A-4</td>
<td>NBSW A (outside the project area)</td>
<td>No activity</td>
<td>C-3</td>
<td></td>
</tr>
<tr>
<td>A-5</td>
<td>Bats</td>
<td>Project construction such that harm to state listed bat species is avoided</td>
<td>E-1</td>
<td></td>
</tr>
<tr>
<td>A-6</td>
<td>Parcel 5 (Norfolk Southern Railroad)</td>
<td>Any activity following HazMat protection measures.</td>
<td>C-5</td>
<td>Environmental Site Assessment Phase Incomplete</td>
</tr>
<tr>
<td>A-7</td>
<td>Parcel 1</td>
<td>Any activity following HazMat protection measures if Phase II Testing identifies parcel as a UST/HazMat site.</td>
<td>C-5, E-2</td>
<td></td>
</tr>
<tr>
<td>A-8</td>
<td>Parcel 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-9</td>
<td>Parcel 4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### B. Special Provisions (Attach all special provisions with transmittal letters to the commitments table, if available)

<table>
<thead>
<tr>
<th>Special Provision</th>
<th>Purpose</th>
<th>Est. Cost</th>
<th>SP's Latest Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-1</td>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## C. ERIT Comments and Design Features

<table>
<thead>
<tr>
<th>ERIT Comment or Design Feature</th>
<th>Description</th>
<th>Est. Cost</th>
<th>Correctly Shown?</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-1 Plan Note</td>
<td>Resources A-1, A-2, A-3 shall be shown as an “Environmentally Sensitive Area” on Plan Sheets and delineated as applicable with orange barrier fencing.</td>
<td>Negligible</td>
<td>No</td>
</tr>
<tr>
<td>C-2 ERIT Comment</td>
<td>The Design-Build Team will ensure that no construction-related activities or access occur beyond the Orange Barrier Fencing protecting this resource per the RFP Volume 2.</td>
<td>“</td>
<td>Yes</td>
</tr>
<tr>
<td>C-3 ERIT Comment</td>
<td>The Design-Build Team shall ensure that no construction-related activities (such as the use of easements, staging, construction, vehicular use, borrow or waste activities, sediment basins, and trailer placement), other than those shown on the RFP plans, occur within the boundary of this resource.</td>
<td>“</td>
<td>“</td>
</tr>
<tr>
<td>C-4 ERIT Comment</td>
<td>Adequate protective measures should be utilized to ensure historic resources and features within or adjacent to the project area are not damaged by construction activities.</td>
<td>“</td>
<td>“</td>
</tr>
<tr>
<td>C-5 ERIT Comment</td>
<td>Any soil excavated during construction activities at this location must be disposed of at a permitted lined municipal solid waste landfill if Phase II Testing identifies parcel as a UST/HazMat site.</td>
<td>“</td>
<td>“</td>
</tr>
</tbody>
</table>

## D. Necessary Permits, Buffer Variances and Mitigation Credits

<table>
<thead>
<tr>
<th>Permit, Variance, etc.</th>
<th>Add'l Info (permit expiration date, number of credits needed, etc…)</th>
<th>Est. Cost</th>
<th>Acquired?</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-1 None</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## E. Other Commitments or Requirements

<table>
<thead>
<tr>
<th>Pre-, During, or Post</th>
<th>Commitment</th>
<th>Responsible party</th>
<th>Est. Cost</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-1 Preconstruction</td>
<td>The Design-Build Team will survey the bridge for bats and nesting birds to verify if exclusionary devices as detailed in Supplemental Provision 107.23(G) would be required prior to any demolition or construction activities.</td>
<td>Design-Build Team</td>
<td>$5,000</td>
<td>Construction / ECM Signature Upon Completion</td>
</tr>
<tr>
<td>E-2 Preconstruction</td>
<td>Complete Phase II Environmental Site Assessment to test potential UST/HazMat</td>
<td>Office of Materials and Testing</td>
<td>$65,000</td>
<td>Incomplete</td>
</tr>
</tbody>
</table>

Estimated Costs are for planning purpose only, in current dollars as of date updated.
<table>
<thead>
<tr>
<th>PI#: 0014895, County: Bibb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Updated: 4/12/2019</td>
</tr>
<tr>
<td>Transmittal Date for Plans Reviewed by OES (if applicable): 03/06/2019</td>
</tr>
</tbody>
</table>

| Page 3 of 3 |

---

**ENVIRONMENTAL COMMITMENTS TABLE**

<table>
<thead>
<tr>
<th>E-3</th>
<th>During Construction</th>
<th>The Design-Build Team will coordinate construction activities with the Norfolk Southern Railway.</th>
<th>Design-Build Team</th>
<th>Negligible</th>
<th>Construction / ECM Signature Upon Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-4</td>
<td>During Construction</td>
<td>Advance notice of the Pio Nono Avenue and Roff Avenue road closing will be provided to the public, local emergency response services, Macon-Bibb County Schools, and the Macon Transit Authority. Alternate routes will be coordinated with emergency response services, Macon-Bibb County Schools, and the Macon Transit Authority.</td>
<td>Design-Build Team</td>
<td>Negligible</td>
<td>Construction / ECM Signature Upon Completion</td>
</tr>
</tbody>
</table>

---

If Project is Complete or Under Construction, Area or Construction Engineer affirms that all Special Provisions, Plan Notes and During Construction Commitments were or are being adhered to during the project’s construction.

Please Print Name and Title: ____________________________ Signature: ________________ Date: __________ Please provide an explanation if unable to sign.

Total Estimated Cost: $70,000

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Estimated Costs are for planning purpose only, in current dollars as of date updated.
ENVIRONMENTAL COMMITMENTS TABLE
– PI 0014899
**ENVIRONMENTAL COMMITMENTS TABLE**

P.I#: 0014899, County: Bibb

- Review If no commitments, NEPA may approve for all.
- GDOT PM: Mathew Fowler
- GDOT Signature/Date: April 16, 2019
- EOR: [Signature/Date: 4/16/2019]

Date Updated: 4/15/2019 | Stage: GEPA Approval
Transmission Date for Plans Reviewed by OES (if applicable): 03/06/2019

Air/Noise: _____ AT 4/5/19 _____ Arch: _____ LF 4/12/19 _____
Eco: _____ WG 4/10/19 _____ Hist: _____ MWH 4/12/19 _____
NEPA: _____ JA 4/16/19 _____

---

**A. Resources to be delineated on the Plans and/or Listed in the Environmental Resource Impact Table (ERIT)**

<table>
<thead>
<tr>
<th>Resource Name</th>
<th>Permitted Construction Activity</th>
<th>Refer to</th>
<th>Name and Date of Report or Transmittal</th>
<th>Correctly Shown?</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1 Macon Historic District</td>
<td>Viaduct replacement within existing and additional right-of-way, and temporary and permanent easement</td>
<td>C-1, C-2, C-4, C-5, E-1, E-2, E-3, E-8, E-9</td>
<td>Historic Resource Survey Report July 25, 2018 Cultural Resources AOE Incomplete</td>
<td>Yes Yes</td>
</tr>
<tr>
<td>A-2 Central of Georgia Railway (Norfolk Southern Railroad)</td>
<td>Temporary and permanent easement for viaduct replacement construction</td>
<td>C-1, C-2, E-2, E-6</td>
<td>“</td>
<td>“ “</td>
</tr>
<tr>
<td>A-3 College Street Viaduct</td>
<td>Viaduct demolition and replacement</td>
<td>C-1, C-2, C-6, E-9</td>
<td>“</td>
<td>“ “</td>
</tr>
<tr>
<td>A-4 Resource 1</td>
<td>No activity</td>
<td>C-1, C-2, C-3, E-8</td>
<td>Survey Report March 11, 2019</td>
<td>Yes “</td>
</tr>
<tr>
<td>A-5 Historic Streetcar Tracx</td>
<td>Viaduct demolition and replacement</td>
<td>B-1, C-4, E-7, E-8</td>
<td>“</td>
<td>No “</td>
</tr>
<tr>
<td>A-6 Bats</td>
<td>Project construction such that harm to state listed bat species is avoided</td>
<td>E-1</td>
<td>Ecology Assessment of Effects April 11, 2019</td>
<td>No Yes</td>
</tr>
<tr>
<td>A-7 Parcel 3</td>
<td>Any activity following HazMat protection measures if Phase II Testing identifies parcel as a UST/HazMat site.</td>
<td>C-6, E-4</td>
<td>Environmental Site Assessment Phase I April 1, 2019</td>
<td>“ “</td>
</tr>
</tbody>
</table>

---

**B. Special Provisions (Attach all special provisions with transmittal letters to the commitments table, if available)**

<table>
<thead>
<tr>
<th>Special Provision</th>
<th>Purpose</th>
<th>Est. Cost</th>
<th>SP’s Latest Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special Provision 107.13 (J)</td>
<td>Possible Historic Streetcar Resources: The Design-Build Team shall ensure that an archaeologist be employed to supervise the monitoring of all land disturbing activities associated with demolition of the existing viaduct, approach slab, full depth pavement replacement, and utility relocation within the footprint of the roadway along College Street. Should street car tracks or evidence of street car tracks be uncovered, the archaeologist will record the site according to guidance set forth by GDOT according to the attached special provision.</td>
<td>$20,000</td>
<td>April 2019</td>
</tr>
</tbody>
</table>

Estimated Costs are for planning purpose only, in current dollars as of date updated.
## C. ERIT Comments and Design Features

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<thead>
<tr>
<th>ERIT Comment or Design Feature</th>
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<th>Est. Cost</th>
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<tbody>
<tr>
<td>C-1 Plan Note</td>
<td>Resources A-1, A-2, A-3, and A-4 shall be shown as an “Environmentally Sensitive Area” on Plan Sheets and delineated as applicable with orange barrier fencing.</td>
<td>Negligible</td>
<td>Yes</td>
</tr>
<tr>
<td>C-2 ERIT Comment</td>
<td>The Design-Build Team will ensure that no construction-related activities or access occur beyond the Orange Barrier Fencing protecting this resource per the RFP Volume 2.</td>
<td>“”</td>
<td>“”</td>
</tr>
<tr>
<td>C-3 ERIT Comment</td>
<td>The Design-Build Team shall ensure that no construction-related activities (such as the use of easements, staging, construction, vehicular use, borrow or waste activities, sediment basins, and trailer placement), other than those shown on the approved plans, occur within the boundary of this resource.</td>
<td>“”</td>
<td>“”</td>
</tr>
<tr>
<td>C-4 ERIT Comment</td>
<td>Adequate protective measures should be utilized to ensure historic resources and features within or adjacent to the project area are not damaged by construction activities (such as the use of easements, staging, construction, vehicular use, borrow or waste activities, sediment basins, and trailer placement).</td>
<td>“”</td>
<td>“”</td>
</tr>
<tr>
<td>C-5 ERIT Comment</td>
<td>Granite curbing encountered within the project area should be retained to the greatest extent possible or replaced with granite curbing specified in the RFP.</td>
<td>$70,300</td>
<td>“”</td>
</tr>
<tr>
<td>C-6 ERIT Comment</td>
<td>Any soil excavated during construction activities at this location must be disposed of at a permitted lined municipal solid waste landfill if Phase II Testing identifies parcel as a UST/HazMat site.</td>
<td>Negligible</td>
<td>“”</td>
</tr>
</tbody>
</table>

## D. Necessary Permits, Buffer Variances and Mitigation Credits

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<th>Est. Cost</th>
<th>Acquired?</th>
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<tbody>
<tr>
<td>D-1 None</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## E. Other Commitments or Requirements

<table>
<thead>
<tr>
<th>Pre-, During, or Post</th>
<th>Commitment</th>
<th>Responsible party</th>
<th>Est. Cost</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-1 Preconstruction</td>
<td>The Design-Build Team will survey the viaduct for bats and nesting birds to verify if exclusionary devices as detailed in Supplemental Provision 107.23(G) would be required prior to any demolition or construction activities.</td>
<td>Design-Build Team</td>
<td>$5,000</td>
<td>Construction / ECM Signature Upon Completion</td>
</tr>
<tr>
<td>E-2 Preconstruction</td>
<td>GDOT will complete photographic documentation of the College Street Viaduct prior to demolition in accordance with the mitigation agreement.</td>
<td>GDOT</td>
<td>Negligible</td>
<td>Incomplete</td>
</tr>
</tbody>
</table>

Estimated Costs are for planning purpose only, in current dollars as of date updated.
| E-3 | Preconstruction & During Construction | A green space on adjacent city property will be designed and constructed in coordination with GDOT for the Macon Historic District in accordance with the mitigation agreement. The green space will include the following features: two interpretive panels regarding the history and significance of the area, a bench, a bus shelter, one new light post for those utilizing the green space, and one trash receptacle. If possible, any brick salvaged from the demolition of the College Street Viaduct will be used. Green space maintenance will be the responsibility of the City of Macon-Bibb County. | Design-Build Team and GDOT | $57,400 | Construction / ECM Signature Upon Completion |
| E-4 | Preconstruction | Complete Phase II Environmental Site Assessment to test potential UST/HazMat | Office of Materials and Testing | $65,000 | Incomplete |
| E-5 | During Construction | If possible, the Design-Build Team will salvage brick following demolition of the College Street Viaduct for use in the green space. | Design-Build Team | Negligible | Construction / ECM Signature Upon Completion |
| E-6 | During Construction | The Design-Build Team will coordinate construction activities with the Norfolk Southern Railway. | Design-Build Team | Negligible | Construction / ECM Signature UponCompletion |
| E-7 | During Construction | Advance notice of the College Street road closing will be provided to the public, local emergency response services, Macon-Bibb Trash Pickup Service, Navicent Health Medical Center, and the Macon Transit Authority. Alternate routes will be coordinated with emergency response services, Navicent Health Medical Center, and the Macon Transit Authority. | Design-Build Team | Negligible | Construction / ECM Signature Upon Completion |
| E-8 | During Construction | The existing viaduct will be replaced with a single span bridge with a barrier utilizing brick panels with locally procured brick from the Cherokee Brick Company (Mercer Blend) or equal as approved by the owner for the inward facia, and decorative Guardsman Panel fence or equal as approved by the owner. | Design-Build Team | $77,700 | Construction / ECM Signature Upon Completion |

Estimated Costs are for planning purpose only, in current dollars as of date updated.
<table>
<thead>
<tr>
<th>PI#</th>
<th>Description</th>
<th>Design-Build Team</th>
<th>Construction / ECM Signature Upon Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-9</td>
<td>During Construction</td>
<td>Negligible</td>
<td>$295,400</td>
</tr>
</tbody>
</table>

Full depth reconstruction of the roadway and removal of underlying brick pavement will occur across the full width of College Street beginning at a point 60 feet southwest of the west end of the existing College Street viaduct and extending to a point 60 feet northeast of the east end of the existing College Street viaduct. Additional areas of removal of the underlying brick pavement include a variable width of pavement beginning on the southeasterly side of College Street at the front sidewalk entrance to 1040 College Street and extending to the full width reconstruction on the west side of the existing College Street viaduct. Width of pavement removal in this area is variable with a maximum removal width of 18 feet. A 5-foot width of pavement removal, if required for installation of drainage structures, will occur along and adjacent to the north and south curbs of College Street and will not extend beyond 870 College Street on the east side of the existing viaduct. All other areas will mill to a maximum depth of 1.25 inches and then overlay with new roadway material.

If Project is Complete or Under Construction, Area or Construction Engineer affirms that all Special Provisions, Plan Notes and During Construction Commitments were or are being adhered to during the project’s construction.

Please Print Name and Title: ____________________________ Signature: ________________ Date: __________ Please provide an explanation if unable to sign.

Estimated Costs are for planning purpose only, in current dollars as of date updated.
Georgia Department of Transportation

Technical Provisions

For

Design-Build Agreement

P.I. Nos. 0014895 and 0014899

Attachment 4-3

SPECIAL PROVISION – PI 0014899 SECTION 107.13.J
Add the following to Subsection 107.13:

J. Monitoring for Potential Historic Streetcar Resources

The following condition is intended as a minimum to protect and record possible historic streetcar resources within the project’s area of potential effect along College Street.

1. The Design Build (DB) Team will ensure that an archaeologist who meets the Secretary of Interior’s Guidelines for Professional Qualifications Standards, and prequalified in Area Class 1.06(f), shall be employed to supervise the monitoring of all construction activities associated with demolition of the existing bridge, approach slab, full depth pavement replacement, and utility relocation within the footprint of the roadbed along College Street. Prior to receipt of NTP 3 and the start of construction, the DB Team archaeologist shall coordinate with Georgia Department of Transportation (GDOT) Office of Environmental Services on the development of a Standard Treatment Plan developed using the guidance outlined in the 2015 Historic Streetcar Archaeological Sites Programmatic Agreement. After receipt of NTP 3, the DB Team archaeologist shall coordinate with the GDOT project archaeologist on the proposed monitoring schedule no later than two weeks prior to ground disturbance on the above project. The monitoring shall include the recordation and reporting of all exposed subsurface archaeological features or artifact concentrations located during construction. If any such features or concentrations are located by the DB Team archaeologist during monitoring, she/he shall notify the GDOT project archaeologist immediately at (404) 631-1234. Construction activity shall be halted in the immediate vicinity of the resource(s) to provide sufficient time for the DB Team archaeologist to evaluate their significance, and allow for their proper excavation and recovery. The work stoppage will not exceed the minimum time necessary for completion of this work for each occurrence of significant archaeological resources. Time necessary to record streetcar resources will not be considered a Relief and/or Compensation Event. The DB Team archaeologist shall document the monitoring results by completing a Monitoring Report and an archaeological site form (if needed). Within two (2) weeks of completion of all activities requiring monitoring, the DB Team archaeologist shall submit a copy of the draft Monitoring Report and site form(s) to the GDOT project archaeologist via the Archaeology Submittals Inbox (ArchSubmittals@dot.ga.gov) for review and approval.
Georgia Department of Transportation

Technical Provisions

For

Design-Build Agreement

P.I. Nos. 0014895 and 0014899

Attachment 4-4

Orange Barrier Fence Locations
Orange Barrier Fence Location Map

Pio Nono Ave over Central of Georgia Railroad Company
PI # 0014895
Bibb, GA
SHEET 1 OF 3
0014895 PIO NONO AVENUE – Sheet 1 Orange Barrier Fence Placement

Place a segment of orange barrier fence along the easterly side of 2602 Stanislaus Circle, beginning at the intersection of the Central of Georgia Rail Road Company right-of-way line and a 40 foot offset from the existing Pio Nono Avenue curb. Extend the orange barrier fence north a distance of 16 feet to the south edge of the driveway to 2602 Stanislaus Circle. Provide an opening in the orange barrier fence at the driveway entrance to 2602 Stanislaus Circle that allows for the movement of the existing gate. Beginning at the north side of the existing gate, place orange barrier fence immediately adjacent to the east side of the existing brick privacy fence located on the east side of 2602 Stanislaus Circle. Extend the orange barrier fence 180 feet to the north along the existing brick wall and terminate at the gate located at Stanislaus Circle.

The graphic depiction is an approximation of the location for the Orange Barrier Fence (OBF) based on the written description. It is understood and acknowledged by the DB Team that it is the DB Team’s responsibility to comply with the requirements of the Environmental Commitments Table regarding the OBF. The DB Team is not entitled to rely on GDOT’s depiction of the OBF as complete or accurate.
Orange Barrier Fence Location Map
Pio Nono Ave over Central of Georgia Railroad Company
PI # 0014895
Bibb, GA
SHEET 2 OF 3
0014895 PIO NONO AVENUE – Sheet 2 Orange Barrier Fence Placement

Place a segment of orange barrier fence along the east exterior of the Macon Bibb Fire Station Number 6 located at 525 Pio Nono Avenue. Omit orange barrier fence in front of doors.

The graphic depiction is an approximation of the location for the Orange Barrier Fence (OBF) based on the written description. It is understood and acknowledged by the DB Team that it is the DB Team’s responsibility to comply with the requirements of the Environmental Commitments Table regarding the OBF. The DB Team is not entitled to rely on GDOT’s depiction of the OBF as complete or accurate.
Orange Barrier Fence Location Map
Pio Nono Ave over Central of Georgia Railroad Company
PI # 0014895
Bibb, GA
SHEET 3 OF 3
0014895 PIO NONO AVENUE – Sheet 3 Orange Barrier Fence Placement

Place a segment of orange barrier fence along the northerly property line of 510 Pio Nono Avenue (Hudspeth Animal Hospital) beginning at the northwesterly corner of the existing asphalt parking lot and extending north to the edge of curb at Roff Avenue, locating the orange barrier fence between the concrete roof of the 510 Pio Nono Avenue basement and the edge of sidewalk. From this point extend the orange barrier fence to the east a distance of 110 feet along Roff Avenue and adjacent to the north exterior of the existing structure, to the northeast corner of the existing structure.

The graphic depiction is an approximation of the location for the Orange Barrier Fence (OBF) based on the written description. It is understood and acknowledged by the DB Team that it is the DB Team’s responsibility to comply with the requirements of the Environmental Commitments Table regarding the OBF. The DB Team is not entitled to rely on GDOT’s depiction of the OBF as complete or accurate.
0014899 COLLEGE STREET – Sheet 1 Orange Barrier Fence Placement

Place a segment of orange barrier fence beginning 2 feet northeast of the driveway of 1040 College Street, 36.5 foot offset from the College Street existing curb and extend the orange barrier fence along the northwesterly side of the property a length of approximately 95 feet to the front entrance sidewalk to 980 College Street, 23 foot offset from the existing College Street curb.

Place a segment of orange barrier fence beginning on the easterly side of the front entrance sidewalk to 980 College Street, 20 foot offset from the existing College Street curb and extend the orange barrier fence 45 feet along the northwesterly side of 980 College Street to a point 25.5 foot offset from the existing College Street curb and 21 feet west of the gravel driveway to 980 College Street. From this point extend the orange barrier fence to the south 12 feet. Maintain access at sidewalks and driveways.

Place a segment of orange barrier fence along the southwest side of 1035 College Street, adjacent to the edge of existing College Street sidewalk, 9 foot offset of the existing College Street curb. Provide an opening in the orange barrier fence at the sidewalk entrance to 1035 College Street.

Place a segment of orange barrier fence along the southwest side of 1021 College Street, adjacent to the edge of existing College Street sidewalk, 8 foot offset from the existing College Street curb. Provide an opening in the orange barrier fence at the sidewalk entrance. Place orange barrier fence along the edge of the concrete driveways on both the southwesterly and northeasterly sides of 1021 College Street, extending the orange barrier fence from the College Street sidewalk to within 2 feet of the 1021 College Street property line, a 20 foot offset from the existing College Street curb.

Place a segment of orange barrier fence along the southwest side of 1005 College Street, adjacent to the edge of existing College Street sidewalk, 8 feet offset from the existing College Street curb. Provide an opening in the orange barrier fence at the sidewalk entrance to the property. Place orange barrier fence along the edge of the concrete driveway on the southwesterly side of 1005 College Street, extending the orange barrier fence from the College Street sidewalk to within 2 feet of the 1005 College Street property line, a 20 foot offset from the existing College Street curb.

Place a segment of orange barrier fence along the southwest side of 1001 College Street, adjacent to the backfilled side of the brick retaining wall, 8 foot offset from the existing College Street curb. Provide an opening in the orange barrier fence at the sidewalk entrance to 1001 College Street.

The graphic depiction is an approximation of the location for the Orange Barrier Fence (OBF) based on the written description. It is understood and acknowledged by the DB Team that it is the DB Team’s responsibility to comply with the requirements of the Environmental Commitments Table regarding the OBF. The DB Team is not entitled to rely on GDOT’s depiction of the OBF as complete or accurate.
Orange Barrier Fence Location Map
College St over Central of Georgia Railroad Company
PI # 0014899
Bibb, GA
SHEET 2 OF 2
0014899 COLLEGE STREET – Sheet 2 Orange Barrier Fence Placement

Place a segment of orange barrier fence along the westerly property line of 885 College Street beginning at a point 58 foot offset from the existing College Street curb and extending south along the westerly property line to the southeast corner of the property, a distance of approximately 37 feet. From this point extend orange barrier fence a distance of 12 feet to the east paralleling the southeasterly property line of 885 College Street but remaining within the right-of-way. Provide an opening in the orange barrier fence at the driveway entrance to 885 College Street.

Place a segment of orange barrier fence adjacent to the east side of the driveway to 885 College Street beginning at a point 2 feet from the property line and extending a distance of 14 feet to the edge of existing College Street sidewalk, 9 foot offset from the existing College Street curb. From this point place orange barrier fence along the southeasterly edge of sidewalk to 885 College Street, providing an opening in the orange barrier fence at the front sidewalk entrance to 885 College Street.

Place a segment of orange barrier fence along the southeasterly edge of sidewalk at 855 College Street and 825 College Street, 9 foot offset from the existing College Street curb. Provide an opening in the orange barrier fence at the driveway entrance to 855 College Street. Extend orange barrier along 825 College Street to the end project limit.

Place a segment of orange barrier fence along the northwesterly edge of sidewalk at 870 College Street, 844 College Street, and 826 College Street, 10 foot offset from the existing College Street curb. At 870 College Street the orange barrier fence is to be placed behind the brick edging. Provide openings in the orange barrier fence at the sidewalk entrance to 870 College Street, driveway entrance to 844 College Street, sidewalk entrance to 844 College Street, and driveway entrance to 826 College Street.

The graphic depiction is an approximation of the location for the Orange Barrier Fence (OBF) based on the written description. It is understood and acknowledged by the DB Team that it is the DB Team’s responsibility to comply with the requirements of the Environmental Commitments Table regarding the OBF. The DB Team is not entitled to rely on GDOT’s depiction of the OBF as complete or accurate.
Georgia Department of Transportation

Technical Provisions

For

Design-Build Agreement

P.I. Nos. 0014895 and 0014899

Attachment 5-1

EXISTING RIGHT OF WAY AND REQUIRED RIGHT OF WAY
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<th>Land Lot No.</th>
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<th>Land District</th>
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**Drawing No.**

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**State of Georgia**

**Right of Way Map**

**Project No.** 60-0003

**Land District** N/A

**Department of Transportation**

**Date**

**Revision**
Georgia Department of Transportation

Technical Provisions

For

Design-Build Agreement

P.I. Nos. 0014895 and 0014899

Attachment 6-1

LEGAL REGULATIONS AND RESPONSIBILITY TO THE PUBLIC

SS 107 Legal Regulations and Responsibility to the Public
Delete Section 107 and Substitute the following:

107.01 Laws to Be Observed
The Contractor shall keep fully informed of all Federal and State laws, all local laws, ordinances, codes, and regulations and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any manner affect those engaged or employed on The Work, or which in any way affect the conduct of The Work. The Contractor shall at all times observe and comply with all such laws, ordinances, codes, regulations, orders, decrees, and permits; and shall protect and indemnify the Department and its representatives against any claim or liability arising from or based on the violation of any such law, ordinance, code, regulation, order, decrees, and permits, whether by himself, his employees, subcontractors, or agents.

107.02 Permits and Licenses
The Contractor shall procure all permits and licenses, pay all charges, taxes, and fees, and give all notices necessary and incidental to the due and lawful prosecution of The Work.

107.03 Patented Devices
If the Contractor employs any design, device, material, or process covered by letters of patent or copyright, he shall provide for such use by suitable legal agreement with the patentee or owner. The Contractor and the Surety shall indemnify and save harmless the Department from any and all claims for infringement by reason of the use of any such patented design, device, material, or process, or any trademark or copyright, and shall indemnify the Department for any costs, expenses, and damages which it may be obliged to pay by reason of any infringement, at any time during the prosecution or after the completion of The Work.

107.04 Restoration of Surfaces Opened By Permit
The right to construct or reconstruct any utility service in the highway or street and to grant permits for the same at any time, is expressly reserved by the Department for the proper authorities of the municipality or county in which The Work is done and the Contractor shall not be entitled to any damages either for the digging up of the street or highway, or for any delay occasioned thereby.

Any individual, firm, or corporation wishing to make an opening in the street or highway must secure a permit from the Department. The Contractor shall allow parties bearing such permits, and only those parties, to make openings in the street or highway. When ordered by the Engineer, the Contractor shall make in an acceptable manner all necessary repairs due to such openings and such necessary work will be paid for as Extra Work, or as provided in the Specifications, and will be subject to the same conditions as original work performed.

107.05 Federal-Aid Provisions
When the United States Government pays all or any part of the cost of a project, the Federal laws and the rules and regulations made pursuant to such laws must be observed by the Contractor, and The Work shall be subject to the
inspection of the appropriate Federal agency. Such inspection shall in no sense make the Federal Government a party to this Contract and will in no way interfere with the rights of either party hereunder.

107.06 Sanitary Provisions
The Contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of his employees as may be necessary to comply with the requirements of the State Department of Health and other authorities having jurisdiction, and shall permit no public nuisance.

107.07 Public Convenience and Safety
The Contractor shall at all times so conduct The Work as to assure the least possible obstruction of traffic. The safety and convenience of the general public and the residents along the highway and the protection of persons and property shall be provided for by the Contractor as specified under Subsection 104.05, Subsection 107.09, Section 150, the Project Plans, and Special Provisions.

Traffic whose origin and destination is within the limits of the Project shall be provided ingress and egress at all times unless otherwise specified in the Plans or Special Provisions. The ingress and egress includes entrance and exit via driveways at the various properties, and access to the intersecting roads and streets. The Contractor shall maintain sufficient personnel and equipment on the project at all times, particularly during inclement weather, to ensure that ingress and egress are provided when and where needed.

Two-way traffic shall be maintained at all times unless otherwise specified or approved. The Contractor shall not stop traffic without permission granted by the Engineer.

All equipment used on The Work shall come equipped with factory-installed mufflers, or manufacturer’s recommended equivalent, in good condition. These mufflers shall be maintained in good condition throughout the construction period.

107.08 Railroad-Highway Provisions
All work to be performed by the Contractor on a railroad company’s right-of-way or property shall be done in a manner satisfactory to the chief engineer of the railroad company, or his authorized representative, and shall be performed at such times and in such manner as not to unnecessarily interfere with the movement of trains or traffic upon the track of the railroad company. The Contractor shall use all reasonable care and precaution in order to avoid accidents, damage, or unnecessary delay or interference with the railroad company’s trains or other property, or property of tenants of railroad company.

The Contractor shall notify the railroad company and obtain its approval before commencing work on the railroad company’s right-of-way or property.

The Contractor shall determine what measures are required by the railroad company to protect its operations and right-of-way or property during construction. Such protection may include the use of a flagger or flaggers provided by the railroad company. The Contractor shall be responsible for ensuring that the required protection is provided and shall pay the railroad company directly for any and all such services which may be required to accomplish the construction unless otherwise specified.

Any temporary grade crossings or other means needed during construction by the Contractor for transporting materials of any nature and/or equipment across the railroad tracks will be the responsibility of the Contractor to handle directly with the railroad company and bear all costs incidental to such crossings including flagging services provided by the railroad company.

A “Special Provisions for the Protection of Railroad Interests” may be included in the proposal to stipulate insurance and other requirements of the railroad company.

107.09 Barricades and Danger, Warning, and Detour Signs
The Contractor shall furnish, install, and maintain all necessary and required barricades, signs, and other traffic control devices in accordance with these Specifications, Project Plans, Special Provisions, and the MUTCD, and take all necessary precautions for the protection of the work and safety of the public.

Unless otherwise specified, all traffic control devices furnished by the Contractor shall remain the property of the Contractor.
107.10 Forest Protection

In carrying out work within or adjacent to State or National Forests, or any other forests, parks, or other public or private lands, the Contractor shall obtain necessary permits and comply with all of the regulations of the appropriate authorities having jurisdiction over such forest, park, or lands. The Contractor shall keep the areas in an orderly condition, dispose of all refuse, obtain permits for the construction and maintenance of all construction camps, stores, warehouses, residences, latrines, cesspools, septic tanks, and other structures in accordance with the requirements of the appropriate authority.

The Contractor shall take all reasonable precautions to prevent and suppress forest fires and shall require his employees and subcontractors, both independently and at the request of forest officials, to do all reasonably within their power to prevent and suppress and to assist in preventing and suppressing forest fires; to notify a forest official at the earliest possible moment of the location and extent of any fire seen by them; and to extinguish or aid in extinguishing nearby fires.

107.11 Construction Over or Adjacent to Navigable Waters

A. Navigation to Be Protected

Since navigable waterways are under the jurisdiction of the United States Coast Guard and/or the United States Army Corps of Engineers, all work done in, over, on or adjacent to such waters shall comply with their requirements. Free navigation shall not be impeded, and navigable depths shall be maintained.

The Contractor shall comply with permits issued by the United States Coast Guard and/or the United States Army Corps of Engineers, and the Contractor shall obtain and comply with other permits in accordance with the requirements of Subsection 107.02

Special Provisions for environmental protection may be included in the proposal to stipulate environmental commitments and other requirements.

B. Obstructions to be Removed

When the construction has progressed enough to permit removal, all falsework, piling and other obstructions shall be removed to the satisfaction of the Federal agency having jurisdiction. In all cases such clearing must be done thoroughly before The Work will be accepted by the Department.

107.12 Use of Explosives

When the use of explosives is necessary for the prosecution of The Work, the Contractor shall exercise the utmost care not to endanger life or property, and shall obey all State, Federal and other Governmental regulations applying to transportation, storage, use, and control of such explosives. The Contractor shall be completely responsible for any and all damage resulting from the transportation, storage, use, and control of explosives in the prosecution of The Work by the Contractor, the Contractor’s agents, or employees; and shall hold the Department harmless from all claims of damages resulting in any manner therefrom.

The Contractor shall notify each public utility owner having structures or other installations, above or below ground, near the site of The Work of his intention to use explosives. Such notice shall be given sufficiently in advance to enable the utility owners to take such steps as they may deem necessary to protect their property from injury. Such notice shall not relieve the Contractor of responsibility for all damages resulting from his blasting operations.

All explosives shall be stored securely in compliance with all laws and ordinances, and all such storage places shall be clearly marked DANGEROUS EXPLOSIVES. Explosives and detonators shall be stored in separate storage facilities in separate areas. Where no laws or ordinances apply, locked storage shall be provided satisfactory to the Engineer, never closer than 1,000 ft (300 m) from any travel-road, building, or camping area.

In all cases where the transport, storage, or use of explosives is undertaken, such activities shall be controlled and directed by fully qualified representatives of the Contractor.

Whenever electric detonators are used, all radio transmitters shall be turned off within a radius of 500 ft (150 m). No blasting supplies shall be transported in vehicles with two-way radio unless the transmitter is turned off, or extra shielding precautions are taken. Appropriate signs shall be placed so as to give ample warning to anyone driving a vehicle equipped with two-way radio. Electrical detonators will not be used within 500 ft (150 m) of a railroad.
Submit a blasting plan to the Engineer a minimum of five working days prior to use of explosives that provides details of the proposed blasting plan, including, but not limited to, the type and amount of explosives, the shot sequence, the description of and distance to the closest inhabitable structure, and other information as requested by the Engineer. Submission of blasting plan does not relieve the contractor of the responsibility for the adequate and safe performance of the blasting.

107.13 Protection and Restoration of Property and Landscape

A. General Provisions

The Contractor shall be responsible for the preservation of all public and private property, crops, fish ponds, trees, monuments, highway signs and markers, fences, grassed and sodded areas, etc. along and adjacent to the highway, and shall use every precaution necessary to prevent damage or injury thereto, unless the removal, alteration, or destruction of such property is provided for under the Contract. The Contractor shall use suitable precaution to prevent damage to all underground structures, whether shown on the Plans or not, and shall protect carefully from disturbance or damage, all land monuments and property marks until the Engineer has witnessed or otherwise referenced their location and shall not move them until directed. The Contractor shall not willfully or maliciously injure or destroy trees or shrubs, and he shall not remove or cut them without proper authority.

The Contractor shall be responsible for all sheet piling, shoring, underpinning, etc., as may be required for the protection of abutting property, nearby buildings, streets, and the like.

The Contractor shall be responsible for all damage or injury to property of any character, during the prosecution of The Work, resulting from any act, omission, neglect, or misconduct in his manner or method of executing The Work, or at any time due to defective work or materials, and said responsibility will not be released until the Project shall have been completed and accepted.

When the Contractor’s excavating operations encounter remains of prehistoric people’s dwelling sites or artifacts of historical or archeological significance, the operations shall be temporarily discontinued. The Engineer will contact archeological authorities and the Office of Environmental Services to determine the disposition thereof. When directed by the Engineer, the Contractor shall excavate the site in such a manner as to preserve the artifacts encountered and shall remove them for delivery to the custody of the proper authorities. Such excavation will be considered and paid for as Extra Work.

When the Contractor’s normal operations are delayed by such stoppage or extra work, an appropriate time extension will be granted.

The Contractor shall plan, coordinate, and prosecute the work so that disruption to personal property and business is held to a practical minimum.

No resident or business shall be denied vehicular access to their property for any length of time other than as determined by the Engineer is absolutely necessary. Where two or more existing driveways are present for a business, only one existing driveway shall be closed at any time. All construction areas abutting lawns and yards of residential or commercial property shall be restored promptly. Backfilling of each drainage structure or section of curb and gutter, sidewalk, or driveway shall be accomplished as soon as adequate strength is obtained. Finishing, dressing, and grassing shall be accomplished immediately thereafter as a continuous operation within each area being constructed with emphasis placed on completing each individual yard or business frontage. Care shall be taken to provide positive drainage to avoid ponding or concentration of runoff.

Handwork, including raking and smoothing, shall be required to ensure that roots, sticks, rocks, and other debris are removed in order to provide a neat and pleasing appearance. Grassing, when in season, shall immediately follow in order to establish permanent cover at the earliest date. If grassing is not in season, proper erosion control shall be installed and maintained.

The work described above shall be in addition to that required by Subsection 104.07, “Final Cleaning Up” and Subsection 105.16, “Final Inspection and Acceptance”.
B. Erosion and Siltation Control

The Contractor shall take all necessary measures throughout the life of the Project to control erosion and silting of rivers, streams, and impoundments (lakes, reservoirs, etc.). Construction of drainage facilities as well as performance of other Contract work which will contribute to the control of erosion and siltation shall be carried out in conjunction with clearing and grubbing, and earthwork operations as stipulated in Section 161.

C. Pollution

The Contractor shall exercise every reasonable precaution throughout the life of the Contract to prevent pollution of rivers, streams or impoundments. Pollutants such as chemicals, fuels, lubricants, bitumens, raw sewage and other harmful waste shall not be discharged into or alongside rivers, streams, and impoundments, or into natural or manmade channels leading thereto. The Contractor shall also comply with the applicable regulations of other State and Federal departments and to all governmental statues relating to the prevention and abatement of pollution.

D. Insect Control Regulations

The Plant Pest Control Division of the U.S. Department of Agriculture and the Georgia State Department of Agriculture restrict the movement of certain items from areas infested with Japanese Beetles or Imported Fire Ants so as to prevent the spread of these pests to non-infested areas. Where insect infested areas are shown on the Plans, Contractors will control their operations in such a manner as to comply fully with the requirements of Section 155.

E. Reclamation of Material Pits and Waste Disposal Areas

Whenever or wherever the Contractor obtains material from a source or wastes material on an area other than within the Right-of-Way, regardless of the fashion, manner or circumstances for which the source or area is obtained, it shall be reclaimed in accordance with the requirements of Section 160.

F. Mailboxes

The property owner shall have the responsibility for removing and relocating the mailbox to an area outside construction limits.

The Engineer will mark a point for the relocation of the box. The stake should be set so that the location of the box will be convenient to both the mail carrier and the patron, yet not interfering with the proposed work. It may be necessary for the Engineer to confer with the Post Office serving the area.

The Contractor shall notify each affected owner, in writing, that their mailbox is in conflict with the proposed construction, that they have ten days to relocate the box and that, after the expiration of the 10 days’ notice, if the owner has not relocated the box, it shall be removed by the Contractor and laid upon the owner’s property, clear of the Right-of-Way.

Any cost to the Contractor for removing the mailboxes as stated above shall be included in the price bid for other items.

G. Failure to Comply

Failure of the Contractor to comply with any of the above provisions or to install erosion prevention items included in the Contract at the time specified, will be evidence of omission and neglect, and the Contractor will be liable for damages as outlined in Subsection 107.13.H below. Furthermore, the Engineer shall withhold payment on all Contract Items until such time as the Contractor complies in full with all of the aforesaid provisions.

H. Payment for Damages

When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the Work, or in consequence of the nonexecution thereof by the Contractor, the Contractor shall restore, at his own expense, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, rebuilding or otherwise restoring as may be directed, or shall make good such damage or injury in an acceptable manner.
I. **Compensation**

All costs pertaining to any requirement contained herein shall be included in the overall Bid submitted unless such requirement is designated as a separate Pay Item in the Proposal.

107.14 Load Restrictions

It is hereby agreed between the Department and the Contractor that in the performance of The Work under the Contract, the following load restrictions and stipulations shall be in full force and effect during the life of the Contract:

A. **Parties Affected**

The load restrictions and stipulations contained herein shall be applicable to the equipment of the Contractor; each agent or subcontractor employed by the Contractor; and each person or persons, firm, partnership, corporation or any combination thereof, hauling materials, supplies or equipment to or on the Project, by or for the Contractor.

B. **Within Project Limits**

No hauling equipment which is loaded beyond those limits provided by State Law shall be permitted on any portion of the new or existing pavement structure except that such loads will be permitted on nonstabilized bases and subbases prior to placing roadway paving subject to the provisions of Subsection 107.17.

Axle loads and gross weight limits will be evaluated in accordance with current Georgia Law.

All damage caused by any equipment to any permanent installation or portion of The Work shall be promptly repaired by the Contractor at his expense. When it becomes necessary to cross existing pavement with excessive loads, the Contractor shall provide and remove, at his own expense, proper cushioning by means of earth blanket or otherwise as directed.

C. **Outside Project Limits**

All equipment users included in Subsection 107.14.A, above, operating equipment on roads outside the Project limits shall be governed by the following regulations:

1. No vehicle shall carry any load in excess of that specified by Georgia Law.
2. On County System roads the maximum total gross weight shall not exceed 56,000 lbs. (25,400 kg) unless a vehicle is making a pickup or delivery on such roads.
3. For a specific individual trip the above weight limitations may be exceeded provided a special permit is obtained from the Department for each such movement. A special permit will not relieve the Contractor of liability for damage that may result from such a movement. Refer to O.C.G.A §32-6-26 Weight of Vehicle and Load, SB54 (2011) for compliance with weight limitations and exceptions.
4. Authorized personnel of the Department of Public Safety shall be permitted to weigh each truck hauling material to the Project whenever the Department so desires. The owner of each truck shall instruct his operators to cooperate with and assist the truck weighers in every way possible.
5. A Certified Public Weigher operating under the provisions of Standard Operating Procedure 15 shall not dispatch any vehicle loaded with material to be incorporated into the Project when the gross vehicle weight exceeds the limit established by law.
6. Ready Mix Concrete trucks shall comply with load restrictions as specified in Laboratory Standard Operating Procedure 10, “Quality Assurance for Ready-Mixed Concrete Plants in Georgia.”

D. **Responsibilities**

It will be the responsibility of the Contractor to advise his personnel, and all equipment users included in Subsection 107.14.A, as to the load restrictions and stipulations contained herein.

E. **Excess Loads and Violations**

If multiple violations assignable to a given Certified Public Weigher are occurring, that Certified Public Weigher may be suspended from weighing materials dispatched to Department of Transportation projects.
107.15 Responsibility for Damage Claims
The Contractor shall indemnify and save harmless the Department, its officers and employees, from all suits, actions, or claims of any character brought because of any injuries or damage received or sustained by any person, persons, or property on account of the operations of the said Contractor; or on account of or in consequence of any negligence in guarding The Work; or through use of unacceptable materials in constructing The Work; or because of any act of omission, neglect or misconduct of said Contractor; or because of any claims or amounts recovered from any infringements of patent, trademark, or copyright; or from any claims or amounts arising or recovered under the Workmen’s Compensation Act, or any other law, ordinance, order, or decree; and so much of the money due the said Contractor under and by virtue of his Contract as may be considered necessary by the Department for such purpose may be withheld for the use of the State; or, in case no money is due, his surety may be held until such suit or suits, action or actions, claim or claims for injuries or damages as aforesaid shall have been settled and suitable evidence to that effect furnished to the Department; except that money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that he is adequately protected by public liability and property damage insurance.

107.16 Opening Sections of Project to Traffic
Whenever any bridge or section of roadway is in acceptable condition for travel, the Engineer may direct that it be opened to traffic, whether or not the opening was originally provided for, and such opening shall not be held to be in any way an acceptance of the bridge or roadway, or any part thereof, or as a waiver of any of the provisions of the Contract. Necessary repairs or renewals made on any section of the roadway or bridge thus opened to traffic under instructions from the Engineer, due to defective material or work, or to any cause other than ordinary wear and tear, pending completion and acceptance of the roadway, bridge, or other work, shall be done by the Contractor, without additional compensation. Also, the Contractor shall not receive additional compensation for completing the Work except as specified in Subsection 104.03.

If the Contractor is dilatory in completing shoulders, drainage structures, or other features of work, the Engineer may so notify him in writing and establish therein a reasonable period of time in which the Work should be completed. If the Contractor is dilatory, or fails to make a reasonable effort toward completion in this period of time, the Engineer may then order all or a portion of the Project opened to traffic. On such sections which are so ordered to be opened, the Contractor shall conduct the remainder of his construction operations so as to cause the least obstruction to traffic and shall not receive any added compensation due to the added cost of the Work by reason of opening such section to traffic.

On any section opened to traffic under any of the above conditions, whether stated in the Special Provisions or opened by necessity of Contractor’s operations, or unforeseen necessity, any damage to the highway not attributable to traffic which might occur on such section (except slides) shall be repaired by the Contractor at his expense. The removal of slides shall be done by the Contractor on a basis agreed to prior to the removal of such slides.

107.17 Contractor’s Responsibility for the Work
From the first day the Contractor begins work, or from the date Contract Time commences, whichever occurs first, until written final acceptance of the project by the Engineer, the Contractor shall have the charge and care thereof and shall take every precaution against injury or damage to any part thereof by the action of the elements or from any other cause, whether arising from the execution or from the non-execution of The Work. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of The Work occasioned by any of the above causes before final acceptance and shall bear the expense thereof except that the Department may, in its discretion, reimburse the Contractor for the repair of damage to The Work due to unforeseeable causes beyond the control of and without the fault or negligence of the Contractor, including but not restricted to acts of God, of the public enemy or of governmental authorities. The Contractor’s responsibility for damages and injuries is defined in Subsection 104.05.A.

In case of suspension of work from any cause whatsoever, the Contractor shall be responsible for the Project and shall take such precautions as may be necessary to prevent damage to the Project, provide for normal drainage and shall erect any necessary temporary structures, signs, or other facilities at his expense.

107.18 Acquisition of Right-of-Way
Rights of Way for the project will be obtained by the Department, in coordination with local governments and others. However, the Contractor’s access to the portions of the right-of-way may be restricted. Where such
restrictions are known in advance to the Department they will be listed in the bid proposal. Delays to the progress of the Work may be encountered because of restricted access to portions of the right-of-way. When such delays occur, whether caused by restrictions listed in the bid proposal or restrictions that develop after the Contract is signed, the parties agree in executing the Contract that such delays do not constitute breach of the Contract. Delays in availability of right-of-way beyond those listed in the bid proposal, or that develop after the Contract has been signed, that impact the controlling Item or Items of the Work will not be charged against the Contract Time. Additional compensation for such delays shall not be paid, except as provided in Subsection 105.13, “Claims for Adjustments and Disputes,” or Subsection 109.09, “Termination Clause.” In the event the Department is unable to acquire right-of-way needed for the project, resulting in delay to or termination of the project, such situation will also be controlled by this Section, and will not constitute a breach of the Contract by the Department.

107.19 Personal Liability of Public Officials
In carrying out any of the provisions of the Contract or in exercising any power or authority granted to the Board, Commissioner, Chief Engineer, their agents and employees, by the Contract, there shall be no liability, either personally or as officials or representatives of the Department, it being understood that in all such matters they act solely as agents and representatives of the Department.

107.20 No Waiver of Legal Rights
Upon completion of The Work, the Department will expeditiously make final inspection and notify the Contractor of acceptance. Such final acceptance, however, shall not preclude or estop the Department from correcting any measurement, estimate, or certificate made before or after completion of The Work, nor shall the Department be precluded or estopped from recovering from the Contractor or his Surety, or both, such over-payment as it may sustain, or by failure on the part of the Contractor to fulfill his obligations under the Contract. A waiver on the part of the Department of any breach of any part of the Contract shall not be held to be a waiver of any other or subsequent breach.

The Contractor, without prejudice to the terms of the Contract, shall be liable to the Department for latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards the Department’s rights under any warranty or guaranty.

107.21 General Description
The Contractor shall designate, prior to beginning any work, a Worksite Utility Coordination Supervisor (WUCS) who shall be responsible for initiating and conducting utility coordination meetings and accurately recording and reporting the progress of utility relocations and adjustment work. Also, the WUCS shall prepare an Emergency Response Plan for the purpose of planning, training, and communicating among the agencies responding to the emergency. The WUCS shall be the primary point of contact between all of the Utility companies, the Contractor and the Department. The WUCS shall recommend the rate of reoccurrence for utility coordination meetings and the Engineer will have the final decision on the regularity for utility coordination meetings. In no case will utility coordination meetings occur less than monthly until controlling items of utility relocations and adjustment milestones are completed. The WUCS shall contact each of the utility companies for the purpose of obtaining information including, but not limited to, a Utility Adjustment Schedule for the controlling items of utility relocations and adjustments. The WUCS shall notify the appropriate utility company and/or utility subcontractors and the Department of the status of controlling items of relocations and adjustment milestones as they are completed. The WUCS shall furnish the Engineer, for approval, a Progress Schedule Chart, immediately following the receipt of the Notice to Proceed unless otherwise specified, which includes the utility companies controlling items of work and other information in accordance with Section 108.03 or elsewhere in the Contract documents.

A. Qualifications
The WUCS shall be an employee of the Prime Contractor, shall have at least one year experience directly related to highway and utility construction in a supervisory capacity and have a complete understanding of the Georgia Utilities Protection Center operations, and shall be knowledgeable of the High-voltage Safety Act and shall be trained on the Georgia Utility Facility Protection Act (GUFPA). The Department does not provide any training on GUFPA but will maintain a list of the Georgia Public Service Commission certified training programs developed by other agencies. Currently the following companies offer approved GUFPA training programs:

Associated Damage Consultants
The Prime Contractor is responsible for obtaining the GUFPA training for their employees. Questions concerning the Georgia Public Service Commission GUFPA training program should be directed to:

Georgia Public Service Commission
244 Washington St. SW
Atlanta, GA 30334
404.463.9784

B. Ticket Status
During the utility coordination meetings the WUCS shall collect and maintain the Ticket Status information to determine the status of all locate requests within the project limits. This information will be used to assure those planning to use mechanized equipment to excavate or work within the project limits are prepared to begin work when they have reported or estimated beginning work. At points where the Contractor’s or utility company’s operations are adjacent to or conflict with overhead or underground utility facilities, or are adjacent to other property, damage to which might result in considerable expense, loss, or inconvenience, work shall not commence until all arrangements necessary for the protection thereof have been made.

C. Notice
The names of known utility companies and the location of known utility facilities will be shown on the Plans, or listed in the Subsurface Utility Engineering Investigation if performed or in the Special Provisions; and the WUCS shall give 24-hour notice to such utility companies before commencing work adjacent to said utility facilities which may result in damage thereto. The WUCS shall further notify utility companies of any changes in the Contractor’s work schedules affecting required action by the utility company to protect or adjust their facilities. Notice to the utility companies by the Department of the Award of Contract, under Subsection 105.06, shall not be deemed to satisfy the notice required by this paragraph. Furthermore, this 24-hour notice shall not satisfy or fulfill the requirements of the Contractor as stated in Chapter 9 of Title 25 of the Official Code of Georgia Annotated, known as the “Georgia Utility Facility Protection Act”.

D. Agenda
The WUCS shall cooperate with the companies of any underground or overhead utility facilities in their removal and relocations or adjustment work in order that these operations may progress in a reasonable manner, that duplication of their removal and relocations or adjustment work may be reduced to a minimum, and services rendered by those parties will not be unnecessarily interrupted. To promote this effort the WUCS shall prepare an agenda for the utility coordination meetings and circulate same in advance of the meeting to encourage input and participation from all of the utility companies. The agenda will be prepared by an examination of the project site and may include photographs of potential/actual utility conflicts.

E. Emergency Response Plan
The WUCS shall prepare an Emergency Utility Response Plan (EURP) within 30 days following the receipt of the Notice to Proceed. The EURP shall indicate the project location (which includes street address and or major intersections / major highway route, if possible with a land mark) that would be reported in case of an emergency, WUCS, Emergency Utility Coordinator (EUC), utility company name, utility company emergency contact information to include but not limited to emergency phone number, response time for emergency, working condition of devices needed to facilitate prompt shut off, and primary point of contact name and phone number for the project.
Emergency Utility Coordinator (EUC) shall be an employee of the Prime Contractor and shall notify the appropriate utility company and/or utility subcontractors in case of an emergency. EURP must include the contact details of the EUC, if WUCS is not the primary emergency utility coordinator for this project.

The plan will also include a means of reporting emergencies and the Utility Emergency Response Information for each company. The WUCS/EUC shall post the EURP in an area readily accessible to the Department and project personnel. Also, WUCS shall distribute the copies of EURP by e-mail and hard copy to GA DOT Area Engineer, GA DOT Construction Project Engineer, Contractor’s project manager, superintendent, and all approved sub-contractors whose work can be in conflict with utilities facilities, personnel of the each facility/owner/ operator who has facilities within the project limits and keep a copy in close proximity to active construction.

In the event of interruption to gas, water or other utility services as a result of accidental breakage or as a result of being exposed or unsupported, the WUCS/EUC shall promptly notify the appropriate emergency officials, the Georgia Utilities Protection Center and the appropriate utility facility company or operator, if known. Until such time as the damage has been repaired, no person shall engage in excavating or blasting activities that may cause further damage to the utility facility.

In order to keep up with the latest / most updated EURP contact information (name and phone numbers); WUCS shall include an item in the agenda of Utility Coordination meeting about the updates / changes in the EURP plan.

The Emergency Utility Response Plan and Emergency Utility Response Information template can be found at the State of Georgia, Office of Utilities Webpage.

**F. Submission**
Provisions for reporting all utility coordination meetings, the progress of utility relocation and adjustment work milestones and ticket status information will be reported on a form developed by the WUCS and will be distributed by the WUCS to all of the utility companies as milestones are met and shall be included as part of the project records. These reports shall be delivered to the Engineer for review, on a monthly basis. The WUCS shall immediately report to the Engineer any delay between the utility relocation and adjustment work, the existing Utility Adjustment Schedule, or the proposed Utility Adjustment Schedule so that these differences can be reconciled.

**G. Delays**
Delays and interruptions to the controlling Item or Items of The Work caused by the adjustment or repair of water, gas, or other utility appurtenances and property may be considered for an extension of Contract Time as provided in Subsection 108.07.E unless such delays are due to the negligence of the Contractor.

**H. Facilities Supported on Bridges**
If the utility facilities are to be supported on bridges, the following provisions shall apply:
1. The Plans will show the location of the facility and the auxiliary items necessary to support the facility.
2. The Contractor constructing the bridge shall install anchor bolts, thimbles, inserts, or other auxiliary items attached to the bridge as a part of the support for the utility facility. The Utility Company shall furnish these auxiliary items, unless the Contract indicates these items are to be furnished by the Contractor as a part of the bridge construction.
3. The Utility or its subcontractor constructing the utility facility shall install hanger rods, pipe rollers, and other attachments necessary for the support of the utility facility as indicated on the Plans. The Utility Company shall furnish these attachments at no cost to the Department or the prime contractor unless otherwise specified. This work shall also include:
   a. Caulking the openings around the utility where it passes through endwalls to prevent the passage of undesirable materials.
   b. Painting the exposed portions of utility supports unless such supports are corrosion resistant. Painting shall be done in accordance with the applicable portions of Section 535, unless otherwise specified.
4. The sequence of bridge construction work may be set forth in the Plans and/or the Special Provisions and will show at what stage of the Work a utility company will be allowed to make the utility installation. Further, all or any portion of The Work under Subsection 107.21.H.3 may be included in the bridge Contract by the Plans and/or the Special Provisions.
5. Any damage to the bridge structure caused by the utility installation shall be repaired to the satisfaction of the Engineer at the expense of the Utility or its subcontractor installing the utility facility.

I. Clearances
The Plans provide for at least minimum clearance of utilities as required by the National Electrical Safety Code, U.S. Department of Commerce, and National Bureau of Standards. Any additional clearance the Contractor may desire or require in performing The Work shall be arranged by the Contractor with the utility company. The Department will pay no extra compensation for such additional clearances.

J. Utility Relocation Progress Schedule
The purpose of the Utility Adjustment Schedule is to provide the Contractor with the pertinent information, including any utility staging required, dependent activities, or joint-use coordination that is required for the creation of a feasible schedule. A suitable Utility Adjustment Schedule form is available from the Department for the WUCS to circulate to utility companies for any proposed project construction staging or should a utility company not duly file a Utility Adjustment Schedule to the Department during the preconstruction phase of the project. The WUCS shall submit a Utility Relocation Progress Schedule showing together the Progress Schedule Chart referenced in Section 108.03 and the proposed Utility Adjustment Schedules from all utility companies to the Engineer for review and approval. Copies of existing Utility Adjustment Schedules with utility companies having facilities on this project will be made available at the Georgia Department of Transportation, Office of Construction Bidding Administration, located at One Georgia Center, 600 West Peachtree Street, NW, Atlanta, GA 30308, for examination by the Contractor. The Utility Adjustment Schedules are available on-line at: http://www.dot.ga.gov/doingbusiness/contractors/Pages/default.aspx

K. Compensation
There will be no separate measurement or payment for this Work. The cost associated with this Work shall be included in the overall Bid submitted.

107.22 Hazardous and/or Toxic Waste
When the Contractor’s operations encounter or expose any abnormal condition which may indicate the presence of a hazardous and/or toxic waste, such operations shall be discontinued in the vicinity of the abnormal condition and the Engineer shall be notified immediately. The presence of barrels, discolored earth, metal, wood, or visible fumes, abnormal odors, excessively hot earth, smoke, or anything else which appears abnormal may be indicators of hazardous and/or toxic wastes and shall be treated with extraordinary caution as they are evidence of abnormal conditions.

The Contractor’s operations shall not resume until so directed by the Engineer.

Disposition of the hazardous and/or toxic waste will be made in accordance with the requirements and regulations of the Department of Human Resources and the Department of Natural Resources. Where the Contractor performs work necessary to dispose of hazardous and/or toxic waste, payment will be made at the unit prices for pay items included in the contract which are applicable to such work or, where the contract does not include such pay items, payment will be as provided in Subsection 109.05, “Extra Work.”

107.23 Environmental Considerations
A. Construction
Erosion control measures shall be installed, to the greatest practical extent, prior to clearing and grubbing. Particular care shall be exercised along stream buffers, wetlands, open waters and other sensitive areas to ensure that these areas are not adversely affected.

Construction equipment shall not cross streams, rivers, or other waterways except at temporary stream crossing structures shown on the plans or as allowed by permit.

Construction activities within wetland areas are prohibited except for those within the construction limits as shown on the Plans and as specified in Subsection 107.23.E.
All sediment control devices (except sediment basins) installed on a project shall, as a minimum, be cleaned of sediment when one half the capacity, by height, depth or volume, has been reached. Sediment basins shall be cleaned of sediment when one-third the capacity by volume has been reached.

B. Bridge Construction Over Waterways

Construction waste or debris, from bridge construction or demolition, shall be prevented from being allowed to fall or be placed into wetlands, streams, rivers or lakes.

Excavation, dewatering, and cleaning of cofferdams shall be performed in such a manner as to prevent siltation. Pumping from cofferdams to a settling basin or a containment unit will be required if deemed necessary by the Engineer.

Operations required within rivers or streams, i.e. jetting or spudding, shall be performed within silt containment areas, cofferdams, silt fence, sediment barriers or other devices to minimize migration of silt off the project.

C. Environmental Clearance of Local Material or Disposal Sites

Specific written environmental approval from the Engineer will be required for any local material or disposal sites not included in the Plans. No work shall be started at any potential local material or waste site not shown on the plans prior to receiving said environmental approval from the Engineer. Local material sites are defined as borrow pits, common borrow, base, embankment, sand clay base, topsoil base, soil cement base, granular embankment, asphalt sand, maintenance pits, or stockpiled borrow sources. Disposals sites, as defined in Standard Specification 201.3.05.E.3, may be defined as excess material, common fill, or inert waste.

The Contractor may obtain environmental approval on a site with one of two methods: 1) GDOT provided environmental surveys or 2) environmental surveys obtained by the Contractor at no cost to the Department. The Contractor must choose one method for review and approvals, which will apply to all sites required for a given project, and submit an Environmental Review Notification indicating their chosen method.

1. If the Contractor chooses to obtain their own environmental surveys, they shall be conducted by a consultant(s) prequalified to work with the Department in the following area classes: 1.06(b) – History; 1.06(e) – Ecology; and 1.06(f) – Archaeology. Background research and field methods shall be conducted in accordance with the Office of Environmental Services Environmental Procedures Manual, with documentation in an Environmental Survey Results Memorandum (template available from the Office of Environmental Services).

2. If the Contractor requests that GDOT conduct required environmental surveys, an Environmental Survey Request shall be submitted for each site (template available from the Office of Environmental Services).

Upon receipt of an Environmental Survey Request, the Office of Environmental Services shall provide environmental approval or denial within thirty (30) business days. Upon receipt of an Environmental Survey Results Memorandum, the Office of Environmental Services shall provide environmental approval or denial within ten (10) business days. The Department will not accept requests for review of sites before a Notice to Proceed is issued. Incomplete Survey Requests, surveys that are not conducted by a GDOT prequalified consultant, or surveys that do not meet the required level of field effort or documentation, will be denied by GDOT OES and may require resubmittal.

The Engineer will inform the Contractor in writing as to the approval or denial of environmental clearance. Approvals may be provided upon condition that an Environmentally Sensitive Area (ESA) be designated within or adjacent to the site prior to use. All ESA stipulations shall be adhered to in accordance with Standard Specification 107.23.F. If a site is denied, the Contractor may, at no expense to the Department, seek to obtain permits or pursue other remedies that might otherwise render the site(s) acceptable, if available. Any and all changes to proposed sites or their associated haul roads that are not included within the original Environmental Survey Request or Environmental Survey Results Memorandum, including expansion,
utilization for purposes other than those indicated in the original submittal, etc. must be submitted for further environmental review and approval prior to use.

Sites included in the Plans have environmental clearance and shall be used only for the purpose(s) specified in the Plans or other contract documents. Should the Contractor wish to expand or utilize said sites for any purpose other than that provided for in the Plans or other contract documents, specific written environmental clearance as noted above shall be obtained.

D. Control of Pollutants

Pollutants or potentially hazardous materials, such as fuels, lubricants, lead paint, chemicals or batteries, shall be transported, stored, and used in a manner to prevent leakage or spillage into the environment. The Contractor shall also be responsible for proper and legal disposal of all such materials.

Equipment, especially concrete or asphalt trucks, shall not be washed or cleaned-out on the Project except in areas where unused product contaminants can be prevented from entering waterways.

E. Temporary Work in Wetlands Outside of the Construction Limits within the Right-of-Way and Easement Areas

Temporary work in wetlands (that are not delineated with orange barrier fence) will be subject to the following requirements:

1. Temporary work in wetlands shall be accomplished by using temporary structures, timber, concrete, soil with geotextile fabric, or other suitable matting. The area shall not be grubbed.
2. Soil matting shall be protected from erosion in accordance with the Specifications.
3. Whenever temporary work is required in Saltwater Marsh Wetlands, all temporary structures and/or matting shall be removed in their entirety prior to Final Acceptance of the Project. Matted and compressed soils shall be backfilled to their original ground elevation with material meeting the requirements of Section 212 – Granular Embankment.
4. Whenever temporary work is required in Freshwater Wetlands, all temporary structures and/or matting (exclusive of soil matting to be retained in the final roadway section) shall be removed in their entirety prior to Final Acceptance of the Project.
   Once the temporary materials have been removed, the area shall be covered by Excelsior or Straw blankets according to Section 713 of the Specifications. The grassing and ground preparation referenced in Subsection 713.3.03, “Preparation”, will not be applicable to this Work.
5. The Engineer shall be notified so that a field inspection may be conducted to certify that the temporary materials were properly removed and that the area was properly restored. The Contractor shall be responsible for any corrective action required to complete this Work.
6. There will be no separate measurement or payment for this Work. The cost associated with this work shall be included in the overall Bid submitted.

F. Environmentally Sensitive Areas

Some archaeological sites, historic sites, wetlands, streams, stream and pond buffers, open waters and protected animal and plant species habitat within the existing/required Right-of-Way and easement areas may be designated as ENVIRONMENTALLY SENSITIVE AREAS (ESAs). These areas are shown on the applicable Plan sheets and labeled “ESA” (e.g. ESA – Historical Boundary, ESA – Wetland Boundary). The Department may require that some ESAs or portions thereof be delineated with orange barrier fence. The Contractor shall install, maintain, and replace as necessary orange barrier fence at ESAs as delineated in the Plan sheets.

The Contractor shall not enter, disturb, or perform any construction related activities, other than those shown on the approved plan sheets within areas designated as ESAs including ESAs or portions thereof not delineated with orange barrier fence. This includes but is not limited to the following construction activities: clearing and grubbing; borrowing; wasting; grading; filling; staging/stockpiling; vehicular use and parking;
sediment basin placement; trailer placement; and equipment cleaning and storage. Also, all archaeological sites, historic sites, wetlands, streams, stream and pond buffers, open waters, and protected animal and plant species habitat that extend beyond the limits of existing/required Right-of-Way and easement areas shall be considered ESAs and the Contractor shall not perform any construction related activities (such as those listed above) within these areas or make agreements with property owners to occupy these areas for construction related activities (such as those listed above). The Contractor shall make all construction employees aware of the location(s) of each ESA and the requirement to not enter or otherwise disturb these areas.

If the Contractor is found to have entered an ESA, either within or outside the project area, for any purpose not specifically shown on the approved plan sheets, the Department may, at its discretion, issue a stop work order for all activities on the project except erosion control and traffic control until such time as all equipment and other items are removed and the ESA is restored to its original condition.

However, should damage to an ESA occur as a result of the Contractor’s action in violation of this section, and notwithstanding any subsequent correction by the Contractor, the Contractor shall be liable for any cost arising from such action, including but not limited to, the cost of repair, remediation of any fines, or mitigation fees assessed against the Department by another government entity.

G. Protection of Migratory Birds and Bats

The following conditions are intended as a minimum to protect migratory birds and bats during construction activities.

1. Project personnel shall be advised about the potential presence and appearance of federally protected migratory birds, including the barn swallow (Hirundo rustica), cliff swallow (Petrochelidon pyrrhonota), and eastern phoebe (Sayornis phoebe), and that there are civil and criminal penalties for harassing, harming, pursuing, hunting, shooting, wounding, killing, capturing, or collecting these species in violation of the Migratory Bird Treaty Act of 1918. The law protects adults, fledglings, nestlings, eggs, and active nests. All bats are protected under Georgia state law (Official Code of Georgia § 27-1-28), with some species protected under the federal Endangered Species Act of 1973. Pictures and habitat information shall be posted in a conspicuous location in the Project field office until such time that construction has been completed and time charges have stopped.

2. The demolition of existing bridge and culvert, the extension of existing culvert, and bridge maintenance activities on the underside of the bridge deck shall take place outside of the breeding and nesting season of phoebes, swallows and other migratory birds, which begins April 1 and extends through August 31, unless exclusionary barriers are put in place to prevent birds from nesting. For bridges, exclusionary barriers may be made of plastic, canvas or other materials proposed by the Contractor and approved by the State Environmental Administrator prior to installation. For box culverts, exclusionary barriers may be overlapping strips of flexible plastic (also called “PVC Strip Doors” or “Strip Curtains”) or an alternate material proposed by the Contractor and approved by the State Environmental Administrator prior to installation. Exclusionary barriers must be installed on the bridge(s) and/or box culvert(s) prior to March 1 or after August 31, but in no time in between this period. Exclusionary barriers are not a guaranteed method of preventing migratory birds from nesting beneath bridges and work schedules shall take into account the possibility that barriers will not be successful. If exclusionary barriers are to be used, these steps shall be followed:

   a. The Project ecologist shall be notified by phone (404) 631-1100 of the decision to install exclusionary barriers and the date of the proposed installation prior to the installation of any exclusionary devices.

   b. The structure(s) shall be checked for nests prior to the placement of exclusionary barriers. If nests are present, they shall be inspected to ensure that eggs or birds are not present. If the nests are found to be occupied, construction activities associated with the bridge shall be postponed until after August 31 when the breeding season is complete.
c. For any box culvert(s) being replaced, exclusionary barriers shall be installed on both the inlet and outlet openings. For any box culvert(s) being extended, exclusionary barriers shall be placed on the opening(s) (inlet and/or outlet) where work is taking place. For bridge(s) being removed, barriers shall be installed along the full length of the bridge(s). In all cases, barriers shall be installed prior to March 1 and left in place until August 31 or until the culvert removal, culvert extension, or bridge demolition is complete. If the exclusionary barriers fail to prevent nesting (i.e., birds are able to bypass barriers and build nests), construction activities associated with the bridge shall be postponed until after August 31.

d. During construction activities, exclusionary barriers shall be inspected daily for holes or other defects that impair its ability to exclude migratory birds from nesting beneath the bridge. Any holes or defects shall be repaired immediately.

e. Entanglement and/or entrapment of barn swallows, cliff swallows, and eastern phoebes in exclusionary netting constitutes harm to migratory birds. Any entanglement and/or entrapment of migratory birds shall be reported immediately to the Project Engineer, who in turn will notify the State Environmental Administrator, Georgia Department of Transportation, Office of Environmental Services at (404) 631-1101.

3. Migratory birds may nest in other structures or natural features that will be impacted by construction activities. If active nests containing eggs are encountered within the footprint of construction activities, the finding shall be reported immediately to the Project Engineer, who in turn shall notify the State Environmental Administrator, Georgia Department of Transportation, Office of Environmental Services at (404) 631-1101. All activity within 50 feet of active nests shall cease pending consultation by the Department with the U. S. Fish and Wildlife Service and the lead Federal Agency.

4. When working on bridges and culverts, sightings of bat species shall be reported immediately to the Project Engineer who in turn will notify the State Environmental Administrator, Georgia Department of Transportation, Office of Environmental Services at (404) 631-1101. All construction activity on the structure shall cease pending consultation by the Department with the U. S. Fish and Wildlife Service and/or the Georgia Department of Natural Resources and/or the lead Federal Agency. The Department will inform the Contractor of any changes to the project.

5. In the event any incident occurs that causes harm or injury to migratory birds during construction activities, the incident shall be reported immediately to the Project Engineer who in turn shall notify the State Environmental Administrator, Georgia Department of Transportation, Office of Environmental Services at (404) 631-1101. All activity shall cease pending consultation by the Department with the U. S. Fish and Wildlife Service and the lead Federal Agency.

6. Within 30 days of the completion of construction and the stopping of time charges, a report shall be provided to the State Environmental Administrator, Georgia Department of Transportation, Office of Environmental Services, 600 West Peachtree Street NW, Atlanta, Georgia 30308. GDOT in turn will provide copies of the report to the U.S. Fish and Wildlife Service, the Georgia Department of Natural Resources Wildlife Resources Division, and the lead Federal Agency. The following information will be included in the report:

   a. Contractor name and address.
   b. Name and title of report preparer.
   c. GDOT Project Identification (PI) number.
   d. County(s) in which project is located.
   e. Project description.
f. Construction start and end dates.

g. Date GDOT was notified of intent to install barrier(s) per # 107.23G.2.a.

h. Number and type(s) of structures on which exclusion barriers were installed.

i. Type(s) of exclusion material used on each structure.

j. Start and end date(s) of installation of exclusionary barrier on each structure.

k. Start and end date(s) of removal of exclusionary barrier from each structure.

l. Photographs of each structure before and after exclusionary barrier installation.

m. Statement regarding whether the exclusionary barrier was effective in deterring bird use of the structure during construction.

n. Description of any incidents causing harm or injury to migratory birds during construction. This should include incidents that were reported as required under 107.23G.5.

o. Description of any sightings of bat species when working on bridges and culverts. This should include incidents that were reported as required under 107.23G.4.

7. All costs pertaining to any requirement contained herein shall be included in the overall bid submitted unless such requirement is designated as a separate Pay Item in the Proposal.

107.24 Closing of Roadways without On-Site Detours

When existing roadways are to be closed to through traffic and on-site detours are not provided, the Contractor shall submit a written notice to the Engineer for approval 14 days prior to the closure of the existing roadways.

After receiving approval from the Engineer for the closure, the Contractor shall install signs at each closure site, in accordance with the MUTCD, to inform the traveling public of the proposed closure, including the date of closure. The sign shall be placed 5 days prior to the closure, at the direction of the Engineer.

Prior to the closure, the Area Engineer will inform local government officials and agencies, local news media, and the DOT Public Information Office of the proposed closure of the roadways.

107.25 Disruption to Residential and Commercial Property

The Contractor shall plan, coordinate, and prosecute the work such that disruption to personal property and business is held to a practical minimum.

All construction areas abutting lawns and yards of residential or commercial property shall be restored promptly. Backfilling of each drainage structure or section of curb and gutter, sidewalk, or driveway shall be accomplished as soon as adequate strength is obtained. Finishing, dressing and grassing shall be accomplished immediately thereafter as a continuous operation within each area being constructed with emphasis placed on completing each individual yard or business frontage. Care shall be taken to provide positive drainage to avoid ponding or concentration of runoff.

Handwork, including raking and smoothing, shall be required to ensure that roots, sticks, rocks, and other debris is removed in order to provide a neat and pleasing appearance. Grassing, when in season, shall immediately follow in order to establish permanent cover at the earliest date. If grassing is not in season, proper erosion control shall be installed and maintained.

The work described herein shall be in addition to that required by Subsection 104.07 “Final Cleaning Up” and Subsection 105.16 “Final Inspection and Acceptance.”
Georgia Department of Transportation

Technical Provisions

For

Design-Build Agreement

P.I. Nos. 0014895 and 0014899

Attachment 6-2

UTILITY MEMORANDUMS OF UNDERSTANDING

AT&T Corp.

BellSouth Telecommunications LLC

Cox Communications

Georgia Power Distribution

Macon-Bibb County Government

Macon Water Authority

Public Service Telephone

Southern Company Gas
Georgia DOT Project: Bibb Co., SR 247/Pio Nono Ave. Over NSRR & CR 581/College St. Over NSRR
GDOT P.I. # 0014895 & 0014899

DESIGN-BUILD
MEMORANDUM OF UNDERSTANDING
between the
Georgia Department of Transportation (hereafter the DEPARTMENT)
and
AT&T Corp (hereafter the OWNER)

Whereas GDOT, hereafter referred to as the DEPARTMENT proposes to undertake a design-build project
hereafter referred to as PROJECT to replace the bridge on CR 5813 (College Street) and increase the vertical
clearance on the bridge on SR 247/US 41 (Pio Nono Avenue), both over Norfolk Southern Railroad, in Bibb
County, Georgia by contract through competitive bidding procedures; and,

Whereas the DEPARTMENT will accomplish the PROJECT through a Design Consultant, Design
Consultant Team and/or Contractor, hereafter referred to as CONTRACTOR; and the utility owner hereafter
referred to as the OWNER, and

Whereas, where OWNER has property rights ("Prior Rights") at the location of the PROJECT, OWNER
will provide written evidence as to said prior rights within the area and will provide written documentation of
prior rights relating to any individual crossing or Utility Facility, at the location of the PROJECT; and

Whereas, OWNER acknowledges that, generally, absent a showing of prior rights, the costs of relocation,
protection, removal, or adjustment performed by OWNER shall be borne by OWNER; and

Whereas, pursuant to O.C.G.A. § 32-6-170(b), DEPARTMENT is authorized to pay or participate in the
payment of the costs of relocation, protection, or adjustment of OWNER’S facilities where DEPARTMENT has
made the determination that (i) such payments are in the best interest of the public and necessary in order to
expedite the staging of the design-build project; and (ii) the costs of the removal, relocation, protection, or
adjustment of such facilities are included as part of the Contract between the Department and the Department's
roadway contractor for the design-build project; and

I. Type of Utility
OWNER has the following utility facilities which may need to be adjusted or relocated as a result of the
proposed PROJECT:

Type of facility or facilities of OWNER:

____ Domestic water mains and distribution lines and associated appurtenances
____ Sanitary Sewer facilities and/or Storm Drainage System
____ Electrical Distribution (overhead and underground) wires, poles, etc.
____ Electrical Transmission (overhead and underground) wires, poles, etc.
____ Natural Gas Distribution Facilities (underground)
____ Natural Gas Transmission Facilities (underground)
____ Petroleum Pipeline (underground)
____ X Telecommunications facilities and equipment
____ Cable TV facilities
____ Street Lighting
____ Internet Data Service
2. New Utility Facilities Proposed (Betterment)

OWNER desires the following to be installed as new additional facilities within the PROJECT. Insert here or attach a detailed description of proposed new additional utility installations.

3. Assignment of Responsibilities for Design and Construction

This MEMORANDUM OF UNDERSTANDING and the following shall serve as a basis for assignment of responsibilities and costs for the DEPARTMENT, CONTRACTOR and the OWNER to enter into a Standard Utility Agreement (SUA) or Contract Item Agreement (CIA), if necessary, with OWNER once the PROJECT is awarded to the CONTRACTOR. For a PROJECT implementation, GDOT will not have in its possession exact costing plans to be utilized to determine exact locations of the removal, relocation, protection, or adjustment. However, Overhead/Subsurface Utility Engineering (SUE) investigations plans exist providing the best information and signifying the layout of known existing facilities. Please use these plans for developing the final determination of services as indicated below. The CONTRACTOR developed plans will be provided to the OWNER after the design build project is awarded by GDOT which shall be used by the CONTRACTOR as the final basis for the SUA or CIA. Betterment costs will be the OWNER’S responsibility.

NOTE: Water and Sewer Design and Construction relocation work put in the contract will automatically be accomplished by the DEPARTMENT’S CONTRACTOR. The UTILITY OWNER will still have design approval authority. (No Pre-Approved Contractor/Consultant List required, leave page 6 blank). If you are a Water & Sewer Utility and choose to put your relocation Design and Construction in the contract, please check Design and Construction under Option 2 under 3B. Owner’s electing to perform their own design, at their own cost, please select design under 3C.

OWNER hereby intends to:

3A. OWNER, at the DEPARTMENT’S cost through an Agreement, will provide the following services for the properties for which it has established prior rights (Check to signify):

Design  
Construction
3B. OWNER, at the CONTRACTOR’S cost, for any removal, relocation, protection, adjustment and/or design (Regardless of Prior Rights) will allow their facilities to be placed into the DEPARTMENT’S contract for the following services pursuant to O.C.G.A. § 32-6-170(b). The CONTRACTOR will add the removal, relocation, protection, materials, adjustment and/or design cost, excluding betterment, to the overall PROJECT’S cost. (Check to signify):

Option 1: OWNER wants the work to be performed by the OWNER’s pre-approved Design Consultants and/or Contractors.

Design  X
Construction  X

Option 2: OWNER wants the DEPARTMENT’S CONTRACTOR to perform the design and/or construction. (Check to signify):

Design
Construction  If both are checked, please leave page 6 blank.

As per this section, all work necessary for the removal, relocation, protection, or adjustment of the described utilities in accordance with the plans when approved shall be included in the project contract and accomplished by the CONTRACTOR except as follows (Check none or list any work items to be performed by the OWNER)

None

Excluded Items

Comments: While the DB Contractor will be able to perform much of the design and construction, only AT&T union personnel can pull cable/fiber, perform splicing/tie-in work, some technical design work and do pole attachments (AT&T will be responsible these cost). The DB Contractor can install any required ducts, poles and vaults/manholes/handholes, enclosures and bridge attachments and will be responsible for the cost of the design and construction (including materials). In the MOU, AT&T has selected design and construction under 3b, option 1. AT&T has also selected 3c design and construction. AT&T will be responsible for some cost as indicated above and the DB Contractor will be responsible for the remaining cost.

3C. OWNER, at OWNER’S cost, will provide the following services (Check to signify):

Design  X
Construction  X
The following is hereby mutually agreed to and understood by both parties:

1. The identification of existing facilities including preparation of Overhead/Subsurface Utility Engineering (SUE) investigations plans will be accomplished by the DEPARTMENT prior to award of the PROJECT and thereafter supplemented by the CONTRACTOR.

2. The CONTRACTOR shall coordinate reviews of the utility relocation information and obtain acceptance from the OWNER and DEPARTMENT when required. However, the OWNER shall apply for and obtain any required permits from the DEPARTMENT and perform any final design or proprietary design needed to administer its own relocation work if the work will not be included in the contract. If the preliminary plans indicate that no conflict exists, and the OWNER concurs with this information, the OWNER shall provide a letter of “no conflict” to the CONTRACTOR.

3. After award of the PROJECT, the CONTRACTOR will research any claimed compensable property interest for each OWNER claiming prior rights under section 3A and present the findings to the DEPARTMENT and OWNER for approval. The plans and estimate for the utility work shall be subject to approval of both the DEPARTMENT and the OWNER prior to construction. If the OWNER chooses to perform its own relocations and the OWNER holds no property interest as stated above; the OWNER shall confirm in writing that the OWNER will relocate its own facilities at no cost to the DEPARTMENT or the CONTRACTOR.

4. All construction engineering and contract supervision shall be the responsibility of the DEPARTMENT and the CONTRACTOR to ensure that all utility work included in the contract is accomplished in accordance with the PROJECT’s plans and specifications. The CONTRACTOR will consult with the OWNER before authorizing any changes or deviations which affect the OWNER’s facility.

5. For utility work included in the contract, the CONTRACTOR shall ensure that the design/construction and installation of the OWNER’s facilities is performed by a contractor/design consultant pre-approved/registered with both the DEPARTMENT and the OWNER. For any work included in the contract, excluding water and sewer, the OWNER will provide a list of pre-approved/registered contractors/design consultants on page 6 of the MOU.

6. For Utility work included in the contract, the OWNER or the OWNER’s Consultant shall have the right to visit and inspect the work at any time and advise the CONTRACTOR and the DEPARTMENT’S Engineer of any observed discrepancies or potential issues. The DEPARTMENT agrees to notify the OWNER when all utility work is completed and ready for final inspection by the OWNER.

7. Upon Maintenance Acceptance or Final Acceptance of the utility work included in the contract and upon certification by the DEPARTMENT’S Engineer and the OWNER that the work has been completed in accordance with the plans and specifications, the OWNER will accept the adjusted, relocated, and additional facilities and will thereafter operate and maintain said facilities located within the PROJECT right of way subject to the DEPARTMENT’S Utility Accommodations Policy and Standards Manual (UAM), current edition” and any agreements in effect without further cost to the DEPARTMENT or its CONTRACTOR. Final acceptance of the utility relocation work is accomplished by the execution of the Utility Facility Relocation Acceptance Form. The CONTRACTOR shall provide the OWNER with a complete set of “As-Built Plans” for review and approval reflecting the relocation work performed by the CONTRACTOR. Upon completion of the Utility Facility Relocation Acceptance Form and the exchange of the final OWNER approved “As-Built Plans”, the OWNER will operate and maintain the installed facilities going forward based on the date of execution of the Utility Facility Relocation Acceptance Form by the DEPARTMENT.

8. For utility coordination, relocation and reimbursement matters, the OWNER shall cooperate with the CONTRACTOR in the same manner as if coordinating directly with the DEPARTMENT in accordance with the laws of the State of Georgia, the DEPARTMENT’S UAM and any agreements in effect between the Owners and Contractors.
DEPARTMENT and OWNER. The OWNER agrees to cooperate in good faith with the CONTRACTOR and to respond to all requests for information or meetings required to reach a resolution of any disputed items.

9. All Utility work included in the PROJECT's contract and Utility work completed by the OWNER that is reimbursed by the DEPARTMENT through an agreement shall be in accordance with the BUY AMERICA requirements of the Federal regulations (23 U.S.C. 313 and 23 CFR 635.410) all manufacturing processes for steel and iron products or predominantly of steel or iron furnished for permanent incorporation into the work on this project shall occur in the United States. The only exception to this requirement is the production of pig iron and the processing, pelletizing and reduction of iron ore, which may occur in another country. Other than these exceptions, all melting, rolling, extruding, machining, bending, grinding, drilling, coating, etc. must occur in the United States.

a. Products of steel include, but are not limited to, such products as structural steel piles, reinforcing steel, structural plate, steel culverts, and guardrail steel supports for signs, signals and luminaires. Products of iron include, but are not limited to, such products as cast iron frames and grates and ductile iron pipe. Coatings include, but are not limited to, the applications of epoxy, galvanizing and paint. The coating material is not limited to this clause, only the application process.

b. A Certificate of Compliance shall be furnished for steel and iron products as part of the backup information with the billing. The form for this certification entitled "Buy America Certificate of Compliance" is attached to this agreement as "Exhibit A." Records to be maintained by the Developer for this certification shall include a signed mill test report and a signed certification by each supplier, distributor, fabricator, and manufacturer that has handled the steel or iron product affirming that every process, including the application of a coating, performed on the steel or iron product has been carried out in the United States of America, except as allowed by this Section. The lack of these certifications will be justification for rejection of the steel and/or iron product or nonpayment of the work.

The requirements of said law and regulations do not prevent the use of miscellaneous steel or iron components, subcomponents and hardware necessary to encase, assemble and construct the above products, manufactured products that are not predominantly steel or iron or a minimal use of foreign steel and iron materials if the cost of such materials used does not exceed one-tenth of one percent (0.1%) of the total contract price or $2,500.00, whichever is greater. The Memorandum of Understanding will be incorporated into the project contract by reference or Exhibit.

APPROVED FOR THE OWNER BY:

[Signature]  
2/14/19  
(DATE)

Senior Technical Project Manager  
(Title)

APPROVED FOR THE DEPARTMENT BY:

[Signature]  
2/25/19  
(Date)

STATE UTILITIES ADMINISTRATOR  

PI # 0014895 & 0014899
Pre-Approved Contractor List

Company Name: ACE, Inc
Address: 302 9th Street NE, Atlanta, GA 30309
Phone: (404) 892-2177
Contact Person: Brad Edmonds
E-Mail: brad@aceincafl.com

Company Name: Tytek, Inc
Address: 3622 Fellowship Road, Monticello, GA 31064
Phone: (706) 468-2517
Contact Person: Jacki Tyler
E-Mail: jacki@tytekinc.com

Company Name: Lee Engineering
Address: P.O. Box 69 (8406 Valdosta Hwy), Dupont, GA 31630
Phone: (912) 487-5307
Contact Person: Kenny Lee
E-Mail: leeceng@windstream.net

Please provide a minimum of three.

Pre-Approved Design Consultant List

Company Name: SDT Solutions LLC
Address: 445 E Main St, Buford, GA 30518
Phone: (770) 331-3868
Contact Person: Steven DeGrave
E-Mail: sdegrave@sdt-1.com

Company Name:
Address:
Phone:
Contact Person:
E-Mail:

Company Name:
Address:
Phone:
Contact Person:
E-Mail:
Georgia DOT Project: Bibb Co., SR 247/Pio Nono Ave. Over NSRR & CR 581/College St. Over NSRR
GDOT P.I. # 0014895 & 0014899

DESIGN-BUILD
MEMORANDUM OF UNDERSTANDING
between the
Georgia Department of Transportation (hereafter the DEPARTMENT)
and
BellSouth Telecommunications LLC d/b/a AT&T Georgia (hereafter the OWNER)

Whereas GDOT, hereafter referred to as the DEPARTMENT proposes to undertake a design-build project hereafter referred to as PROJECT to replace the bridge on CR 5813 (College Street) and increase the vertical clearance on the bridge on SR 247/US 41 (Pio Nono Avenue), both over Norfolk Southern Railroad, in Bibb County, Georgia by contract through competitive bidding procedures; and,

Whereas the DEPARTMENT will accomplish the PROJECT through a Design Consultant, Design Consultant Team and/or Contractor, hereafter referred to as CONTRACTOR; and the utility owner hereafter referred to as the OWNER, and

Whereas, where OWNER has property rights ("Prior Rights") at the location of the PROJECT, OWNER will provide written evidence as to said prior rights within the area and will provide written documentation of prior rights relating to any individual crossing or Utility Facility, at the location of the PROJECT; and

Whereas, OWNER acknowledges that, generally, absent a showing of prior rights, the costs of relocation, protection, removal, or adjustment performed by OWNER shall be borne by OWNER; and

Whereas, pursuant to O.C.G.A. § 32-6-170(b), DEPARTMENT is authorized to pay or participate in the payment of the costs of relocation, protection, or adjustment of OWNER’S facilities where DEPARTMENT has made the determination that (i) such payments are in the best interest of the public and necessary in order to expedite the staging of the design-build project; and (ii) the costs of the removal, relocation, protection, or adjustment of such facilities are included as part of the Contract between the Department and the Department’s roadway contractor for the design-build project; and

1. Type of Utility
OWNER has the following utility facilities which may need to be adjusted or relocated as a result of the proposed PROJECT:

Type of facility or facilities of OWNER:

_____ Domestic water mains and distribution lines and associated appurtenance
_____ Sanitary Sewer facilities and/or Storm Drainage System
_____ Electrical Distribution (overhead and underground) wires, poles, etc.
_____ Electrical Transmission (overhead and underground) wires, poles, etc.
_____ Natural Gas Distribution Facilities (underground)
_____ Natural Gas Transmission Facilities (underground)
_____ Petroleum Pipeline (underground)
_____ X Telecommunications facilities and equipment
_____ Cable TV facilities
_____ Street Lighting
_____ Internet Data Service
2. New Utility Facilities Proposed (Betterment)

OWNER desires the following to be installed as new additional facilities within the PROJECT. Insert here or attach a detailed description of proposed new additional utility installations:

NONE

3. Assignment of Responsibilities for Design and Construction

This MEMORANDUM OF UNDERSTANDING and the following shall serve as a basis for assignment of responsibilities and costs for the DEPARTMENT, CONTRACTOR and the OWNER to enter into a Standard Utility Agreement (SUA) or Contract Item Agreement (CIA), if necessary, with OWNER once the PROJECT is awarded to the CONTRACTOR. For a PROJECT implementation, GDOT will not have in its possession exact costing plans to be utilized to determine exact locations of the removal, relocation, protection, or adjustment. However, Overhead/Subsurface Utility Engineering (SUE) investigations plans exist providing the best information and signifying the layout of known existing facilities. Please use these plans for developing the final determination of services as indicated below. The CONTRACTOR developed plans will be provided to the OWNER after the design build project is awarded by GDOT which shall be used by the CONTRACTOR as the final basis for the SUA or CIA. Betterment costs will be the OWNER’S responsibility.

NOTE: Water and Sewer Design and Construction relocation work put in the contract will automatically be accomplished by the DEPARTMENT’S CONTRACTOR. The UTILITY OWNER will still have design approval authority. (No Pre-Approved Contractor/Consultant List required, leave page 6 blank). If you are a Water & Sewer Utility and choose to put your relocation Design and Construction in the contract, please check Design and Construction under Option 2 under 3B. Owner’s electing to perform their own design, at their own cost, please select design under 3C.

OWNER hereby intends to:

3A. OWNER, at the DEPARTMENT’S cost through an Agreement, will provide the following services for the properties for which it has established prior rights (Check to signify):

   Design _____
   Construction _____
3B. OWNER, at the CONTRACTOR’S cost, for any removal, relocation, protection, adjustment and/or design (Regardless of Prior Rights) will allow their facilities to be placed into the DEPARTMENT’S contract for the following services pursuant to O.C.G.A. § 32-6-170(b). The CONTRACTOR will add the removal, relocation, protection, materials, adjustment and/or design cost, excluding betterment, to the overall PROJECT’s cost. (Check to signify):

**Option 1:** OWNER wants the work to be performed by the OWNER’s pre-approved Design Consultants and/or Contractors.

Design  
Construction  

**Option 2:** OWNER wants the DEPARTMENT’S CONTRACTOR to perform the design and/or construction. (Check to signify):

Design  
Construction  

If both are checked, please leave page 6 blank.

As per this section, all work necessary for the removal, relocation, protection, or adjustment of the described utilities in accordance with the plans when approved shall be included in the project contract and accomplished by the CONTRACTOR except as follows (Check none or list any work items to be performed by the OWNER)

None  

Excluded Items

Comments: While the DB Contractor will be able to perform much of the design and construction, only AT&T union personnel can pull cable/fiber, perform splicing/tie-in work, some technical design work and do pole attachments (AT&T will be responsible these cost). The DB Contractor can install any required ducts, poles and vaults/manholes/handholes, enclosures and bridge attachments and will be responsible for the cost of the design and construction (including materials). In the MOU, AT&T has selected design and construction under 3b, option 1. AT&T has also selected 3c design and construction. AT&T will be responsible for some cost as indicated above and the DB Contractor will be responsible for the remaining cost.

3C. OWNER, at OWNER’S cost, will provide the following services (Check to signify):

Design  
Construction  

PI # 0014895 & 0014899
The following is hereby mutually agreed to and understood by both parties:

1. The identification of existing facilities including preparation of Overhead/Subsurface Utility Engineering (SUE) investigations plans will be accomplished by the DEPARTMENT prior to award of the PROJECT and thereafter supplemented by the CONTRACTOR.

2. The CONTRACTOR shall coordinate reviews of the utility relocation information and obtain acceptance from the OWNER and DEPARTMENT when required. However, the OWNER shall apply for and obtain any required permits from the DEPARTMENT and perform any final design or proprietary design needed to administer its own relocation work if the work will not be included in the contract. If the preliminary plans indicate that no conflict exists, and the OWNER concurs with this information, the OWNER shall provide a letter of “no conflict” to the CONTRACTOR.

3. After award of the PROJECT, the CONTRACTOR will research any claimed compensable property interest for each OWNER claiming prior rights under section 3A and present the findings to the DEPARTMENT and OWNER for approval. The plans and estimate for the utility work shall be subject to approval of both the DEPARTMENT and the OWNER prior to construction. If the OWNER chooses to perform its own relocations and the OWNER holds no property interest as stated above; the OWNER shall confirm in writing that the OWNER will relegate its own facilities at no cost to the DEPARTMENT or the CONTRACTOR.

4. All construction engineering and contract supervision shall be the responsibility of the DEPARTMENT and the CONTRACTOR to ensure that all utility work included in the contract is accomplished in accordance with the PROJECT’s plans and specifications. The CONTRACTOR will consult with the OWNER before authorizing any changes or deviations which affect the OWNER’s facility.

5. For utility work included in the contract, the CONTRACTOR shall ensure that the design/construction and installation of the OWNER’S facilities is performed by a contractor/design consultant pre-approved/registered with both the DEPARTMENT and the OWNER. For any work included in the contract, excluding water and sewer, the OWNER will provide a list of pre-approved/registered contractors/design consultants on page 6 of the MOU.

6. For Utility work included in the contract, the OWNER or the OWNER’s Consultant shall have the right to visit and inspect the work at any time and advise the CONTRACTOR and the DEPARTMENT’S Engineer of any observed discrepancies or potential issues. The DEPARTMENT agrees to notify the OWNER when all utility work is completed and ready for final inspection by the OWNER.

7. Upon Maintenance Acceptance or Final Acceptance of the utility work included in the contract and upon certification by the DEPARTMENT’S Engineer and the OWNER that the work has been completed in accordance with the plans and specifications, the OWNER will accept the adjusted, relocated, and additional facilities and will thereafter operate and maintain said facilities located within the PROJECT right of way subject to the DEPARTMENT’S Utility Accommodations Policy and Standards Manual (UAM), current edition” and any agreements in effect without further cost to the DEPARTMENT or it’s CONTRACTOR. Final acceptance of the utility relocation work is accomplished by the execution of the Utility Facility Relocation Acceptance Form. The CONTRACTOR shall provide the OWNER with a complete set of “As-Built Plans” for review and approval reflecting the relocation work performed by the CONTRACTOR. Upon completion of the Utility Facility Relocation Acceptance Form and the exchange of the final OWNER approved “As-Built Plans”, the OWNER will operate and maintain the installed facilities going forward based on the date of execution of the Utility Facility Relocation Acceptance Form by the DEPARTMENT.

8. For utility coordination, relocation and reimbursement matters, the OWNER shall cooperate with the CONTRACTOR in the same manner as if coordinating directly with the DEPARTMENT in accordance with the laws of the State of Georgia, the DEPARTMENT’S UAM and any agreements in effect between the DEPARTMENT and OWNER. The OWNER agrees to cooperate in good faith with the CONTRACTOR and to respond to all requests for information or meetings required to reach a resolution of any disputed items.
9. All Utility work included in the PROJECT’s contract and Utility work completed by the OWNER that is reimbursed by the DEPARTMENT through an agreement shall be in accordance with the BUY AMERICA requirements of the Federal regulations (23 U.S.C. 313 and 23 CFR 635.410) all manufacturing processes for steel and iron products or predominantly of steel or iron furnished for permanent incorporation into the work on this project shall occur in the United States. The only exception to this requirement is the production of pig iron and the processing, pelletizing and reduction of iron ore, which may occur in another country. Other than these exceptions, all melting, rolling, extruding, machining, bending, grinding, drilling, coating, etc. must occur in the United States.

   a. Products of steel include, but are not limited to, such products as structural steel piles, reinforcing steel, structural plate, steel culverts, and guardrail steel supports for signs, signals and luminaires. Products of iron include, but are not limited to, such products as cast iron frames and grates and ductile iron pipe. Coatings include, but are not limited to, the applications of epoxy, galvanizing and paint. The coating material is not limited to this clause, only the application process.

   b. A Certificate of Compliance shall be furnished for steel and iron products as part of the backup information with the billing. The form for this certification entitled “Buy America Certificate of Compliance” is attached to this agreement as “Exhibit A.” Records to be maintained by the Developer for this certification shall include a signed mill test report and a signed certification by each supplier, distributor, fabricator, and manufacturer that has handled the steel or iron product affirming that every process, including the application of a coating, performed on the steel or iron product has been carried out in the United States of America, except as allowed by this Section. The lack of these certifications will be justification for rejection of the steel and/or iron product or nonpayment of the work.

The requirements of said law and regulations do not prevent the use of miscellaneous steel or iron components, subcomponents and hardware necessary to encase, assemble and construct the above products, manufactured products that are not predominantly steel or iron or a minimal use of foreign steel and iron materials if the cost of such materials used does not exceed one-tenth of one percent (0.1%) of the total contract price or $2,500.00, whichever is greater. The Memorandum of Understanding will be incorporated into the project contract by reference or Exhibit.

APPROVED FOR THE OWNER BY:

[Signature] 02-12-2019

Manager OSP – Planning & Design Engineering

APPROVED FOR THE DEPARTMENT BY:

[Signature] 2/25/19

STATE UTILITIES ADMINISTRATOR
Pre-Approved Contractor List

Company Name: SEE ATTACHED LIST
Address:
Phone:
Contact Person:
E-Mail:

Company Name:
Address:
Phone:
Contact Person:
E-Mail:

Company Name:
Address:
Phone:
Contact Person:
E-Mail:

Please provide a minimum of three.

Pre-Approved Design Consultant List

Company Name: Byers Engineering
Address: 6285 Barfield Rd
Phone: 229-809-0407
Contact Person: Mitchell Belcher
E-Mail: mitchell.belcher@byers.com

Company Name: SourceOne Corp
Address: 1700 Water Place SE
Phone: Office: 678-594-5100 Ext. #102
Contact Person: Ben Blanton
E-Mail: bblanton@sourceonecorp.com

Company Name: Regional Telecom Services Associates, LLC
Address: 188 Hurricane Shoals Rd, Building 3000
Phone: 770-270-1212 ext=2006
Contact Person: John Ballard
E-Mail: jb210u@att.com
<table>
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**GA Region**
- **GA 1**: Atlanta
- **GA 2**: East
- **GA 3**: West
- **GA 4**: SE
- **GA 5**: SW

**Contact Information**
- **Emails**
- **Phone Numbers**
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<th>Company Name</th>
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<th>Phone</th>
<th>Email</th>
<th>Contact Name</th>
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</thead>
<tbody>
<tr>
<td>SOUTHERN FIBER CONSTRUCTION AND MANAGEMENT CO</td>
<td>51498L</td>
<td></td>
<td><a href="mailto:ethan@southernfibercable.com">ethan@southernfibercable.com</a></td>
<td>Ethan Beeks</td>
<td>803-274-4244</td>
</tr>
<tr>
<td>SOUTHERN NETWORK CONSTRUCTION, LLC</td>
<td>51508L</td>
<td></td>
<td><a href="mailto:sncacas@snetworkconstruction.com">sncacas@snetworkconstruction.com</a></td>
<td>Robert (Bobby) Jones</td>
<td>336-273-2799</td>
</tr>
<tr>
<td>TRIPLE S COMMUNICATIONS, INC.</td>
<td>37088</td>
<td></td>
<td><a href="mailto:triplescomm@windstream.net">triplescomm@windstream.net</a></td>
<td>Jerry Sumner</td>
<td>229-985-3090</td>
</tr>
<tr>
<td>WORLD FIBER TECHNOLOGIES, INC.</td>
<td>34658</td>
<td></td>
<td><a href="mailto:mbattle@worldfiber.com">mbattle@worldfiber.com</a></td>
<td>Mark Battle</td>
<td>770-619-0118</td>
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Georgia DOT Project: Bibb Co., SR 247/Pio Nono Ave. Over NSRR & CR 581/College St. Over NSRR
GDOT P.I. # 0014895 & 0014899

DESIGN-BUILD
MEMORANDUM OF UNDERSTANDING
between the
Georgia Department of Transportation (hereafter the DEPARTMENT)
and
Cox Communications (hereafter the OWNER)

Whereas GDOT, hereafter referred to as the DEPARTMENT proposes to undertake a design-build project hereafter referred to as PROJECT to replace the bridge on CR 5813 (College Street) and increase the vertical clearance on the bridge on SR 247/US 41 (Pio Nono Avenue), both over Norfolk Southern Railroad, in Bibb County, Georgia by contract through competitive bidding procedures; and,

Whereas the DEPARTMENT will accomplish the PROJECT through a Design Consultant, Design Consultant Team and/or Contractor, hereafter referred to as CONTRACTOR; and the utility owner hereafter referred to as the OWNER, and

Whereas, where OWNER has property rights ("Prior Rights") at the location of the PROJECT, OWNER will provide written evidence as to said prior rights within the area and will provide written documentation of prior rights relating to any individual crossing or Utility Facility, at the location of the PROJECT; and

Whereas, OWNER acknowledges that, generally, absent a showing of prior rights, the costs of relocation, protection, removal, or adjustment performed by OWNER shall be borne by OWNER; and

Whereas, pursuant to O.C.G.A. § 32-6-170(b), DEPARTMENT is authorized to pay or participate in the payment of the costs of relocation, protection, or adjustment of OWNER'S facilities where DEPARTMENT has made the determination that (i) such payments are in the best interest of the public and necessary in order to expedite the staging of the design-build project; and (ii) the costs of the removal, relocation, protection, or adjustment of such facilities are included as part of the Contract between the Department and the Department's roadway contractor for the design-build project; and

1. Type of Utility
OWNER has the following utility facilities which may need to be adjusted or relocated as a result of the proposed PROJECT:

Type of facility or facilities of OWNER:

___ Domestic water mains and distribution lines and associated appurtenances
___ Sanitary Sewer facilities and/or Storm Drainage System
___ Electrical Distribution (overhead and underground) wires, poles, etc.
___ Electrical Transmission (overhead and underground) wires, poles, etc.
___ Natural Gas Distribution Facilities (underground)
___ Natural Gas Transmission Facilities (underground)
___ Petroleum Pipeline (underground)
X Telecommunications facilities and equipment
X Cable TV facilities
___ Street Lighting
X Internet Data Service
___ Other Facilities (Description)
2. New Utility Facilities Proposed (Betterment)

OWNER desires the following to be installed as new additional facilities within the PROJECT. Insert here or attach a detailed description of proposed new additional utility installations:

3. Assignment of Responsibilities for Design and Construction

This MEMORANDUM OF UNDERSTANDING and the following shall serve as a basis for assignment of responsibilities and costs for the DEPARTMENT, CONTRACTOR and the OWNER to enter into a Standard Utility Agreement (SUA) or Contract Item Agreement (CIA), if necessary, with OWNER once the PROJECT is awarded to the CONTRACTOR. For a PROJECT implementation, GDOT will not have in its possession exact costing plans to be utilized to determine exact locations of the removal, relocation, protection, or adjustment. However, Overhead/Subsurface Utility Engineering (SUE) investigations plans exist providing the best information and signifying the layout of known existing facilities. Please use these plans for developing the final determination of services as indicated below. The CONTRACTOR developed plans will be provided to the OWNER after the design build project is awarded by GDOT which shall be used by the CONTRACTOR as the final basis for the SUA or CIA. Betterment costs will be the OWNER'S responsibility.

NOTE: Water and Sewer Design and Construction relocation work put in the contract will automatically be accomplished by the DEPARTMENT'S CONTRACTOR. The UTILITY OWNER will still have design approval authority. (No Pre-Approved Contractor/Consultant List required, leave page 6 blank). If you are a Water & Sewer Utility and choose to put your relocation Design and Construction in the contract, please check Design and Construction under Option 2 under 3B. Owner’s electing to perform their own design, at their own cost, please select design under 3C.

OWNER hereby intends to:

3A. OWNER, at the DEPARTMENT’S cost through an Agreement, will provide the following services for the properties for which it has established prior rights (Check to signify):

Design
Construction
3B. OWNER, at the CONTRACTOR’S cost, for any removal, relocation, protection, adjustment and/or design (Regardless of Prior Rights) will allow their facilities to be placed into the DEPARTMENT’S contract for the following services pursuant to O.C.G.A. § 32-6-170(b). The CONTRACTOR will add the removal, relocation, protection, materials, adjustment and/or design cost, excluding betterment, to the overall PROJECT’s cost. (Check to signify):

**Option 1:** OWNER wants the work to be performed by the OWNER’s pre-approved Design Consultants and/or Contractors.

- Design __X__
- Construction __X__

**Option 2:** OWNER wants the DEPARTMENT’S CONTRACTOR to perform the design and/or construction. (Check to signify):

- Design
- Construction __ If both are checked, please leave page 6 blank.

As per this section, all work necessary for the removal, relocation, protection, or adjustment of the described utilities in accordance with the plans when approved shall be included in the project contract and accomplished by the CONTRACTOR except as follows (Check none or list any work items to be performed by the OWNER)

None ______

Excluded Items ________________________________
______________________________
______________________________

Comments:
______________________________
______________________________
______________________________
______________________________

3C. OWNER, at OWNER’S cost, will provide the following services (Check to signify):

- Design
- Construction
The following is hereby mutually agreed to and understood by both parties:

1. The identification of existing facilities including preparation of Overhead/Subsurface Utility Engineering (SUE) investigations plans will be accomplished by the DEPARTMENT prior to award of the PROJECT and thereafter supplemented by the CONTRACTOR.

2. The CONTRACTOR shall coordinate reviews of the utility relocation information and obtain acceptance from the OWNER and DEPARTMENT when required. However, the OWNER shall apply for and obtain any required permits from the DEPARTMENT and perform any final design or proprietary design needed to administer its own relocation work if the work will not be included in the contract. If the preliminary plans indicate that no conflict exists, and the OWNER concurs with this information, the OWNER shall provide a letter of “no conflict” to the CONTRACTOR.

3. After award of the PROJECT, the CONTRACTOR will research any claimed compensable property interest for each OWNER claiming prior rights under section 3A and present the findings to the DEPARTMENT and OWNER for approval. The plans and estimate for the utility work shall be subject to approval of both the DEPARTMENT and the OWNER prior to construction. If the OWNER chooses to perform its own relocations and the OWNER holds no property interest as stated above; the OWNER shall confirm in writing that the OWNER will relocate its own facilities at no cost to the DEPARTMENT or the CONTRACTOR.

4. All construction engineering and contract supervision shall be the responsibility of the DEPARTMENT and the CONTRACTOR to ensure that all utility work included in the contract is accomplished in accordance with the PROJECT’s plans and specifications. The CONTRACTOR will consult with the OWNER before authorizing any changes or deviations which affect the OWNER’s facility.

5. For utility work included in the contract, the CONTRACTOR shall ensure that the design/construction and installation of the OWNER’S facilities is performed by a contractor/design consultant pre-approved/registered with both the DEPARTMENT and the OWNER. For any work included in the contract, excluding water and sewer, the OWNER will provide a list of pre-approved/registered contractors/design consultants on page 6 of the MOU.

6. For Utility work included in the contract, the OWNER or the OWNER’s Consultant shall have the right to visit and inspect the work at any time and advise the CONTRACTOR and the DEPARTMENT’S Engineer of any observed discrepancies or potential issues. The DEPARTMENT agrees to notify the OWNER when all utility work is completed and ready for final inspection by the OWNER.

7. Upon Maintenance Acceptance or Final Acceptance of the utility work included in the contract and upon certification by the DEPARTMENT’S Engineer and the OWNER that the work has been completed in accordance with the plans and specifications, the OWNER will accept the adjusted, relocated, and additional facilities and will thereafter operate and maintain said facilities located within the PROJECT right of way subject to the DEPARTMENT’S Utility Accommodations Policy and Standards Manual (UAM), current edition” and any agreements in effect without further cost to the DEPARTMENT or it’s CONTRACTOR. Final acceptance of the utility relocation work is accomplished by the execution of the Utility Facility Relocation Acceptance Form. The CONTRACTOR shall provide the OWNER with a complete set of “As-Built Plans” for review and approval reflecting the relocation work performed by the CONTRACTOR. Upon completion of the Utility Facility Relocation Acceptance Form and the exchange of the final OWNER approved “As-Built Plans”, the OWNER will operate and maintain the installed facilities going forward based on the date of execution of the Utility Facility Relocation Acceptance Form by the DEPARTMENT.

8. For utility coordination, relocation and reimbursement matters, the OWNER shall cooperate with the CONTRACTOR in the same manner as if coordinating directly with the DEPARTMENT in accordance with the laws of the State of Georgia, the DEPARTMENT’S UAM and any agreements in effect between the DEPARTMENT and OWNER. The OWNER agrees to cooperate in good faith with the CONTRACTOR and to respond to all requests for information or meetings required to reach a resolution of any disputed items.
9. All Utility work included in the PROJECT’s contract and Utility work completed by the OWNER that is reimbursed by the DEPARTMENT through an agreement shall be in accordance with the BUY AMERICA requirements of the Federal regulations (23 U.S.C. 313 and 23 CFR 635.410) all manufacturing processes for steel and iron products or predominantly of steel or iron furnished for permanent incorporation into the work on this project shall occur in the United States. The only exception to this requirement is the production of pig iron and the processing, pelletizing and reduction of iron ore, which may occur in another country. Other than these exceptions, all melting, rolling, extruding, machining, bending, grinding, drilling, coating, etc. must occur in the United States.

   a. Products of steel include, but are not limited to, such products as structural steel piles, reinforcing steel, structural plate, steel culverts, and guardrail steel supports for signs, signals and luminaires. Products of iron include, but are not limited to, such products as cast iron frames and grates and ductile iron pipe. Coatings include, but are not limited to, the applications of epoxy, galvanizing and paint. The coating material is not limited to this clause, only the application process.

   b. A Certificate of Compliance shall be furnished for steel and iron products as part of the backup information with the billing. The form for this certification entitled “Buy America Certificate of Compliance” is attached to this agreement as “Exhibit A.” Records to be maintained by the Developer for this certification shall include a signed mill test report and a signed certification by each supplier, distributor, fabricator, and manufacturer that has handled the steel or iron product affirming that every process, including the application of a coating, performed on the steel or iron product has been carried out in the United States of America, except as allowed by this Section. The lack of these certifications will be justification for rejection of the steel and/or iron product or nonpayment of the work.

The requirements of said law and regulations do not prevent the use of miscellaneous steel or iron components, subcomponents and hardware necessary to encase, assemble and construct the above products, manufactured products that are not predominantly steel or iron or a minimal use of foreign steel and iron materials if the cost of such materials used does not exceed one-tenth of one percent (0.1%) of the total contract price or $2,500.00, whichever is greater. The Memorandum of Understanding will be incorporated into the project contract by reference or Exhibit.

APPROVED FOR THE OWNER BY:

[Signature]

[Title]

(APPROVED FOR THE DEPARTMENT BY:

[Signature]

STATE UTILITIES ADMINISTRATOR

2/17/19

2/25/19
Pre-Approved Contractor List

Company Name: Innovative Fiber Technologies (IFT)
Address: 5861 Columbus Rd, Macon GA 31206
Phone: 478-957-7521
Contact Person: James Menke
E-Mail: james.menke@ift-ga.com

Company Name:
Address:
Phone:
Contact Person:
E-Mail:

Company Name:
Address:
Phone:
Contact Person:
E-Mail:

Company Name:
Address:
Phone:
Contact Person:
E-Mail:

Please provide a minimum of three.

Pre-Approved Design Consultant List

Company Name: Innovative Fiber Technologies (IFT)
Address: 5861 Columbus Rd, Macon Ga 31206
Phone: 478-957-7521
Contact Person: James Menke
E-Mail: james.menke@ift-ga.com

Company Name:
Address:
Phone:
Contact Person:
E-Mail:

Company Name:
Address:
Phone:
Contact Person:
E-Mail:
Cox Communication
Macon, GA

02/11/2019

Georgia Department of Transportation
District Utilities Office
Attention: Patrick Allen
600 W. Peachtree St
Atlanta, GA 30308


Dear Mr. Allen:

We only have the one contractor in the project area authorized to work on our facilities and we have included them on the MOU. Please let me know if this is acceptable for this project. If you have any questions, please let us know.

Cox Communications
Michelle Osborne

[Signature]
February 25, 2019

Michelle Osborne  
Cox Communications

RE: PI# 0014895 & 0014899 Bibb SR 247/Pio Nono Ave over NSRR & CR 581/College over NSRR

Ms. Osborne,

We received your letter stating that only one approved contractor is available to Cox Communications for the subject project. This is acceptable to the Department.

Sincerely,

Patrick Allen, P.E.  
State Utilities Engineer

Enclosure:
cc: John Tuttle
Georgia DOT Project: Bibb Co., SR 247/Pio Nono Ave. Over NSRR & CR 581/College St. Over NSRR
GDOT P.I. # 0014895 & 0014899

DESIGN-BUILD
MEMORANDUM OF UNDERSTANDING
between the
Georgia Department of Transportation (hereafter the DEPARTMENT)
and
Georgia Power Distribution (hereafter the OWNER)

Whereas GDOT, hereafter referred to as the DEPARTMENT proposes to undertake a design-build project hereafter referred to as PROJECT to replace the bridge on CR 5813 (College Street) and increase the vertical clearance on the bridge on SR 247/US 41 (Pio Nono Avenue), both over Norfolk Southern Railroad, in Bibb County, Georgia by contract through competitive bidding procedures; and,

Whereas the DEPARTMENT will accomplish the PROJECT through a Design Consultant, Design Consultant Team and/or Contractor, hereafter referred to as CONTRACTOR; and the utility owner hereafter referred to as the OWNER, and

Whereas, where OWNER has property rights (“Prior Rights”) at the location of the PROJECT, OWNER will provide written evidence as to said prior rights within the area and will provide written documentation of prior rights relating to any individual crossing or Utility Facility, at the location of the PROJECT; and

Whereas, OWNER acknowledges that, generally, absent a showing of prior rights, the costs of relocation, protection, removal, or adjustment performed by OWNER shall be borne by OWNER; and

Whereas, pursuant to O.C.G.A. § 32-6-170(b), DEPARTMENT is authorized to pay or participate in the payment of the costs of relocation, protection, or adjustment of OWNER’S facilities where DEPARTMENT has made the determination that (i) such payments are in the best interest of the public and necessary in order to expedite the staging of the design-build project; and (ii) the costs of the removal, relocation, protection, or adjustment of such facilities are included as part of the Contract between the Department and the Department's roadway contractor for the design-build project; and

1. Type of Utility
OWNER has the following utility facilities which may need to be adjusted or relocated as a result of the proposed PROJECT:

Type of facility or facilities of OWNER:
  ____________________________ Domestic water mains and distribution lines and associated appurtenances
  ____________________________ Sanitary Sewer facilities and/or Storm Drainage System
  ________ x Electrical Distribution (overhead and underground) wires, poles, etc.
  ____________________________ Electrical Transmission (overhead and underground) wires, poles, etc.
  ____________________________ Natural Gas Distribution Facilities (underground)
  ____________________________ Natural Gas Transmission Facilities (underground)
  ____________________________ Petroleum Pipeline (underground)
  ____________________________ Telecommunications facilities and equipment
  ____________________________ Cable TV facilities
  ____________________________ Street Lighting
  ____________________________ Internet Data Service
  ____________________________ Other Facilities (Description) ____________________________
2. New Utility Facilities Proposed (Betterment)

OWNER desires the following to be installed as new additional facilities within the PROJECT. Insert here or attach a detailed description of proposed new additional utility installations:

N/A

3. Assignment of Responsibilities for Design and Construction

This MEMORANDUM OF UNDERSTANDING and the following shall serve as a basis for assignment of responsibilities and costs for the DEPARTMENT, CONTRACTOR and the OWNER to enter into a Standard Utility Agreement (SUA) or Contract Item Agreement (CIA), if necessary, with OWNER once the PROJECT is awarded to the CONTRACTOR. For a PROJECT implementation, GDOT will not have in its possession exact costing plans to be utilized to determine exact locations of the removal, relocation, protection, or adjustment. However, Overhead/Subsurface Utility Engineering (SUE) investigations plans exist providing the best information and signifying the layout of known existing facilities. Please use these plans for developing the final determination of services as indicated below. The CONTRACTOR developed plans will be provided to the OWNER after the design build project is awarded by GDOT which shall be used by the CONTRACTOR as the final basis for the SUA or CIA. Betterment costs will be the OWNER’S responsibility.

NOTE: Water and Sewer Design and Construction relocation work put in the contract will automatically be accomplished by the DEPARTMENT’S CONTRACTOR. The UTILITY OWNER will still have design approval authority. (No Pre-Approved Contractor/Consultant List required, leave page 6 blank). If you are a Water & Sewer Utility and choose to put your relocation Design and Construction in the contract, please check Design and Construction under Option 2 under 3B. Owner’s electing to perform their own design, at their own cost, please select design under 3C.

OWNER hereby intends to:

3A. OWNER, at the DEPARTMENT’S cost through an Agreement, will provide the following services for the properties for which it has established prior rights (Check to signify):

Design X
Construction X
3B. OWNER, at the CONTRACTOR’S cost, for any removal, relocation, protection, adjustment and/or design (Regardless of Prior Rights) will allow their facilities to be placed into the DEPARTMENT’S contract for the following services pursuant to O.C.G.A. § 32-6-170(b). The CONTRACTOR will add the removal, relocation, protection, materials, adjustment and/or design cost, excluding betterment, to the overall PROJECT’s cost. (Check to signify):

**Option 1:** OWNER wants the work to be performed by the OWNER’s pre-approved Design Consultants and/or Contractors.

- Design _x_
- Construction _x_

**Option 2:** OWNER wants the DEPARTMENT’S CONTRACTOR to perform the design and/or construction. (Check to signify):

- Design ___
- Construction ___  **If both are checked, please leave page 6 blank.**

As per this section, all work necessary for the removal, relocation, protection, or adjustment of the described utilities in accordance with the plans when approved shall be included in the project contract and accomplished by the CONTRACTOR except as follows (Check none or list any work items to be performed by the OWNER)

- None _x_

Excluded Items __________________________________________________________

______________________________________________________________________

Comments: ____________________________________________________________

______________________________________________________________________

3C. OWNER, at OWNER’S cost, will provide the following services (Check to signify):

- Design ___
- Construction ____
The following is hereby mutually agreed to and understood by both parties:

1. The identification of existing facilities including preparation of Overhead/Subsurface Utility Engineering (SUERC) investigations plans will be accomplished by the DEPARTMENT prior to award of the PROJECT and thereafter supplemented by the CONTRACTOR.

2. The CONTRACTOR shall coordinate reviews of the utility relocation information and obtain acceptance from the OWNER and DEPARTMENT when required. However, the OWNER shall apply for and obtain any required permits from the DEPARTMENT and perform any final design or proprietary design needed to administer its own relocation work if the work will not be included in the contract. If the preliminary plans indicate that no conflict exists, and the OWNER concurs with this information, the OWNER shall provide a letter of “no conflict” to the CONTRACTOR.

3. After award of the PROJECT, the CONTRACTOR will research any claimed compensable property interest for each OWNER claiming prior rights under section 3A and present the findings to the DEPARTMENT and OWNER for approval. The plans and estimate for the utility work shall be subject to approval of both the DEPARTMENT and the OWNER prior to construction. If the OWNER chooses to perform its own relocations and the OWNER holds no property interest as stated above, the OWNER shall confirm in writing that the OWNER will relocate its own facilities at no cost to the DEPARTMENT or the CONTRACTOR.

4. All construction engineering and contract supervision shall be the responsibility of the DEPARTMENT and the CONTRACTOR to ensure that all utility work included in the contract is accomplished in accordance with the PROJECT’s plans and specifications. The CONTRACTOR will consult with the OWNER before authorizing any changes or deviations which affect the OWNER’s facility.

5. For utility work included in the contract, the CONTRACTOR shall ensure that the design/construction and installation of the OWNER’S facilities is performed by a contractor/design consultant pre-approved/registered with both the DEPARTMENT and the OWNER. For any work included in the contract, excluding water and sewer, the OWNER will provide a list of pre-approved/registered contractors/design consultants on page 6 of the MOU.

6. For Utility work included in the contract, the OWNER or the OWNER’s Consultant shall have the right to visit and inspect the work at any time and advise the CONTRACTOR and the DEPARTMENT’S Engineer of any observed discrepancies or potential issues. The DEPARTMENT agrees to notify the OWNER when all utility work is completed and ready for final inspection by the OWNER.

7. Upon Maintenance Acceptance or Final Acceptance of the utility work included in the contract and upon certification by the DEPARTMENT’S Engineer and the OWNER that the work has been completed in accordance with the plans and specifications, the OWNER will accept the adjusted, relocated, and additional facilities and will thereafter operate and maintain said facilities located within the PROJECT right of way subject to the DEPARTMENT’S Utility Accommodations Policy and Standards Manual (UAM), current edition and any agreements in effect without further cost to the DEPARTMENT or it’s CONTRACTOR. Final acceptance of the utility relocation work is accomplished by the execution of the Utility Facility Relocation Acceptance Form. The CONTRACTOR shall provide the OWNER with a complete set of “As-Built Plans” for review and approval reflecting the relocation work performed by the CONTRACTOR. Upon completion of the Utility Facility Relocation Acceptance Form and the exchange of the final OWNER approved “As-Built Plans”, the OWNER will operate and maintain the installed facilities going forward based on the date of execution of the Utility Facility Relocation Acceptance Form by the DEPARTMENT.

8. For utility coordination, relocation and reimbursement matters, the OWNER shall cooperate with the CONTRACTOR in the same manner as if coordinating directly with the DEPARTMENT in accordance with the laws of the State of Georgia, the DEPARTMENT’S UAM and any agreements in effect between the DEPARTMENT and OWNER. The OWNER agrees to cooperate in good faith with the CONTRACTOR and to respond to all requests for information or meetings required to reach a resolution of any disputed items.
9. All Utility work included in the PROJECT's contract and Utility work completed by the OWNER that is reimbursed by the DEPARTMENT through an agreement shall be in accordance with the BUY AMERICA requirements of the Federal regulations (23 U.S.C. 313 and 23 CFR 635.410) all manufacturing processes for steel and iron products or predominantly of steel or iron furnished for permanent incorporation into the work on this project shall occur in the United States. The only exception to this requirement is the production of pig iron and the processing, pelletizing and reduction of iron ore, which may occur in another country. Other than these exceptions, all melting, rolling, extruding, machining, bending, grinding, drilling, coating, etc. must occur in the United States.

a. Products of steel include, but are not limited to, such products as structural steel piles, reinforcing steel, structural plate, steel culverts, and guardrail steel supports for signs, signals and luminaires. Products of iron include, but are not limited to, such products as cast iron frames and grates and ductile iron pipe. Coatings include, but are not limited to, the applications of epoxy, galvanizing and paint. The coating material is not limited to this clause, only the application process.

b. A Certificate of Compliance shall be furnished for steel and iron products as part of the backup information with the billing. The form for this certification entitled “Buy America Certificate of Compliance” is attached to this agreement as “Exhibit A.” Records to be maintained by the Developer for this certification shall include a signed mill test report and a signed certification by each supplier, distributor, fabricator, and manufacturer that has handled the steel or iron product affirming that every process, including the application of a coating, performed on the steel or iron product has been carried out in the United States of America, except as allowed by this Section. The lack of these certifications will be justification for rejection of the steel and/or iron product or nonpayment of the work.

The requirements of said law and regulations do not prevent the use of miscellaneous steel or iron components, subcomponents and hardware necessary to encase, assemble and construct the above products, manufactured products that are not predominantly steel or iron or a minimal use of foreign steel and iron materials if the cost of such materials used does not exceed one-tenth of one percent (0.1%) of the total contract price or $2,500.00, whichever is greater. The Memorandum of Understanding will be incorporated into the project contract by reference or Exhibit.

APPROVED FOR THE OWNER BY:

[Signature]
Project Manager

(Date)

APPROVED FOR THE DEPARTMENT BY:

[Signature]
STATE UTILITIES ADMINISTRATOR

(Date)
Pre-Approved Contractor List

Company Name: See Attached Spreadsheet
Address:
Phone:
Contact Person:
E-Mail:

Company Name:
Address:
Phone:
Contact Person:
E-Mail:

Company Name:
Address:
Phone:
Contact Person:
E-Mail:

Please provide a minimum of three.

Pre-Approved Design Consultant List

Company Name: See Attached Spreadsheet
Address:
Phone:
Contact Person:
E-Mail:

Company Name:
Address:
Phone:
Contact Person:
E-Mail:

Company Name:
Address:
Phone:
Contact Person:
E-Mail:
# GEORGIA POWER COMPANY

## Design Contractors

<table>
<thead>
<tr>
<th>Name</th>
<th>Contact</th>
<th>Phone Number</th>
<th>Email</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enercon</td>
<td>Bryan Phillips</td>
<td>(813) 418-2263</td>
<td></td>
<td></td>
</tr>
<tr>
<td>McLean Engineering</td>
<td>Sean Knowles</td>
<td>(404) 520-0288</td>
<td><a href="mailto:sean.knowles@mcleanengineering.com">sean.knowles@mcleanengineering.com</a></td>
<td>1954 Airport Road, Suite 214, Chamblee GA 30341</td>
</tr>
<tr>
<td>Storm Services</td>
<td>David Dent</td>
<td>(678) 726-7551</td>
<td><a href="mailto:david@stormsl.com">david@stormsl.com</a></td>
<td>432 Wateroak Lane, Augusta, GA 30907</td>
</tr>
<tr>
<td>Pike Engineering</td>
<td>Justin Simmons</td>
<td>336-448-8564</td>
<td><a href="mailto:jsimmons@ucsend.com">jsimmons@ucsend.com</a></td>
<td>200 Cobb Pkwy N, Ste 428, Marietta, GA 30062</td>
</tr>
</tbody>
</table>

## Construction Contractors

<table>
<thead>
<tr>
<th>Name</th>
<th>Contact</th>
<th>Phone Number</th>
<th>Email</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>MasTec</td>
<td>Copper Nelson</td>
<td>650-519-0664</td>
<td><a href="mailto:Copper.Nelson@mastec.com">Copper.Nelson@mastec.com</a></td>
<td>800 S. Douglas Road, 12th Floor Coral Gables, FL 33134</td>
</tr>
<tr>
<td>Pike Electric</td>
<td>Jim McCloud</td>
<td>770-601-2358</td>
<td><a href="mailto:JMcCloud@pike.com">JMcCloud@pike.com</a></td>
<td>P.O. Box 868, 100 Pike Way Mount Airy, NC 27030</td>
</tr>
<tr>
<td>Service Electric</td>
<td>Brian Imsand</td>
<td>(423) 265-3161</td>
<td><a href="mailto:Bimsand@serviceelectricco.com">Bimsand@serviceelectricco.com</a></td>
<td>1631 East 25th Street PO Box 3656 Chattanooga, TN 37404</td>
</tr>
<tr>
<td>Sumter Utilities</td>
<td>Mikell Murray</td>
<td>843-725-9521</td>
<td><a href="mailto:jmurray@suimail.com">jmurray@suimail.com</a></td>
<td>1151 North Pike West Sumter, SC 29151</td>
</tr>
<tr>
<td>Utilicon</td>
<td>Jimmy Glover</td>
<td>(478) 348-3233</td>
<td><a href="mailto:l.glover@utilicon.net">l.glover@utilicon.net</a></td>
<td>13275 Highway 231 Davisboro, Ga 31018</td>
</tr>
<tr>
<td>Williams Electric</td>
<td>Rick Falls</td>
<td>(704) 484-1881</td>
<td><a href="mailto:rick.falls@4weco.com">rick.falls@4weco.com</a></td>
<td>P.O. Box 2367 Shelby, NC 28151</td>
</tr>
</tbody>
</table>

2/4/2019
Georgia DOT Project: Bibb Co., SR 247/Pio Nono Ave. Over NSRR & CR 581/College St. Over NSRR  
GDOT P.I. # 0014895 & 0014899

DESIGN-BUILD  
MEMORANDUM OF UNDERSTANDING  
between the  
Georgia Department of Transportation (hereafter the DEPARTMENT)  
and  
Macon-Bibb County Government (hereafter the OWNER)

Whereas GDOT, hereafter referred to as the DEPARTMENT proposes to undertake a design-build project hereafter referred to as PROJECT to replace the bridge on CR 5813 (College Street) and increase the vertical clearance on the bridge on SR 247/US 41 (Pio Nono Avenue), both over Norfolk Southern Railroad, in Bibb County, Georgia by contract through competitive bidding procedures; and,

Whereas the DEPARTMENT will accomplish the PROJECT through a Design Consultant, Design Consultant Team and/or Contractor, hereafter referred to as CONTRACTOR; and the utility owner hereafter referred to as the OWNER, and

Whereas, where OWNER has property rights ("Prior Rights") at the location of the PROJECT, OWNER will provide written evidence as to said prior rights within the area and will provide written documentation of prior rights relating to any individual crossing or Utility Facility, at the location of the PROJECT; and

Whereas, OWNER acknowledges that, generally, absent a showing of prior rights, the costs of relocation, protection, removal, or adjustment performed by OWNER shall be borne by OWNER; and

Whereas, pursuant to O.C.G.A. § 32-6-170(b), DEPARTMENT is authorized to pay or participate in the payment of the costs of relocation, protection, or adjustment of OWNER'S facilities where DEPARTMENT has made the determination that (i) such payments are in the best interest of the public and necessary in order to expedite the staging of the design-build project; and (ii) the costs of the removal, relocation, protection, or adjustment of such facilities are included as part of the Contract between the Department and the Department's roadway contractor for the design-build project; and

1. Type of Utility  
OWNER has the following utility facilities which may need to be adjusted or relocated as a result of the proposed PROJECT:

Type of facility or facilities of OWNER:  
_____ Domestic water mains and distribution lines and associated appurtenances  
_____ Sanitary Sewer facilities and/or Storm Drainage System  
_____ Electrical Distribution (overhead and underground) wires, poles, etc.  
_____ Electrical Transmission (overhead and underground) wires, poles, etc.  
_____ Natural Gas Distribution Facilities (underground)  
_____ Natural Gas Transmission Facilities (underground)  
_____ Petroleum Pipeline (underground)  
_____ Telecommunications facilities and equipment  
_____ Cable TV facilities  
_____ Street Lighting  
_____ Internet Data Service  
_____ Other Facilities (Description)
2. New Utility Facilities Proposed (Betterment)

OWNER desires the following to be installed as new additional facilities within the PROJECT. Insert here or attach a detailed description of proposed new additional utility installations:

3. Assignment of Responsibilities for Design and Construction

This MEMORANDUM OF UNDERSTANDING and the following shall serve as a basis for assignment of responsibilities and costs for the DEPARTMENT, CONTRACTOR and the OWNER to enter into a Standard Utility Agreement (SUA) or Contract Item Agreement (CIA), if necessary, with OWNER once the PROJECT is awarded to the CONTRACTOR. For a PROJECT implementation, GDOT will not have in its possession exact costing plans to be utilized to determine exact locations of the removal, relocation, protection, or adjustment. However, Overhead/Subsurface Utility Engineering (SUE) investigations plans exist providing the best information and signifying the layout of known existing facilities. Please use these plans for developing the final determination of services as indicated below. The CONTRACTOR developed plans will be provided to the OWNER after the design build project is awarded by GDOT which shall be used by the CONTRACTOR as the final basis for the SUA or CIA. Betterment costs will be the OWNER'S responsibility.

NOTE: Water and Sewer Design and Construction relocation work put in the contract will automatically be accomplished by the DEPARTMENT'S CONTRACTOR. The UTILITY OWNER will still have design approval authority. (No Pre-Approved Contractor/Consultant List required, leave page 6 blank). If you are a Water & Sewer Utility and choose to put your relocation Design and Construction in the contract, please check Design and Construction under Option 2 under 3B. Owner’s electing to perform their own design, at their own cost, please select design under 3C.

OWNER hereby intends to:

3A. OWNER, at the DEPARTMENT'S cost through an Agreement, will provide the following services for the properties for which it has established prior rights (Check to signify):

Design
Construction

3B. OWNER, at the CONTRACTOR’S cost, for any removal, relocation, protection, adjustment and/or design (Regardless of Prior Rights) will allow their facilities to be placed into the DEPARTMENT’S contract for the following services pursuant to O.C.G.A. § 32-6-170(b). The CONTRACTOR will add the removal, relocation, protection, materials, adjustment and/or design cost, excluding betterment, to the overall PROJECT’s cost. (Check to signify):

**Option 1:** OWNER wants the work to be performed by the OWNER’s pre-approved Design Consultants and/or Contractors.

Design ____
Construction ____

**Option 2:** OWNER wants the DEPARTMENT’S CONTRACTOR to perform the design and/or construction. (Check to signify):

Design   X
Construction   X  **If both are checked, please leave page 6 blank.**

As per this section, all work necessary for the removal, relocation, protection, or adjustment of the described utilities in accordance with the plans when approved shall be included in the project contract and accomplished by the CONTRACTOR except as follows (Check none or list any work items to be performed by the OWNER)

None   X

Excluded Items
________________________________________________________
________________________________________________________

Comments:
________________________________________________________
________________________________________________________
________________________________________________________
________________________________________________________
________________________________________________________
________________________________________________________

3C. OWNER, at OWNER’S cost, will provide the following services (Check to signify):

Design ____
Construction ____
The following is hereby mutually agreed to and understood by both parties:

1. The identification of existing facilities including preparation of Overhead/Subsurface Utility Engineering (SUE) investigations plans will be accomplished by the DEPARTMENT prior to award of the PROJECT and thereafter supplemented by the CONTRACTOR.

2. The CONTRACTOR shall coordinate reviews of the utility relocation information and obtain acceptance from the OWNER and DEPARTMENT when required. However, the OWNER shall apply for and obtain any required permits from the DEPARTMENT and perform any final design or proprietary design needed to administer its own relocation work if the work will not be included in the contract. If the preliminary plans indicate that no conflict exists, and the OWNER concurs with this information, the OWNER shall provide a letter of “no conflict” to the CONTRACTOR.

3. After award of the PROJECT, the CONTRACTOR will research any claimed compensable property interest for each OWNER claiming prior rights under section 3A and present the findings to the DEPARTMENT and OWNER for approval. The plans and estimate for the utility work shall be subject to approval of both the DEPARTMENT and the OWNER prior to construction. If the OWNER chooses to perform its own relocations and the OWNER holds no property interest as stated above; the OWNER shall confirm in writing that the OWNER will relocate its own facilities at no cost to the DEPARTMENT or the CONTRACTOR.

4. All construction engineering and contract supervision shall be the responsibility of the DEPARTMENT and the CONTRACTOR to ensure that all utility work included in the contract is accomplished in accordance with the PROJECT’s plans and specifications. The CONTRACTOR will consult with the OWNER before authorizing any changes or deviations which affect the OWNER’s facility.

5. For utility work included in the contract, the CONTRACTOR shall ensure that the design/construction and installation of the OWNER’S facilities is performed by a contractor/design consultant pre-approved/registered with both the DEPARTMENT and the OWNER. For any work included in the contract, excluding water and sewer, the OWNER will provide a list of pre-approved/registered contractors/design consultants on page 6 of the MOU.

6. For Utility work included in the contract, the OWNER or the OWNER’S Consultant shall have the right to visit and inspect the work at any time and advise the CONTRACTOR and the DEPARTMENT’S Engineer of any observed discrepancies or potential issues. The DEPARTMENT agrees to notify the OWNER when all utility work is completed and ready for final inspection by the OWNER.

7. Upon Maintenance Acceptance or Final Acceptance of the utility work included in the contract and upon certification by the DEPARTMENT’S Engineer and the OWNER that the work has been completed in accordance with the plans and specifications, the OWNER will accept the adjusted, relocated, and additional facilities and will thereafter operate and maintain said facilities located within the PROJECT right of way subject to the DEPARTMENT’S Utility Accommodations Policy and Standards Manual (UAM), current edition” and any agreements in effect without further cost to the DEPARTMENT or it’s CONTRACTOR. Final acceptance of the utility relocation work is accomplished by the execution of the Utility Facility Relocation Acceptance Form. The CONTRACTOR shall provide the OWNER with a complete set of “As-Built Plans” for review and approval reflecting the relocation work performed by the CONTRACTOR. Upon completion of the Utility Facility Relocation Acceptance Form and the exchange of the final OWNER approved “As-Built Plans”, the OWNER will operate and maintain the installed facilities going forward based on the date of execution of the Utility Facility Relocation Acceptance Form by the DEPARTMENT.

8. For utility coordination, relocation and reimbursement matters, the OWNER shall cooperate with the CONTRACTOR in the same manner as if coordinating directly with the DEPARTMENT in accordance with the laws of the State of Georgia, the DEPARTMENT’S UAM and any agreements in effect between the DEPARTMENT and OWNER. The OWNER agrees to cooperate in good faith with the CONTRACTOR and to respond to all requests for information or meetings required to reach a resolution of any disputed items.
9. All Utility work included in the PROJECT’s contract and Utility work completed by the OWNER that is reimbursed by the DEPARTMENT through an agreement shall be in accordance with the BUY AMERICA requirements of the Federal regulations (23 U.S.C. 313 and 23 CFR 635.410) all manufacturing processes for steel and iron products or predominantly of steel or iron furnished for permanent incorporation into the work on this project shall occur in the United States. The only exception to this requirement is the production of pig iron and the processing, pelletizing and reduction of iron ore, which may occur in another country. Other than these exceptions, all melting, rolling, extruding, machining, bending, grinding, drilling, coating, etc. must occur in the United States.

a. Products of steel include, but are not limited to, such products as structural steel piles, reinforcing steel, structural plate, steel culverts, and guardrail steel supports for signs, signals and luminaires. Products of iron include, but are not limited to, such products as cast iron frames and grates and ductile iron pipe. Coatings include, but are not limited to, the applications of epoxy, galvanizing and paint. The coating material is not limited to this clause, only the application process.

b. A Certificate of Compliance shall be furnished for steel and iron products as part of the backup information with the billing. The form for this certification entitled “Buy America Certificate of Compliance” is attached to this agreement as “Exhibit A.” Records to be maintained by the Developer for this certification shall include a signed mill test report and a signed certification by each supplier, distributor, fabricator, and manufacturer that has handled the steel or iron product affirming that every process, including the application of a coating, performed on the steel or iron product has been carried out in the United States of America, except as allowed by this Section. The lack of these certifications will be justification for rejection of the steel and/or iron product or nonpayment of the work.

The requirements of said law and regulations do not prevent the use of miscellaneous steel or iron components, subcomponents and hardware necessary to encase, assemble and construct the above products, manufactured products that are not predominantly steel or iron or a minimal use of foreign steel and iron materials if the cost of such materials used does not exceed one-tenth of one percent (0.1%) of the total contract price or $2,500.00, whichever is greater. The Memorandum of Understanding will be incorporated into the project contract by reference or Exhibit.

APPROVED FOR THE OWNER BY:

[Signature]  
[Signature]  
[Signature]

(Date)  
(Date)  
(Date)

Mayor  
Title

APPROVED FOR THE DEPARTMENT BY:

[Signature]

(Date)

STATE UTILITIES ADMINISTRATOR
Pre- Approved Contractor List

Company Name:
Address:
Phone:
Contact Person:
E-Mail:

Company Name:
Address:
Phone:
Contact Person:
E-Mail:

Company Name:
Address:
Phone:
Contact Person:
E-Mail:

Please provide a minimum of three.

Pre-Approved Design Consultant List

Company Name:
Address:
Phone:
Contact Person:
E-Mail:

Company Name:
Address:
Phone:
Contact Person:
E-Mail:

Company Name:
Address:
Phone:
Contact Person:
E-Mail:
Georgia DOT Project: Bibb Co., SR 247/Pio Nono Ave. Over NSRR & CR 581/College St. Over NSRR
GDOT P.I. # 0014895 & 0014899

DESIGN-BUILD
MEMORANDUM OF UNDERSTANDING
between the
Georgia Department of Transportation (hereafter the DEPARTMENT)
and
Macon Water Authority (hereafter the OWNER)

Whereas GDOT, hereafter referred to as the DEPARTMENT proposes to undertake a design-build project hereafter referred to as PROJECT to replace the bridge on CR 5813 (College Street) and increase the vertical clearance on the bridge on SR 247/US 41 (Pio Nono Avenue), both over Norfolk Southern Railroad, in Bibb County, Georgia by contract through competitive bidding procedures; and,

Whereas the DEPARTMENT will accomplish the PROJECT through a Design Consultant, Design Consultant Team and/or Contractor, hereafter referred to as CONTRACTOR; and the utility owner hereafter referred to as the OWNER, and

Whereas, where OWNER has property rights ("Prior Rights") at the location of the PROJECT, OWNER will provide written evidence as to said prior rights within the area and will provide written documentation of prior rights relating to any individual crossing or Utility Facility, at the location of the PROJECT; and

Whereas, OWNER acknowledges that, generally, absent a showing of prior rights, the costs of relocation, protection, removal, or adjustment performed by OWNER shall be borne by OWNER; and

Whereas, pursuant to O.C.G.A. § 32-6-170(b), DEPARTMENT is authorized to pay or participate in the payment of the costs of relocation, protection, or adjustment of OWNER’S facilities where DEPARTMENT has made the determination that (i) such payments are in the best interest of the public and necessary in order to expedite the staging of the design-build project; and (ii) the costs of the removal, relocation, protection, or adjustment of such facilities are included as part of the Contract between the Department and the Department's roadway contractor for the design-build project; and

1. Type of Utility
OWNER has the following utility facilities which may need to be adjusted or relocated as a result of the proposed PROJECT:

Type of facility or facilities of OWNER:
- [X] Domestic water mains and distribution lines and associated appurtenances
- [X] Sanitary Sewer facilities and/or Storm Drainage System
- Electrical Distribution (overhead and underground) wires, poles, etc.
- Electrical Transmission (overhead and underground) wires, poles, etc.
- Natural Gas Distribution Facilities (underground)
- Natural Gas Transmission Facilities (underground)
- Petroleum Pipeline (underground)
- Telecommunications facilities and equipment
- Cable TV facilities
- Street Lighting
- Internet Data Service
- Other Facilities (Description)
2. New Utility Facilities Proposed (Betterment)

OWNER desires the following to be installed as new additional facilities within the PROJECT. Insert here or attach a detailed description of proposed new additional utility installations:

3. Assignment of Responsibilities for Design and Construction

This MEMORANDUM OF UNDERSTANDING and the following shall serve as a basis for assignment of responsibilities and costs for the DEPARTMENT, CONTRACTOR and the OWNER to enter into a Standard Utility Agreement (SUA) or Contract Item Agreement (CIA), if necessary, with OWNER once the PROJECT is awarded to the CONTRACTOR. For a PROJECT implementation, GDOT will not have in its possession exact costing plans to be utilized to determine exact locations of the removal, relocation, protection, or adjustment. However, Overhead/Subsurface Utility Engineering (SUB) investigations plans exist providing the best information and signifying the layout of known existing facilities. Please use these plans for developing the final determination of services as indicated below. The CONTRACTOR developed plans will be provided to the OWNER after the design build project is awarded by GDOT which shall be used by the CONTRACTOR as the final basis for the SUA or CIA. Betterment costs will be the OWNER’S responsibility.

NOTE: Water and Sewer Design and Construction relocation work put in the contract will automatically be accomplished by the DEPARTMENT’S CONTRACTOR. The UTILITY OWNER will still have design approval authority. (No Pre-Approved Contractor/Consultant List required, leave page 6 blank). If you are a Water & Sewer Utility and choose to put your relocation Design and Construction in the contract, please check Design and Construction under Option 2 under 3B. Owner’s electing to perform their own design, at their own cost, please select design under 3C.

OWNER hereby intends to:

3A. OWNER, at the DEPARTMENT’S cost through an Agreement, will provide the following services for the properties for which it has established prior rights (Check to signify):

Design
Construction
3B. OWNER, at the CONTRACTOR’S cost, for any removal, relocation, protection, adjustment and/or design (Regardless of Prior Rights) will allow their facilities to be placed into the DEPARTMENT’S contract for the following services pursuant to O.C.G.A. § 32-6-170(b). The CONTRACTOR will add the removal, relocation, protection, materials, adjustment and/or design cost, excluding betterment, to the overall PROJECT’s cost. (Check to signify):

**Option 1:** OWNER wants the work to be performed by the OWNER’s pre-approved Design Consultants and/or Contractors.

Design  
Construction  

**Option 2:** OWNER wants the DEPARTMENT’S CONTRACTOR to perform the design and/or construction. (Check to signify):

Design  
Construction  

*If both are checked, please leave page 6 blank.*

As per this section, all work necessary for the removal, relocation, protection, or adjustment of the described utilities in accordance with the plans when approved shall be included in the project contract and accomplished by the CONTRACTOR except as follows (Check none or list any work items to be performed by the OWNER)

None  

Excluded Items  

Comments:  

3C. OWNER, at OWNER’S cost, will provide the following services (Check to signify):

Design  
Construction  
The following is hereby mutually agreed to and understood by both parties:

1. The identification of existing facilities including preparation of Overhead/Subsurface Utility Engineering (SUE) investigations plans will be accomplished by the DEPARTMENT prior to award of the PROJECT and thereafter supplemented by the CONTRACTOR.

2. The CONTRACTOR shall coordinate reviews of the utility relocation information and obtain acceptance from the OWNER and DEPARTMENT when required. However, the OWNER shall apply for and obtain any required permits from the DEPARTMENT and perform any final design or proprietary design needed to administer its own relocation work if the work will not be included in the contract. If the preliminary plans indicate that no conflict exists, and the OWNER concurs with this information, the OWNER shall provide a letter of “no conflict” to the CONTRACTOR.

3. After award of the PROJECT, the CONTRACTOR will research any claimed compensable property interest for each OWNER claiming prior rights under section 3A and present the findings to the DEPARTMENT and OWNER for approval. The plans and estimate for the utility work shall be subject to approval of both the DEPARTMENT and the OWNER prior to construction. If the OWNER chooses to perform its own relocations and the OWNER holds no property interest as stated above; the OWNER shall confirm in writing that the OWNER will relocate its own facilities at no cost to the DEPARTMENT or the CONTRACTOR.

4. All construction engineering and contract supervision shall be the responsibility of the DEPARTMENT and the CONTRACTOR to ensure that all utility work included in the contract is accomplished in accordance with the PROJECT’s plans and specifications. The CONTRACTOR will consult with the OWNER before authorizing any changes or deviations which affect the OWNER’s facility.

5. For utility work included in the contract, the CONTRACTOR shall ensure that the design/construction and installation of the OWNER’S facilities is performed by a contractor/design consultant pre-approved/registered with both the DEPARTMENT and the OWNER. For any work included in the contract, excluding water and sewer, the OWNER will provide a list of pre-approved/registered contractors/design consultants on page 6 of the MOU.

6. For Utility work included in the contract, the OWNER or the OWNER’s Consultant shall have the right to visit and inspect the work at any time and advise the CONTRACTOR and the DEPARTMENT’S Engineer of any observed discrepancies or potential issues. The DEPARTMENT agrees to notify the OWNER when all utility work is completed and ready for final inspection by the OWNER.

7. Upon Maintenance Acceptance or Final Acceptance of the utility work included in the contract and upon certification by the DEPARTMENT’S Engineer and the OWNER that the work has been completed in accordance with the plans and specifications, the OWNER will accept the adjusted, relocated, and additional facilities and will thereafter operate and maintain said facilities located within the PROJECT right of way subject to the DEPARTMENT’S Utility Accommodations Policy and Standards Manual (UAM), current edition and any agreements in effect without further cost to the DEPARTMENT or it’s CONTRACTOR. Final acceptance of the utility relocation work is accomplished by the execution of the Utility Facility Relocation Acceptance Form. The CONTRACTOR shall provide the OWNER with a complete set of “As-Built Plans” for review and approval reflecting the relocation work performed by the CONTRACTOR. Upon completion of the Utility Facility Relocation Acceptance Form and the exchange of the final OWNER approved “As-Built Plans”, the OWNER will operate and maintain the installed facilities going forward based on the date of execution of the Utility Facility Relocation Acceptance Form by the DEPARTMENT.

8. For utility coordination, relocation and reimbursement matters, the OWNER shall cooperate with the CONTRACTOR in the same manner as if coordinating directly with the DEPARTMENT in accordance with the laws of the State of Georgia, the DEPARTMENT’S UAM and any agreements in effect between the DEPARTMENT and OWNER. The OWNER agrees to cooperate in good faith with the CONTRACTOR and to respond to all requests for information or meetings required to reach a resolution of any disputed items.
9. All Utility work included in the PROJECT’s contract and Utility work completed by the OWNER that is reimbursed by the DEPARTMENT through an agreement shall be in accordance with the BUY AMERICA requirements of the Federal regulations (23 U.S.C. 313 and 23 CFR 635.410) all manufacturing processes for steel and iron products or predominantly of steel or iron furnished for permanent incorporation into the work on this project shall occur in the United States. The only exception to this requirement is the production of pig iron and the processing, pelletizing and reduction of iron ore, which may occur in another country. Other than these exceptions, all melting, rolling, extruding, machining, bending, grinding, drilling, coating, etc. must occur in the United States.

   a. Products of steel include, but are not limited to, such products as structural steel piles, reinforcing steel, structural plate, steel culverts, and guardrail steel supports for signs, signals and luminaires. Products of iron include, but are not limited to, such products as cast iron frames and grates and ductile iron pipe. Coatings include, but are not limited to, the applications of epoxy, galvanizing and paint. The coating material is not limited to this clause, only the application process.

   b. A Certificate of Compliance shall be furnished for steel and iron products as part of the backup information with the billing. The form for this certification entitled “Buy America Certificate of Compliance” is attached to this agreement as “Exhibit A.” Records to be maintained by the Developer for this certification shall include a signed mill test report and a signed certification by each supplier, distributor, fabricator, and manufacturer that has handled the steel or iron product affirming that every process, including the application of a coating, performed on the steel or iron product has been carried out in the United States of America, except as allowed by this Section. The lack of these certifications will be justification for rejection of the steel and/or iron product or nonpayment of the work.

The requirements of said law and regulations do not prevent the use of miscellaneous steel or iron components, subcomponents and hardware necessary to encase, assemble and construct the above products, manufactured products that are not predominantly steel or iron or a minimal use of foreign steel and iron materials if the cost of such materials used does not exceed one-tenth of one percent (0.1%) of the total contract price or $2,500.00, whichever is greater. The Memorandum of Understanding will be incorporated into the project contract by reference or Exhibit.

APPROVED FOR THE OWNER BY:

[Signature] [Date]

[Title]

APPROVED FOR THE DEPARTMENT BY:

[Signature] [Date]

STATE UTILITIES ADMINISTRATOR
Pre-Approved Contractor List

Company Name:  
Address:  
Phone:  
Contact Person:  
E-Mail: 

Company Name:  
Address:  
Phone:  
Contact Person:  
E-Mail: 

Company Name:  
Address:  
Phone:  
Contact Person:  
E-Mail: 

Please provide a minimum of three.

Pre-Approved Design Consultant List

Company Name:  
Address:  
Phone:  
Contact Person:  
E-Mail: 

Company Name:  
Address:  
Phone:  
Contact Person:  
E-Mail: 

Company Name:  
Address:  
Phone:  
Contact Person:  
E-Mail:
**Georgia DOT Project:** Bibb Co., SR 247/Pio Nono Ave. Over NSRR & CR 581/College St. Over NSRR  
**GDOT P.I. #** 0014895 & 0014899

**DESIGN-BUILD MEMORANDUM OF UNDERSTANDING**

between the  
Georgia Department of Transportation (hereafter the DEPARTMENT)  
and  
Public Service Telephone (hereafter the OWNER)

Whereas GDOT, hereafter referred to as the DEPARTMENT proposes to undertake a design-build project hereafter referred to as PROJECT to replace the bridge on CR 5813 (College Street) and increase the vertical clearance on the bridge on SR 247/US 41 (Pio Nono Avenue), both over Norfolk Southern Railroad, in Bibb County, Georgia by contract through competitive bidding procedures; and,

Whereas the DEPARTMENT will accomplish the PROJECT through a Design Consultant, Design Consultant Team and/or Contractor, hereafter referred to as CONTRACTOR; and the utility owner hereafter referred to as the OWNER, and

Whereas, where OWNER has property rights ("Prior Rights") at the location of the PROJECT, OWNER will provide written evidence as to said prior rights within the area and will provide written documentation of prior rights relating to any individual crossing or Utility Facility, at the location of the PROJECT; and

Whereas, OWNER acknowledges that, generally, absent a showing of prior rights, the costs of relocation, protection, removal, or adjustment performed by OWNER shall be borne by OWNER; and

Whereas, pursuant to O.C.G.A. § 32-6-170(b), DEPARTMENT is authorized to pay or participate in the payment of the costs of relocation, protection, or adjustment of OWNER'S facilities where DEPARTMENT has made the determination that (i) such payments are in the best interest of the public and necessary in order to expedite the staging of the design-build project; and (ii) the costs of the removal, relocation, protection, or adjustment of such facilities are included as part of the Contract between the Department and the Department's roadway contractor for the design-build project; and

1. **Type of Utility**

OWNER has the following utility facilities which may need to be adjusted or relocated as a result of the proposed PROJECT:

Type of facility or facilities of OWNER:

- Domestic water mains and distribution lines and associated appurtenances
- Sanitary Sewer facilities and/or Storm Drainage System
- Electrical Distribution (overhead and underground) wires, poles, etc.
- Electrical Transmission (overhead and underground) wires, poles, etc.
- Natural Gas Distribution Facilities (underground)
- Natural Gas Transmission Facilities (underground)
- Petroleum Pipeline (underground)
- Telecommunications facilities and equipment
- Cable TV facilities
- Street Lighting
- Internet Data Service
- Other Facilities (Description)
2. New Utility Facilities Proposed (Betterment)

OWNER desires the following to be installed as new additional facilities within the PROJECT. Insert here or attach a detailed description of proposed new additional utility installations:

3. Assignment of Responsibilities for Design and Construction

This MEMORANDUM OF UNDERSTANDING and the following shall serve as a basis for assignment of responsibilities and costs for the DEPARTMENT, CONTRACTOR and the OWNER to enter into Standard Utility Agreement (SUA) or Contract Item Agreement (CIA), if necessary, with OWNER once the PROJECT is awarded to the CONTRACTOR. For a PROJECT implementation, GDOT will not have in its possession exact costing plans to be utilized to determine exact locations of the removal, relocation, protection, or adjustment. However, Overhead/Subsurface Utility Engineering (SUE) investigations plans exist providing the best information and signifying the layout of known existing facilities. Please use these plans for developing the final determination of services as indicated below. The CONTRACTOR developed plans will be provided to the OWNER after the design build project is awarded by GDOT which shall be used by the CONTRACTOR as the final basis for the SUA or CIA. Betterment costs will be the OWNER’S responsibility.

NOTE: Water and Sewer Design and Construction relocation work put in the contract will automatically be accomplished by the DEPARTMENT’S CONTRACTOR. The UTILITY OWNER will still have design approval authority. (No Pre-Approved Contractor/Consultant List required, leave page 6 blank). If you are a Water & Sewer Utility and choose to put your relocation Design and Construction in the contract, please check Design and Construction under Option 2 under 3B. Owner’s electing to perform their own design, at their own cost, please select design under 3C.

OWNER hereby intends to:

3A. OWNER, at the DEPARTMENT’S cost through an Agreement, will provide the following services for the properties for which it has established prior rights (Check to signify):

Design
Construction
3B. OWNER, at the CONTRACTOR’S cost, for any removal, relocation, protection, adjustment and/or design (Regardless of Prior Rights) will allow their facilities to be placed into the DEPARTMENT’S contract for the following services pursuant to O.C.G.A. § 32-6-170(b). The CONTRACTOR will add the removal, relocation, protection, materials, adjustment and/or design cost, excluding betterment, to the overall PROJECT’S cost. (Check to signify):

**Option 1:** OWNER wants the work to be performed by the OWNER’s pre-approved Design Consultants and/or Contractors.

Design     
Construction  

**Option 2:** OWNER wants the DEPARTMENT’S CONTRACTOR to perform the design and/or construction. (Check to signify):

Design     
Construction  

If both are checked, please leave page 6 blank.

As per this section, all work necessary for the removal, relocation, protection, or adjustment of the described utilities in accordance with the plans when approved shall be included in the project contract and accomplished by the CONTRACTOR except as follows (Check none or list any work items to be performed by the OWNER)

None_____  

Excluded Items ____________________________________________

_______________________________________________________

Comments:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

3C. OWNER, at OWNER’S cost, will provide the following services (Check to signify):

Design  
Construction  


The following is hereby mutually agreed to and understood by both parties:

1. The identification of existing facilities including preparation of Overhead/Subsurface Utility Engineering (SUE) investigations plans will be accomplished by the DEPARTMENT prior to award of the PROJECT and thereafter supplemented by the CONTRACTOR.

2. The CONTRACTOR shall coordinate reviews of the utility relocation information and obtain acceptance from the OWNER and DEPARTMENT when required. However, the OWNER shall apply for and obtain any required permits from the DEPARTMENT and perform any final design or proprietary design needed to administer its own relocation work if the work will not be included in the contract. If the preliminary plans indicate that no conflict exists, and the OWNER concurs with this information, the OWNER shall provide a letter of “no conflict” to the CONTRACTOR.

3. After award of the PROJECT, the CONTRACTOR will research any claimed compensable property interest for each OWNER claiming prior rights under section 3A and present the findings to the DEPARTMENT and OWNER for approval. The plans and estimate for the utility work shall be subject to approval of both the DEPARTMENT and the OWNER prior to construction. If the OWNER chooses to perform its own relocations and the OWNER holds no property interest as stated above; the OWNER shall confirm in writing that the OWNER will relocate its own facilities at no cost to the DEPARTMENT or the CONTRACTOR.

4. All construction engineering and contract supervision shall be the responsibility of the DEPARTMENT and the CONTRACTOR to ensure that all utility work included in the contract is accomplished in accordance with the PROJECT’s plans and specifications. The CONTRACTOR will consult with the OWNER before authorizing any changes or deviations which affect the OWNER’s facility.

5. For utility work included in the contract, the CONTRACTOR shall ensure that the design/construction and installation of the OWNER’S facilities is performed by a contractor/design consultant pre-approved/registered with both the DEPARTMENT and the OWNER. For any work included in the contract, excluding water and sewer, the OWNER will provide a list of pre-approved/registered contractors/design consultants on page 6 of the MOU.

6. For Utility work included in the contract, the OWNER or the OWNER’s Consultant shall have the right to visit and inspect the work at any time and advise the CONTRACTOR and the DEPARTMENT’S Engineer of any observed discrepancies or potential issues. The DEPARTMENT agrees to notify the OWNER when all utility work is completed and ready for final inspection by the OWNER.

7. Upon Maintenance Acceptance or Final Acceptance of the utility work included in the contract and upon certification by the DEPARTMENT’S Engineer and the OWNER that the work has been completed in accordance with the plans and specifications, the OWNER will accept the adjusted, relocated, and additional facilities and will thereafter operate and maintain said facilities located within the PROJECT right of way subject to the DEPARTMENT’S Utility Accommodations Policy and Standards Manual (UAM), current edition” and any agreements in effect without further cost to the DEPARTMENT or it’s CONTRACTOR. Final acceptance of the utility relocation work is accomplished by the execution of the Utility Facility Relocation Acceptance Form. The CONTRACTOR shall provide the OWNER with a complete set of “As-Built Plans” for review and approval reflecting the relocation work performed by the CONTRACTOR. Upon completion of the Utility Facility Relocation Acceptance Form and the exchange of the final OWNER approved “As-Built Plans”, the OWNER will operate and maintain the installed facilities going forward based on the date of execution of the Utility Facility Relocation Acceptance Form by the DEPARTMENT.

8. For utility coordination, relocation and reimbursement matters, the OWNER shall cooperate with the CONTRACTOR in the same manner as if coordinating directly with the DEPARTMENT in accordance with the laws of the State of Georgia, the DEPARTMENT’S UAM and any agreements in effect between the DEPARTMENT and OWNER. The OWNER agrees to cooperate in good faith with the CONTRACTOR and to respond to all requests for information or meetings required to reach a resolution of any disputed items.
9. All Utility work included in the PROJECT’s contract and Utility work completed by the OWNER that is reimbursed by the DEPARTMENT through an agreement shall be in accordance with the BUY AMERICA requirements of the Federal regulations (23 U.S.C. 313 and 23 CFR 635.410) all manufacturing processes for steel and iron products or predominantly of steel or iron furnished for permanent incorporation into the work on this project shall occur in the United States. The only exception to this requirement is the production of pig iron and the processing, pelletizing and reduction of iron ore, which may occur in another country. Other than these exceptions, all melting, rolling, extruding, machining, bending, grinding, drilling, coating, etc. must occur in the United States.

a. Products of steel include, but are not limited to, such products as structural steel piles, reinforcing steel, structural plate, steel culverts, and guardrail steel supports for signs, signals and luminaires. Products of iron include, but are not limited to, such products as cast iron frames and grates and ductile iron pipe. Coatings include, but are not limited to, the applications of epoxy, galvanizing and paint. The coating material is not limited to this clause, only the application process.

b. A Certificate of Compliance shall be furnished for steel and iron products as part of the backup information with the billing. The form for this certification entitled “Buy America Certificate of Compliance” is attached to this agreement as “Exhibit A.” Records to be maintained by the Developer for this certification shall include a signed mill test report and a signed certification by each supplier, distributor, fabricator, and manufacturer that has handled the steel or iron product affirming that every process, including the application of a coating, performed on the steel or iron product has been carried out in the United States of America, except as allowed by this Section. The lack of these certifications will be justification for rejection of the steel and/or iron product or nonpayment of the work.

The requirements of said law and regulations do not prevent the use of miscellaneous steel or iron components, subcomponents and hardware necessary to encase, assemble and construct the above products, manufactured products that are not predominantly steel or iron or a minimal use of foreign steel and iron materials if the cost of such materials used does not exceed one-tenth of one percent (0.1%) of the total contract price or $2,500.00, whichever is greater. The Memorandum of Understanding will be incorporated into the project contract by reference or Exhibit.

APPROVED FOR THE OWNER BY:

(Signature) [Signature]

(Date) [02/13/19]

President

(Title)

APPROVED FOR THE DEPARTMENT BY:

(Signature) [Signature]

(Date) [2/25/19]

STATE UTILITIES ADMINISTRATOR
Pre-Approved Contractor List

Company Name: INNOVATIVE FIBER TECHNOLOGIES (I.F.T.)
Address: 5861 COLUMBUS RD, MACON GA, 31206
Phone: 478-474-7476
Contact Person: JAMES MENKE
E-Mail: james.menke@1ft-ga.com

Please provide a minimum of three.

Pre-Approved Design Consultant List

Company Name: 
Address: 
Phone: 
Contact Person: 
E-Mail: 

Company Name: 
Address: 
Phone: 
Contact Person: 
E-Mail: 

Company Name: 
Address: 
Phone: 
Contact Person: 
E-Mail:
Public Service Telephone
Macon, GA

02/14/2019

Georgia Department of Transportation
District Utilities Office
Attention: Patrick Allen
600 W. Peachtree St
Atlanta, GA 30308


Dear Mr. Allen:

We only have the one contractor in the project area authorized to work on our facilities and we have included them on the MOU. Innovative Fiber Technologies, also known as I.F.T., is the only approved company. Please let me know if this is acceptable for this project. If you have any questions, please let us know.

Thanks,

Outside Plant Engineer

Jeremy Kendrick
February 25, 2019

Jeremy Kendrick
Outside Plant Engineer
Public Service Telephone

RE: PI# 0014895 & 0014899 Bibb SR 247/Pio Nono Ave over NSRR & CR 581/College over NSRR

Mr. Kendrick,

We received your letter stating that only one approved contractor is available to Public Service Telephone for the subject project. This is acceptable to the Department.

Sincerely,

Patrick Allen, P.E.
State Utilities Engineer

Enclosure:
cc: John Tuttle
Georgia DOT Project: Bibb Co., SR 247/Pio Nono Ave, Over NSRR & CR 581/College St. Over NSRR
GDOT P.I. # 0014895 & 0014899

DESIGN-BUILD
MEMORANDUM OF UNDERSTANDING
between the
Georgia Department of Transportation (hereafter the DEPARTMENT)
and
Southern Company Gas (hereafter the OWNER)

Whereas GDOT, hereafter referred to as the DEPARTMENT proposes to undertake a design-build project hereafter referred to as PROJECT to replace the bridge on CR 5813 (College Street) and increase the vertical clearance on the bridge on SR 247/US 41 (Pio Nono Avenue), both over Norfolk Southern Railroad, in Bibb County, Georgia by contract through competitive bidding procedures; and,

Whereas the DEPARTMENT will accomplish the PROJECT through a Design Consultant, Design Consultant Team and/or Contractor, hereafter referred to as CONTRACTOR; and the utility owner hereafter referred to as the OWNER, and

Whereas, where OWNER has property rights ("Prior Rights") at the location of the PROJECT, OWNER will provide written evidence as to said prior rights within the area and will provide written documentation of prior rights relating to any individual crossing or Utility Facility, at the location of the PROJECT; and

Whereas, OWNER acknowledges that, generally, absent a showing of prior rights, the costs of relocation, protection, removal, or adjustment performed by OWNER shall be borne by OWNER; and

Whereas, pursuant to O.C.G.A. § 32-6-170(b), DEPARTMENT is authorized to pay or participate in the payment of the costs of relocation, protection, or adjustment of OWNER'S facilities where DEPARTMENT has made the determination that (i) such payments are in the best interest of the public and necessary in order to expedite the staging of the design-build project; and (ii) the costs of the removal, relocation, protection, or adjustment of such facilities are included as part of the Contract between the Department and the Department's roadway contractor for the design-build project; and

1. Type of Utility
OWNER has the following utility facilities which may need to be adjusted or relocated as a result of the proposed PROJECT:

Type of facility or facilities of OWNER:
_____ Domestic water mains and distribution lines and associated appurtenances
_____ Sanitary Sewer facilities and/or Storm Drainage System
_____ Electrical Distribution (overhead and underground) wires, poles, etc.
_____ Electrical Transmission (overhead and underground) wires, poles, etc.
_____ Natural Gas Distribution Facilities (underground)
____ x Natural Gas Transmission Facilities (underground)
_____ Petroleum Pipeline (underground)
_____ Telecommunications facilities and equipment
_____ Cable TV facilities
_____ Street Lighting
_____ Internet Data Service
_____ Other Facilities (Description)
2. New Utility Facilities Proposed (Betterment)

OWNER desires the following to be installed as new additional facilities within the PROJECT. Insert here or attach a detailed description of proposed new additional utility installations:

3. Assignment of Responsibilities for Design and Construction

This MEMORANDUM OF UNDERSTANDING and the following shall serve as a basis for assignment of responsibilities and costs for the DEPARTMENT, CONTRACTOR and the OWNER to enter into a Standard Utility Agreement (SUA) or Contract Item Agreement (CIA), if necessary, with OWNER once the PROJECT is awarded to the CONTRACTOR. For a PROJECT implementation, GDOT will not have in its possession exact costing plans to be utilized to determine exact locations of the removal, relocation, protection, or adjustment. However, Overhead/Subsurface Utility Engineering (SUE) investigations plans exist providing the best information and signifying the layout of known existing facilities. Please use these plans for developing the final determination of services as indicated below. The CONTRACTOR developed plans will be provided to the OWNER after the design build project is awarded by GDOT which shall be used by the CONTRACTOR as the final basis for the SUA or CIA. Betterment costs will be the OWNER'S responsibility.

NOTE: Water and Sewer Design and Construction relocation work put in the contract will automatically be accomplished by the DEPARTMENT'S CONTRACTOR. The UTILITY OWNER will still have design approval authority. (No Pre-Approved Contractor/Consultant List required, leave page 6 blank). If you are a Water & Sewer Utility and choose to put your relocation Design and Construction in the contract, please check Design and Construction under Option 2 under 3B. Owner's electing to perform their own design, at their own cost, please select design under 3C.

OWNER hereby intends to:

3A. OWNER, at the DEPARTMENT'S cost through an Agreement, will provide the following services for the properties for which it has established prior rights (Check to signify):

Design  __X__
Construction  __X__
3B. OWNER, at the CONTRACTOR’S cost, for any removal, relocation, protection, adjustment and/or design (Regardless of Prior Rights) will allow their facilities to be placed into the DEPARTMENT’S contract for the following services pursuant to O.C.G.A. § 32-6-170(b). The CONTRACTOR will add the removal, relocation, protection, materials, adjustment and/or design cost, excluding betterment, to the overall PROJECT’s cost. (Check to signify):

**Option 1: OWNER wants the work to be performed by the OWNER’s pre-approved Design Consultants and/or Contractors.**

Design ___
Construction ___

**Option 2: OWNER wants the DEPARTMENT’S CONTRACTOR to perform the design and/or construction. (Check to signify):**

Design ___
Construction ___  **If both are checked, please leave page 6 blank.**

As per this section, all work necessary for the removal, relocation, protection, or adjustment of the described utilities in accordance with the plans when approved shall be included in the project contract and accomplished by the CONTRACTOR except as follows (Check none or list any work items to be performed by the OWNER)

None ___

Excluded Items

Comments:

3C. OWNER, at OWNER’S cost, will provide the following services (Check to signify):

Design ___
Construction ___
The following is hereby mutually agreed to and understood by both parties:

1. The identification of existing facilities including preparation of Overhead/Subsurface Utility Engineering (SUE) investigations plans will be accomplished by the DEPARTMENT prior to award of the PROJECT and thereafter supplemented by the CONTRACTOR.

2. The CONTRACTOR shall coordinate reviews of the utility relocation information and obtain acceptance from the OWNER and DEPARTMENT when required. However, the OWNER shall apply for and obtain any required permits from the DEPARTMENT and perform any final design or proprietary design needed to administer its own relocation work if the work will not be included in the contract. If the preliminary plans indicate that no conflict exists, and the OWNER concurs with this information, the OWNER shall provide a letter of “no conflict” to the CONTRACTOR.

3. After award of the PROJECT, the CONTRACTOR will research any claimed compensable property interest for each OWNER claiming prior rights under section 3A and present the findings to the DEPARTMENT and OWNER for approval. The plans and estimate for the utility work shall be subject to approval of both the DEPARTMENT and the OWNER prior to construction. If the OWNER chooses to perform its own relocations and the OWNER holds no property interest as stated above; the OWNER shall confirm in writing that the OWNER will relocate its own facilities at no cost to the DEPARTMENT or the CONTRACTOR.

4. All construction engineering and contract supervision shall be the responsibility of the DEPARTMENT and the CONTRACTOR to ensure that all utility work included in the contract is accomplished in accordance with the PROJECT’s plans and specifications. The CONTRACTOR will consult with the OWNER before authorizing any changes or deviations which affect the OWNER’s facility.

5. For utility work included in the contract, the CONTRACTOR shall ensure that the design/construction and installation of the OWNER’s facilities is performed by a contractor/design consultant pre-approved/registered with both the DEPARTMENT and the OWNER. For any work included in the contract, excluding water and sewer, the OWNER will provide a list of pre-approved/registered contractors/design consultants on page 6 of the MOU.

6. For Utility work included in the contract, the OWNER or the OWNER’s Consultant shall have the right to visit and inspect the work at any time and advise the CONTRACTOR and the DEPARTMENT’S Engineer of any observed discrepancies or potential issues. The DEPARTMENT agrees to notify the OWNER when all utility work is completed and ready for final inspection by the OWNER.

7. Upon Maintenance Acceptance or Final Acceptance of the utility work included in the contract and upon certification by the DEPARTMENT’S Engineer and the OWNER that the work has been completed in accordance with the plans and specifications, the OWNER will accept the adjusted, relocated, and additional facilities and will thereafter operate and maintain said facilities located within the PROJECT right of way subject to the DEPARTMENT’S Utility Accommodations Policy and Standards Manual (UAM), current edition and any agreements in effect without further cost to the DEPARTMENT or it’s CONTRACTOR. Final acceptance of the utility relocation work is accomplished by the execution of the Utility Facility Relocation Acceptance Form. The CONTRACTOR shall provide the OWNER with a complete set of “As-Built Plans” for review and approval reflecting the relocation work performed by the CONTRACTOR. Upon completion of the Utility Facility Relocation Acceptance Form and the exchange of the final OWNER approved “As-Built Plans”, the OWNER will operate and maintain the installed facilities going forward based on the date of execution of the Utility Facility Relocation Acceptance Form by the DEPARTMENT.

8. For utility coordination, relocation and reimbursement matters, the OWNER shall cooperate with the CONTRACTOR in the same manner as if coordinating directly with the DEPARTMENT in accordance with the laws of the State of Georgia, the DEPARTMENT’S UAM and any agreements in effect between the DEPARTMENT and OWNER. The OWNER agrees to cooperate in good faith with the CONTRACTOR and to respond to all requests for information or meetings required to reach a resolution of any disputed items.
9. All Utility work included in the PROJECT’s contract and Utility work completed by the OWNER that is reimbursed by the DEPARTMENT through an agreement shall be in accordance with the BUY AMERICA requirements of the Federal regulations (23 U.S.C. 313 and 23 CFR 635.410) all manufacturing processes for steel and iron products or predominantly of steel or iron furnished for permanent incorporation into the work on this project shall occur in the United States. The only exception to this requirement is the production of pig iron and the processing, pelletizing and reduction of iron ore, which may occur in another country. Other than these exceptions, all melting, rolling, extruding, machining, bending, grinding, drilling, coating, etc. must occur in the United States.

a. Products of steel include, but are not limited to, such products as structural steel piles, reinforcing steel, structural plate, steel culverts, and guardrail steel supports for signs, signals and luminaires. Products of iron include, but are not limited to, such products as cast iron frames and grates and ductile iron pipe. Coatings include, but are not limited to, the applications of epoxy, galvanizing and paint. The coating material is not limited to this clause, only the application process.

b. A Certificate of Compliance shall be furnished for steel and iron products as part of the backup information with the billing. The form for this certification entitled “Buy America Certificate of Compliance” is attached to this agreement as “Exhibit A.” Records to be maintained by the Developer for this certification shall include a signed mill test report and a signed certification by each supplier, distributor, fabricator, and manufacturer that has handled the steel or iron product affirming that every process, including the application of a coating, performed on the steel or iron product has been carried out in the United States of America, except as allowed by this Section. The lack of these certifications will be justification for rejection of the steel and/or iron product or nonpayment of the work.

The requirements of said law and regulations do not prevent the use of miscellaneous steel or iron components, subcomponents and hardware necessary to encase, assemble and construct the above products, manufactured products that are not predominantly steel or iron or a minimal use of foreign steel and iron materials if the cost of such materials used does not exceed one-tenth of one percent (0.1%) of the total contract price or $2,500.00, whichever is greater. The Memorandum of Understanding will be incorporated into the project contract by reference or Exhibit.

APPROVED FOR THE OWNER BY:  

[Signature]  

[Date]

[Title]

APPROVED FOR THE DEPARTMENT BY:  

[Signature]  

[Date]

STATE UTILITIES ADMINISTRATOR
Pre-Approved Contractor List

**SEE ATTACHED**

Please provide a minimum of three.

Pre-Approved Design Consultant List

**SEE ATTACHED**
**Southern Company Gas – Pre-Approved Contractor List:**

**Note:** This approved contractor list is only valid at this time, please contact Southern Company Gas for an updated contractor list prior to going to bid.

- Benton Georgia
- CEDS Construction
- Diversified Utility Services
- D Lance Souther
- Gunter Construction
- Hiwassee Construction (located in Tennessee)
- Hunter Construction (located in Tennessee)
- Pride Utilities
- Southeast Connections
- Thomas Utility Contractors
- Troy Construction
Georgia Department of Transportation

Technical Provisions

For

Design-Build Agreement

P.I. No. 0014895 and 0014899

Attachment 6-3

UTILITY FACILITY RELOCATION ACCEPTANCE FORM TEMPLATE
Utility Facility Relocation Acceptance Form

Project PI Number: 0014895 & 0014899
Project Number: 
County(ies): Bibb
Project Description: 
Utility Owner Name: 

Type of Utility Facilities Installed by Contractor:

Type of Relocation Work Described Herein (Circle One): Initial Relocation or Revised

Relocation Station Limits: ________________________________

General Description of Utility Facilities Installed by Contractor: ________________________________

Utility Work Completion Date: ________________________________

This Utility Facility Relocation Acceptance Form shall be completed by the Contractor’s Worksite Utility Coordination Supervisor (WUCS). It shall also be signed by an authorized representative of the Utility Owner and by the GDOT Project Manager upon completion and acceptance of the work described herein.

Execution of this Utility Facility Relocation Acceptance Form by the parties below provides acknowledgement that the work described above, has been visually inspected and accepted by the Utility Owner as to having been constructed in accordance with the Utility Owner approved relocation design plans and their current specifications and the requirements of the Memorandum of Understanding (MOU) as executed by the Utility Owner. Further, the Contractor’s WUCS shall provide the Utility Owner with a complete set of “As-Built Plans” for review and approval reflecting the relocation work performed by the Contractor as outlined in the Contract Specifications. Upon completion of this form and the exchange of the final Utility Owner approved “As-Built Plans”, all parties agree the Utility Owner will operate and maintain the installed facilities covered by this document going forward based on the date of execution by the GDOT Project Manager (PM). However, any items inadvertently overlooked and as identified in a subsequent utility punch list shall still be the responsibility of the Contractor to correct and provide up to date “As-Built Plans” to the Utility Owner.

Acceptance of this form by the Department does not confer legitimacy and accuracy or in any way transfers liability for errors or omissions made by the preparer.
Contractor’s WUCS:
  Printed Name: ________________________________ Date: _____________
  Signature: ________________________________ Title: _____________

Utility Owner Representative:
  Printed Name: ________________________________ Date: _____________
  Signature: ________________________________ Title: _____________

GDOT Project Manager:
  Printed Name: ________________________________ Date: _____________
  Signature: ________________________________ Title: _____________
DEPARTMENT OF TRANSPORTATION - P.L. #0014899
CR5813/COLLEGE STREET @ NS#718370R

PROJECT P.1. #0014899 PROPOSES TO REPLACE THE STRUCTURALLY DEFICIENT STEEL AND MASONARY VIADUCT ON COLLEGE ST OVER NORFOLK SOUTHERN RAILROAD. THE EXISTING STRUCTURES WAS CONSTRUCTED IN THE MID-TO-LATE 19TH CENTURY AND CONSISTS OF A SINGLE BRICK-MASONARY ARCH THAT SUPPORTS A STEEL SUPERSTRUCTURE AND CONCRETE DECK ABOVE. THE VIADUCT IS CURRENTLY LOAD-POSTED DUE TO CORROSION OF THE STEEL-FRAMED SUPERSTRUCTURE ELEMENTS AND EROSION OF THE VIADUCT FOUNDATIONS. THE SIDEWALK RAILINGS DO NOT MEET CURRENT DESIGN REQUIREMENTS FOR BOTH PEDESTRIAN AND VEHICULAR LOADS AND HAVE A HISTORY OF FAILURE. THE PROPOSED REPLACEMENT STRUCTURE IS A 65'-LONG BY 54'-WIDE SINGLE-SPAN PRESTRESSED CONCRETE BRIDGE. THE PROPOSED TYPICAL SECTION CONSISTS OF TWO 11'-TRAVEL LAKES, TWO BIKE LAKES (4' LANE WITH 2.5' GORE) AND 8' SIDEWALKS ON BOTH SIDES OF THE BRIDGE. THE PROJECT LENGTH IS APPROXIMATELY 600'.

SCOPE OF WORK - DESIGN BUILD

PHASE I:
1. PLACE 4-4' PVC DUCTS FROM MH-N2 TO MH-N2A
2. REBUILD MANHOLE MH-N2A CAST IN PLACE 1X12X7
3. PLACE 4-4' PVC DUCTS FROM MH-N4 TO MH-N4
4. REBUILD MANHOLE MH-N4A CAST IN PLACE 1X12X8

PHASE II:
1. ADD 3 FIBERGLASS DUCTS TO THE EXISTING DUCT SYSTEM ON THE BRIDGE. THE DUCT SYSTEM SHOULD HAVE AT LEAST 23'-2" VERTICAL CLEARANCE FROM THE TOP OF THE EXISTING RAIL.
2. TIE-IN THE NEW FIBERGLASS DUCTS TO THE EXISTING MANHOLES. THAT IS PLACE 25'-OF 3'-4" PVC DUCTS FROM BRIDGE TO MH-N3A AND 15'-OF 3'-4" PVC DUCTS FROM THE BRIDGE TO MH-N4A.
3. INCLUDE CUTTING AND REMOVAL OF ANY TREES THAT ARE IN THE WAY OF CONDUIT CONSTRUCTION

PHASE III:
1. EXPOSE CONDUIT AND REMOVE ENCASEMENT FROM MH-N3A TO THE BRIDGE AND FROM THE SOUTHEND OF THE BRIDGE TO 60' OR AS FAR BACK AS NEEDED
2. THE BRIDGE CONTRACTOR WILL BUILD A TEMPORARY STRUCTURE TO SUPPORT THE DUCT SYSTEM AFTER WHICH THE PROJECT CONTRACTOR WILL CUT THE HANGERS OFF THE DUCTS SO THAT THE CONDUIT WILL BE SUSPENDED OVER THE RAILROAD WHILE THE NEW BRIDGE IS UNDER CONSTRUCTION

PHASE IV
1. AFTER THE NEW BRIDGE IS COMPLETED, THE BRIDGE CONTRACTOR WILL REATTACH THE AT&T DUCTS TO THE NEW BRIDGE AND SECURE THEM IN THEIR FINAL LOCATION.
2. THE PROJECT CONTRACTOR WILL ENCASE AND COVER THE CONDUIT EXPOSED IN PHASE III TO ITS PRE-CONSTRUCTION CONDITION.

NOTES:
1. THE REBUILDING OF MANHOLES AND DUCT PLACEMENT WILL REQUIRE A COUNTY PERMIT TO CUT AND RESTORE STREETS. APPROVAL FROM THE RAILROAD IS REQUIRED FOR WORK WITHIN THE RAILROAD RIGHT-OF-WAY.
2. AT&T PLANS TO PLACE 2-1200 PAIR CABLES IN THE EXISTING 12 DUCT SYSTEM. THIS WORK (PLACING, SPLICING AND CUTOVER) WILL BE PERFORMED BY AT&T AND NEEDS TO BE COMPLETED AT THE CONCLUSION OF PHASE I CONSTRUCTION. AT&T WILL THEN ABANDON MANHOLE MH-N3 AND ASSOCIATED CONDUIT WHICH IS IN THE MIDDLE OF THE ROAD/BRIDGE.
3. THE BRIDGE CONTRACTOR MUST COORDINATE WITH AT&T AND THE PROJECT CONTRACTOR WHEN DEALING WITH AT&T FACILITIES.
Georgia Department of Transportation

Technical Provisions

For

Design-Build Agreement

P.I. Nos. 0014895 and 0014899

Attachment 11-1

DESIGN CRITERIA TABLE
<table>
<thead>
<tr>
<th>GENERAL - DESIGN ELEMENTS</th>
<th>PIO NONO AVE.</th>
<th>ROFF AVE (EAST)</th>
<th>ROFF AVE (WEST)</th>
<th>COMMENTS / REMARKS</th>
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<tr>
<td>Roadway Classification</td>
<td>Urban Minor Arterial Street</td>
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<tr>
<td>Design Vehicle</td>
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<tr>
<td>Min. Stopping Sight Distance</td>
<td>250-ft</td>
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<tr>
<td>Max. Super-Elevation Rate (emax.)</td>
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<tr>
<td>Min. Radius of Curvature</td>
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<td>0'-6&quot;</td>
<td>Outside Shoulder-Width includes 5' Sidewalk</td>
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<td>Up to 2 Lanes in one direction</td>
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<th>College St. (spur)</th>
<th>COMMENTS / REMARKS</th>
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<tr>
<td>Design Vehicle</td>
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<tr>
<td>Design Speed</td>
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</tr>
<tr>
<td>Min. Radius of Curvature</td>
<td>260-ft</td>
<td>38-ft</td>
<td>154-ft</td>
<td></td>
</tr>
<tr>
<td>Maximum Grade</td>
<td>9.00%</td>
<td>14.00%</td>
<td>12.00%</td>
<td></td>
</tr>
<tr>
<td>Crest Vertical Curve (min. K Value)</td>
<td>19</td>
<td>3</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Sag Vertical Curve (min. K Value)</td>
<td>37</td>
<td>10</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Minimum Vertical Clearance Over NS</td>
<td>22'-6&quot;</td>
<td>N/A</td>
<td>N/A</td>
<td>See Design Variance</td>
</tr>
<tr>
<td>Number of Lanes</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Lane-Width</td>
<td>Minimum 11-ft</td>
<td>Minimum 9-ft</td>
<td>12-ft</td>
<td></td>
</tr>
<tr>
<td>Bike Lane-Width</td>
<td>12'-0&quot;</td>
<td>N/A</td>
<td>N/A</td>
<td>Shared Use Lane</td>
</tr>
<tr>
<td>Median Type</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Sidewalk-Width</td>
<td>7'-6&quot;</td>
<td>N/A</td>
<td>6'-0&quot;</td>
<td></td>
</tr>
<tr>
<td>Header Curb, Type 2, Granite</td>
<td>6&quot;</td>
<td>N/A</td>
<td>6&quot;</td>
<td></td>
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<tr>
<td>Normal Cross Slope:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Up to 2 Lanes in one direction</td>
<td>2.00%</td>
<td>2.00%</td>
<td>2.00%</td>
<td></td>
</tr>
<tr>
<td>Outside Shoulders</td>
<td>Minimum 1.00%</td>
<td>Minimum 1.00%</td>
<td>Minimum 1.00%</td>
<td></td>
</tr>
<tr>
<td>Side Slopes:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal Slope</td>
<td>4:1</td>
<td>4:1</td>
<td>4:1</td>
<td></td>
</tr>
<tr>
<td>Maximum Slope</td>
<td>2:1</td>
<td>2:1</td>
<td>2:1</td>
<td></td>
</tr>
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</table>
Georgia Department of Transportation

Technical Provisions

For

Design-Build Agreement

P.I. No. 0014895 and 0014899

Attachment 11-2

GUIDELINES FOR MINOR PAVEMENT PROJECTS
DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE Pavement Design

OFFICE Materials and Testing

Forest Park, Georgia

DATE January 26, 2018

FROM Monica L. Flournoy, P.E., State Materials Engineer

TO Brent A. Story, P.E., State Design Policy Engineer

SUBJECT Guidelines for Minor Pavement Projects

The Office of Materials and Testing (OMAT) recommends the attached Guidelines for Minor Pavement Projects replace all previously published guidelines related to pavement sections for minor projects.

These guidelines are applicable for all non-interstate roads with a design year two-way average daily traffic (ADT) less than or equal to 10,000 vehicles per day (vpd), a design year two-way average daily truck traffic (ADTT) less than or equal to 1,000 vpd, and a maximum of 475 total daily loadings. The total daily loadings shall be calculated using the assumptions and equations provided in these guidelines. In addition, the guidelines should be used for pavement work constructed by permit within the GDOT right-of-way.

In general, all routes that meet the criteria of these guidelines should use 9.5 mm Superpave, Type II as the asphaltic concrete surface course. However, roundabout sections on routes that meet the criteria of these guidelines should use 12.5 mm Superpave with polymer modified asphaltic cement as the asphaltic concrete surface course.

The guidelines are for immediate implementation. Where projects meet the minor pavement project criteria and pavement designs reflect the appropriate pavement section in the guidelines, pavement designs shall not require review and approval by the State Pavement Engineer.

Alternately for designs that meet all criteria of the guidelines, the Design Phase Leader may prepare pavement designs using the current GDOT Pavement Design Tool, for submission by the Project Manager to OMAT for review and approval by the State Pavement Engineer.
Pavement Evaluation Summary (PES) reports are still required for projects when recommended in the Plan Development Process (PDP) Manual. For projects that meet the guidelines and require a PES, the Design Phase Leader should prepare pavement full-depth designs using the current GDOT Pavement Design Tool, for submission by the Project Manager to OMAT for review and approval by the State Pavement Engineer. Using the GDOT Pavement Design Tool in lieu of these guidelines could result in a thinner and more cost effective design than what is provided in these guidelines.

Furthermore, for projects that meet the guidelines and where recommended by the PES report, the Design Phase Leader should prepare pavement overlay designs using the current GDOT Pavement Design Tool, for submission by the Project Manager to OMAT for review and approval by the State Pavement Engineer.

If additional information is needed, please contact Ian Rish at (404) 608-4849 (Direct) or (404) 608-4770 (Main).

MLF: JTR: IDR

Attachments: Guidelines for Minor Pavement Projects

Concurs: 

Marc Mastronardi, P.E., Director of Construction

Recommends: 

Hiral Patel, P.E., Director of Engineering

Approves: 

Meg Dinkle, P.E., Chief Engineer
GUIDELINES FOR MINOR PAVEMENT PROJECTS

Criteria for use of the Minor Pavement Project Guidelines (MPPG):
- Non-interstate roadways that require up to a 20-year design life
- Design Year Two-Way ADT ≤ 10,000 vehicles per day (vpd)
- Design Year Two-Way ADTT ≤ 1,000 vpd
- Total Daily Loadings (TDL) ≤ 475

The use of the guidelines requires the following information:
- Traffic data that has been approved by GDOT.
- The soil support value (SSV) and regional factor (RF) for the project. If available, the SSV should be taken from the Soil Survey Summary Report. If the Soil Survey Summary Report is unavailable, the SSV should be taken from the “Georgia Map for Regional Factors, Typical Soil Support Values, and ‘k’ Values.”
- The calculated TDL for each pavement thickness to be designed. The TDL can be calculated manually or by use of the current Guidelines for Minor Pavement Projects Tool. In the calculation of the TDL, the following assumption and equations shall be used:
  - Lane Distribution Factor (LDF) = 1.0
  - Design Year One-Way ADTT = (Design Year One-Way ADT) * (24-Hour Truck %)
  - 18-Kip ESAL Factor = (S.U. Truck %) / (24 Hour Truck %) * 0.40 + (M.U. Truck %) / (24 Hour Truck %) * 1.50
  - TDL = (Design Year One-Way ADTT) * (LDF) * (18-Kip ESAL Factor)

Example of the Manual Calculation of the Total Daily Loadings (or Daily ESALs)
Given:
- Design Year One-Way ADT = 5,000 vpd
- 24-Hour Truck % = 10%
- S.U. Truck % = 5%
- M.U. Truck % = 5%
- LDF = 1.0

Design Year One-Way ADTT = (Design Year One-Way ADT) * (24-Hour Truck %)
Design Year One-Way ADTT = (5,000) * (10%)
Design Year One-Way ADTT = 500 vpd
18-Kip ESAL Factor = (S.U. Truck %) / (24 Hour Truck %) * 0.40 + (M.U. Truck %) / (24 Hour Truck %) * 1.50
18-Kip ESAL Factor = (5%) / (10%) * 0.40 + (5%) / (10%) * 1.50
18-Kip ESAL Factor = 0.95
TDL = (Design Year One-Way ADTT) * (LDF) * (18-Kip ESAL Factor)
TDL = (500 vpd) * (1.0) * (0.95)
TDL = 475 (Note: this is also the maximum TDL possible under these Guidelines.)

Explanation of the MPPG Pavement Sections
- The attached map for RF and typical SSV provides historical values that have been successfully used in the design of pavement sections by the Department. This map can be used when no Soil Survey Summary has been prepared.
- From Table 1, the recommended MPPG pavement section is obtained given the SSV, RF, and calculated TDL. For example, the recommended section for a road with a SSV = 4.0, RF = 1.7, and calculated TDL = 475 is MPPG Pavement Section C-8.
- Table 2 and Table 3 indicate that MPPG Pavement Section C-8 is equivalent to an asphaltic concrete pavement thickness of 8.25 inches and 8.50 inches, respectively. The hyphenated number indicates the recommended graded aggregate base (GAB) thickness, which for this example is 8 inches.
## GUIDELINES FOR MINOR PAVEMENT PROJECTS

### Table 1: Minor Pavement Project Guideline Pavement Sections

<table>
<thead>
<tr>
<th>Soil Support Value</th>
<th>Regional Factor</th>
<th>Total Daily Loadings</th>
<th>MPPG Pavement Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.5</td>
<td>1.6</td>
<td>≤ 328</td>
<td>A-8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>329 to 475</td>
<td>B-8</td>
</tr>
<tr>
<td>4.0</td>
<td>1.6 to 1.7</td>
<td>≤ 201</td>
<td>A-8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>202 to 329</td>
<td>B-8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>330 to 475</td>
<td>C-8</td>
</tr>
<tr>
<td>3.5</td>
<td>1.4 to 1.5</td>
<td>≤ 228</td>
<td>A-8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>229 to 372</td>
<td>B-8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>373 to 475</td>
<td>C-8</td>
</tr>
<tr>
<td>3.0</td>
<td>2.0</td>
<td>≤ 188</td>
<td>A-10</td>
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<td></td>
<td></td>
<td>189 to 300</td>
<td>B-10</td>
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<td></td>
<td></td>
<td>301 to 472</td>
<td>C-10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>473 to 475</td>
<td>D-10</td>
</tr>
<tr>
<td>2.4</td>
<td>1.7 to 1.8</td>
<td>≤ 209</td>
<td>A-10</td>
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<tr>
<td></td>
<td></td>
<td>210 to 334</td>
<td>B-10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>335 to 475</td>
<td>C-10</td>
</tr>
<tr>
<td>2.0</td>
<td>1.4 to 1.6</td>
<td>≤ 235</td>
<td>A-10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>236 to 375</td>
<td>B-10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>376 to 475</td>
<td>C-10</td>
</tr>
<tr>
<td>1.7 to 1.8</td>
<td>2.4</td>
<td>≤ 102</td>
<td>A-10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>103 to 163</td>
<td>B-10</td>
</tr>
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<td></td>
<td></td>
<td>164 to 256</td>
<td>C-10</td>
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<td>257 to 397</td>
<td>D-10</td>
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<td></td>
<td>398 to 475</td>
<td>E-10</td>
</tr>
<tr>
<td>1.7 to 1.8</td>
<td>2.0</td>
<td>≤ 122</td>
<td>A-10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>123 to 195</td>
<td>B-10</td>
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<td></td>
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<td>196 to 307</td>
<td>C-10</td>
</tr>
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<td></td>
<td></td>
<td>308 to 475</td>
<td>D-10</td>
</tr>
<tr>
<td>1.5 to 1.6</td>
<td>1.7 to 1.8</td>
<td>≤ 136</td>
<td>A-10</td>
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<td></td>
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<td>137 to 217</td>
<td>B-10</td>
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<td>218 to 342</td>
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<td></td>
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<td>343 to 475</td>
<td>D-10</td>
</tr>
<tr>
<td>1.5 to 1.6</td>
<td>1.4</td>
<td>≤ 153</td>
<td>A-10</td>
</tr>
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<td></td>
<td></td>
<td>154 to 244</td>
<td>B-10</td>
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<td>245 to 384</td>
<td>C-10</td>
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<td></td>
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<td>385 to 475</td>
<td>D-10</td>
</tr>
<tr>
<td>1.4</td>
<td>1.7 to 1.8</td>
<td>≤ 175</td>
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<td>280 to 439</td>
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<td>440 to 475</td>
<td>D-10</td>
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## GUIDELINES FOR MINOR PAVEMENT PROJECTS

<table>
<thead>
<tr>
<th>Soil Support Value</th>
<th>Regional Factor</th>
<th>Total Daily Loadings</th>
<th>MMPG Pavement Section</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>2.2 to 2.4</td>
<td>≤ 109</td>
<td>A-12</td>
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<td>173 to 266</td>
<td>C-12</td>
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<td>2.5</td>
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<td>267 to 406</td>
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<td></td>
<td>407 to 475</td>
<td>E-12</td>
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<td></td>
<td>1.8 to 2.0</td>
<td>≤ 131</td>
<td>A-12</td>
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<td>132 to 206</td>
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<td>207 to 319</td>
<td>C-12</td>
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<td>320 to 475</td>
<td>D-12</td>
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<td>165 to 258</td>
<td>B-12</td>
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<td>259 to 399</td>
<td>C-12</td>
</tr>
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<td>400 to 475</td>
<td>D-12</td>
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<td>2.0</td>
<td>≤ 85</td>
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<td>86 to 134</td>
<td>B-12</td>
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<td>135 to 208</td>
<td>C-12</td>
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<td>209 to 317</td>
<td>D-12</td>
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<td>318 to 475</td>
<td>E-12</td>
</tr>
<tr>
<td></td>
<td>1.6 to 1.8</td>
<td>≤ 95</td>
<td>A-12</td>
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<td>D-12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>353 to 475</td>
<td>E-12</td>
</tr>
</tbody>
</table>

Table 2: MMPG Pavement Section Codes for Asphaltic Concrete Pavement Thicknesses (Excluding Roundabout Sections)

<table>
<thead>
<tr>
<th>MPG Pavement Section Code</th>
<th>Total Asphaltic Concrete Thickness (inches)</th>
<th>9.5 mm SP Type II*</th>
<th>19mm SP</th>
<th>25mm SP</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>6.25</td>
<td>1.25</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>B</td>
<td>7.25</td>
<td>1.25</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>C</td>
<td>8.25</td>
<td>1.25</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>D</td>
<td>9.25</td>
<td>1.25</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>E</td>
<td>10.25</td>
<td>1.25</td>
<td>2</td>
<td>7</td>
</tr>
</tbody>
</table>

*For ADT < 4,000 vpd, use pay item number 402-3102.
For 4,000 vpd ≤ ADT ≤ 10,000 vpd, use pay item number 402-3103.

Table 3: MMPG Pavement Section Codes for Asphaltic Concrete Pavement Thicknesses (Roundabout Sections)

<table>
<thead>
<tr>
<th>MPG Pavement Section Code</th>
<th>Total Asphaltic Concrete Thickness (inches)</th>
<th>12.5 mm SP w/ Polymer Modified AC</th>
<th>19mm SP</th>
<th>25mm SP</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>6.50</td>
<td>1.50</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>B</td>
<td>7.50</td>
<td>1.50</td>
<td>2</td>
<td>4</td>
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<tr>
<td>C</td>
<td>8.50</td>
<td>1.50</td>
<td>2</td>
<td>5</td>
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<tr>
<td>D</td>
<td>9.50</td>
<td>1.50</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>E</td>
<td>10.50</td>
<td>1.50</td>
<td>2</td>
<td>7</td>
</tr>
</tbody>
</table>

Guidelines for Minor Pavement Projects - January 26, 2017.docx
GUIDELINES FOR MINOR PAVEMENT PROJECTS

Georgia Map Showing
Regional Factors (RF), Typical Soil Support Values (SSV) and 'k'-Values

'k' - Value  SSV
110       2.0
130       2.5
150       3.0
175       3.5
190       4.0
200       4.5

Guidelines for Minor Pavement Projects - January 26, 2017.docx
Georgia Department of Transportation

Technical Provisions

For

Design-Build Agreement

P.I. Nos. 0014895 and 0014899

Attachment 11-3

CONSTRUCTION VIBRATION MONITORING
DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA  

SPECIAL PROVISION  

PROJECT: 0014899, Bibb County  

PI No. 0014899  

Section 154 — Construction Vibration Monitoring  

Add the following:  

154.1 General Description  

This Work consists of performing preconstruction crack surveys, seismograph and other monitoring of construction vibrations, and post construction crack surveys of the buildings located on Parcels 01, 03 and 04 adjacent to the proposed project construction on College Street by procuring the services of a prequalified subcontractor specializing in this work.  

154.1.01 Definitions  

General Provisions 101 through 150.  

154.1.02 Related References  

A. Standard Specifications  

General Provisions 101 through 150.  

B. Referenced Documents  

General Provisions 101 through 150.  

154.1.03 Submittals  

A. Prequalification of Subcontractor  

Submit the following documentation for the Engineer’s review and approval a minimum of thirty days prior to beginning construction activities on the project:  

Evidence of the subcontractor’s successful completion of at least five projects similar in concept and scope to the proposed crack survey and vibration monitoring. Include names, addresses and telephone numbers of the owners’ representatives for verification.  

Résumés of employees performing this work. Provide evidence showing each employee possesses experience and knowledge similar in concept and scope of this work for performing crack surveys and installing and reading seismographs. Provide evidence that the reports will be reviewed and signed by a
Georgia Licensed Professional Engineer or Georgia Licensed Professional Geologist. The Department will be sole judge of determining if employees are qualified to perform the work on this project.

A detailed survey plan, monitoring plan, and sequence of work that describes all materials, methods and equipment to be used to complete the crack survey and vibration monitoring.

B. Construction Monitoring

Submit the following documentation during construction monitoring:

- Preconstruction Crack Survey Report documenting existing conditions of buildings prior to construction activities in accordance with subsection 154.3.03.B.

- Monthly Seismograph Data and Data Summary Report and Activity Log of all construction activities within 500 feet (152 meters) of the seismograph in accordance with subsection 154.3.03.A.1.

- Reports of building conditions regarding cracks or any other damage potentially caused by construction activities as complaints are received in accordance with subsection 154.3.03.C.

C. Post Construction

Submit a Post Construction Crack Survey Report in accordance with subsection 154.3.03.D documenting post construction condition of cracks or damage identified in the pre-construction survey and cracks or any other damage potentially caused by construction activities.

154.2 Materials

General Provision 101 through 150.

154.3 Construction Requirements

154.3.01 Personnel

Ensure all employees performing this work have been approved by the Engineer in accordance with subsection 154.1.03.A.

154.3.02 Equipment

A. Seismograph

Use a seismograph(s) that is weather proof and capable of continuously recording particle velocity in three perpendicular components with a flat response of 2-250 HZ over a range of at least 0.01 to 5.0 inches per second (0.254 to 127 mm per second). Provide a seismograph(s) that employs an internal dynamic calibration during each recording sequence and that has been shake table tested within the previous 24 months verifying an accuracy of +/- 5% over the frequency range of 4 to 125 Hertz. Provide a recorder/ software system that is capable of digitally storing and reproducing vibration levels in tabular or histogram (bar graph) form at no greater than six minute intervals.

B. Crack Gauges

Use crack gauges specifically designed for use on this type of work. Utilize a minimum of 15 crack gauges and a maximum of 25 to monitor significant cracks on the interior or exterior of buildings located closest to the construction activities. Submit the proposed locations of crack gauges to the Engineer for review and approval prior to installation. Use crack gauges that do not damage or stain existing surfaces. Replace missing or damaged gauges at no additional cost to the Department. Repair and restore surfaces back to the pre- installation state.

154.3.03 Construction

8.2.17
Obtain Engineer’s written approval of the Prequalification documents submitted in accordance with Subsection 154.1.03.A prior to beginning this work.

Perform the preconstruction crack survey prior to starting construction activities on the project.

Install and begin seismograph monitoring prior to starting excavation, shoring, backfilling, and substructure work including driving piles construction activities on the project.

Maintain seismograph and crack monitoring until substructure work including driving piles, excavation, shoring and backfilling, compaction of subgrade, base and pavement construction activities on the project are complete.

A. Seismograph Installation and Monitoring

Monitor vibrations at building(s) using seismograph(s) when construction activities including, but not limited to, substructure work including driving piles, excavation, shoring installation, backfilling, and compaction of subgrade, base and pavement are within 75 feet (23 meters) of the building(s), or otherwise have the potential to result in vibrations that may cause damage or complaints. Relocate seismograph(s) as needed. Protect the seismograph from weather and vandalism. Replace missing or damaged equipment at no cost to the Department. Document the following information at the time that the seismograph is installed:

Date and time of installation

Coordinates of installed instrument or Station and offset

Method of transducer attachment

Name and affiliation of the person installing the instrument

1. Monthly Seismograph Data and Data Summary Report and Activity Log:

Compile a Monthly Seismograph Data and Data Summary Report containing the data from the seismograph and a summarization of the data showing time and magnitude of the maximum vibration that has occurred each day.

Maintain an activity log of all construction activities within 500 feet (152 meters) of the seismograph. Include the following data in each log:

Location of construction activity

Type of construction activity

Types and number of construction equipment being used, including model, manufacture and weight.

Date and times construction equipment was used.

Submit Monthly Seismograph Data Summary Report and Activity Log to the Engineer on a monthly basis.

B. Preconstruction Crack Survey

Complete a preconstruction crack survey on the outside and inside of all buildings located on Parcels 01, 03 and 04. Document building conditions by taking photographs and detailed notes citing location, length and width of cracks. Compile documentation into a Preconstruction Crack Survey Report and submit to the Engineer.

8.2.17
C. Building Monitoring

Monitor buildings during construction for any new cracks and or elongation or widening of existing cracks. Provide a report of building conditions to the Engineer regarding cracks or any other damage potentially caused by construction activities as complaints are received.

D. Post Construction Crack Survey

Complete a post construction crack survey on the outside and inside of all buildings located on Parcels: 01, 03 and 04. Document building conditions by taking photographs and detailed notes citing condition of cracks or damage identified in the pre-construction survey; also, location, length and width of cracks or any other damage potentially caused by construction activities.

Office of Materials and Testing
Georgia Department of Transportation

Technical Provisions

For

Design-Build Agreement

P.I. No. 0014899

Attachment 11-4

Special Provision 437
Granite Curb

&

Special Provision 805
Rip Rap and Curbing Stone
DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA  

SPECIAL PROVISION  

PROJECT: 0014899, Bibb County  

PI No. 0014899  

Section 437 — Granite Curb  

Delete Subsection 437.3.03.3.  

Add the following to Subsection 437.3.03:  

3. Pour one (1) cubic foot of Class A concrete underneath joints according to Figure 1.  

![Figure 1](attachment:typical_granite_curb.png)  

4. Place the granite curb on a dry, firm foundation.
Delete Subsection 805.2.02.A.4.c
Delete Subsection 805.2.02.A.4.d

Add the following to Subsection 805.2.02.A.4:

I. Exposed surface of granite curb to be dressed with a bush hammered, thermal or split face finish.
Georgia Department of Transportation

Technical Provisions

For

Design-Build Agreement

P.I. Nos. 0014895 and 0014899

Attachment 12-1

MS4 Responsibilities Design-Build Project
### MS4 Responsibilities – Design-Build Project

#### 4.2.1 Public Education

<table>
<thead>
<tr>
<th>4.2.1-1</th>
<th>DOT website to educate the public regarding stormwater related topics (e.g. litter prevention, Adopt-A-Highway)</th>
<th>N/A</th>
<th>Design-Build Team</th>
<th>GDOT</th>
<th>PMC</th>
<th>3rd Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.2.1-2</td>
<td>Training program to educate contractors and employees conducting activities that may impact stormwater runoff</td>
<td>N/A</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>4.2.1-3</td>
<td>Distribution of stormwater related educational materials to the public</td>
<td>N/A</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.2.1-4</td>
<td>Storm draining marking, and/or pet waste program in high pedestrian areas, such as welcome centers / rest areas, maintenance facilities, and along streets with sidewalks within a permitted area</td>
<td>N/A</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 4.2.2 Public Involvement

| 4.2.2-1 | Adopt-A-Highway Program | N/A | ✔ |
| 4.2.2-2 | Public Information Open Houses (PIOHs) to allow public input into projects | Conduct all appropriate public information open houses as applicable. As part of each public information open house, contact GDOT Office of Design Policy to ensure that a Stormwater Management Program display is provided and displayed at the open house. Provide the number of open houses conducted each year. | ✔ |
| 4.2.2-3 | Memorandum of Agreements | N/A | ✔ |

#### 4.2.3 Illicit Discharge Detection and Elimination

<p>| 4.2.3-1 | Outfall Map and Inventory | Provide a list of new outfalls within the project area indicating the location and geographic coordinates for each outfall. Provide all information per SP 156. | ✔ |
| 4.2.3-2 | A policy that prohibits non-stormwater discharges into the MS4 | N/A | ✔ |
| 4.2.3-3 | An Illicit Discharge Detection and Elimination (IDDE) Plan | Conduct inspections outfalls within the project area each year inspecting the outfalls for the presence of dry weather discharges in accordance with the IDDE plan. For a copy of the IDDE plan, contact the GDOT Office of Design Policy. Provide a copy of the inspection reports (see the IDDE plan) for each outfall inspected. If a dry weather discharge is detected, contact the District Environmental Compliance Engineer for further investigation / action. | ✔ |
| 4.2.3-4 | Procedures for tracing and eliminating any identified illicit discharges | N/A | ✔ |</p>
<table>
<thead>
<tr>
<th>2017-2022 Permit No. GAR041 000 Ref.</th>
<th>Best Management Practice (BMP)</th>
<th>Activity Description</th>
<th>Design-Build Team</th>
<th>GDOT</th>
<th>PMC</th>
<th>Aardvark</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.2.3-5</td>
<td>Education</td>
<td>N/A</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.2.3-6</td>
<td>Procedures for receiving and responding to complaints related to illicit discharges</td>
<td>Report all complaints related to illicit discharges to the District Environmental Compliance Engineer. Provide a summary of the number of complaints and summary of resolution including the date and time received each year for the project area to GDOT.</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.2.3-7</td>
<td>Spill response procedures</td>
<td>Report all spills in accordance with the IDDE plan and the Georgia Oil or Hazardous Material Spills and Releases Reporting. If a spill occurs and the spill reaches an MS4 structure, report the spill to the District Environmental Compliance Engineer.</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 4.2.4 Construction Site Runoff Stormwater Control

| 4.2.4-1                          | A contractual obligation mechanism | Requires erosion and sediment controls consistent with the Manual for Erosion and Sediment Control in Georgia and the Construction General Permits, as well as penalties to ensure compliance, to the extent allowable, under State or local law. |                  | ✓    |     |          |
| 4.2.4-2                          | Erosion, Sedimentation and Pollution Control Plans (ESPCPs) | Prepare and submit to EPD an ESPCP that complies with the requirements of the most recent Construction Activity Permits, which identify the Manual for Erosion and Sediment Control in Georgia (Green Book) and stream buffer requirements for all land disturbance activities that require coverage. |                  | ✓    |     |          |
| 4.2.4-3                          | Procedures for receiving and responding to erosion and sedimentation complaints | Report all complaints related to construction site runoff to the District Environmental Compliance Engineer. Provide a summary of the number of complaints and summary of resolution including the date and time received each year for the project area to GDOT. |                  | ✓    |     |          |
| 4.2.4-4                          | Site plan review procedures     | Incorporate consideration of potential water quality impacts. |                  | ✓    |     |          |
| 4.2.4-5                          | Site inspection procedures in accordance with the Construction Activity Permits | Maintain inspections as required in the most recent Construction Activity Permits, which identify the Manual for Erosion and Sediment Control in Georgia (Green Book) and stream buffer requirements for all land disturbance activities that require coverage. Provide a copy of all inspections performed. |                  | ✓    |     |          |
| 4.2.4-6                          | Ensure through contracts or other mechanisms that construction site operators control waste that may cause adverse water quality impacts in accordance with the Construction Activity Permits | |                  | ✓    | ✓    | ✓        |
| 4.2.4-7                          | Procedures for bringing contractors back into compliance with the contract requirements | N/A | | ✓    | ✓    |          |

### 4.2.5 Post-Construction Stormwater Management

<p>| 4.2.5-1                          | Inventory of post-construction stormwater management structures, designed for filtering and/or detention | Provide an inventory of all permanent Post Construction Stormwater management structures following GDOT acceptance utilizing SP 156 for required data to be provided on each structure. | | ✓    |     |          |</p>
<table>
<thead>
<tr>
<th>Best Management Practice (BMP)</th>
<th>Activity Description</th>
<th>Design-Build Team</th>
<th>GDOT</th>
<th>PM</th>
<th>And 4.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.2.5-2 Policy or other regulatory mechanism to address post-construction runoff</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.2.5-3 Program for the long-term operation and maintenance of post-construction structures</td>
<td>Inspect and maintain Post Construction Stormwater management structures within the project area utilizing the inspection forms in the current effective GDOT Stormwater System Inspection &amp; Maintenance (I&amp;M) Manual. Report all maintenance performed on each structure utilizing GDOT Maintenance Activity Codes.</td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>4.2.5-4 Program for ensuring the use of a stormwater design manual and the feasibility of inclusion of the post-construction standards from Section 4.2.5.1 during the project design phase</td>
<td>Submit and secure approval of a Post Construction Stormwater Report for all applicable construction projects within the project area following the specifications in the most current GDOT Drainage Manual.</td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>4.2.5.4 Green Infrastructure / Low Impact Development</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>4.2.5.4-1 Program for conducting a green infrastructure / low impact development (GI/LID) feasibility study, and implementing GI/LID infrastructure, where feasible</td>
<td>Submit and secure approval of a Post Construction Stormwater Report for all applicable construction projects within the project area following the specifications in the most current GDOT Drainage Manual.</td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>4.2.6 Pollution Prevention / Good Housekeeping for Municipal-Type Operations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>4.2.6-1 Inventory of GDOT facilities conducting municipal-type activities that have the potential to cause pollutant runoff</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>4.2.6-2 Program for inspecting the GDOT facilities for good housekeeping practices</td>
<td>Perform inspections on 20% of all GDOT accepted facilities annually utilizing the F-SWPPP such that all facilities are inspected over the course of 5 years.</td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>4.2.6-3 Manual detailing procedures for routine maintenance activities at municipal type operations to prevent pollutant runoff</td>
<td>Provide an annual copy of inspections and corrective actions implemented for each GDOT accepted facility utilizing the F-SWPPP for guidance.</td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>4.2.6-4 Inventory and Map of MS4 structures</td>
<td>Provide an inventory of all MS4 structures following GDOT acceptance utilizing SP 156 for required data to be provided on each structure.</td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>4.2.6-5 Program for inspecting and maintaining MS4 structures</td>
<td>Perform inspections on 10% of all GDOT MS4 structures within the project area annually utilizing the GDOT Stormwater System Inspection &amp; Maintenance Manual such that all structures are inspected over the course of 5 years. Report all maintenance performed on each structure utilizing GDOT Maintenance Activity Codes.</td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>4.2.6-6 An employee training program, with the purpose of preventing and reducing stormwater pollution from GDOT facilities and activities</td>
<td>All field personnel with supervisory capacity assigned to the project must have attended a GDOT F-SWPPP training course within 5 years of the contract date of the project. For those personnel that have not attended the training course within the previous 5 years, the training course must be completed within 6 months of assignment to the project.</td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
</tbody>
</table>
### Reporting:
GDOT’s NPDES Phase II MS4 permit requires that an annual report be submitted each year documenting compliance with all aspects of the permit from January 1\textsuperscript{st} to December 31\textsuperscript{st} (reporting period). To aid in that reporting, the contractor shall submit quarterly update reports documenting those activities undertaken during the reporting period as required in the matrix above. The deadlines for each update report shall be established as shown below:

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Dates</th>
<th>Quarterly Update Report Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>January 1\textsuperscript{st} – March 31\textsuperscript{st}</td>
<td>April 30\textsuperscript{th}</td>
</tr>
<tr>
<td>Q2</td>
<td>April 1\textsuperscript{st} – June 30\textsuperscript{th}</td>
<td>July 31\textsuperscript{st}</td>
</tr>
<tr>
<td>Q3</td>
<td>July 1\textsuperscript{st} – September 30\textsuperscript{th}</td>
<td>October 31\textsuperscript{st}</td>
</tr>
<tr>
<td>Q4</td>
<td>October 1\textsuperscript{st} – December 31\textsuperscript{st}</td>
<td>January 31\textsuperscript{st}</td>
</tr>
</tbody>
</table>
Georgia Department of Transportation

Technical Provisions

For

Design-Build Agreement

P.I. Nos. 0014895 and 0014899

Attachment 13-1

SP 443 Elastomeric Profile Bridge Joint Seals
SP 449 Bridge Deck Joint Seals
SP 449 Silicone Seal
SP 500 HPC
SP 500 Light Weight Concrete
SP 500 Class D
SP 500 UHPC
SP 500 Mass Concrete
SP 511 Mechanical Bar Splice
SP 521 Patching Concrete Bridge Structures
SP 627 LRFD MSE Walls
SP 628 Permanent Soil Nailed Walls
SP 865 Manufacture of Prestressed Concrete Bridge Members
SP 999 Precast Concrete Bridge Deck
DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA  

SPECIAL PROVISION  

Project No:  
P.I. No. 0014895 & 0014899  

SECTION 443 - ELASTOMERIC PROFILE BRIDGE JOINT SEALS  

443.1 General Description  

This work consists of furnishing and installing a bridge deck joint seal device to the limits shown on the plans that consists of a monolithic steel strip seal retainer, a polychloroprene gland, and alubricant adhesive. Only a continuous full length strip seal joint system is acceptable, unless stage construction or excessive length prohibits monolithic installation. Utilize a prequalified expansion device manufacturer with a five year proven history of successful product manufacture.  

Provide an expansion joint device designed for HS-20 truck loading and impact in accordance with 2002 AASHTO specifications.  

443.1.01 Definitions  

A. Strip Seal Expansion Joint Device  

This device is constructed of steel elements designed with a locking mechanism capable of securely locking the edges of a continuous non-reinforced polychloroprene gland. The steel elements are anchored to the structure in accordance with the specification. All materials are as specified in the contract documents or as recommended by the manufacturer of the strip seal joint assembly. The strip seal joint assembly is referred to throughout the specifications as the expansion joint device.  

B. Joint  

Provide joint opening between two portions of a structure to allow for expansion and contraction.  

443.1.02 Related Referernces  

General Provisions 101 through 150.  

443.1.02 Submittals  

Submit for review by the Engineer, complete shop drawings and product data for the expansion device. Submit seven (7) complete sets of information. At the discretion of the Engineer, furnish facilities for inspection of the completed device or a representative sample in the manufacturer’s plant. Allow the inspector free access to the necessary
parts of the manufacturer’s plant. Accurately set and securely support at the correct grade and elevation and the correct joint opening based on temperature as shown on the plans and on the approved shop drawings.

### 443.2 Materials

Furnish a manufacturer’s certification that the materials proposed for use on the project have been pretested and meet the requirements as set forth in the specification and as detailed in the corresponding contract drawings. Do not install materials in the field prior to the Engineer’s approval. The strip seal expansion joint device, including anchorages, is to be supplied by the manufacturer. The following requirements for each component are to be verified by the manufacturer:

#### A. Steel Elements

Provide ASTM A-588 weathering grade steel for the material utilized to produce a shape suitable to mechanically lock the sealing element in place throughout the normal movement cycle of the joint. Provide a minimum thickness of ¼ in. as measured from the internal locking mechanism cavity to the top surface of the steel retainer. Provide minimum dimensions of 2-1/4 in. width and 3 in. height.

Provide steel strip seal retainers that are a monolithic steel shape with a machined seal retainer cavity. Multiple component welded steel shapes and rolled steel, that is bent or crimped to achieve final shape and/or seal retainer cavity, is not permitted. Perform all welding in accordance to the Georgia Standard Specifications and paragraph D-1.5 of the AWS welding code. Provide full penetration groove welds for splices between sections of steel strip seal retainers.

#### B. Continuous Polychloroprene Gland

Supply and install the polychloroprene gland in one continuous length. Provide a gland with a shape that promotes self-removal of foreign material during normal joint operation. Provide a gland with physical properties generally in accordance with the following:

<table>
<thead>
<tr>
<th>PHYSICAL PROPERTY</th>
<th>ASTM TEST METHOD</th>
<th>REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile strength, min, psi</td>
<td>D-412</td>
<td>2000</td>
</tr>
<tr>
<td>Elongation @ break, min, %</td>
<td>D-412</td>
<td>250%</td>
</tr>
<tr>
<td>Hardness, Type A durometer</td>
<td>D-2240 Modified</td>
<td>55 ± 5% points</td>
</tr>
<tr>
<td>Oven aging, 70h @ 212°F</td>
<td>D-573</td>
<td></td>
</tr>
<tr>
<td>Tensile strength, max % loss</td>
<td></td>
<td>20% max</td>
</tr>
<tr>
<td>Elongation, max % loss</td>
<td></td>
<td>20% max</td>
</tr>
<tr>
<td>Hardness, Type A durometer, points change</td>
<td></td>
<td>0 to + 10</td>
</tr>
<tr>
<td>Oil Swell, ASTM Oil No. 3, 70h @ 212°F</td>
<td>D-471</td>
<td></td>
</tr>
<tr>
<td>Weight change, max %</td>
<td></td>
<td>45%</td>
</tr>
<tr>
<td>Ozone resistance</td>
<td>D-1149 Modified</td>
<td></td>
</tr>
<tr>
<td>20% strain, 300 pphm in air 70h @ 104°F</td>
<td></td>
<td>no cracks</td>
</tr>
<tr>
<td>Low temperature stiffening, 7 days @ 14°F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hardness, Type A durometer, points change</td>
<td></td>
<td>0 to + 15</td>
</tr>
<tr>
<td>Compression Set, 70h @ 212°F max</td>
<td>D-395 Method B (modified)</td>
<td>40%</td>
</tr>
</tbody>
</table>
C. **Lubricant Adhesive**

Use a one part moisture curing polyurethane and hydrocarbon solvent mixture meeting the requirements of ASTM D-4070-81 for the material used in bonding the polychloroprene gland to the steel elements.

D. **Anchorage**

Provide an anchorage as detailed on the contract drawings with a minimum of 0.75 in² of bolt area per 1.0 linear foot of joint (Minimum ½ in. diameter hardware at 6 in. O.C. both sides of joint).

443.2.01 Delivery, Storage and Handling

General Provisions 101 through 150.

Store all materials to prevent damage from the elements and to ensure the preservation of its quality and fitness for the work. Avoid contact with flame.

Inspect all stored materials, although accepted before storage, prior to their use in the work. Ensure that all stored materials meet the requirements of the Contract at the time of use.

Remove from the site of the work immediately, any material rejected because of failure to meet the required tests or rejected because of damage. Replace all removed material at no additional cost to the Department.

443.3 Construction Requirements

443.3.01 Personnel

General Provision 101 through 150.

443.3.02 Equipment

General Provisions 101 through 150.

443.3.03 Preparation

General Provisions 101 through 150.

443.3.04 Fabrication

General Provisions 101 through 150.

443.3.05 Construction

Measure and record the surface temperature of the concrete and/or steel with a surface thermometer as described below. Record the temperature of the underside of the concrete slab at each end of the superstructure element adjacent to the expansion joint. Take the average of the readings to use with the temperature shown on the shop drawings.

Immediately prior to installation, inspect the joint system for proper alignment and complete bond between the neoprene sealer and the steel and proper stud placement and effectiveness. No bends or kinks in the joint system are allowed, except as necessary to follow the roadway grades. Any joint system exhibiting bends or kinks due to transporting or as a result of mishandling are to be removed from the work site, and replaced by a new joint system, at no additional expense to the Department. Where stage construction is required, connect all steel sections using full penetration groove welds.
Inspect studs visually and give each a light blow with a 4 lb. hammer to ensure full connection to steel. Replace any stud which does not have a complete end weld, or does not emit a ringing sound when struck with a light blow by hammer. Carefully remove studs located more than 1 inch in any direction from the location shown on the shop drawings and provide a new stud placed on the proper location. Perform all stud replacements at no additional expense to the Department.

Blast clean all metal surfaces to come in contact with the neoprene sealer in accordance with the requirements of Steel Structures Painting Council Surface Preparation NO. 6 (SSPC-SP6)-Commercial Blast Cleaning. After cleaning, all cleaned surfaces are to exhibit a clean quality of C SA 2, or better, as defined by Steel Structures Painting Council Standard SSPC-VIS 1.

Protect cleaned metal surfaces until such time as the sealer and lubricant adhesive are placed against the metal surface. Reclean any metal surface upon which rusting appears in accordance with the foregoing, at no additional expense to the Department. Replace neoprene seals not fully bonded to the steel at no additional expense to the Department.

After installation and when the adjacent concrete is cured, water test the expansion joint device under the Engineer’s direction and supervision. Seeping of water through the joint is cause for rejection of the expansion joint device.

**443.4 Measurement**

Measurement for the expansion device is per each device completely installed, which is the expansion joint device in place with the concrete placed and finished and the watertight integrity test performed as described above.

**443.5 Payment**

Payment for the expansion device as specified above is paid for at the Contract Unit price bid per each. Such payment is full compensation for furnishing all equipment and materials and performing the work in accordance with the Plans and Specifications.

Payment will be made under:

<table>
<thead>
<tr>
<th>Item No. 443</th>
<th>Elastomeric Profile Bridge Joint Seals, Bridge No - , Bent No -</th>
<th>Per each</th>
</tr>
</thead>
</table>

---

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DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SPECIAL PROVISION

PROJECT No:
P.I. NO. 0014895 & 0014899

SECTION 449 – Bridge Deck Joint Seals

Add the following Subsections to Section 449:

449.1 General Description

• A Preformed Pre-compressed, Silicone Coated, Self-Expanding Sealant System

449.2 Materials

J. Preformed Pre-compressed, Silicone Coated, Self-Expanding Sealant System

The preformed pre-compressed silicone joint seal shall as a minimum:

• Sealant system shall be comprised of three components: 1.) cellular polyurethane foam impregnated with hydrophobic 100% acrylic, water-based emulsion, factory coated with highway-grade, fuel resistant silicone; 2) field-applied epoxy adhesive primer, 3) field-injected silicone sealant bands.

• Be held in place by a non-sag, high modulus silicone adhesive.

• Be compatible with the epoxy and header material.

• Withstand the effects of vertical and lateral movements, skew movements and rotational movement without adhesive or cohesive failure.

• Designed so that, the material is capable of movement of +50%, -50% (100% total) of nominal material size.

• Changes in plane and direction shall be executed using factory fabricated 90 degree transition assemblies. The transitions shall be watertight at the inside and outside corners though the full movement of the product.

• The depth of the joint shall be recessed ½” below the riding surface throughout the normal limits of joint movement.

• Be resistant to ultraviolet rays

• Be resistant to abrasion, oxidation, oils, gasoline, salt, and other materials that may be spilled on or applied to the surface.

• Certify to the Engineer that the joint composition shall be free of any waxes or wax compounds; asphalts or asphalt compounds.
Ensure the joint meets the following physical properties:

<table>
<thead>
<tr>
<th>Test</th>
<th>Requirements</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Strength of Silicone Coating (min)</td>
<td>140 psi</td>
<td>ASTM D 412</td>
</tr>
<tr>
<td>UV Resistance of Joint System</td>
<td>No Changes--2000 Hours</td>
<td>ASTM G155-00A</td>
</tr>
<tr>
<td>Density of Cellular Polyurethane Foam</td>
<td>200kg/m3 (12.5lb/ft3)</td>
<td>ASTM D545</td>
</tr>
<tr>
<td>Heat Aging Effects (Silicone Coating)</td>
<td>No cracking, chalking</td>
<td>ASTM C 792</td>
</tr>
<tr>
<td>Resilience (Silicone Coating)</td>
<td>≥ 95%</td>
<td>ASTM D 5329</td>
</tr>
<tr>
<td>Joint System Operating temp range (min)</td>
<td>-40° F to 185° F</td>
<td>ASTM C 711</td>
</tr>
</tbody>
</table>

The adhesive shall be a two-component, 100% solid, modified epoxy meeting the requirements of ASTM C881, Type I, Grade 3, Class B & C. The adhesive shall also have the following properties:

<table>
<thead>
<tr>
<th>Test</th>
<th>Requirements</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Strength</td>
<td>2,500 psi (24 MPa) min.</td>
<td></td>
</tr>
<tr>
<td>Compressive Strength</td>
<td>7000 psi (48 MPa) min.</td>
<td></td>
</tr>
<tr>
<td>Bond Strength (Dry Cure)</td>
<td>2000 psi (28MPa) min</td>
<td></td>
</tr>
<tr>
<td>Water Absorption</td>
<td>0.1% by weight</td>
<td></td>
</tr>
</tbody>
</table>

The silicone band adhesive shall have the following properties:

<table>
<thead>
<tr>
<th>Test</th>
<th>Requirements</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Movement Capability</td>
<td>+100/-50%</td>
<td>ASTM C 719</td>
</tr>
<tr>
<td>Elongation at Break</td>
<td>&gt;1400%</td>
<td>ASTM D 412</td>
</tr>
<tr>
<td>Slump</td>
<td>≤=0.3&quot;</td>
<td>ASTM D 2202</td>
</tr>
<tr>
<td>Hardness (Shore A) max.</td>
<td>20</td>
<td>ASTM C 661</td>
</tr>
<tr>
<td>Tack free time (max)</td>
<td>60 minutes</td>
<td>ASTM C 679</td>
</tr>
<tr>
<td>Heat Aging Effects</td>
<td>No cracking, chalking</td>
<td>ASTM C 792</td>
</tr>
<tr>
<td>Resilience</td>
<td>≥ 95%</td>
<td>ASTM D 5329</td>
</tr>
<tr>
<td>Bond</td>
<td>0% Adhesive or Cohesive Failure after 5 cycles @100% extension</td>
<td>ASTM D 5329</td>
</tr>
</tbody>
</table>
449.3.03 Preparation

A. Surface Preparation

2. Preparation for Joint Seal
   
   Delete: “Saw-cutting of the concrete deck may be necessary to provide an acceptable attachment surface for the joint seal”.

449.3.05 Construction

H. Preformed Pre-compressed, Silicone Coated, Self-Expanding Sealant System

1. After the epoxy or elastomeric concrete had developed enough strength to be traffic ready, remove the temporary joint filler (when called for) and thoroughly clean the joint faces of all joint filler.

2. Lightly sandblast the joint to remove all residues. Prior to installation ensure surfaces are completely dry and all recommendations of the manufacture have been completed.

3. Clean the seal prior to installation by wiping it down with a cloth saturated with acetone.

4. Apply epoxy adhesive to substrate in a thin layer inside cleaned substrate.

5. Install the foam length into the wet epoxy adhesive so that the top of the bellows is ½” below the deck surface.

6. Inject a ¾-inch band of Silicone between the substrate and the foam.

7. Tool the excess Silicone and remove excess Silicone from bellows at the joins. Coat any exposed foam ends.

449.5 Payment

Payment will be made under:

<table>
<thead>
<tr>
<th>Item No. 449</th>
<th>Preformed Pre-compressed, Silicone Coated, Self-Expanding Sealant System, Bridge No - _____, Bent No - ____</th>
<th>Per Linear Foot (meter)</th>
</tr>
</thead>
</table>

Bridge Maintenance
DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SPECIAL PROVISION

P.I. No: 0014895 & 0014899
Bibb Counties

SECTION 449 – Bridge Deck Joint Seals

Add the following Subsections to Section 449:

449.1 General Description

- A preformed silicone joint seal, or

449.2 Materials

J. Performed Silicone Joint Seal

The preformed silicone joint seal shall as a minimum:

- Be held in place by a non-sag, high modulus silicone adhesive.
- Be compatible with epoxy and elastomeric concrete header material and steel headers (if required).
- Withstand the effects of vertical and lateral movements, skew movements and rotational movement without adhesive or cohesive failure.
- The depth of the joint shall be recessed below the riding surface throughout the normal limits of joint movement.
- Be resistant to ultraviolet rays
- Be resistant to abrasion, oxidation, oils, gasoline, salt, and other materials that may be spilled on or applied to the surface.
Ensure the joint meets the following physical properties:

<table>
<thead>
<tr>
<th>Test</th>
<th>Requirements</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardness Type A durometer</td>
<td>53 ± 5</td>
<td>ASTM D 2240</td>
</tr>
<tr>
<td>Tensile Strength (min)</td>
<td>550 psi (3.8 Mpa)</td>
<td>ASTM D 412</td>
</tr>
<tr>
<td>Elongation at break (min)</td>
<td>350%</td>
<td>ASTM D 412</td>
</tr>
<tr>
<td>Tear Strength (min)</td>
<td>80 lb/in (92 kg/cm)</td>
<td>ASTM D 624</td>
</tr>
<tr>
<td>Compression set (max)</td>
<td>30% at 350o F</td>
<td>ASTM D 395</td>
</tr>
<tr>
<td>Operating temp range (min)</td>
<td>-60° F to 450° F (51° C to 232° C)</td>
<td></td>
</tr>
</tbody>
</table>

The adhesive shall also have the following properties:

<table>
<thead>
<tr>
<th>Test</th>
<th>Requirements</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sag/flow (max)</td>
<td>3/16” (4.8 mm)</td>
<td>ASTM C 639</td>
</tr>
<tr>
<td>Hardness</td>
<td>23 ± 3</td>
<td>ASTM C 661</td>
</tr>
<tr>
<td>Tack free time (max)</td>
<td>30 minutes</td>
<td>ASTM C 679</td>
</tr>
<tr>
<td>Skin over time (tooling Time) (max)</td>
<td>5 minutes</td>
<td>AT 75° F/50% RH</td>
</tr>
<tr>
<td>Cure through to ¼” thickness (max)</td>
<td>16 hours</td>
<td>AT 75° F/50% RH</td>
</tr>
<tr>
<td>Resistance to UV</td>
<td>No Degradation</td>
<td>ASTM C 793</td>
</tr>
<tr>
<td>Peel Adhesion to substrates (min)</td>
<td>50 lb/in (58kg/cm)</td>
<td>ASTM C 794</td>
</tr>
</tbody>
</table>

449.3.03 Preparation

A. Surface Preparation

1. Preparation for Joint Seal

   Delete: “Saw-cutting of the concrete deck may be necessary to provide an acceptable attachment surface for the joint seal”.

   - Preparation for Joint Seal

     Delete: “Saw-cutting of the concrete deck may be necessary to provide an acceptable attachment surface for the joint seal”.

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Page 2
449.3.05 Construction

H. Preformed Silicone Joint Seal

1. After the epoxy or elastomeric concrete has developed enough strength to be traffic ready, remove the temporary joint filler (when called for) and thoroughly clean the joint faces of all joint filler.

2. Lightly sandblast the joint to remove all residues. Prior to installation, ensure surfaces are completely dry and all recommendations of the manufacturer have been completed.

3. Clean the seal prior to installation by wiping it down with a cloth saturated with denatured alcohol.

4. Apply a 3/8” thick bead of adhesive along both sides of the joint at the depth recommended by the manufacturer.

5. Position the joint seal to the proper depth as recommended by the manufacturer.

6. Apply a bead of adhesive along the top side of the joint on each side as recommended by the manufacturer.

7. Tool the adhesive twice to insure complete contact with the vertical edge.
Add the following to 500.1.03.A:

The Contractor is responsible for all concrete mix designs. Submit a mix design for approval to the Office of Materials and Testing. Include the sources, actual quantity of each ingredient, design slump, design air and laboratory results that demonstrate the ability of the design to attain the required compressive strength at 28 days.

Prepare and test at least 8 cylinders according to ASTM C192 and AASHTO T22 to ensure that the demonstrated laboratory compressive strength at 28 days exceeds the minimum acceptance strength (X). Make the specimens from two or more separate batches with an equal number of cylinders made from each batch. The minimum acceptance strength is:

\[ X = f'c + 500 \text{ psi} \quad (X = f'c + 3.4 \text{ MPa}) \]

Where, \( f'c \) is the required minimum compressive strength at 28 days for Class D concrete as shown in Table 1—Concrete Mix Table.

Add the following to Table 1—Concrete Mix Table:

| English |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Class of Concrete | (2) Coarse Aggregate Size No. | (1 & 6) Minimum Cement Factor lbs/yd³ | Max Water/Cement Ratio lbs/lbs | (5) Slump Acceptance Limits (in) Lower - Upper | (3 & 7) Entrained Air Acceptance Limits (%) Lower - Upper | Minimum Compressive Strength at 28 days (psi) |
| Class D | 57,67 | 650 | 0.445 | 2 | 4 | 3.5 | 7.0 | 4000 |

| Metric |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Class of Concrete | (2) Coarse Aggregate Size No. | (1 & 6) Minimum Cement Factor kg/m³ | Max Water/Cement Ratio kg/kg | (5) Slump Acceptance Limits (mm) Lower - Upper | (3 & 7) Entrained Air Acceptance Limits (%) Lower - Upper | Minimum Compressive Strength at 28 days (MPa) |
| Class D | 57,67 | 386 | 0.445 | 50 | 100 | 3.5 | 7.0 | 28 |

Delete Subsection 500.3.04.F.1.b

Add the following to Subsection 500.3.04.F.1:

f. Class D—Bridge superstructure concrete or as called for on the Plans

MATERIALS AND TESTING
Delete Subsection 500.1 and substitute the following:

This work consists of manufacturing and using High Performance Portland cement concrete to construct precast-prestressed concrete bridge members as shown in the plans and using normal weight Portland cement concrete to construct structures as shown in the Plans.

Add the following to Subsection 500.1.02.A:

Section 831—Admixtures

Add the following to Subsection 500.1.02.B:

AASHTO T 277

Add the following to Subsection 500.1.03.A:

High Performance Concrete Mix Designs

The Fabricator is responsible for all concrete mix designs. Ensure that concrete mixes contain enough cement to produce workability within the water-cement ratio specified in Table 1A—High Performance Concrete Mix Table, below.

Submit a mix design for approval to the Office of Materials and Research. Include the sources and actual quantity of each ingredient and laboratory results that demonstrate the ability of the design to attain both the required compressive strength and chloride permeability at 56 days.

Include laboratory compressive strength test results of at least eight test cylinders prepared and cured according to AASHTO T 126. Ensure these test cylinders are made from two or more separate batches with an equal number of cylinders made from each batch.

Also include laboratory chloride permeability test results of at least two test specimens prepared and tested according to AASHTO T 277. Ensure these test specimens are made from two or more separate batches with an equal number of specimens made from each batch.
### Table 1A—High Performance Concrete Mix Table

<table>
<thead>
<tr>
<th></th>
<th>Class of Concrete</th>
<th>Coarse Aggregate Size No.</th>
<th>(1) Minimum Cement Factor (lbs/yd^3)</th>
<th>Maximum Water/Cement ratio (lbs/lbs)</th>
<th>(2) Slump Acceptance Limits (in) Lower-Upper</th>
<th>Entrained Air Acceptance Limits (%) Lower-Upper</th>
<th>(3) Minimum Compressive Strength at 56 days (psi)</th>
<th>Maximum Chloride Permeability at 56 days (Coulombs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>&quot;AAA HPC&quot;</td>
<td>67</td>
<td>650</td>
<td>.330</td>
<td>2-7</td>
<td>3.5-6.5</td>
<td>Beams – As shown on the Plans Piling – 5000</td>
<td>Beams – 3,000 Piling – 2,000</td>
</tr>
<tr>
<td>Metric</td>
<td>&quot;AAA HPC&quot;</td>
<td>67</td>
<td>386</td>
<td>.330</td>
<td>50-180</td>
<td>3.5-6.5</td>
<td>Beams – As shown on the Plans Piling – 35</td>
<td>Beams – 3,000 Piling – 2,000</td>
</tr>
</tbody>
</table>

1. Determine the slump acceptance after the addition of high-range water reducer.

2. Determine the minimum compressive strength at 56 days using 4 in. diameter x 8 in. high (100 mm x 200 mm) cylinders.

Add the following to Subsection 500.2 Table 3:

- Fly Ash 831.2.03.A.1
- Silica Fume 831.2.03.A.4

Add the following note to Subsection 500.2 Table 3:

4. Use Type I or III Portland cement in High Performance concrete. Do not use air-entraining cement.

Add the following to Subsection 500.3.04.D.4:

f. For High Performance concrete, fly ash may be used as an additive at an addition rate not to exceed 15% of the cement by weight.

Add the following to Subsection 500.3.04.D:

6. Silica Fume

   Silica Fume may be used as an additive at an addition rate not to exceed 10% of the cement by weight.
Georgia Department of Transportation  
State of Georgia  
Special Provision  

PROJECT NO.:  
P.I. NO.: 0014895 & 0014899  

Section 500—Concrete Structures  

Add the following to Subsection 500.1:  
This work consists of manufacturing and using Portland cement concrete with lightweight aggregate to construct structures as shown in the Plans.  

Add the following to Subsection 500.1.02.B  
ASTM C 567  
AASHTO T 96  
AASHTO T 104  
AASHTO M 195  
AASHTO T 196  
GDT 32  

Add the following to Subsection 500.3.01:  
C. ACI Concrete Technician  

Provide a GDOT certified ACI Concrete Technician, from an independent GDOT prequalified consultant firm, which is certified to perform Field Testing of Roadway Construction Materials.  

Add the following to Subsection 500.3.04.F.1:  
f. Lightweight Concrete—Concrete composed of a mixture of cementitious material, normal weight fine aggregate, lightweight coarse aggregate conforming to AASHTO M 195, water and admixtures. All structural lightweight concrete will have a maximum equilibrium density of 115 lbs/ft³ (1840 kg/m³) as determined by ASTM C 567.  
g. Lightweight concrete will comply with the applicable requirements of Section 500 of the Standard Specifications. Use GDT 32 or AASHTO T 196 to determine air content of structural lightweight concrete.  

Use lightweight coarse aggregate from an approved source or stockpile meeting the requirements of AASHTO M 195 and the Sulfate Soundness (AASHTO T 104) and Los Angeles Abrasion (AASHTO T 96) requirements of Section 800.2. Nominal sizes of lightweight coarse aggregates are as specified in AASHTO M 195 as 3/4, 1/2 or 3/8 in. (19.0, 12.5 or 9.5 mm).  
The use of lightweight aggregate in concrete in a particular component of a structure will be shown on the Plans or called for in the specifications.
Add the following to Subsection 500.3.06:

F. Air Content Testing of Structural Lightweight Concrete

Provide testing of structural lightweight concrete per Subsection 500.3.04.F.1.g, and in accordance with test frequencies outlined in the Sampling, Testing and Inspection Quick Guide. Perform air content by a technician meeting the requirements of Subsection 500.3.01.C and who is approved by the Engineer. Submit test results to the Engineer. No separate measurement for payment will be made for testing of structural lightweight concrete.

MATERIALS AND RESEARCH
Add the following to Subsection 500.1.02:

B. Referenced Documents

“Guide to Mass Concrete”, ACI 207.1R-05.
“Report on Thermal and Volume Change Effects on Cracking of Mass Concrete”, ACI 207.2R-07.
“Cooling and Insulating Systems for Mass Concrete”, ACI 207.4R-05.
“Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete”, ACI 211.1-91
“Control of Cracking Concrete Structures”, ACI 224R-01.
“Specification of Structural Concrete”, Section 8, ACI 301-10.
“Compressive Strength of Cylindrical Concrete Specimens”, AASHTO T 22-10
“Making and Curing Concrete Test Specimens in the Laboratory”, ASTM C192

Add the following to Subsection 500.3.05:

AM. Mass Concrete

Mass concrete is defined as “Any large volume of concrete with dimensions large enough to require that measures be taken to cope with the generation of heat and attendant volume change to minimize cracking”. Any concrete element with a least plan dimension greater than 5ft (or greater than 6 ft diameter for a drilled shaft) shall be designated as mass concrete and will use this specification. To account for variability in as-built dimension versus plan dimension, such as telescoping casing during construction, any concrete element with a least as-built dimension greater than 5 ½ ft (or greater than 6 ½ ft diameter for a drilled shaft) shall be designated as mass concrete and use this specification. The introduction of a construction joint at a dimension less than 5 ft does not ensure that the maximum temperature attained by or the differential temperature in concrete is adequately controlled. Proposals for large volume concrete shall thus be evaluated based on the heat development and a Thermal Control Plan.
a. Temperature Specifications for Mass Concrete

Mass concrete shall conform to the concrete acceptance criteria and the following temperature requirements to prevent delayed ettringite formation (DEF) and thermally induced stress cracks:

1. The maximum allowable internal temperature of mass concrete meeting the requirements of Subsection 500.3.05.AM.b.1, shall not exceed 158 °F.

2. The maximum temperature differential between interior and exterior portions of the designated mass concrete element shall not exceed 35 °F.

3. The maximum temperature of the concrete when delivered and prior to placement shall be 85 °F.

b. Materials Selection and Mix Design Development

Materials used for mass concrete shall conform to the provisions in Section 500-Concrete Structures of GDOT Standard Specifications-Construction of Transportation Systems and the following requirements. When in conflict, materials shall conform to the special provisions below rather than those in Section 500.

1. Use Class F fly ash (no Class C fly ash is allowed), granulated iron blast-furnace slag or other pozzolans, if approved by the Department in all mass concrete. Slag may comprise no more than 75% by mass of total cementitious and pozzolanous materials. Class F fly ash may comprise no more than 40% by mass of total cementitious and pozzolanous materials. When a combination of multiple different pozzolans is used, the total amount may be no more than 75% by mass of total cementitious and pozzolanous materials.

2. High-early-strength (ASTM C150 Type III or ASTM C1157 HE) cement, metakaolin, silica fume calcium chloride and accelerating type admixtures shall not be used unless an adiabatic temperature study is completed showing temperature rise significantly less than that of plain unmodified concrete.

3. A retarding admixture, pretested with the job materials under job conditions, may be permitted to prevent cold joints due to the quantity of concrete placed, as approved by the Engineer.

4. Coarse aggregate larger than #5 stone maximum size aggregate is permitted to be used for mass concrete, if approved by the Engineer.

5. Other materials and/or mix designs may be proposed to the Engineer for approval, with documentation that the proposed mix designs meet temperature specifications from Subsection 500.3.05.AM.a for mass concrete.
6. Laboratory-designed mix proportions of materials are permitted for commonly used combinations of materials. Request these mixes in writing from the State Materials Engineer specifying the class of concrete and the source of ingredients.

7. Degree of Alkali-Silica Reactivity (ASR) of either fine or coarse aggregate is determined by testing the aggregates in ASTM C1260, or ASTM C1567 (either expansion shall be less than 0.10% after 14 days immersion). Unless the results of petrography indicate a significant change in the composition of materials in quarries, ASTM 1293 (expansion <0.04% at 1 year) is not required to be conducted, before a mix design can be approved by the Engineer. Alternatively obtain low ARS risk aggregate materials from certified suppliers.

8. The mixture will be capable of demonstrating a laboratory compressive strength at 28 days meeting the requirements of Table 1 – Concrete Mix Table, Subsection 500.1.03.A. Compressive strength will be determined based upon result of six cylinders prepared and tested in accordance with AASHTO T 22 and ASTM C192.

c. Thermal Control Plan

At least 30 calendar days prior to placing any concrete defined as mass concrete, the contractor shall submit to the Engineer for approval a Thermal Control Plan (TCP). The TCP shall show complete analysis of the anticipated thermal developments in the mass concrete elements for all expected project temperature ranges using the proposed mix design, casting procedures and materials. A primary focus of the TCP is actions to take when any of the temperature controls noted in Subsection 500.3.05.AM are exceeded or are anticipated to be exceeded. As a minimum, the TCP shall include details about the following:

1. Concrete mix design showing composition, proportions, and sources for all components.

2. Proposed methods to control concrete temperature at time of placement, such as pre-cooling of raw materials or concrete.

3. Duration and method of curing.

4. Calculations of maximum concrete temperatures for the range of expected air, water (for underwater construction) and concrete temperatures.

5. Proposed methods to control maximum temperature during curing. A mechanical cooling system may be used to control the internal temperature of mass concrete during curing but shall be designed in conformance with the Thermal Control Plan. If a mechanical cooling system is used, the plans for the cooling system operation and final grouting after cooling shall be submitted to the Engineer for approval.

6. When the maximum concrete temperature nears 140 °F, notify the Engineer and take corrective measures immediately to retard further increase in the temperature to limit it to the 158 °F maximum. Utilize the mechanical cooling system, if installed, to lower the overall temperature. Other active measures may include, but not limited to
for any further pours: chilled water for mixing, precooling aggregate stockpiles, ice for mixing water, nitrogen gas, and shade for aggregate stockpiles. Cease placement of concrete until the maximum temperature has been lowered.

7. Proposed methods to control temperature differentials during curing that could include insulation for the forms and exposed portions of concrete. Contractor must take actions that prevent the exterior surfaces of the concrete from getting too cool, too quickly such as using insulation or heater or by preventing the core from getting too hot.

8. When the internal concrete temperature differential between interior and exterior concrete nears 30°F, notify the Engineer and take corrective measures immediately to retard further increase in the temperature differential to limit it to the 35°F maximum. Utilize the mechanical cooling system, if being use, to lower the internal temperature. Other active measures may include, but not limited to: chilled water for mixing, precooling aggregate stockpiles, ice for mixing water, nitrogen gas, and shade for aggregate stockpiles. Cease placement of concrete until the temperature differential has been lowered.

9. Calculations of maximum temperature gradients within each concrete element during curing. Calculations shall include maximum possible temperature induced tensile stress in the concrete in addition to tensile stresses at 1 day, 3 days, 7 days, 28 days, and 56 days after placement. The thermal calculation model and/or computational software shall be submitted to the Engineer for approval.

10. Temperature monitoring and recording system, that shall consist of temperature sensors connected to a data acquisition system. The temperature sensor types and locations shall be specified.

11. Results of strength tests of sample cylinders. The concrete shall attain the specified strength at an age (28 or 56 days) as specified by the Engineer. Match curing of concrete is required. Match curing shall be conducted according to temperature history obtained using thermocouples typically 4 inches from surface and at the centroid of the concrete pour. The depth of the thermocouple may need to be established by the depth of rebar or other anchoring structure (See Subsection 500.3.05.AM.d.3 and Subsection 500.3.05.AM.d.5).

12. For all mass concrete construction, the TCP shall be developed by a Professional Engineer, licensed in the State of Georgia, who shall be competent in the modeling, design, and temperature control of mass concrete with at least three mass concrete projects experience that can be verified by the Department.

Place no concrete until the mass concrete mix design and the proposed TCP is reviewed and approved by the Engineer. If concrete design mixture is changed, the TCP must be updated and approved by the Engineer.

d. Temperature Monitoring and Recording System

1. Install within the concrete placed in each mass pour and in the surrounding environment of the concrete, temperature sensing devices (thermocouples) of a type approved by and at locations based on the plan approved by the Engineer.
2. The sensing system will contain as a minimum two independent sets of sensing devices in order to assure readings if one of the systems fail. The sensing devices shall be accurate to within 2°F range.

3. Thermocouples shall be placed at the centroid of the pour, or wherever the point of expected maximum temperature is anticipated. Additional thermocouples shall be placed on the exterior to monitor the maximum temperature differential. Ensure the thermocouples are placed at a depth of 2 to 6 inches below the surface.

4. The temperature monitoring and recording system for mass concrete shall consist of temperature sensors connected to a data acquisition system capable of printing, storing, and downloading data to a computer. Data shall be printed and submitted to the Engineer daily with a copy sent to Office of Materials and Testing.

5. Two independent sets of sensing devices shall be placed at each of the following locations and readings to be taken hourly: (1) center of the mass pour; (2) midpoint of the side which is the shortest distance from the center; (3) midpoint of the top surface; (4) midpoint of the bottom surface; and (5) corner of the mass pour which is furthest distance from the center. Ensure the thermocouples are placed at a depth of 2 to 6 inches below the surface.

e. Placing and Curing Mass Concrete

When placing and curing mass concrete do the following:

1. Maintain a temperature differential of 35 °F or less between the interior and exterior portions of the designated mass elements.

2. Monitor and maintain records of the concrete temperature, beginning with casting and continuing until the maximum temperature is reached and begins decreasing to a differential of no more than 35°F from the mean annual ambient temperature of the surrounding environment, for three consecutive days.

3. The contractor shall suggest consolidation techniques based on the placement technique to be used for mass concrete. The consolidation technique shall be reviewed and approved by the Engineer before start of placement of mass concrete. Slump tests or slump-flow (ASTM C 1611) tests, as applicable, shall be used to provide quality control from batch to batch.

4. Maintain a minimum concrete placement rate of 30 cubic yards per hour or as designated on the plans or in the Special Provisions. Any requested change from this placement rate is to be approved by the Engineer.

f. Acceptance

Mass concrete shall conform to the concrete acceptance criteria and the temperature requirements as stated earlier to prevent delayed ettringite formation (DEF) and thermally induced stress cracks.
If the Contractor fails to conform to any of the above temperature requirements in any one pour, any additional mass concrete pours will cease. The Engineer may, at its sole discretion, direct that the concrete be removed or otherwise mitigated, at no cost to the Department. The contractor shall revise the Thermal Control Plan and design calculations to correct the problem and resubmit the revised Thermal Control Plan. Mass concrete placement shall not begin until the Engineer has approved the revised Thermal Control Plan. No extension of time or compensation will be made for any rejected mass concrete element or revisions of the Thermal Control Plan.

Office of Materials and Testing
Add the following Subsections to Section 500:

**500.1 General Description**
This work includes furnishing ultra high performance concrete (UHPC) field cast joints to accelerate bridge construction.

**500.1.02 Related References**
A. Standard Specifications
   Section 109—Measurement and Payment

**500.1.03 Submittals**
I. Ultra High Performance Concrete
   1. Documented experience of manufacturing UHPC for at least five projects.
   2. UHPC mix design in accordance with the material performance measures stated in this specification.
   3. For UHPC mixed at the site, documentation of equipment meeting the UPHC Manufacturer’s recommendations.

J. UHPC Pour Details
   Provide details for placement of UHPC. Start placement of UHPC at the lowest point of bridge and limit length of UHPC pours to a maximum of 10 feet horizontal.

**500.2 Materials**
Ensure that materials for Ultra High Performance Concrete (UHPC) meet the following Specifications:

The material shall be Ultra High Performance Concrete with all components supplied by one manufacturer. Materials commonly used in UHPC include: fine aggregate, cementious material, super plasticizer, accelerator and steel fibers (deformed, specifically made for steel reinforcement of concrete). The Contractor is responsible for UHPC mix design and ensure material meets:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Compressive Strength (ASTM C39)</td>
<td></td>
</tr>
<tr>
<td>Heat-Treated*</td>
<td>≥ 25 ksi</td>
</tr>
<tr>
<td>Not Heat-Treated</td>
<td>≥ 21 ksi</td>
</tr>
<tr>
<td>Not Heat-Treated 4 day</td>
<td>≥ 12 ksi</td>
</tr>
<tr>
<td>Prism Flexural Tensile toughness (ASTM C1018**, 10 in. span)</td>
<td>$I_{30} \geq 48$</td>
</tr>
</tbody>
</table>
Provide a UHPC mix design that contains steel fibers at a minimum of 2% by total volume of UHPC.

Provide certification of UHPC.

A minimum of 12 cylinders 3 in. X 6 in. shall be cast.

All cylinders shall be cured using the same method of curing proposed to be used in the field. The temperature during curing shall be within 18°F of the low end of the proposed temperature range for curing in the field. Test 2 cylinders each testing day. Test at 4 days, 7 days, 14 days and 28 days. Measure compressive strength in accordance with ASTM C39. Compressive strength shall meet 12 ksi minimum at 4 days and 21 ksi minimum at 28 days. Only a UHPC mix design that passes these test may be used in the work.

Cast 6 additional cylinders 12 in. diameter and 7½ in. deep. Each cylinder shall have one 32 in. long epoxy-coated reinforcing bar cast in the center of the circular face. The axis of the bar shall be perpendicular to the finished surface. Three (3) of the bars shall be #6 bars embedded 5 inches deep and 3 of the bars shall be #4 bars embedded 3 inches deep. Keep cylinders wet for 4 days prior to testing. Perform test as soon as practical once samples have reached a minimum compressive strength of 12 ksi. This test is a pullout test. The samples pass if the bars yield without the UHPC failing and without the bars pulling out of UHPC.

Results of these tests shall be conducted by a GDOT approved testing firm. Submit results for review and approval to the Engineer a minimum of 60 days prior to use of UHPC in the field.

### 500.3 Construction Requirements

#### 500.3.01 Personnel

A. **Supervision, Personnel, and Skilled Workers**

4. Provide a manufacturer’s representative supplying the approved UHPC who is knowledgeable in the supply, mixing, delivery, placement and curing of UHPC material. This representative shall be on site during all placement of UHPC.

#### 500.3.03 Preparation

A. **Pre-Pour Meeting**

Prior to the initial placement of the UHPC, conduct an on site meeting with a manufacturer’s representative supplying the approved UHPC and the Engineer. The objective of the meeting will be to clearly outline the procedures for mixing, transporting, finishing and curing of the UHPC material.
500.3.05 Construction

AM. Form Work, Batching and Curing

The design and fabrication of forms shall follow approved shop drawings and shall follow recommendations of the manufacturer. All forms for UHPC shall be constructed from plywood unless otherwise shown in the plans. The forms shall be coated to prevent absorption of water. Provide water tightness of forms to prevent loss of UHPC during pours.

Follow batching sequence as specified by the supplier and approved by the Engineer. The surface of UHPC field joints shall be filled flush to plus 1/4 in. above surface of bridge deck.

Cure UHPC in form according to Manufacturer’s recommendations and as approved by the Engineer to attain 28 day strength listed herein. A continuous curing temperature of a minimum of 60°F is recommended.

500.3.06 Quality Acceptance

A. UHPC

Measure the slump flow on each batch of UHPC. The slump flow will be conducted using a mini-slump cone. The flow for each batch shall be between 7 in. and 10 in. Record slump flow for each batch and submit to the Engineer.

Make four sets of compressive strength test samples for each day of placement. Each set consists of 3 cylinders 3 in. X 6 in. Cure all cylinders in an environment similar to material placed and approved by the Engineer. Test the first set of cylinders as directed by the Engineer. Test second set of cylinders at 28 days. The third set of cylinders will be submitted to GDOT Office of Materials and Testing between the 4th day and the 14th day. The fourth set will be treated as a reserve set.

500.5 Payment

This Work will be paid for at the Contract Price per Lump Sum, complete in place and accepted.

Payment is full compensation for all things, including incidentals, and direct and indirect cost, to complete the Work.

Payment will be made under:

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td>Ultra High Performance Concrete, Br No -</td>
<td>Per lump sum</td>
</tr>
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</table>
Section 511 – Reinforcement Steel

Add the following to 511.2 Materials, B. Fabrication:

2. **Reinforcement Steel Couplers.** When couplers are indicated on the Plans, use mechanical butt splices from an approved source listed on QPL 93.

   Provide mechanical butt splices which develop a minimum of 125% of the guaranteed yield strength of the reinforcing steel to be spliced. Limit the total slip of the reinforcing bars within the splice sleeve after loading to 30 kips per square inch (207 MPa) and relaxing to 3 kips per square inch (21 MPa) to no more than the following, as measured between gauge points clear of the splice sleeve: 0.010 of an inch (.25mm) for reinforcing bars no. 14 (43) or smaller, or 0.030 of an inch (.76mm) for reinforcing bars no. 18 (57).

   Prior to installation on GDOT projects, the contractor is required to submit job-control samples for testing to the Office of Materials and Testing. This is to ensure that the installer is qualified to construct the units. Make test specimens in the presence of the Engineer or his authorized representative using reinforcing steel consigned for the work. A test specimen consists of a splice made at the job site to connect two 24 inch (600mm) or longer bars using the same splice materials, position, location, and equipment, and following the same procedures to be used to make splices in the work. Prior to incorporating couplers into the work, make and test three specimens that meet the above criteria.

   Perform all testing required above by the Office of Materials and Testing or at a testing laboratory approved by the Department.

   If threaded couplers are used, equip them with approved devices which will prevent rotation after installation.

   After installation, clean all couplers with a power wire brush or by other approved methods and recoat the couplers with a material prepared and recommended by the coating manufacturer.

   Install the couplers in strict accordance with the manufacturer’s instructions and as approved by the Engineer.

   All costs for the couplers, test samples (including reinforcing steel for tests) and testing of couplers shall be included in the costs of reinforcing steel.
DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SPECIAL PROVISION

P.I. No.: 0014895
Bibb County

SECTION 521 – PATCHING CONCRETE BRIDGE STRUCTURES

521.1 General Description
This work includes patching of substructure or superstructure concrete bridge components by removing the broken, damaged, or disintegrated concrete, cleaning existing reinforcement, adding supplemental reinforcement when required, and patching with approved conventional or accelerated Portland cement concrete, rapid setting patching materials, or polymer concrete according to this Specification and as shown on the Plans.

521.1.01 Definitions
“Sound” – the act of striking a concrete surface with a chipping hammer or similar tools to detect unsound concrete.

521.1.02 Related References
A. Standard Specifications
   - Section 500—Concrete Structures
   - Section 504—Twenty-Four Hour Accelerated Strength Concrete
   - Section 511—Reinforcement Steel
   - Section 853—Reinforcement and Tensioning Steel
   - Section 886—Epoxy Resin Adhesives
   - Section 934—Rapid Setting Patching Materials for Portland Cement Concrete

B. Referenced Documents
   - QPL 10
   - QPL 27

521.1.03 Submittals
General Provisions 101 through 150.
521.2 Materials

Ensure that the materials used to repair and patch bridge components meet the following requirements:

A. Portland Cement Concrete Patching Materials

1. Conventional Portland Cement Concrete (Repair Method 1)
   a. Use Class “A” or Class “AA” concrete or as indicated on the Plans.
   b. Meets the requirements of Section 500 of the Specifications.
   c. Use concrete manufactured at plants that qualify as approved sources according to the Standard Operating Procedure for Ready Mix Concrete. See QPL 10 for a list of approved plants.

2. Twenty-Four Hour Accelerated Strength Concrete (Repair Method 2)
   a. Meets the requirements of Section 504 of the Specifications, except that the use of a portable concrete mixer is required.

B. Rapid Setting Patching Materials (Repair Method 3)

1. Use rapid setting patching materials meeting the requirements of Section 934. See QPL 27 for a list of approved patching materials. Patching materials not listed on QPL 27 will require testing and approval by the Office of Materials and Testing before use.

2. When shown on the Plans, use Type III rapid setting patching material to patch vertical and overhead repair areas.

521.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150.

521.3 Construction Requirements

521.3.01 Personnel

General Provisions 101 through 150.

521.3.02 Equipment

To clean the repair areas, use air compressors equipped with traps that can remove surplus water and oil in the compressed air. Ensure that the compressor can deliver compressed air at a continuous pressure of at least 90 psi (620 kPa).

The Engineer will check the compressed air daily for contamination. Do not use contaminated air.

521.3.03 Preparation

A. Limits of Repair

   Repair all patches as shown on the Plans and as directed by the Engineer. Determine limits of patch repair as follows:

   1. “Sound” concrete surface with visual defects to determine the limits of the damaged areas. Strike the surface with a chipping hammer or similar tools to detect unsound concrete. Concrete that is loose or exhibits a flat or hollow sound is considered unsound. Omit any defect for repair that is less than 1 in. by 6 in. by 0.5 in. (25 by 150 by 12 mm) deep.

   2. Mark the limits of the defective areas on the concrete surface by making a rectangle 2 in. (50 mm) beyond the outer limits of the unsound concrete area as a guide for saw cuts.
3. Combine patched areas less than 6 in. (150 mm) from each other as one patch area.

4. Obtain approval from the Engineer on the limits of each repair prior to saw cutting.

B. Concrete Removal

1. Saw the rectangular marked areas a minimum of 1 in. (25 mm) deep or as shown on the plans. Exercise extreme care not to saw or damage the reinforcing steel.

2. Remove unsound material within the sawed area to a minimum depth of 2 inches for unreinforced concrete or 0.5 in. (12 mm) below the reinforcing steel or as shown on the Plans with power chipping or hand tools. Pneumatic hammers heavier than 15 lb. class nominal (30 lb. maximum) are not permitted. Exercise extreme care not to saw or damage the reinforcing steel.

3. Operate pneumatic hammers and chipping tools at an angle not to exceed 60 degrees relative to the surface of the concrete. After starting the tool in the vertical position, immediately tilt the tool to a 60 degree operating angle.

4. Do not damage or fracture the sound concrete substrate to be left on the bottom of the patch area. Do not use sharp pointed bits.

C. Surface Preparation

1. Clean all exposed reinforcing steel of all rust and corrosive products including oil, dirt, concrete fragments, loose scale and any other coating of any character that would destroy or inhibit the bond with the patching material.

2. Immediately before placing the patching material, thoroughly clean the surfaces within the repair areas by sandblasting and air blasting to remove oil, dust, dirt, slurry from saw operation, and other contaminants.

3. Place formwork as required to complete patch repair. Provide access in formwork for placement of patch material.

4. Ensure that the finished surface meets a surface tolerance of 1/16 in. (1.5 mm).

5. Use approved measures as necessary to keep the adjacent concrete surfaces free of excess grout and other materials.

521.3.04 Fabrication

General Provisions 101 through 150.

521.3.05 Construction

A. Concrete Patching

Patch concrete safely and rapidly to minimize inconvenience to the traveling public.

1. Accomplish this work with other operations in progress within an area if possible.

2. Remove and replace completed patches that contain cracks, shrinkage, compression failures, or are damaged by construction or traffic before Final Acceptance at no cost to the Department.

B. Placing Patching Material

Only use Repair Method 1 with the class of concrete on bridge components designated on the Plans.

Use Repair Method 2 unless the Engineer gives written approval to use Repair Method 3. Use Repair Method 1 and 2 when the average daily temperature is 50 °F (10 °C) or above. Use of Repair Method 3, if approved, is limited to the manufacturer’s written recommendations.

For the following repair methods, begin the placement when the surface within the repair area is dry and thoroughly free of contaminants.

1. Repair Method 1: Conventional Portland Cement Concrete
a. Completely coat the concrete surface areas within the repair area with a film of Type II epoxy adhesive as specified in Section 886 approximately 10 to 20 mils (0.25 to 0.50 mm) thick or according to the manufacturer’s written recommendations.

b. Deposit the concrete in the repair area while the epoxy is still tacky. Vibrate it to form a dense, homogeneous mass of concrete that completely fills the patch area.

c. Screed the concrete to the proper grade and do not disturb it until the water sheen disappears from the surface.

d. Cover the concrete with wet burlap or membrane curing compound. Allow the curing to continue until the required minimum design compressive strength is achieved as designated by the class of concrete used or as shown on the Plans. Complete curing prior to transferring load to the repaired section.

2. Repair Method 2: Twenty-Four Hour Accelerated Strength Concrete
   a. Prepare, remove and place as outlined in Subsections 521.3.03 and 521.3.05.B and 521.3.05.B.1.
   b. Mix the concrete on site in a portable mixer of adequate capacity. Obtain approval for the mix design and mixing method from the Office of Materials and Testing.
   c. The material must meet a slump range of 1.0 to 3.0 in. (25 to 75 mm).

3. Repair Method 3: Rapid-Setting Patching Material
   a. In addition to the requirements outlined in Subsection 521.3.03, prepare the surfaces in the repair areas according to the manufacturer’s written recommendations.
   b. Perform the patching material handling, mixing, placing, consolidating, finishing, and curing according to the manufacturer’s written recommendations as approved by the Office of Materials and Testing.
   c. Continue curing until a minimum design compressive strength of 3,000 psi (20 MPa) or as shown on the Plans is achieved. Complete curing prior to transferring load to the repaired section.

C. Special Requirements

The following special requirements apply to this work:

1. During sandblasting, protect traffic in adjacent travel lanes.

2. After the sandblasting operations:
   a. Thoroughly clean the area to be repaired with compressed air.
   b. Remove sand from the sandblasting operation from adjacent concrete surfaces.

3. Do not “over-cut” concrete surfaces beyond marked areas whenever possible.

4. Remove saw slurry and other contaminates from the over-cutting.

5. Repair the over-cuts by filling full-depth with an approved low-viscosity epoxy compound using a Type II epoxy adhesive specified in Section 886. Make these repairs as soon as possible.

521.3.06 Quality Acceptance

General Provisions 101 through 150.

521.3.07 Contractor Warranty and Maintenance

General Provisions 101 through 150.

521.4 Measurement

The area measured for payment is the number of square feet (meters) of patching complete in place and accepted.

521.4.01 Limits

General Provisions 101 through 150.
521.5 Payment
The area measured as specified above will be paid for at the Contract Unit Price per square foot (meter). Payment is full compensation for equipment, tools, labor, incidentals to complete the work, including but not limited to:

- Removing existing patching material or the spalled, broken, or damaged concrete
- Cleaning the open area by sandblasting
- Furnishing, placing, finishing, and curing the patching material
- Supplemental reinforcement

Payment will be made under:

<table>
<thead>
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<th>Item No.</th>
<th>Description</th>
<th>Unit of Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>521</td>
<td>Patching concrete bridge</td>
<td>Per square foot (meter)</td>
</tr>
</tbody>
</table>

521.5.01 Adjustments
General Provisions 101 through 150.
Delete Subsection 627.3.03.B and substitute the following:

B. Wall Design

Use the following design criteria for a Contractor designed wall:

1. Provide one of the following wall systems:
   - ARES (Tensar Earth Technologies)
   - Reinforced Earth Wall (The Reinforced Earth Company)
   - Sine Wall MSE Panel Systems (Sine Wall)
   - Stabilized Earth Wall (Vistawall Systems)
   - Tricon Retained Soil Wall (Tricon Precast)


3. Design the MSE wall to account for all live load, dead load and wind load from all traffic barrier, lights, overhead signs, sound barriers and other appurtenances located on top and adjacent to the wall. Design MSE walls to account for all external forces. Also, design bridge abutment walls for a lateral load as defined in the plans. If lateral load is not defined on plans then design bridge abutment wall for a lateral load equal to 5% of the dead load transmitted through the bearings, as reported on the bearing sheet of the bridge. This load shall be considered a destabilizing force for the entire reinforced mass as well as a load to be resisted by reinforcement attached to the back of the abutment seat. It should be applied at the top of the abutment seat.

4. Design MSE Walls within 100 feet of a bridge abutment for a minimum service life of 100 years.

5. Assume responsibility for all temporary shoring that may be necessary for wall construction. Design the shoring using sound engineering principles.

6. Use permanent concrete wall facing panels that are at least 7 in (175 mm) thick.

7. Provide a minimum length of soil reinforcement as defined in the plans. If the minimum is not defined in the plans, then provide a minimum length of soil reinforcement of 10 feet (3 m) or seven-tenths (0.7) of the wall height, whichever is greater.

8. Ensure that the special wall backfill extends a minimum of 12 in (300 mm) past the end of the soil reinforcement.

9. Use the Architectural treatment of facing panels as indicated on the Department’s drawings.
10. Provide internal walls to allow for future widening if shown on the wall envelope. Ensure the internal walls have galvanized wire or concrete facing. Ensure as a minimum that the facing of the internal walls extend to the back limit of the MSE Wall Backfill for the permanent wall.

11. Ensure the maximum panel area does not exceed 35 square feet (3.25 square meters).

12. Design the Traffic Barrier H or Coping B Parapet to satisfy the requirements of AASHTO LRFD Section A13.2-1 for a railing Test Level of TL-4 except that the Ft load shall equal 76 kips. Evaluate overturning and sliding using a 10 kip force distributed to a maximum length of the moment slab joint spacing.

13. A Foundation Investigation Report may be available from the Geotechnical Engineering Bureau of the Department. The information contained in this report may be used by the Contractor to assist in evaluating existing conditions for design as well as construction. However, the accuracy of the information is not guaranteed and no requests for additional monies or time extensions will be considered as a result of the Contractor relying on the information in this report.

14. Ensure the following requirements are met:
   - The gutterline grade on the proposed top of wall submitted matches the gutter elevations required by the plans.
   - The top of coping is at or above the top of coping shown on the envelope.
   - The leveling pad is at or below the elevation shown on the wall envelope.
   - Any changes in wall pay quantities due to changes in the wall envelope are noted in the contractor’s plans.
   - All changes in quantities due to the proposed walls being outside the wall envelope (step locations, ending wall at full panel, etc.) are shown as separate quantities.

15. Ensure the minimum embedment of the wall (top of leveling pad) is at least 2 feet (600 mm). If the soil slopes away from the bottom of the wall, lower the bottom of the wall to provide a minimum horizontal distance of 10 ft (3 m) to the slope. [i.e. a 2:1 slope in front of the wall requires 5 ft (1.5 m) of embedment; a 4:1 slope in front of the wall requires 2.5 ft (750 mm) of embedment]

16. If the Department’s review of the submitted plans and calculations results in more than two submittals to the Department by the Contractor, the Contractor will be assessed for all reviews in excess of two submittals. The assessment for these additional reviews will be at the rate of $60.00 per hour of engineering time expended.
628.1 General Description
This work includes furnishing materials, labor, tools, equipment, and other incidental items to design, detail, and construct a soil nailed wall. This Specification also applies to any Contractor-proposed alternate design of Department-furnished plans.

628.1.01 Definitions
Soil Nail - Synonymous with nail or soil reinforcing

The term Soil Nailed Wall includes the following items:
• Soil nails
• Nails
• Shotcrete (pneumatically applied concrete) – for temporary facing
• Cast-in-place reinforced concrete facing – for permanent facing
• Drainage

628.1.02 Related References
A. Standard Specifications
   Section 500 - Concrete Structures
   Section 511 - Reinforcement Steel
   Section 853 - Reinforcement and Tensioning Steel

B. Referenced Documents
   General Provisions 101 through 150.

628.1.03 Submittals
A. Proof of Ability
   Submit the following proof of ability (or ability of the subcontractor) when requested by the Department to design or construct soil nailed walls:
   • Evidence of successfully completing at least 5 projects similar in concept and scope to the proposed wall.
   • Resumes of foremen, nail testing personnel, and drilling operators to be employed on this project. Show the type, length, and number of soil nails each has installed or tested within the past 5 years.
   • Evidence of experience in nail testing. Persons performing nail testing shall prove experience by performing sample tests supervised by the Engineer.
   The Department is the sole judge of the qualifications of the foreman, drilling operator, and testing personnel. Do not begin wall construction until the Engineer has approved proof of ability.
B. Design Criteria for Alternate Design
If the department receives more than 2 submittals of the Plans and calculations for review, the Contractor will be assessed $60 per hour of engineering time for reviews in excess of the 2 submittals.

C. Construction Drawings and Design Notes
Submit construction drawings and design notes within 28 days of the award of the Contract. The Design Engineer shall prepare and stamp the submission. Include design notes and reproducible drawings in the submission concerning the following:
- Details, dimensions, and schedules of reinforcing steel including dowels and/or studs for attaching the facing to the soil nailed wall.
- Details of the shotcrete installation and nails, including the thickness of shotcrete and spacing and angle of installation of nails.
- Detailed plans for testing of nails showing loading and measuring devices to be used and procedures to be followed.

D. Final Wall Plans and Calculations
Submit final wall plans and calculations to the Department for review and approval before beginning construction on the wall. The time required for Plan and calculation review will be charged to the allowable Contract time. The Department has 30 days for Plan and calculation review per item after receiving the structure calculations and drawings.

New submittals from the Contractor showing corrections from the Department’s review or changes to ease construction or to correct field errors have a 30-day review. The Department is the sole judge of information adequacy.

The Department’s review and acceptance of the final Plans and construction methods do not relieve the Contractor from successfully completing the work. Time extensions are not granted for Contractor delays from untimely submissions or insufficient information.

E. Admixture Literature
Before using an admixture, submit the manufacturer’s literature to the Engineer. Indicate the admixture type and the manufacturer’s recommendations for mixing the admixtures with grout.

628.2 Materials
A. Concrete
Use concrete conforming to Section 500.

B. Reinforcing Steel
Use reinforcing steel conforming to Section 511. Reinforcing steel used as soil nails shall be full length. Couplers will not be allowed.

C. Structural Steel
Use structural steel shapes or plates conforming to Section 501. Use ASTM A 709 Grade 36 (Grade 250) structural steel unless otherwise specified on the plans.

D. Cement Grout
Produce cement grout using Portland cement conforming to AASHTO M-85, Type I, II, or III, and potable water. Use cement that is fresh and free of lumps and hydration.

Follow these restrictions if using admixtures:
1. Do not use admixtures with chemicals that may harm the soil nail, reinforcing steel, or cement.
2. Do not use admixtures that cause air bubbles in the grout.
3. If approved by the Engineer, use admixtures imparting low water content, flowability, and minimum bleeding in the cement grout.

E. Plastic
Use Polyethylene conforming to AASHTO M-252 with a minimum wall thickness of 30 mils (0.76 mm) for corrosion protection.
F. Shotcrete
Use shotcrete conforming to the following:
1. Cement – Section 830.2.01 Type I, II or III.
2. Fine Aggregate – Section 801.2.02.
3. Coarse Aggregate – Section 800.2.01.
4. Fly Ash – Section 831.2.03
6. Air Entraining Admixtures for wet mix – Section 831.2.01.
7. Plasticizers – AASHTO M-194, Type A, D, F, G.
8. Use accelerating admixtures that are compatible with the cement, are non-corrosive to steel and do not promote other detrimental effects such as cracking and excessive shrinkage and do not contain calcium chloride. Use admixtures in accordance with the manufacturer’s recommendations. Silica fume, if used, shall not exceed 10 percent of the cement weight and shall be an admixture with a minimum of 90 percent SiO\textsubscript{2} with a proven record of performance in shotcrete.
9. Use water in shotcrete that is potable, clean, free from substances which may be injurious to concrete and steel, and is free of elements which would cause staining.
10. Provide premixed and prepackaged concrete products specifically manufactured as a shotcrete product for on-site mixed shotcrete, if approved by the engineer. The packages shall contain cement and aggregates conforming to Section 500.

G. Corrosion Inhibitor
Use corrosion inhibitor (grease) conforming to the following:
1. Drop point 300 degrees F (149 degrees C) minimum by ASTM D-566.
2. Flash point 300 degrees F (149 degrees C) minimum by ASTM D-92.
3. Water content 0.1% maximum by ASTM D-95.
4. Rust test – Rust Grade 7 or better after 720 hours, aggressive conditions: Rust Grade 7 or better after 1000 hours by ASTM B-117 and ASTM D-610.
5. Water soluble ions.
   - Chlorides 10 ppm maximum by ASTM D-512
   - Nitrates 10 ppm maximum by ASTM D-3867
   - Sulfates 10 ppm maximum by APHA 427D (15th ED)
6. Oil separation – 0.5% by weight maximum at 160 degrees F (71 degrees C) by FIMS 719B, Method 321.2.
7. Soak test – 5% Salt Fog at 100 degrees F (38 degrees C), 5 mils (0.13 mm) (Q Panel Type S), immerse panels in 50% salt solution and expose to 5% Salt Fog – no emulsification after 720 hours by ASTM B117 Modified.

628.2.01 Delivery, Storage, and Handling

A. Protection Systems
Protect soil nails against corrosion by properly storing, fabricating, and handling the nail components before inserting them into the borehole. Avoid prolonged exposure of the nail components to the elements, and avoid mechanical or physical damage that reduces or impairs the component’s ability to resist adverse conditions during service. Nail components will be rejected for heavy corrosion or pitting, but not for a light coating of rust.

Use the protection systems as follows:
1. Soil Nail
   a. Encase the nail in a corrugated plastic tube.
   b. Use cement grout to fill the voids between the tube and the nail and the tube and the soil. Place cement grout between the soil and the tube to at least ¾ in (20 mm) thick and extend the entire length of the nail. Cement grout between the tube and the nail shall be a minimum of ½ in (12 mm) thick
   c. Provide centralizers spaced at a maximum of 5 feet (1.5 m) center-to-center throughout the nail length. Do not use wood or material harmful to the soil nail or the corrugated plastic tubing as centralizers.
   d. Provide a smooth piece of plastic sheath to encapsulate the entire free length. Do not splice the sheath. Ensure that the sheath is at least 0.05 in (1.27 mm) thick. Provide a void space between the sheath and the steel as shown on the plans and maintain that space with centralizers. Fill visible void space with grease and seal the bottom to prevent grout intrusion.
2. Area Underneath Anchorage
   Protect the area immediately behind the stressing anchorage.
   a. Weld a pipe sleeve to the bearing plate and seal the pipe sleeve to the anchor sheath at the other end of the sleeve.
   b. Clean the pipe sleeve to remove dirt, rust, or other harmful material before inserting the soil nail into the pipe sleeve.
   c. If a seal is not provided at the lower end of the pipe sleeve, during installation and grouting, fill the lower end of the pipe sleeve with grout. Keep the pipe sleeve free of harmful material until the upper portion of the pipe sleeve and anchor head are filled with grout.
   d. Fill the void inside the sleeve and anchor head with anti-bleed expansion grout after the nails have been stressed.

3. Anchorage
   Encase the anchorage system head into a corrosion protective system before proceeding to the next lift. Install the protective system for each lift within 30 days after installing the nails for that lift. Ensure that the anchorage system has a cover of at least 3 in (75 mm) once the wall face is placed.

628.3 Construction Requirements

628.3.01 Personnel
   A. Contractor Qualifications
      The Contractor and Subcontractor shall be experienced in constructing permanent soil nailed walls. Provide at least one Registered Professional Engineer licensed to perform work in the State of Georgia and a supervising Engineer for the Project with at least 5 years of experience in constructing permanent soil nailed walls.

      Furnish verification of these qualifications to the Engineer before beginning operations.

   B. Design Engineer
      The Design Engineer shall:
      • Be registered as a Professional Engineer in the State of Georgia
      • Have considerable knowledge and experience designing and constructing soil nailed walls
      • Be available at any time during the Contract to discuss the design of the walls with the Department.

   C. Registered Professional Engineer
      Retain the services of a second Professional Engineer licensed to perform work in the State of Georgia and prequalified by the Department. The Engineer shall operate independently from the Professional Engineer of Subsection 628.3.01.B, “Design Engineer.”

      This Engineer will independently check the design calculations and Plan details for the permanent soil nailed wall before submitting them to the Department.

628.3.02 Equipment
   Use anchorage and hardware suitable for the type of soil nails used. Ensure that the anchorage and hardware are capable of the following:
   • Developing 75 percent of the yield capacity of the nails when tested in the unbonded state and without failure of the nail
   • Holding the soil nail at a load producing a stress of not less than 75 percent of the yield capacity of the nail without exceeding the anticipated set and without causing anchorage or soil nail failure
   • Test nails shall be capable of lifting-off, detensioning, or retensioning a nail before secondary grouting to fill voids at the top of the pipe sleeve.

628.3.03 Preparation
   Before beginning the work, survey the condition of the adjoining properties. Keep records and photograph settlement or cracking of adjacent structures that may become the subject of possible damage claims. Deliver the report to the Department before beginning work at the site.
Obtain a Foundation Investigation Report from the Geotechnical/Environmental Bureau of the Department to assist in evaluating existing conditions for design and construction.

628.3.04 Fabrication
A. Soil Nails
Fabricate the soil nails according to the approved details.
1. Keep the nails free of dirt, rust, and other harmful substances.
2. Use a plastic sheath that is a single piece without splices.
3. Before installation, handle and store the nails so as to avoid corrosion and physical damage. Nails will be rejected for damage such as abrasions, cuts, nicks, welds, weld splatters, or heavy corrosion and pitting. Replace the nails at the Contractor’s expense for material replacements or time delays.

628.3.05 Construction
A. Design Criteria
The design criteria for a proposed design or design include:
1. Design soil nails according to this Specification.
2. Use reinforced concrete facing according to the latest AASHTO Standard Specifications for Highway Bridges, including interims. Ensure that the structural thickness is at least 12 in (300 mm). Provide architectural facing treatment as shown on the Department drawings.
3. Ensure that the concrete strength is at least 3000 psi (20 MPa) 28-day strength. Extend the facing 2 ft (600 mm) below the gutterline or, if applicable, the ground line adjacent to the wall unless otherwise indicated on the Department Plans.
4. Design and install permanent drainage systems behind the wall. Connect the drainage systems to the nearest drop inlet using pipe or free drainage through traffic barriers or other obstructions. Ensure that holes through traffic barriers and/or facing are no higher than 3 in (75 mm) above the gutterline or ground line.
5. Ensure that the wall is compatible with the horizontal and vertical criteria indicated in the Department Plans.
6. Provide a wall design that is adequate to resist sliding, overturning and bearing forces. Safety factors shall be as follows:
   - Sliding: 1.50
   - Overturning: 2.00
   - Bearing: 1.00
Design the wall for the design condition shown in Figure 1.
7. See Figure 3 for typical section of permanent soil nail wall.

B. Ground Movements and Load Transfer Instruments
During construction of the wall, the Department may install devices to monitor ground movements and load transfers during or after construction. The Department will schedule installation to minimize interference with the Contractor’s operations. Cooperate with the instrumentation installers. Anticipate delays of two to four hours per instrumented nail.

Although the Instrumentation Specialist maintains the instruments, assume responsibility for damage to the instruments, connections or readouts from operations. Replace and install damaged equipment at the Department’s approval and at the Contractor’s expense.

C. Soil Nail Installation
Install the soil nails as follows:
1. Before installation, visit the site to observe existing conditions that may affect the work or design, if applicable, and to review the geotechnical data available for the Project.
2. Drive or drill the holes for the soil nails by core drilling, rotary drilling, auger drilling, or percussion drilling. If using water in the drilling operation, dispose of the water to minimize wall erosion. Repair water erosion damage to the site at no cost to the Department.
3. If the hole will not stand open, install casing to maintain a clean and open hole. Ensure that the hole diameter is at least 3 in (75 mm) if no pressure grouting is used. Pressure grouting is grouting with a pressure greater than 60 psi (415 kPa).
4. Ensure that the drill bit diameter is not more than 1/8 in (3 mm) smaller than the specified hole diameter.
5. Start soil nail holes within an angle tolerance of 3 degrees from the inclination specified on the approved design Plans. Do not allow the holes to deviate from a straight line by more than 2 in (50 mm) in 10 ft. (3 m). Do not allow the holes to extend outside the Right-of-Way limits. Thoroughly clean the holes of all dust, grease, or other deleterious material before inserting the nail.
6. Install the nail in the casing or the hole drilled for the nail. Ensure that the nail’s corrosion protection is not damaged during handling or installation.

7. Install the nail in the bond length to achieve at least 1½ in (38 mm) of grout cover.

8. Do not use nails to ground electric equipment and do not subject the nails to sharp bends.

9. Provide centralizers spaced a maximum of 5 ft (1.5 m) center to center throughout the nail length. Do not use spacers of wood or other material harmful to the nail or corrosion protection.

10. Inject grout at the lowest point of the nail and place over the entire length of the nail.
   a. Ensure that the grouting equipment can continuously mix and produce lump-free grout. Equip the grout pump nozzle with a grout pressure gauge capable of measuring pressure of at least 150 psi (1 MPa) or twice the actual pressure used.
   b. Base the material proportions used in the grout on grout tests made before beginning grouting; or select the proportions based on prior documented experience with similar materials and equipment under comparable field conditions.
   c. Use the minimum water content necessary for proper placement and do not exceed a water-cement ratio of 0.45. Do not leave the grout in the mixer longer than 45 minutes.

11. After grouting, do not disturb the nail until the grout has reached a cube strength of 3500 psi (25 MPa). Keep the mouth of the hole clean after grouting. Record the following data in a Project field book during the grouting operation:
   • Type of mixer
   • Water-cement ratio
   • Type of additives
   • Grout pressure
   • Type of cement
   • Test sample strengths (before stressing)
   • Volume placed in bond and free lengths

12. If using pressure grouting, choose whether to perform a water-tightness test. However, if injecting grout with a pressure of 60 psi (415 kPa) or less, always perform a water-tightness test. Perform the test as follows:
   a. Fill the entire hole in the rock with water and subject it to a pressure of 5 psi (35 kPa) in excess of the hydrostatic head as measured at the top of the hole.
   b. If after 10 minutes the leakage rate from the hole exceeds 0.001 gal per inch diameter per foot of depth per minute (0.5 ml per mm diameter per meter of depth per minute), consolidate grout, redrill, and retest the hole. If the second water-tightness test fails, repeat the entire process.
   c. During the tests, observe holes adjacent to the hole being tested for water-tightness to detect and seal inter-hole connections.
   d. If artesian or flowing water is encountered in the drilled hole, maintain the pressure on the consolidation grout until the grout has initially set.

D. Temporary Shotcrete Facing
Provide temporary shotcrete facing.

1. Shotcrete Quality - Produce the shotcrete by the wet mix process and achieve a minimum compressive strength of 3000 psi (20 MPa) in seven (7) days and 4600 psi (32 MPa) in 28 days.

2. Mixture Proportions - Submit for acceptance the recommended mixture proportions, strength results, water cement ratio, and source of materials. Select the mixture proportions based on compressive strength tests of specimens continuously moist cured until tested at 28 days in accordance with AASHTO T-22. Use a maximum water cement ratio of 0.40, air content of 6.5% ± 1.5%, slump of 1.5 to 3 inches (38 to 50 mm). The mixture is acceptable if the average core compressive strength is at least 1.2 times the required compressive strength in 628.4.07.A above.


4. Delivery Equipment - Provide equipment capable of delivering the premixed materials accurately, uniformly and continuously through the delivery hose. Follow the recommendations of the equipment manufacturer on the type and size of nozzle to be used, and on cleaning, inspecting and maintaining the equipment. Deliver ready-mix shotcrete in transit mixers that comply with AASHTO M-157. Provide a supply of clean, dry air adequate for maintaining sufficient nozzle velocity for all parts of the work and, if required, for simultaneous operation of a suitable blow pipe for clearing away rebound. Provide a compressor capable of providing a minimum of 315 cfm (8.9 m3/min) per operating nozzle.
5. Curing:
   a. Keep shotcrete continuously moist for 24 hours after completion by one of the following methods or materials:
      - Continuous sprinkling
      - Absorbent mat or fabric, or other covering kept continuously moist
      - Curing compounds in accordance with Section 500.3.05.Z. On natural gun or flash finishes, apply one gallon per 100 square feet (0.4 l per square meter). Do not use curing compounds on any surfaces against which additional shotcrete or other cementitious finishing materials are to be bonded unless positive measures, such as sandblasting, are taken to completely remove curing compounds prior to application of such additional materials.
   b. Provide final curing immediately following the initial curing and before the shotcrete has dried by one of the following materials or methods:
      - Continuation of the method used in the initial curing
      - Application of impervious sheet material conforming to AASHTO M-171.
   c. Continue curing for the first seven days after shotcreting or until the required seven-day strength is obtained. During the curing period, maintain the shotcrete above 38 degrees F (3.3 degrees C) and in a moist condition as specified.

6. Construction Testing - Cut cores from the structure and test in accordance with AASHTO T-24. Take a minimum of three cores from each 1000 square feet (93 square meters) of completed facing. Alternatively, construct a test panel with minimum dimensions of 18 X 18 X 4 in (450 X 450 X 100 mm) gunned in the same position as the work represented for each 1000 square feet (93 square meters) of completed facing. The Contractor’s regular nozzlemen shall gun the panels during the course of the work. Field cure the panels in the same manner as the work, except that the test panels shall be soaked for a minimum of 40 hours prior to testing. Cut a minimum of three cores from each panel for testing in accordance with AASHTO T-24. The average compressive strength of each core of a set of three cores must equal or exceed 85 percent of the compressive strength specified in 628.3.05.A.

E. Permanent Cast-In-Place Facing

Provide permanent cast-in-place reinforced concrete facing in accordance with the requirements of this specification, as shown in the plans and the following:

1. Provide vertical expansion joints at a maximum spacing of 90’-0”
2. Provide vertical contraction or construction joints at a maximum spacing of 30’-0”
3. Form vertical rustication grooves at a maximum spacing of 10’-0”. Rustication grooves are to be equally spaced between expansion joints and coincide with construction joints.
4. Provide studs in the construction of the soil nail system for anchoring the cast-in-place facing.

628.3.06 Quality Acceptance

A. Nail Testing and Acceptance

Perform testing according to this subsection.

Perform load tests on at least 5% of the nails in each row to verify the soil-to-grout bond stress used in the design. Provide separate nails specifically for the purpose of testing. Test nail locations shall be approved by the Engineer. Test nails will not be considered part of the permanent support system. Install the test nails in accordance with Figure 2. Grout only the bonded length of the nail prior to testing. Provide and use the following testing equipment:

- A dial gauge that can measure elongation to the nearest 0.001 in (0.025 mm)
- A hydraulic jack and pump with a pressure gauge graduated in increments of 100 psi (690 kPa) or less.

Test by incrementally loading the nail according to the following schedule:

<table>
<thead>
<tr>
<th>AL</th>
<th>0.25P</th>
<th>0.50P</th>
<th>0.75P</th>
<th>1.00P</th>
<th>1.25P</th>
<th>1.50P</th>
</tr>
</thead>
</table>

where:

AL = minimum load required to support the jacking system tightly against the bearing surface = 2 kips (8.9 kN).
P = design load
Measure the nail movement with the dial gauge fixed to an independent reference point. Apply the load with a hydraulic jack and measure it with a hydraulic pressure gauge. Increase the load from one increment to the next immediately after the nail movement is recorded.

Hold the maximum test load for ten (10) minutes. Start the load hold period as soon as the maximum test load is applied, and measure the nail movements at one (1), two (2), three (3), four (4), five (5), six (6), and ten (10) minutes. The nail test is acceptable if the nail carries the maximum test load with less than 0.08 in (2 mm) of movement between one (1) and ten (10) minutes.

If the nail fails the test, determine the cause. If the failure indicates that the nails will not achieve the design soil-to-grout bond stress, then modify the design and/or construction procedures. These modifications may include, but are not limited to, installing replacement nails, reducing the design bond stress by increasing the number of soil nails or by lengthening the nails, or modifying the installation methods. After modifications, test the nails for acceptance of the new design.

Make the modifications of the design and/or construction procedures at no cost to the Department unless the modifications are due to changed conditions.

After completion of testing and determination of acceptance, detension all test nails and all nails shall be tensioned to 200 ft-lb (270 N-m) of torque.

### 628.4 Measurement
Permanent Soil Nailed Walls are not measured separately for payment.

### 628.5 Payment
Payment for this work is made per Lump Sum. Payment includes costs for concrete, reinforcing steel, excavation, backfill, shotcrete, soil nails, anchorages, labor, design, and all other materials and equipment. Payment also includes grouting, drilling holes, performing and evaluating all tests, submitting records of tests, all tools and all other items to complete the work.

Payment will be made under:

| Item 628 | Permanent Soil Nailed Wall, wall no. ___ | Per lump sum |

### 628.5.01 Adjustments
Additional wall area required because of unforeseen foundation conditions or other reasons that are approved by the Engineer will be paid for by adjusting the Lump Sum Price Bid. If the wall area is increased or decreased, the Lump Sum Price Bid will be adjusted proportionally based on the change in wall area as determined from the stations, elevations and dimensions on the Plans.

No additional compensation will be made for additional material, equipment, design, or other items to comply with the Project specifications as a result of the Department’s review of the contractor’s design.
FIGURE 1

DESIGN CONDITION

NO PASSIVE RESISTING PRESSURE ALLOWED

ONE FOOT (300mm) BELOW PIPE INVERT ELEVATION

PROPOSED DITCH

FINISHED GRADE

TOP OF FACING

EXISTING SLOPE

250 PSF (12 Kn/m²)
TEST NAIL DETAIL
NO SCALE

FIGURE 2
FIGURE NO. 3
Georgia Department of Transportation  
State of Georgia  
Special Provision  
PROJECT NO.:  
P.I. NO.: 0014895 & 0014899  

Section 865—Manufacture of Prestressed Concrete Bridge Members  

Delete Subsection 865.1 and substitute the following:

This section includes the following requirements for precast-prestressed concrete bridge members and piling using High Performance Portland cement concrete as shown in the Plans:

- Manufacturing
- Inspecting
- Testing
- Marking
- Painting
- Rubbing as specified
- Plant handling
- Storing
- Shipping

The term “precast-prestressed concrete” is referred to as “prestressed concrete” in the rest of this Section.

Add the following to Subsection 865.2:

<table>
<thead>
<tr>
<th>Material</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete, Class AAA HPC</td>
<td>500</td>
</tr>
</tbody>
</table>

Add the following to the end of Subsection 865.2.01.B.7.a.6:

Optional Method of Curing for Release Strengths with HPC: Temperature match curing (“Sure Cure” or equivalent methods) is allowed for specimens used to determine when stress may be transferred to the concrete for High Performance Concrete Units.
Add Section 999 as follows:

999.1 General Description
This work includes furnishing full depth precast concrete bridge deck panels with field cast joints to accelerate bridge construction.

999.1.01 Definitions
General Provisions 101 through 150.

999.1.02 Related References
A. Standard Specifications
   Section 109—Measurement and Payment
   Section 500—Concrete Structures
   Section 511—Reinforcement Steel
   Section 801—Fine Aggregate
   Section 830—Portland Cement
   Section 853—Reinforcement and Tensioning Steel

B. Referenced Documents
   SOP-3, Standard Operating Procedures for Precast/Prestressed Concrete
   QPL 9 – Certified Prestressed and/or Precast Concrete Plants
   QPL 93 – Rebar Mechanical Butt Splices
   General Provisions 101 through 150.

999.1.03 Submittals
A. Precast Concrete Deck Panel Shop Drawings
   Submit shop drawings detailing the fabrication of the precast deck panels for approval of the Engineer. Include fabrication tolerances. Method for grinding to achieve deck profile and longitudinal grooving shall be detailed in the shop drawings.

B. Erection Drawings and Field Pour Details
   Submit erection drawings detailing the installation of precast deck panels and procedures for adjusting panels to fit the bridge deck profile shown in the plans. Provide installation tolerances for placement and adjustment of precast deck panels. Provide details for placement of field cast joints.

C. Accelerated Bridge Construction Schedule
Submit a detailed schedule for approval of the Engineer outlining construction operations from the time the road is closed to traffic until traffic is resumed. At a minimum, this schedule shall include the removal of existing bridge, construction of substructure, placement of beams, installation and adjustment of precast deck panels, installation of formwork, placement of endwalls and wingwalls, placement of field cast joints, placement of concrete barrier, endpost and barrier transition, placement of approach slabs and pavement.

999.2 Materials
Provide precast concrete deck panels in accordance with the plans and Specifications.

999.2.01 Delivery, Storage, and Handling
General Provisions 101 through 150.

999.3 Construction Requirements

999.3.01 Personnel
General Provisions 101 through 150.

999.3.02 Equipment
General Provisions 101 through 150.

999.3.03 Preparation
General Provisions 101 through 150.

999.3.04 Fabrication
General Provisions 101 through 150.

Apply the following tolerances for precast units, unless otherwise shown elsewhere in the plans:
1. Thickness:
   Limit variation in as built panel thickness and thickness shown in the accepted shop drawings
to plus 3/16 inch (4 mm) and minus 0 inches (0 mm).
2. Horizontal Dimensions:
   Limit variation between as built panels and dimensions shown in the accepted shop drawings
to no more than 1/4 inch (6 mm). Squareness of the panel (measured along the diagonal
length) shall be within 1/2 inch. Limit horizontal alignment (deviation from straight line
parallel to centerline of member) to be no more than 1/8 inch per 10 feet, but not greater than
3/8 inch for the entire length. Greater deviation may be accepted if, in the Engineer’s opinion,
it does not impair the suitability of the member for its intended use.
3. Deck Surface:
   Deck surfaces must meet straightedge requirement in longitudinal and transverse directions in
accordance with section 500.3.06.D of the Specifications.

Fabricate the deck panels in a concrete fabrication plant that has been approved according to Laboratory
SOP-3, Standard Operation Procedures for Precast Prestressed Concrete. See QPL 9 for a list of approved
facilities.

999.3.05 Construction
Construct precast deck panel with field cast joints in accordance with the plans, Specifications and
approved installation procedures.

Grind the bridge deck for profile improvement as required by the plans, in conformance with Section
500.3.06.E of the Specifications.

Office of Bridges and Structures
Saw cut transverse grooves into top of bridge deck using a mechanical cutting device after grinding. Saw cutting grooves shall conform to Section 500.3.05.T.9.C of the Specifications.

999.3.06 Quality Acceptance
See Sub-Section 500.3.06 for Quality Acceptance.

999.3.07 Contractor Warranty and Maintenance
General Provisions 101 through 150.

999.4 Measurement
Measurement is made as a unit, complete in place, for precast concrete bridge deck panels

999.4.01 Limits
General Provisions 101 through 150.

999.5 Payment
This Work will be paid for at the Contract Price per Lump Sum, complete in place and accepted. Payment is full compensation for all things, including incidentals, and direct and indirect cost, to complete the Work.

Payment will be made under:

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>999</td>
<td>Precast Concrete Bridge Deck, Br No -</td>
<td>Per lump sum</td>
</tr>
</tbody>
</table>
Georgia Department of Transportation

Technical Provisions

For
Design-Build Agreement
P.I. No. 0014899

Attachment 13-2
FENCE AND PARAPET DETAILS
FENCE NOTES:
1. PROVIDE GUARDSMAN PANEL FENCE OR EQUAL, AS APPROVED BY THE OWNER.
2. 4" METAL SLEEVE SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A53 AND SHALL BE CAST IN THE PARAPET. NON-SHRINK CEMENT SHALL NOT BE ALLOWED TO CURE FOR THREE DAYS BEFORE FENCE FABRIC IS INSTALLED.
3. PROVIDE EXPANSION SLEEVE FOR ALL RAILS TO MATCH SUPERSTRUCTURE JOINTS.
4. FOR FURTHER DETAILS, SEE GEORGIA DOT SPECIFICATIONS SECTIONS 643 AND 894.
5. EXPANDED METAL MESH SHALL BE FASTENED TO POST AT INTERVALS NOT GREATER THAN 14".

SECTION A-A

ATTACH BLACK METAL MESH TO FENCE

PARAPET/FENCE AESTHETIC
(INSIDE FACE OF PARAPET)
(SHOWING GUARDSMAN PANEL FENCE - COMMERCIAL, CURVED TOP)
Georgia Department of Transportation

Technical Provisions

For

Design-Build Agreement

P.I. Nos. 0014895 and 0014899

Attachment 13-3

PAVING REST DETAILS
506B AT 18" ±,
ALT. TO GIVE 9” SP.
3½” MIN. CL.

506A AT 18"

504B AT 12" ±
BETWEEN BEAMS

504A AT END OF BEAM
(3 ON BULB TEE,
2 ON AASHTO SHAPES)

2" CL.
3 SIDES
Georgia Department of Transportation

Technical Provisions

For

Design-Build Agreement

P.I. Nos. 0014895 and 0014899

Attachment 14-1

SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS
DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA  

PI No. 0014895, Bibb County  

Central of Georgia Railroad Company  
Railroad File No. BR0014134  

SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS  

This project is proposing to increase the vertical clearance of the SR 247/Pio Nono bridge over the tracks in the City of Macon, Bibb County, Georgia. The work will require construction activities within the right of way of Central of Georgia Railroad Company (Norfolk Southern Corporation) at railroad inventory number 718364M. The average train movement through this area is approximately 4 trains per day at a maximum speed of 25 mph. There are no passenger trains at this location.

1. AUTHORITY OF RAILROAD ENGINEER AND HIGHWAY ENGINEER:

The authorized representative of the Railroad, hereinafter referred to as Railroad Engineer, shall have final authority in all matters affecting the safe maintenance of Railroad traffic and facilities including the adequacy of the foundations and structures supporting the railroad tracks and the necessity for flagging during construction.

The authorized representative of the Chief Engineer, hereinafter referred to as the Highway Engineer, shall have authority over all other matters as prescribed herein and in the Department’s Standard Specifications, current edition at the time of the project let date.

2. NOTICE OF STARTING WORK:

A. The Contractor shall not commence any work on Railroad rights-of-way until it has complied with the following conditions:

   (1) Given the Railroad written notice, with copy to the Department, at the addresses shown below and to the Highway Engineer who has been designated to be in charge of the work, at least 10 working days in advance of the date proposed to begin work on Railroad rights-of-way. If flagging is required, it may take up to 30 days to obtain flagging from the Railroad and no work shall be undertaken until flagging is present at the job site.

Notice to:  
Chief Engineer Bridges and Structures 
Norfolk Southern Corporation  
1200 Peachtree St., N.E.  
Atlanta, Georgia 30309  
404-529-1225  

Copy to:  
State Utilities Engineer  
Georgia Department of Transportation  
One Georgia Center 10th Floor  
600 West Peachtree Street NW  
Atlanta, Georgia 30308
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

(2) Obtained written authorization from the Railroad to begin work on Railroad right-of-way. Such authorization may include an outline of specific and general conditions with which the Contractor must comply.

(3) Obtained written authorization from the Railroad Protective and General Liability Insurance coverage as required by paragraph 12 herein. It should be noted that Railroad Company does not accept notation of Railroad Protective Insurance on a Certificate of Liability Insurance or for Binders as Railroad Company must have the full original countersigned policy. Further, please note that mere receipt of the policy is not the only issue, but review for compliance. Due to the number of projects system wide, it typically takes a minimum of 45 days for Railroad Company to review.

(4) Furnished a schedule for all work within the Railroad rights-of-way as required by paragraph 7 B (1) herein.

B. The Railroad’s written authorization to proceed with the work shall include the names, addresses, and telephone numbers of the Railroad’s representatives who are to be notified as hereinafter required. Where more than one representative is designated, area of responsibility of each representative shall be specified.

3. INTERFERENCE WITH RAILROAD OPERATIONS AND PROPERTY:

A. The Contractor shall so arrange and conduct its work to avoid interference with Railroad operations, including train, signal, and communication services, or damage to the facilities or property of the Railroad or tenants on the right-of-way of the Railroad. Whenever work is liable to affect such operations, safety, facilities, or property, the method of doing such work shall first be submitted to the Railroad Engineer for review and approval, but such approval shall not relieve the Contractor from liability. Any work to be performed by the Contractor which requires flagging and inspection by the Railroad shall be deferred by the Contractor until the flagging and inspection required by the Railroad is available at the job site.

B. Whenever work within Railroad rights-of-way is of such a nature that impediment to Railroad operations such as use of runaround or detour tracks or necessity for reduced speed is unavoidable, the Contractor shall schedule and conduct its operations so that such impediment is reduced to the absolute minimum.

C. Should conditions arising from, or in connection with the work, require that immediate and unusual provisions be made to protect operations, facilities, and property of the Railroad, the Contractor shall make such provisions. If in the judgement of the Railroad Engineer, or in his absence, the Highway Engineer, such provision is insufficient, either may require or make such provisions as he deems necessary. In any event, such unusual provisions shall be at the Contractor’s expense and without cost to the Railroad or the Department.
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

4. TRACK CLEARANCES

A. The minimum track clearances to be maintained by the Contractor during construction are shown on the Project Plans. However, before undertaking any work within Railroad right-of-way, or before placing any obstruction over any track, the Contractor shall:

1. Notify the Railroad’s representative at least 72 hours in advance of the work.
2. Receive assurance from the Railroad’s representative that arrangements have been made for flagging service as may be necessary.
3. Receive permission from the Railroad’s representative to proceed with the work.
4. Ascertain that the Highway Engineer has received copies of notice to the Railroad and of the Railroad’s response thereto.

5. CONSTRUCTION PROCEDURES:

A. General:

Construction work and operations by the Contractor on Railroad rights-of-way, or property, shall be:

1. Subject to the inspection and approval of the Railroad.
2. In accord with the Railroad’s most current version prior to project let date of Public Projects Manual: For Projects Which May Impact Norfolk Southern Railway Company and additional written outline of specific conditions if provided by Railroad.
3. In accord with the Railroad’s general rules, regulations, and requirements including those relating to safety, fall protection, and personal protective equipment.
4. In accord with this special provision and Railroad Special Provision for Protection of Railway Interest.

B. Temporary Excavation:

The subgrade of an operated track shall be maintained with edge of berm at least 10 feet from centerline of track and not more than 24 inches below top of rail. The Contractor will not be required to make existing section meet this specification if the existing section is substandard, in which case the existing section will be maintained.
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

C. Excavation for Structures:

The Contractor will be required to take special precaution and care in connection with excavating and shoring pits, for construction of bridges, walls, footings, drainage pipes, or structures, 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 which they carry, without disturbance of track alignment and surface, and 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 Railroad Engineer, but such approval shall not relieve the Contractor from liability. Before submission of plans to the Railroad Engineer for approval, such plans shall first be reviewed by the Department’s Office of Bridge Design. Shoring plans submitted must be prepared, signed and sealed by a Registered Professional Engineer in the state of Georgia.

D. Demolition, Erection, Hoisting:

(1) Railroad tracks and other railroad property must be protected from damage during the procedure.

(2) The contractor is required to submit a plan showing the location of cranes, horizontally and vertically, operating radii, with delivery or disposal locations shown. The location of all tracks and other railroad facilities as well as all obstructions such as wire lines, poles, adjacent structures, etc. must be shown.

(3) Crane rating sheets showing cranes to be adequate for 150% of the actual weight of the pick. A complete set of crane charts, including crane, counterweight, and boom nomenclature is to be submitted.

(4) Plans and computations showing the weight of the pick must 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 structure. If plans do not exist, lifting weights must be calculated from field measurements. The field measurements are to be made under supervision of the Registered Professional Engineer in the state of Georgia submitting the procedure and calculations.

(5) A data sheet must be submitted listing the types, size, and arrangements of all rigging and connection equipment.

(6) A complete procedure is to be submitted, including the order of lifts, time required for each lift, and any repositioning or re-hitching of the crane or cranes.

(7) All erection or demolition plans, procedures, data sheets, etc. submitted must be prepared, signed and sealed by a Registered Professional Engineer in the state of Georgia.
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

(8) The Railroad’s representative must be present at the site during the entire demolition and erection procedure period.

(9) All procedures, plans, and calculations shall first be approved by the Highway Engineer and the Railroad Engineer, but such approval does not relieve the Contractor from liability.

E. Blasting:

(1) Blasting will not be permitted.

F. Maintenance and Repair of Railroad Facilities:

(1) The Contractor will maintain all ditches and drainage structures free of silt or other obstructions which may result from its operations and provide and maintain any erosion control measures as required by Highway Project plans and contract documents. The Contractor will promptly repair eroded areas within Railroad rights-of-way.

(2) The Contractor will also repair, or cause to be repaired, any other damage to the property or facilities of the Railroad or its tenants.

(3) All such maintenance and repair of damages due to the Contractor’s operations shall be done at the Contractor’s expense.

G. Storage of Materials and Equipment:

Materials and equipment shall not be stored where they will interfere with Railroad operations, nor on the rights-of-way of the Railroad without first having obtained permission from the Railroad Engineer, and such permission will be with the understanding that the Railroad will not be liable for damage to such material and equipment from any cause and that the Railroad Engineer may move or require the Contractor to move, at the Contractor’s expense, such material and equipment. All grading or construction machinery that is left parked unattended near the track or on the Railroad rights-of-way shall be effectively immobilized so that it cannot be moved by unauthorized persons. Safety guidelines are given in paragraph 11 herein.

H. Cleanup:

Upon completion of the work, the Contractor shall remove from within the limits of the Railroad rights-of-way, all machinery, equipment, surplus materials, falsework, temporary erosion measures, rubbish or temporary buildings of the Contractor, and leave said rights-of-way in a neat condition satisfactory to the Chief Engineer of the Railroad or his authorized representative.

I. Field Painting of Overhead Bridges:
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

(1) The contractor shall submit a blast cleaning and paint containment plan to the Railroad for review and approval and comply with the Railroad "Public Projects Manual" which can be downloaded from their website, Special Provisions for Protection of Railway Interests, and the Departments’ Specifications for Painting Structures.

(2) The blast cleaning and paint containment plan shall include drawings, procedures, and calculations showing the structural adequacy of the system and shall be signed and sealed by a registered Professional Engineer licensed in the state of Georgia. The calculations shall demonstrate that the cables, ropes, chains, anchors, shackles, and decking (if applicable) are all adequate to withstand the anticipated loads. The contractor shall provide manufacturer's catalog cut sheets for each component for verification of capacity.

(3) The drawings shall include a detailed sketch of the containment system and indicating the method(s) of supporting the working platforms and containment components to each other and to the bridge structure. All components shall be clearly identified and tagged with their rated capacities.

(4) The minimum temporary vertical clearance measured from the bottom of the work platform or containment system shall not be less than 22'-0". The contractor shall ensure to take into account the sag of longitudinal cables supporting the containment.

6. DAMAGES:

A. The Contractor shall assume all liability for any and all damages to its work, employees, servants, equipment and materials caused by Railroad traffic.

B. Any cost incurred by the Railroad for repairing damages to its property or to property of its tenants, caused by or resulting from the operations of the Contractor, shall be paid directly to the Railroad by the Contractor.

7. FLAGGING SERVICES:

A. When Required

Under the terms of the agreement between the Department and the Railroad, the Railroad 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 the Contractor’s personnel or equipment are, or are likely to be, working on the Railroad’s right-of-way, or within distances as may be specified by Railroad’s authorized representative, 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
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

piece of equipment, is located such that its boom, or extremity, could move and pass within 20 feet of the centerline of a track or within a distance as may otherwise be specified by Railroad’s authorized representative. Safety guidelines are given in paragraph 11 herein. **Normally the Railroad will assign one flagman to a project, based on an 8 hour workday and 40 hour workweek, but in some cases more than one may be necessary.**

B. Scheduling and Notification

(1) Not later than the time that approval is initially requested to begin work on Railroad right-of-way, Contractor shall furnish to the Railroad and the Department a schedule for all work required to complete the portion of the project within Railroad right-of-way.

(2) The Contractor will be required to give the Railroad representative at least 10 working days of advance notice of intent to begin work within Railroad right-of-way in accordance with paragraph 2.A.(1) of this special provision. Once begun, when such work is then suspended at any time, or for any reason, the Contractor will be required to give the Railroad representative at least 3 working days of advance notice before resuming work on Railroad right-of-way. Such notices shall include sufficient details of the proposed work to enable the Railroad representative to determine if flagging will be required. If such notice is in writing, the contractor shall furnish the Highway Engineer a copy; if notice is given verbally it shall be confirmed in writing with copy to the Highway Engineer. 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 30 days to obtain flagging initially from the Railroad. When flagging begins, the flagman is usually assigned by the Railroad to work at the project site on a continual basis until no longer needed and cannot be called for on a spot basis. If flagging becomes unnecessary and is suspended, it may take up to 30 days to again obtain flagging from the Railroad. Due to Railroad practices, in some cases it may be necessary to give 5 days notice before flagging service may be discontinued and payment stopped.

(3) If, after the flagman is assigned to the project site, unusual circumstances or conditions arise which require the flagman’s presence elsewhere, then the Contractor shall delay work on Railroad right-of-way until such time as the flagman is again available. Any additional costs incurred by the Contractor resulting from such delays shall be the sole responsibility of the Contractor.

C. Payment

(1) The Department will pay for flagging through the Construction Agreement between the Department and the Railroad.

D. Verification
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

(1) The Contractor will review and sign the Railroad flagman’s semi-monthly time sheet, or other similar documentation, attesting that the flagman was present during the time recorded. The Railroad’s flagman may also enter flagging time electronically via the Railroad’s electronic billing system. Any complaints concerning flagging must be resolved in a timely manner. If need for flagging is questioned, please contact Railroad’s Engineer of Public Improvements. All verbal complaints will be confirmed in writing by the contractor within 5 working days with a copy to the Department Engineer. Address all written correspondence to:

Notice to:      Copy to:
Chief Engineer Bridges and Structures State Utilities Engineer
Norfolk Southern Corporation Georgia Department of Transportation
1200 Peachtree St., N.E. One Georgia Center 10th Floor
Atlanta, Georgia  30309 600 West Peachtree Street NW
404-529-1225     Atlanta, Georgia  30308

(2) The Railroad flagman assigned to the project will be responsible for notifying the Highway Engineer 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. The Highway Engineer will document such notification in the project records. When requested, the Highway Engineer will also sign the flagman’s time sheets showing daily time spent at the project site.

8. TRANSPORTING MATERIALS AND EQUIPMENT ACROSS TRACKS:

A. Where the plans show or imply that materials of any nature must be hauled across a Railroad, unless the plans clearly show that the Department has included arrangements for such haul in its agreement with the Railroad, the Contractor will be required to make all necessary arrangements with the Railroad regarding means of transporting such materials across the railroad. The Contractor will be required to bear all costs incidental to such crossings whether services are performed by his own forces or by Railroad personnel.

B. No crossing may be established for use of the contractor for transporting materials or equipment across the tracks of the Railroad Company unless specific authority for its installation, maintenance, necessary watching and flagging thereof and removal, until a temporary private crossing agreement has been executed between the Contractor and Railroad. The approval process for an agreement, normally takes 90 days.

9. WORK FOR THE BENEFIT OF THE CONTRACTOR:

A. All temporary or permanent changes in wire lines or other facilities which are considered necessary to the project are shown on the plans; included in the force account agreement between the Department and the Railroad; or will be covered
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

by appropriate revisions to same which will be initiated and approved by the Department and the Railroad.

B. Should the Contractor desire any changes in addition to the above, then it shall make separate arrangements with the Railroad for same to be accomplished, including any required flagging service, at the Contractor’s expense.

10. COOPERATION AND DELAYS

A. It shall be the Contractor’s responsibility to arrange a schedule with the Railroad for accomplishing stage construction involving work by the Railroad or tenants of the Railroad. In arranging the schedule the contractor shall ascertain, from the Railroad, the lead time required for assembling crews and materials and shall make due allowance therefore.

B. No charge or claims of the Contractor against either the Department or the Railroad will be allowed for hindrance or delay on account of railway traffic, any work performed or to be performed by the Railroad, or other delay incident to or necessary for safe maintenance of railway traffic and facilities, or for any delays due to compliance with this special provision.

11. SAFETY GUIDELINES:

A. Guidelines for Personnel on Railroad Right-of-Way

(1) All persons shall wear hard hats. Appropriate eye and hearing protection must be used. Working in shorts is prohibited. Shirts must cover shoulders, back and abdomen. Working in tennis or jogging shoes, sandals, boots with high heels, cowboy and other slip-on type boots is prohibited. Hard-sole, lace-up footwear, zippered boots or boots cinched up with straps which fit snugly about the ankle are adequate. Safety boots are strongly recommended. It is required that reflective vests be worn.

(2) No one is allowed within 25 feet of the centerline of track without specific authorization from the flagman.

(3) All persons working near track while train is passing are to look out for dragging bands, chains and protruding or shifted cargo.

(4) No one is allowed to cross tracks without specific authorization from flagman.

(5) All welders and cutting torches working within 25 feet of the track must stop when train is passing.

(6) No steel tape or chain will be allowed to cross or touch rails without permission.
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

B. Guidelines for Equipment on Railroad Right-of-Way

(1) No crane or boom equipment will be allowed to set up to work or park within boom distance plus 15 feet of the centerline of track without specific permission from railroad official and flagman.

(2) No crane or boom equipment will be allowed to foul track or lift a load over the track without flag protection and track time.

(3) All employees will stay with their machines when crane or boom equipment is pointed toward track.

(4) All cranes and boom equipment under load will stop work while train is passing (including pile driving).

(5) Swinging loads must be secured to prevent movement while train is passing.

(6) No loads will be suspended above a moving train.

(7) No equipment will be allowed within 25 feet of centerline of track without specific authorization of the flagman.

(8) Trucks, tractors or any equipment will not touch ballast line without specific permission from railroad official and flagman.

(9) No equipment or load movement within 25 feet or above a standing train or railroad equipment without specific authorization of flagman.

(10) All operating equipment within 25 feet of track must halt operations when a train is passing. All other operating equipment may be halted by the flagman if the flagman views the operation to be dangerous to the passing train.

(11) All equipment, loads, and cables are prohibited from touching rails.

(12) While clearing and grubbing, no vegetation will be removed from railroad embankment with heavy equipment without specific permission from the Railroad Engineer and flagman.

(13) No equipment or materials will be parked or stored on Railroad’s property unless specific authorization is granted from the Railroad Engineer.

(14) All unattended equipment that is left parked on Railroad property shall be effectively immobilized so that it cannot be moved by unauthorized persons.

(15) All cranes and boom equipment will be turned away from track after each work day or whenever unattended by an operator.

12. INSURANCE:
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

See Exhibit A attached.

13. FAILURE TO COMPLY:

In the event the Contractor violates or fails to comply with any of the requirements of this special provision:

(1) The Railroad Engineer may require that the Contractor vacate Railroad property.

(2) The Highway Engineer may withhold all monies due the Contractor on monthly statements.

Any such orders shall remain in effect until the Contractor has remedied the situation to the satisfaction of the Railroad Engineer and the Highway Engineer.

14. PAYMENT FOR COST OF COMPLIANCE:

No separate payment will be made for any cost incurred on account of compliance with this special provision. All such cost shall be included in prices bid for other items of the work.

Office of Utilities
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

Exhibit A

INSURANCE:

A. In addition to any other forms of insurance or bonds required under the terms of the contract and specifications, the Prime Contractor will be required to carry insurance of the following kinds and amounts:

1. a. Commercial General Liability Insurance having a combined single limit of not less than $2,000,000 per occurrence for all loss, damage, cost and expense, including attorneys' fees, arising out of bodily injury liability and property damage liability during the policy period. Said policy shall include explosion, collapse, and underground hazard (XCU) coverage, shall be endorsed to name Railroad specified in item A.2.c. below both as the certificate holder and as an additional insured, and shall include a severability of interests provision.

b. Automobile Liability Insurance with a combined single limit of not less than $1,000,000 each occurrence for injury to or death of persons and damage to or loss or destruction of property. Said policy or policies shall be endorsed to name Railroad specified in item A.2.c. below both as the certificate holder and as an additional insured and shall include a severability of interests provision;

2. Railroad Protective Liability Insurance having a combined single limit of not less than $2,000,000 each occurrence and $6,000,000 in the aggregate applying separately to each annual period. If the project involves track over which passenger trains operate, the insurance limits required are not less than a combined single limit of $5,000,000 each occurrence and $10,000,000 in the aggregate applying separately to each annual period. Said policy shall provide coverage for all loss, damage or expense arising from bodily injury and property damage liability, and physical damage to property attributed to acts or omissions at the job site.

The standards for the Railroad Protective Liability Insurance are as follows:

a. The insurer must be rated A- or better by A.M. Best Company, Inc.

b. NOTE: NS does not accept from insurers Chartis (AIG or Affiliated Company including Lexington Insurance Company), Hudson Group or Liberty or Affiliated Company, American Contractors Insurance Company and Erie Insurance Company including Erie Insurance Exchange and Erie Indemnity Company.

c. The policy must be written using one of the following combinations of Insurance Services Office (“ISO”) Railroad Protective Liability Insurance Form Numbers:

(1) CG 00 35 01 96 and CG 28 31 10 93; or
(2) CG 00 35 07 98 and CG 28 31 07 98; or
(3) CG 00 35 10 01; or
(4) CG 00 35 12 04; or
(5) CG 00 35 12 07; or
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

(6) CG 00 35 04 13.

d. The named insured shall read:
   Norfolk Southern Corporation and its subsidiaries
   Three Commercial Place
   Norfolk, Virginia 23510-2191
   (NOTE: NS does not share coverage on RRPL with any other entity on this policy)

e. The description of operations must appear on the Declarations, must match the project description in this agreement, and must include the appropriate Department project and contract identification numbers.

f. The job location must appear on the Declarations and must include the city, state, and appropriate highway name/number. NOTE: Do not include any references to milepost, valuation station, or mile marker on the insurance policy.

g. The name and address of the prime contractor must appear on the Declarations.

h. The name and address of the Department must be identified on the Declarations as the “Involved Governmental Authority or Other Contracting Party.”

i. Endorsements/forms that are required are:
   (1) Physical Damage to Property Amendment
   (2) Terrorism Risk Insurance Act (TRIA) coverage must be included

j. Other endorsements/forms that will be accepted are:
   (1) Broad Form Nuclear Exclusion – Form IL 00 21
   (2) 30-day Advance Notice of Non-renewal or cancellation
   (3) Required State Cancellation Endorsement
   (4) Quick Reference or Index Form CL/IL 240

k. Endorsements/forms that are NOT acceptable are:
   (1) Any Pollution Exclusion Endorsement except CG 28 31
   (2) Any Punitive or Exemplary Damages Exclusion
   (3) Known injury or Damage Exclusion form CG 00 59
   (4) Any Common Policy Conditions form
   (5) An Endorsement that limits or excludes Professional Liability coverage
   (6) A Non-Cumulation of Liability or Pyramiding of Limits Endorsement
   (7) An Endorsement that excludes TRIA coverage
   (8) A Sole Agent Endorsement
   (9) Any type of deductible endorsement or amendment
   (10) Any other endorsement/form not specifically authorized in item no. 2.h above.

B. If any part of the work is sublet, similar insurance, and evidence thereof as specified in A.1 above, shall be provided by or on behalf of the subcontractor to cover its operations on Railroad’s right of way.

C. All insurance required under the preceding subsection A shall be underwritten by insurers and be of such form and content, as may be acceptable to the Company. Prior to entry on Railroad right-of-way, the original Railroad Protective Liability

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SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

Insurance Policy shall be submitted by the Prime Contractor to the Department at the address below for its review and transmittal to the Railroad. In addition, certificates of insurance evidencing the Prime Contractor’s and any subcontractors’ Commercial General Liability Insurance shall be issued to the Railroad and the Department at the addresses below. The certificates of insurance shall state that the insurance coverage will not be suspended, voided, canceled, or reduced in coverage or limits without (30) days advance written notice to Railroad and the Department. No work will be permitted by Railroad on its right-of-way until it has reviewed and approved the evidence of insurance required herein.

DEPARTMENT:    RAILROAD:

State Utilities Engineer    Risk Management
Georgia Department of Transportation    Norfolk Southern Corporation and its subsidiaries
One Georgia Center 10th Floor    Three Commercial Place
600 West Peachtree Street NW    Norfolk, Virginia 23510-2191
Atlanta, Georgia  30308

D. The insurance required herein shall in no way serve to limit the liability of Department or its Contractors under the terms of this agreement.
DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PI No. 0014899, Bibb County

Central of Georgia Railroad Company
Railroad File No. BR0014133

SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

This project is proposing to replace the CR 5813/College Street bridge over the tracks in the City of Macon, Bibb County, Georgia. The work will require construction activities within the right of way of Central of Georgia Railroad Company (Norfolk Southern Corporation) at railroad inventory number 718370R. The average train movement through this area is approximately 4 trains per day at a maximum speed of 10 mph. There are no passenger trains at this location.

1. AUTHORITY OF RAILROAD ENGINEER AND HIGHWAY ENGINEER:

The authorized representative of the Railroad, hereinafter referred to as Railroad Engineer, shall have final authority in all matters affecting the safe maintenance of Railroad traffic and facilities including the adequacy of the foundations and structures supporting the railroad tracks and the necessity for flagging during construction.

The authorized representative of the Chief Engineer, hereinafter referred to as the Highway Engineer, shall have authority over all other matters as prescribed herein and in the Department’s Standard Specifications, current edition at the time of the project let date.

2. NOTICE OF STARTING WORK:

A. The Contractor shall not commence any work on Railroad rights-of-way until it has complied with the following conditions:

(1) Given the Railroad written notice, with copy to the Department, at the addresses shown below and to the Highway Engineer who has been designated to be in charge of the work, at least 10 working days in advance of the date proposed to begin work on Railroad rights-of-way. If flagging is required, it may take up to 30 days to obtain flagging from the Railroad and no work shall be undertaken until flagging is present at the job site.

Notice to:                                                        Copy to:
Chief Engineer Bridges and Structures                           State Utilities Engineer
Norfolk Southern Corporation                                    Georgia Department of Transportation
1200 Peachtree St., N.E.                                          One Georgia Center 10th Floor
Atlanta, Georgia 30309                                           600 West Peachtree Street NW
404-529-1225                                                    Atlanta, Georgia 30308
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

(2) Obtained written authorization from the Railroad to begin work on Railroad right-of-way. Such authorization may include an outline of specific and general conditions with which the Contractor must comply.

(3) Obtained written authorization from the Railroad Protective and General Liability Insurance coverage as required by paragraph 12 herein. It should be noted that Railroad Company does not accept notation of Railroad Protective Insurance on a Certificate of Liability Insurance or for Binders as Railroad Company must have the full original countersigned policy. Further, please note that mere receipt of the policy is not the only issue, but review for compliance. Due to the number of projects system wide, it typically takes a minimum of 45 days for Railroad Company to review.

(4) Furnished a schedule for all work within the Railroad rights-of-way as required by paragraph 7 B (1) herein.

B. The Railroad’s written authorization to proceed with the work shall include the names, addresses, and telephone numbers of the Railroad’s representatives who are to be notified as hereinafter required. Where more than one representative is designated, area of responsibility of each representative shall be specified.

3. INTERFERENCE WITH RAILROAD OPERATIONS AND PROPERTY:

A. The Contractor shall so arrange and conduct its work to avoid interference with Railroad operations, including train, signal, and communication services, or damage to the facilities or property of the Railroad or tenants on the right-of-way of the Railroad. Whenever work is liable to affect such operations, safety, facilities, or property, the method of doing such work shall first be submitted to the Railroad Engineer for review and approval, but such approval shall not relieve the Contractor from liability. Any work to be performed by the Contractor which requires flagging and inspection by the Railroad shall be deferred by the Contractor until the flagging and inspection required by the Railroad is available at the job site.

B. Whenever work within Railroad rights-of-way is of such a nature that impediment to Railroad operations such as use of runaround or detour tracks or necessity for reduced speed is unavoidable, the Contractor shall schedule and conduct its operations so that such impediment is reduced to the absolute minimum.

C. Should conditions arising from, or in connection with the work, require that immediate and unusual provisions be made to protect operations, facilities, and property of the Railroad, the Contractor shall make such provisions. If in the judgement of the Railroad Engineer, or in his absence, the Highway Engineer, such provision is insufficient, either may require or make such provisions as he deems necessary. In any event, such unusual provisions shall be at the Contractor’s expense and without cost to the Railroad or the Department.
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

4. TRACK CLEARANCES

A. The minimum track clearances to be maintained by the Contractor during construction are shown on the Project Plans. However, before undertaking any work within Railroad right-of-way, or before placing any obstruction over any track, the Contractor shall:

1. Notify the Railroad’s representative at least 72 hours in advance of the work.
2. Receive assurance from the Railroad’s representative that arrangements have been made for flagging service as may be necessary.
3. Receive permission from the Railroad’s representative to proceed with the work.
4. Ascertain that the Highway Engineer has received copies of notice to the Railroad and of the Railroad’s response thereto.

5. CONSTRUCTION PROCEDURES:

A. General:

Construction work and operations by the Contractor on Railroad rights-of-way, or property, shall be:

1. Subject to the inspection and approval of the Railroad.
2. In accord with the Railroad’s most current version prior to project let date of Public Projects Manual: For Projects Which May Impact Norfolk Southern Railway Company and additional written outline of specific conditions if provided by Railroad.
3. In accord with the Railroad’s general rules, regulations, and requirements including those relating to safety, fall protection, and personal protective equipment.
4. In accord with this special provision and Railroad Special Provision for Protection of Railway Interest.

B. Temporary Excavation:

The subgrade of an operated track shall be maintained with edge of berm at least 10 feet from centerline of track and not more than 24 inches below top of rail. The Contractor will not be required to make existing section meet this specification if the existing section is substandard, in which case the existing section will be maintained.
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

C. **Excavation for Structures:**

The Contractor will be required to take special precaution and care in connection with excavating and shoring pits, for construction of bridges, walls, footings, drainage pipes, or structures, 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 which they carry, without disturbance of track alignment and surface, and 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 Railroad Engineer, but such approval shall not relieve the Contractor from liability. Before submission of plans to the Railroad Engineer for approval, such plans shall first be reviewed by the Department’s Office of Bridge Design. Shoring plans submitted must be prepared, signed and sealed by a Registered Professional Engineer in the state of Georgia.

D. **Demolition, Erection, Hoisting:**

(1) Railroad tracks and other railroad property must be protected from damage during the procedure.

(2) The contractor is required to submit a plan showing the location of cranes, horizontally and vertically, operating radii, with delivery or disposal locations shown. The location of all tracks and other railroad facilities as well as all obstructions such as wire lines, poles, adjacent structures, etc. must be shown.

(3) Crane rating sheets showing cranes to be adequate for 150% of the actual weight of the pick. A complete set of crane charts, including crane, counterweight, and boom nomenclature is to be submitted.

(4) Plans and computations showing the weight of the pick must 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 structure. If plans do not exist, lifting weights must be calculated from field measurements. The field measurements are to be made under supervision of the Registered Professional Engineer in the state of Georgia submitting the procedure and calculations.

(5) A data sheet must be submitted listing the types, size, and arrangements of all rigging and connection equipment.

(6) A complete procedure is to be submitted, including the order of lifts, time required for each lift, and any repositioning or re-hitching of the crane or cranes.

(7) All erection or demolition plans, procedures, data sheets, etc. submitted must be prepared, signed and sealed by a Registered Professional Engineer in the state of Georgia.
(8) The Railroad’s representative must be present at the site during the entire demolition and erection procedure period.

(9) All procedures, plans, and calculations shall first be approved by the Highway Engineer and the Railroad Engineer, but such approval does not relieve the Contractor from liability.

E. Blasting:

(1) Blasting will not be permitted.

F. Maintenance and Repair of Railroad Facilities:

(1) The Contractor will maintain all ditches and drainage structures free of silt or other obstructions which may result from its operations and provide and maintain any erosion control measures as required by Highway Project plans and contract documents. The Contractor will promptly repair eroded areas within Railroad rights-of-way.

(2) The Contractor will also repair, or cause to be repaired, any other damage to the property or facilities of the Railroad or its tenants.

(3) All such maintenance and repair of damages due to the Contractor’s operations shall be done at the Contractor’s expense.

G. Storage of Materials and Equipment:

Materials and equipment shall not be stored where they will interfere with Railroad operations, nor on the rights-of-way of the Railroad without first having obtained permission from the Railroad Engineer, and such permission will be with the understanding that the Railroad will not be liable for damage to such material and equipment from any cause and that the Railroad Engineer may move or require the Contractor to move, at the Contractor’s expense, such material and equipment. All grading or construction machinery that is left parked unattended near the track or on the Railroad rights-of-way shall be effectively immobilized so that it cannot be moved by unauthorized persons. Safety guidelines are given in paragraph 11 herein.

H. Cleanup:

Upon completion of the work, the Contractor shall remove from within the limits of the Railroad rights-of-way, all machinery, equipment, surplus materials, falsework, temporary erosion measures, rubbish or temporary buildings of the Contractor, and leave said rights-of-way in a neat condition satisfactory to the Chief Engineer of the Railroad or his authorized representative.

I. Field Painting of Overhead Bridges:
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

(1) The contractor shall submit a blast cleaning and paint containment plan to the Railroad for review and approval and comply with the Railroad "Public Projects Manual" which can be downloaded from their website, Special Provisions for Protection of Railway Interests, and the Departments’ Specifications for Painting Structures.

(2) The blast cleaning and paint containment plan shall include drawings, procedures, and calculations showing the structural adequacy of the system and shall be signed and sealed by a registered Professional Engineer licensed in the state of Georgia. The calculations shall demonstrate that the cables, ropes, chains, anchors, shackles, and decking (if applicable) are all adequate to withstand the anticipated loads. The contractor shall provide manufacturer’s catalog cut sheets for each component for verification of capacity.

(3) The drawings shall include a detailed sketch of the containment system and indicating the method(s) of supporting the working platforms and containment components to each other and to the bridge structure. All components shall be clearly identified and tagged with their rated capacities.

(4) The minimum temporary vertical clearance measured from the bottom of the work platform or containment system shall not be less than 22'-0". The contractor shall ensure to take into account the sag of longitudinal cables supporting the containment.

6. DAMAGES:

A. The Contractor shall assume all liability for any and all damages to its work, employees, servants, equipment and materials caused by Railroad traffic.

B. Any cost incurred by the Railroad for repairing damages to its property or to property of its tenants, caused by or resulting from the operations of the Contractor, shall be paid directly to the Railroad by the Contractor.

7. FLAGGING SERVICES:

A. When Required

Under the terms of the agreement between the Department and the Railroad, the Railroad 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 the Contractor’s personnel or equipment are, or are likely to be, working on the Railroad’s right-of-way, or within distances as may be specified by Railroad’s authorized representative, 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
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

piece of equipment, is located such that its boom, or extremity, could move and pass within 20 feet of the centerline of a track or within a distance as may otherwise be specified by Railroad’s authorized representative. Safety guidelines are given in paragraph 11 herein. Normally the Railroad will assign one flagman to a project, based on an 8 hour workday and 40 hour workweek, but in some cases more than one may be necessary.

B. Scheduling and Notification

(1) Not later than the time that approval is initially requested to begin work on Railroad right-of-way, Contractor shall furnish to the Railroad and the Department a schedule for all work required to complete the portion of the project within Railroad right-of-way.

(2) The Contractor will be required to give the Railroad representative at least 10 working days of advance notice of intent to begin work within Railroad right-of-way in accordance with paragraph 2.A.(1) of this special provision. Once begun, when such work is then suspended at any time, or for any reason, the Contractor will be required to give the Railroad representative at least 3 working days of advance notice before resuming work on Railroad right-of-way. Such notices shall include sufficient details of the proposed work to enable the Railroad representative to determine if flagging will be required. If such notice is in writing, the contractor shall furnish the Highway Engineer a copy; if notice is given verbally it shall be confirmed in writing with copy to the Highway Engineer. 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 30 days to obtain flagging initially from the Railroad. When flagging begins, the flagman is usually assigned by the Railroad to work at the project site on a continual basis until no longer needed and cannot be called for on a spot basis. If flagging becomes unnecessary and is suspended, it may take up to 30 days to again obtain flagging from the Railroad. Due to Railroad practices, in some cases it may be necessary to give 5 days notice before flagging service may be discontinued and payment stopped.

(3) If, after the flagman is assigned to the project site, unusual circumstances or conditions arise which require the flagman’s presence elsewhere, then the Contractor shall delay work on Railroad right-of-way until such time as the flagman is again available. Any additional costs incurred by the Contractor resulting from such delays shall be the sole responsibility of the Contractor.

C. Payment

(1) The Department will pay for flagging through the Construction Agreement between the Department and the Railroad.

D. Verification
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

(1) The Contractor will review and sign the Railroad flagman’s semi-monthly time sheet, or other similar documentation, attesting that the flagman was present during the time recorded. The Railroad’s flagman may also enter flagging time electronically via the Railroad’s electronic billing system. Any complaints concerning flagging must be resolved in a timely manner. If need for flagging is questioned, please contact Railroad’s Engineer of Public Improvements. All verbal complaints will be confirmed in writing by the contractor within 5 working days with a copy to the Department Engineer. Address all written correspondence to:

Notice to:    Copy to:
Chief Engineer Bridges and Structures    State Utilities Engineer
Norfolk Southern Corporation    Georgia Department of Transportation
1200 Peachtree St., N.E.    One Georgia Center 10th Floor
Atlanta, Georgia 30309    600 West Peachtree Street NW
404-529-1225    Atlanta, Georgia 30308

(2) The Railroad flagman assigned to the project will be responsible for notifying the Highway Engineer 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. The Highway Engineer will document such notification in the project records. When requested, the Highway Engineer will also sign the flagman’s time sheets showing daily time spent at the project site.

8. TRANSPORTING MATERIALS AND EQUIPMENT ACROSS TRACKS:

A. Where the plans show or imply that materials of any nature must be hauled across a Railroad, unless the plans clearly show that the Department has included arrangements for such haul in its agreement with the Railroad, the Contractor will be required to make all necessary arrangements with the Railroad regarding means of transporting such materials across the railroad. The Contractor will be required to bear all costs incidental to such crossings whether services are performed by his own forces or by Railroad personnel.

B. No crossing may be established for use of the contractor for transporting materials or equipment across the tracks of the Railroad Company unless specific authority for its installation, maintenance, necessary watching and flagging thereof and removal, until a temporary private crossing agreement has been executed between the Contractor and Railroad. The approval process for an agreement, normally takes 90 days.

9. WORK FOR THE BENEFIT OF THE CONTRACTOR:

A. All temporary or permanent changes in wire lines or other facilities which are considered necessary to the project are shown on the plans; included in the force account agreement between the Department and the Railroad; or will be covered
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

by appropriate revisions to same which will be initiated and approved by the Department and the Railroad.

B. Should the Contractor desire any changes in addition to the above, then it shall make separate arrangements with the Railroad for same to be accomplished, including any required flagging service, at the Contractor’s expense.

10. COOPERATION AND DELAYS

A. It shall be the Contractor’s responsibility to arrange a schedule with the Railroad for accomplishing stage construction involving work by the Railroad or tenants of the Railroad. In arranging the schedule the contractor shall ascertain, from the Railroad, the lead time required for assembling crews and materials and shall make due allowance therefore.

B. No charge or claims of the Contractor against either the Department or the Railroad will be allowed for hindrance or delay on account of railway traffic, any work performed or to be performed by the Railroad, or other delay incident to or necessary for safe maintenance of railway traffic and facilities, or for any delays due to compliance with this special provision.

11. SAFETY GUIDELINES:

A. Guidelines for Personnel on Railroad Right-of-Way

(1) All persons shall wear hard hats. Appropriate eye and hearing protection must be used. Working in shorts is prohibited. Shirts must cover shoulders, back and abdomen. Working in tennis or jogging shoes, sandals, boots with high heels, cowboy and other slip-on type boots is prohibited. Hard-sole, lace-up footwear, zippered boots or boots cinched up with straps which fit snugly about the ankle are adequate. Safety boots are strongly recommended. It is required that reflective vests be worn.

(2) No one is allowed within 25 feet of the centerline of track without specific authorization from the flagman.

(3) All persons working near track while train is passing are to look out for dragging bands, chains and protruding or shifted cargo.

(4) No one is allowed to cross tracks without specific authorization from flagman.

(5) All welders and cutting torches working within 25 feet of the track must stop when train is passing.

(6) No steel tape or chain will be allowed to cross or touch rails without permission.
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

B. Guidelines for Equipment on Railroad Right-of-Way

   (1) No crane or boom equipment will be allowed to set up to work or park within boom distance plus 15 feet of the centerline of track without specific permission from railroad official and flagman.

   (2) No crane or boom equipment will be allowed to foul track or lift a load over the track without flag protection and track time.

   (3) All employees will stay with their machines when crane or boom equipment is pointed toward track.

   (4) All cranes and boom equipment under load will stop work while train is passing (including pile driving).

   (5) Swinging loads must be secured to prevent movement while train is passing.

   (6) No loads will be suspended above a moving train.

   (7) No equipment will be allowed within 25 feet of centerline of track without specific authorization of the flagman.

   (8) Trucks, tractors or any equipment will not touch ballast line without specific permission from railroad official and flagman.

   (9) No equipment or load movement within 25 feet or above a standing train or railroad equipment without specific authorization of flagman.

   (10) All operating equipment within 25 feet of track must halt operations when a train is passing. All other operating equipment may be halted by the flagman if the flagman views the operation to be dangerous to the passing train.

   (11) All equipment, loads, and cables are prohibited from touching rails.

   (12) While clearing and grubbing, no vegetation will be removed from railroad embankment with heavy equipment without specific permission from the Railroad Engineer and flagman.

   (13) No equipment or materials will be parked or stored on Railroad’s property unless specific authorization is granted from the Railroad Engineer.

   (14) All unattended equipment that is left parked on Railroad property shall be effectively immobilized so that it cannot be moved by unauthorized persons.

   (15) All cranes and boom equipment will be turned away from track after each work day or whenever unattended by an operator.

12. INSURANCE:
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

See Exhibit A attached.

13. FAILURE TO COMPLY:

In the event the Contractor violates or fails to comply with any of the requirements of this special provision:

(1) The Railroad Engineer may require that the Contractor vacate Railroad property.

(2) The Highway Engineer may withhold all monies due the Contractor on monthly statements.

Any such orders shall remain in effect until the Contractor has remedied the situation to the satisfaction of the Railroad Engineer and the Highway Engineer.

14. PAYMENT FOR COST OF COMPLIANCE:

No separate payment will be made for any cost incurred on account of compliance with this special provision. All such cost shall be included in prices bid for other items of the work.

Office of Utilities
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

Exhibit A

INSURANCE:

A. In addition to any other forms of insurance or bonds required under the terms of the contract and specifications, the Prime Contractor will be required to carry insurance of the following kinds and amounts:

1. a. Commercial General Liability Insurance having a combined single limit of not less than $2,000,000 per occurrence for all loss, damage, cost and expense, including attorneys' fees, arising out of bodily injury liability and property damage liability during the policy period. Said policy shall include explosion, collapse, and underground hazard (XCU) coverage, shall be endorsed to name Railroad specified in item A.2.c. below both as the certificate holder and as an additional insured, and shall include a severability of interests provision.

b. Automobile Liability Insurance with a combined single limit of not less than $1,000,000 each occurrence for injury to or death of persons and damage to or loss or destruction of property. Said policy or policies shall be endorsed to name Railroad specified in item A.2.c. below both as the certificate holder and as an additional insured and shall include a severability of interests provision.

2. Railroad Protective Liability Insurance having a combined single limit of not less than $2,000,000 each occurrence and $6,000,000 in the aggregate applying separately to each annual period. If the project involves track over which passenger trains operate, the insurance limits required are not less than a combined single limit of $5,000,000 each occurrence and $10,000,000 in the aggregate applying separately to each annual period. Said policy shall provide coverage for all loss, damage or expense arising from bodily injury and property damage liability, and physical damage to property attributed to acts or omissions at the job site.

The standards for the Railroad Protective Liability Insurance are as follows:

a. The insurer must be rated A- or better by A.M. Best Company, Inc.

b. NOTE: NS does not accept from insurers Chartis (AIG or Affiliated Company including Lexington Insurance Company), Hudson Group or Liberty or Affiliated Company, American Contractors Insurance Company and Erie Insurance Company including Erie Insurance Exchange and Erie Indemnity Company.

c. The policy must be written using one of the following combinations of Insurance Services Office (“ISO”) Railroad Protective Liability Insurance Form Numbers:

(1) CG 00 35 01 96 and CG 28 31 10 93; or
(2) CG 00 35 07 98 and CG 28 31 07 98; or
(3) CG 00 35 10 01; or
(4) CG 00 35 12 04; or
(5) CG 00 35 12 07; or
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

(6) CG 00 35 04 13.

d. The named insured shall read:
   Norfolk Southern Corporation and its subsidiaries
   Three Commercial Place
   Norfolk, Virginia 23510-2191
   (NOTE: NS does not share coverage on RRPL with any other entity on this policy)

e. The description of operations must appear on the Declarations, must match
   the project description in this agreement, and must include the appropriate
   Department project and contract identification numbers.

f. The job location must appear on the Declarations and must include the city,
   state, and appropriate highway name/number. NOTE: Do not include any
   references to milepost, valuation station, or mile marker on the insurance
   policy.

g. The name and address of the prime contractor must appear on the
   Declarations.

h. The name and address of the Department must be identified on the
   Declarations as the “Involved Governmental Authority or Other
   Contracting Party.”

i. Endorsements/forms that are required are:
   (1) Physical Damage to Property Amendment
   (2) Terrorism Risk Insurance Act (TRIA) coverage must be included

j. Other endorsements/forms that will be accepted are:
   (1) Broad Form Nuclear Exclusion – Form IL 00 21
   (2) 30-day Advance Notice of Non-renewal or cancellation
   (3) Required State Cancellation Endorsement
   (4) Quick Reference or Index Form CL/IL 240

k. Endorsements/forms that are NOT acceptable are:
   (1) Any Pollution Exclusion Endorsement except CG 28 31
   (2) Any Punitive or Exemplary Damages Exclusion
   (3) Known injury or Damage Exclusion form CG 00 59
   (4) Any Common Policy Conditions form
   (5) An Endorsement that limits or excludes Professional Liability coverage
   (6) A Non-Cumulation of Liability or Pyramiding of Limits Endorsement
   (7) An Endorsement that excludes TRIA coverage
   (8) A Sole Agent Endorsement
   (9) Any type of deductible endorsement or amendment
   (10) Any other endorsement/form not specifically authorized in item no.
        2.h above.

B. If any part of the work is sublet, similar insurance, and evidence thereof as specified
   in A.1 above, shall be provided by or on behalf of the subcontractor to cover its
   operations on Railroad’s right of way.

C. All insurance required under the preceding subsection A shall be underwritten by
   insurers and be of such form and content, as may be acceptable to the Company.
   Prior to entry on Railroad right-of-way, the original Railroad Protective Liability
SPECIAL PROVISION FOR PROTECTION OF RAILWAY INTERESTS

Insurance Policy shall be submitted by the Prime Contractor to the Department at the address below for its review and transmittal to the Railroad. In addition, certificates of insurance evidencing the Prime Contractor’s and any subcontractors’ Commercial General Liability Insurance shall be issued to the Railroad and the Department at the addresses below. The certificates of insurance shall state that the insurance coverage will not be suspended, voided, canceled, or reduced in coverage or limits without (30) days advance written notice to Railroad and the Department. No work will be permitted by Railroad on its right-of-way until it has reviewed and approved the evidence of insurance required herein.

DEPARTMENT: RAILROAD:

State Utilities Engineer Risk Management
Georgia Department of Transportation Norfolk Southern Corporation and its subsidiaries
One Georgia Center 10th Floor Three Commercial Place
600 West Peachtree Street NW Norfolk, Virginia 23510-2191
Atlanta, Georgia 30308

D. The insurance required herein shall in no way serve to limit the liability of Department or its Contractors under the terms of this agreement.
Georgia Department of Transportation

Technical Provisions

For

Design-Build Agreement

P.I. Nos. 0014895 and 0014899

Attachment 15-1

MTA BUS SHELTER
Georgia Department of Transportation

Technical Provisions

For

Design-Build Agreement

P.I. Nos. 0014895 and 0014899

Attachment 17-1

SPECIAL PROVISION FOR NAVIGATOR ATMS INTEGRATION
Section 940 - NaviGAtor Advanced Transportation Management System Integration

Add the following:

940.1 General Description

This work includes coordination and integration of the project into the Department’s NaviGAtor advanced transportation management system to provide a complete and fully operational expansion of the Department’s NaviGAtor system as shown in the Contract Documents.

An example project follows:

Project scope includes installation of communications and field equipment that will provide information to the Transportation Management Center (TMC) and other facilities. The backbone of the communication system is a fiber optic cable infrastructure utilizing IP protocols over Ethernet technology. Ethernet switching equipment is used to transport the data from field devices to hub buildings. Routing equipment at the hub-building routes the data to the TMC and other facilities as needed. Cameras will provide video for traffic surveillance and vehicle detection. Changeable message signs and surveillance cameras will be controlled from the TMC. Ramp Metering Operation will communicate with the NaviGAtor System using center-to-center communication between NaviGAtor and ACTRA. ACTRA will communicate to the Ramp Metering firmware.

Each hub-building and assigned field devices are configured as an IP subnet within the GDOT overall network. Each field device (VDS processor, CMS controller, video encoder and decoder) incorporates its own IP address. Each field device will connect to a field switch at the equipment cabinet. The field switches (located in the equipment cabinets) will be daisy-chained using GBIC optical links to form a string. The ends of the daisy-chained switches are terminated at different hub buildings.

Make communications between the surveillance cameras and the network by means of Ethernet video encoders as shown on the Plans. Make communications from the VDS sites by means of Ethernet compatible video detection system processor(s) at each VDS site. Make communications between the CMS and the network by means of CMS controllers incorporating Ethernet ports. Make communication between the ramp metering operations and the network using an Ethernet field switch within the Ramp Meter Controller Cabinet.

At the hubs buildings, data communication arrives through the field switches using Layer 2 protocols. At the hub building routers will disseminate the data as needed across the backbone network.

Video decoders will be used for decoding of the video images at specific locations as shown on Project Plans.
At Project completion, a complete and useable system comprised of all components involved in the Project will be established.

940.1.1 Related References

A. Georgia Standard Specifications

Section 631 – Permanent Changeable Message Signs
Section 647 – Traffic Signal Installation
Section 797 – Hub Buildings
Section 925 – Traffic Signal Equipment
Section 935 – Fiber Optic System
Section 936 – Closed Circuit Television System (CCTV)
Section 937 – Video Detection System
Section 938 – Microwave Radar Detection
Section 939 – Communication and Electronic Equipment

B. Referenced Documents

Not applicable

940.1.2 Submittals

Submit six copies of the Integration Plan to the Engineer within 15 days of Contract Notice to Proceed. Submit six copies of the Acceptance Test Plan to the Engineer within 45 days of Contract Notice to Proceed.

940.2 Materials

Not applicable

940.3 Construction Requirements

Not applicable

940.3.1 Personnel

Not applicable

940.3.2 Equipment

Not applicable

940.3.3 Preparation

Not applicable
940.3.4 Fabrication

Not applicable

940.3.5 Construction

Not applicable

940.3.6 Quality Acceptance

If, in the Department’s judgement, the Contractor is not demonstrating progress in solving any technical problem, the Contractor may be directed to supply Factory technical representation and diagnostic equipment at no cost to the Department until satisfactory resolution of those defined problems.

The Engineer may direct any completed or partially completed portions of the project placed in service. Such action cannot be deemed an acceptance of the project in whole or in part, nor shall such action be construed as a waiver by the Engineer of any provision of the specifications. Assume no right to additional compensation or extension of time for completion of the work. Fully maintain all equipment until final acceptance, which includes but is not limited to equipment configuration and communication systems that are being integrated.

Perform all acceptance testing in the presence of the Engineer. Notify the Engineer of a desired acceptance test no less than fourteen calendar days prior to beginning the testing except for testing using the NaviGAtor software and existing NaviGAtor control center and communications equipment. For acceptance testing using the NaviGAtor software and existing NaviGAtor control center and communications equipment, coordinate the testing schedule with the Engineer no less than 30 days prior to the start of this testing. Do not conduct any testing during any State or Federal holiday.

Ramp Meter Testing

The Contractor shall submit to and obtain approval from the Engineer a ramp metering testing procedure for each specific ramp meter location. The testing procedure shall demonstrate that all components: hardware, cable, and connections furnished and installed by the contractor operates correctly and that all functions are in conformance with the specifications. Testing requirements are also outlined in Section 647.

The Department will provide controller firmware. The Contractor shall provide the controller to the Department. The Department will load the firmware into the controller and return to the Contractor.

At a minimum, the Contractor shall demonstrate to the Engineer:

- The I-VDS and loop detectors at each location are functioning with expected accuracy as specified.
- The ramp meter signals function properly at all stages, including non-metering, startup, metering, and shutdown.
- In multi-lane configurations, the ramp meter can operate a simultaneous release of vehicles from all lanes and as well as an alternating or staggered release of vehicles from the two (or three) lanes.
- Queue detectors are functioning as specified, including both queue detection and queue override.
- The ramp meter functions properly for both local traffic responsive and time of day operations.
- The advance warning sign can be clearly seen and can be activated and deactivated properly.
- The ramp meter can communicate properly with the Hub/TMC.
- The traffic enforcement heads are operating as per the plans and can be seen by enforcement personnel.
The Contractor shall coordinate closely with the NaviGAtor system integrator for conducting ramp meter operational tests. Note: Pretest should be performed prior to calling the Engineer for inspection. Pretest shall be defined as all tests that will be performed during the Engineer’s inspection. Begin operational tests after the Engineer is satisfied that all work has been completed. After the ramp meter has been placed in operation, the contractor, in coordination with the system integrator, shall demonstrate that all equipment furnished and installed by the Contractor operates with all software and firmware as specified.

After successful completion of the test procedure, each ramp meter assembly shall go through a burn-in period for 30 consecutive days of normal ramp metering operations. During the burn-in period, the Contractor shall ensure that all Contractor-supplied equipment operates without failures of any type. If any equipment component malfunctions or fails to provide the specified functionality during the 30-day burn-in period, the Contractor shall replace or repair the defective equipment within 48 hours of notification by the Engineer.

After the malfunctioning component(s) have been repaired or replaced to the satisfaction of the Engineer, the Contractor shall begin a new 30-day burn-in period. The new 30-day burn-in period shall apply only to equipment components supplied by the Contractor. In the event of a failure or malfunctioning of equipment furnished by others which prevents the 30-day burn-in test from continuing, the Engineer will suspend the burn-in test and resume when the other equipment failures are corrected.

940.3.7 Contractor Warranty and Maintenance

Not applicable

940.3.8 Training

Not applicable

940.4 Measurement

The Department will pay all costs of coordination with and integration of the project into NaviGAtor under the integration pay item when the pay item is included in the Contract. The integration pay item is measured as a lump sum for all supplies, materials and subsistence it requires.

When the integration pay item is not included in the Contract, all costs of coordination with and integration of the project into NaviGAtor with all supplies, materials and subsistence it requires shall be included in other Contract items. The Department will make no separate payment for integration.

940.4.01 Limits

Not applicable

940.5 Payment

The Department will pay for integration that is complete, in place and accepted by the Department. Payment is full compensation for the work.

Payment for Section 940 is made under:

<table>
<thead>
<tr>
<th>Item No. 940</th>
<th>Integration</th>
<th>Lump Sum</th>
</tr>
</thead>
</table>

– or –

Not applicable [when the Integration pay item is not included on the job.]
940.5.01 Adjustments

Not applicable
Georgia Department of Transportation

Technical Provisions

For

Design-Build Agreement

P.I. Nos. 0014895 and 0014899

Attachment 17-2

SUPPLEMENTAL SPECIFICATIONS

SP 687 Traffic Signal Timing
SP 935 Fiber Optic System
SP 936 CCTV Camera System
SP 939 Communications and Electronic Equipment
Section 687 - Traffic Signal Timing

687.1 General Description

Add the following:

Develop and implement, by a prequalified Contractor/Consultant, a traffic signal operating plan that provides safe and efficient operation of the Intersections defined in Table 687-4. As a MINIMUM, this work will include:

- Coordinate with local GDOT District and/or local government(s) to gather agency preferred timing parameters and expectations, and to facilitate a smooth transition from existing signal timing plans to new signal timing plans.
- Evaluation of existing traffic operations, system equipment functionality, and inventory of assets.
- Collect two-hour turning movement counts (TMC’s) for the AM, mid-day, and PM peak periods at each Intersection. For contractor timing projects (if approved by the Engineer AND the signals reside in a rural area), one-hour TMC’s may be collected in lieu of two-hour TMC’s.
- Collect directional (tube) counts (7-day/24-hour) per control section, as appropriate or as recommended by the Engineer. A minimum of one (1) directional count is required and additional directional counts are needed if the number of intersections exceeds seven (7) or if there are significant changes in traffic volumes along the corridor.
- Develop, implement and fine-tune a minimum of four (4) signal timing plans per control section, unless otherwise specified by the Engineer. In most cases, more than the minimum required will be needed to successfully complete the project.
- Develop additional timing plans as needed, including holiday, seasonal, weekend and other special plans as requested by the Engineer. The number of additional plans shall be discussed as part of the kickoff meeting. For contractor timing projects, the Consultant will need to address this item prior to providing a fee to the contractor(s).
- Conduct before/after studies and prepare project performance measures to detail signal timing improvements.

687.1.01 Definitions

Use the following definitions for purposes of this section:

- **Prequalified Contractor/Consultant**: One who is qualified to perform work in Area Class Codes 3.06, 3.07, and 3.09 in the Department's Consultant Prequalification regulations.
- **Signal Timing Plan**: A unique combination of cycle length/split/offset for all Intersections within a system or control section.
- **Control Section**: Any portion of a traffic control system, which can be controlled by a single set of timing parameters and in which all Intersections change timing patterns at the same time.
- **Engineer**: The State Signal Timing Engineer or District Traffic Engineer for the District in which the Intersections are located.
• **Intersections:** All the Intersections listed in Table 687-4. In the event there are no Intersections listed, the Contractor/Consultant shall request the list of Intersections to be re-timed from the maintaining agency.

• **Directional (tube) Count:** The measurement of the total traffic volume traveling a roadway in a single direction.

• **Turning Movement Count (TMC):** The measurement of the directional traffic volume traveling through an individual Intersection.

• **Before/After Study:** The measurement of the travel time, stops, and emissions through a control section and the comparison of the before versus after data. “Before” data is gathered prior to making any changes. “After” data is gathered once the new timing plans are implemented, fine-tuned and accepted by the Engineer.

• **Approved or Approval:** Written notice (via letter, memorandum or email) from the Engineer or his designated representative.

### 687.1.02 Related References

A. **Standard Specifications**

   - Section 108 – Prosecution and Progress
   - Section 647 – Traffic Signal Installation
   - Section 925 – Traffic Signal Equipment

### 687.1.03 Submittals

In the sequence and order listed, submit one (1) electronic (.PDF) copy to the Engineer for review and approval. Approval of each submittal must be obtained before conducting work on subsequent submittals. *Hard copies of any/all reports may be requested by the Engineer and/or maintaining agency.*

1. Kickoff Meeting
2. Preliminary Timing Report
3. Final Timing Report
4. Project Closeout

**Note:** Signal timing performed as part of a GDOT construction project should be submitted to the signal contractor for submission to the Engineer. This will ensure the project inspector from the respective GDOT area office, or from the consulting firm performing project inspections for GDOT, is knowledgeable for purposes of payment requests.

See Table 687-3 for workflow chart.

### 687.2 Materials

#### 687.2.01 Software

The Department will not provide resources to fulfill any Contractor obligations under this Special Provision. The Department will not furnish any software or equipment for the development and implementation of timing plans. Obtain all necessary licensed software, equipment and materials to support this work effort.

### 687.3 Construction Requirements

#### 687.3.01 Kickoff Meeting

A kickoff meeting, in person or via conference call (however preferred by the Engineer), with the Engineer and any other parties involved in the timings will be conducted to determine locations to collect Directional Counts, time of day to collect TMC’s, travel run routes, local jurisdiction timing preferences, project schedule, whether or not to develop traffic responsive timing plans, and overall project expectations.

After the meeting is complete, an email submission of the meeting minutes shall be sent to all parties involved for verification of project decisions. A project schedule and graphic depicting approved locations for TMCs and Directional Counts should also be submitted as part of the meeting minutes. An example of a system map with count locations is shown in Exhibit 687-3.

At this time, “Before” travel time runs should be collected per the route(s) agreed upon at the Kickoff Meeting. TMC’s and Directional Counts should also be collected as agreed upon in the Kickoff Meeting.
687.3.02 Preliminary Timing Report

Visit all Intersections listed in Table 687-4 during the AM, MD and PM peak traffic periods (weekends may also be required) in order to make qualitative assessments of Intersection operation. Make note of queue length, delays, conflicts or any other operational characteristics that should be considered in evaluating and developing coordinated traffic signal timing plans. Make note of the surrounding land use and traffic generators to gain insight on the daily traffic patterns of motorists in the area.

Develop a traffic signal Preliminary Timing Report containing, but not limited to the following data:

1. Intersection Inventory
2. Clearance Calculations
3. Methodology for Evaluating Performance Measures
4. Existing System Evaluation and Operational Analysis
5. Traffic Count Data in Summarized Form
6. Raw Count Data
7. Proposed Time of Day Plans and Comparison to Existing
8. Modeling Analysis and Proposed Improvements

687.3.02.01 Intersection Inventory

Prepare an inventory of the conditions at each Intersection and collect all data required to effectively devise a signal timing plan for the Intersections. Inventory the Intersection configuration, signing and marking, marked and unmarked crosswalk distances, turn lane storage lengths, signal phasing and signal timing at all Intersections as well as any other data required to complete the system timing plans. The minimum limits of this inventory include the vehicle detection locations. The purpose of the inventory is for the preparation of signal timing plans, signal system database and system maps. An example of an Intersection Inventory Sheet is shown in Exhibit 687-1. An example of an Intersection Diagram is shown in Exhibit 687-2. For Intersections with new construction, a copy of the project construction plan sheet is acceptable.

All (cabinet, controller, conflict monitor, battery backup, vehicular and pedestrian signals, communications equipment, signs, etc.) equipment must be inventoried and logged into the current version of the GDOT Signal Inventory Database. An example of the data collected is shown in Exhibit 687-2.

687.3.02.02 Clearance Calculations

Calculation of Pedestrian and Vehicular Clearance Values should follow the MUTCD guidelines, unless the local jurisdiction has its own standard for calculating clearances. The clearance time consists of the yellow change interval and the all-red clearance interval that separates phases. Tables 687-1 and 687-2 should be utilized to calculate vehicular clearance intervals.

The intersection diagrams shall detail where the measurements for both vehicular and pedestrian clearance values were taken.

**Yellow Clearance Interval:** The length of time such that the distance traveled at the 85th percentile speed in that length of time is equal to the distance required to stop from the posted speed limit. It is calculated using the “ITE Formula” where:

\[ Y = t + \frac{v}{2a + 2Gg} \]

Where:

- \( Y \) = yellow change interval (seconds)
- \( t \) = perception – reaction time (seconds) (assume 1 second)
- \( v \) = design velocity (feet/sec)
- \( a \) = deceleration rate (feet/sec.\(^2\)) (assume 10 ft/sec\(^2\))
- \( G \) = acceleration due to gravity (32.2 ft/sec\(^2\))
- \( g \) = grade in decimal form (1 percent = 0.01) {Round UP to nearest grade}
# Table 687-1 Yellow Clearance Time (Y) Chart (Seconds)

<table>
<thead>
<tr>
<th>SPEED (MPH)</th>
<th>GRADE (PERCENT)</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
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<td>*</td>
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<td>*</td>
<td>*</td>
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</tr>
</tbody>
</table>

*Minimum Yellow Clearance Time should be 3.0 seconds. If the calculated yellow clearance time is greater than 6.0 seconds, consult with the Engineer.

**All-red Clearance Interval:** The length of time needed to clear the intersection based on the vehicle speed. It is calculated using the “ITE Formula” where:

\[
R = \frac{(w + l)}{v}
\]

Where:

- \(R\) = All-red Clearance Time (seconds)
- \(w\) = width of the intersection, stop bar to opposite curb (or crosswalk when the crosswalk is greater than 20’ from the intersection) OR the furthest point of conflict (feet)
- \(l\) = length of vehicle (assume 20 feet)
- \(v\) = design velocity (feet/sec)

# Table 687-2 All-red Clearance Time (R) Chart (Seconds)

<table>
<thead>
<tr>
<th>SPEED (MPH)</th>
<th>WIDTH OF INTERSECTION (FEET)</th>
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</tr>
<tr>
<td>70</td>
<td>1.5</td>
</tr>
</tbody>
</table>

*All-red Clearance Time should be a minimum of 1.5 seconds. If the calculated red time is greater than 3.0 seconds, the additional time should be added to the Yellow Clearance Time, clearly documented as such, and discussed with the Engineer.
**Pedestrian Intervals:** Pedestrian clearance times should be calculated in accordance with the current GDOT adopted Manual on Uniform Traffic Control Devices (MUTCD).

The pedestrian intervals consist of a Walk Interval, a Pedestrian Change Interval, and a Buffer Interval. The Walk Interval shall be a walk time of 4-7 seconds minimum. The Pedestrian Change Interval should be the calculated pedestrian clearance interval and may be lowered by the amount of the buffer interval or the vehicle clearance time (yellow and all red). The pedestrian clearance interval is calculated using the distance from curb to curb along a crosswalk divided by a walking speed of 3.5 feet per second. Special considerations may require a slower walking speed to be used to calculate this interval. Buffer Intervals shall consist of the Yellow Change Interval plus the Red Clearance Interval.

**687.3.02.03 Methodology for Evaluating Performance Measures**

An explanation of the travel run methodology and the software being used to conduct the travel runs will be included as part of this report. Also, once the travel runs are complete, explain the procedure for studying the “Before” and the “After” data to show project costs and benefits. Additional performance measures (for example, arrival rate on green) and analysis methodology should be detailed at this time.

**687.3.02.04 Existing System Evaluation and Operational Analysis**

An evaluation of current system conditions shall be included in the Preliminary Timing Report. Detail about directionality, queues, existing levels of service, and traffic generators are expected. Demonstrate the current operational characteristics of the system using field collected data and the modeling software approved at the kickoff meeting.

“Before” Travel Runs should be conducted at this time.

**687.3.02.05 Traffic Count Data in Summarized Form**

After the directional count locations have been approved (in the kickoff meeting), conduct the directional counts. In general, directional counts should be taken along major arterials and may be taken on major side streets if needed. Take directional counts for seven (7) consecutive days, twenty-four (24) hours per day. Use an automatic traffic counter that produces a written record of the count and time of day. Summarize the directional count data on a volume summary form. From the count data, develop a tabular and graphic presentation of directional traffic volumes showing 15-minute interval volumes and hourly interval volumes over the seven consecutive day period. An example of tabular 15-minute interval volumes are show in Exhibit 687-6 and an example of graphical hourly interval volumes is shown in Exhibit 687-7.

After the TMC locations and time periods have been approved (in the kickoff meeting), conduct the TMC’s. Summarize peak hour turning movement counts in fifteen (15) minute increments for one-hour intervals. Differentiate in the turning movement counts between trucks and passenger vehicles, and include pedestrian counts. Summarize the count data on turning movement count forms. An example of turning movement count forms is shown in Exhibit 687-8.

Turning Movement Count Data should also be provided at this time in a summarized form, such as an intersection schematic detailing turning movement counts at intersections where data has been collected.

**687.3.02.06 Raw Count Data**

Provide all raw count data as collected for the project. This may be included as an appendix item to this report.

**687.3.02.07 Proposed Time of Day Plans and Comparison to Existing**

Describe how the proposed timing plans and TOD compare to the existing system operation. An example of a timing plan and TOD comparison is shown in Exhibit 687-9.

Proposed Timing Plans shall be listed and described individually detailing traffic conditions while the plan is running and what the plan is attempting to achieve. An operational analysis shall be included that details the existing operation and how the proposed timing plans will improve the performance of the signal system. The modeling software files shall also be submitted for review.

**687.3.02.08 Modeling Analysis and Proposed Improvements**

Develop software models of the proposed timing plans with approved software by the Department. Evaluate each proposed timing plan with the modeling software based on proposed performance measures. Summarize the proposed improvements in tabular or graphical form, clearly demonstrating the before conditions of the project and the proposed after conditions as reported through software modeling. This can be done through approved performance measures, such as Level of Service (LOS), queue analysis, number of stops reduction, overall delay reduction, travel time reduction, emissions reductions, arrival rate on greens, and any other industry accepted metric.
Submit one (1) electronic (.PDF) copy of the Preliminary Timing Report to the Engineer for review and approval. Obtain written approval of the Preliminary Timing Plan Report prior to implementation.

687.3.03 Timing Plan Implementation and Fine Tuning

687.3.03.01 Database Development and Testing

Determine values for all controller parameters (local and coordination) and prepare the system database for the Intersections listed in Table 687-4. Include the entire database for the local and master controllers, as well as central server settings.

Each of the proposed timing plans shall be tested prior to field implementation. Testing results shall be documented and included as part of the Preliminary Timing Report. An example of office testing documentation is shown in Exhibit 687-11.

687.3.03.02 Field Implementation

Upon receipt of written approval of the Preliminary Timing Report by the Engineer, implement the new signal and system timing data for the entire system. Upon approval, Contractor/Consultant shall notify the Engineer at least three (3) working days in advance of the implementation of the system timing plans. Do not schedule implementation on peak traffic days or peak travel times without prior approval from the Engineer. At this stage, if one isn’t found in the cabinet, a data key shall be supplied by GDOT or the local jurisdiction and kept inside the cabinet drawer with current timing data. Data keys should be labeled with the applicable controller firmware version and date.

Enter only approved data into the equipment at each location. If an Intersection is ready for turn-on before the initial timing plans are developed, the existing timings (if suitable) or other approved temporary timings may be installed until the initial timing plans are developed. Do not activate any new phases under temporary timings without the approval of the Engineer. Enter the new timing data at each controller, through a master controller, or from a central workstation. If entering the timing data from a central workstation, have a person experienced with controller operation on-site in the field during the implementation process. Obtain approval of the method of data entry from the Engineer prior to the entry of any data. Develop and implement all settings required for the system database. Conduct initial field verifications at time of implementation. Review the operation of equipment in the field to verify that the correct cycle lengths, splits, offsets and phasing sequence are being implemented and that no major operation problems occur. Field testing documentation should be submitted to the Engineer after implementation. An example of field testing documentation is shown in Exhibit 687-12.

Review the timing plans and adjust this data as required by actual field conditions or as directed by the Engineer. Update the data key with the current timing as changes are made.

687.3.03.03 Field Fine Tuning

Fine-tuning consists of an on-street review of the timing plans by the Contractor/Consultant. All timing plans should be verified based on traffic conditions at the time the plan is running in the TOD schedule. Cycle lengths, splits and offset should be field verified based on traffic conditions by the Consultant/Contractor. All adjustments to the timing plans should be uploaded to the final database and the local Intersection data key.

Fine-tuning approval consists of an on-street review (system evaluation) of the timing plans by the Contractor/Consultant, the Department and the Local Agency, if applicable. A written request (via email) is to be sent to the Engineer, the Department and the Local Jurisdiction for the system evaluation at least five (5) working days in advance of the proposed date for the review. It is not the intent of the approval for the Department and the Local Agency to accomplish fine-tuning for the Contractor/Consultant. System evaluations are reserved for the Department and/or Local Agency to review and approve, reject or request changes to the final timings, as installed by the Contractor/Consultant. As directed by the Department, the system evaluation could involve rejection of the timing plans, at which point the Contractor/Consultant must repeat the fine-tuning process and then request a follow-up approval with the Department. If so directed, implement the necessary adjustments and repeat the detailed on-street review. The Department reserves the right to require that adjustments be made due to conditions observed in the field.

Make any adjustments to the timings requested by the Department/Local until the Final Timing Report is submitted for review. Anticipate implementing all plans into the system and fine tuning all plans during the TOD/day-of-week (and season of year, if applicable) that the plans are scheduled to be in effect. Present to the Department for approval any contract scheduling conflicts that may interfere with the proper scheduling of the timing plan implementation along with proposed resolutions.

Perform “After” travel runs upon approval of new timing plans.

687.3.04 Final Timing Report

687.3.04.01 Project Performance Measures – Before/After Analysis
After all necessary field adjustments have been made to the timing and approval of the operation is provided by the Engineer, provide a qualitative assessment of the signal system timing by comparing the “Before” travel time runs with the “After” travel time runs. A Cost/Benefit analysis shall be included as part of the signal timing assessment. If travel runs are removed from scope at the Kickoff Meeting, the Final Timing Report will consist of the final timing database printouts.

Develop project performance measures containing, but not limited to the following data:

- Emissions (NOx, CO, VOC)
- Total travel time (Before and After)
- Stops/Delays (including side streets)
- Fuel consumption
- Benefit/Cost Ratio
- Additional Measures of Effectiveness as directed by the Engineer

Submit a copy of the final local and system timing plans to the Engineer. Use the back-up routine provided in the Department’s signal system software to make a back-up of the system database. Supply this back-up electronic version to the Engineer (Include updated and final signal timing software models and any/all electronic database). Leave the data key in the cabinet drawer. Data keys should be labeled with the applicable controller firmware version and date.

**687.3.04.02 As-Built Timing Database**

Provide a final timing database that includes all changes made from field fine tuning.

**687.3.04.03 As-Built Software Model**

Provide a final software model that includes all changes made from field fine tuning.

**687.3.04.04 Data Keys/Loadable Media**

Provide data keys or other loadable media as approved by the Engineer for each intersection in the project.

Submit one (1) electronic (.PDF) copy of the Final Timing Report to the Engineer for review and approval. Obtain written approval of the Final Timing Report prior to submitting all approved project files to the Engineer.

**687.3.05 Training**

**687.3.05.01 Overview**

*Training may be requested by the Engineer, Department or Local Jurisdiction.*

Provide instructors and all material for training Department and Local Agency personnel in the development and implementation of timing plans specifically related to this project. Submit training course outline to the Engineer for approval at least thirty (30) days prior to the proposed scheduled start of the training session. Obtain written approval of the course content prior to the final scheduling of the training session. Scheduling of training shall be coordinated with the Department and Local agency.

Develop and supply all necessary manuals, displays, class notes, visual aids, and/or other instructional materials as required to provide the training programs described herein. Bind the manuals individually in loose-leaf binders and provide up to ten (10) copies depending on the requested size of the class. Check with the Engineer to determine the final number of required manuals.

Unless otherwise specified, conduct the training session at the District office. Provide up to sixteen (16) hours of training over multiple days. Training could consist of both classroom and field sessions. The dates and times of the training will be approved by the Engineer. The Engineer will determine the personnel who will attend each training session.

**687.3.05.02 Recommended Content**

Provide a course to instruct the procuring and maintaining agency in the procedures used in the development and implementation of timing plans for this project.
Items to possibly be covered:

- Data required for input into the signal timing program and what the signal timing program does with the data
- Program limitations
- Timing plan methodology for the respective project
- Explanation of timing plan development process related to the signal timing program
- Terminology employed, data required, reports and graphics available for evaluation, definition of MOE’s, interpretation of results
- Explanation of timing plan development process related to the respective project
- Reasoning for the evaluation and selection of cycle length, splits and offsets and why this is an iterative process
- Conversion of the timing plan output from the signal timing program to the input utilized by the system and controller database
- Installation of the timing plans for manual mode use and TOD use
- Fine-tuning a signal system
- Fine-tuning intersections with light vehicular traffic but high pedestrian demand
- Development of parameters to be used in the database to implement traffic responsive operation based on the data collected from the field
- Data collection to support traffic responsive operation
- Fine-tuning traffic responsive operation
- Reporting project performance measures
- Conducting a Benefit to Cost (B/C) analysis

687.4 Measurement

687.4.01 Construction Contracts

GDOT will provide one (1) data key or other media per controller, as noted in section 687.3.04 Final Timing Report, if one is not currently in the cabinet. The data key shall remain with maintaining local agencies. Consultant shall update data key with current timing plan(s).

Traffic signal timing, complete and accepted is measured for payment per Lump Sum.

- Traffic Signal Timing
- Training

687.5 Payment

687.5.01 Construction Contracts

Traffic signal timing complete and accepted is measured for payment per Lump Sum. Price and payment is full compensation for all materials, labor, tools, equipment, supplies, testing, and incidentals to complete the item of work.

Payment will be made under:

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<thead>
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<th>Item No. 687</th>
<th>Traffic Signal Timing</th>
<th>Lump Sum</th>
</tr>
</thead>
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The GDOT Construction Project Manager, at his/her discretion may choose to pay a partial payment based upon percent complete.
Table 687-3 Signal Timing Flowchart (Workflow)

- Develop Project Schedule
- Local Timing Preferences
- Locations for Traffic Counts
- Traffic Responsive Operation Evaluation
- Proposed Travel Run Routes
- Overall Project Expectations

- Intersection Inventory
- Clearance Calculations
- Methodology for Evaluating Performance Measures
- Existing System Evaluation and Operational Analysis
- Traffic Count Data in Summarized Form and Raw Data
- Proposed Time of Day Plans and Comparison to Existing Plans
- Modeling Analysis and Proposed Improvements

- Database Development and Testing
- Field Implementation
- Field Fine Tuning

- Project Performance Measures – Before/After Analysis
- As-Built Timing Database
- As-Built Software Model
- Data Keys

- Discuss Project Summary
- Project Recommendations
- Lessons Learned
- Open Forum
TABLE 687-4 List of Intersections and Count TOD

INTERSECTIONS

ADD INTERSECTIONS HERE

COUNTS

Collect TMC’s at the locations listed above, during the days and hours listed below. Any changes to the days and times listed below shall be approved by the Engineer before proceeding.

ADD COUNT TIMES AND DAYS HERE
Exhibit 687-1

XX System - XX County

Intersection: ____________________________  Field Review Date: ____________________________
Recorded by: ____________________________  Intersection #: ________________________________

Phasing:

1  OMIT  2  3  4

5  6  7  8

Left Turn Treatment  Right Turn  Misc. Comments

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<th>Prot./Perm</th>
<th>Ray Length</th>
<th>Ray Length</th>
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<td>Southbound Prot./Perm</td>
<td>141'</td>
<td>---</td>
</tr>
<tr>
<td>Eastbound Prot./Perm</td>
<td>337'</td>
<td>---</td>
</tr>
<tr>
<td>Westbound Prot./Perm</td>
<td>420'</td>
<td>393'</td>
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</table>

2070 Controller: 332 Cabinet
NB & SB loops can’t be seen in the field—possibly paved over
(calls being picked up in cabinet by detector cards)
Peds on Phase 2 and Phase 3
All signal and ped heads are good
Wireless Antenna on strain pole closest to the cabinet
In Free Operation based on TOD (15:35)
30 seconds slower than www.time.gov

Geometrics

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<th>Prot./Perm</th>
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<td>55'</td>
</tr>
<tr>
<td>Eastbound</td>
<td>62'</td>
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<tr>
<td>Westbound</td>
<td>63'</td>
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Ped Data

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<th>Prot./Perm</th>
<th>Heads</th>
<th>PB</th>
<th>X walk Ds</th>
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<tbody>
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<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Southbound</td>
<td>Yes</td>
<td>Yes</td>
<td>36'/60'/5'</td>
</tr>
<tr>
<td>Eastbound</td>
<td>Yes</td>
<td>Yes</td>
<td>14'/50'/4'</td>
</tr>
<tr>
<td>Westbound</td>
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Detectors

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<td>Quad Pres</td>
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<td>Left</td>
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<tr>
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<td>Quad Pres</td>
<td>---</td>
<td>Thru</td>
</tr>
<tr>
<td>NB</td>
<td>6' x 6'</td>
<td>Setback</td>
<td>318'</td>
<td>Thru</td>
</tr>
<tr>
<td>EB</td>
<td>6' x 6'</td>
<td>Quad Pres</td>
<td>---</td>
<td>Thru</td>
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<tr>
<td>EB</td>
<td>4' x 6'</td>
<td>Quad Pres</td>
<td>---</td>
<td>Left</td>
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<tr>
<td>SB</td>
<td>6' x 6'</td>
<td>Quad Pres</td>
<td>---</td>
<td>Left</td>
</tr>
<tr>
<td>SB</td>
<td>6' x 6'</td>
<td>Setback</td>
<td>287'</td>
<td>Thru</td>
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*Note: X walk Ds is a running cumulative distance that includes: button to curb, curb to curb, and curb to button*
Exhibit 687-2 cont'd
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<th>Load Switches</th>
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<td>Primary Rte Alt Name</td>
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<tr>
<td>Secondary Rte Alt Name</td>
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</tr>
<tr>
<td>Install Date</td>
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</tbody>
</table>
Exhibit 687-3
Exhibit 687-4

Methodology for Clearance Intervals

Local controller timings will be developed for each of the three (3) intersections in this project. Table 3 details the clearance interval values that will be used for each signal phase.

<table>
<thead>
<tr>
<th>Phase Interval</th>
<th>Interval Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walk Interval</td>
<td>4 seconds typical and 7 seconds for intersections near schools or with high pedestrian traffic.</td>
</tr>
<tr>
<td>Flashing Don’t Walk</td>
<td>Distance from the curb to curb divided by 3.5 feet/second (typically) or 3.0 feet/second for schools and elderly. Concurrent phases do not need to be equal.</td>
</tr>
<tr>
<td>Yellow Interval</td>
<td>( t + \left( \frac{V(t^2A + 64.4g)}{V} \right) ) ( t ) Concurrently terminating phases should be equal (set to higher).</td>
</tr>
<tr>
<td>All Red Interval</td>
<td>( \frac{(W + L)}{V} ) ( \frac{V}{V} ) Concurrently terminating phases should be equal (set to higher). Max red interval = 3.0 seconds.</td>
</tr>
</tbody>
</table>

In addition, left-turn clearance calculations will be based on a turning speed of 25 mph. Through movements will be based on the posted speed limit.
SIGNAL TIMING GUIDELINES

The City of XX Traffic Engineering will use the following guidelines for traffic signal timing. These guidelines are not a substitute for good engineering judgement.

1. Compute minimum green intervals by applying Greenshields formula \( t = 4 + 2n \) to a minimal queue associated with off-peak conditions. Round off to nearest second as necessary. Typical assignments are as follows:

   - 4 sec – Turn Arrows and Low speed (≥30 MPH) minor street approaches controlled by 40 foot presence loops; T intersections.
   - 6 sec – Medium speed (≥40 MPH) minor street approaches.
   - 8 sec – High speed (≥40 MPH) minor street approaches.
   - 12 sec – Medium speed (≥40 MPH) main line approaches.
   - 15 sec – High speed (≥40 MPH) main line approaches.

   Set the maximum variable initial greater than the maximum time needed to clear the queue of vehicles that has accumulated between the stop line and the loop.

2. Passage time is computed as follows:

   \[ \text{Distance from stop line/}(\text{Speed Limit}^\ast 1.47) \]

3. Determine the maximum green time using the procedures described in chapter nine of the Highway Capacity Manual.

4. Compute the yellow change interval according to the Institute of Transportation Engineers recommended procedure.

   \[ Y = t + \frac{v}{2a \pm 64.4g} \]

   Where: \( Y \) = length of yellow interval to nearest 0.1 second
   \( t \) = driver perception/reaction time, recommended as 1.0 second.
   \( v \) = approach speed, in fps (MPH^\ast 1.47), taken as the 85th percentile speed or speed limit.
   \( a \) = deceleration rate stopping, recommended as 10 ft/sec^2.
   \( g \) = grade of approach, in percent divided by 100 (downhill is negative)

   *Note: The City of XX Traffic Engineering will use the 85th percentile speed to enter the table. If a speed study is not available, the speed limit is used. Use 25 MPH for all turning movements.*
5. The red clearance interval will follow the Institute of Transportation Engineers recommended procedure.

\[ R = \frac{W + L}{V} \]

Where: 
- \( R \) = length of red clearance, to the nearest 0.1 second
- \( W \) = width of intersection, in feet, measured from the nearside stop line to the far edge of the conflicting traffic lane along the actual vehicle path.
- \( L \) = length of vehicle, recommended as 20 feet
- \( V \) = speed of the vehicle through the intersection, in ft/sec

Note: The City of XX Traffic Engineering will use the 85th percentile speed to enter the table. If a speed study is not available, the speed limit is used. Use 25 MPH for all turning movements.

6. Calculate the “Pedestrian Clearance” for each leg at which pedestrian crossings are permitted. This is the crossing width divided by the walking speed (4.0 ft/sec, or 3 – 3.5 ft/sec in areas where school children or handicapped pedestrians may be present). This value is used for the flashing “DON’T WALK” interval. The “WALK” interval is 4 to 7 seconds as determined by minimum pedestrian volumes. These values are used for actuated pedestrian phases with or without pedestrian signals.

Crossing leg refers to the leg of the intersection the data applies.

Crossing width is the distance for the pedestrian to cross from the point at which he would wait for a crossing opportunity to the middle of the furthest travel lane.

Fixed time controllers or phases on recall, adjust the vehicle minimum green interval to “Pedestrian Minimum Green” (Pedestrian clearance plus Walk). This value is useful since it represents the minimum green split (less vehicle clearance) that must be allowed for in coordination.

Note: If the roadway is 28 feet wide or less, then the crossing width is from the edge of pavement to the edge of pavement. Pedestrian Clearance shall not be less than 8 seconds.
### Exhibit 687-6

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<td>01:15 AM</td>
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Exhibit 687-7

US 29 East of Bethesda Church Road - Weekday ADT

Vehicles Per Hour

Hour

Monday EB  | Tuesday EB  | Wednesday EB  | Thursday EB  | Friday EB  
Monday WB  | Tuesday WB  | Wednesday WB  | Thursday WB  | Friday WB  

All Traffic Data Services, Inc
1336 Farmer Road
Conyers, Ga 30012
404-374-1283

File Name: #1 Patterson Rd @ US 29 Lawrenceville Hwy AM
Site Code: 
Start Date: 11/7/2012
Page No: 2

Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 07:30 AM

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<th>Right</th>
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<th>Right</th>
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Total Volume

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| %           | 93.3 |
| %           | 93.3 |
| %           | 93.3 |
| %           | 93.3 |

Peak Hour Data

North
Peak Hour Begins at 07:30 AM
Cars
Trucks

Out
In
Total

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Out
In
Total

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<tr>
<td>Cycle Length</td>
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<td>Before 120&quot;</td>
</tr>
<tr>
<td></td>
<td>After 120&quot;</td>
<td>After 120&quot;</td>
</tr>
<tr>
<td><strong>MD Peak Plan</strong></td>
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<tr>
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<td>After 110&quot;</td>
<td>After Free</td>
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<td><strong>PM Peak Plan</strong></td>
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<td>After 120&quot;</td>
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### Exhibit 687-10

**SR 11 Business**

**1: SR 11/Limestone Playy & SR 11 Business**

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<th>South</th>
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<th>East</th>
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<td><strong>Storage Lanes</strong></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
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<tr>
<td><strong>Taper Length (ft)</strong></td>
<td>50</td>
<td>25</td>
<td>50</td>
<td>60</td>
<td>60</td>
<td></td>
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<tr>
<td><strong>Lane Util. Factor</strong></td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td><strong>Fi</strong></td>
<td>0.950</td>
<td>0.950</td>
<td>0.950</td>
<td>0.950</td>
<td>0.950</td>
<td></td>
</tr>
<tr>
<td><strong>Fit Protected</strong></td>
<td>0.950</td>
<td>0.950</td>
<td>0.950</td>
<td>0.950</td>
<td>0.950</td>
<td></td>
</tr>
<tr>
<td><strong>Sand. Flow (gpm)</strong></td>
<td>1743</td>
<td>1568</td>
<td>1881</td>
<td>1539</td>
<td>1523</td>
<td></td>
</tr>
<tr>
<td><strong>Fit Permitted</strong></td>
<td>0.950</td>
<td>0.950</td>
<td>0.950</td>
<td>0.950</td>
<td>0.950</td>
<td></td>
</tr>
<tr>
<td><strong>Sand. Flow (gpm)</strong></td>
<td>1743</td>
<td>1568</td>
<td>1881</td>
<td>1539</td>
<td>1523</td>
<td></td>
</tr>
<tr>
<td><strong>Right Turn on Red</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
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<tr>
<td><strong>Sand. Flow (RTOR)</strong></td>
<td>189</td>
<td>36</td>
<td></td>
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<tr>
<td><strong>Lane Speed (mph)</strong></td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
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<tr>
<td><strong>Lane Distance (ft)</strong></td>
<td>2012</td>
<td>1700</td>
<td>1068</td>
<td>1068</td>
<td>1068</td>
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<tr>
<td><strong>Travel Time (s)</strong></td>
<td>20.5</td>
<td>20.0</td>
<td>16.2</td>
<td>16.2</td>
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<tr>
<td><strong>Peak Hr Factor</strong></td>
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<td>0.92</td>
<td>0.92</td>
<td>0.92</td>
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<tr>
<td><strong>Adj. Flow (vph)</strong></td>
<td>12</td>
<td>199</td>
<td>219</td>
<td>38</td>
<td>729</td>
<td></td>
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<td><strong>Shared Lane Traffic (%)</strong></td>
<td>12%</td>
<td>19%</td>
<td>21%</td>
<td>36%</td>
<td>72%</td>
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<tr>
<td><strong>Turn Type</strong></td>
<td>Perm</td>
<td>Perm</td>
<td>Perm</td>
<td>Perm</td>
<td>Perm</td>
<td></td>
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<tr>
<td><strong>Protected Phases</strong></td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>6</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td><strong>Permitted Phases</strong></td>
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<td>2</td>
<td>1</td>
<td>6</td>
<td>6</td>
<td></td>
</tr>
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<td><strong>Detector Phases</strong></td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td></td>
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<tr>
<td><strong>Switch Phase</strong></td>
<td>4.0</td>
<td>4.0</td>
<td>12.0</td>
<td>12.0</td>
<td>12.0</td>
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<tr>
<td><strong>Minimum Initial (s)</strong></td>
<td>4.0</td>
<td>4.0</td>
<td>12.0</td>
<td>12.0</td>
<td>12.0</td>
<td></td>
</tr>
<tr>
<td><strong>Minimum Split (s)</strong></td>
<td>11.0</td>
<td>11.0</td>
<td>18.0</td>
<td>18.0</td>
<td>18.0</td>
<td></td>
</tr>
<tr>
<td><strong>Total Split (s)</strong></td>
<td>15.0</td>
<td>15.0</td>
<td>18.0</td>
<td>20.0</td>
<td>15.0</td>
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<tr>
<td><strong>Total Stop (%)</strong></td>
<td>10.7%</td>
<td>10.7%</td>
<td>57.7%</td>
<td>57.7%</td>
<td>57.7%</td>
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<tr>
<td><strong>Yellow Time (s)</strong></td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
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<tr>
<td><strong>All Red Time (s)</strong></td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
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<tr>
<td><strong>Total Lost Time (s)</strong></td>
<td>6.5</td>
<td>6.5</td>
<td>6.5</td>
<td>6.5</td>
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<table>
<thead>
<tr>
<th>Lane</th>
<th>Lag</th>
<th>Lag</th>
<th>Lag</th>
<th>Lag</th>
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<tbody>
<tr>
<td>Left</td>
<td>None</td>
<td>None</td>
<td>C-Max</td>
<td>C-Max</td>
</tr>
<tr>
<td>Left</td>
<td>None</td>
<td>None</td>
<td>C-Max</td>
<td>C-Max</td>
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<tr>
<td>Art. Eff. (Green g)</td>
<td>7.0</td>
<td>7.0</td>
<td>90.2</td>
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<td>Actuating G/C Ratio</td>
<td>0.05</td>
<td>0.05</td>
<td>0.66</td>
<td>0.66</td>
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<tr>
<td>V/C Ratio</td>
<td>0.14</td>
<td>0.14</td>
<td>0.18</td>
<td>0.18</td>
</tr>
<tr>
<td>Control Delay</td>
<td>68.4</td>
<td>25.7</td>
<td>9.5</td>
<td>3.5</td>
</tr>
<tr>
<td>Queue Delay</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Total Delay</td>
<td>68.4</td>
<td>25.7</td>
<td>9.5</td>
<td>3.5</td>
</tr>
<tr>
<td>Loss</td>
<td>E</td>
<td>C</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Approach Delay</td>
<td>28.0</td>
<td>8.7</td>
<td>5.5</td>
<td>5.5</td>
</tr>
<tr>
<td>Approach LOS</td>
<td>C</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Queue Length 50th (ft)</td>
<td>11</td>
<td>0</td>
<td>53</td>
<td>0</td>
</tr>
<tr>
<td>Queue Length 90th (ft)</td>
<td>18</td>
<td>114</td>
<td>114</td>
<td>143</td>
</tr>
</tbody>
</table>

**AM Peak:**

140 second cycle
### Exhibit 687-10 cont’d

#### 1. SR 11/Limestone Pkwy & SR 11 Business

**SR 11 Business**

**4/28/2013**

<table>
<thead>
<tr>
<th>Lane Group</th>
<th>WSL</th>
<th>WER</th>
<th>NBT</th>
<th>NBR</th>
<th>SBL</th>
<th>SBT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Link Dist (ft)</td>
<td>1932</td>
<td>1423</td>
<td>156</td>
<td>130</td>
<td>918</td>
<td>918</td>
</tr>
<tr>
<td>Turn Bay Length (ft)</td>
<td>156</td>
<td>310</td>
<td>156</td>
<td>130</td>
<td>918</td>
<td>918</td>
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<tr>
<td>Base Capacity (vph)</td>
<td>106</td>
<td>246</td>
<td>1238</td>
<td>1446</td>
<td>106</td>
<td>1557</td>
</tr>
<tr>
<td>Stratum Cap Reduction</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Splitback Cap Reduction</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Storage Cap Reduction</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Reduced v/c Ratio</td>
<td>0.11</td>
<td>0.71</td>
<td>0.18</td>
<td>0.03</td>
<td>0.67</td>
<td>0.62</td>
</tr>
</tbody>
</table>

**Intersection Summary**

- **Area Type:** Other
- **Cycle Length:** 140
- **Actual Cycle Length:** 140
- **Other:** 106 (93%), Referenced to phase 2 NBT and 6336 TL, Start of 1st Green
- **Natural Cycle:** 150
- **Control Type:** Actuated
- **Maximum v/c Ratio:** 0.75
- **Intersection Signal Delay:** 8.3
- **Intersection LOS:** A
- **Intersection Capacity Utilization:** 54.3%
- **ICU Level of Service:** C
- **Analysis Period (min):** 15

4. 95th percentile volume exceeds capacity, queue may be longer.

**Queue shown is maximum after two cycles.**

#### Spots and Phases

- **SR 11/Limestone Pkwy & SR 11 Business**

<table>
<thead>
<tr>
<th>Phases</th>
<th>All Peak</th>
<th>140 Second Cycle</th>
</tr>
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<tbody>
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<td>a1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a2</td>
<td></td>
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<tr>
<td>a3</td>
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</tr>
<tr>
<td>a4</td>
<td></td>
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<td>a5</td>
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<td>a6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a7</td>
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</table>
Part I – Office Tests

Local Intersection Timing Plan Checklist

<table>
<thead>
<tr>
<th>Project Name: XX Road Signal Timing</th>
<th>Site Address:</th>
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<tbody>
<tr>
<td>Project Number: Task Order XX</td>
<td>Intersection:</td>
</tr>
<tr>
<td>Client: City of XXX</td>
<td>Checked by:</td>
</tr>
<tr>
<td>Project Manager:</td>
<td>Reviewed by:</td>
</tr>
<tr>
<td></td>
<td>Approved by:</td>
</tr>
</tbody>
</table>

1. Intersection Phases

   Verified vehicle and pedestrian phases in use correspond to phases shown on the intersection diagram.

<table>
<thead>
<tr>
<th>Vehicular Phases</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initialization Status</td>
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<td></td>
<td></td>
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<tr>
<td>Pedestrian Phases</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Phasing Sequence

   Describe any non standard phasing sequence (non standard phasing orders, exclusive phases). List once only if phasing sequence does not change by time of day; otherwise list for each plan along with the description of the sequence and purpose of the non-standard sequence. Examples are lead/tag, phase omit by time of day, split phasing and exclusive pedestrian phases.

<table>
<thead>
<tr>
<th>Non Standard Sequence</th>
<th>Description</th>
<th>Plan</th>
<th>Purpose</th>
</tr>
</thead>
</table>
Part II - Field Tests

Local Intersection Timing Plan Checklist

- Project Number: Task Order XX
- Project Name: XX Road Signal Timing
- Client: City of XX
- Project Manager: 
- Intersection: ____________________________
- Checked by: ____________________________ Date: ________
- Reviewed by: ____________________________ Date: ________
- Approved by: ____________________________ Date: ________

1. Intersection Phases (Check box for phases in use)
   - Verified phases in use correspond to phases shown on intersection diagram and signal heads

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<tbody>
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<td>Vehicular Phases</td>
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<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Pedestrian Phases</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Basic Intersection Operations
   - 1. Verified all vehicular movements are detected by controller.
   - 2. Verified all vehicular phases are served and signal heads turned on in the correct sequence.
   - 3. Verified all pedestrian pushes are detected by controller.
   - 4. Verified the pedestrian signal heads are turned on (walk, flashing don't walk, and still don't walk) in the correct sequence.
   - 5. Set controller time clock to the correct date and time.
   - 6. For each test criteria, indicate whether the plan passes or fails the test criteria below in the corresponding boxes.
Delete Section 935 in its entirety and substitute the following:

### 935.1 General Description

Furnish, install, test, and provide warranty and training for fiber optic system equipment and materials as shown in the Contract documents.

#### 935.1.1 Definitions, Acronyms, and Abbreviations

##### A. Definitions

1. **Fiber Interconnect Cable**: A 12 or 24 fiber factory-connectorized cable from the splice tray to the back of the bulkhead connector panel.

2. **Fiber Pigtail Cable**: A single or multi-fiber factory-connectorized cable within a FPP.

3. **Fiber Patch Panel (FPP)/Fiber Distribution Unit (FDU)**: Provide fiber termination at field cabinets and hubs to provide network connectivity for ITS devices. FPPs are defined as providing 6 to 36 connectors or ports, and FDUs are larger providing 48 to 288 connectors or ports.

4. **Trunk Fiber**: A multi-fiber count fiber optic cable that provides the network interconnection and transport between field cabinets, hubs and the TMC and other buildings.

5. **Drop Fiber**: A smaller-strand count fiber optic cable that provides the interconnection of network equipment inside a field cabinet and/or a hub to the trunk or backbone fiber optic cable.

##### B. Acronyms and Abbreviations

Refer to Sections 101.01 and 940.1.01 for a list of acronyms, abbreviations, and common terminology used throughout the ITS specifications.

#### 935.1.2 Related References

##### A. GDOT Standard Specifications

1. Section 150–Traffic Control

2. Section 939–Communication and Electronic Equipment

3. Section 940–ITS General Requirements

##### B. Referenced Industry Standards and Documents

It is the Contractor's responsibility to utilize the standards, codes, manuals, and guidelines that apply to the work required to complete this Project.
Section 935—Fiber Optic System

Fiber optic system materials are to be consistent and compliant with the latest version or edition of the standards and industry practices as specified.

21. TIA-604-XX, “Fiber Optic Connector Intermateability Standards (FOCIS),” where XX specifies the fiber optic connector type (i.e., ST, LC, etc.), latest edition.

935.1.3 Submittals
Refer to Section 940.2.01 for submittal requirements. Requirements for materials and components are specified herein.
Section 935—Fiber Optic System

935.2 Materials

935.2.1 Fiber Cable and Optical Requirements
Provide outside plant (OSP), single-mode (SM) fiber optic cabling that is suitable for underground in conduit and aerial installation. Provide cable-related hardware, connectors, splice closures, fiber pigtail cables, fiber-interconnect cables, fiber patch panels, fiber distribution units, and any other ancillary and incidental materials required or needed to provide a complete fiber optic system.

A. General Requirements

1. Manufacture materials in an International Organization for Standardization (ISO) 9001-certified manufacturing facility that is regularly engaged in the production of the materials described in this section.

2. Use only fiber optic cables and components that are new (manufactured no more than one year prior to the Project Notice-to-Proceed), provided by one manufacturer, and from the same manufacturer production batch.

3. Provide standard products manufactured and distributed for a minimum of three years by the same manufacturer that is regularly engaged in the production of these materials.

4. Furnish only commercial off-the-shelf materials, equipment, and components.

5. Use the most stringent material requirement for this Contract if a conflict or difference exists between the specified industry standards listed in Section 935.1.02(B) and between the specified industry standards and these supplemental specifications. Notify and resolve with the Department or authority having jurisdiction of any such conflicts or differences prior to procurement of materials and components.

6. Use fiber optic cable that is splice-compatible with the Department’s existing G.652 SM fiber and requires no electronic equipment for dispersion compensation between new and existing fiber.

7. Provide SM fiber optic cables ranging from 6 strands to 288 strands depending on its location and function as listed in the Contract documents.

8. Provide cables that comply with National Electrical Code (NEC) Article 770.


B. Fiber Optical Requirements

1. Provide fiber optic cables that comply with ICEA S-87-640.

2. Provide fiber optic cables that comply with Telcordia GR-20-CORE.

3. Provide fiber optic cables that comply with RUS 7 CFR 1755.900, 901, and 902 (PE-90).

4. Provide fiber optic cables that comply with ITU-T G.652.D.


6. Provide fiber optic cables that comply with TIA 492-CAAB(OS2).

7. Ensure that fibers are 100 percent usable and meet the optical performance requirements when tested according to TIA 455:
   a. Provide a fiber section attenuation of ≤0.35 dB/km at 1310 nm with a variability of ≤0.03 dB/km between 1285 nm and 1330 nm. Tested according to Fiber Optic Test Procedure (FOTP)-78-B.
   b. Provide a fiber section attenuation of ≤0.25 dB/km at 1550 nm with a variability of ≤0.02 dB/km between 1525 nm and 1575 nm. Tested according to FOTP-78-B.
   c. Provide a mode field diameter of 9.2 µm ±0.4 µm at 1310 nm and 10.4 µm ±0.5 µm at 1550 nm. Tested according to FOTP-191-B.
Section 935—Fiber Optic System

8. Ensure uniform attenuation with no point discontinuities >0.05 dB at both 1310 nm and 1550 nm.

9. Provide a mechanically strippable, dual-layer, ultraviolet (UV) acrylate, color-coded protective coating.

C. Fiber Cable Construction Requirements

1. Provide OSP fiber optic cables with the following characteristics:
   a. Provide cable suitable for underground (i.e., in conduit) and aerial installation.
   b. Provide cable with a single jacket that is unarmored.
   c. Provide all-dielectric (no metal or electrically conductive) materials.
   d. Provide water-blocking materials that are gel-free, dry-type, non-nutritive to fungus, electrically non-conductive, and homogenous.
   e. Provide loose tube design that is SZ-stranded around an anti-buckling central strength member.
   f. Provide buffer tubes that contain 12 optical fibers placed inside each tube for cables 24 count and higher.
   g. Ensure that fibers and buffer tubes are color coded according to TIA-598-D.
      i. Ensure colors are stable during temperature cycling and aging.
      ii. Ensure colors do not fade or smear onto each other.

2. Provide cable outer jacket or sheath meeting the following minimum requirements:
   a. Provide a minimum medium-density polyethylene black outer jacket as defined by ASTM D1248, Type II, Class C, Category 4 or 5 and Grades J4, E7, and E8.
   b. Provide a track-resistant polyethylene black outer jacket if the fiber optic cable is installed in an aerial application and the space potential is >12 kV.
   c. Provide jacket that is smooth; concentric; free from holes; consistent thickness; free of splits, blisters, and any other surface flaws; and contains carbon black to provide UV protection and prevent the growth of fungus.
   d. Provide a method to permit removal of the sheath.

3. Provide labeling for the fiber optic cable meeting the following minimum requirements:
   a. Cable Print-line Labeling: Label fiber cables using the following template, unless otherwise listed in the Contract:
      i. Manufacturer's name – Optical Cable – Year – Telecommunication Handset Symbol – GA DOT – Description (which consists of XX SM, where XX denotes the fiber count).
      ii. Sequentially mark the cable length reflecting the distance from the cable origin point in English units every 2 ft (0.6 m). Ensure that the cable length markings are within 1 percent of the actual length of the cable.
      iii. Provide cable marking that is contrasting in color to the cable jacket. Marking font height shall be no less than 0.10 in (2.5 mm).
   b. Cable Marking: Cable marking will meet the following minimum requirements:
      i. Use 2.5 in (64 mm) wide, 4 in (100 mm) long, wrap-around type cable markers suitable for underground and aerial use.
      ii. Use UV-stabilized marker material and printing inks to provide an aerial durability of at least five years.
      iii. Print text in bold black type on orange or yellow PVC markers.
      iv. Fabricate markers from PVC base material with a minimum thickness of 0.015 in (0.38 mm).
Section 935—Fiber Optic System

v. Pre-print the following text, or alternate text shown in the Plans, legibly on markers used for the cables:

Cable ID: XXXXXXX
GA DOT
Optical Cable

Where XXXXXXX is the cable ID as defined in the Contract documents.

vi. Print the text specified above twice on every cable marker with the text of the second image reversed and abutting the first image in such a manner to ensure the text “reads right” when either short edge of the cable marker is held horizontally upright.

D. Cable Performance Requirements

1. Provide fiber optic cable that can operate over a temperature range of −30°F to +158°F (−34°C to +70°C) at a relative humidity of up to 95 percent condensing.

2. Provide fiber optic cable that has been tested in accordance with TIA-455 as shown in Table 1, resulting in no permanent change in attenuation, no signs of water leakage, no mechanical damage to the cable, and no adverse effects to the jacket or fibers. Upon the request of the Department, provide certification from an independent testing laboratory certifying the cable conforms to the following specifications and test procedures.

<table>
<thead>
<tr>
<th>ID</th>
<th>Parameter</th>
<th>Test Performed</th>
<th>Test Condition/Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bend Test (Low and High Temperature)</td>
<td>FOTP-37-A</td>
<td>Four full turns around mandrel of 20 times cable outer diameter at 4 hours of −22°F and +140°F (−30°C and +60°C)</td>
</tr>
<tr>
<td>2</td>
<td>Impact Resistance</td>
<td>FOTP-25-D</td>
<td>25 impact cycles (at 4.4 nm) at different points along the sample</td>
</tr>
<tr>
<td>3</td>
<td>Compressive Strength (Crush Resistance)</td>
<td>FOTP-41-A</td>
<td>125 lb/in (220 Newton/cm) (short)</td>
</tr>
<tr>
<td>4</td>
<td>Tensile and Fiber Strain (Macro-bending)</td>
<td>FOTP-33-B</td>
<td>Maximum 600 lb (2,700 Newton) – during tensile load, Maximum 180 lb (800 Newton) – without tensile load</td>
</tr>
<tr>
<td>5</td>
<td>Cable Twist-Bend</td>
<td>FOTP-85-A</td>
<td>10 cycles ±180 degrees of mechanical twisting</td>
</tr>
<tr>
<td>6</td>
<td>Cable Cyclic Flexing</td>
<td>FOTP-104-B</td>
<td>25 times mechanical flexing cycles around a sheave of 20 times cable outer diameter</td>
</tr>
<tr>
<td>7</td>
<td>Temperature-Humidity Cycling</td>
<td>FOTP-3-B</td>
<td>Minus 40°F to +158°F (−40°C to +70°C)</td>
</tr>
<tr>
<td>8</td>
<td>Water (Fluid) Penetration</td>
<td>FOTP-82-B</td>
<td>1 m static head for 1 hour</td>
</tr>
<tr>
<td>9</td>
<td>Cable Freezing</td>
<td>FOTP-98</td>
<td>Frozen on ice</td>
</tr>
</tbody>
</table>

Testing requirements that apply to aerial fiber optic cable

<table>
<thead>
<tr>
<th>ID</th>
<th>Parameter</th>
<th>Test Condition/Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High Frequency (Aeolian) Vibration</td>
<td>IEEE P1222</td>
</tr>
<tr>
<td>2</td>
<td>Low Frequency (Galloping) Vibration</td>
<td>IEEE P1222</td>
</tr>
</tbody>
</table>

E. Aerial Cable Lashing Materials Requirements

1. Provide minimum 0.038 in (0.96 mm) diameter lashing wire to attach aerial fiber optic cable to the messenger or strand.

2. Provide lashing wire, attachment, and mounting hardware with sufficient tensile strength for the application and meeting the requirements of ASTM F593 and ASTM F594 for corrosion resistance.
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3. Use Type 302 stainless steel lashing materials in non-coastal regions and Type 316 along coastal regions (within 5 miles of the coast line).

F. Aerial Snowshoe Storage Requirements

1. Provide a factory-manufactured UV-stabilized snowshoe fiber storage unit that is designed to store excess or slack fiber optic cable or fiber optic cable and a splice closure in the span.

2. Provide fiber optic snowshoe that is constructed with plastic or aluminum bodies that maintain the minimum cable bend radius and have integral cable lashing strap slots or holes to secure cable attachments to the storage bracket.

3. Provide galvanized or stainless steel hanging and attachment hardware (bolts, nuts, washers) and strand clamps for attachment to messenger or strand according to ASTM A135 and B695.

4. Provide cable protection bracket that minimizes cable abrasion and organizes cable against the pole.

5. Provide side facing channel to minimize ice and leaf loading.

G. Fiber Patch Cord Requirements

1. Provide the same glass type and performance requirements as the manufacturer of the backbone and drop fiber optic cable provided in this Contract.

2. Provide factory pre-assembled, riser-rated, factory-tested, pre-terminated duplex patch cords with two fibers with connectors as described in Section 935.2.03(A) on each end.

3. Ensure patch cords meet UL94-VO flammability requirements.

4. Provide lengths as listed in the Contract with a minimum of 1 ft (30 cm) slack between connected equipment.

5. Ensure that the optical fiber within the body of fiber optic connectors is mechanically isolated from cable tension, bending, and twisting.

6. Provide an outer jacket and a connector boot and housing color as directed by the Department.

7. Label duplex patch cords to distinguish between the two zip legs of the duplex cord as approved by the Department.

8. Provide protective dust caps on the connector ferrules.

9. Ensure no splices of any type are within a patch cord assembly.

10. Provide qualification or certification data from the manufacturer upon request by the Department.

11. Package each assembly individually within a plastic bag and clearly mark on the outside of that bag the submitted manufacturer's part number.

935.2.2 Fiber Optic Connection Hardware Requirements

Ensure that splice closures, organizers, cable end preparation tools, and procedures are compatible with the fiber optic cable and are approved by the Department.

A. Fiber Optic Splice Closure Requirements

1. House optical fiber splices within a fiber optic splice closure, complete with fiber splice and buffer organizer assembly, dome, grommets, end plate, mounting hardware and bracket, cable restraint hardware, buffer tube storage, splice protection, sealant materials, and any other materials and components needed to provide a sealed fiber splice closure installation.

2. Provide splice closures that are stand-alone and be from the same manufacturer and type.

3. Use splice closures that are either “cylindrical” or “rectangular dome” type with cable entries at one end only and sealed one-piece high-density black polyethylene (thermoplastic) dome bodies.
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4. Ensure splice closures comply with Telcordia GR-771-CORE.

5. Use only RUS-listed splice closures.

6. For splice closures up to 144 splices as shown on the Contract documents meet the following minimum configuration requirements:
   a. Splice Capacity (maximum): 144 splices, single fusion
   b. Cable Entrance Configuration: Butt
   c. Cable Entries Supported (maximum): up to 4 cables at 0.75 in each
   d. Express Capacity (maximum): 16 express buffers (when configured for 144 splices)
   e. Physical Dimension (typical): 6 in to 22 in

7. For splice closures between 144 and 288 splices as shown on the Contract documents meet the following minimum configuration requirements:
   a. Splice Capacity (maximum): 288 splices, single fusion
   b. Cable Entrance Configuration: Butt
   c. Cable Entries Supported (maximum): up to 5 cables at 0.75 in each + 1 cable at 1.0 in each
   d. Express Capacity (maximum): 36 express buffers (when configured for 288 splices)
   e. Physical Dimension (typical): 8 in to 28 in

8. Port Sealing Method: Provide a flexible thermoplastic compression seal grommet for each pre-template cable port that matches the required number and size of cables coming in and out of the splice closure without jeopardizing the waterproof characteristics of the splice closure.

9. Hermetically seal closures to protect fiber, splices, and internal components from water entry without the use of an encapsulate, including being submerged in standing water.

10. Ensure spliced closure is sealed from insects, rodent proof, airtight, crush resistant, chemical-resistant, and corrosion resistant.

11. Provide an external pressurization air value or port for flash testing the splice closure.

12. Provide fiber organizers and splice trays that organize fiber buffers, protect fiber splices and provide fiber and buffer slack storage.

13. Provide splice closures that can be re-entered and re-sealed using no special tools, reusable sealing materials (grommets, O-rings, etc.) allowing multiple re-entries without removal of any component and without disruption to the surrounding cables.

14. Provide splice closures that are suitable for mounting on the inside wall of an underground buried electrical communications box (ECB), pull box, or aerial messenger or strand as listed in the Contract documents.

15. Use corrosion-resistant or stainless steel mounting brackets and hardware.

16. Aerial Installation: In addition to the above requirements the closure shall meet the following minimum requirements:
   a. Provide universal mounting bracket with features to permit aerial strand mounting with strand clamps or as approved by the Department.
   b. Provide a design that eliminates the need for drip collars and sealing collars.
   c. Package the closure with all necessary hardware for aerial mounting.
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B. Fiber Splice Tray Requirements

1. Hold each fiber strand and buffer tube in the tray so that no stress or tensile force is placed on completed and finished fusion splices within the tray.
2. Loop individual fibers one full turn within the splice tray to avoid microbending.
3. Maintain minimum bend radius of fiber at all times.
4. Provide slack storage for exposed fibers and buffer tubes to prevent damage to fibers.
5. Ensure that splice trays include a cover with a locking mechanism to hold it in place.
6. Provide access to individual fibers without disrupting other fibers in the tray.
7. Ensure the fiber can be visually inspected.
8. Package and protect each fusion-spliced fiber housed within the splice tray with a minimum 1.5 in (40 mm) reinforced, heat shrink, and waterproof sleeve.

935.2.3 Fiber Optic Cable Termination Requirements

A. Fiber Optic Connector Requirements

1. Provide certified Lucent Connector (LC) fiber optic connectors for Small Form-Factor Pluggable (SFP) optical transceivers.
2. Provide only Straight Tip (ST)-compatible, ceramic-insert couplers where barrel couplers are used in passive termination applications such as FPPs and FDUs.
3. Ensure connectors comply with TIA-568-B.3.
4. Ensure connectors comply with TIA-604-10B (Type LC) and TIA-604-2B (Type ST) intermateability requirements.
5. Test connectors according to Telcordia GR-326-CORE.
6. Provide ceramic ferrule ultra-polish connectors (UPC) that are polished.
7. Mechanically isolate the optical fiber within the body of connectors from cable tension, bending, and twisting.
8. Ensure that connectors are factory-assembled and tested. No field installed connectors are permitted.
9. Provide unmated connectors with protective dust caps installed. Provide dust caps for both sides of couplers at all times until permanent connector installation.
10. Provide industry standard approved connector for SM optical fiber that meets or exceeds the applicable provisions of TIA-455-X related to fiber optic connectors and interfaces and meets the following requirements:
   a. Operating temperate range of −40°F to +167°F (−40°C to +75°C).
   c. Insertion loss of ≤0.25 dB (typical) and ≤0.5 dB (maximum).
   d. Return loss (back reflection) ≤−55 dB (UPC).
   e. Mating durability ≤0.2 dB (typical) change, 500 mating cycles.

B. Fiber Patch Panel (FPP) and Fiber Distribution Unit (FDU) Requirements

1. Provide FPPs (6 to 36 connectors) and FDUs (48 to 288 connectors) that meet the requirements as presented in this section.
2. Ensure FPPs and FDUs comply with TIA-310-D standard 19-in rack-mounted or wall or panel-mounted installation.
3. For 6 to 36 connectors, use FPP and FDU enclosures that integrate the splice trays and connector modules into one compartment within one enclosure. For 48 connectors and larger, use FDU enclosures as one integrated
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compartment or house the splice trays and connector modules in separate compartments integrated into one enclosure.

4. Provide splice trays for storing the number of fusion splices as listed in the Contract documents.

5. Ensure FPPs and FDUs meet UL94-VO flammability requirements.

6. Provide wire management system at every FPP and FDU location for fiber cables and patch cords.

7. Provide access to fiber splicing trays and fiber termination couplers.
   a. Provide access from the front or rear with removable, fold-down or swing-out doors, drawers, and covers.
   b. Provide physical protection when doors, drawers, and covers are in the closed position and completely enclose fiber splicing trays, fiber pigtails, and fiber termination couplers.
   c. Provide storage space to house and protect the number of splice trays required to splice and terminate the fibers.
   d. Provide rubber grommets or similar material to prevent the cable from coming in contact with bare metal.
   e. Provide radius guides and strain relief for the incoming fiber optic cable(s) to maintain bend radius and protect the fibers.
   f. Provide bulkhead-mounted, termination coupling connectors that include locknuts for mounting the connectors in predrilled or punched holes in the connector panel.
   g. Provide bulkhead-mounted coupling connectors with dust caps.

8. Provide fiber interconnect cables and fiber pigtail cables meeting the following minimum requirements:
   a. Provide 12-fiber fiber interconnect cables for FDU’s with 12-splice capacity trays, and 24-fiber interconnect cables with FDU’s with 24-splice capacity trays.
   b. Use fiber-interconnect cables for FPP’s with splice trays (for 48 to 288 fiber OSP cables).
   c. Provide single fiber pigtail cables for FPP’s without splice trays (for 6 to 36 fiber OSP cables) that meet the requirements as presented in this section.
   d. Provide cables with factory installed connectors in accordance with Subsection 935.2.03(A).
   e. Provide cables with 900 micron tubing or 0.12 in (3 mm) fan out tubing as required for the application.
   f. Use fiber pigtail cables with 900 micron tubing only when fully enclosed within the FPP from splice tray to the back of the bulkhead connector panel.
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935.3 Construction Requirements

Ensure that construction and installation for the fiber optic cabling and components comply with the fiber optic cable manufacturers’ installation procedures and guidelines and follows the Project Fiber Optic Installation Plan as specified herein.

935.3.1 Contractor Experience and Qualifications

1. Provide the following documentation
   a. Provide three current client references for projects that were performed by the Contractor and/or sub-contractor for the installation of fiber optic cables, including fusion splicing, terminating, and testing of SM fiber optic cable.
   b. Proof of staff certification by the equipment manufacturer as being training and proficient for use of the equipment.
   c. Proof that splicing personnel have been trained for the fusion splicing and possess a fiber optic splicing certification from an industry recognized authority such as International Municipal Signal Association (IMSA) or Electronics Technicians Association (ETA).
   d. Evidence that the technical staff who will perform the fiber optic work have a minimum of three years of similar outside plant (OSP) project experience and proficient with state-of-the-art fiber optic fusion splicers, Optical Time Domain Reflectometers (OTDR), optical power meters, and other fiber test diagnostic equipment and tools as required on this Project.
   e. Evidence that the directional boring staff, including the drilling supervisor, have experience in similar installs and conditions.

2. Ensure the drilling supervisor is in direct charge and control of the directional boring operation at all times.

3. Provide credentials and experience of the directional boring drilling supervisor and other drilling field staff. The Department reserves the right to request replacement of said individual if they do not have sufficient experience prior to the start of any directional drilling.

935.3.2 Construction Requirements

A. Cable Installation Procedures and Standards

1. Fiber Installation Plan:
   a. Develop a Fiber Installation Plan for review and approval by the Department prior to fiber optic cable installation, splicing, and termination work on this Project. Include at a minimum the following components:
      i. Fiber running path line (route). Where not specifically shown in the Contract documents, show proposed trunk fiber and existing fiber (if any) to identify trunk to trunk fiber splice points, coordination of fiber allocation and associated splice details, and as-built drawings of the complete fiber system.
      ii. The vendor and part numbers for proposed materials and equipment, i.e., fiber optic trunk and drop cables, splice closures and splice trays, splicer equipment, fiber patch panels, connectors and other materials required or needed.
      iii. Location of fiber drop cables and proposed splice locations.
      iv. Location of fiber terminations.
      v. Fiber splice details for each location, showing buffer/strand utilization and allocation plan.

2. Safety Requirements: Follow OSHA and industry standards related to safety when working in manholes or underground vaults and when handling optical fibers.
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3. Fiber Cable Shipping and Storage:
   a. Assume full responsibility for any cable/fiber damage that occurs during shipment.
   b. Pack the cable and wrap in weather and temperature resistant covering to prevent damage during shipment, to facilitate unloading, and to allow for outdoor storage as approved by the Department.

B. Cable Installation Guidelines:

1. Before the installation begins, inspect the cable reels for imperfections such as nails that might cause damage to the cable as it is unreeled.
2. Whenever unreeled cable is placed on the pavement or surface above a manhole, provide means of preventing vehicular or pedestrian traffic through the area in accordance with Section 150.
3. Cable Handling: Comply with the manufacturer’s recommended procedures and these specifications.
4. Pulling Tension: Comply with the maximum recommended pulling tension during installation as specified by the cable manufacturer.
5. Allowable Bend Radius: Comply with the minimum recommended bend radius during installation as specified by the cable manufacturer. Unless the manufacturer’s recommendations are more stringent, use the following guidelines for minimum bend radius:
   a. 20 times the outside cable diameter for short term (during installation)
   b. 10 times the outside cable diameter for long term (installed)
6. Cable Monitoring: Submit the method of monitoring cable stress during installation to the Department for review and approval. Ensure allowable pulling tension is the lesser of either of the two values below:
   a. The cable manufacturer’s recommended pulling tension from the outer jacket for the cable.
   b. 80 percent of the cable manufacturer’s maximum pulling tension from the outer jacket.
7. When using lubricants, comply with the cable manufacturer’s recommendations for type, amount, application tools and method, and removal of the lubricant from the exposed cable. Pre-lubrication of cable is acceptable to provide uniform lubrication.
8. Use rollers and sheaves for difficult pulls to eliminate damage when entering and existing the conduit system.
9. During the installation of the fiber cable, record as-built fiber cable footage at riser locations, hand-holes, and slack storage locations.
10. Where messenger cable is required, as shown in the Contract documents, lash aerial fiber optic cable to a steel strand wire messenger cable of the size specified in the Contract documents that conforms to Section 915.02.
11. Installation Methods: Ensure fiber cable installation method selected meets the following requirements:
   a. If pulling is utilized on this Project:
      i. Install the fiber optic cable by hand and/or by using a mechanical pulling machine.
      ii. If a mechanical pulling machine is used, equip the machine with a monitored or recording tension meter. Ensure that at no time the manufacturer’s recommended maximum pulling tension is exceeded.
      iii. Ensure that the central strength member and aramid yarn are attached directly to the pulling eye during cable pulling. Use pulling attachments, such as “basket grip” or “Chinese finger” type, so that the optical and mechanical characteristics are not degraded during the fiber optic cable installation.
      iv. Ensure that excess cable is coiled in a figure eight and fed manually when pulling through pull boxes by hand.
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v. If rollers, pulleys, and sheaves will be used to mechanically pull through pull boxes and splice boxes, provide a drawing of the proposed layout showing that the cable shall never be pulled through a radius less than the manufacturer’s minimum bend radius.

vi. Use large diameter wheels, pulling sheaves, and cable guides to maintain the bend radius. Provide tension monitoring at all times during the pulling operation.

vii. Ensure that cable pulling lubricant used during installation is recommended by the optical fiber cable manufacturer.

viii. Provide a continuous section of cable throughout the pull. Cable breaks are allowed only at designated splice points.

b. If air assisted/blowing is utilized on this Project:

i. Use either the high-airspeed blowing (HASB) method or the Piston method.

ii. When using the HASB method, ensure that the volume of air passing through the conduit does not exceed 600 cubic feet per minute or the conduit manufacturer’s recommended air volume, whichever is more restrictive.

iii. In cold temperatures, an air dryer accessory is recommended to avoid introducing water condensation into the HASB air inlet chamber or conduit/duct system. Condensation may result in frost. In hot temperatures, an air cooler is recommended to avoid excessive temperatures at the conduit/duct and cable.

iv. When using the Piston method, comply with the conduit manufacturer’s recommended air volume or limit to 300 cubic feet per minute, whoever is less.

C. Cable End Sealing:

1. Where a cable ends without termination in a fiber optic closure, seal the end of the cable by reusing a cable end cap shipped with a cable reel, or use a cap that is size-matched to the cable to be sealed.

2. Clean the end of the cable. Partly fill the cap with a waterproof silicone adhesive sealant and press the cap fully onto the cable end, rotating the cap to fully encapsulate the cable end with the sealant in the cap.

3. Apply a full sealant bead between the end of the cap and the cable jacket.

D. Cable Slack Storage

1. At designated intervals throughout the cable plant, pull and store excess cable for slack for future terminations or splicing.

2. Store cable slack to minimize susceptibility to damage.

3. Communication and Pull Boxes: Store the excess or slack cable in the pull box or communication box in accordance with the Contract documents.

4. Aerial Installations:

a. Where messenger strand or cable is required, as shown in the Contract documents, lash aerial fiber optic cable to a steel strand wire messenger cable of the size specified in the Contract documents that conforms to Section 915.02.

b. Store the excess or slack cable at storage loops in a “bow tie” configuration on the messenger strand using two fiber optic snowshoes (aerial fiber cable storage brackets) that maintain the proper bend radius in the fiber cable.

c. Install one fiber optic snowshoe for drop cable and trunk cable storage at aerial splice closures to maintain the bend radius in the fiber optic cable.
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5. **Minimum Cable Slack Storage Requirements – Underground:** Unless otherwise noted on the Contract documents, meet the following requirements for cable storage for underground applications:

a. Pull Box Types 4, 4S, 5, 5S, 6, and 7: Apply the following storage requirements for the indicated cable/splice closure situations.

   i. Drop cable with no splice closure: 10 ft (3 m).

   ii. One or more trunk cables with no splice closure: 110 ft (34 m) of each cable.

   iii. Two or more trunk cables with one splice closure: store 55 ft (17 m) of each trunk cable so that the splice closure can be removed from the pull box approximately 55 ft (17 m). If a drop cable is spliced to the trunk cable at this point, store 55 ft (17 m) of each drop cable.

   iv. One trunk cable with one splice closure: 110 ft (34 m). Install splice closure in the center of the 110 ft (34 m) cable loop, so that the splice closure can be removed from the ECB approximately 55 ft (15 m). If a drop cable is spliced to the trunk cable at this point, store 55 ft (17 m) of each drop cable.

   v. One trunk cable with one splice closure and trunk cable ends: 95 ft (30 m). Install splice closure on the trunk cable at 55 ft (17 m) from the ECB on the trunk cable. If a drop cable(s) is spliced to the trunk cable at this point, store 55 ft (17 m) of each drop cable.

   vi. Trunk cable ends with no closure: 95 ft (30 m).

c. Hub Building (interior): Do not store slack cable inside the hub building.

d. Hub Building (exterior adjacent ECBs): 180 ft (55 m).

e. Traffic Control Center & Transportation Management Center (OSP splice vault): 180 ft (55 m).

f. Traffic Control Center & Transportation Management Center (ISP at equipment room): cable entrance to distribution panel bay plus 20 ft (6 m).

g. Electrical Communication Box (ECB) Types 3, 4, 5, and 6: Apply the following storage requirements for the indicated cable/closure situations. More than one situation may occur in a single ECB, in which case apply each requirement

   i. Trunk cable with no splice closure: 110 ft (34 m).

   ii. Trunk cable with one splice closure: 110 ft (34 m). Measure the storage amount from the top of the ECB manhole opening. Install closure in the center of the 110 ft (34 m) cable loop, so that the splice closure can be removed from the ECB approximately 55 ft (17 m). If a drop cable(s) is spliced to the trunk cable at this point, store 55 ft (17 m) of each drop cable.

   iii. Trunk cable with one splice closure and trunk cable ends: 95 ft (30 m). Install closure at 55 ft (17 m) from the ECB on the trunk cable. If a drop cable(s) is spliced to the trunk cable at this point, store 55 ft (17 m) of each drop cable.

   iv. Trunk cable ends with no closure: 95 ft (30 m).

6. **Minimum Cable Storage Requirements – Aerial Applications:** Unless otherwise noted on the Contract documents, the following are the minimum requirements for cable storage for aerial applications.

a. Install a minimum 150 ft (45 m) storage loop approximately one-half the distance between every equipment drop or as shown in the Contract documents.

b. Where equipment drops are >1000 ft (300 m) apart, install a minimum 150 ft (45 m) storage loop for every 1000 ft (300 m) of uninterrupted cable length.

c. At aerial splice closures, install 75 ft (23 m) of drop cable storage and 150 ft (45 m) of trunk cable storage, unless otherwise noted in the Contract documents, to allow the fully assembled splice closure, including the trunk cable and drop cable, to be lowered to ground level for maintenance purposes.
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E. Cable Splicing

1. Splice together each individual reel of fiber optic cable to provide the continuous length of installed cable.
2. Splice cable only at splice points shown in the Contract documents.
3. Make no splices within a fiber patch cable assembly or fiber drop cable.
4. Fusion Splicing: Use the fusion technique for splices and terminations. Use a fusion splicing machine (fusion splicer) to splice optical fiber. Mechanical splicing is not allowed.
5. Splice Equipment and Preparation:
   a. Ensure fusion splicing equipment is supported with calibration records indicating a factory calibration within three months preceding their use on this Project.
   b. Clean and calibrate fusion splicing equipment per the manufacturer’s specifications, and specifically adjust the fiber and environmental conditions at the start of each splicing shift.

Splicing: Comply with the cable manufacturer’s and fusion splicer’s procedures, accepted standards, codes, and practices. Do not install mechanical splices.

6. Splice Loss:
   a. Splice optical fibers using the fusion splice method and ensure the mean (average) splice loss does not exceed 0.1 dB for new fiber to new fiber and 0.3 dB (per TIA-568.3-D) for new fiber to existing (legacy) fiber.
   b. Obtain the mean splice loss by measuring the loss through the splice in both directions and then averaging the resultant values.

7. Splice Protection:
   a. Protect fusion splices in splice trays or organizers in a splice closure or enclosure.
   b. Provide the splice with strain relief and protection of the stripped fiber splice in a manner recommended by the splice tray or organizer manufacturer. Use splice types compatible with the tray design.
   c. Protect fusion splices with a heat shrink tubing that protects the splice and extends over the fiber coating.
   d. Do not leave bare fiber exposed.

F. Mid Span/Drop Access

1. At points where mid span/drop access is required, keep fibers intact except those being accessed for the equipment drop.
2. Use a suitable tool for removing fibers from the buffer tube to prevent damage to the fibers remaining intact.

G. Connector Termination Procedures

Comply with procedures for the termination of the connectors as required by the connector manufacturer’s fiber optic installation standard operating procedure (FOSOP) for the field installation.

H. Cable Marking Installation

1. Clean the installed cable of dirt and grease before applying any marker.
2. Follow the marker manufacturer’s recommended procedure for applying cable markers.
3. Mark cables in or at every Hub, ECB, pull box, hand-hole, field cabinet, aerial or underground splice closure, pole attachment, aerial storage bracket, and pole conduit riser entrance.
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4. At every trunk cable termination, reel end-to-reel end splice, ECB, pull box, hand-hole, field cabinet, aerial splice closure, and aerial storage bracket, record the cable distance markings from the print-line for the cable entry and exit, along with the exact location by station number or location name.

5. Record the cable distance markings in a tabular format approved by the Department or on a documentation form provided by the Department.

6. Place cable markers in the following locations:
   a. Within 18 in (460 mm) of every cable entry to a pull box, hand-hole, ECB, and Hub building
   b. Within 6 in (150 mm) of every cable entry or termination in a field cabinet
   c. Within 18 in (460 mm) of every splice closure at cable entry points
   d. Within 6 in (150 mm) of every FPP/FDU or splice cabinet in a Hub building in which a cable terminates or enters
   e. Every 20 ft (6 m) for the length of a cable in maintenance coils in ECBs or pull boxes
   f. Within 12 in (0.30 m) of every pole attachment, aerial storage bracket, and pole conduit riser entrance

7. Use orange markers at all locations, except as noted below:
   a. Where a trunk cable enters and leaves a closure (mid-span cable entry or end-to-end splice), use orange markers for one leg of the trunk cable and yellow for the other leg, placing corresponding color labels at the closure end of a leg and at the conduit entrance (underground installation) or span attachment (aerial installation).
   b. Where two drop cables terminate in a closure, use orange markers for one drop cable and yellow markers for the other drop cable, throughout the drop cable’s length to its other termination.

I. Splice Closures
   1. Install splice closures according to manufacturers’ recommendations.
   2. Install splice closures where shown in the Contract documents and in the approximate center of fiber cable storage coils.
   3. Securely mount splice closures in ECBs or pull boxes to cable rack hooks or mounting brackets.

J. Fiber Patch Panel (FPP)/Fiber Distribution Unit (FDU)
   1. Do not install mechanical splices or field installed connectors.
   2. Equip unused panel slots with blank panels.
   3. Provide inter-cabinet and inter-bay bend radius and jumper management on each side of the FDU.
   4. Install hardware according to the manufacturer’s recommended procedures and Department standards.
   5. Determine specific hardware sizing from the Contract documents.
   6. For rack-mount and wall-mount FPPs/FDUs, array connectors in a vertical pattern with number one being at the top left position.
   7. Route and secure the drop cable beside or behind the cabinet side panel such that it is fully strain-relieved, does not violate the manufacturers’ recommended bending radius, and does not interfere with the operation of or access to any field cabinet equipment or electrical components.

935.3.3 Equipment Configuration and Integration Requirements

Not Applicable
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935.3.4 Testing Requirements
Refer to Section 940.2.04 for fiber optic system testing requirements.

935.3.5 Training Requirements
Refer to Section 940.2.05 for fiber optic system training requirements.

935.3.6 Warranty and Maintenance Support Services

A. Warranty Requirements:
1. Ensure that the fiber optic system including fiber optic cable and associated components and materials defined herein furnished, installed, and tested have a manufacturer’s warranty (usual and customary). Include in warranty and support, contractor or manufacturer activities related to maintenance, removal, and replacement of parts and materials during the period of support.
2. Provide a minimum warranty length of two years for fiber optic cable and associated components installed.
3. If the manufacturer’s warranties for the components are for a longer period, those longer period warranties shall apply.
4. Ensure warranty periods begin on the date of maintenance acceptance by the Department.
5. Ensure that the manufacturer’s warranties are continuous throughout the period and are fully transferable from the Contractor to the Department and any maintenance consultant/contractor.
6. Provide maintenance support services and make any replacements required during the warranty period without additional charge for labor, equipment, parts, shipping, and other materials required. Support system components notwithstanding any supplier’s warranties whether written or implied.

B. Maintenance Support Services:
Refer to Section 940.2.06 for fiber optic system maintenance support services requirements.

935.3.7 Project Close-Out Requirements
Refer to Section 940.2.07 for fiber optic system project close-out requirements.
Section 935—Fiber Optic System

935.4 Measurement

The fiber optic system and training complete, in place, accepted, and of the kind, size, and type specified is measured as follows:

A. **Outside Plant Fiber Optic Cable – Trunk/Backbone & Drop**

   Item No. 935-1111 to 1119 – OSP Fiber Optic Cable, Single Mode, X-fiber (LF)

   OSP SM fiber optic cabling shall be measured in units of actual linear feet and paid for at the contract price per linear feet, including cable slack. The price bid shall include the length in feet of actual cable installed as measured from the cable sequential length markings, cable labels, aerial snowshoes for storage (aerial segments), ancillary and incidental materials, documentation, and labor and equipment necessary to complete the work. No measurement for payment shall be made for cable storage amounts in excess of that required in the Project Plans, Details, and Special Provisions. This price shall be full compensation for labor, tools, materials, equipment, and incidentals necessary to complete the work.

B. **Fiber Optic Closures**

   Item No. 935-4101 to 4109 – Fiber Optic Closure, Underground, X Splices (EA)
   
   Item No. 935-4201 to 4209 – Fiber Optic Closure, Aerial (Sealed), X Splices (EA)
   
   Item No. 935-4401 to 4409 – Fiber Optic Closure, FPP/FDU Rack Mount, X Ports (EA)
   
   Item No. 935-4501 to 4505 – Fiber Optic Closure, FPP/FDU Wall Mount, X Ports (EA)

   Underground splice closures, aerial splice closures, FPPs, and FDUs shall be measured for payment by the number of units installed, complete, functional, and accepted. The price bid shall include, but not be limited to, cable labels, splice trays, mounting hardware within the pull box, on the messenger strand, rack and wall mounting hardware, ancillary and incidental materials, testing, documentation, and labor and equipment necessary to complete the work. This price shall be full compensation for labor, tools, materials, equipment, and incidentals necessary to complete the work.

C. **Fiber Optic Splice, Fusion**

   Item No. 935-4010 – Fiber Optic Splice (EA)

   Fiber optic fusion splices shall be measured for payment by the number of splices made, complete, and accepted. Fiber optic splices associated with the use of factory-connectorized pigtails, in accordance with Subsection 935.2.03, shall not be measured separately for payment. The price bid shall include, but not be limited to, ancillary and incidental materials, testing, documentation, and labor and equipment necessary to complete the work. This price shall be full compensation for labor, tools, materials, equipment, and incidentals necessary to complete the work.

D. **Fiber Patch Cable**

   Item No. 935-5050 – Fiber Patch Cable, SM (EA)

   Fiber patch cable shall be measured in units of each and paid for at the contract price per each. The price bid shall include, but not be limited to, ancillary and incidental materials, testing, documentation, and labor and equipment necessary to complete the work. This price shall be full compensation for labor, tools, materials, equipment, and incidentals necessary to complete the work.

E. **Fiber Pigtail Cable**

   Item No. 935-0330 – Fiber Pigtail Cable (EA)

F. **Fiber Interconnect Cable**

   Item No. 935-0335 – Fiber Interconnect Cable (EA)
Section 935—Fiber Optic System

G. Fiber Optic Connector

Item No. 935-5030 – Fiber Optic Connector, SM (ST Only) (EA)

H. Training

Item No. 935-8500 – Training (Lump Sum)

Training is measured as a lump sum for supplies, equipment, materials, handouts, travel, and subsistence necessary to conduct the training.

Measurement Notes:

Submittal

Submittal requirements are included in Section 940 and shall not be paid for separately and shall be considered as incidental to the fiber optic system pay item.

Testing

Testing requirements are included in Section 940 and shall not be paid for separately and shall be considered as incidental to the fiber optic system pay item.

Labeling

Labeling is included in the quantities of other pay items and shall not be measured separately for payment.

Fiber Optic Snowshoes

Fiber optic snowshoes are included in the aerial fiber optic cable quantities and shall not be measured separately for payment.

935.5 Payment

935.5.1 Fiber Optic System

Outside fiber optic cable, splice closures, splices, FDU interconnect cables, fiber pig tails, fiber patch cables, and fiber optic connectors shall be paid for at the Contract Unit Price for the various items. Other required items including testing, fiber optic snowshoes, labeling, and other ancillary items for a completed fiber optic system are included as part of the below pay items. No separate payment shall be made for these items.

The Department will pay 50 percent of the total Contract bid amount for properly stored fiber cable and associated materials. The Department will pay 50 percent of the total Contract bid amount upon installation and testing of the fiber optic cable plant including all terminations. The total sum of all payments cannot exceed the original Contract amount for this item.

Payment for fiber optic system is made under:

<table>
<thead>
<tr>
<th>Item No. 935</th>
<th>Outside Plant Fiber Optic Cable, SM, X-fiber</th>
<th>Linear Feet (Linear Meter)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item No. 935</td>
<td>Fiber Optic Closure, Underground, X-splice</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 935</td>
<td>Fiber Optic Closure, Aerial, X-splice</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 935</td>
<td>Fiber Optic Closure, FPP/FDU, Rackmount, X-port</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 935</td>
<td>Fiber Optic Closure, FPP/FDU, Wall mount, X-port</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 935</td>
<td>Fiber Optic Splice</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 935</td>
<td>Fiber Patch Cable</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 935</td>
<td>Fiber Pigtail Cable</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 935</td>
<td>Fiber Interconnect Cable</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 935</td>
<td>Fiber Optic Connector</td>
<td>Per each</td>
</tr>
</tbody>
</table>
Section 935—Fiber Optic System

935.5.2 Training

The Department will pay 25 percent of the total contract bid amount for training upon approval of the Training Plan. The Department will pay the remaining 75 percent after completion of training described in Section 940.2.05. The total sum of payments cannot exceed the original contract amount for this item.

Payment for training is made under:

<table>
<thead>
<tr>
<th>Item No. 935</th>
<th>Training</th>
<th>Lump Sum</th>
</tr>
</thead>
</table>

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SUPPLEMENTAL SPECIFICATION

Section 936—Closed-Circuit Television (CCTV) Camera System

Delete Section 936 in its entirety and substitute the following:

936.1 General Description
Furnish, install, test, and provide training for closed circuit television (CCTV) field equipment and materials as shown in the Contract documents.

936.1.1 Definitions, Acronyms, and Abbreviations

A. Definitions
1. CCTV Camera System, Type 1 Internet Protocol (IP) Pan-Tilt-Zoom (PTZ), High Definition (HD), Dome Type Camera, Non-Pressurized
2. CCTV Camera System, Type 1P Same as Type 1 except Pressurized
3. CCTV Camera System, Type 2 IP PTZ, HD, Turret/Positioning Type Camera, Non-Pressurized
4. CCTV Camera System, Type 2P Same as Type 2 except Pressurized
5. CCTV Camera System, Type 3 IP Fixed, HD, Barrel or Box Type Camera, Non-Pressurized
6. CCTV Camera System, Type 3P Same as Type 3 except Pressurized

B. Acronyms and Abbreviations
Refer to Sections 101.01 and 940.1.01 for a list of acronyms, abbreviations, and common terminology used throughout the ITS specifications.

936.1.2 Related References

A. GDOT Standard Specifications
1. Section 150–Traffic Control
2. Section 639–Strain Poles for Overhead Sign and Signal Assemblies
3. Section 647–Traffic Signal Installation
4. Section 682–Electrical Wire, Cable, and Conduit
5. Section 694–Weather Monitoring and Reporting System
6. Section 922–Electrical Wire & Cable
7. Section 923–Electrical Conduit
8. Section 924–Miscellaneous Electrical Materials
Section 936—Closed-Circuit Television (CCTV) Camera System

9. Section 925—Traffic Signal Equipment
10. Section 926—Wireless Communications Equipment
11. Section 939—Communication and Electronic Equipment
12. Section 940—ITS General Requirements

B. Referenced Industry Standards and Documents

It is the Contractor's responsibility to utilize the standards, codes, manuals, and guidelines that apply to the work required to complete this Project.

All CCTV camera materials are to be consistent and compliant with the latest version or edition of the standards and industry practices as specified.

4. American Society of Civil Engineers (ASCE) 7, Minimum Design Loads and Associated Criteria for Buildings and Other Structures.
12. NTCIP 1205, “National Transportation Communications for ITS Protocol Object Definitions for CCTV Camera Control v01.08,” latest edition.
Section 936—Closed-Circuit Television (CCTV) Camera System

936.1.3 Submittals
Refer to Section 940.2.02 for submittal requirements. Requirements for materials and components are specified herein.

936.2 Materials

936.2.1 CCTV Camera System Requirements
Provide a CCTV camera system for outdoor use with internal video encoder, weather-tight camera casing or enclosure, outdoor-rated cabling, Power-over-Ethernet (PoE) injector for powering the IP camera, surge protection, mounting brackets and hardware, network patch cables, and any other ancillary and incidental materials required or needed to provide a complete CCTV camera system.

A. General Requirements
1. Manufacture in an International Organization for Standardization (ISO)-9001 certified manufacturing facility that is regularly engaged in the production of the materials described in this section.
2. Provide commercial-off-the-shelf only equipment and materials that are of new manufacture and previously unused.
3. Provide all equipment and materials of like kind and function of the exact same manufacturer, model, part number, revision, and firmware.
4. Use the most stringent material requirement for this Contract if a conflict or difference exists between the specified industry standards and practices listed in Section 936.1.02(B) and these minimum standard specifications. Notify and resolve with the Department or authority having jurisdiction (AHJ) of any such conflicts or differences prior to procurement of materials and components.
5. Support an open and published application programming interface or software development kit that provides the necessary information for integration of functionality into third party applications and the users’ central control system environment.

B. CCTV Camera Requirements
1. Image Sensor and Scanning: Provide a progressive scan digital complementary metal-oxide semiconductor (CMOS) or charge-coupled-device (CCD) image sensor.
2. Image Resolution: Support at a minimum the following resolutions.
   a. High Definition Television (HDTV) User-configurable 1080P (1920 x 1080) to 320 x 180 pixel array.
   b. HDTV User-configurable 720P (1280 x 720) to 320 x 180 pixel array.
3. Frame Rate: Allow user-configurable frame rates from 5 up to 30 frames per second (fps) with a default of 30fps.
4. Camera Format: Provide removable Infrared (IR)-cut filter, providing day (color) and night (monochromatic) functionality.
6. Image Processing:
   a. Provide automatic and manual electronic shutter speed setting that is user selectable from 1/2 second to 1/30,000 second at 60 Hz.
   b. Provide automatic and manual user selectable automatic gain control.
   c. Provide automatic and manual user selectable white balance control.
   d. Provide on/off backlight compensation operation with user control.
   e. Provide on/off wide dynamic range operation with user controls and manual override option.
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f. Provide automatic and manual user selectable defog mode.

g. Provide on/off electronic image stabilization (EIS) algorithms integrated within the camera assembly system.
   i. Provide compensation algorithms based on those particular movement wavelengths associated with vibration present at the roadside or pole movement (e.g., 5 Hz and 10 Hz sinusoidal frequencies at a minimum).
   ii. Ensure EIS function automatically pauses while PTZ functions are occurring and restores when no PTZ is occurring.
   iii. Provide stabilization such that standard Department of Transportation placards with a size of 1 ft (0.3 m) by 1 ft (0.3 m) are continuously legible in conjunction with viewing specification and maximum zoom level at a distance of 500 ft (152 m).

7. Lens:
   a. For Type 1, 1P, 2, and 2P cameras, provide an integrated zoom lens assembly for each camera with the following features:
      i. An aperture f-stop of f/1.6 (wide) or better zoom lens with variable focal lengths.
      ii. A minimum 30X optical zoom and 2X digital zoom.
      iii. Automatic switching from optical zoom to digital when optical zoom range is exceeded.
      iv. Adjustable zoom speed.
      v. Automatic and manual user selectable focus control.
      vi. Automatic and manual user selectable iris control to compensate for changes in scene illumination to maintain constant video-level output within sensitivity specifications.
   b. For Type 3 and 3P cameras, provide a varifocal lens for each camera with the following features:
      i. An aperture f-stop of f/1.4 (wide) or better.
      ii. A horizontal angular field of view of 46 degrees (wide angle) to 9 degrees (telephoto), typical.
      iii. Adjustable zoom remotely through the camera’s web interface. Final focus to be adjustable through camera’s web interface.

8. Sensitivity: Provide a camera that has useable video at the following ambient low light conditions:
   a. Scene Illumination; F-stop set at wide open at 50 percent video (50 Institute of Radio Departments [IRE])
   b. 1.0 Lux (0.1 fc) at 1/30 shutter, color mode
   c. 0.1 Lux (0.01 fc) at 1/30 shutter, monochromatic (black and white) mode

C. Pan-Tilt (P/T) Positioning Drive Requirements

1. P/T Range and Speed:
   a. Provide Type 1, 1P, 2, and 2P camera system that has an integrated P/T unit meeting the following minimum requirements:
      i. Pan Range: 360 degrees, full endless or continuous rotation movement.
      ii. Pan Manual Speed: variable up to 90 degrees per second (minimum), user adjustable through the full speed range.
      iii. Pan Preset Speed: minimum 180 degrees per second.
      iv. Preset Pan Repeatability: ±0.36 degree, or <0.10 percent or better.
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v. Tilt Range: minimum of 180 degrees total tilt range for Type 1 and 1P cameras and minimum 130 degrees total tilt range for Type 2 and 2P cameras.

vi. Tilt Manual Speed: variable up to 90 degrees per second (minimum), user adjustable through the full speed range.

vii. Tilt Preset Speed: minimum 180 degrees per second.

viii. Preset Tilt Repeatability: ±0.36 degree, or <0.10 percent or better.

b. Provide an automatic electronic image inversion or “auto flip” functionality that shall automatically rotate the image 180 degrees electronically when following a moving object passing under the camera. No mechanical stops are permitted.

c. Provide proportional zoom control allowing variable P/T speeds based on “zoom” position. This is to scale the maximum P/T speed, while maintaining variable speed capability, throughout the zoom range of the camera.

2. P/T Preset Functions: Provide Type 1, 1P, 2, and 2P camera system that has P/T presets meeting the following minimum requirements:

a. A minimum of 64 presets for PTZ and focus settings.

b. A minimum of eight tours (sequences) that allow the camera to automatically move between selected presets using an individual speed and viewing dwell time for each preset.

c. A minimum of eight programmable blackout privacy masks or zones.

D. Video Encoding Requirements

1. Encoding Standards: Comply with the following standards:

a. ISO/IEC 14496-10, Advanced Video Coding (H.264), Baseline, Main and High Profiles

b. Motion JPEG (MJPG)

2. Video Standards: Comply with the following HDTV video standards in regards to resolution, frame rate, aspect ratio, and color fidelity:

a. SMPTE 296M (HDTV 720P)

b. SMPTE 274M (HDTV 1080P)

3. Video Stream Format and Configuration:

a. Provide simultaneous unique video streams that are independently and individually configurable that meet the following minimum requirements:

i. Stream 1: H.264 Baseline, Main or High Profile

ii. Stream 2: H.264 Baseline, Main or High Profile

iii. Snapshot: JPG full-frame capture

b. Provide the following encoding parameters minimum ranges and operation, that can be independently and individually configurable by the user for each stream:

i. Target multicast address, port and time-to-live (TTL) setting

ii. Video compression technology and levels: H.264 Baseline, Main or High Profile for video and JPG/MJPG for snapshot captures or full-frame captures from a video stream

iii. Image resolution of 1080P (1920 x 1080) to 320 x 180 or 720P (1280 x 720) to 320 x 180

iv. Frame rate: adjustable 5 to 30 fps (North American, 60 Hz)
Section 936—Closed-Circuit Television (CCTV) Camera System

v. Bandwidth and encoding bit rate control: variable bit rate or constant bit rate/maximum bit rate selectable from 192 Kbps to 8 Mbps

vi. Group of Pictures length

c. Provide simultaneous and continuous encoding and streaming for a minimum of three video streams. The activation of one, two, or three simultaneous streams shall not result in a performance degradation of any video stream, video image, control function, or device management interface. The video streams shall be capable of providing the following minimum requirements:

i. Stream 1: 4 Mbps/1920 x 1080/Main Profile/30 fps/RTP

ii. Stream 2: 384 Kbps/720 x 480/Main Profile/15 fps/RTP

iii. Snapshot: 1920 x 1080/120 second capture interval

4. Video Compatibility: Ensure encoded streams are fully compatible with the GDOT Central software decoding system and with VLC (Video LAN Client) Ver. 2.1.3.

5. Video Snapshot:

a. Provide JPG snapshots from either a dedicated stream or from any of the video streams and image transfer via File Transfer Protocol (FTP) either by push or pull at a user-defined interval between 60 and 300 seconds.

b. Include on-screen display (OSD) capabilities in the snapshot images.

c. Provide target FTP server settings including connection credentials for push function.

d. Provide a minimum space for 32 characters for the snapshot filename for push function.

6. Management System and User Interface Requirements:

a. Manage encoder through Hypertext Transfer Protocol (HTTP)/HTTP Secure (HTTPS) and Secure Shell (SSH).

b. Provide a built-in web server user interface making video, status, and configuration available to multiple clients in a standard operating system and browser environment using HTTP, without the need for any additional software of any kind, except video player plugins solely for displaying a live image stream of the video output.

c. Provide web server user interface that supports access to all configurable parameters in the CCTV camera system, without the need for any separate textual or line commands of any kind.

d. Provide user-configurable password-protected accounts with at least one full administrative and one read/view permissions profile.

e. Reset or reboot and upload firmware via the methods listed above.

i. Update the firmware in the encoder from a network connection.

ii. Access the firmware number, IP address, and equipment configuration.

7. On-Screen Display (OSD): Provide a camera system that meets the following minimum OSD requirements:

a. Provide static text insertion on streams and insert a minimum of one line of user configurable text messages with support for date and time of at least 40 ASCII characters in length.

b. Provide text insertion that scales appropriately or is independently configurable for different video image size resolutions.

c. Provide JPG, BMP, or PNG image insertion on streams in the upper portion of the image, using image file(s) uploaded by the user and stored in the encoder’s memory and configuration. Text display on the side of the image is prohibited.

d. Provide the capability to insert a different image file for each stream.
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8. **Configuration Backup**: Provide automatic recovery from an over or under voltage condition when prime power has returned to the tolerance values specified herein.
   a. Store configuration parameters in non-volatile memory.
   b. Ensure no reprogramming or manual adjustments are required upon power recovery.

E. **Network Requirements**

1. **Network Format**: Comply with Ethernet compliant IEEE 802.3, 802.3u, and 802.3x; 10/100 Mbps or higher, auto sensing full or half-duplex operations.

2. **Network Hardware Interface**: Equip with a minimum of one 10BASE-T/100BASE-TX PoE Ethernet-port using an IP66 rated RJ-45 weathertight connector or other Ethernet-compatible locking weathertight connector.

3. **Video Encapsulation**: Provide encapsulation of each of the video streams in User Datagram Protocol (UDP) packet and transmission control protocol (TCP) packets, depending on stream configuration, for network transmission.


5. **Camera Protocols**: Support NTCIP 1205, Open Network Video Interface Forum (ONVIF) or other as directed by the Department or AHJ.
   a. Comply with NTCIP objects determined mandatory and optional by the Department. Contact the Department for the current list.
   b. Comply with ONVIF Profile S requirements determined mandatory by the Department. Contact the Department for the current list.

6. **Video Network Transmission**:
   a. Support both unicast (one-to-one) and multi-cast (one-to-many) streams simultaneously.
   b. Allow for video to be transported over:
      i. RTP (Unicast and Multicast)
      ii. RTP over RTSP (Unicast)
      iii. RTP over RTSP over HTTP (Unicast)
      iv. HTTP/HTTPS tunneling (Unicast)

7. **IP Addresses**:
   a. Support both fixed IP addresses and dynamically assigned IP addresses provided by a DHCP server.
   b. Support static management interface IP addressing (classes A, B, and C).
   c. Support static IP addressing of the multi-cast group individually and independently for each stream.

F. **Electrical Requirements**

1. **PoE**: Provide PoE power to the camera system meeting the following minimum requirements:
   a. Provide a standalone PoE injector. PoE service through the use of a PoE capable Ethernet switch is not permitted.
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b. Select PoE injectors that are based on power requirements of the camera system as recommended by the manufacturer conforming to the following PoE standards:
   i. PoE+ in compliance with IEEE 802.3at (latest revision)
   ii. PoE++ in compliance with IEEE 802.3bt (latest revision)

c. Mount PoE injectors to wall or panel or DIN-rail mount within the Intelligent Transportation System (ITS) field cabinet as approved by the Department.
d. Meet the same environmental requirements as the outdoor-rated elements of the CCTV system.

2. **Outdoor-Rated Cat-6 Cable**: Provide outdoor-rated, shielded Cat-6 cabling from the PoE injector to the camera encoder meeting the following minimum requirements:
   b. Comply with ICEA 5-56-434 standard for communications cables for outdoor use.
   c. Provide eight (four STP) insulated 22 to 23 American Wire Gauge (AWG), solid copper conductors with polyolefin insulation, arranged in four color-coded twisted-pairs.
   d. Provide modular IP66-rated RJ-45 male push-pull connectors with eight-position non-keyed and eight gold anodized pins or other Ethernet-compatible locking weathertight connector.

3. **Surge Protection**: Provide single-channel, in-line surge protection for the Cat-6 cabling meeting the following minimum requirements:
   a. Comply with TIA-568-A/B.
   b. Comply with UL 497B requirements.
   c. Provide a fully shielded RJ-45 connector.
   d. Provide PoE+ and PoE++ power, IEEE 802.3at and 802.3bt.
   e. Test according to Telcordia GR-1089-CORE and IEC EN61000-4-5.
   f. Provide a maximum cut-off voltage of 60 VDC and greater.
   g. Provide protection modes of line to line, line to ground, and shield to ground.
   h. Provide a maximum surge current (per pin) line to ground (8/20 µs) of 100 A, typical.
   i. Provide a maximum surge current shield to ground (8/20 µs) of 5 kiloamps, typical.
   j. Provide heavy-duty single point ground.
   k. Ensure it can be wall or panel or DIN-rail mounted.
   l. Provide protection against corrosion and UV degradation.

G. Mechanical Requirements

1. **Camera Casing or Enclosure (Non-Pressurized)**:
   a. Provide a casing or enclosure that is manufactured in compliance with IEC 60529 IP66, NEMA 4X, and IK08 ratings or greater.
   b. Provide camera assembly that meets or exceeds the requirements stated above without the need for additional components such as mounting brackets and hardware to achieve the stated ratings.
   c. Provide high-impact, non-metallic UV-stabilized material of a light color or an aluminum material with a heat-cured paint coating or powder coating of an equivalent color.
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d. Provide viewing windows constructed of an optically corrected acrylic material designed to mitigate degradation of materials and yellowing due to prolonged exposure to UV rays or as approved by the Department.

e. Protect interior of casing by providing weatherproof glands or grommets for cabling to maintain IP rating.

f. Provide camera and housing with measures to protect against water, dust, corrosive elements, and insect intrusion into the camera casing or housing.

g. Provide a housing that is secure from unauthorized entries and vandals.

2. Camera Casing or Enclosure (Pressurized):

a. Meet the casing or enclosure requirements specified in Section 936.2.01.G.1.

b. Meet the following minimum pressurization requirements:
   i. Provide a Schrader inlet valve for pressurized extra dry nitrogen.
   ii. Provide an operating pressure range of 3 to 7 pounds per square inch (psi) (21 to 48 kPa).
   iii. Provide a pressure relief for protection against overpressure.

3. Sunshield: Provide a sunshield to reduce the solar heating of the camera casing or enclosure.

4. Heating and Ventilation:

a. Provide a heater and blower function to maintain internal temperatures within the manufacturer’s operating temperatures for temperature ranges internal to the camera unit not conforming to the environmental requirements in Section 936.2.01(H)(1).

b. For Type 1 and 1P cameras, provide a conventional mechanical thermostat-controlled heater and circulating blower fan system that is designed to keep the camera equipment within the required operational temperature range and to maintain a clear viewing window.

c. For Type 2, 2P, 3, and 3P cameras, an alternative method may be provided to prevent dust and humidity build-up and to keep internal camera casing temperatures to within operational tolerances defined by the manufacturer as approved by the Department.

5. Mounting Arm Requirements:

a. Attach the camera system to the camera pole as shown in the Contract documents using stainless steel banding, clamps, brackets, and other incidental hardware in compliance with the manufacturer’s recommendations.

b. Provide mounting solution(s) as listed in the Contract. Mounting options will be paid for under separate pay items to include the following:
   i. Type 1: Strap to pole using arm {AECOM to define in the next spec version}
   ii. Type 2: Attached to luminaire mounting mechanism {AECOM to define in the next spec version}
   iii. Type 3: Small “candy cane” hook {AECOM to define in the next spec version}
   iv. Type 4: Large “candy cane” hook {AECOM to define in the next spec version}

c. Allow for cabling to be routed inside the poles and mounting hardware and protected from exposure to the outside environment.

d. Provide stainless steel mounting hardware and straps in accordance with MIL-STD-810F (3) Method 509 Procedure 1 for exterior salt atmospheres.

e. Provide light-colored camera mounts and mounting bracket arm coatings.
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f. Provide opening in mounting bracket arms to fully enclose the cables. Provide non-metallic cable protection grommets for cable entrances.

g. Provide camera casing mounts that shall accommodate a weight load capacity of no less than 40 lb (18 kg).

H. Environmental Requirements

1. Provide equipment that meets the following operating ambient temperature range and humidity levels:
   a. Camera Assembly and PoE Injectors
      i. −4°F (−20°C) through +140 °F (+60°C, maximum).
      ii. Up to 95 percent relative humidity (condensing).
   b. Cat-6 PoE Surge Protector
      i. −40°F (−40°C) to +149°F (+65°C, maximum)
      ii. Up to 95 percent relative humidity (condensing).

2. Provide a camera assembly that meets the following environmental and emission requirements:
   a. Comply with NEMA TS2 Sections 2.1.9, 2.2.3, and 2.2.8 and meet the specified requirements during and after being subjected to a vibration of 5 to 30 Hz up to 0.5 g applied in each of three mutually perpendicular planes for 30 minutes.
   b. Comply with NEMA TS2 Sections 2.1.10, 2.2.4, and 2.2.9 and do not yield permanent mechanical deformation or any damage that renders the unit inoperable when subjected to a shock of 10 g applied in each of three mutually perpendicular planes for 30 minutes.
   c. Comply with IEC 60529 Section 14.2.6 for IP66 or greater rating.
   d. Comply with NEMA 250, Type 4X corrosion requirements for salt environments (i.e., coastal regions).
   e. Ensure that the CCTV camera system can withstand wind forces of 100 mph (161 kph) with a 20 percent gust factor.
   f. Provide the following Electromagnetic Compatibility (EMC) emission approvals:
      i. FCC Part 15, Subpart B, Class A
      ii. IEC EN 61000-6-4

936.2.2 CCTV Camera Lowering Device (CLD) Requirements

A. General Requirements:

1. Provide a camera lowering device (CLD) for all new CCTV camera poles 60 ft (18.3 m) or greater above ground level unless otherwise shown in the Contract documents.

2. Provide a CLD designed to support and lower a standard CCTV camera system as specified herein and other supporting components without causing damage or degradation of camera operations.

3. Provide the electrical connection between the ITS field cabinet and the camera assembly installed on the lowering device.

4. Ensure that the CLD shall work with and support Cat-6 Ethernet-based PoE camera operations.

5. Provide CLD and external components that are corrosion-resistant powder-coated, galvanized materials, or otherwise protected from the environment by industry-accepted coatings that can withstand exposure to a corrosive environment.
Section 936—Closed-Circuit Television (CCTV) Camera System

6. Provide a CLD that can withstand wind forces of 100 mph (161 kph) with a 20 percent gust factor using a 1.65 safety factor.

B. Lowering Cable Requirements:
   1. Provide a lowering cable that shall support a minimum of 200 lb (90.7 kg) load.
   2. Provide a lowering cable that is stainless steel and located inside conduit within the pole to avoid cable twisting and ensure that only the lowering cable is in motion when the lowering device is operated. All other cables are to remain stable and secure during lowering and raising operations.
   3. Provide a design so that the lifting cable does not come into contact with the power or video cables.
   4. Ensure that lowering cable accessories, such as connecting links, have a minimum workload rating that meets or exceeds that of the lowering cable.
   5. Provide weights and/or counterweights to ensure the alignment for the camera connection can be raised into position without binding and that it can be lowered properly.

C. Disconnect Unit and Connection Requirements:
   1. Provide a disconnect unit with a minimum load capacity of 200 lb (90.7 kg) with a 4:1 safety factor.
   2. Provide a locking mechanism between the fixed and movable components of the disconnect unit.
   3. Provide a minimum of two mechanical latches for the movable assembly to remove all weight from the lowering cable when latched.
   4. Provide the fixed unit with a heavy-duty cast tracking guide and a means for latching in the same position each time.
   5. Provide capability of securely holding the lowering device and the equipment installed on the lowering device.
   6. Provide stainless steel or aluminum interface and locking components.
   7. Provide a watertight suspension contact unit with a gasket to seal the interior from dust and moisture without the use of pressurization.
   8. Provide connectors that are resistant to UV light degradation.
   9. Ensure that male and female matched parts mate together to make a weatherproof, non-corrosive electrical connection between the cable and the camera housing when the camera is fully raised and locked.
   10. Ensure the wire leads from both the male and female contacts are permanently and securely fastened into a weatherproof, non-corrosive body.
   11. Provide a design to keep contacts protected or provide a method to displace surface contaminants.
   12. Ensure any grease or lubricant used on moving parts of the CLD components is recommended by the manufacturer.

D. Camera Lowering Tool Requirements:
   1. Provide a camera lowering tool consisting of a portable, lightweight, corrosion-resistant metal frame and winch assembly with a cable, a quick release cable connector, and an adjustable safety clutch.
   2. Provide a camera lowering tool that is powered by a 0.5 in chuck, variable speed, and reversible, industrial duty drill, ½ horsepower (minimum). Do not exceed the CLD manufacturer’s maximum rotations per minute.
   3. Ensure that the lowering cable winds evenly on the winch drum during operation.
   4. Provide a camera lowering tool that is manufactured of durable, corrosion-resistant materials that are powder-coated, galvanized, or otherwise protected from the environment by industry accepted coatings that can withstand exposure to a corrosive environment.
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5. Provide a camera lowering tool that can support itself and the load equipped with a positive braking mechanism to secure the cable reel during raising and lowering operations and to prevent freewheeling or freefall.

6. Provide a minimum of one camera lowering tool plus any additional tools required to operate the lowering device for each set of five poles or fraction thereof. Upon the Final Project Acceptance, the Contractor shall deliver the camera lowering tool(s) to the Department.

E. CLD Pole Provisions:

1. Provide a 1.25 in (3.2 mm) polyvinyl chloride (PVC) conduit to contain the CLD stainless steel lowering cable for the full length of cable run inside the camera pole.

2. Provide new camera poles with appropriate hand-holes, cable entry points, and weather-heads so that all cabling, grounding conductors, lowering device, etc., for the complete CCTV camera and CLD installation are run inside the pole. Include these details on the shop drawing submittals and submit for review and approval by the Department prior to fabrication.

3. Provide a hand-hole of sufficient size to provide access to the camera pole interior and for temporarily securing and operating the lowering tool.

4. Provide a pole-top tenon that is rotatable.

5. Provide an attachment point inside the camera pole for attaching the lowering device cable that is fully accessible from the hand-hole.

6. Provide the attachment point material and means of attachment to the pole of sufficient strength and durability to hold the lowering device cable in place if the camera lowering device were to release at the top of the pole.

936.3 Construction Requirements

Ensure that construction and installation of the equipment, materials, components, and assemblies of the CCTV system specified comply with the CCTV manufacturer’s requirements and recommendations.

936.3.1 Contractor Experience and Qualifications

1. Provide the following documentation:
   a. Provide three current client references for project that were performed by the Contractor and/or sub-contractor for the installation, integration and testing of CCTV camera systems including IP-based PTZ dome and fixed camera systems.
   b. Evidence that the electronic technicians performing installation, configuration, setup, program, and related works are thoroughly trained by the manufacturer in the installation and service of the equipment provided.

936.3.2 Construction Requirements

A. General Installation Requirements

1. Request that the Department establish the utility service as described in Section 682.

2. Mount the camera system assembly and the mounting bracket arm at the cardinal direction and height as shown in the Contract documents, and so the pole is not obstructing the camera’s view of the roadway or traffic signals.

3. Install cables between the camera system assembly and the CCTV camera field cabinet inside new hollow steel or metal or concrete support poles unless otherwise specified. Where devices are installed on existing wood poles, install cabling on the wood poles in conduit risers of minimum 2 in (51 mm) diameter.

4. Provide wiring and cabling meeting the following minimum requirements:
   a. Comply with local, state, and national electrical codes.
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b. Provide wires that are cut to proper length before assembly. It is not acceptable to “double-back” wires to take up slack inside the cabinet.
c. Neatly arrange and dress wiring, firmly lace or bundle it, and mechanically secure the wiring without the use of adhesive fasteners.
d. Organize cables neatly inside the cabinet and secure cables with clamps to minimize movement in the wind and chafing against the pole, device, or bracket.
e. Provide service loops at connection points when connecting to hardware inside the cabinet.
f. No splicing of cables or exposed wiring is allowed.
g. Ensure that wiring entry to the camera casing or enclosure uses watertight fittings.
h. Ensure that wiring entry and exits are made at the side or underneath components; no exposed top entry or exits are permitted. This requirement extends to enclosures, junction boxes, support arms, or any other externally exposed devices.
i. Route and secure wiring and cabling to avoid sharp edges and to avoid conflicts with other equipment or cabling.
j. Route CCTV cables separate from any 120 VAC power wiring or surge suppressor ground wiring.
k. Clearly label all wiring as approved by the Department.
l. Neatly coil and dress between 3 ft (1 m) and 5 ft (1.5 m) of cables in the bottom of the cabinet.

5. Dress and route grounding wires separately from other field cabinet wiring and with the minimum length possible between the surge protector and the ground buss-bar.

6. Do not splice any cable, shield, or conductor used for CCTV camera operation, communications signaling, power supply, or grounding.

7. Provide mechanical components meeting the following requirements:
   a. Provide stainless steel external screws, nuts, and locking washers. Self-tapping screws are not acceptable.
   b. Provide parts that are made of corrosion resistant material; examples include plastic, stainless steel, anodized aluminum, or brass.
   c. Protect materials used in construction from fungus growth and deterioration due to sustained moisture.
   d. Separate dissimilar metals by an inert dielectric material.

B. Camera Lowering Device Requirements

1. Install in accordance with the manufacturer’s installation instructions.
2. Install materials in a neat and professional manner.
3. Coordinate with the Department to determine actual mounting height and azimuth. Typically, the camera lowering system azimuth shall be perpendicular to the mainline lanes.

C. As-Built Documentation

1. Furnish as-built CCTV system wiring diagrams identified by location.
2. Include wiring, cabling, conductor function, connector type, and pinouts in an electronic (PDF) format.
3. Include the height of the camera in feet above the travel lanes.
Section 936—Closed-Circuit Television (CCTV) Camera System

936.3.3 Equipment Configuration and Integration Requirements
Refer to Section 940.2.03 for CCTV equipment configuration and integration requirements.

936.3.4 Testing Requirements
Refer to Section 940.2.04 for CCTV testing requirements.

936.3.5 Training
Refer to Section 940.2.05 for CCTV training requirements.

936.3.6 Warranty and Maintenance Support Services

A. Warranty Requirements:
   1. Ensure that the CCTV camera system, communication cables, and associated components defined herein furnished, assembled, and installed have a manufacturer’s warranty (usual and customary) covering defects in assembly, fabrication, and materials. Include in warranty and support, all contractor or manufacturer activities related to maintenance, removal, and replacement of parts and materials during the period of support.
   2. Provide a minimum warranty length as follows:
      a. CCTV camera assembly and associated components: Minimum of three years.
      b. Cat-6 PoE surge protector: Minimum of five years.
      c. Camera lowering system: Minimum of two years.
   3. If the manufacturer’s warranties for the components are for a longer period, those longer period warranties shall apply.
   4. Ensure warranty periods begin on the date of maintenance acceptance by the Department.
   5. Ensure that the manufacturer’s warranties are continuous throughout the period and shall be fully transferable from the Contractor to the Department and any maintenance consultant/contractor.
   6. Provide maintenance support services and make any replacements required during the warranty period without additional charge for labor, equipment, parts, shipping, and other materials required. Support all system components notwithstanding any supplier's warranties whether written or implied.

B. Maintenance Support Services:
Refer to Section 940.2.06 for maintenance support services requirements.

936.3.7 Project Close-out Requirements
Refer to Section 940.2.07 for CCTV project close-out requirements.

936.4 Measurement
The CCTV camera system and training complete, in place, accepted, and of the kind, size, and type specified is measured as follows:

A. CCTV Camera System Pay Items
   Item No. 936-2000 – CCTV System, Type 1 (EA)
   Item No. 936-2050 – CCTV System, Type 1P (EA)
   Item No. 936-2100 – CCTV System, Type 2 (EA)
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Item No. 936-2150 – CCTV System, Type 2P (EA)
Item No. 936-2200 – CCTV System, Type 3 (EA)
Item No. 936-2250 – CCTV System, Type 3P (EA)

The CCTV camera system will be measured for payment by the number installed, complete, functional, and successfully completed final acceptance testing including IP-based camera assembly with internal video encoder, camera lens, P/T positioning drive, camera casing or enclosure and sunshield. CCTV camera system shall also include ITS field cabinet components, including but not limited to, PoE injector, outdoor-rated cabling and associated wiring, network patch cable, connectors, terminal blocks, surge protector, weather heads (as required or needed), grounding to site ground, and video encoder configuration. This price shall be full compensation for labor, tools, materials, equipment, and incidentals necessary to complete the work.

B. Camera Mounting Pay Items

Item No. 936-2901 – CCTV System, Mounting Arm, Type 1 (EA)
Item No. 936-2902 – CCTV System, Mounting Arm, Type 2 (EA)
Item No. 936-2903 – CCTV System, Mounting Arm, Type 3 (EA)
Item No. 936-2904 – CCTV System, Mounting Arm, Type 4 (EA)

C. Camera Lowering Device (CLD) Pay Item

Item No. 936-XXXX – Camera Lowering Device (EA)

D. Camera Lowering Tool Pay Item

Item No. 936-XXXX – Camera Lowering Tool (EA)

E. Training Pay Item

Item No. 936-8500 – Training (Lump Sum)

Training is measured as a lump sum for supplies, equipment, materials, handouts, travel, and subsistence necessary to conduct the training.

Measurement Notes:

Submittal

Submittal requirements are included in Section 940 and shall not be paid for separately and shall be considered as incidental to the CCTV camera system pay item.

Testing

Testing requirements are included in Section 940 and shall not be paid for separately and shall be considered as incidental to the CCTV camera system pay item.

NaviGAtor Integration

NaviGAtor integration requirements are included in Section 940 and shall be paid for under 940-1000.

936.5 Basis of Payment

936.5.1 CCTV Camera System

CCTV systems of the type specified in the Contract documents are paid for at the Contract Unit Price. Payment is full compensation for furnishing and installing or delivering the CCTV camera system.
Section 936—Closed-Circuit Television (CCTV) Camera System

The Department will pay 25 percent of the total Contract bid amount for properly stored materials. The Department will pay 50 percent of the total Contract bid amount upon installation of the physical elements of the CCTV camera system and completion of the stand-alone / site testing acceptance. The Department will pay 25 percent of the total Contract bid amount upon completion of the Final Project Acceptance. The total sum of all payments cannot exceed the original Contract amount for this item.

Payment for CCTV camera systems is made under:

<table>
<thead>
<tr>
<th>Item No. 936</th>
<th>CCTV System, Type 1</th>
<th>Per each</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item No. 936</td>
<td>CCTV System, Type 1P</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 936</td>
<td>CCTV System, Type 2</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 936</td>
<td>CCTV System, Type 2P</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 936</td>
<td>CCTV System, Type 3</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 936</td>
<td>CCTV System, Type 3P</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 936</td>
<td>Camera Lowering Device</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 936</td>
<td>Camera Lowering Tool</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 936</td>
<td>CCTV System, Mounting Arm, Type 1</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 936</td>
<td>CCTV System, Mounting Arm, Type 2</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 936</td>
<td>CCTV System, Mounting Arm, Type 3</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 936</td>
<td>CCTV System, Mounting Arm, Type 4</td>
<td>Per each</td>
</tr>
</tbody>
</table>

936.5.2 Training

The Department will pay 25 percent of the total Contract bid amount for training upon approval of the Training Plan. The Department will pay the remaining 75 percent after completion of training described in Section 940.2.05. The total sum of all payments cannot exceed the original Contract amount for this item.

Payment for training is made under:

<table>
<thead>
<tr>
<th>Item No. 936</th>
<th>Training</th>
<th>Lump Sum</th>
</tr>
</thead>
</table>
DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SUPPLEMENTAL SPECIFICATION

Section 939—Communications and Electronic Equipment

Delete Section 939 in its entirety and substitute the following:

939.1 General Description

Furnish, install, test, and provide warranty and training for communications and electronic equipment and materials as shown in the Contract documents.

939.1.1 Definitions, Acronyms, and Abbreviations

A. Definitions

1. Field Switch, Type A: Layer 2, minimum 6 copper ports and 2 Small Form Factor Plug-in (SFP) 1 Gbps fiber ports.
2. Field Switch, Type B: Layer 2, minimum 6 copper ports and 3 SFP 1 Gbps fiber ports.
3. Field Switch, Type C: Layer 2, minimum 1 copper port and 7 SFP 1 Gbps fiber ports.
4. Field Switch, Type D: Layer 2 or 3 upgradeable, minimum 4 copper ports and 4 dual-purpose 1 Gbps ports.
5. Field Switch, Type E: Layer 2 or 3 upgradeable, minimum 8 copper ports and 4 dual-purpose 1 Gbps ports.
6. SFP, Type 1: LX optics for shorter distances.
7. SFP, Type 2: ZX optics for longer distances.
9. Routing Switch, Hub, Type B: Layer 3, minimum 48 ports at 10/100/1 Gbps copper and 4 ports at 1 Gbps SFP.
10. Field Cabinet, Type 1: A modification of the Joint Committee (JC) Standard ITS Cabinet Housing #2.
11. Field Cabinet, Type 2: JC Standard ITS Cabinet Housing #2.
13. Field Cabinet, Type 4: JC Standard ITS Cabinet Housing #3.

B. Acronyms and Abbreviations

Refer to Sections 101.01 and 940.1.01(A) for a list of acronyms, abbreviations, and terminology used in this section and throughout these ITS specifications.

939.1.2 Related References

A. GDOT Standard Specifications

1. Section 150 – Traffic Control
2. Section 639 – Strain Poles for Overhead Sign and Signal Assemblies
Section 939—Communications and Electronic Equipment

3. Section 647 – Traffic Signal Installation
4. Section 682 – Electrical Wire, Cable, and Conduit
5. Section 694 – Weather Monitoring and Reporting System
6. Section 922 – Electrical Wire & Cable
7. Section 923 – Electrical Conduit
8. Section 924 – Miscellaneous Electrical Materials
9. Section 925 – Traffic Signal Equipment
10. Section 926 – Wireless Communications Equipment
11. Section 939 – Communication and Electronic Equipment
12. Section 940 – ITS General Requirements

B. Referenced Standards and Documents
   1. Refer to Section 940.1.01(B) for a list of standards and documents referenced in this section and throughout the ITS specifications.
   2. Ensure that all communications and electronic equipment and materials are consistent and compliant with the latest version or edition of the standards and industry practices as specified.

939.1.3 Submittals
Refer to Section 940.2.02 for submittal requirements. Requirements for communications and electronic equipment materials are specified herein.

939.2 Materials
Provide communication and electronic equipment that meet following minimum general requirements:

939.2.1 General Requirements
   1. Manufacture in an International Organization for Standardization (ISO) 9001-certified manufacturing facility that is regularly engaged in the production of the materials described in this section.
   2. Provide only proven and commercial-off-the-shelf only equipment and materials.
   3. Provide equipment and materials that are of new manufacture and previously unused.
   4. Provide all equipment and materials that are of like kind and function from the same manufacturer, using the same model, part number, revision, and firmware.
   5. Use the most stringent material requirement for this Contract if a conflict or difference exists between the specified industry standards and practices listed in Section 939.1.02(B) and these minimum standard specifications. Notify and resolve with the Department or authority having jurisdiction of any such conflicts or differences prior to procurement of materials and components.

939.2.2 Network Field Switch Requirements
A. General Requirements
   1. Provide one or more of the network field switch types listed in Table 1 as specified in the Contract documents:
Table 1 – Network Field Switch Types

<table>
<thead>
<tr>
<th>Type</th>
<th>Layer Capability</th>
<th>Ethernet Port Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A</td>
<td>Layer 2</td>
<td>Minimum 8 ports total including 2 x Gigabit-Ethernet SFP modules and 6 10/100Base-T/TX ports</td>
</tr>
<tr>
<td>Type B</td>
<td>Layer 2</td>
<td>Minimum 9 ports total including 3 x Gigabit-Ethernet SFP modules and 6 10/100Base-T/TX ports</td>
</tr>
<tr>
<td>Type C</td>
<td>Layer 2</td>
<td>Minimum 8 ports total including 7 x Gigabit-Ethernet SFP modules and 1 10/100Base-T/TX ports</td>
</tr>
<tr>
<td>Type D</td>
<td>Layer 2 or Layer 3 upgradeable</td>
<td>Minimum 8 ports total including 4 dual-purpose uplink or downlink ports that can be used for 10/100/1000BASE-T/TX ports or 100/1000 Mbps SFP-modules, and 4 10/100/1000Base-T/TX ports</td>
</tr>
<tr>
<td>Type E</td>
<td>Layer 2 or Layer 3 upgradeable</td>
<td>Minimum 12 ports total including: 4 dual-purpose uplink or downlink ports that can be used for 10/100/1000Base-T/TX ports or 100/1000 Mbps SFP-modules, and 8 10/100/1000Base-T/TX ports</td>
</tr>
</tbody>
</table>

2. Ensure compatibility and interoperability of network field and routing switches with the existing GDOT network by support of features and implementation of common standards that enable switches to work together and minimize integration effort.

3. Provide the following network field switch interfaces:
   a. Fiber Ports: 1000BaseSFP slot or 100/1000BaseSFPslot.
   b. RJ-45 Ports: 10/100Base-T(X) or 10/100/1000Base-T(TX) auto negotiation speed and capable of being manually set to half-duplex or full-duplex.
   c. Console Port along with any adapter cables as needed and approved by the Department.
   d. LED Indicators: Power on/off and network status per port (transmit, receive, link, and speed).

4. Operate with non-blocking, store and forward, switching at full wire speed.

5. Provide a minimum Mean Time Between Failure (MTBF) of 200,000 hours using Telcordia SR-332, Method 1, Case 3 or MIL-HDBK-217J standards.

6. Comply with IEEE 802.3 for 10Base-T standard specifications.

7. Comply with IEEE 802.3u for 100Base-T(X) standard specifications.

8. Comply with IEEE 802.3ab for 1000Base-T(X) standard specifications.

9. Comply with IEEE 802.3z for 1000Base-X standard specifications.

10. Provide a fan-less (no fan) design.

B. Network Capabilities and Features

1. Provide support for multicast with Internet Group Management Protocol (IGMP) v1/v2/v3 snoopng and IGMP filtering.

2. Comply with IEEE 802.3x (Flow Control) standard.

3. Comply with IEEE 802.1p (Class of Service or Priority Queuing) standard.

4. Comply with IEEE 802.1Q (VLAN tagging) standard per port.

5. Comply with IEEE 802.1D (Spanning Tree Protocol) and IEEE 802.1w (Rapid Spanning Tree Protocol) standards.

6. Comply with IEEE 802.3ad (Link Aggregation or Port Trunk) standard for a minimum of two groups of four ports.
Section 939—Communications and Electronic Equipment

C. Security Requirements

1. Provide the capability to configure static Media Access Control (MAC) addresses access.
2. Provide the capability to disable automatic address learning per ports; known hereinafter as Secure Port. Secure Ports only forward statically configured MAC addresses.
3. Provide the capability to trap and alarm upon any unauthorized MAC address and shutdown. Require administrator to manually reset the port before communications are allowed.
5. Provide support for Hyper Text Transfer Protocol (HTTP) and HTTP Secure (HTTPS).
6. Provide support for Secure Sockets Layer (SSL).

D. Network Management Requirements

1. Provide network management capabilities that are compatible with the existing GDOT network management consisting of Cisco Prime centralized enterprise management software supporting remote management.
2. Provide network field switch that is password manageable with a minimum of one read-only profile and one full administration profile.
4. Provide implementation of Link Layer Discovery (LLDP) protocol as defined in IEEE 802.1ab (Station and Media Access Control Connectivity Discovery).
5. Provide full implementation of Remote Network Monitoring (RMON) I statistics, history, alarms, and events objects.
6. Provide network field switch that can mirror any port to any other port within the network field switch.
7. Provide network field switch that can be managed remotely by an enterprise software/program for configuration, reporting, updates, and monitoring of alarms.
8. Provide environment monitoring capabilities.
9. Provide management capabilities via a serial maintenance/console serial port (local) and over the network (remote).
10. Provide support for HTTP (Embedded Web Server) with SSL.
11. Provide full implementation of RFC 783 (TFTP) to allow remote firmware upgrades.

E. Additional Requirements for Network Field Switch Types D and E

1. Provide, in the quantity specified in the Contract documents, Gigabit-Ethernet Combo ports, where each Gigabit-Ethernet Combo port is defined as a single interface that can be used as a 10/100/1000Base-T/TX ports or 100/1000Base SFP GBIC socket.
2. Provide a card slot for a field removable SanDisk (SD) read-write memory card (included) that can store switch operating system modules and switch configuration modules, and is addressable/ manageable from the switch’s management interface and built-in memory system.
3. Provide capability for booting from and loading configuration from the removable memory card slot or from the built-in memory, as defined by the user.
4. Provide capability for push/pull of switch operating system modules and switch configuration settings from the GDOT network management system.
5. Provide capability for conversion from Layer 2 to Layer 3 switch and routing protocols, as specified in Section 939.2.03, with only a change in the switch operating system and/or license.
Section 939—Communications and Electronic Equipment

F. Mechanical and Cabling Requirements

1. Unless otherwise specified in the Contract documents, provide network field switches that are DIN rail panel mountable. Rack-mounted DIN rails may be installed if cabinet space is available and approved by the Department. Rack-mountable switches may be used if approved by the Department. Shelf mount is not permitted.

2. Provide corrosion-resistant hardware and materials for mounting within the field cabinet.

3. Provide a quantity of fiber optic patch cords that matches the number of populated optical ports on the network field switch, in accordance with Section 935, with ST connectors on one end (at the FPP/FDU) and an LC connector on the other end (at the network field switch).

4. Provide rubber dust caps or covers with insertion and removal handles that completely seal the port opening for unused copper and optical ports.

G. Electrical Requirements

1. Provide network field switch that is capable of operating over minimum input voltage range of 108 VAC to 132 VAC at 50/60 Hz (±5%, maximum).

2. Provide network field switch with power conversion/supplies (24 VDC or 24 VAC) as specified herein and provide regulation necessary to support electronics operation.

3. Comply with IEC EN 61000-4-5 surge immunity for network equipment.

4. Ensure that power transformers are a “fastening mechanism” type. No plug-in types will be permitted. Corded transformers are to be mountable with neatly secured power cords.

H. Environmental Requirements

1. Provide hardened network field switch including power supply that comply with NEMA TS 2 Sections 2.1.7, 2.1.8, and 2.1.9 temperature, humidity, vibration, and shock testing requirements.


939.2.3 Network Routing Switch Requirements

Provide a network routing switch with the minimum number and types of ports along with functionality according to the Routing Switch Type indicated in the Contract documents.

A. General Requirements

1. Provide one or more of the network routing switch types listed in Table 2 as specified in the Contract documents:

<table>
<thead>
<tr>
<th>Type</th>
<th>Layer Capability</th>
<th>Ethernet Port Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A</td>
<td>Layer 3</td>
<td>Providing a minimum 48 1/10/25Gbps SFP+ fiber ports + 6 40/100Gbps QSFP28 fiber uplink ports per switch</td>
</tr>
<tr>
<td>Type B</td>
<td>Layer 3</td>
<td>Providing a minimum 48 10/100/1000 Ethernet copper ports + 4 SFP 1Gbps fiber uplink ports per switch, stackable</td>
</tr>
</tbody>
</table>

2. Provide network routing switches that are compatible with the existing GDOT routing network consisting of Cisco Nexus 93180YC-FX Layer 3 routing switch (Type A) and Cisco Catalyst 2960XR Layer 3 routing switch (Type B) that can be managed by the Department’s existing network management software.

3. Populate network routing switch with optical SFPs meeting the minimum SFP requirements in Section 939.2.05.

4. Provide network routing switch with SFP fiber ports that accept LC fiber optic single-mode connectors.
Section 939—Communications and Electronic Equipment

5. Provide a minimum MTBF of 200,000 hours using Telcordia SR-332, Method 1, Case 3 or MIL-HDBK-217J standards.

6. Provide up to 4,096 VLANs.

7. Provide network routing switch where modules are hot-swappable.

8. Provide network routing switch that can be EIA 19 in (483 mm) rack mounted (one RU per network routing switch, typical).

B. Network Standards and Protocols

1. Provide support for the network standards and Layer 2 and 2+ protocols specified in Section 939.2.02.

2. Provide support for additional network Layer 3 protocols as follows:
   b. Provide full implementation of IGMP v1/v2/v3.
   d. Provide support for Remote Authentication Dial-In User Service (RADIUS) protocol.
   e. Provide full implementation of Routing Information Protocol (RIPv2).
   f. Provide full implementation of Open Shortest Path First (OSPF) protocol.
   g. Provide full implementation of Generic Multicast Registration Protocol (GMRP).
   h. Provide full implementation of Generic VLAN Registration Protocol (GVRP).
   i. Provide full implementation of Protocol Independent Multicast Sparse Mode (PIM-SM).
   j. Provide full implementation of Virtual Router Redundancy Protocol (VRRP).

C. Mechanical and Cabling Requirements

1. Provide network routing switches that are rack mountable.

2. Provide hardware and materials for mounting within the equipment rack that are corrosion resistant.

3. Provide a quantity of fiber optic patch cords that matches the number of populated optical ports on the network routing switch, in accordance with Section 935, with ST connectors on one end (at the FPP/FDU) and an LC connector on the other end (at the network field switch).

4. Provide rubber dust caps or covers with insertion and removal handles that completely seal the port opening for unused copper and optical ports.

D. Electrical Requirements

1. Provide network field switch that is capable of operating over minimum input voltage range of 108 VAC to 132 VAC at 50/60 Hz (±5%, maximum).

2. Comply with IEC 61000-4-5 surge immunity testing requirements.

3. Provide network routing switch with dual redundant power supplies and fans, N+1 configuration, hot swappable, and configured for 120 VAC service.

E. Environmental Requirements

1. Provide network routing switch including power supply that meets following minimum ambient temperature and humidity requirements:
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a. Temperature range from +23°F through +113 °F (−5°C to +45°C).
b. Relative humidity from 10% through 95%, noncondensing.
c. Comply with NEMA TS 2 Sections 2.1.8 and 2.1.9 vibration, and shock testing requirements.


939.2.4 Reserved

939.2.5 Small Form Factor Plug-in (SFP) Fiber Module Requirements

1. Provide single-mode, dual-fiber SFPs.

2. Provide one or more the following types of full duplex, SFP fiber optical modules as shown in the Contract documents as required:
   a. Type 1: LX/LH optics for single-mode >10 km (6.2 miles) in length (under ideal conditions).
   b. Type 2: ZX optics for single-mode fiber of > 70 km (43 miles) in length (under ideal conditions).

3. Comply with IEEE 802.3x, 1000Base-LX/LH and 1000Base-ZX standards.

4. Provide fiber optic patch cables as specified in Section 935.2.01(G) with integral optical attenuators if required for optical power control per the network field switch manufacturer’s recommendations.

5. Provide SFPs that are 100% compatible with the network field switch, including any serial number or other identifying information. Only demonstrated proven SFPs that do not require non-default, switch configuration settings are acceptable.

6. Provide SFPs that are hot-swappable to maximize uptime.

7. Support detecting and shutting down one-way link failures using auto-negotiation.

8. Operate as its’ own switched port.

9. Provide network field switch with SFP fiber ports that accept LC fiber optic single-mode connectors.

10. Provide with LC connectors as approved by the Department.

11. Environmental Requirements: Provide SFPs with extended temperature capabilities meeting the following minimum requirements:
    a. Ambient temperature range from +23°F through +185°F (−5°C through +85°C).
    b. Relative humidity from 10% through 95%, non-condensing.

939.2.6 Network Patch Cord Requirements

A. Network Field Switch Patch Cords:

Verify that network field switch patch cords meet ANSI/TIA requirements for Category 6, 4-pair unshielded twisted pair cabling with stranded conductors and RJ-45 connectors meeting the following minimum requirements:

1. Provide patch cords that are factory assembled, connectorized, and certified by the manufacturer to meet the relevant performance standards specified herein.

2. Comply with ANSI/TIA-568-C.2 and UL 444 standards.

3. Provide eight (four STP) insulated 22 to 24 AWG, solid copper conductors arranged in four color-coded twisted-pairs.

4. Provide modular RJ-45 male connectors with 8-position non-keyed and eight gold anodized pins.
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5. Ensure that connectors incorporate mechanical cable strain relief and protective boots.

6. Characterize to 600 MHz and provide design margin (headroom) beyond standard Near-End Crosstalk (NEXT), Power Sum NEXT (PSNEXT), Attenuation-to-Crosswalk Ratio (ACR), and Power Sum ACR (PSACR).

7. Provide with lengths of patching from network field switch to equipment inside the field cabinet or equipment rack without strain. Provide custom or standard lengths as required or needed based on final equipment layout and configuration that permits future movement of equipment within the field cabinet or equipment rack.

8. Provide a riser-rated patch cord.

B. Fiber Optic Patch Cords:

Provide fiber optic patch cords that meet the requirements of Section 935.

939.2.7 Reserved

939.2.8 Field Cabinet Requirements

A. General Requirements

1. Provide one or more of the field cabinet types listed in Table 3 as specified in the Contract documents:

<table>
<thead>
<tr>
<th>GDOT Type</th>
<th>Joint Committee ITS Cabinet Standard</th>
<th>Minimum Cabinet Dimension Range</th>
<th>Number of Doors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>Modified ITS Cabinet Housing #2</td>
<td>30 in to 36 in</td>
<td>23 in to 26 in</td>
</tr>
<tr>
<td>Type 2</td>
<td>ITS Cabinet Housing #2</td>
<td>44 in to 47 in</td>
<td>23 in to 26 in</td>
</tr>
<tr>
<td>Type 3</td>
<td>ITS Cabinet Housing #1</td>
<td>64 in to 67 in</td>
<td>23 in to 26 in</td>
</tr>
<tr>
<td>Type 4</td>
<td>ITS Cabinet Housing #3</td>
<td>64 in to 67 in</td>
<td>44 in to 46 in</td>
</tr>
</tbody>
</table>

2. Unless otherwise specified in the Contract documents or directed and approved by the Department, construct all ITS cabinet (field cabinet) housing assemblies in conformance with this Subsection 939.2.08 and the Joint Committee (JC) ITS Cabinet Standard Specifications for Roadside Cabinets v01.02.17b or latest version.

a. Do not include with the ITS field cabinet housing the following:

i. Police panel and associated wiring.

ii. Power distribution assembly (PDA) and associated flasher units, and signal power contactor.

iii. DC power supply unit (24 VDC and 12 VDC).

iv. Input file and associated sensor units, isolator units, and serial interface unit (SIU).

v. Output file and associated auxiliary monitor unit, SIU unit, transfer relay unit, and switch pack unit.

vi. Cabinet monitor unit (CMU) assembly.

vii. Serial and control bus assemblies and wiring.

b. Unless otherwise specified, configure all field cabinet housing assemblies for pole mounting.

i. Properly reinforce the holes for pole mounting with metal plates of adequate size and strength welded longitudinally across the inside depth of the field cabinet.

ii. Where base-mounting of field cabinets is specified, make the field cabinet bottom open and provide an approved base mounting adapter, in accordance with the Department’s Standard Specification for Traffic Signal Equipment.
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B. Field Cabinet Components

1. Rack Cage
   a. Equip all field cabinet housings with the standard EIA 19 in (483 mm) rack cage as described in the JC ITS Cabinet Standard Specifications and as follows:
      i. Do not use unistruts or other rail types.
      ii. Types 1, 2 and 3: Equip field cabinet housings with the standard EIA 19 in (483 mm) rack cage.
      iii. Type 4: Equip field cabinet housings with two standard EIA 19 in (483 mm) rack cages.

2. Cabinet Side Mounting Panels
   a. Fabricate side mounting panels as described in the JC ITS Cabinet Standard Specifications for J Panels and as follows:
      i. Do not provide pre-punched terminal block/bar or component mounting holes, except holes for mounting the panel to the rack cage.
      ii. Do not provide shelf assemblies.
      iii. In all field cabinet types provide side panels that are the full depth of the rack cage and the rack cage height less 2 in (50 mm) at the top and bottom.
   b. In all field cabinet types provide side panels on both sides of each rack cage.

3. Shelf and Drawer
   a. Provide shelf and drawer meeting the following minimum requirements:
      i. Provide drawer that is an aluminum storage compartment mounted in the rack cage that is approximately 1.75 in (44.4 mm) (height) by 16 in (410 mm) (width) by 14 in (360 mm) (depth) and is approximately 40 in above final grade.
      ii. Provide telescoping guides to allow full extension from the rack cage.
      iii. Provide construction that supports a weight of 25 lb (11 kg) when extended.
      iv. Provide a minimum non-slip work area measuring 12 in (304 mm) by 12 in (304 mm).
   b. Types 2 and 3: Equip field cabinet with one cabinet-sliding internal shelf and drawer.
   c. Type 4: Equip field cabinet with two sliding internal shelves and drawers.

4. Document Pouch
   a. Provide a plastic documentation pouch that is side-opening, resealable, opaque, and of a heavy-duty plastic material to store the cabinet and equipment documentation.
   b. Provide a pouch that has metal or hard-plastic reinforced holes for hanging from hooks included on the field cabinet door.
   c. Provide a pouch that is of the size and strength to easily hold wiring diagrams, equipment documentation, and the maintenance logbook.
   d. Provide field cabinets with hooks, welded to the inside of the front cabinet door, for hanging the plastic documentation pouch.

5. Wiring, Conductors and Terminal Blocks
   a. Component Mounting Deutsche Industrie Norm (DIN) Rail
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i. Provide 1.38 in (35 mm) wide by 0.3 in (7.5 mm) high by 0.04 in (1 mm) thick standard DIN rails perforated and cut to length for flexible mounting of devices including switches with power supply, PoE injector, terminal blocks, circuit breakers, and surge protection devices.

ii. Provide DIN rail that is burr free with no sharp edges or deformation from the standard profile.

iii. Comply with IEC EN 50022 (NS35), IEC EN 60715, and DIN 46277.

iv. Provide nut, bolt, and start washers to mount to panel for low resistance electrical connection.

v. Provide an anti-corrosion paste to provide a solid and long lasting electrical connection between the DIN rail and the mounting panel.

b. Terminal Blocks

i. Use DIN terminal blocks with voltage and current ratings greater than the voltage and current ratings of the wires that are terminated on the blocks

ii. Terminate conductors on terminal blocks using insulated terminal lugs large enough to accommodate the conductor to be terminated.

iii. Terminate on field wiring terminal block screws using a terminal ring lug for termination when two or more conductors are terminated.

iv. Use metallic terminal block connection hardware and components that are non-ferrous copper or nickel/tin-plated copper alloy or equivalent.

v. Comply with the following colors listed for all supplied terminal blocks and wires.
   a) Black – Line
   b) White – Neutral
   c) Green or Green/Yellow – Ground

vi. Provide a ground terminal that is the same size and pitch as the power terminals and provides positive electrical and mechanical connection to the mounting rail.

vii. Provide the quantity of terminals as shown in the Contract documents.

viii. Service Entrance Terminal Blocks:
   a) Make the terminal block for the 120 VAC field cabinet service entrance (SE) a 10 mm single level screw type device.
   b) Provide a terminal block that accommodates #14 to #2 AWG wiring for terminating electrical inputs and outputs.

ix. Distribution Terminal Blocks:
   a) Make terminal blocks for distribution of 120 VAC (TB2) and ground located on the protected side of the power service panel assembly a 6 mm single level screw type device.
   b) Provide terminal block that accommodates #24-6 AWG wiring and provide in colors as specified herein.

c. Circuit Breakers

i. Provide enclosed, thermal magnetic molded case circuit breakers bolted to the panel of the types, sizes, and quantities listed in the Contract documents.

ii. Provide spare breaker space.
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iii. Provide two-pole (2P) breakers for 120/240 VAC and single-pole (1P) for 120 VAC single-phase operating voltages.

iv. Comply with UL 489 and NEMA AB-1 standard for molded-case circuit breakers.

v. Ensure that amperage rating of breakers is shown on the face of the breaker or handle.

vi. Provide circuit breakers that have a quick-make, quick-break over center toggle-type mechanism and a position between “ON” and “OFF” when tripped automatically.

vii. Provide circuit breakers that are 120 VAC rated with a minimum symmetrical interrupting short circuit capacity of 18,000A.

viii. Use only circuit breakers that are DIN rail mounted.

ix. Provide circuit breakers that are UL listed.

d. Fuses:

i. Provide DIN rail-mounted switch or disconnect type fuse holders and fuses for low voltage AC and DC circuits in the proper capacity and configured as required.

ii. Fuse size rating labeled on the holder or one the panel adjacent to the holder.

e. Spacer:

i. Provide spacers or dividers between terminal blocks and other components as shown in the Contract documents for visual separation.

ii. Ensure that spacers snap on to DIN rail be approximately 5 to 18 mm thick and match the size of the terminals they separate.

f. Safety Cover:

i. Provide safety covers on terminal blocks to prevent contact with exposed conductors or any metallic components. This cover will provide electrical and visual separation between terminal blocks and other rail-mounted devices.

ii. Ensure that covers are approximately 2 mm thick and sized to match the terminal blocks they protect or separate.

g. Internal Wiring

i. Provide wiring between terminal blocks and attached devices insulated and the proper size.

ii. Utilize #12 to #14 AWG, THHN-THWN, stranded, copper wiring for internal branch circuits.

iii. Use insulated green wire to connect the ground wire directly to the ground terminals.

iv. Do not “daisy chain” with the grounding wires of other devices including other surge protectors.

h. Ground Fault Interrupter (GFI) Service Outlet

i. Provide one duplex, NEMA 15A, 5-15R, GFI duplex receptacle (convenience service outlet) with ground-fault circuit interrupters, box, and cover plate able to be accessed after equipment is installed within the field cabinet.

ii. Provide a UL-listed receptacle meeting Federal Specification #WC596.

i. Ground Buss Bar: Provide a ground buss bar of copper alloy material compatible with copper wire and provide at least two positions where a No. 2 AWG stranded copper wire can be attached.

j. Grounding and Bonding: Provide grounding and bonding that complies with NEC requirements. Refer to Section 682 for detailed grounding and bonding requirements.
k. End Brackets: Provide screw-clamped end brackets to positively lock all DIN rail-mounted devices to the rail.

6. Surge Protection
   a. Provide a Type 2 Surge Protection Device (SPD) for the cabinet’s main AC power input on the load side of the field cabinet circuit breaker. Other surge protection devices are covered under individual device specifications.
   b. Provide SPD that meets the following minimum performance requirements:
      i. Posted at UL.com under certification with 20KA I-nominal rating.
      ii. Provide a performance that equals or exceeds 100KA per phase, less than 1nSec response time, and with a maximum protection rating of 600V for L-G and L-N and 1,000V for L-L modes of protection.
      iii. Provide a SCCR that equals or exceeds 100KA.
      iv. Provide a UL Voltage Protection Rating (VPR) per L-N mode of 800V or lower.
   c. Provide SPD that has no leakage current to ground.
   d. Include directly connected thermally protected MOVs.
   e. Provide pluggable SPD modules.
   f. Comply with UL 1449 4th edition, Open-Type 1 Listed.
   g. Comply with IEEE C62.45, C62.41.1, and C62.41.2 rated for NEMA TS 2 temperature and humidity requirements.
   h. Provide solid-state bi-directional operation.
      i. Provide SPD that can be DIN rail mounted.
   j. Provide SPDs that are equipped with visual and remote status indication and with an audible alarm.

7. Rack-Mounted Power Strip
   a. Provide a maximum rating of 15A, 120 VAC, 60 Hz.
   b. Provide minimum of eight NEMA 5-15R receptacles or as specified in the Contract documents.
   c. Provide spacing to accommodate a minimum of four plug-in power supplies without covering up remaining outlets.
   d. Mount the power strip on the rear near the top of the standard TIA-310-D rack cage. Mount the power strip facing toward the back of the field cabinet providing a minimum spacing of 3 in (76 mm) between the outlet’s face and the field cabinet door when the door is closed.
   e. Provide power strip that does not hinder accessibility to the back of existing electrical equipment.
   f. Provide power strip with integrated surge protection meeting the following minimum requirements:
      i. Provide power strip that is UL 1449 listed.
      ii. Exceed IEEE 587 Category A and B specifications.
      iii. Provide a minimum UL 1449 let-through voltage rating of less than 330V(RMS).
      iv. Provide a minimum AC suppression joule rating of 600joules.
      v. Provide an AC suppression surge current rating of 20,000A.
      vi. Provide a minimum UL 1283 EMI/RFI noise filtering protection rating of 40 dB.
      vii. Provide LED status indicators.
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8. Interior Lighting
   a. Provide LED lights at the front and back of the field cabinet.
   b. Equip the LED lights with a manual on/off switch that is connected to a door switch that allows the lights to be powered when the field cabinet door is open.

9. Environmental Systems: For vented cabinet types provide the following ventilation system:
   a. Temperature
      i. Provide a thermostatically controlled ventilation blower fan(s) to maintain internal temperatures below the upper operating temperature thresholds for installed equipment and components that are operating continuously at full capacity.
      ii. Provide the capability for the user-set temperature thresholds to automatically active the fan(s) to turn on or off when the internal field cabinet temperature exceeds the threshold.
   b. Ventilation System
      i. Provide a design so that openings prevent the entrance of dust, insects, and other foreign matter.
      ii. Provide a bottom trough to drain any accumulated moisture to the outside of the field cabinet.
      iii. Type 1: Provide one 100 cubic feet per minute (cfm) (minimum) 120 VAC blower exhaust fan mounted near the top of the field cabinet.
      iv. Types 2, 3 and 4: Provide two 100 cfm (minimum) 120 VAC blower exhaust fans mounted near the top of the field cabinet.

10. Cable and Wire Management
    a. Provide vertical and horizontal cable management as shown in the Contract documents or as approved by the Department.
    b. Provide cable and wire management for AC branch, low-voltage power, and communications/data wiring within the field cabinet.
    c. Provide cable and wire management components securely attached to the field cabinet/rack cage with screws; no adhesive or self-stick mounting is acceptable.
    d. Provide separate wire management for power and other field cabinet low-voltage and communications wiring.
    e. Type 4 cabinet only: Provide a minimum of four wiring pass-through holes on the inside side-mounting panels to permit patch cords to pass between the two cabinet sides:
       i. Provide 5 in (127 mm) pass-through holes that are fully grommeted for patch cord protection, with the holes positioned with two in the cabinet front and two in the cabinet rear and aligning horizontally between the two side panels.
       ii. Provide plastic- or rubber-coated J-hooks or D-rings, minimum 1 in (25 mm) depth and height, on the inside rails of the rack cabinet cages, to organize patch cords passing between the two cabinet sides.

939.2.9 Reserved

939.2.10 Field UPS Requirements
   1. Provide an industrial-grade UPS that is a double-conversion, on-linetype.
   2. Comply with UL 1778 standard.
   3. Provide one or more of the field UPS types listed in Table 4:
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Table 4 – UPS Types

<table>
<thead>
<tr>
<th>Type</th>
<th>Location</th>
<th>UPS Output Power Capacity (minimum, full load)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>Field Cabinet</td>
<td>350 watts</td>
</tr>
<tr>
<td>Type 2</td>
<td>Field Cabinet</td>
<td>800 watts</td>
</tr>
<tr>
<td>Hub</td>
<td>Hub Building</td>
<td>1900 watts</td>
</tr>
</tbody>
</table>

4. Provide UPS that is capable of operating over minimum input voltage range of 80 VAC to 138 VAC at 50/60 Hz (±5%, maximum).

5. Ensure that the UPS outputs a pure sine wave at 120 VAC ±3% at 50/60 (±0.3% maximum).

6. Provide a Total Harmonic Distortion (THD) of <3% (resistive load).

7. Provide a minimum of four output receptacles type NEMA5-15R.

8. Provide a UPS with a minimum of 85% efficiency (AC-to-AC).

9. Support a minimum transfer time of 0 ms for line fails/recovers, and 5 ms or less for UPS to bypass and reverse.

11. Battery System
   a. Provide maintenance-free sealed batteries that can be serviced and replaced separately from the UPS.
   b. Provide batteries that are rated for extreme temperatures that have been field proven and tested.
   c. Provide UPS batteries that maintain 80% of original capacity for a minimum of five years.
   d. Provide a maximum battery recharge time of 8 hours to 90% of full charge.
   e. Provide battery charger capability that provides a minimum of three-stage, temperature compensated charging and keeps the batteries above a minimum depth of discharge point of 50% or as recommended by the manufacturer.
   f. Provide user-replaceable and hot-swappable battery packs.
   g. Provide batteries with non-conductive terminal covers.

12. Size the battery bank to meet the following minimum runtimes:
   a. Type 1 and 2 field UPS: Provide a minimum runtime of one hour under full load as shown in Table 4.
   b. Hub UPS only: Provide a minimum runtime of four hours under full load as shown in Table 4.
   c. Provide the capability to be expanded for increased runtime using additional expansion battery banks or packs.

13. Provide UPS that supports local and remote monitoring and control via RS232 port and Ethernet SNMP interface:
   a. Provide an addressable SNMP command set including, at a minimum, UPS state, battery condition (capacity, age, internal temperature); current AC input conditions (voltage, phase, frequency, failure condition); current AC output conditions (voltage, frequency, load); and diagnostic/self-test control and status.
   b. Provide remote environmental sensing hardware and software integrated with SNMP minimally capable of temperature and humidity monitoring including generating alarms for Low Battery, Over/Under Voltage, Over/Under Frequency, and High Temperature.
   c. Provide UPS with LCD display for monitoring unit.
   d. Provide four dry contact closures.
   e. Provide support for adjustable high and low voltage buck/boost function.
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f. Provide a UPS with automatic low-battery and high temperature shutdown features.

 g. Ensure the UPS will return to normal operations without a manual reset.

14. Provide UPS with a maximum audible noise of <50 dBA at 3 ft (0.9 m).

15. Provide UPS with battery bank(s) that mount on an EIA 19 in (483 mm) rack using a maximum space of five rack units.

16. Environmental Requirements: Provide a UPS system including battery bank that meets following minimum requirements:

a. Types 1 and 2 field UPS: Ambient temperature range from −4°F through +131°F (−20 °C through +55°C).

b. Hub UPS: Ambient temperature range from +32°F through +104°F (0°C through +40°C).

c. Relative humidity from 10% through 95%, noncondensing.


939.2.11 Solar Power System Requirements

A. General Requirements

1. Provide a solar system that can be mounted in a permanent configuration or in a temporary portable type configuration.

2. Provide one or more of the solar power system types listed in Table 5 as specified in the Contract documents:

<table>
<thead>
<tr>
<th>Type</th>
<th>Location</th>
<th>Site Output Power Capacity (minimum, full load)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>Field Cabinet</td>
<td>350 watts</td>
</tr>
<tr>
<td>Type 2</td>
<td>Field Cabinet</td>
<td>800 watts</td>
</tr>
</tbody>
</table>

3. Provide DC-to-DC and DC-to-AC conversion equipment, as specified herein.

B. Solar Panel Requirements

1. Provide high-efficiency, photovoltaic solar panel(s) made from tempered glass with an anodized aluminum frame, sized to provide full charging of batteries within a one day full sunlight cycle while under operation in December.

2. Provide solar panels that deliver power for the equipment at the site such that it operates using the lowest average winter insolation values for the area in which the system is installed, accounting for system inefficiencies.

3. Provide IP67-rated junction boxes as required on the backside of the panel.

4. Provide bypass diodes to minimize power drop caused by shade and provide better performance in low-light conditions.

C. Solar Battery Requirements

1. Provide batteries that are individually replaceable (hot-swappable), completely sealed, and maintenance free, requiring no watering.

2. Provide battery capacity (amp-hours) and type that will keep field cabinet equipment operating for a minimum of 72 hours without sunlight or charging of the batteries. Include a 20% safety factor to ensure operation in unseasonable weather conditions and battery degradation overtime.

3. Provide solar batteries that maintain 80% of original capacity for a minimum of five years.
4. Provide solar batteries with non-conductive terminal covers.

D. Solar Charge Controller Requirements

1. Provide a minimum 30Arated Pulse Width Modulation (PWM) charge controller that charges 12, 24, and 48V batteries.
2. Provide a charge controller that supports the selected battery type.
3. Provide a charge controller with built-in energy LCD monitor to track and indicate the state of charge, voltage level of the solar batteries, and output of the solar panels.
4. Provide a charge controller that keeps the solar batteries above the minimum depth of discharge point of 50% or as recommended by the battery manufacturer.
5. Provide a charge controller with data logging capabilities that can be viewed over the network.
6. Provide charge controller that disconnects the equipment from the solar batteries at a variable percentage load and allows the batteries to reach a higher state of charge, commonly referred to as a low voltage disconnect feature.

E. Solar Power Inverter Requirements

1. Provide a power inverter that outputs a true sine wave DC to 120 VAC ±5% rated for off-grid solar application.
2. Provide power inverter that meets the continuous power wattage (total load capacity) requirements of the ITS field cabinet equipment and components.
3. Provide a minimum surge rating that is double the continuous power wattage calculation to support equipment start-up power needs (peak power).
4. Provide a power inverter with a power factor of 0.9 to 1.0.
5. Provide power inverter with a minimum 3 x NEMA 5-15R, 15A outlet receptacles.

F. Environmental Requirements

Provide solar panels, charge controller, inverter and battery bank that meets following minimum temperature and humidity requirements:

1. Ambient temperature range from −4°F through +131°F (−20°C through +55°C).
2. Relative humidity from 10% through 95%, noncondensing.

939.2.12 Field Power Controller Requirements

1. Provide a field power controller that is IP-addressable (static) and accessible over a network.
2. Provide a 10/100 autosensing, port selectable, RJ-45 Ethernet interface.
3. Provide capability for rebooting and control of outlet receptacles in remote locations from a web browser.
4. Provide secure control through a user web interface, including SSL and multi-user password secure access.
5. Provide a minimum of 18 x NEMA 5-15R, 15A outlet receptacles with eight switched pairs and two unswitched receptacles.
6. Provide an automatic ping feature that monitors and automatically reboots if locked up devices.
7. Provide a minimum surge protection using dual 3,600J metal oxide varistors (MOV) to clamp power surges and spikes.
8. Provide configurable event data logging.
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9. Provide field power controller that mounts on an EIA 19 in (483 mm) rack (maximum space of two rack units) inside a standard ITS field cabinet or hub building rack.

10. **Environmental Requirements**: Provide a field power controller that meets following minimum requirements:

   a. Provide field power controller including power supply that comply with NEMA TS 2 Sections 2.1.7, 2.1.8, and 2.1.9 temperature, humidity, vibration, and shock testing requirements.

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939.3 Construction

Ensure that construction and installation of the equipment, materials, components, and assemblies specified in this section comply with the manufacturer’s requirements and recommendations.

939.3.1 Contractor Experience and Qualifications

Provide a minimum of three current client references for projects that were performed by the Contractor and/or sub-contractor for the installation, integration, and testing of Ethernet network switches (Layer 2 and Layer 3), field cabinets and components, UPS and battery systems, and solar power systems. The systems must have been in continuous service for at least two years.

939.3.2 Construction Requirements

A. General Installation Requirements

1. Install network switches, field cabinets and components, UPS and battery systems, and solar power components as required by the Contract documents and recommended by the manufacturer.

2. Install equipment in new and/or existing rack space in accordance with the equipment manufacturer’s recommendations, including mounting, interconnection wiring, and electrical service.

3. Furnish and install mounting hardware and incidental materials, including fasteners and auxiliary supporting frames/brackets, as recommended by the manufacturer.

4. Furnish and install miscellaneous hardware, materials, wiring/cabling, configuration, and any other incidental items necessary for fully operational components and subsystems shown in the Contract documents and Section 940, except when specifically identified as existing or as work to be performed by the Department.

5. Work on this Project may require access to various Department buildings, hub buildings, and field cabinets requiring coordination of all work activities in these locations with the Department 10 days before access is needed.

6. Work on this Project requires system configuration and integration tasks to be performed by the Department before some Contractor-installed items can be brought online and completely system tested. Coordinate all work activities needing system configuration with the Department a minimum of 14 days prior to any testing.

7. Provide properly sized electrical service, including grounding and current rating, in the equipment racks for all hardware installed under this Project. Furnish and install additional power outlet strips in new and existing equipment racks if needed for the new equipment.

8. For any equipment that is not rack mountable with “rack ears,” provide perforated shelves and secure shelf-mounted equipment with rack mounting hardware.

9. Protect cable ends at all times with acceptable end caps. Never subject any cable to exceed its minimum bend radius as recommended by the manufacturer.

10. Terminate ground wiring between cabinet surge protectors on the DIN rail-mounted ground terminal blocks.

11. Dress and route grounding wires separately from all other field cabinet wiring.

12. Install grounding wires with the absolute minimum length possible between the surge protector and the ground terminals.

13. Provide grommets, guides, and/or strain relief material where necessary to avoid abrasion of or excess tension on wire and cable.

14. Neatly route, dress, and secure patch cords in the equipment racks and at both ends. Use all available cable management devices and/or trays. Route patch cords only vertically on the sides of the equipment racks or horizontally across the bottom or top of the racks; no diagonal routing is permitted. Follow manufacturer’s recommendations including bend radius requirements during patch cord installation.
Section 939—Communications and Electronic Equipment

15. Store uninstalled cable according to manufacturer recommended bend radius and cable reel requirements.

16. Inspect and test cable for continuity when received, with results compared with factory pre-shipping tests.

17. Inspect the cable nomenclature to make certain that the correct product has been received. Notify the supplier (or manufacturer) of discrepancies for immediate correction.

B. Communications Subsystem

1. Install communications network equipment and materials necessary for a complete communications path from the field site to the TMC or communications hub as shown in the Contract documents.

2. Furnish and install mounting and interconnection materials, including but not limited to mounting panels and rack hardware, fiber and Cat-6 patch/jumper cables, surge protection, and power supply cables.

3. Mount field equipment in a manner as to not restrict the replacement of other components in the field cabinet housing or hub building.

C. Uninterruptible Power Supply

1. Install UPS and battery bank or pack in the field cabinet rack and hub equipment rack.

2. Furnish and install a dedicated electrical service branch circuit from the hub main service panel for the UPS system.

3. Ensure that the UPS system branch circuit is in accordance with all recommendation of the UPS manufacturer, including the provision of a locking plug/receptacle connection.

4. Locate the branch circuit receptacle as close as possible to the UPS mounting position to minimize the UPS input line cord and to minimize tripping hazards.

5. Configure the electrical service inputs for network switches and other equipment to be supplied by the UPS.

6. Furnish and install line cords, power strips, and incidental materials to configure the UPS service to the above equipment.

D. Solar Power System

1. Install and mount the solar panel(s) with mounting bracket and the field cabinet on the ITS pole or structure at heights specified in the Contract documents or as directed by the Department.

2. The installation locations of poles and structures may require slight adjustments to maximize sun exposure for the solar panel assembly. Obtain approval of final site location and orientation from the Department prior to installation.

3. Install in accordance with the manufacturer’s recommended installation procedures and the Contract documents.

4. Mount and orient the solar panel(s) to maximize sun exposure in accordance with the manufacturer’s recommendations.

5. Mount panels at an angle to enable runoff of rain and snow.

6. Provide power from the solar power assembly to the controller cabinet by connecting to the UPS in the cabinet.

7. Ensure no wires from the solar panel(s) to the battery and from the battery to the charge controller are exposed.

8. Install wires in liquid tight flexible conduit, run inside a pole, or other method approved by the Department. The cost to furnish and install any conduit for the solar power assembly installation shall be included in the cost of the solar power assembly.

9. Electrically ground the solar power assembly in accordance with manufacturer recommendations.
Section 939—Communications and Electronic Equipment

E. Patch Cables and Labeling

1. Label wiring and cabling, including entrance cables, jumper and patch cords, and power supply cables. Cable labels shall consist of UV-protected, waterproof permanent ink printed or legibly written on self-laminating and over-wrapping label material.

2. Apply cable labels at each end and in the center of the cable. Cable labels shall consist of permanent ink printed or legibly written on self-laminating and over-wrapping label material.

3. Label patch cords using cable identification numbers shown in the Contract documents or provided by the Department.

4. Apply cable labels at each end and in the center of the cable.

5. Use printer-generated adhesive overlapping cable labels.

939.3.3 Equipment Configuration and Integration Requirements

Refer to Section 940.2.03 for network equipment configuration and integration requirements.

939.3.4 Testing Requirements

Refer to Section 940.2.04 for testing requirements.

939.3.5 Training Requirements

Refer to Section 940.2.05 for training requirements.

939.3.6 Warranty and Maintenance Support Services

A. Warranty Requirements

1. Ensure that the network equipment, field cabinets and components, UPS battery back-up systems, solar equipment, surge protection, communication cables, and associated components defined herein furnished, assembled, and installed have a manufacturer’s warranty (usual and customary) covering defects in assembly, fabrication, and materials. Include in warranty and support, all contractor or manufacturer activities related to maintenance, removal, and replacement of parts and materials during the period of support.

2. Provide a minimum warranty length as follows:
   a. Network Field Switch: minimum of five years.
   b. Network Routing Switch: minimum of five years.
   c. Surge Protectors: minimum of five years.
   d. UPS and Battery System: minimum of three years.
   e. All other equipment and materials furnished and installed as part of this section: minimum of two years.

3. If the manufacturer’s warranties for the components are for a longer period, those longer period warranties shall apply.

4. Ensure warranty periods begin on the date of maintenance acceptance by the Department.

5. Ensure that the manufacturer’s warranties are continuous throughout the period and shall be fully transferable from the Contractor to the Department and any maintenance consultant/contractor.

6. Provide maintenance support services and make any replacements required during the warranty period without additional charge for labor, equipment, parts, shipping, and other materials required. Support all system components notwithstanding any supplier’s warranties whether written or implied.
Section 939—Communications and Electronic Equipment

B. Maintenance Support Services:

Refer to Section 940.2.06 for maintenance support services requirements.

939.3.7 Project Close-Out Requirements

Refer to Section 940.2.07 for project close-out requirements.

939.4 Measurement

The network equipment, field cabinets and components, UPS battery back-up systems, solar equipment, surge protection, and communication cables defined herein and training complete, in place, accepted, and of the kind, size, and type specified is measured as follows:

A. Network Field Switch

Item 939-2300 -- FIELD SWITCH, TYPE A (EA)
Item 939-2301 -- FIELD SWITCH, TYPE B (EA)
Item 939-2305 -- FIELD SWITCH, TYPE C (EA)
Item 939-2310 -- FIELD SWITCH, TYPE D (EA)
Item 939-2315 -- FIELD SWITCH, TYPE E (EA)

Network field switches (all types) with mounting hardware will be measured for payment by the number installed, complete, functional, and accepted. This price will be full compensation for labor, tools, materials, equipment, and incidentals necessary to complete the work.

B. SFP Fiber Module

Item 939-2390 – SFP FIBER MODULE, TYPE 1 (EA)
Item 939-2391 – SFP FIBER MODULE, TYPE 2 (EA)

SFPs (all types) are measured for payment by the number installed, complete, functional, and accepted.

C. Network Routing Switch

Item 939-2401 -- ROUTING SWITCH, Hub, TYPE A (EA)
Item 939-2402 -- ROUTING SWITCH, Hub, TYPE B (EA)

Network routing switches (all types) with mounting hardware will be measured for payment by the number installed, complete, functional, and accepted. This price will be full compensation for labor, tools, materials, equipment, and incidentals necessary to complete the work.

D. Field Cabinet

Item 939-4101 -- FIELD CABINET, TYPE 1 (EA)
Item 939-4110 -- FIELD CABINET, TYPE 2 (EA)
Item 939-4120 -- FIELD CABINET, TYPE 3 (EA)
Item 939-4130 -- FIELD CABINET, TYPE 4 (EA)

E. Solar Power System

Item No. 939-4201 – SOLAR POWER SYSTEM, TYPE 1 (EA)
Item No. 939-4202 – SOLAR POWER SYSTEM, TYPE 2 (EA)
Section 939—Communications and Electronic Equipment

F. Field UPS

Item 939-6000 – HUB UPS (EA)
Item 939-6050 – FIELD UPS, TYPE 1 (EA)
Item 939-6060 – FIELD UPS, TYPE 2 (EA)

G. Field Power Controller

Item 939-6100 – FIELD POWER CONTROLLER (EA)

H. Training

Item 939-8500 – TRAINING (LS)

Training is measured as a lump sum for supplies, equipment, materials, handouts, travel, and subsistence necessary to conduct the training.

Measurement Notes:

Submittal

Submittal requirements are included in Section 940 and shall not be paid for separately and shall be considered incidental to the different communications and electronic equipment specified in this section.

Testing

Testing requirements are included in Section 940 and shall not be paid for separately and shall be considered incidental to the communications and electronic equipment specified in this section.

NavIGAtor Integration

NavIGAtor integration requirements are included in Section 940 and shall be paid for under 940-1000.

939.5 Payment

Communications and electronic equipment of the type specified in the Contract documents are paid for at the Contract Unit Price. Payment is full compensation for furnishing and installing or delivering the communications and electronic equipment.

The Department will pay 25% of the total Contract bid amount for properly stored materials. The Department will pay 50% of the total Contract bid amount upon the installation of the communications and electronic equipment and completion of the stand-alone/site testing acceptance. The Department will pay 25% of the total Contract bid amount upon the completion of the Final Project Acceptance. The total sum of all payments cannot exceed the original Contract amount for this item.

Payment for communications and electronic equipment is made under:

<table>
<thead>
<tr>
<th>Item No. 939</th>
<th>Description</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item No. 939</td>
<td>Field Switch, Type A</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 939</td>
<td>Field Switch, Type B</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 939</td>
<td>Field Switch, Type C</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 939</td>
<td>Field Switch, Type D</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 939</td>
<td>Field Switch, Type E</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 939</td>
<td>SFP Fiber Module, Type 1</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 939</td>
<td>SFP Fiber Module, Type 2</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 939</td>
<td>Routing Switch, Hub, Type A</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 939</td>
<td>Routing Switch, Hub, Type B</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 939</td>
<td>Field Cabinet, Type 1</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 939</td>
<td>Field Cabinet, Type 2</td>
<td>Per each</td>
</tr>
<tr>
<td>Item No. 939</td>
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</tr>
<tr>
<td>Item No. 939</td>
<td>Field Cabinet, Type 4</td>
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Section 939—Communications and Electronic Equipment

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<thead>
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<th>Item No. 939</th>
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<td>Solar Power System, Type 1</td>
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</tr>
<tr>
<td>939</td>
<td>Hub UPS</td>
<td>Per each</td>
</tr>
<tr>
<td>939</td>
<td>Field UPS, Type 1</td>
<td>Per each</td>
</tr>
<tr>
<td>939</td>
<td>Field UPS, Type 2</td>
<td>Per each</td>
</tr>
<tr>
<td>939</td>
<td>Field Power Controller</td>
<td>Per each</td>
</tr>
</tbody>
</table>

694.5.02 Training

The Department will pay 25% of the total Contract bid amount for training upon approval of the Training Plan. The Department will pay the remaining 75% after completion of training described in Section 940.2.05. The total sum of all payments cannot exceed the original Contract amount for this item.

Payment for training is made under:

<table>
<thead>
<tr>
<th>Item No. 939</th>
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<th>Unit</th>
</tr>
</thead>
<tbody>
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<td>939</td>
<td>Training</td>
<td>Lump Sum</td>
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</table>

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Georgia Department of Transportation

Technical Provisions
For
Design-Build Agreement
P.I. Nos. 0014895 and 0014899

Attachment 17-3
SURGE PROTECTION SYSTEMS AND DEVICES
Attachment 17-3

Surge Protection Systems and Devices

Section 17-1 Surge Protection Systems and Devices

17-1.1 General Description

This work consists of furnishing materials and installation of Surge Protection Devices for traffic signal and intelligent transportation system implementation.

It also includes all test periods, warranties and guarantees as designated in subsequent sections, and response to maintenance and operational issues as described in subsequent sections.

17-1.1.01 Definitions

General Provisions 101 through 150.

17-1.1.02 Related References

A. Standard Specifications

Section 106—Control of Materials
Section 500—Concrete Structures
Section 501—Steel Structures
Section 631—Changeable Message Signs
Section 636—Highway Signs
Section 639—Strain Poles for Overhead Sign and Signal Assemblies
Section 680—Highway Lighting
Section 681—Lighting Standards and Luminaires
Section 682—Electrical Wire, Cable, and Conduit
Section 915—Mast Arm Assemblies
Section 923—Electrical Conduit
Section 925—Traffic Signal Equipment
Section 935—Fiber Optic System
Section 936—CCTV System
Section 937—Video Detection System
Section 938—Radar Detection System
Section 939—Communications & Electronic Equipment
Section 940—Navigator Integration

B. Referenced Documents

National Electrical Manufacturers Association (NEMA) Traffic Control Systems Standards No. TS 1
NEMA Traffic Control Systems Standards No. TS 2
AASHTO Roadside Design Guide
The Manual on Uniform Traffic Control Devices (MUTCD), current edition
National Electrical Code (NEC)
UL 467, Grounding and Bonding Equipment;
UL 497A, Standard for Secondary Protectors for Communications Circuits;
UL 497B, Standard for Protectors for Data Communications and Fire-Alarm Circuits;
UL 497C, Standard for Protectors for Coaxial Communications Circuits;
UL 752, Standard for Bullet-Resisting Equipment;
UL1008, Standard for Transfer Switch Equipment;
UL 1449, Standard for Surge Protective Devices; and the NEC.

Ensure that lightning protection systems conform to the requirements of NFPA 780, Standard for the Installation of Lightning Protection Systems.

GDT 7
GDT 24a
GDT 24b
GDT 67

17-1.1.03 Submittals
Submit to the Engineer, SPD material specifications information on all materials proposed for use on the project. The Engineer will forward the materials submissions to the District Traffic Operations offices, which will forward the information onto the Traffic Operations offices at the TMC building.

A. Review
For all submittals, the State Traffic Signal Design Engineer’s review of the material should be completed within thirty (30) days from the date of receipt of the submission unless otherwise specified. The State traffic Signal Design Engineer will advise in writing, as to the acceptability of the material submitted.

All material submittals for equipment and materials used on the project will be reviewed by the Department’s Traffic Signal Electrical Facility (TSEF). The material review should be completed within thirty (30) days from the date of receipt of the material submission unless otherwise specified. The State Traffic Signal Engineer will advise in writing as to acceptability of materials to be used on the project.

The State Traffic Signal Design Engineer may determine that the item is approved, in which case no further action is required; or the item may be partially or totally rejected in which case, modify the submittal as required and resubmit within fifteen (15) days. At this time, the review and approval cycle described above begins again.

B. Submittal Costs
Include the costs of submittals within the price paid for individual bid items. No additional compensation will be made.

17-1.2 Materials

17-1.2.01 General
Furnish and install grounding and Surge Protective Devices (SPDs) for all ITS devices to protect the devices from lightning, transient voltage surges, and induced current. Use only new materials meeting the requirements of this section. Use equipment or materials that have been tested and approved for the specific use intended by a NRTL, recognized by the Occupational Safety and Health Administration, in accordance with 29 CFR 1910.7 and that also meet the following requirements.

Install SPDs on all power, data, video and any other conductive circuit. Use only equipment and components that meet the minimum requirements of this specification. All SPD shall operate as specified during and after being subjected to the transients, temperature, voltage, humidity, vibration, and shock tests described in National Electrical Manufacturers Association (NEMA) TS2, 2.2.7, 2.2.8, and 2.2.9.
Date: 05/03/2017

A. Temperature and Humidity:

Equipment shall operate as specified when the ambient temperature and humidity are within the following specified limits:

- The operating ambient temperature range shall be from -30° to 165°F (-34.4° to 73.8°C).
- The storage temperature range shall be from -50° to 185°F (-45.5° to 85°C).
- The relative humidity shall not exceed 95 percent, non-condensing

B. Vibration:

The equipment shall operate as specified and maintain its physical integrity when subjected to a vibration of 5 to 30 Hz up to 0.5 gravity applied in each of three mutually perpendicular planes.

C. Shock:

The equipment shall suffer neither permanent mechanical deformation nor any change that renders the unit inoperable when subjected to a shock of 10 gravities applied in each of three mutually perpendicular planes.

17-1.2.01 Installation:

Provide all ITS field installation sites with both primary and secondary surge protection on the AC power. Connect the primary surge protection at the service entrance or main disconnect. Connect the secondary surge protection on the power distribution to the equipment.

A. SPD at Power Entry Point:

Install a SPD at the closest termination/disconnection point where the supply circuit enters the ITS device cabinet. Locate the SPD on the load side of the main disconnect and ahead of any and all ITS electronic devices. Configure the SPD to operate at 120 volt single phase (i.e., line, neutral and ground) or 120/240 volt single phase (line 1, line 2, neutral and ground) as required to match the supply circuit configuration. Ensure that the SPD maximum surge current rating is 80kA per phase or greater. Verify that the SPD has been labeled to indicate that the unit is UL listed and meets the requirements of UL 1449, Third Edition.

Ensure that the SPD has a visual indication system that monitors the weakest link in each mode and shows normal operation or failure status and also provides one set of normally open (NO)/normally closed (NC) Form C contacts for remote alarm monitoring. The enclosure for a SPD shall have a NEMA 4 rating.

B. SPD at Point of Use:

Install a SPD at the point the ITS devices receive 120 volt power. Ensure that the units are rated at 15 or 20 amps load and a minimum of 20kA of surge current capacity and configured with receptacles.

Ensure that these units have internal fuse protection and provide common mode (L+N-G) protection.

C. SPD for Low-Voltage Power, Control, Data and Signal Systems:

Install a specialized SPD on all conductive circuits including, but not limited to, data communication cables, coaxial video cables, and low-voltage power cables. Ensure that these devices comply with the functional requirements shown in Table 785-1 for all available modes (i.e. power L-N, N-G; L-G, data and signal center pin-to-shield, L-L, L-G, and shield-G where appropriate).

<table>
<thead>
<tr>
<th>Circuit Description</th>
<th>Clamping Voltage</th>
<th>Data Rate</th>
<th>Surge Capacity</th>
<th>Maximum Let-Through Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 VDC</td>
<td>15-20 V</td>
<td>N/A</td>
<td>5kA per mode (8x20 μs)</td>
<td>&lt;150 Vpk</td>
</tr>
<tr>
<td>24 VAC</td>
<td>30-55 V</td>
<td>N/A</td>
<td>5kA per mode (8x20 μs)</td>
<td>&lt;175 Vpk</td>
</tr>
<tr>
<td>48 VDC</td>
<td>60-85 V</td>
<td>N/A</td>
<td>5kA per mode (8x20 μs)</td>
<td>&lt;200 Vpk</td>
</tr>
</tbody>
</table>
SPD Minimum Requirements

<table>
<thead>
<tr>
<th>Circuit Description</th>
<th>Clamping Voltage</th>
<th>Data Rate</th>
<th>Surge Capacity</th>
<th>Maximum Let-Through Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>120 VAC at POU</td>
<td>150-200 V</td>
<td>N/A</td>
<td>20kA per mode (8x20 μs)</td>
<td>&lt;550 Vpk</td>
</tr>
<tr>
<td>Coaxial Composite Video</td>
<td>4-8 V</td>
<td>N/A</td>
<td>10kA per mode (8x20 μs)</td>
<td>&lt;30 Vpk</td>
</tr>
<tr>
<td>RS422/RS485</td>
<td>8-15 V</td>
<td>Up to 10 Mbps</td>
<td>10kA per mode (8x20 μs)</td>
<td>&lt;30 Vpk</td>
</tr>
<tr>
<td>T1</td>
<td>13-30 V</td>
<td>Up to 10 Mbps</td>
<td>10kA per mode (8x20 μs)</td>
<td>&lt;30 Vpk</td>
</tr>
<tr>
<td>Ethernet Data</td>
<td>7-12 V</td>
<td>Up to 1 Gbps</td>
<td>1kA per mode (10x1000 μs)</td>
<td>&lt;30 Vpk</td>
</tr>
</tbody>
</table>

17-1.2.01 Warranty for Surge Protective Devices:
Provide a SPD that is warranted by its manufacturer against any failures caused by electrical events, including direct lightning strikes, for a period of not less than 10 years or the SPD device manufacturer’s standard warranty period, whichever is greater.

The term “failure” for warranty replacement is defined as follows:
- Parallel-connected, power-rated SPD units are considered in failure mode when any of the visual indicators shows failure mode when power is applied to the terminals at the unit’s rated voltage, or the properly functioning over-current protective device will not reset after tripping.
- Series-connected, low-voltage power, data, or signal units are considered in the failure mode when an open circuit condition is created and no data/signal will pass through the SPD device or a signal lead is permanently connected to ground.

In the event that the SPD, including any component of the unit, should fail during the warranty period, the entire SPD shall be replaced by the manufacturer at no cost to the Department. Costs relating to the removal of the SPD, shipping and handling, and the reinstallation of the SPD shall be paid by the Department.
Georgia Department of Transportation

Technical Provisions

For

Design-Build Agreement

P.I. Nos. 0014895 and 0014899

Attachment 18-1

APPROVED DETOURS
DETOUR MAP
BRIDGE SERIAL NO: 021-0060-0
BIBB COUNTY

SR 247 / PIO NONO AVE OVER NORFOLK SOUTHERN RAILWAY
- ROAD CLOSURE (0.24 MI)
- OPEN TO LOCAL TRAFFIC (1.19 MI)
- PROPOSED SR 247/PIO NONO AVE DETOUR (2.91 MI)
- PROPOSED ROFF AVE (WEST) DETOUR (1.32 MI)
- PROPOSED ROFF AVE (EAST) DETOUR (0.32 MI)
IN WITNESS WHEREOF THE PARTIES HAVE SET THEIR HANDS AND AFFIXED THEIR SEALS

Wright Brothers Construction Company, Inc.

Signature of Contractor (SEAL)

J. Mitchell Simpson

Printed Name of Signee:

Liberty Mutual Insurance Company

Signature of Attorney-In-Fact (SEAL)

D-Ann Kleidosty

Printed Name of Signee:
Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"); pursuant to and by authority herein set forth, does hereby name, constitute and appoint, D-Ann Kleidosty, Marra Concepcion, Gary D. Eklund, Sharon J. Potts, Adrienne C. Stevenson

all of the city of Atlanta state of GA each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 3rd day of May, 2019.

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

By: David M. Carey, Assistant Secretary

State of PENNSYLVANIA
County of MONTGOMERY $5

On this 3rd day of May, 2019 before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized official.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at King of Prussia, Pennsylvania, on the day and year first above written.

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

Any officer of the Corporation authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation – The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization – By unanimous consent of the Company’s Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 4th day of October, 2019.
**Certificate Of Completion**

**Envelope Id:** 95F4ADCE1F664AF6BCB10C6F46E988AE  
**Status:** Completed  
**Subject:** B3IPD1902060-0/WRIGHT BROTHERS CONSTRUCTION CO INC  
**Document Pages:** 729  
**Certificate Pages:** 5  
**AutoNav:** Enabled  
**Envelope Id Stamping:** Enabled  
**Time Zone:** (UTC-05:00) Eastern Time (US & Canada)

**Record Tracking**

**Status:** Original  
**Holder:** GDOT DocuSign Admin  
**Location:** DocuSign  
**Security Appliance Status:** Connected  
**Pool:** StateLocal  
**Storage Appliance Status:** Connected  
**Pool:** Georgia Department of Transportation  
**IP Address:** 143.100.53.12

**Signer Events**

<table>
<thead>
<tr>
<th>Signature</th>
<th>Timestamp</th>
</tr>
</thead>
</table>
| J. Mitchell Simpson  
msimpson@wbcci.com  
Executive Vice President  
Security Level: Email, Account Authentication (None)  
Signature Adoption: Uploaded Signature Image  
Using IP Address: 96.33.247.122 | Sent: 10/3/2019 11:52:40 AM  
Viewed: 10/3/2019 4:11:54 PM  
Signed: 10/3/2019 4:13:10 PM |
| D-Ann Kleidosty  
D-Ann.Kleidosty@marshmc.com  
Marsh USA, Inc  
Security Level: Email, Account Authentication (None)  
Signature Adoption: Pre-selected Style  
Viewed: 10/4/2019 6:08:54 AM  
| Russell R McMurry  
rmcmurry@dot.ga.gov  
Security Level: Email  
Resent: 10/9/2019 1:53:04 PM  
Viewed: 10/9/2019 1:58:52 PM  
Signed: 10/9/2019 1:59:41 PM |
| Connie J. Steele  
csteele@dot.ga.gov  
Security Level: Email  
10/3/2019 2:04:50 PM | Sent: 10/9/2019 2:00:16 PM  
Resent: 10/9/2019 2:03:36 PM  
Viewed: 10/9/2019 2:05:10 PM  
Signed: 10/9/2019 2:05:42 PM |

**Electronic Record and Signature Disclosure:**

- Accepted: 10/3/2019 4:11:54 PM  
  ID: 56e07349-3306-42d9-839e-51b3315df6ea
- Accepted: 1/18/2017 8:15:14 AM  
  ID: bd532bd6-3676-48ee-a390-4846d07a000f
- Accepted: 2/26/2016 9:35:33 AM  
  ID: cd5495ce-99ae-409c-b25c-b6922ca5a283
- Accepted: 10/3/2019 4:13:10 PM  
  ID: 56e07349-3306-42d9-839e-51b3315df6ea
- Accepted: 1/18/2017 8:15:14 AM  
  ID: bd532bd6-3676-48ee-a390-4846d07a000f
- Accepted: 2/26/2016 9:35:33 AM  
  ID: cd5495ce-99ae-409c-b25c-b6922ca5a283
- Accepted: 10/3/2019 4:13:10 PM  
  ID: 56e07349-3306-42d9-839e-51b3315df6ea
- Accepted: 1/18/2017 8:15:14 AM  
  ID: bd532bd6-3676-48ee-a390-4846d07a000f
- Accepted: 2/26/2016 9:35:33 AM  
  ID: cd5495ce-99ae-409c-b25c-b6922ca5a283
- Accepted: 10/3/2019 4:13:10 PM  
  ID: 56e07349-3306-42d9-839e-51b3315df6ea
- Accepted: 1/18/2017 8:15:14 AM  
  ID: bd532bd6-3676-48ee-a390-4846d07a000f
- Accepted: 2/26/2016 9:35:33 AM  
  ID: cd5495ce-99ae-409c-b25c-b6922ca5a283
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<th>Agent Delivery Events</th>
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<th>Intermediary Delivery Events</th>
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<th>Carbon Copy Events</th>
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<table>
<thead>
<tr>
<th>Andrew Hoenig</th>
<th><a href="mailto:ahoenig@dot.ga.gov">ahoenig@dot.ga.gov</a></th>
<th>Sent: 10/4/2019 6:14:47 AM</th>
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</thead>
<tbody>
<tr>
<td>Security Level: Email, Account Authentication (None)</td>
<td>Electronic Record and Signature Disclosure: Not Offered via DocuSign</td>
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<table>
<thead>
<tr>
<th>Rick O'Hara</th>
<th>RO'<a href="mailto:Hara@dot.ga.gov">Hara@dot.ga.gov</a></th>
<th>Sent: 10/4/2019 6:14:48 AM</th>
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<tbody>
<tr>
<td>Security Level: Email, Account Authentication (None)</td>
<td>Electronic Record and Signature Disclosure: Not Offered via DocuSign</td>
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<th>Witness Events</th>
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<table>
<thead>
<tr>
<th>Notary Events</th>
<th>Signature</th>
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<table>
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<tr>
<th>Envelope Summary Events</th>
<th>Status</th>
<th>Timestamps</th>
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<tbody>
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</table>

| Envelope Sent          | Hashed/Encrypted | 10/9/2019 2:03:36 PM |
| Certified Delivered    | Security Checked | 10/9/2019 2:05:11 PM |
| Signing Complete       | Security Checked | 10/9/2019 2:05:42 PM |
| Completed              | Security Checked | 10/9/2019 2:05:42 PM |

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<th>Payment Events</th>
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<table>
<thead>
<tr>
<th>Electronic Record and Signature Disclosure</th>
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</table>
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You may contact us to let us know of your changes as to how we may contact you electronically, to request paper copies of certain information from us, and to withdraw your prior consent to receive notices and disclosures electronically as follows:
To contact us by email send messages to: gdot_contracts@dot.ga.gov

To advise Georgia Department of Transportation of your new e-mail address
To let us know of a change in your e-mail address where we should send notices and disclosures electronically to you, you must send an email message to us at gdot_contracts@dot.ga.gov and in the body of such request you must state: your previous e-mail address, your new e-mail address. We do not require any other information from you to change your email address.
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To inform us that you no longer want to receive future notices and disclosures in electronic format you may:
  i. decline to sign a document from within your DocuSign account, and on the subsequent page, select the check-box indicating you wish to withdraw your consent, or you may;
  ii. send us an e-mail to gdot_contracts@dot.ga.gov and in the body of such request you must state your e-mail, full name, IS Postal Address, telephone number, and account number. We do not need any other information from you to withdraw consent. The consequences of your withdrawing consent for online documents will be that transactions may take a longer time to process.

Required hardware and software

<table>
<thead>
<tr>
<th>Operating Systems:</th>
<th>Windows2000? or WindowsXP?</th>
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<tbody>
<tr>
<td>Browsers (for SENDING):</td>
<td>Internet Explorer 6.0? or above</td>
</tr>
<tr>
<td>Browsers (for SIGNING):</td>
<td>Internet Explorer 6.0?, Mozilla FireFox 1.0, NetScape 7.2 (or above)</td>
</tr>
<tr>
<td>Email:</td>
<td>Access to a valid email account</td>
</tr>
<tr>
<td>Screen Resolution:</td>
<td>800 x 600 minimum</td>
</tr>
</tbody>
</table>

Enabled Security Settings:

- Allow per session cookies
- Users accessing the internet behind a Proxy Server must enable HTTP 1.1 settings via proxy connection

** These minimum requirements are subject to change. If these requirements change, we will provide you with an email message at the email address we have on file for you at that time providing you with the revised hardware and software requirements, at which time you will have the right to withdraw your consent.
Acknowledging your access and consent to receive materials electronically
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