DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

SPECIAL PROVISION

PROJECT NO. CSNHS-0008-00(232)

P.I. NO. 0008232

SECTION 999 – DESIGN-BUILD

999.1 General Description

999.1.01 Project Location

The location of the construction work included in this Project is shown in the plans package in the costing plans. This project is located in Troup County. Any reference to Webb Road shall also be deemed to mean Webb-Bartley Road.

999.1.02 Design-Build Concept

In the Design-Build concept, the Design-Build Firm (see www.dot.state.ga.us/specialstudies/designbuild/) will work to design and build the Project. Any reference to Contractor shall also mean Design-Build Firm and any reference to Design-Build Firm shall also mean Contractor. A design consultant will either be acting as a subcontractor to the Contractor or as a joint-venture member with whom this agreement has been executed. The Department will have oversight responsibilities only, and will perform official reviews and approvals of design work as noted. Design and engineering work shall be conducted under the supervision of those entities prequalified to do such work.

The Contractor shall not begin work until the following have been approved by the Engineer:

- QC/QA Plan.
- Proof of no UST involvement or hazardous materials within project limits.
- Basis of the design and concept.
- Erosion and Sediment Control Plan along with Construction Activities Schedule w/NOI
- Traffic Control Plan for approved work.
- Utility Agreements, Encroachment Permits, Relocation Plans, and Contractor Certification of “No-Conflict.”
- Nighttime Sensitive Receptors (NSR) within 500 feet of proposed construction shall be identified.

Throughout this document, alternative proposals are mentioned. Bids on this project shall reflect designing and constructing the project as shown in the Scope (999.1.03) and applicable portions of the Plans Package. No exceptions shall be assumed by the Contractor. However, alternative proposals on portions of the work will be entertained once the project is awarded. The VE Specification, including procedures, in which the Contractor and Department have a share in the savings, is included in this contract. Alternative proposals shall not conflict with the overall completion date of the project or intermediate completion dates unless otherwise approved by the Department.

The Contractor shall use those entities prequalified in related disciplines (design, traffic analysis, geotechnical, etc.) as presented in the Statement of Qualifications. Revisions to the team and/or the proposed assignments reflected in the Statement of Qualifications must be approved by the Engineer. Additional disciplines needed to meet the requirements of

this special provision that were not identified in the Statement of Qualifications shall meet GDOT prequalifications as required and any applicable standards, policies or guidelines of the local agencies or utility owners. Please be aware that this project is known to fall under the State of Georgia, Troup County, and the City of West Point jurisdictions.

All proposal materials shall become the property of the Department and may be used by the Department without exception. Ideas originating with qualified proposers may be used by the proposer awarded the project.

Coordinate with other contractors whose project limits penetrate the project limits of this project. Do not restrict access to the West Point Economic Development Site by Contractors currently on site or attempting to get on site during the construction of project. Maintain all access roads within the limits of right of way at all times.

Where specifications differ with this proposal, the Special Provision 999 Design-Build shall take precedence unless otherwise revised through the amendment process. Prescriptive provisions found in the Specifications shall be followed for this project.

999.1.03 Project Scope

A. General

This Project will consist of, but is not limited to the following major roadway and bridge construction as shown in these specification and Plans Package: relocating Gabbettville Road (to be named KIA Boulevard) from the existing Sandtown Road intersection on the west side of I-85 to Warner Road on the east side of I-85, improvements to Warner Road, Sandtown Road, Webb Road and SR 18, construction of a frontage road (KIA Parkway) adjacent to I-85 on the west side from SR 18 to Relocated Gabbettville Road (KIA Boulevard), construction of a truck access roadway to the West Point Economic Development Site, construction of driveways, construction of retaining walls, construction of two bridges (Relocated Gabbettville Road (KIA Boulevard) over I-85 and Frontage Road (KIA Parkway) over Long Cane Creek), multiple culverts, milling I-85 (for filter fabric only), construction of the ramps, ramp tapers (associated with a diamond interchange with Relocated Gabbettville Road (KIA Boulevard) and I-85), construction of lighting facilities, construction of drainage conveyance systems, construction of required signage (for interstate and local roads), signals (6 separate locations – SR 18 and KIA Pkwy, Webb Road and KIA Pkwy, KIA Blvd at KIA Pkwy, both ramps, and Warner Road (4 total on KIA Blvd)), striping, coordination with utility relocation, pedestrian amenities and landscaping in accordance with the plans, special provisions, and compliance with current ADA requirements. Final design and construction shall be consistent with and commensurate with the design and proposed construction of all facilities (hard and soft) shown in the Costing Plans.

The work covered under this Specification includes the furnishing of all materials, labor, tools, equipment, and other incidental items for the designing, detailing, and construction of the roadway, bridges, and all other items contained in the Project Scope and Plans Package. The Contractor shall construct all items such as, but not limited to, roadway items, bridge items, lighting items, temporary and permanent erosion control items, temporary grassing items, signing, marking, and signal items, and landscaping items to the limits of the construction plans as designed by the Contractor and approved by the Department. All advanced signing relative to proposed work, to be placed outside the limits shown on the provided plans package, and/or subsequent approved Contractor's plan, shall be included in the work and paid for under CONSTRUCTION COMPLETE.

The Truck Road alignment located in the Costing Plans will be revised once the project is awarded. The final alignment (including an additional connection to the West Point Economic Development Site) of the Truck Road serving the West Point Economic Development Site is unknown at this time. The right of way flares (starting from the West Point Economic Development Site and moving northward) to accommodate a possible split in the proposed Truck Road to provide both a four-lane, two-way entrance/exit, and a two-lane, two-way entrance/exit. The exact configuration will be determined after the project is awarded. Also, the Truck Road alignment may tie in as much as 50 feet to the west of its current tie-in with Relocated Gabbettville Road (KIA Boulevard). Beyond what is shown in the costing plans, the Contractor shall include the design and construction of an additional 1600 feet of two-lane two-way facilities matching the Truck Road typical section found in the Plans Package. This additional 1600 feet of facilities shall include, but not be limited to, materials, labor, transportation and storage of materials required for the earthwork (and any needed stabilization), pavement, signing and marking, drainage, etc. The Contractor shall work with the Engineer (or designee) as to progress towards and coordinate the final alignment (and additional connection mentioned above) of the Truck Road. This will include up to three iterations of alignments (including that level of

detail necessary to determine viable options and consequential effects to the currently proposed project found in the Plans Package). Meetings with the Engineer, and others, will be required. The Contractor shall assume that a final alignment and environmental clearance will be complete by June 30, 2007. Collateral changes to any portion of the project, made necessary by the acceptance of the final Truck Road alignment, will be included in the overall price bid for CONSTRUCTION COMPLETE or DESIGN COMPLETE. No construction shall be conducted on the Truck Road until the final alignment is available. Note: Wetland impacts have been approved for the proposed alignment as shown in the Plans Package. As such, any revision may require a reevaluation. While working with the Contractor, the Department will make that determination and will be responsible for any environmental reevaluations associated with a change on the Truck Road. Any reevaluation will be complete June 30, 2007. Supporting information (reports and layouts shall be made available to the Department, by the Contractor, for use in any reevaluation efforts. Unless otherwise determined by the Engineer, information shall be available to the Department within 3 business days. The Contractor's schedule shall include these parameters. In the event that this additional 1600 feet of facilities is not needed (as directed by the Engineer), the Contractor shall give the Department an acceptable credit (as determined by the Engineer) for the costs proposed by the Contractor for design, coordination and construction.

The Contractor shall work with the Engineer (or designee) to establish the final location of the driveways along KIA Pkwy that is proposed to serve the West Point Economic Development Site. The Contractor's bid shall include that "design and construction" effort that would accommodate said driveways at any location between Relocated Gabbettville Road (KIA Boulevard) and the West Point Economic Development Site.

Where grading or clearing and grubbing occur up to, or within 5 feet of, the existing limited access fence along I-85, the existing fence shall be replaced with field fence including 2-strand barbed wire. Construction of fence shall occur within existing right of way as shown in the Plans Packages, or from the interstate right of way. All costs associated with placing said fence, included necessary clearing, are included in the price bid for CONSTRUCTION COMPLETE.

A Cell Tower existing along Frontage Road (KIA Parkway) will not be relocated until July 31, 2007. The Contractor shall schedule his work as to include this parameter. Access for crews to remove the tower shall remain open at all times until July 31, 2007.

The Contractor shall construct all work, including bridge substructure and superstructure (only that which Contractor constructs from below the bridge) and all permanent safety features, along the mainline of I-85 northbound, within 75 feet outside the existing outside edge of pavement to a point halfway in the median (measured as ½ the distance from inside edge of pavement northbound to inside edge of pavement southbound) within 180 calendar days

The Contractor shall construct all work, including bridge substructure and superstructure (only that which Contractor constructs from below the bridge) and all permanent safety features, along the mainline of I-85 southbound, within 75 feet outside the existing outside edge of pavement to a point halfway in the median (measured as ½ the distance from inside edge of pavement northbound to inside edge of pavement southbound) within 180 calendar days.

Work referenced the above text may overlap, but the total time to complete the two may not exceed 270 calendar days.

The Contractor shall adhere to lane closure parameters found within the specifications, specifically on I-85.

Two-way public access along KIA Blvd, starting from the intersection of Gabbettville Road and Sandtown Road moving eastward to just east of the Truck Road, along with the final alignment(s) of the Truck Road from KIA Blvd to the West Point Economic Development Site shall be opened to traffic by December 31, 2007. Two-way public access from Webb Road to Sandtown Road shall be opened to traffic 365 calendar days after NTP for the project is given. Contractor shall include temporary signing, striping and marking in applicable asphalt sections in order for traffic to run on 19 mm asphalt coarse. Final surface course shall not be placed until final asphalt paving begins for remainder of project.

Construction, within those areas of proposed construction that are within 500 feet of NSRs, shall be limited to daylight hours. NSRs are defined as a residential dwelling.

Information related to “existing conditions”, as reflected in the plans package, is for information only. The Contractor shall be aware that existing conditions found in the plans package have changed since the field survey work and associated design effort were completed. The plans package, along with the specifications, will attempt to highlight areas of known changes in the existing conditions. These areas may or may not include all actual areas where existing conditions differ from those that currently exist in the field. The Contractor shall be responsible to verify all existing conditions. No claims will be considered due to decisions/assumptions made by the Contractor based on “existing conditions” reflected in the plans package.

The contractor may propose alternative methods/solutions to this requirement once the project is awarded, but must provide the same, or better, facilities as shown in the Plans Package and specifications and meet the following criteria:

- No additional or increased costs
- No extension in overall schedule (or specified milestones)
- No breach of secured commitments or MOUs included in this contract
- No exceptions to specifications included in this contract
- Alternatives must be approved by the Engineer

Note: Geometric design (including but not limited to horizontal and vertical alignments, radiuses, etc.) shall be as shown in Plans Package or may be revised as long as the design incorporates more conservative values.

B. Right-of-Way

All construction will occur within the existing right of way and easement and/or required right of way and easement as shown on the provided right of way plans.

C. Utilities

The Contractor shall have the responsibility of coordinating the project construction with all utilities that may be affected. Coordinating responsibilities shall include but not be limited to the following:

1. The Contractor shall be responsible for the cost of utility coordination. Coordination shall include, but shall not be limited to, contacting each Utility Owner to advise of the proposed project; supplemental verification of the locations of existing utility facilities (including the employment of additional Overhead/Underground Subsurface Utility Engineering investigations (SUE) as described in section 999.3.B.1.k of this specification); and determining requirements for the relocation or adjustment of facilities.

2. The Department and/or the Utility Owner shall be responsible for the cost of utility relocation where they hold a property interest, and in accordance with the Department's "Utility Accommodation Policy and Standards Manual." Details are provided in the attached Memorandum of Understanding (MOU) executed between the Department and each Utility Owner.

3. The Contractor shall design the project to avoid conflicts with utilities when feasible, and minimize impacts where conflicts cannot be avoided (See Section 999.3.B.1.k). The Contractor shall submit to the Department a Utility Conflict Matrix in the Department's prescribed format within 180 days of notice to proceed.

4. The Contractor shall initiate early coordination with all Utility Owners located within the project limits.

5. The Contractor shall coordinate and conduct a preliminary review meeting with the Utility Owners to assess and explain the impact of the project. The Department's Project Manager, District Construction Engineer (or designee), and District Utilities Engineer (or designee) shall be included in this meeting. The Contractor shall record the minutes for this meeting and distribute to all attendees for their review and concurrence.

6. The Contractor shall research the property interests of each Utility Owner's facilities. If there is a dispute over property interests with a Utility Owner, the Contractor shall be responsible for resolving the dispute. The Contractor shall meet with the Department's District Utilities Engineer (or designee) to present the property interests information gathered. This information shall be sufficient for the District Utilities Engineer (or designee) to certify the extent of the Utility Owner's property interests. The Department shall have final approval authority as to the Contractor's determination of whether the Utility Owner has property interests.

7. The Contractor shall prepare and submit to the Department a Preliminary Utility Status Report within 90 days after the Notice to Proceed has been given for the contract. This report shall 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. This report shall include copies of easements, plans, or other supporting documentation that substantiates any property interests of the Utility Owners. The report shall also include a preliminary assessment of the impact to each Utility Owner.

8. Depending on the provisions stipulated in the Memorandum of Understanding (MOU – See Attached) between the Department and each Utility Owner, the Contractor shall be responsible for one of the following Design Activities:

    - The Contractor shall provide Utility Owners with design plans and Preliminary Utility Plans as soon as the plans have reached a level of completeness adequate to allow them to fully understand the project impacts. The Utility Owner will use the Contractor's design plan for preparing Utility Relocation Plans, cost estimates, and respective Utility Adjustment Schedules (UAS). If a party other than the Utility Owner prepares Utility Relocation Plans, there shall be a concurrence box on the plans where the Utility Owner signs and accepts the Utility Relocation Plans as shown.

    - The Contractor shall prepare all engineering design, plans, technical specifications, cost estimates, and utility adjustment schedules required to perform the necessary utility relocations. The Contractor shall certify to the Department that the design package listed above has been reviewed and accepted by the each respective Utility Owner.

9. The Contractor shall be responsible for collecting the following from each Utility Owner that is located within the project limits: Certified Utility Relocation Plans including a letter of "no cost" where the Utility Owner does not have a prior right; Utility Agreements, certificates of eligibility, including cost estimate and Utility Relocation plans where the Utility Owner has a property interest; Letters of "no conflict" where the Utility Owner's facilities will not be impacted by the Project.

10 The Contractor shall be responsible for determining if the Department has agreed to be pay for in-kind relocations according to any approved Utility-Aid assistance package for publicly (government) owned utilities found within the project's limits (See the Department's TOPPS Policy #6863-11 for additional information regarding Utility-Aid). If the Department has approved Utility-Aid; it is the Contractor's responsibility to assemble the necessary information including any Utility Agreements in a final and complete form and in such a manner that the Department may approve the submittals with minimal review. Failure to submit such required Utility Agreements prior to the beginning of construction shall fully transfer the utility owner's obligations, as stated in the subject Utility-Aid assistance package, to the Contractor. Deductions to reimburse the Department for such obligations may be made from any current partial payment of the Lump Sum price.

11. The Contractor shall review all Utility Relocation Plans and Utility Agreements and certificates of eligibility to ensure that relocations comply with the Departments "Utility Accommodation Policy and Standards Manual." The Contractor shall also ensure that there are no conflicts with the proposed highway improvements, and ensure that there are no conflicts between each of the Utility Owner's relocation plans.

12. The Contractor shall compile, and submit to the Department all Utility Relocation Plans, Utility Conflict Matrix, Utility Adjustment Schedules, Utility Agreements, Utility Estimates, and Letters of "no conflict," as set forth above for the project. The Contractor is expected to assemble the information included in the Utility Agreements and Utility Relocation Plans in a final and complete form and in such a manner that the Department may approve the submittals with minimal review. The Contractor is expected to meet with the Department's District Utilities Office within 30 days of the Notice to Proceed to gain a full understanding of what is required with each submittal. The Utility Owners shall not begin their Utility Relocation work until authorized in writing by the Department.

13. Each Utility Agreement and Utility Relocation Plan submitted shall be accompanied by a certification from the Contractor stating that the proposed relocation will not conflict with the proposed highway improvement and will not conflict with another Utility Owner's relocation plan.

14. Depending on the provisions stipulated in the Memorandum of Understanding (MOU – See Attached) between the Department and each Utility Owner the Contractor shall be responsible for one of the following construction activities:

    - The Contractor shall be responsible for coordinating the work of its subcontractors and the various Utility Owners. The resolution of any conflicts between Utilities and the construction of the project shall be the responsibility of the Contractor. No additional compensation will be allowed for any delays, inconveniences, or damage sustained by the Contractor or its subcontractors due to interference from utilities or the operation of relocating utilities.

    - The Contractor shall be responsible for performing all utility removal, relocation, and adjustments required to accommodate the proposed project. This shall include any required inspection, permitting, testing and monitoring to ensure that the work is properly performed to the certified design package. The resolution of any conflicts between Utilities and the construction of the project shall be the responsibility of the Contractor. No additional compensation will be allowed for any delays, inconveniences, or damage sustained by the Contractor or its subcontractors due to interference from utilities or the operation of relocating utilities.

15. During the construction of the project, 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 prior to beginning Construction 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 Phone:
706.234.8218 or
706.853.1362

Georgia Utility Contractors Association
Phone: 404.362.9995

Georgia Utilities Protection Center
Phone: 678.291.0631 or
404.375.6209

H B Training & Consulting
Phone: 706.619.1669 or
877.442.4282 (Toll Free)

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 30334-5701
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 and submit to the Department an Emergency Response Plan no later than 30 days prior to beginning construction. The WUCS shall clearly mark and highlight the gas, water and other pressurized pipeline shut-off valves and other utility services including overhead switch locations on the utility plans; and prepare a chart to indicate the location of each site (Street address or intersections), the utility company or operator of the facility with emergency contact information and the working condition of the device to facilitate prompt shut-off. The WUCS shall post the Emergency Response Plan in an area readily accessible to the Department. 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 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.

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. Utility Adjustment 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 progress schedule chart that is feasible. 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. The WUCS shall submit the Progress Schedule Chart in accordance with Section 108.03 and the proposed Utility Adjustment Schedules from all utility companies to the Engineer for review and approval.

16. During the construction of the project, the Contractor shall be responsible to conduct monthly coordination meetings in order to identify and resolve utility issues/conflicts with project construction. The Department's District Construction Engineer (or designee), District Utilities Engineer (or designee) and all Utility Owner's shall be included in this meeting. The Contractor shall record the minutes for this meeting and distribute to all attendees for their review and concurrence.

17. At the time the Contractor notifies the Department that the Contractor deems the Project to have reached Final Completion, the Contractor shall certify to the Department 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 by the Contractor.

18. The Contractor shall accurately show the final location of all utilities on the as-built drawings for the project as stated in Section 999.3.A.12.

19. In addition to the above, the Contractor shall comply with all provisions set forth under subsection 107.21 found in the Georgia Department of Transportation's Specifications Construction of Transportation Systems, current edition.

20. The City of West Point will provide proposed water line plans. The current plan includes facilities in or near KIA Pkwy. The Contractor shall coordinated with the City (and/or designee) to facilitate the design and construction of the proposed water lines. The Contractor's schedule shall include the City's proposed implementation schedule for the water lines.

D. Landscaping

Design and construct any required landscaping for interchange and frontage road within the limits shown in the plans package and/or as approved by the Department. Landscaping shall adhere to the criteria found in the plans package.

Final location and maturation of landscaping shall not interfere with sight distance criteria (including site triangles at intersections)

E. Lighting

Design and construct any required lighting for the interchange (including any interchange signage that requires lighting) and frontage road within the limits shown in the plans package and/or approved by the Department. Lighting shall conform to the following:

1. Design and construct complete roadway lighting system for Kia Boulevard from Truck Road to Ramps A/B utilizing luminaires equal to Holophane Mongoose with 250W HPS lamps and medium roadway clear drop glass optics (TP3 - cutoff) on 39-foot high, round, tapered, galvanized steel roadway poles. Fixture tilt angles shall be adjusted to maximize uniformity.

2. Design and construct a complete highmast roadway lighting system for Kia Boulevard from Ramps A/B to Warner Road. Highmast luminaries shall be equal to Holophane HMST with 400W HPS lamps and asymmetric distribution optics (TP2) on 100-foot high, round, tapered, galvanized steel towers.

3. Design and construct complete roadway lighting system for Truck Road in its entirety utilizing luminaires equal to Holophane Mongoose with 250W HPS lamps and narrow roadway clear drop glass optics (TP2 - cutoff) on 39-foot high, round, tapered, galvanized steel roadway poles. Fixture tilt angles shall be adjusted to maximize uniformity.

4. Design and construct complete roadway lighting system for Kia Parkway in its entirety utilizing luminaires equal to Holophane Mongoose with 250W HPS lamps with wide roadway clear drop glass optics (TP3 - cutoff) on 39-foot high, round, tapered, galvanized steel roadway poles. Provide lighting above the Long Cane Creek Bridge utilizing the same roadway luminaires and poles located atop 4-foot extensions of selected bridge bents. Fixture tilt angles shall be adjusted to maximize uniformity.

5. Design and construct complete highmast roadway lighting system for the I-85 Interchange at CR 98 / Gabbettville Road. Interchange lighting shall include illumination of the four ramps in their entirety and underpass lighting below the bridge over I-85. Highmast luminaries shall be equal to Holophane HMST with 400W HPS lamps and assymetric distribution optics (TP2) on 100-foot high, round, tapered, galvanized steel towers.

6. Coordinate with the Department of Aviation Programs to ensure that the design is compatible with all applicable Federal Aviation Administration requirements in the area.

7. All interchange lighting shall be in accordance with the AASHTO Roadway Lighting Design Guide October 2005 Edition AND the IES RP-8-00 Roadway Lighting Recommended Practices publications using the Illuminance Design method.

8. All pole locations shall be outside of the clearzone if possible. **ALL** roadway poles that are located within the clearzone require AASHTO compliant breakaway couplings.

9. All pole locations shall be a minimum of 20 feet from the edge of travel lane where not located on or behind concrete barrier walls.

10. Perform a Field Evaluation prior to commencing construction. Coordinate with Engineer and local designee.

11. Coordinate with local power utility to identify the best external power source location(s) for the lighting.

12. Evaluate the number of power metering points required.

13. Provide power service runs, power service poles, lighting controls and wiring to/from power company meter enclosure. Provide lighting controls per Typical Service Point Wiring Detail included in the preliminary Drawings. Service points shall contain a maximum of three 40A, 480V single-phase circuits.

14. Calculate electrical service loads and prepare wiring schematics.

15. Provide wiring between all luminaires and poles. Cable types are multiples of 2-#2-1-#4 or 2-#6-1-#8 in 2-inch or 1-inch Schedule 40 PVC or galvanized rigid steel conduit.

16. Wiring shall meet the requirements of the 2001 Edition of the State of Georgia Specifications for Construction of Transportation Systems and the 2005 Edition of NFPA 70: National Electrical Code.

17. Produce a set of construction plans for the detailed wiring of the lighting. These plans will include any and all wiring, conduit, power service locations and wiring diagrams not already included in the preliminary Drawings. This will entail producing a cover sheet, index, revision summary sheet, revised summary of quantities, revised detailed estimate, plan sheets, special details (if required), special provisions (if required) and including all applicable Georgia Standards and Details if not already included in the preliminary Drawings. Estimated quantities are provided in the preliminary Drawings.

18. Prepare all required special provisions in Microsoft Word format **AND** Adobe PDF formats.

19. Provide soil boring reports with footing design(s) for highmast light towers.

20. Provide footing design(s) for roadway light poles.

21. Prepare Cost Estimate(s) in Microsoft Word **AND** Adobe PDF formats.

22. Provide design values for light intensities and uniformity ratios with design computation documentation.

23. Provide manufacturer name, model number and cut sheets for **ALL** proposed luminaires used in the design.

24. Provide in hardcopy, MicroStation DGN **AND** Adobe PDF format a photometric layout including but not limited to the Illuminance Method design computations including: Road Classification, Pedestrian Conflict Area category, Roadway Surface Classification, Minimum Maintained Average Footcandle level, Uniformity Ratio avg/min and Veiling Luminance Ratio vmax/avg as per Table 2, Page 8 of the IES RP-8-00 publication.

25. The limits of lighting coverage shall be in concordance with all the Department's requirements and details.

26. The road classifications shall be as follows:

27. I-85 Ramps: Interstate; R3; Low.

28. Kia Boulevard: Collector; R1; Low.

29. Truck Road: Collector; R1; Low.
30. Kia Parkway Local; R3; Low.
31. The minimum Illuminance shall be ≥ 0.2 foot-candles (fc).
32. The maintenance factor shall be 0.7 (70%).
33. All luminaries shall be High Pressure Sodium (HPS).
34. Coordinate lighting design with roadway design.
35. Coordinate lighting design with bridge design.
36. Coordinate lighting design with the Utility Office.
37. Coordinate Soil Boring Report with the Office of Materials and Research.
38. Coordinate all applicable Special Provisions with the appropriate offices in the Department.
39. Create final drawings.
40. Pole Data Legend Sheet shall include:
    - Circuit number
    - Roadway station and offset
    - Luminaire wattage and type
    - Mounting height
    - Mounting arrangement
41. Plan Sheets or Layout Sheet at same scale as GDOT proposed roadway plans (to be coordinated with the Department).
42. Including pole and service point location(s).
43. Identify utility owner, address and contact person with specific connection information.
44. Provide Construction Details.
45. Provide itemized quantities and detailed estimate.
46. Revise project lighting plans and Special Provisions as necessary
47. Review shop drawings, cut sheets and material submittals.
48. Prepare all required “Use on Construction” revisions.
49. The electrical circuit design and construction (including service points) for the interchange shall be separate from the electrical circuit(s) design and construction for the remainder of the project. The Contractor shall coordinate with the Engineer (and the City of West Point) on all aspects of the design and construction
50. Final location lighting shall not interfere with sight distance criteria (including site triangles at intersections).

F. Deliverables

The following items shall be delivered to the Department at the following address:

Alan Walker
Georgia Department of Transportation
Office of Road & Airport Design
No. 2 Capitol Square – Room 444
Atlanta, Georgia 30334

1. **Preliminary Submittal – See Table 999-1.**

2. **Highmast Light Tower Foundation Submittal(s) – See Table 999-1.**

3. **Final Submittal – See Table 999-1.**

4. **Revision Submittal(s)**

   One set of necessary Use on Construction revisions (1 half size paper AND 1 set – individual electronic Adobe PDF per sheet).

G. Existing Facilities

Where existing facilities are damaged during the prosecution of The Work – *See Section 107.13.* The Contractor shall work with the City of West Point and Troup County as to minimize damage (related to Contractor activity) to the existing City and County road system. When existing pavement structures within the project limits are damaged as a result of the Contractor's activities, it shall be repaired in kind or better and on a schedule as directed by the Engineer. This work shall be included in Section 107.13.

H. Environmental

The following pages include environmental commitments. Adhere and provide all material, labor, equipment and other incidentals required in the "Commitments/ Requirments" that apply to the Contractor. Key words such as "construction," "contractor," "work," etc., point to the areas of responsibility by the Contractor. The Contractor shall provide the "qualified ecologist" mentioned in the table below.

		Specialist Review	
Project No.:	CSNHS-0008-00(232)	404	
County:	Troup	Air/Noise	
P.I. No.:	0008232	Archaeology	
Status:	Environmental Assessment	Ecology	
Date Updated:	February 14, 2007	History	

Pre-Construction Commitments

COMMITMENT/REQUIREMENT	DOCUMENT STIPULATED IN	RESPONSIBLE OFFICE (Concurrence date; if other than OEL)	PLACE ON PLANS? (Yes or No)	REQUIRES A SPECIAL PROVISION? (Yes or No)	STATUS (Pre-Construction: Complete/ Incomplete) (During Construction: ECB Signature upon completion) (Post Construction: Complete/Incomplete)
Natural Resources					
Obtain a stream buffer variance from the Georgia EPD	404 Permit	GDED*	No	No	Complete 9-2006
Obtain a 404 Individual permit for impacts to jurisdictional waters	EA	GDED	No	No	Complete 9-2006
Develop a compensatory mitigation plan for wetlands, streams and stream buffers that would generate suitable credit according to the SOP for Compensatory Mitigation, Savannah District, USACE. Stream buffer mitigation would comply with EPD standards.	404 Permit	GDED	Yes (for any on-site mitigation areas)	No	Complete 9-2006
Procedures for Coordinating Highway Encroachments on Floodplains with the Federal Emergency Management Agency (FEMA) will be completed prior to construction	EA	GDOT Roadway	Yes	No	Complete 1-2007

Section 7 coordination for bald eagle would be completed before project construction.	EA and Ecology Report	GDOT OEL	No	No	Complete 12-2006
Special Provision 107.23 G for the protection of the bald eagle and migratory birds will be forwarded to Design for inclusion in the construction contract.	EA and Ecology Report	GDOT OEL	No	Yes	Complete 2-2007
Update to Section 404 Permit to capture the additional 3.2 acres of impacts at Wetland 1 will be completed by June, 2007. No work will take place between stations 480+00 and 485+00 to avoid impacting the additional wetland acreage until the permit is updated by GDED*.	EA	GDED	No	No	Incomplete (Will be completed by June, 2007)
Bridges shall be designed to prevent direct roadway water runoff discharge to all streams that would be crossed by the proposed project.	EA	GDOT Roadway	Yes	No	Incomplete (Will be completed design/build contractor as part of final design plans)
All culverts shall be embedded 15-20% of their width to allow natural substrate to colonize the structures bottom and encourage fish movement. Please see attached Special Provision 999, which identifies this requirement	404 Permit	GDOT Roadway	No	Yes	Complete 3-2007

Community Resources					
Sensitive nighttime receptors shall be identified on the plans. Please see attached Special Provision 999, which identifies this requirement.	404 Permit	GDOT Roadway	Yes	Yes	Incomplete (Will be completed by July 1, 2007 or before construction begins in the area.)
Cultural Resources					
All NRHP eligible site boundaries shall be labeled on the plans, and identified as Environmentally Sensitive Areas (ESAs) to prohibit staging of equipment or materials thereon.	EA	GDOT Roadway	Yes	No	Complete 2-2007
Update to Section 404 Permit to capture the additional area surveyed for cultural resources along Webb Road will be completed by June, 2007. No work will take place east of station 105+00 on Webb Road to avoid disturbing any area that is beyond the limits of the cultural resource survey area covered under the approved 404 permit until the permit is updated by GDED*.	EA	GDED	No	No	Incomplete (Will be completed by June, 2007)
ESAs will be marked on the plans and restrictions will be set on construction, easements, staging and borrowing activities in the vicinity of the ESA. A copy of Special Provision 107.23, which identifies the requirements needed to protect the ESA's has been included in the contract specifications and is attached to this Commitment table.	EA and 404 Programmatic Agreement	GDOT OEL/GDED	Yes	Yes	Complete 2-2007

GDED = Georgia Department of Economic Development

COMMITMENT/REQUIREMENT	DOCUMENT STIPULATED IN	RESPONSIBLE OFFICE (Concurrence date; if other than OEL)	PLACE ON PLANS? (Yes or No)	REQUIRES A SPECIAL PROVISION? (Yes or No)	STATUS (Pre-Construction: Complete/ Incomplete) (During Construction: ECB Signature upon completion) (Post Construction: Complete/Incomplete)
During Construction Commitments					
Natural Resources					
To the greatest extent practicable clearing of vegetation shall be completed from September 1 to March 31. If clearing is to be completed between April 1 and August 31, clearing limits shall be surveyed by a qualified ecologist to verify the presence or absence of barn swallow breeding activities and determine the feasibility and need to relocate any nests.	EA	GDOT OEL	Yes	Yes	ECB signature upon completion
As per the 25-foot Vegetative Buffer variance granted by the Georgia Department of Natural Resources on September 26, 2006, specific activities to protect the stream and vegetative buffer (ESA) must be completed. A copy of Special Provision 107.23F, which identifies the requirements needed to protect the ESA has been included in the contract specifications and is attached to this Commitment table.	EA and 25-foot Vegetative Buffer Variance	GDOT/GDED	Yes	Yes	ECB signature upon completion
Stream buffer mitigation would occur as close to the project impacts as is practicable and within the same ecoregion and eight digit USGS Hydrologic Unit Catalogue Unit, according to regulatory agency guidelines for mitigation in Georgia. Mitigation would include on-site and off-site mitigation. On-site mitigation includes the restoration, enhancement, and preservation of existing wetlands and the preservation of the Long Cane Creek forested riparian zones with a restrictive covenant.	404 Permit	GDED	Yes (for any on-site mitigation areas)	No	Incomplete

Off-site mitigation would include preservation of stream buffer along Mud Creek and one of its tributaries in the Mud Creek Mitigation Area (MCMA).					
Special Provision 107.23G for the protection of the bald eagle and barn swallows will be followed. The full provision is attached.	EA and Ecology Report	GDED	No	Yes	ECB signature upon completion
Complete implementation of August 24, 2006 Compensatory Mitigation Plan by September 30, 2007	404 Permit and EA	GDED	No	No	Incomplete
Community Resources					
Construction shall be limited to daytime hours within 500 feet of nighttime sensitive receptors. Please see the attached Special Provision 999.	404 Permit	GDOT Roadway	Yes	Yes	ECB signature upon completion
Cultural Resources					
As part of the Programmatic Agreement between the USACE, SHPO, and GDED, there are several items to be implemented for the protection of Site 9TP990 (ESA). Please see A copy of Special Provision 107.23F for a listing of the requirements needed to protect this ESA, which has been included in the contract specifications and is attached to this Commitment table.	EA and 404 Programmatic Agreement	GDOT/GDED	Yes	Yes	ECB signature upon completion
In the vicinity of Site 9TP990, construction fencing would be constructed along the right of way to prevent any encroachment on the ESA, which would be fenced according to a Programmatic Agreement among the USACE, SHPO, and GDED* for the construction of the WPEDS. Please see A copy of Special Provision 107.23F, which identifies all requirements associated with this commitment.	EA	GDOT/GDED	Yes	Yes	ECB signature upon completion

COMMITMENT/REQUIREMENT	DOCUMENT STIPULATED IN	RESPONSIBLE OFFICE (Concurrence date; if other than OEL)	PLACE ON PLANS? (Yes or No)	REQUIRES A SPECIAL PROVISION? (Yes or No)	STATUS (Pre-Construction: Complete/ Incomplete) (During Construction: ECB Signature upon completion) (Post Construction: Complete/Incomplete)

Post Construction Commitments

Evaluate area roadway network to determine other transportation improvement projects required as a result of the WPEDS construction/operation.	IJR	GDOT Roadway	No	No	Incomplete
Project completion procedures outlined in Special Provision 107.23G for the protection of the bald eagle and barn swallows will be followed. The full provision is attached.	EA and Ecology Report	GDED	No	Yes	Incomplete

I. Highways for Life

The Department has applied to FHWA for this Highways for Life grant. Notification for the approval of this grant is expected in May 2007 which is after the anticipated letting date of this project. The Bidder shall include in the technical proposal a cost basis for all items under this Highways for Life item. If this Highway for Life grant is denied then GDOT may remove a portion or all of the items under this section. Any costs associated with the removal of these items will be deducted from the construction complete pay item at the cost basis provided in the awarded Bidder's technical proposal.

Details on this federal program can be found at http://www.fhwa.dot.gov/hfl/. Implementation of commitments will be the responsibility of the Department and the Contractor.

The Contractor shall provide the following:

Safety:

- Construct permanent safety features in either direction of traffic on I-85 within 6 months of beginning work on I-85 as to require no more lane closures after this period. See lane closure requirement in specification 150.11. Provide methods to monitor speed bands during lane closures using work zone law enforcement. Provide elements, methods and processes to evaluate a goal of reaching a construction period speed band in which 75% of the traveling public through the construction zone will be within five (5) mph of the posted speed. Provide the elements, methods and processes to evaluate reaching a goal of less than 5% of drivers that will be traveling more than 20 mph over the posted speed limit during construction. GDOT will evaluate the daily reporting of traffic volumes and speeds provided by the design-build contractor and law enforcement monitoring. The Interstate 85 crash history for this rural section will be the baseline. See intermediate completion date in specification 108 regarding I-85.

- Propose a safety plan and include the method to be used to monitor and measure worker injury Incident Rate. Safety plan shall include the elements, method, and process to evaluate a goal of having a worker injury Incident Rate (IR) of less than 4.0 based on the OSHA 300 rate. GDOT, or its designated independent evaluator, will determine goal achievement.

Construction Congestion:

- Provide plan to prioritize work elements as to minimize congestion. The project schedule for work involving lane closures shall have in-and-out construction activities on the Interstate arranged by staging plan sheets to minimize the duration of lane closure time needed.

- Provide methods for non-injury incident clearance time management. Propose performance measure methods to reach a goal during lane closures of clearing non-injury incidents from the construction zone travel lanes within 20 minutes. Note: GDOT will coordinate with the Contractor to establish protocols and define responsibilities with appropriate law enforcement agencies.

- Interstate lane closures will occur during the evening-night hours and off peak daytime hours of construction that will minimize rural area queue lengths and construction congestion.

Quality:

- Provide a finished pavement that has an IRI less than or equal to 37.5 inch/mile, but in no way have a corrected finished pavement with an IRI exceeding 43.8 inch/mile. These criteria meet GDOT's current specifications.

- Use prefabricated columns and caps for Bents 2, 3, and 4 of the bridge on the KIA Blvd over Interstate 85 (Bridge 1). The Request for Proposal (RFP) will encourage the use of innovative and non-traditional items in construction of this project. The Contractor is encouraged to use innovative materials and technology such as prefabricated deck panels, prefabricated culverts and innovative roller compacted concrete (RCC) pavement on shoulders as allowed in the specifications or as proposed once the project is awarded.

User Satisfaction:

- During construction and upon completion of the project, the Contractor provides four Likert Scale user satisfaction surveys (at 25%, 50%, 75% and 100% of project completion). The GDOT will set an approval rating goal of 80% (i.e. 80% or more of our surveyed customers approve of the job we are doing in the construction work zone).

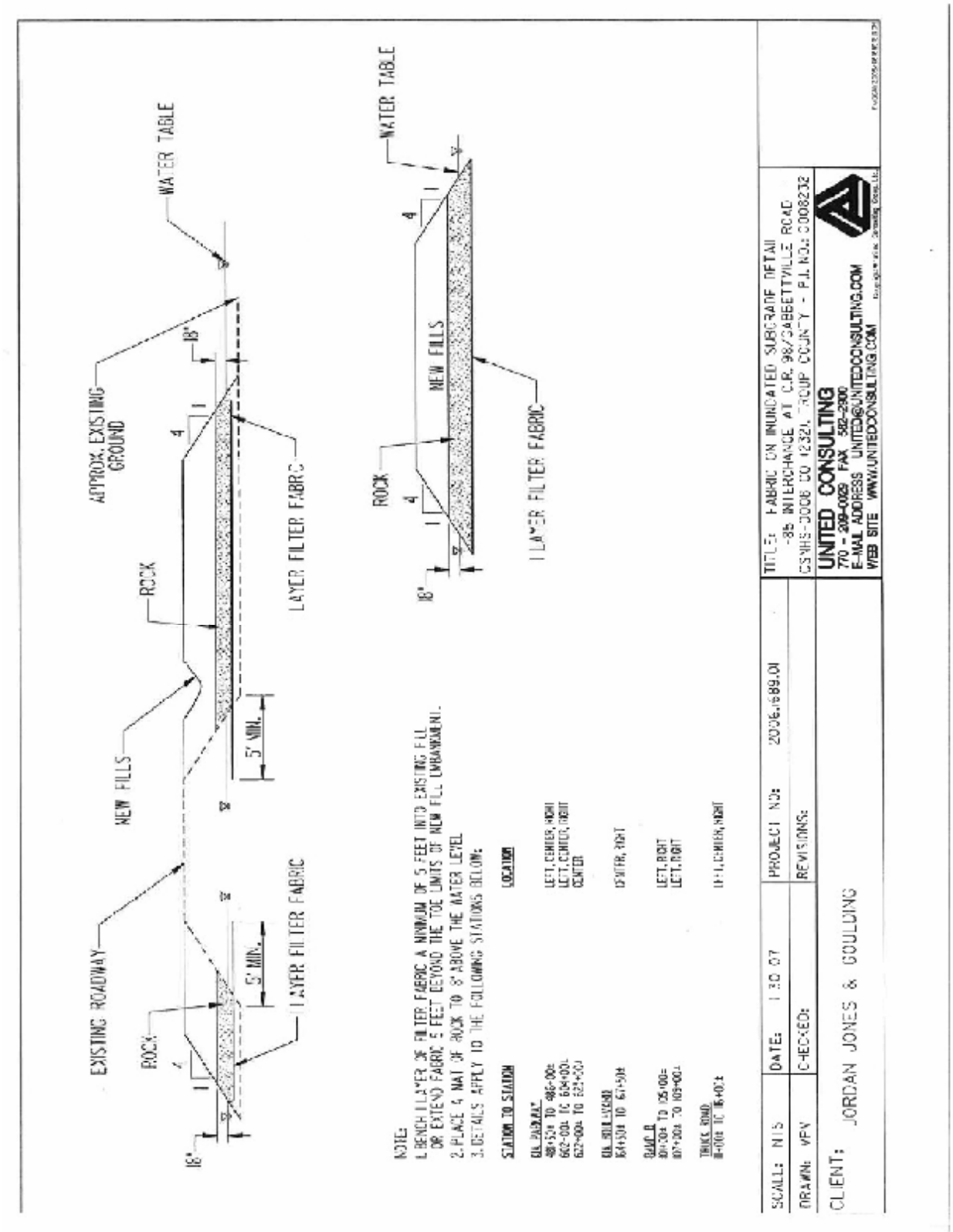
- The user satisfaction survey will ask how the user rates the methods used to minimize disruption during the construction of these new facilities.

- Monitor construction noise. GDOT's goal is to maintain construction work noise to less than 95 dBA 100 yards from the construction site. Provide the hourly, sound level measuring devices to be used. Performance will be evaluated by GDOT.

- Involve the community and traveling public by various forms of communications. Provide the methods of communication to be used and how issues that may arise will be resolved. Include submittals of a public involvement plan, a communications plan, and an emergency management and resolution plan, subject to GDOT approval.

  Note: All reports (hard-copy and electronic) shall be included. Assume 4 hard copies and 1 electronic copy (.pdf and original format [MS Word, Excel, etc.]).

J. Geotechnical – Place Rock Embankment as shown in detail below at locations shown. Slopes shall be benched and serrated at shown in details also. Contractor shall note all areas in soil survey where soil support value is less than 2.0 and shall ensure areas have 2.0 soil support value prior to placing fill.



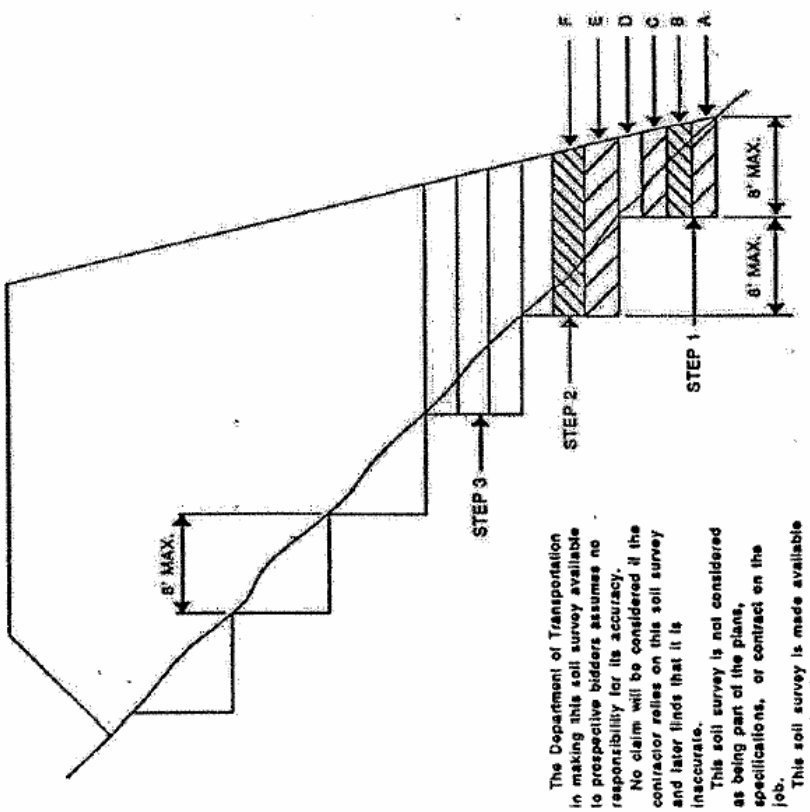
BENCHING DETAIL

CSNHS-0008-00 (232)
TROUP COUNTY
P.I. NO.: 0008232

1. WHERE THE EMBANKMENT IS TO BE PLACED ON A HILLSIDE OR ANOTHER EXISTING EMBANKMENT HAVING A SLOPE OF 3 TO 1 OR STEEPER, THE FOUNDATION MUST BE BENCHED WHILE THE EMBANKMENT IS BEING MADE.
(SEE DIAGRAM AT LEFT.)

2. THE DIAGRAM SHOWS THAT BEFORE LAYER "A" IS PLACED THE FIRST STEP (1) IS CUT INTO THE SLOPE A MAXIMUM DISTANCE OF ABOUT 8' (ABOUT 3/4 THE WIDTH OF THE USUAL D-6 BULLDOZER BLADE). SUCCESSIVE LAYERS B, C, AND D ARE THEN PLACED. BEFORE LAYER "E" IS PLACED, THE SECOND STEP IS CUT 8' INTO THE SLOPE AND SUCCESSIVE LAYERS ARE AGAIN PLACED. IF IT IS ANTICIPATED THAT THE VERTICAL PART OF THE STEP WILL EXCEED 4' IF AN 8' HORIZONTAL CUT IS MADE, THEN THE ACTUAL CUT STOPS WHEN THE VERTICAL PART REACHES A MAXIMUM OF 4' ALLOWING THE HORIZONTAL DISTANCE TO VARY.

3. THE PROCESS OF BENCHING IS CONSIDERED INCIDENTAL TO THE ITEM OF UNCLASSIFIED EXCAVATION AND BORROW IN CONSTRUCTION OF THE EMBANKMENT AND NO ADDITIONAL MEASUREMENT OF QUANTITY OR PAYMENT WILL BE MADE FOR BENCHING.



The Department of Transportation in making this soil survey available to prospective bidders assumes no responsibility for its accuracy. No claim will be considered if the contractor relies on this soil survey and later finds that it is inaccurate.
This soil survey is not considered as being part of the plans, specifications, or contract on the job.
This soil survey is made available as provided for in the specifications of the Department.

NOTES:

1. SLOPES STEEPER THAN 3:1 SHALL BE SERRATED. CUT SLOPES IN HARD AND COMPETENT ROCK WILL NOT REQUIRE SERRATING.
2. WIDTH OF STEP SHALL BE 3 FT. ± 1FT.
3. HEIGHT OF STEP IS A FUNCTION OF WIDTH AND STAKED SLOPE.
4. TREAD OF STEP SHALL BE APPROXIMATELY HORIZONTAL.
5. SERRATED SLOPES SHALL BE USED ON ALL PROJECTS IN DISTRICTS 1,6 AND 7, EXCEPT WHERE SPECIFICALLY EXCEPTED BY THE GEOTECHNICAL BUREAU IN THE SOIL SURVEY REPORT. SERRATED SLOPES SHALL NOT BE USED IN DISTRICTS 2,3,4 AND 5, UNLESS REQUIRED BY THE SOIL SURVEY.
6. SERRATED SLOPES WILL BE REQUIRED AT THE FOLLOWING LOCATIONS ON THIS PROJECT:

STATION	TO STATION	LOCATION
As directed by the Engineer.		

4.6.27

SERRATED SLOPE DETAIL

NO SCALE

K. Other

There are no known existing ITS, video detection, or CCTV surveillance cameras directly affected by this project. There are no ITS electronic message signs or ITS communications (fiber) planned for this project.

Right of way markers shall be installed throughout the project at all right of way corners/breaks as shown on the costing plans or Contractor's accepted plans.

999.2 Plans Package

The Plans Package prepared by the Department includes multiple resources listed below. They will be made available via CD and/or DVD. These resources are to be used in preparing the proposal for this project unless otherwise noted as "For Information Only." The Contractor shall make the Department aware on any resource that is in error or would cause the design (in the Plans Package) to not be constructible.

Those items labeled as for information only are not part of the plans and specifications or contract for this Project. The Georgia Department of Transportation, in making this information available to contractors, assumes no responsibility for its accuracy. No claim will be considered if the contractor relies on this information in its bidding or in its construction operations and finds that it is inaccurate. The Contractor's attention is directed to Specifications 101.16 – CONTRACT and 102.05 – EXAMINATIONS OF PLANS, SPECIFICATIONS, SPECIAL PROVISIONS, AND SITE OF THE WORK.

999.2.01 Costing Plans

1. Cover Sheet
2. Typical Sections
3. Plan and Profile Sheets
4. Cross Sections
5. Drainage Profiles and Cross Sections
6. Erosion Control Plans – Plans are approved and on file with EPD
7. Preliminary Bridge Layout Sheets – Preliminary Plans are approved.
8. Wall Envelopes – Envelopes are approved.
9. Signal Plans – Warrants are approved. Contractor responsible for complete signal design
10. Signing and Marking Plans – Plans are approved - The lane configurations shown in the Plans Package shall be included in the Contractor's design.
11. Existing Overhead/Subsurface Utility Engineering Investigation Plans (See Section 999.03.B.1.k for details) – Approved as of 12-4-07.
12. Conceptual Landscaping Plans
13. Conceptual Lighting Plans

999.2.02 Right-of-Way Plans

999.2.03 CAiCE Files

999.2.04 Survey Control Package

999.2.05 Environmental Documents

999.2.06 Drainage Calculations – For Information Only

999.2.07 Hydraulic Studies – For Information Only

999.2.08 Soil Survey, BFIs and WFIs – For Information Only (with the exception of Erosion Index values which may be used for estimating purposes. Geotechnical investigation is the responsibility of the Contractor. Actual materials placed shall be consistent with the Contractor's geotechnical investigations.

A soil survey, BFIs and WFIs are included for this project for information only. Please note that stationing of actual locations of borings may vary slightly since they were obtained before the alignments and structure locations had been finalized. The existing ground in and around the proposed KIA Pkwy (Frontage Road) has been modified by the ongoing project to construct the West Point Economic Development Site.

999.2.09 Traffic Diagrams

Traffic diagrams provided in this package shall be used to develop approved design.

999.2.10 Pavement Structures

The pavement structures have been determined for this project and are included in the plans package. See Section 999.04.

The resources shown above shall be used in the design and construction of this project.

999.2.11 Record Plans – For Information Only

1. I-85
2. I-85 Bridge over Webb Road
3. SR 18 near Exit 2 on I-85

999.3 General Design

999.3.01 Ownership of Documents

The Contractor agrees that all deliverables prepared in this contract, including but not limited to reports, drawings, studies, specifications, survey notes, estimates, maps, computations, computer files, and other data, under the terms of this agreement shall be delivered to, become and remain in the property of the Department upon termination or completion of the work. The Department shall have the right to use same without restriction or limitation and without compensation to the Contractor other than that provided for in this agreement.

Any use of these documents by the Department on any project other than this project will be done without warranty by the Contractor.

999.3.02 Insurance

In addition to the insurance requirements covered elsewhere in this Proposal, the Contractor shall have insurance coverage of the following types and amounts:

- Valuable Papers Insurance in an amount sufficient to assure the restoration of any plans, drawings, field notes, or other similar data relating to the work covered by the project. Insurance shall be maintained in full force and effect during the life of the agreement.

- Professional Liability (Errors and Omissions) Insurance in an amount of not less than one million dollars ($1,000,000) per claim (with a maximum of $250,000 deductible per claim) during the agreement term and for a period of at least five years after the agreement is closed. Such policy shall cover all of the Contractor's professional liabilities, whether occasioned by the Contractor, his employees, subcontractors, or other agents, arising out of services performed under or in accordance with this agreement.

  Errors and omissions are the responsibility of the Design / Build Contractor to correct and shall be solely at the Contractor's expense.

999.3.03 Publication and Publicity

Articles, papers, bulletins, reports, or other materials reporting the plans, progress, analyses, or results and findings of the work conducted under this Agreement shall not be presented publicly or published without prior approval in writing of the Department. All releases of information, findings and recommendations shall include a disclaimer provision and that all published reports shall include the disclaimer on the cover and title page in the following form:

> *"The opinions, findings and conclusions in this publication are those of the author(s) and not necessarily those of the Department of Transportation, State of Georgia, or the Federal Highway Administration."*

If any information concerning the project, its conduct, results, or data gathered or processed is released by the Contractor without prior approval from the Department, the release of same shall constitute grounds for termination of this Agreement without indemnity to the Contractor, but shall any such information be released by the Department or by the Contractor with such prior written approval, the same shall be regarded as public information and no longer subject to the restrictions of this Agreement. Provided, however, shall such information be required to be released by the Department under the Georgia Open Records Act, Section 50-18-70, et seq., O.C.G.A., the restrictions and penalties set forth herein shall not apply. Any request for information directed to the Contractor, pursuant to the Georgia Open Records Act, by the public shall be redirected to the Department for further action.

999.3.04 Copyrighting

The Contractor and the Department agree that any papers, interim reports, forms, and other material which are a part of work under this Agreement are to be deemed a "work made for hire," as such term is defined in the Copyright Laws of the United States. As a "work made for hire," all copyright interests in said works will vest in the Department upon creation of the copyrightable work. If any papers, interim reports, forms, or other material which are a part of work under this Agreement are deemed by law not to be a "work made for hire," any copyright interests of the Contractor are hereby assigned completely and solely to the Department. Publication rights to any works produced under this Agreement are reserved by the Department.

999.3.05 Patent Rights

If patentable discoveries or inventions should result from work described herein, all rights accruing from such discoveries or inventions will be the sole property of the Contractor. However, the Contractor agrees to and does hereby grant to the Department, an irrevocable, non-exclusive, non-transferable and royalty-free license to practice each invention in the manufacture, use and disposition according to law of any article or material and in use of any method that may be developed as a part of the work under this Agreement.

999.3.06 General Design Criteria

Plans shall be prepared in accordance with the Georgia Department of Transportation's instructions as to design criteria, procedures, and format as contained in this Special Provision and the following: 2003 Manual on Uniform Traffic Control Devices; Current Draft Georgia Manual on Drainage Design for Highways; Current Utility Accommodation Policy and Standards Manual; and the Department's Current Plan Preparation Guide dated November 2002, 2004 AASHTO Geometric Design of Highways and Streets, 2002 Roadside Design Guide, AASHTO Roadway Lighting Design Guide October 2005 Edition AND the IES RP-8-00 Roadway Lighting Recommended Practices publications using the Illuminance Design method, and the 2001 Edition of the State of Georgia Specifications for Construction of Transportation Systems and the 2005 Edition of NFPA 70: National Electrical Code. The Contractor shall use an acceptable level of professional care when considering and synthesizing all elements of the design, including but not limited to roadway geometry, drainage requirements, traffic control during construction, erosion control, structural design, utility conflicts, signing and marking, lighting, landscaping and future maintenance requirements. Existing retention and/or detention ponds on the West Point Economic Development site shall be incorporated in the drainage design. Calculations for the site are included in the Plans Package. Contractor's permanent construction will affect ponds. Ensure that design and construction address this parameter. Design and construction must remain within limits of the right of way. Any design and/or construction on the ponds needed as a result of this project is the responsibility of the Contractor.

999.3.07 Measuring Units

The project shall be designed in English units of measurement.

999.3.08 Design Software

Microstation and CAiCE software shall be used. All files shall conform to the criteria found in the Electronic Data Guidelines dated March 15, 2004. This information can be found at the Department's website http://www.dot.state.ga.us/dot/preconstruction/R-O-A-D-S/PPC/index.shtml.

999.3.09 Reviews / Meetings

The design shall be prepared under the direct supervision of licensed design professionals, and a member of the design-build firm, who is a Professional Engineer licensed to practice engineering in the State of Georgia, shall seal the final plans. Their seal on the drawing shall represent certification that the design meets all applicable codes, is of good engineering practice and standards, and includes no Design Exception or Design Variances. Check and certify all drawings, including intermediate submittals.

The Department may establish dates and times for cursory reviews, and may comment on design work, but will not require hold points, review periods, or comment responses, except as noted otherwise in the specifications. If the Department at any time determines that the design work is not in conformance with the Department's standards, specifications, or good engineering practice, the Department reserves the right to stop work (or applicable portion of the work), at the Contractor's

expense, until resolution of the issue(s) has occurred. Work stoppage(s), caused by the Contractor, that have an adverse affect on the project schedule will not be grounds for a claim(s).

Documents (reports, plans and specifications) relating to the construction of this project (shown in Table 999-1) shall be submitted to the Department for review. Department approval of these submittals is required. Approvals, disapprovals, or comments made by the Department will be provided, in writing, to the Contractor within the appropriate timeframes shown below Table 999-1. No construction shall begin prior to receiving approval from the Engineer. Additional detailed backup may be requested and shall be submitted to the Department as deemed appropriate by the Department.

Weekly progress meetings will be held on site (this frequency may be increased or decreased at the discretion of the Engineer at any time as needed to facility the completion of this project). Attendees shall include the Engineer, the contractor (including engineer(s) knowledgeable in regards to design proposed, issues to be settled, and with authority to make decisions needed to keep project on schedule and budget), and the Department's project engineer(s) knowledgeable in regards to design proposed, issues to be settled, and with authority to make decisions needed to keep project on schedule and budget), and others as deemed appropriate by the Engineer. Minutes shall be taken at the meeting (and all meetings at which Contractor is present) by the Contractor and shall be made available by the 4th business day after said meeting unless circumstances are deemed accepted to delay. Any delay shall be approved by the Engineer and shall be subject to the Engineer's interpretation. The location shall be determined by the Engineer and may include the general office in Atlanta. The Contractor shall bring a 3 month "look ahead" schedule that includes design and construction. GDOT (and others) review times shall be shown in schedule. Contractor shall be able to articulate the logic of assumed predecessors and successors at each weekly meeting. The Contractor shall develop a reviewer(s) list (personnel from the Department, other agencies, local governments, etc.) that will actually conduct reviews (the Engineer will work with the Contractor and approve this list) and a 7 to 14 calendar day advance notification shall be sent via email to all applicable reviewers noting the following: impending submittal description, format, quantity, scheduled delivery date, and review period (the advance notification only applies to submittals found in Table 999-1). The Engineer (and/or designee) shall be cc'd on all email correspondence. The notifications shall be consistent with the schedule. The most current schedule and all submittals (current and past) shall be available 24 hours a day, 7 days a week, every day of the year for access by the Department via the internet. **Submittals shall be Adobe .pdfs (no lower than Version 7.0) and shall be grouped as one file per submittal.** Access to the schedule shall be secure.

999.3.10 Field Surveys

The Contractor shall verify all provided surveying data. The Contractor shall provide terrain and drainage cross sections, pavement elevations, and drainage structure information for this project. All survey data shall be in English units. The following is only a guideline for data collection and is not intended to be comprehensive:

A. Provide cross sections of the terrain and pavement at mainline and cross streets stations as follows:

   1. These cross sections shall be provided at intervals adequate enough to accurately design and construct the Project, but not to exceed 50 feet.

   2. The cross sections shall extend from the centerline to outer most edge of easement or right of way shown on the plans.

   3. In addition to all terrain breaks, the cross sections shall include all applicable edges of pavement (emergency, outside edges of travel lanes, and any curb and gutter sections).

B. Use the Department feature codes when collecting the data in accordance with CAiCE Survey Data Guidelines.

C. Locate all existing drainage structures (X, Y, and Z) within the right-of-way and provide their size, type, condition, and flow line elevations at each end.

D. Inlet elevations for all drop inlets and catch basins.

E. Terrain profile at each drainage structure showing the skew of the structure.

F. Terrain profile of the drainage outfall from the end of each structure to the right-of-way.

Contract Data Requirements List (CDRL) - Legend

AA	As Appropriate
AE	Accepted by Engineer
AR	As Required
c	Calendar Days
FS	Full-size paper – meets GDOT Plan Presentation Guide
HC	Hard Copy – 8 ½ x 11 unles otherwise noted
HS	Half-size paper – meets GDOT Plan Presentation Guide
m	Month = 30c
Monthly	Submitted monthly not later than the number of days at the end of that report month
MS	Microstation File - Electronic
MW	Microsoft Word - .doc
NTP	Notice to Proceed
PAS	Per Approved Schedule
PDF	Adobe PDF – One complete file
PDFI	Adobe PDF – Individual Sheets

Table 999-1 – Contract Data Requirements List (CDRL)

Submittal Description	Format	Quantity	Delivery Date*	Review Period*	Review Type	Comment
Basis of Design	HC	6	NTP+7	7	Accepted by Engineer	
Erosion Control Plan	FS,HS	3,3	Contractor Resp.	21	Plan reviewed by the Environmental Compliance Bureau	Acceptance of plans in Plan Package or Submission of Alternate Plan.
Schedule – including review times	MS Project or Primavera	6	NTP+14	14	Accepted by Engineer (includes Design Liaison and Construction Manager)	
QC/QA Plan	HC	6	NTP+14	14	Accepted by Engineer	See 999.3.A.
Construction Traffic Control Plan	FS,HS	3,3	As needed	21	See Specification 150	
Preliminary Structures • Bridge Layouts • Hydraulics Reports • Wall Layouts	FS,HS,HC,PDF	3,3,1,1	PAS	30	Accepted by Engineer	FHWA reviews will be concurrent. Acceptance of plans in Plan Package or Submission of Alternate Plan.
50% Structures • Bridge Plans • Wall Plans	FS,HS	3,3	PAS	30	Accepted by Engineer	FHWA reviews will be concurrent.
90% Structures • Bridge Plans • Wall Plans	FS,HS	3,3	PAS	30	Accepted by Engineer	FHWA reviews will be concurrent.

Table 999-1 – Contract Data Requirements List (CDRL) – (Continued)

Submittal Description	Format	Quantity	Delivery Date*	Review Period*	Review Type	Comment
Signing and Marking (Preliminary & Final)	FS,HS	3,3	PAS	21	Accepted by Engineer	
Signalization Plans (Preliminary & Final)	FS,HS	3,3	PAS	21	Accepted by Engineer	
Utility Plans/Agreements	Plans/Agreements	Agreements: 3 hard copy, 1 electronic pdf Plans: 1 for each Utility Owner + 3 for Dept. and MIcrostation files	Concurrently w/Construction Traffic Control Plans	Agreements: 30 days for Dept. + 120 days for each Utility Owner Plans: 30 days	Relocation Plans and Agreements reviewed by Department Utilities Office. Agreements also reviewed by Utility Owner.	
Preliminary Utility Status Report	Report	3	NTP + 90	21	Accepted by Engineer	
Landscaping Plans (Preliminary & Final)	Plan	6	PAS	21	Accepted by Engineer	
Lighting Plans – Preliminary						
Photometric Layout	RP, PDF	1	PAS	21	Accepted by Engineer	
Luminaire Manufacturers Specifications including but not limited to Manufacturer, Model Number, and Cut Sheet for each proposed luminaire included in the proposed design.	PDF, HC	1 and 2	PAS	21	Accepted by Engineer	
Pole Date and Legend Sheet(s)	AA	3	PAS	21	Accepted by Engineer	
Plan Sheets	FS, HS, & PDF	3,2, and 1	PAS	21	Accepted by Engineer	

Table 999-1 – Contract Data Requirements List (CDRL) – (Continued)

Submittal Description	Format	Quantity	Delivery Date*	Review Period*	Review Type	Comment
Lighting Plans – Highmast Light Tower Foundation Submittal(s)						
Soil Boring Reports with Footing Designs for Light Towers (as part of Roadway Plans) including:	HC, PDF	4,1	PAS	21	Accepted by Engineer	
Light Tower Foundation Design	FS, HS, PDFI	2,1,1	PAS	21	Accepted by Engineer	
Lighting Plans – Construction Plans Final Submittal						
Pole Data and Legend Sheet(s)	FS, HS, MS, PDFI	1,1,1,1				
Plan Sheets, Foundation Design Sheet(s)	FS, HS, MS, PDFI	1,1,1,1				
Cover Sheet, Detail Sheet(s), Summary of Quantities and Detailed Estimate	FS, HS, MS, PDFI	1,1,1,1				
Special Provisions	HC(MW), PDF	2,1				
Cost Estimate	HC(MW), PDF	2,1				

Table 999-1 – Contract Data Requirements List (CDRL) – (Continued)

Submittal Description	Format	Quantity	Delivery Date*	Review Period*	Review Type	Comment
Relocated Utility Plans	HS	Plans: 1 for each Utility Owner +3 for Dept. and Microstation files	Concurrently w/Construction Traffic Control Plan	21	Accepted by Engineer	
Shop Drawings	FS, HS	1,2	PAS	30	Accepted by Engineer	
As Built Plans	FS	See spec	Project Completion (-30)	30	Accepted by Engineer	See 999.3.A.12 and 3.B.1.E
Progress Meetings / Reports	HC	TBD	TBD	TBD	Accepted by Engineer	Meetings to be weekly.

*All days are "Calendar Days."

All Submittals shall be concurrent submittals in that they shall be made to the Engineer, applicable GDOT Office Reviewer and/or other applicable entities (including FHWA and local governments) as directed by the Engineer. **The Contractor shall hand-deliver submittals**. In the event that concurrent submittals are required, the "receipt" date shall be date the last recipient receives the submittal and shall be the contractual begin date for the review. Unless a different review time is specified elsewhere in the contract, a period of **twenty one days (21) calendar days** from receipt to release of the submittal by the Department shall be allowed for the Department's review. Engineer acceptance is required for all reviews. All Contractors' schedules shall reflect the review times contained within the specifications and contract. All submittals shall be directly submitted to the Engineer. Engineer's receipt of submittals will mark the beginning of the review period. All submittals by the Contractor shall be required to contain a statement certifying that no unapproved design-exceptions have been incorporated in the submittal. Up to date half-size sets of plans with the most current design and construction plans shall be made available to a distribution list made up of up to 20 individuals/offices at all times during this project

G. Provide any additional necessary survey control.

H. The accuracy for all survey data shall be as follows:

Horizontal:	Additional control	= 1:10.000
Topography		= 0.4′
Vertical:	Additional control	= NOOA 3rd Order
Pavement		= 0.03′
Ground Terrain		= 0.25′

999.3.11 Quality Control / Quality Assurance for Design

The Contractor shall employ only persons duly registered in Georgia in the appropriate category in responsible charge of supervision and design of the work; and further, shall employ only qualified, registered in Georgia land surveyors in responsible charge of any survey work.

The Contractor shall use those entities prequalified in related disciplines (design, traffic analysis, geotechnical, etc.) as presented in the Statement of Qualifications. Revisions to the team and/or the proposed assignments reflected in the Statement of Qualifications must be approved by the Department. Approval of any replacements in the team shall occur prior to the letting of the project. Failure to secure approval of replacements prior to letting may result in the disqualification of the bidder's bid.

The Contractor shall endorse all final reports, contract plans, and survey data. Such endorsements shall be made by a person(s) duly registered in the appropriate category by the Georgia State Board of Registration for Professional Engineers and Land Surveyors, being in the full employ of the Contractor and responsible for the work prescribed by this agreement.

Authorized representatives of the Department and Federal Highway Administration may at all reasonable times review and inspect the Project activities and data collected. All reports, drawings, studies, specifications, estimates, maps, and computations, prepared by or for the Contractor, shall be available to authorized representatives of the Department and representatives of the Federal Highway Administration for inspection and review in the General Offices of the Department or at another location as determined by the Department. The Department's review comments shall be incorporated into the plans by the Contractor or as agreed between the Engineer and contractor. Changes associated with incorporated review comments, and consistent with requirements within this contract, shall occur within the price bid for the contract.

Before the start of the contracted design effort, the Contractor will develop and gain the Department's approval for a QC/QA Plan to ensure that all design documents are prepared in accordance with the Department's Plans Presentation Guide (http://www.dot.state.ga.us/dot/preconstruction/R-O-A-D-S/PPC/index.shtml.) using good, prudent, and generally accepted design and engineering practice.

The QC/QA Plan shall include the following:

A. The quality control and quality assurance procedures for design documents. These procedures shall specify measures to be taken by the Contractor (1) to ensure that appropriate quality standards are specified and included in the design documents and to control deviations from such standards, it being understood and agreed that no deviations from such standards shall be made unless they have been previously approved by the Department, and (2) for the selection of suitable materials, and elements of the Work that are included in the Project.

B. Quality control and quality assurance procedures for preparing and checking all plans, calculations, drawings, and other items submitted, to ensure that they are independently checked and back-checked in accordance with generally accepted engineering practices, by experienced engineers. The originator, checker, and back-checker shall be clearly identified on the face of all submittals. Specific procedures for verifying computer programs used shall also be included. Plans, reports, and other documents shall be stamped, signed, and dated by the responsible Georgia registered engineer where required under the contract documents, under generally accepted engineering

practices, or by applicable laws. Also, a statement from the Contractor that all the reviews have been accomplished is required.

C. The Contractor shall review all associated shop drawings. Submit to the Department for approval shop drawings that have been approved and stamped by the Contractor's licensed engineer.

D. Procedures for coordinating work performed by different persons in the same area, or in adjacent areas, or in related tasks to ensure that conflicts, omissions, or misalignments do not occur between drawings or between the drawings and the specifications, and to coordinate the review, approval, release, distribution, and revision of documents involving such persons. All the persons proposed to be responsible for design Quality Control and Assurance shall be listed as follows:

1. Discipline
2. Name
3. Qualifications
4. Duties
5. Responsibilities
6. Authorities

All key personnel performing quality control and quality assurance functions shall be exclusively designated to such and shall not be assigned to perform conflicting duties.

All documents shall be maintained by the Contractor for the duration of the Contract and shall be organized, indexed, and delivered to the Department (1) upon Final Acceptance or (2) even if incomplete, within fourteen (14) days of receipt of request from the Department. These documents shall include but not be limited to the following items: design criteria, reports and notes, calculations, drawings, schematics, supporting materials, statement regarding accomplishment of reviews, etc.

999.3.12 As-Built Plans

Upon completion of the Project, a complete as-built set of plans shall be provided to the Department in the following formats:

A. Two (2) sets of CD-ROMs with all electronic design files.

B. Design notes and calculations.

C. Entire set of plans in one .pdf file and .tif file (per sheet).

D. One (1) full-size set of paper prints.

E. Ten (10) half-size set of paper prints.

In addition, paper prints will be required throughout the design period for the Department's reviews as noted herein. The Contractor will be responsible for all production and delivery of materials needed for Department review. Note materials required by other state agencies will be covered similarly by the Contractor. A member of the design team who is a Professional Engineer licensed to practice engineering in the State of Georgia shall seal the as-built plans. An estimated summary of quantities and detailed estimate shall be provided in the final as-built plans.

999.4 Roadway

999.4.01 Preparation of Construction Plans

A. Criteria

The Contractor shall become familiar with and use the latest, as determined by the Department, American Association of State Highway and Transportation Officials (AASHTO) Design Manuals for Arterial Streets, Rural, Urban and Interstate Highways, including those standards adopted by the AASHTO and approved by the Secretary of Commerce, as provided by Title 23, United States Code, Section 109 (b), with the Department's Standards, Procedures, Plans, Specifications and Methods, with Federal Highway Administration (FHWA) procedures relating to plan review and approval, and shall produce plans in accordance therewith. The Project shall be designed and constructed utilizing minimum or greater than the values for 70 mph for interstate design on I-85, 45 mph for a rural collector on relocated Gabbettville Road (KIA Blvd) and the Frontage Road (KIA Pkwy), 45 mph for a rural local road on Warner Road and 35 mph for a rural local road on Webb Road, guidelines found in the 2004 American Association of State Highway and Transportation Officials (AASHTO) Design Manuals for Arterial Streets, Rural, Urban and Interstate Highways (including but not limited to the "Green Book"), unless otherwise approved by the Department.

B. Design Specifications and Guidelines

Design for roadways, and intersections shall be in accordance with the AASHTO Design Specifications, current edition; AASHTO Standard Specifications for Structure Supports for Highway Signs, Luminaries and Traffic Signals dated 1994; and AASHTO Roadside Design Guide dated 2002. The lighting design shall be in accordance with the American National publication, "An IES RP-8-83," and the Department of Transportation Specifications for Construction of Roads and Bridges, 2001 edition, and Special Provisions, current editions. Design and plan preparation shall also be in accordance with the FHWA Federal-Aid Policy Guide. Plans and specifications shall conform to the requirements of the Highway Capacity Manual, current edition (T.R.B. Report No. 2). Design for work inside interstate rights of way shall conform to interstate standards. Design for work outside interstate right of way shall conform to AASHTO design standards for the appropriate classification and speed design. Any deviation will require prior approval in writing by the Department. On facilities where driveways are included, the Contractor shall become familiar with the Department's regulations and procedures and shall produce plans for upgrading driveway control. The Contractor shall strive to meet upper limit guidelines on all new work and reconstruction. Where this proves to be impracticable, the design shall meet or exceed "minimum" guidelines. Any deviation will require a written design exception or variance be approved prior to incorporating the deviation in the work. Exceptions and deviations shall include a typical review period as shown in the specification. Concurrent reviews by the FHWA and GDOT will occur where issues arise that involve their approval. The Contractor shall prepare the required design exception request for approval by Department and/or the FHWA. A design exception request will justify fully why the guideline cannot be reasonably met considering such items as right-of-way impacts, mitigation measures taken, accident history, utility impacts and other related costs. The Contractor shall meet the current ADA guidelines. In addition to the references listed above, the following references shall be used in the development of this project:

- Electronic Data Guidelines – Dated March 15, 2004.
- Plan Presentation Guide – Dated November 2002.
- Turning Vehicle Templates by Jack E. Leisch & Associates or Autoturn CAD program by Transoft Solutions.
- 2003 Edition of the Manual on Uniform Traffic Control Devices "MUTCD" by the U.S. Department of Transportation, Federal Highway Administration "FHWA."
- Draft Manual of Drainage Design for Highways by the Georgia Department of Transportation, "GDOT."
- Roadway and Bridge Standard Plans as of June 1, 2004 by the "GDOT" Road and Airport Design Office. Design and plan preparation shall also be in accordance with the Certification Acceptance Authorized by 23 USC 117(a) for Administering Federal Aid Projects Not on Interstate System, dated 6-1-90.
- Guidelines for Processing Design Data in CAiCE - http://www.dot.state.ga.us – search for keyword "CAiCE."
- Construction Details by the "GDOT" Road and Airport Design Office as of June 1, 2004.
- Bid Item Index by the "GDOT" State Transportation Office Engineer.
- Rules and Regulations for Driveway and Encroachment Control by the "GDOT."

- Utility Accommodation Policy and Standards by the "GDOT" Utilities Office.

This list is not intended to be all-inclusive. All references shall be current editions (accepted by the Department). Any current editions that are written in metric units shall be "soft converted" to U.S. Standard Units. Any rounding will be to the dimension that will increase safety.

C. Plan Sizes

All plans for shall be reproducible quality ink drawings on bond paper. Plan (full size plans shall be 36 x 24 and half sized plans shall be 11x17) shall meet the guidelines found in the GDOT Design Policy Manual unless otherwise stated in the specifications.

D. Construction Plan Requirements and Scale

The plans shall be fully dimensioned in English units; all elevations necessary for construction shall be shown per guidelines found in GDOT Design Policy Manual. All plans shall be prepared on the scales listed below, unless otherwise approved by the Department. Drawings and lettering shall be such as to produce clear and legible reproductions when reduced to half-size. The scale of sheets shall be as follows:

1. 1″ = 10′
    a. Roadway cross sections 1″ = 10′ horizontal and 1″ = 10′ vertical. Note: Cross sections may have to be plotted lengthwise on the sheet to avoid folded sections.
    b. Driveway profile sheets horizontal 1″ = 10′, vertical 1″ = 20′ (could be 10′).
2. 1″ = 50′
    a. Roadway plan sheets.
    b. Roadway profile sheets horizontal, 1″ = 10′ vertical.
    c. Gore detail sheets.
    d. Intersection detail sheets.
    e. Drainage profile sheets 1″ = 20' horizontal, 1″ = 10′ vertical (include location of existing and proposed utility crossings).
    f. Detours and staging plans.
    g. Utility relocation plans.
3. 1″ = 100′
    a. Cover sheet.
    b. Stake out sheet.
    c. Property map.
    d. Drainage area map.

The Contractor shall check all details and dimensions shown on the plans before they are submitted to the Department for review. Topography shall remain fully legible when plans are reduced in size, but shall be less prominent and readily distinguishable from proposed work. Profile sheets shall have the existing ground line dashed and the required profile in a solid line. All other plan sheets (utility, erosion control, landscaping, lighting, signing & marking, signal, etc.) shall be the same scale as its corresponding roadway plan sheet.

E. Computations

All design computations and computer printouts shall be neatly recorded on 8 ½″ by 11″ sheets, fully titled, numbered, indexed, dated, and signed by the designer/project manager and checker. Project quantity computations shall be done in electronic spreadsheet format or directly processed from the CAiCE software. The computer files and two copies of the computations fully checked and appropriately bound, shall be submitted to the Department with the plans. A complete tabulation of the drainage analysis along with the calculations used to determine the size of drainage structures shall be submitted to the Department with the construction plans.

F. Plan Print Requirements

The CONTRACTOR shall furnish all the prints necessary for the development of the preliminary and final construction plans and specifications. All prints shall be clear and legible.

G. Traffic Flow Diagrams

These sheets provide the traffic data information to determine design criteria. All traffic data information and diagrams are included in the plan package. The sheets are not required to be to a scale, but the drawing shall show and represent the alignment of the overall project and shall be included in the final as-built set of plans.

H. Typical Sections

Typical sections shall meet the guidelines found in GDOT Design Policy Manual and Plan Presentation Guide (PPG). Criteria found in this specification shall take precedence.

1. Typical sections shall show exact dimensions (medians, travel-lanes, shoulders, slopes, ditches, etc.) from the construction centerline. Locate and label the roadway profile grade line (existing and proposed). Label appropriate items as to type and thickness. All slope controls shall be specified on each typical section.

2. Typical sections shall show exact dimensions (medians, travel-lanes, shoulders, slopes, ditches, etc.) from the construction centerline. Locate and label the roadway profile grade line (existing and proposed). Label appropriate items as to type and thickness. All slope controls shall be specified on each typical section.

3. Any special conditions shall be shown as details on the typical section sheets. However, if these items are covered by a Georgia Standard or a construction detail, then a note shall be included referring to the standard or detail.

4. The scale of each typical section may differ between the horizontal and the vertical in order to more clearly show the division between separate layers of the structure of the pavement.

5. Roadway plans shall meet the posted speed design for all intersections as shown in the 2002 Roadside Design Guide and the MUTCD.

6. Roadway reconstruction – the final reconstructed section shall meet the following requirements:

    a. Mainline pavements shall slope to the outside at 2.00%, unless geometry requires superelevation.

    b. The proposed shoulders shall be the same dimensions and slopes as shown in the plans package.

    c. All PCC concrete and asphaltic concrete mixes shall meet the specifications of this proposal and applicable public documentation regarding the Department's current mix design criteria. Also, see letter from Preconstruction Division Director regarding "Guideline for Superpave and Other Mix Types Selection – Revision" dated January 30, 2006 at www.dot.state.ga.us.

    d. Materials and depths shall be as follows (note spread rates shall be 110 lb/sy/in). Contractor shall construct project as to deliver final dimensions as that shown in the Costing Plans. Contractor shall declare what alternates are selected at time of proposal submission:

For:

- **Ramps**
- **KIA Blvd (west side of Truck Entrance to radius return of ramps on east side)**
- **Truck Road**

Mainline		Outside Shoulders			
		Alt A		Alt B	
Material	Inches	Material	Inches	Material	Inches
PCC (w/ 1/ ¼ inch dowels)	12	PCC	12	RCC	12
19 mm SUPERPAVE	3	19 mm SUPERPAVE	3	19 mm SUPERPAVE	3
GAB	12	GAB	12	GAB	12

Note: Inside shoulders on ramps shall be same depths and materials as ramps.

For:

- **KIA Pkwy**

Mainline				Outside Shoulders	
Alt 1		Alt 2			
Material	Inches	Material	Inches	Material	Inches
PCC (w/ 1/ ¼ inch dowels)	10	12.5 mm SUPERPAVE	1.5	12.5 mm SUPERPAVE	1.5
19 mm SUPERPAVE	3	19mm SUPERPAVE	2	19mm SUPERPAVE	2
GAB	12	25mm SUPERPAVE	6	GAB	6
		GAB	12		

For:

- **KIA Blvd - (Sandtown to west side of Truck Ent. & radius return of ramps on east side to Warner)**
- **Warner Road**
- **SR 18**
- **Webb Road**
- **All other pavement (note: where overlay is required, top two lifts shall be used)**

Mainline		Outside Shoulders	
Material	Inches	Material	Inches
12.5 mm SUPERPAVE	1.5	12.5 mm SUPERPAVE	1.5
19mm SUPERPAVE	2	19mm SUPERPAVE	2
25mm SUPERPAVE	6	GAB	8
GAB	12		

f. For superelevated sections, use 0.06 ft/ft maximum for all roads except I-85 and Interchange ramps. I-85 and Interchange ramps shall meet a 0.08 ft/ft maximum.

g. Where shown on the plans, concrete curb and gutter shall have a 2′ wide gutter and "v-gutter" shall be constructed as per applicable GDOT standard or details.

h. Where existing culverts are to be extended and/or other existing structures within the right of way do not meet current GDOT standards, the Contractor shall reconstruct any portion thereof that does not meet current standards or is in poor working condition. All costs associated with this work (including traffic control) shall be included in the overall price bid for construction.

i. Rumble stripes are not required on this project.

j. The transition from the concrete to asphalt shall be constructioned as shown on the Plans Package.

k. Asphalt mixes shall be Superpave mixes and shall include hydrated lime. Surface courses shall be Group II only with no RAP.

l. OGFC shall be used on ramps from gore area to the farthest point where the proposed ramp pavement ends adjacent to the existing I-85 outside edge of pavement.

m. Filter fabric shall be placed between the existing I-85 mainline pavement and any proposed pavement for ramps. Contactor shall not remove (or cause damage to) any pavement from the I-85 mainline with the exception of the area needed to install the filter fabric. This shall be no greater than 12 inches (horizontally) and 2 inches vertically.

n. Leveling (materials, labor, haulings, etc.) is included in price bid for project as needed to meet tolerances and requirements in specifications.

o. An additional 2" of GAB shall be placed at stations shown in Special Provision 205.

p. All temporary barrier used, reused, hauled and stored by the Contractor to fulfill any approved traffic control plans is the responsibility of the Contractor.

q. The Truck Road Typical Section (listed as Truck Drive in the Costing Plans) will consist of four 12-foot lanes (two in each direction). The contractor shall provide all design, coordination, and construction (including but not limited to labor, materials, hauling, storage, etc.) necessary to lengthen the current alignment shown in the Costing Plans by 150 feet. The remaining details in the Truck Road (Drive) typical section shown in the Costing Plans will apply. The expanded receiving area on Truck Road (Drive) from the left hand turn off of KIA Blvd shall be included in the final design. The "additional 1600 feet of two-lane two-way facilities" stated in 999.1.03.A shall be designed and constructed as per the current two-way, two lane Truck Road (Drive) shown in the Costing Plans. Figure 999.4.H.6.q reflects the most up to date right of way in the area of the Truck Road (Drive) and the WPEDS.

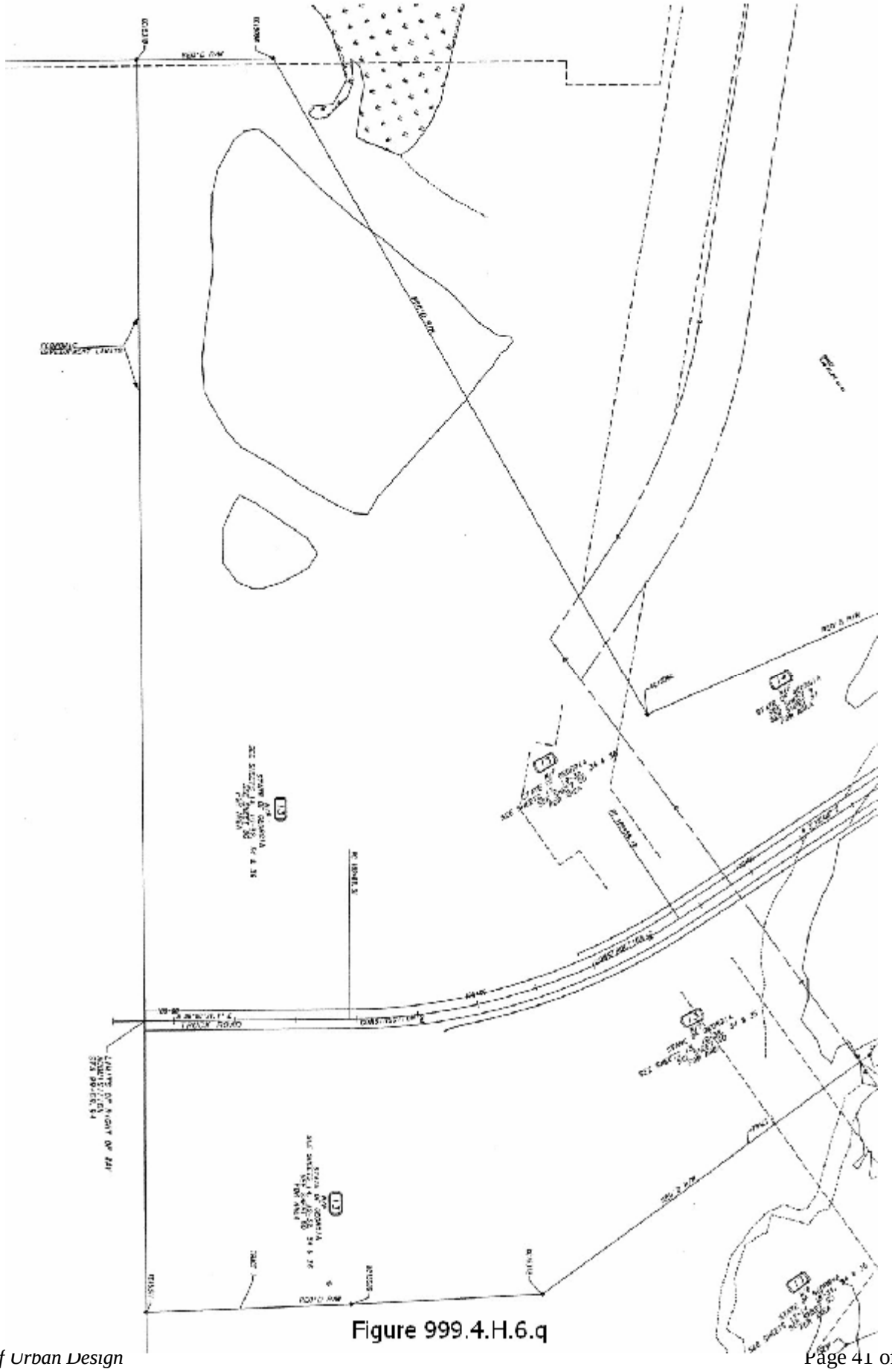


Figure 999.4.H.6.q

r. All culverts shall be embedded 15 to 20% of their width.

s. Access to the West Point Economic Develepment Site (WPEDS) at Webb Road shall not be closed to construction access by contractors working on the WPEDS until the two-way public access along KIA Blvd, starting from the intersection of Gabbettville Road and Sandtown Road moving eastward to just east of the Truck Road, along with the final alignment(s) of the Truck Road from KIA Blvd to the West Point Economic Development Site is opened.

I. Erosion and Sediment Control Sheets

Note: An approved Control of Soil Erosion and Sedimentation Plan is included in the plans package. The intent of the approved plans is to facilitate the earliest possible construction of the project. The Contractor must accept ownership of these plans by completing the NOI and any other applicable criteria associated with the NOI. If the Contractor's plans appreciably differ from the approved plans, the Contractor is responsible for revising the Control of Soil Erosion and Sedimentation Plan as required to by consistent with their proposal. At a minimum, the plan must be revised to include the Contractor's Level 2 certification of the plans and approval must be completed (including standard review time by EPD) prior to any construction activities. Note that minimum EPD acceptance times will occur if revised erosion control plans are submitted. Review time shall be included in schedule. The Contractor shall not begin construction activities until the NOI has been secured or the revised set of Control of Soil Erosion and Sedimentation Plans has been accepted and approved by the Engineer. See 999.1.A.2 and Specification 161.

Note: Sediment and Erosion Control Items will not be paid for under individual pay items. All Erosion Control required to construct and maintain this project is the responsibility of the Prime Contractor. The Contractor shall include 120% of all quantities of items shown in the approved Control of Soil Erosion and Sedimentation Plans in the price bid by this contract. The additional 20% shall be placed at the direction of the Engineer or as needed for the proper control of sediment and erosion on this job. Also, any additions or changes required beyond the approved Control of Soil Erosion and Sedimentation Plan will be the sole responsibility of the Contractor and shall be accounted for in the overall bid price. There will be no additional compensation for overruns in quantities."

J. Signing and Marking, and Signalization Requirements

Prepare signing, signalization, and marking plans in accordance with the Manual of Uniform Traffic Control Devices (MUTCD) and any applicable AASHTO or Department standards and guidelines.

Prepare plan sheets to show all permanent roadway signs and pavement markings as they appear upon completion of the project. Place emphasis on designing clear directional signage and coordinating sign placement with roadway features, structures, sight distances, and driver awareness. All signs within the project limits (unless shown otherwise within the plan package or specifications) shall be replaced unless they meet the current reflectivity and design policy requirements.

Signalization plans are not included in the plans package. Provide signalization plans for approval. Signals installed along KIA Blvd (4 total) shall be coordinated electronically and shall function together (not independently). All work shall comply with the Department's Specification Sections 647, 925 and for traffic signal equipment, Type B CCTV cameras and IVDS intersection video detection. The contractor will be responsible for all fees and permits necessary for establishing power and DSL communications to the traffic signal installations. The contractor will be responsible for all charges associated with monthly utility service to the device until the device has satisfactorily completed a test period of uninterrupted operation, of at least 30 days. Upon completion of the test period, the contractor will complete a transfer of monthly utility costs to Troup County or the City of West Point (as applicable). Prior to activating new signal equipment, the contractor will contact the District Three Traffic Signal shop at least 10 working days prior to activation to allow for preliminary inspection of the installation and development of signal timing. The Contractor will be responsible for providing variable message signs to be placed in advance of each signal installation with text advising motorists of traffic signal activation prior placing any new traffic signal into flashing operation.

Once placed into operation, the Contractor will be responsible for responding to all reports of traffic signal "trouble" or malfunction until each traffic signal has successfully completed a 30 day test period. During the test period, the contractor will be responsible for replacing all defective traffic signal equipment, until the traffic signal has completed the test period. If the signal is part of an operating traffic signal system whereby the signal operates in coordination

with adjacent traffic signal installations, those traffic signals considered part of an operating traffic signal system, will successfully complete a 30 day test period as part of a system test prior to District Three Signal staff assuming responsibility for maintenance and operations of the new signals.

K. Utilities

1. General:

   By Georgia Statues, utilities whether public or privately owned, aerial or underground, are permitted by the Department and local governments to be accommodated within the public right of way. To this end, the Contractor needs to make every effort to design/build a project that will accommodate (and minimize impacts to) all existing utilities and new utilities to be constructed concurrently with the project.

   The selection of typical section features, horizontal alignment, and location of storm sewer lines are design elements that can sometimes be varied without violating safety standards, and accepted design principles. Design/construction techniques that minimize or avoid utility conflicts may involve increased upfront costs; however, those costs are offset by savings during construction, in addition to the total cost savings for the project owner (the Department or local government) and the respective utility owners.

   Additional guidance for accommodating utilities within the right of way are given in the AASHTO publications: *A Guide for Accommodating Utilities within Highway Right of Way, A Policy on Geometric Design of Highways and Streets*; the TRB publication: *Policies for Accommodation of Utilities on Highway Rights-of-Way*; and in GDOT's *Utility Accommodation Policy and Standards, current edition*.

   Existing utility information shown on the Utility Plans for this project have been obtained from an Overhead / Subsurface Utility Engineering (SUE) Investigation (please refer to Section 2.C. for more information on SUE). This existing utility information has been provided by the Department for the Contractor's use in the design and construction of this project. However, the Contractor shall be responsible for supplementing this utility information for utilities that have been installed after the Overhead / Subsurface Utility Engineering (SUE) Investigation was performed. Known utilities and contacts are shown in the plans package. This information shall be verified by the Contractor.

   Utility plan sheets are comprised of completed roadway plan sheets but will contain more detailed information featuring existing and proposed utility facilities. Specific requirements for Utility Plans are detailed below.

2. Required Information:

   a. Preliminary Utility Plans

      Preliminary Utility Plan sheets are typically comprised of preliminary roadway plan sheets with the inclusion of all existing utility facility locations (overhead & underground) found within a project's limits. Determining the location of the existing utilities was accomplished through an Overhead/Subsurface Utility Engineering Investigation. The "degree of effort" exerted on the part of the Department and the Utility Owner varies with the type and location of the utility. The Department has classified these "degrees of effort" into different Quality Levels of information. Please refer to Section 2.C. for definitions of these Quality Levels.

      Preliminary Utility Plans shall be produced and used by the Contractor in the utility coordination/relocation design activities outlined here and under Section 999.1.3. The following minimum information shall be shown on the Preliminary Utility Plans:

      (1) Construction centerline with project stations and begin / end project limits.

      (2) Curb and gutter or edge of pavement (proposed and existing).

      (3) Road and street names.

      (4) Existing and required right-of-way limits, property lines, environmentally sensitive area limits, and property owners.

(5) All proposed and existing easements (including existing utility easements).

(6) Proposed and existing drainage structures/features (excluding drainage text).

(7) Proposed construction limits (C/F lines).

(8) Topographical planimetrics (i.e., existing buildings / structures, existing tree / vegetation limits).

(9) All proposed bridges, walls, other structures and landscape hardscapes.

(10) All proposed and existing strain poles (signal, sign, lighting).

(11) Utilities legend.

(12) Miscellaneous general notes.

(13) Existing overhead and underground utilities found within the project's limits. Including size and material if known.

(14) Sanitary sewer manhole top and invert elevations. Sanitary sewer pipe flow directions.

(15) Railroad mainline and spur tracks with their respective property / easement limits.

(16) Project survey control point locations.

(17) SUE specific general notes.

(18) Utility pole data table.

(19) SUE Investigation Limit of Study.

(20) SUE Quality Level A information.

b. Final Utility Plans

Final Utility Plans consist of all the elements provided for in the Preliminary Utility Plans, but also show all proposed utility adjustments required to accommodate the project.

The proposed utility information will either be provided to the Contractor by each of the respective Utility Owners, or included in the Design Scope for this project. Refer to Section 999.1.A.3 to determine how proposed utility relocation design information is to be provided. In either case, the Contractor shall compile and incorporate this information into the project's Final Utility Plans.

The proposed utility work for this project shall either be performed by the Utility Owner or their designated contractor, or included as part of the project's construction contract. Refer to Section 999.1.A.3 to determine who is responsible for the proposed utility relocation work for this project.

In either case, the Final Utility Plans shall clearly show all existing, proposed, temporary, and relocated utilities on the plans and clearly indicate the disposition of all existing utilities: for example, "To be Removed," "To be Adjusted," "To be Abandoned," "To Remain," "To be Relocated," etc. The plans shall also clearly define utility work as to which is to be done by the Contractor and which is to be done by others. Utilities to be relocated (or removed, or installed) prior to construction should be labeled on the plans as "To be relocated (or removed or installed) by others prior to project construction."

When proposed utility work is included as part of the project's contract, it is necessary for a Summary of Quantities to be included within the Final Utility Plans. The Summary of Quantities shown in the Final Utility plans shall be prepared in the same basic format as indicated in Section 999.3.B.1.q.

Where extensive or complex utility work is proposed to be performed, separate Utility Relocation Plan Sheets for that specific utility may be required to ensure plan legibility / constructability. The Contractor shall

determine whether separate Utility Relocation Plans are needed. However, after review of the plans, the Engineer may require these additional sheets be included in the project plan package.

In addition to the information required for the Preliminary Utility Plans, the Final Utility Plans shall include the following:

(1) All proposed and temporary utility facilities with annotation describing nature of work.

(2) Miscellaneous general notes required for coordination of utility facilities with roadway construction.

(3) Proposed water and sanitary sewer plan / profiles.

(4) Summary of quantities for contract items (if applicable).

(5) Any proposed utility easements.

(6) Any miscellaneous proposed utility details.

c. Overhead / Subsurface Utility Engineering (SUE) Investigations (provided by the Department)

Employ an established engineering technology that can provide precise horizontal and vertical locations of underground and overhead utilities to produce an accurate picture of the underground and overhead utility infrastructure. The existing utility information provided in these investigations includes a description of what "degree of confidence" there is in its accuracy. The Department has classified these "degrees of confidence" into different Quality Levels of information:

Quality Level "D" Information - Information obtained solely from a review of utility records. The comprehensiveness and accuracy of such information is highly limited. Even when existing information for a utility in a particular area is accurate, there are often other underground systems that are not shown on any records. Quality Level "D" may be appropriately used early in the development of a project to determine the presence of utilities.

Quality Level "C" Information - Information obtained to augment Quality Level "D" information. This involves topographic surveying of visible, above-ground utility features (e.g., poles, hydrants, valve boxes, circuit breakers, etc.) and entering the topographic data into the CADD system. Since aerial utility lines are not surveyed, information provided for these facilities is considered Quality Level "C" also. Quality Level "C" may be appropriately used early in the development of a project and will provide better data than Quality Level "D" information alone. Designers must be very cautious when working on projects using information for underground utilities that is based only on Quality Levels "D" and "C" locates.

Quality Level "B" Information - Information obtained through the use of designating technologies (e.g., geophysical prospecting technologies). This is an application using scanning technologies, most of which have very specific capabilities. Applying a variety of techniques is essential to the process of preparing a comprehensive horizontal map of utilities and other underground structures on the site. Designating technologies are capable of providing good horizontal information.

Quality Level "A" (Test Hole) Information (not provided by the Department) - Provides the highest level of accuracy of utility locations in three dimensions. This level may apply manual, mechanical or nondestructive (e.g., vacuum excavation) methods to physically expose utilities for measurement and data recording. Quality Levels "B," "C," and "D" locates are incorporated in Quality Level "A" locates.

The Contractor shall identify all utility conflict points where verified existing utility information is necessary to avoid the respective utility conflict. The Contractor shall obtain Quality Level "A" locates at these project/utility conflict points, and shall coordinate with the Utility Owners and make every effort to avoid existing utility facilities and thereby reduce utility relocations.

This Quality Level "A" information shall be performed to GDOT standards by a prequalified firm in Subsurface Utility Engineering (SUE). Refer to the following website for a list of current prequalified firms:

http://www.dot.state.ga.us/dot/preconstruction/consultantdesign/byclass/I508.htm

3. Sheet Layout:

The Contractor needs to ensure that any information and graphic data that is not necessary to depict the disposition of utilities found within the project's limits is removed by turning off the appropriate CADD levels(s) 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. All background information such as pavement limits, existing structures, etc. should be screened back. Also, the Contractor must ensure all text, line work, details, and symbols are clear and legible when plans are reduced to ½ size.

In order to maintain plan clarity all applicable general notes, tables, Summary of Quantities, and the Utility Legend shall be placed separately from the Utility Plan sheets. This Utility Plan "Cover Sheet" shall be provided for both preliminary and final Utility Plans. A recommended example utility sheet schedule is provided below:

- Utility Sheet 1 (Cover Sheet) – Utility General Notes, Utility Legend, Miscellaneous Details.
- Utility Sheet 2 (required as needed) – Additional Miscellaneous Details, Summary of Quantities, Pole Data Table.
- Utility Plan Sheets – Utilities shown in plan view with respect to project.
- Utility Profile and Cross Sections Sheets – Proposed Utility facility profiles and cross sections (as required).
- Miscellaneous Utilities Sheets – Miscellaneous proposed utility details (as required).

The above sheet schedule should also be generally followed for all separate utility relocation plans (i.e., water and sewer plans) included in the project plans.

4. Miscellaneous Notes and Other Information:

State on the Utility Plans whose responsibility it is for utility adjustment. If the Contractor is to adjust utilities, those items are to be summarized and the appropriate pay items are to be included on the detailed estimate.

For bridge plans required, the Contractor is to make sure the plans have made accommodations for utility crossings and attachments, if applicable. Any new utility crossings requests must include the size, weight, and type of utility. In addition, the method of attachment to the bridge must be fully detailed. Such requests shall be reviewed by the Contractor to ensure adequacy and constructability and final approval shall be obtained by the Contractor from the Department. The Contractor shall follow the approval process within this specification.

The Contractor is responsible to ensure that all proposed and existing utilities are coordinated with the respective project's Construction Staging and Erosion Control Plans.

Upon completion of the Utility Relocation Plans, the Contractor needs to ensure that any additional environmental impacts due to utilities are addressed in the project's environmental document/permit.

L. Crack Survey

A survey will be conducted by the Department. Notify the Engineer 30 days prior to any construction activities in order to facilitate survey.

M. Pond Survey

A survey will be conducted by the Department. Notify the Engineer 30 days prior to any construction activities in order to facilitate survey.

N. Staging

The Contractor must address staging and all final and staging related drainage issues. Contractor shall make the Engineer aware and shall notify all Emergency and Public Services (including local schools) of proposed road closures.

999.5 Structures

999.5.01 General

A. Design Specifications and Guidelines

Design bridges and retaining walls in accordance with the AASHTO Standard Specifications for Highway Bridges, 17th Edition, 2002. Use the Design Memos for information regarding bridge design practice located at the internet address: http://www.dot.state.ga.us/dot/preconstruction/bridgedesign/index.shtml. Use the Bridge & Structural Design Manual available on the R-O-A-D-S website: http://www.dot.state.ga.us/dot/preconstruction/R-O-A-D-S/DesignPolicies/index.shtml. Use "Basic Drawings" where possible. Basic drawings and cells can be downloaded at the following internet address: http://www.dot.state.ga.us/dot/preconstruction/adds/bridge/drawings.shtml. Use MicroStation/J to prepare plans in accordance with the Office of Bridge and Structural Design's MicroStation Customization. These files include a folder structure that is required to be on C:\Drive along with the "Bentley" folder. Access the Bridge MicroStation Customization files at the internet address: http://www.dot.state.ga.us/dot/preconstruction/adds/microstation/customization.shtml.

Bridge over I-85 should able to accommodate possible future placement of water and gas line.

B. Bridge and Wall Foundation Investigation

The Department is supplying preliminary bridge and wall foundation investigations for information only. Should the contractor choose to perform additional foundation investigations to be utilized in the bridge and wall design, the investigation and reporting shall be prepared in accordance with the following:

1. General:

   Perform field and laboratory testing and analysis, and prepare a report with foundation recommendations for the bridges and walls. Work is to be performed by qualified and experienced firms that are pre-qualified with the Georgia DOT in Area Class 6.02.

   Perform work in accordance with AASHTO Standards and in general conformance with the Department's Geotechnical Engineering Bureau Foundation Drilling and Sampling Guidelines. Comply with all applicable Federal and State requirements.

2. Field Investigation:

   Drill a minimum of one boring at each bent line and at each wall. Drill additional borings as necessary. Perform the following, as applicable:

   - Notify property owners prior to accessing their properties.
   - Obtain locations and clearance for all utilities within the area of the borings.
   - Provide traffic control and lane closures in accordance with the Georgia DOT Specifications.
   - Clearing and preparation of the boring site.
   - Obtaining and transporting water to the site.
   - Foundation drilling and sampling of soil and rock.
   - Obtaining accurate survey elevations.
   - Site clean up, erosion control, and restoration.

   Fill portions of all drill holes with drill cuttings after completion of drilling that are not subject to excavation for construction. Top off all drill holes through pavements with cold mix asphalt (unless subject to excavation) to the same depth as the existing pavement. Remove all drill cuttings, muddy water, slurry, and other debris deposited on

pavements, paved shoulders, and other travel ways immediately when the areas will be subject to traffic after the completion of this project. Calculate elevations to an accuracy of one tenth (0.1) of a foot.

Do not provide copies of boring logs, plans, or field test reports to property owners or other parties without the permission of the State Geotechnical Engineer.

3. Laboratory Testing:

Perform laboratory testing on samples obtained from the field in accordance with applicable methods of AASHTO, ASTM, or GDT test procedures. Use a laboratory that possesses current AASHTO certification.

Furnish laboratory results as part of the Final Report.

4. Final Analysis and Report:

Perform a geotechnical analysis for this project and prepare geotechnical recommendations in the form of a final report to the Department's State Geotechnical Engineer for review, prior to foundation construction. Base the final report on the information collected from the field investigation, the plans, specifications, results of laboratory tests, and the analysis of all other available information.

Stamp and sign the final reports by a Professional Engineer registered in the State of Georgia. Provide copies of the final report to the State Geotechnical Engineer.

Prepare the reports in general conformance to the Department's Geotechnical Engineering Bureau Report Preparation Guidelines, Georgia DOT Specifications, and in conformance with good engineering practice. Incorporate the following recommendations and additional recommendations as applicable

- Foundation types and allowable loads.
- Footing elevations.
- Pile minimum and estimated tip elevations.
- Drilled caisson tip elevations.
- Small diameter micropile tip elevations.
- Foundation installations in rock.
- Embankment construction, settlement, and slope angles.
- Treatment of groundwater conditions.
- Treatment of poor soil conditions.
- Construction effects on adjacent structures and remedies for any potential problems.

In the Final Report, include (as applicable) copies of boring logs, field notes, laboratory and field test results or summaries, photographs, special provisions, details and drawings, and other related information. Correct final reports with errors and omissions, as determined by the State Geotechnical Engineer. Resubmit the corrected report at no additional cost to the Department.

Acceptance of the work by the Department will not relieve the Contractor of the responsibility for subsequent correction of errors or for the costs associated with work caused by negligent errors or omissions from work performed by the Contractor.

C. Plan Submittals

1. Preliminary Plans.

2. Construction Plans.

   Submit complete bridge and wall construction plans for the following:

   - Wall 1
   - Walls 2 and 3
   - Bridge No. 1
   - Bridge No. 2

3. Submit two (2) full size paper copies and two (2) half size paper copies of Plans and one (1) copy of the calculations for each scheduled submittal.

4. Do not proceed with the final design of bridge and wall plans until the preliminary plans have been approved by the Department.

999.5.02 Preliminary Bridge and Wall Plans

A. Preliminary Bridge Plans

The Contractor shall check the bridge preliminary layouts supplied by the Department in the plans package. This check shall verify all dimensions and clearances based on field measurements. The Contractor shall notify the Department in writing of the acceptability of the layouts or of any discrepancies that may be present. Upon the Contractor's acceptance of the layouts, the Department will authorize the Contractor to proceed with final design of the bridges. Should the Contractor wish to change the supplied bridge preliminary layouts, the Contractor shall submit these changes to the Department based on the following guidelines:

1. Design the bridges with Standard Reinforced Concrete Deck Girders, AASHTO or Prestressed Concrete Institute Bulb-Tee shapes for prestressed concrete beams, or with structural steel I shapes. Use only one type of beam per bridge in the bridge superstructure, i.e., only concrete beams or only steel I girders.

2. At Bridge No. 1, a grade separation structure, design spill-through end bents/abutments, intermediate bents with concrete columns, caps, or walls with footings having their top a minimum of two feet below ground or finished grade and sufficiently deep to be below retained and proposed drainage structures along I-85.

3. At Bridge No. 2, a stream crossing structure, design spill-through end bents/abutments, intermediate bents with pile bents or intermediate bents with concrete columns, caps or walls with drilled caissons. The intermediate bents supporting the span over the stream shall be concrete columns and caps with drilled caisson foundations. Piles and drilled caissons shall be set at a depth to protect the structure from collapse during a 500 year scour event.

   Contractor shall stake out endrolls and intermediate bents. Piles, columns, caissons and footings of intermediate bents shall be no closer than five (5) feet from the top of stream bank. The toe of endrolls shall be no closer than ten (10) feet from top of stream bank.

4. Where end bents and intermediate bents are founded on piling in Bridges No. 1 and 2, piling shall be Steel-H Piling.

5. Outline on the preliminary layout for Bridge 1 the construction scheme for the structure. Address the proposed staging of construction, traffic handling requirements, construction access for delivering materials, erection and construction activities, location of any temporary bents, location of transverse expansion joints and construction joints in the bridge.

6. For Bridge 1, provide a minimum vertical clearance from bottom of superstructure to roadway beneath of 17′-0″.

7. Provide a typical section which indicates the following information:

   - Center to center spacing of girders, limited to a maximum spacing of 9′-6″.

- Distance from outside edge of slab to center of exterior girder. This distance (overhang) is limited to a maximum of 4′-7 1/2″.

- Deck thickness between girders and thickness of centerline of girder from top surface of deck to top of the flange

- Provide a slab with a minimum thickness determined by attached chart, Service Load Design of Concrete Bridge Slabs proportioned to provide 2 ¼ inches of concrete cover over the top mat of reinforcing and 1 inch cover over the bottom mat of reinforcement. Use the slab thickness determined for the portion of the bridge supporting the highway loading at all locations.

- Thickness of the top and bottom flange and depth of web for steel girders or the type of prestressed girder used for determining vertical clearance.

8. In addition to the requirements above, provide the following:

   - A plan view of the proposed structure indicating beginning and end bridge stations, skew angles, joint locations, station and skew of roadways crossing under the structure, width of roadways beneath the structure, taper control station(s), offset and rate, location of point of minimum vertical clearance, and location and magnitude of the horizontal clearances from edge of travelway beneath the structure to the face of intermediate bents and abutments.

   - An elevation view of the proposed structure indicating the span length, location of fixed and expansion joints, profile of roadways beneath structures, vertical clearance from bottom of structure to roadway beneath (both north bound and south bound), proposed bent locations, and existing ground profile.

   - All horizontal and vertical curve data for the bridge and the roadway beneath the bridge.

   - The location and elevation of the nearest bench mark.

   - A brief description of the proposed structure indicating span lengths, and type of end bents.

     Any drawing and/or narrative description of the construction scheme necessary to indicate how the bridge is to be built, including traffic handling sketches.

9. If Bridge 2 is changed from the provided bridge preliminary layout including span lengths, intermediate bent and end bent locations or superstructure depth, a supplemental Bridge Hydrologic/Hydraulic Study may be required, as determined by the Department, in accordance with the Draft Georgia Drainage Manual and approved in writing by the Department. No bents may be placed in the channel. Spans on pile bents shall not exceed 50-ft in length. The total length of Bridge No. 2 shall not be less than the total length shown in the provided preliminary layout.

B. Preliminary Wall Plans

1. Prepare the following for each wall:

   a. An elevation view or wall envelope of the proposed wall drawn to a scale of 1:10 and indicating the following data:

      - Beginning and end wall stations.

      - Elevations on top of wall parapet, coping, or traffic barrier at the beginning and end of wall, at profile break points, and at least every 50 feet along the wall.

      - Bottom of wall (top of footing) elevation necessary to maintain minimum berm requirements.

SERVICE LOAD DESIGN OF BRIDGE SLAB
Minimum slab thickness is 7 inches.

Georgia Department of Transportation 4-OCT-06
Office of Bridge and Structural Design 16:43:17
October 2006

WHEEL LOAD (Kips)	fc (ksi)	fs (ksi)	n	SLAB COVER (in)	FUTURE PAVING (kips/ft^2)	CONTINUITY FACTOR
16.00	1.400	24.000	9	2.250	0.030	0.8

EFFECTIVE SPAN LENGTH (ft-in)	SLAB THICKNESS MINIMUM (in)	SLAB THICKNESS ACTUAL (in)	SIZE AND SPACING OF MAIN REINFORCEMENT	(in)	DISTRIBUTION REINFORCEMENT MIDDLE HALF	DISTRIBUTION REINFORCEMENT OUTER QUARTERS
3- 6	6.3150	7.000	# 5 at	9.625	3-# 4	2-# 4
3- 7	6.3463	7.000	# 5 at	9.500	3-# 4	2-# 4
3- 8	6.3774	7.000	# 5 at	9.375	3-# 4	2-# 4
3- 9	6.4083	7.000	# 5 at	9.250	3-# 4	2-# 4
3-10	6.4391	7.000	# 5 at	9.000	3-# 4	2-# 4
3-11	6.4698	7.000	# 5 at	8.875	3-# 4	2-# 4
4- 0	6.5003	7.000	# 5 at	8.750	3-# 4	2-# 4
4- 1	6.5307	7.000	# 5 at	8.625	3-# 4	2-# 4
4- 2	6.5610	7.000	# 5 at	8.500	4-# 4	2-# 4
4- 3	6.5911	7.000	# 5 at	8.375	4-# 4	2-# 4
4- 4	6.6211	7.000	# 5 at	8.250	4-# 4	2-# 4
4- 5	6.6509	7.000	# 5 at	8.125	4-# 4	2-# 4
4- 6	6.6807	7.000	# 5 at	8.000	4-# 4	2-# 4
4- 7	6.7103	7.000	# 5 at	7.875	4-# 4	2-# 4
4- 8	6.7398	7.000	# 5 at	7.750	4-# 4	2-# 4
4- 9	6.7692	7.000	# 5 at	7.625	4-# 4	2-# 4
4-10	6.7984	7.000	# 5 at	7.625	4-# 4	2-# 4
4-11	6.8276	7.000	# 5 at	7.500	5-# 4	4-# 4
5- 0	6.8567	7.000	# 5 at	7.375	5-# 4	4-# 4
5- 1	6.8856	7.000	# 5 at	7.250	5-# 4	4-# 4
5- 2	6.9144	7.000	# 5 at	7.125	5-# 4	4-# 4
5- 3	6.9432	7.000	# 5 at	7.125	5-# 4	4-# 4
5- 4	6.9718	7.000	# 5 at	7.000	5-# 4	4-# 4
5- 5	7.0028	7.125	# 5 at	7.125	5-# 4	4-# 4
5- 6	7.0313	7.125	# 5 at	7.000	5-# 4	4-# 4
5- 7	7.0597	7.125	# 5 at	6.875	5-# 4	4-# 4
5- 8	7.0880	7.125	# 5 at	6.875	6-# 4	4-# 4
5- 9	7.1162	7.125	# 5 at	6.750	6-# 4	4-# 4
5-10	7.1471	7.250	# 5 at	6.875	6-# 4	4-# 4
5-11	7.1752	7.250	# 5 at	6.750	6-# 4	4-# 4
6- 0	7.2032	7.250	# 5 at	6.625	6-# 4	4-# 4
6- 1	7.2311	7.250	# 5 at	6.625	6-# 4	4-# 4
6- 2	7.2619	7.375	# 5 at	6.625	6-# 4	4-# 4
6- 3	7.2898	7.375	# 5 at	6.625	6-# 4	4-# 4
6- 4	7.3175	7.375	# 5 at	6.500	6-# 4	4-# 4
6- 5	7.3452	7.375	# 5 at	6.375	7-# 4	4-# 4

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SERVICE LOAD DESIGN OF BRIDGE SLAB
Minimum slab thickness is 7 inches.

Georgia Department of Transportation 4-OCT-06
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October 2006

WHEEL LOAD (Kips)	fc (ksi)	fs (ksi)	n	SLAB COVER (in)	FUTURE PAVING (kips/ft^2)	CONTINUITY FACTOR
16.00	1.400	24.000	9	2.250	0.030	0.8

EFFECTIVE SPAN LENGTH (ft-in)	SLAB THICKNESS MINIMUM (in)	SLAB THICKNESS ACTUAL (in)	SIZE AND SPACING OF MAIN REINFORCEMENT (in)	DISTRIBUTION REINFORCEMENT MIDDLE HALF	DISTRIBUTION REINFORCEMENT OUTER QUARTERS
6- 6	7.3728	7.375	# 5 at 6.375	7-# 4	4-# 4
6- 7	7.4036	7.500	# 5 at 6.500	7-# 4	4-# 4
6- 8	7.4311	7.500	# 5 at 6.375	7-# 4	4-# 4
6- 9	7.4586	7.500	# 5 at 6.250	7-# 4	4-# 4
6-10	7.4859	7.500	# 5 at 6.250	7-# 4	4-# 4
6-11	7.5168	7.625	# 5 at 6.250	7-# 4	4-# 4
7- 0	7.5441	7.625	# 5 at 6.250	7-# 4	4-# 4
7- 1	7.5713	7.625	# 5 at 6.125	8-# 4	4-# 4
7- 2	7.5985	7.625	# 5 at 6.125	8-# 4	4-# 4
7- 3	7.6294	7.750	# 5 at 6.125	8-# 4	4-# 4
7- 4	7.6565	7.750	# 5 at 6.125	8-# 4	4-# 4
7- 5	7.6835	7.750	# 5 at 6.000	8-# 4	4-# 4
7- 6	7.7105	7.750	# 5 at 6.000	8-# 4	4-# 4
7- 7	7.7374	7.750	# 5 at 5.875	8-# 4	4-# 4
7- 8	7.7684	7.875	# 5 at 6.000	8-# 4	4-# 4
7- 9	7.7953	7.875	# 5 at 5.875	9-# 4	6-# 4
7-10	7.8221	7.875	# 5 at 5.875	9-# 4	6-# 4
7-11	7.8489	7.875	# 5 at 5.750	9-# 4	6-# 4
8- 0	7.8800	8.000	# 5 at 5.875	9-# 4	6-# 4
8- 1	7.9067	8.000	# 5 at 5.875	9-# 4	6-# 4
8- 2	7.9333	8.000	# 5 at 5.750	9-# 4	6-# 4
8- 3	7.9599	8.000	# 5 at 5.750	9-# 4	6-# 4
8- 4	7.9865	8.000	# 5 at 5.625	10-# 4	6-# 4
8- 5	8.0178	8.125	# 5 at 5.750	10-# 4	6-# 4
8- 6	8.0443	8.125	# 5 at 5.625	10-# 4	6-# 4
8- 7	8.0708	8.125	# 5 at 5.625	10-# 4	6-# 4
8- 8	8.0972	8.125	# 5 at 5.500	10-# 4	6-# 4
8- 9	8.1235	8.125	# 5 at 5.500	10-# 4	6-# 4
8-10	8.1550	8.250	# 5 at 5.500	10-# 4	6-# 4
8-11	8.1813	8.250	# 5 at 5.500	10-# 4	6-# 4
9- 0	8.2076	8.250	# 5 at 5.500	11-# 4	6-# 4
9- 1	8.2339	8.250	# 5 at 5.375	11-# 4	6-# 4
9- 2	8.2655	8.375	# 5 at 5.500	11-# 4	6-# 4
9- 3	8.2918	8.375	# 5 at 5.375	11-# 4	6-# 4
9- 4	8.3180	8.375	# 5 at 5.375	11-# 4	6-# 4
9- 5	8.3441	8.375	# 5 at 5.250	11-# 4	6-# 4

SERVICE LOAD DESIGN OF BRIDGE SLAB
Minimum slab thickness is 7 inches.

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WHEEL LOAD (Kips)	fc (ksi)	fs (ksi)	n	SLAB COVER (in)	FUTURE PAVING (kips/ft^2)	CONTINUITY FACTOR
16.00	1.400	24.000	9	2.250	0.030	0.8

EFFECTIVE SPAN LENGTH (ft-in)	SLAB THICKNESS MINIMUM (in)	SLAB THICKNESS ACTUAL (in)	SIZE AND SPACING OF MAIN REINFORCEMENT		DISTRIBUTION REINFORCEMENT MIDDLE HALF	DISTRIBUTION REINFORCEMENT OUTER QUARTERS
9- 6	8.3702	8.375	# 5 at	5.250	12-# 4	6-# 4
9- 7	8.4021	8.500	# 5 at	5.375	12-# 4	6-# 4
9- 8	8.4282	8.500	# 5 at	5.250	12-# 4	6-# 4
9- 9	8.4542	8.500	# 5 at	5.250	12-# 4	6-# 4
9-10	8.4803	8.500	# 5 at	5.125	12-# 4	6-# 4
9-11	8.5123	8.625	# 5 at	5.250	12-# 4	6-# 4
10- 0	8.5383	8.625	# 5 at	5.125	12-# 4	6-# 4
10- 1	8.5643	8.625	# 5 at	5.125	13-# 4	8-# 4
10- 2	8.5903	8.625	# 5 at	5.125	13-# 4	8-# 4
10- 3	8.6162	8.625	# 5 at	5.000	13-# 4	8-# 4
10- 4	8.6485	8.750	# 5 at	5.125	13-# 4	8-# 4
10- 5	8.6744	8.750	# 5 at	5.000	13-# 4	8-# 4
10- 6	8.7003	8.750	# 5 at	5.000	13-# 4	8-# 4
10- 7	8.7261	8.750	# 5 at	5.000	14-# 4	8-# 4
10- 8	8.7587	8.875	# 5 at	5.000	14-# 4	8-# 4
10- 9	8.7845	8.875	# 5 at	5.000	14-# 4	8-# 4
10-10	8.8728	8.875	# 6 at	7.000	9-# 5	6-# 5
10-11	8.9056	9.000	# 6 at	7.000	9-# 5	6-# 5
11- 0	8.9314	9.000	# 6 at	7.000	9-# 5	6-# 5
11- 1	8.9572	9.000	# 6 at	6.875	9-# 5	6-# 5
11- 2	8.9830	9.000	# 6 at	6.875	10-# 5	6-# 5
11- 3	9.0159	9.125	# 6 at	6.875	10-# 5	6-# 5
11- 4	9.0417	9.125	# 6 at	6.875	10-# 5	6-# 5
11- 5	9.0675	9.125	# 6 at	6.750	10-# 5	6-# 5
11- 6	9.0932	9.125	# 6 at	6.750	10-# 5	6-# 5
11- 7	9.1189	9.125	# 6 at	6.750	10-# 5	6-# 5
11- 8	9.1522	9.250	# 6 at	6.750	10-# 5	6-# 5
11- 9	9.1779	9.250	# 6 at	6.750	10-# 5	6-# 5
11-10	9.2036	9.250	# 6 at	6.625	10-# 5	6-# 5
11-11	9.2293	9.250	# 6 at	6.625	10-# 5	6-# 5
12- 0	9.2628	9.375	# 6 at	6.625	10-# 5	6-# 5

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- Original ground profile.
- Proposed ground profile.

b. Roadway cross-sections in the vicinity of the wall that will indicate the existing and final slope behind the wall.

c. Typical sections associated with the wall.

d. Project Plan and Profile sheets which indicate the following:

- Limits of right-of-way.
- Superelevation data.
- Horizontal and vertical alignment data.
- Horizontal offsets to face of retaining wall.
- Location and type of overhead signs which may be near retaining walls.
- Location of roadway lighting which may be near or attached to the retaining wall.
- Location and size of any drainage structures which will affect the retaining walls.

e. Any construction sequence requirements that will affect the construction of the walls and which will have to be accounted for in the preparation of retaining wall plans.

2. Use a special design cast-in-place wall tie-back wall in accordance with section 617 for Wall 1.

3. Use L-shape cast-in-place walls for Walls 2 and 3. These walls shall be designed with consideration to the adjacent pile footing and piles.

999.5.03 Final Bridge and Wall Plans

A. Additional Bridge Design Requirements

1. The Contractor's design professionals, in designing the bridge in this project, shall utilize the Department Bridge Geometric and Design Software to the maximum extent possible. Upon prior written approval by the Department, the Contractor's design professionals may be authorized to utilize its computer capabilities. The contractor's design professionals are requi4red to verify results to obtain final design accuracy.

2. Use ASTM A 615 Gr 60 reinforcement.

3. Use concrete with a minimum 28 day concrete strength as follows:

- 3,500 psi in the bridge deck, reinforced concrete deck girders, concrete intermediate bents, and barriers.
- 3,000 psi in the pile end bents cap and the pile intermediate bents cap substructure.

3. For Bridge No. 1, all intermediate bent caps and columns are to be precast.

- Use class AAA concrete with a minimum 28 day concrete strength of 4,500 psi in fabrication of these precast units.
- In addition to requirements provided in this special provision, the design and construction of the precast columns and caps shall meet requirements of AASHTO Guide Specifications for Design and Construction of Segmental Concrete Bridges, Second Edition.
- Caps and columns may be precast as single elements.

- If caps or columns are cast as two or more segments, advancing segments shall be match-cast to previous segments.
- Caps and columns shall be square or rectangular in shape.
- Continuity between individual segments shall be achieved by closure pours and/or through post-tensioning.
- Construction joints between segments shall be epoxied joints in accordance with the design requirements; dry joints will not be allowed
- See Special Provision Section 509 – Prestressing Concrete by Post Tensioning for grouting of tendons if post tensioning is utilized.
- External or un-bonded tendons will not be allowed.
- If hollow-core columns are constructed, completely fill annulus with Class A concrete prior to installation of cap.

4. Include 30 pounds per square foot in the design loads to allow for future paving.
5. If metal deck forms are used, include 16.0 pounds per square foot in the non-composite design loads.
6. Design the bridge for seismic performance category "A."
7. Design and detail edge beams where the deck is to be discontinuous and extend them a minimum of 18 inches below the bottom of the top slab and a minimum of 12 inches wide. Place slab transverse and longitudinal reinforcing steel 2 inches from the edge of the slab and place the top mat of the edge beam bars below the top mat of the deck steel. Do not use truss shaped bars in the edge beam. Extend stirrups from the edge beam into the slab.
8. To accommodate deck planning, neglect ¼ inch of the top slab for strength calculations. However, include the ¼ inch in the dead load calculations.
9. For reinforced concrete deck girders, meet the following criteria:
    - Stems shall be 1′-6″ wide.
    - Depth including slab shall be 2′-9″.
    - Neoprene pads will be used under the beams.
    - Pile bents not to be used with spans longer than 50′-0″.
10. For prestressed beams, meet the following criteria:
    - Design prestressed concrete beams with conventional strength concrete up to a maximum 28 day compressive strength of 9,000 psi.
    - Design prestressed concrete beams with high performance concrete (HPC) for a maximum 56 day compressive strength over 9,000 psi up to 10,000 psi. The maximum design compressive strengths shall not exceed 10,000 psi.
    - Design prestressed beams as simple spans.
    - In calculation of prestressed girders section properties, do not utilize transformed are of bonded reinforcement.
    - Use neoprene bearing pads at each end of the prestressed beams. Design the pads to account for transverse and longitudinal expansion and contraction.

- Use anchorage beds set for horizontal and vertical strand patterns of two inches center to center. Detail all straight and draped strands utilizing two inch spacings.
- Provide the minimum amount of reinforcing steel at beam ends as required by AASHTO specifications, Article 9.22.
- Detail beam lengths to 1/16 inch increments.
- Provide prestressed beam sheets with all the applicable details as shown on the "basic drawings."
- Require the use of 10 inch wide concrete diaphragms or galvanized structural steel diaphragms.

11. For structural steel I girders, meet the following:

- Use ASTM A 709 Grade 36 or Grade 50 structural steel.
- Use ASTM A 709 Grade 70 structural steel that meets the requirements of high performance steel; see special provision section 851 for additional requirements.
- Design girders as simple span beams or as continuous beams.
- If simple spans are used, provide concealment plates attached to the exterior girders exposed to traffic at the intermediate bent.
- Provide bearing assemblies at the girder ends and if the girder is continuous, provide bearing assemblies at the girder ends, and at the intermediate bent. Design bearing assemblies that are a combination of neoprene and steel plates or pot bearings that account for transverse and longitudinal expansion and contraction.
- Indicate on the plans the main load carrying members that are subject to tension and state that they shall meet Charpy V-notch test requirements found in the Georgia DOT Specifications.
- For fatigue, design all welds for Category C or better as defined by the AASHTO Specifications.
- Do not place web stiffeners closer than twelve inches from web splices. Provide web stiffeners at all field web splices.
- For bolted splices, use two plates, one each side, of each flange and web splice to be bolted.
- Bolt gusset plates attaching lateral bracing to the webs of girders. Provide a support system for the crossing of the lateral bracing diagonals to limit deflection of the bracing system.
- For welded splices, see Basic Drawings, WELD.DGN.
- All field splices shall be welded with full-penetration butt welds.

12. Design and detail the bridge ends with a paving rest to accommodate full width approach slabs.
13. Use H-piles, or drilled caissons in the foundations.

- For H-piles:

    a. For H-piles driven and installed to a maximum allowable stress of .25Fy:

    Minimum pile embedment will be 10 feet. Pile embedment is measured from the bottom of the footing to the bottom of the pile.

    b. For H-piles driven and installed to a maximum allowable stress of .33Fy:

i. One Pile Load Test and two Pile Driving Analyzer (PDA) Tests will be required. The Department's Geotechnical Bureau will determine the location of each Load Test.

ii. Minimum pile embedment will be 15 feet.

c. Maximum batter is 4 horizontal on 12 vertical.

- For drilled caissons, do not exceed a bearing of 150 kips per square foot.

14. Steel H-piles in pile intermediate bents shall be encased in concrete from 2-ft below ground to 2-ft above normal pool or 2-ft above ground, whichever is higher. Encasement shall be in accordance with section 547 of the Georgia DOT Specifications.

15. See Section H, Highways for Life, for additional bridge commitments.

B. Bridge Construction Plans

1. Meet with the Department and discuss how the plans will be prepared prior to beginning plan preparation on the project.

2. Prepare construction plans with all dimensions, notes and details necessary to construct the structure. As a minimum, include the following sheets:

- Plan and Elevation sheets that include:

a. Plan view of the bridge,

b. Elevation view of the bridge,

c. Beginning and ending stations,

d. North arrow,

e. Location of fixed and expansion bearings,

f. Location of the minimum vertical clearance above the north bound and south bound traffic,

g. If applicable, existing Bridge Serial No., Existing Bridge ID No., Project No., Project PI No., and Construction ID No. supplied by the Department.

h. Grade data for bridge and roadways below, if applicable.

- General Notes sheets that include:

a. Notes for the following: Specifications, Reinforcing Steel, Chamfer, Existing Bridge Plans, Welding, Salvage Material, and others as necessary (use GDOT Bridge Notes, BRNOTES05),

b. Bridge Design Data,

c. A summary of Bridge Consists of (for information),

d. A summary of Traffic Data,

e. A summary of Quantities (for information only),

f. A list of Existing Utilities (if applicable),

g. A list of Utilities (if applicable)

- Deck Plan sheets,
- Deck Cross-Section sheets,
- Bearing Assembly sheets,
- Beam sheets,
- Miscellaneous sheets,
- Framing Plan and Substructure Layout sheets,
- End Bent / Abutment sheets,
- Intermediate Bent sheets,
- As-Built Foundation sheets, and
- Bar Bending Detail sheets.

Additional sheets may be necessary to show the details required for construction. Provide additional sheets at no additional cost when deemed necessary by the Department.

In the Deck Section sheets, provide one full-width section across the structure which indicates, at least, all the horizontal dimensions necessary to construct the bridge. Provide sufficient deck cross-sections to indicate the staging, location of the existing structure and location of any temporary barriers on the structure.

Show as many sections as are necessary to detail the placement of reinforcing in the deck and barrier. Also, draw deck sections indicating edge beams, backwalls, diaphragms or cross-frames, and end walls. Cut sections radially across the structure.

Detail Deck Plan sheets with all longitudinal and transverse dimensions necessary to construct the bridge, including edge beam width, expansion joint widths, backwall or end wall locations, location of construction and expansion joints, and any other items that are necessary to construct the structure.

All details except those shown on beam/girder sheets shall be drawn to scale. Draw deck cross-sections and intermediate bent sheets “Looking Ahead.” If the end bents or abutments are drawn separately, draw bent/abutment one “Looking Back,” and draw the other end bent/abutment “Looking Ahead.”

All details on the Plans shall be clear and legible. The Department will have the final say as to how a Project is to be drawn and will have the right to require additional drawings at no increase in Contract cost. Fully check the plans for completeness of content and accuracy before submittal to the Department for review.

3. Provide for the installation of utilities on the bridges as required. Consider the installation of utilities in staging the construction of the bridge.

4. Groove the bridge deck in accordance with Georgia DOT Specifications Sub-Section 500.3.05.T.9.c.

5. Meet the riding quality requirements for the bridge deck as specified in Sub-Section 500.3.06.E of the Georgia DOT Specifications for state routes with four or more lanes.

C. Wall Construction Plans

Walls shall be special design cast in place concrete walls or tieback walls.

1. Design and detail tie-back walls in accordance with Georgia DOT Specifications Section 617.

   - Use soldier piles,
   - Use cast-in-place concrete for the wall facing. Do not use pneumatically applied concrete (shotcrete) for the permanent wall facing.
   - Use 1'-0" maximum spacing for shear studs connecting soldier piles and cast-in-place wall facing.
   - Tie-back walls shall be designed with consideration to the adjacent pile caps and piles.
   - Tie-backs shall be placed such that they clear the edges of the footings by a minimum of 1′-0″.
   - Allow 2′-0″ minimum between the edge of the footing and the face of the tie-back wall.
   - Finish concrete face with Type III bridge finish or special surface coating.
   - Submit joint pattern for approval by the Department.

2. Design and detail L-shape cast-in-place walls. See Special Design Retaining Wall detail sheets provided in the plans.

D. Shop Drawings

Provide shop drawings in accordance with Georgia DOT Specifications. The Contractor's Design Engineer shall review and stamp approved all shop drawings as the Engineer of Record. After being stamped by the Contractor's Design Engineer, the Department will review the shop drawings for conformance with the plans and specifications. Allow the Department a 30 day review period upon receipt of the shop drawings for each submittal.

999.6 Construction

The Contractor shall construct the project as per the project scope and as per the approved final plans in accordance with Specifications.

Construction includes, but is not limited to the following:

A. All clearing and grubbing and grading required in accordance with Sections 201, 202, 205, 206, 208, 209 and 210.

B. All necessary grading and drainage (see attached chart for allowable Pipe Culvert Materials) to construction the subgrades, including the removal and replacement of unsuitable material, shoulders, and incidental work, including furnishing borrow pits, waste disposal areas and hauling borrow and waste materials as required. The removal and replacement of unsuitable material is the responsibility of the Contractor.

   - All necessary base construction, milling, and paving to construct the Pavement Structure.
   - Removal of all curbs, drainage structures, pavements, bases, and subbases, or other obstructions within the rights of way as necessary to construct the roadway section.
   - All signing, signalization, pavement marking, raised pavement markers, and guardrail.

C. All Equipment and Materials stored on the project shall be stored outside the clear zone.

D. Granular embankment shall be placed where culverts and pipes 46″ or larger are extended, as per Specification Section 212. 12" of Type II Backfill shall be placed under all culverts 48" or larger.

E. The Contractor shall install outlet ditch protection, Type 3 Rip Rap, 18″ thick, at all 42″ or larger pipes and culverts. The ditch protection shall extend 2′ greater than the width of the existing creek / ditch and at a minimum to the right-of-way line.

F. No construction shall occur outside of the existing and/or proposed right-of-way as reflected in the preliminary layouts.

G. Errors and omissions are the responsibility of the Contractor to correct and at the expense of the Contractor.

H. All salvageable material from the project shall be the property of the Contractor except as follows:

Guardrail (not including the posts). Deliver guardrail to Thomaston. The contact will be Ken Robinson, District Maintenance Engineer @ 706 646-6514. Contact shall be called at least 7 business days prior to delivery.

I. See below for Allowable Pipe Chart.

J. Include 4 portable variable message signs to be used as directed by the Engineer.

K. All materials shall meet applicable Georgia DOT Specifications.

L. Provide protective platforms at bridge 1, see section 510 of the Georgia DOT Specifications. Maintain a minimum vertical clearance of 17'-0" above I-85.

m. Landscaping and Lighting plans consistent and commensurate with provided conceptual plans.

pH 5.84

Resistance 42158

Project No.: CSNHS-0008-00 (232) **County:** TROUP **P.I. No.:** 0008232

Pipe Culvert Material Alternates

For Piedmont/Blue Ridge Region

TYPE OF PIPE INSTALLATION				CONCRETE	CORRUGATED STEEL AASHTO M-36		CORRUGATED ALUMINUM AASHTO M-196	PLASTIC			
					ALUMINUM COATED (TYPE 2) CORR. STEEL	PLAIN ZINC COATED	PLAIN UNCOATED ALUMINUM	CORR. POLY- ETHYLENE AASHTO M-252	CORR. POLY- ETHYLENE SMOOTHED LINED AASHTO M-294 TYPE "S"	POLY VINYL CHLORIDE (PVC) PROFILE WALL AASHTO M-304	POLY VINYL CHLORIDE (PVC) CORRUGATED SMOOTH INTERIOR ASTM F-949
STORM DRAIN	LONGITUDINAL INTERSTATE AND TRAVEL BEARING			X							
	LONGITUDINAL NON-INTERSTATE AND NON-TRAVEL BEARING			X	X		X		X	X	X
	CROSS DRAIN	GRADE ≤ 10%	ADT < 250	X	X		X		X	X	X
			250 < ADT < 1500	X	X*		X		X	X	X
			ADT > 1500	X							
		GRADE > 10%	ADT < 250		X		X		X	X	X
			ADT > 250				X		X	X	X
SIDE DRAIN				X	X		X		X	X	X
PERMANENT SLOPE DRAIN					X	X	X		X	X	X
PERFORATED UNDERDRAIN					X	X	X	X	X		X

This type pipe can be used if the addition of Type "B" Coating (AASHTO M-190, Half Bituminous Coated with
* Paved Invert) is utilized.

NOTES:

1. Allowable materials are indicated by an "X".

2. Structural requirements of storm drain pipe will be in accordance with Georgia Standard 1030-D or 1030-P, whichever is applicable, and the Standard Specifications.

3 Graded aggregate backfill shall be used in cross drain applications for all plastic pipes (AASHTO M-294, HDPE pipe; AASHTO M-304, PVC pipe; ASTM F-949, PVC pipe).

999.7 Measurement and Payment

The Work required under the Specification will not be measured separately for payment unless pay items are otherwise specified within this proposal. Payment for the items listed below, complete and accepted, will be made at the Lump Sum price bid. Payment shall be full compensation for furnishing all materials, labor, tools, equipment, superintendence, mailing charges, removal and replacement of unsuitable material, and other incidentals, and for performing all work specified, including but not limited to, designing, detailing, producing construction plans (preliminary and final, electronic and hard copy), meetings with the Department (and others as needed or required), processing NOI, and complete construction as required in the Plans Package and Specifications.. For all asphalt concrete, when materials or construction are not within the tolerances specified in Section 400, deductions will be made in accordance with the applicable requirements of Sub-Sections 106.03 and 400.5. For all Portland cement concrete, when materials or construction are not within the tolerances specified in Sections 500 and 430, deductions will be made in accordance with the applicable requirements of Sub-Sections 106.3 and 430.5.

Partial payments of the Lump Sum price will be made on monthly statements based on an approved Schedule of Payment. The Contractor shall develop a Schedule for Payment for each of the following items:

- DESIGN COMPLETE
- CONSTRUCTION COMPLETE

The Schedule for Payment shall include a rational basis for partial payments of the Lump Sum price bid based on the completed portion of the item and definitive activities. The schedule for payment shall be submitted to the Engineer, and no payments will be made until the plan is approved. No construction shall begin prior to said schedule being approved by the Engineer.

Note: Contractor shall work with the Engineer to establish estimated earthwork, asphalt, and concrete quantities, as this will determine the frequency of required testing by the Department.

At the end of each calendar month, the Contractor shall provide the Department with a certification showing the percent complete for each Pay Item. The Contractor shall include a breakdown and supporting documents in sufficient detail to substantiate the percent complete certified.

Payment will be made under:

Item 999, DESIGN COMPLETE .....per Lump Sum

Item 999, CONSTRUCTION COMPLETE .....per Lump Sum