

**AGREEMENT FOR
DESIGN CONSULTANT SERVICES**

BETWEEN

COUNTY OF DURHAM

AND

BLACK & VEATCH INTERNATIONAL COMPANY

PROJECT: TRIANGLE WWTP EFFICIENCY & RESILIENCY IMPROVEMENTS

OWNER'S PROJECT NO: RFQ 17-012

DATE: JANUARY 12, 2017

AGREEMENT FOR DESIGN CONSULTANT SERVICES

This Contract for Design Consultant Services is made, and entered into this the 12th day of January, 2017, by and between the **COUNTY OF DURHAM**, a political subdivision of the State of North Carolina, (hereinafter "**OWNER**"), and **BLACK & VEATCH INTERNATIONAL COMPANY**, EID #: 43-1833073 (hereinafter "**DESIGNER OR DESIGN CONSULTANT**"), whose principal place of business is: 1104 Lamar Ave., Overland Park, Kansas 66211.

For Professional Services in connection with the Project known as:

TRIANGLE WWTP EFFICIENCY & RESILIENCY IMPROVEMENTS AERATION SYSTEM ENHANCEMENTS

The Owner and the Design Consultant hereby agree as set forth below:

ARTICLE 1 DEFINITIONS

The following words and phrases where appearing in initial capitalization, shall for the purposes of this Agreement have the following meanings:

- 1.1 **Project**. The Project shall be as described above.
- 1.2 **Services**. The Services to be performed by the Design Consultant under this Agreement shall consist of the Basic Services described in Article 3 and any Additional Services under described in Article 7.
- 1.3 **Construction Contract Documents**. The Construction Contract Documents shall consist of the plans and specifications prepared by the Design Consultant, and any addenda and change orders thereto, and the Construction Contract between Owner and Contractor, all of which shall be compatible and consistent with this Agreement.
- 1.4 **Contractor**. The Contractor is the person or entity which enters into an agreement with the Owner to perform the construction of any or all of the Project, including, without limitation, the providing of labor, materials, and equipment incorporated or to be incorporated into the Project. The term "Contractor" means the Contractor or its authorized representative, but excludes the Owner's Representative and the Design Consultant.
- 1.5 **Basic Services Compensation**. Basic Services Compensation shall be the lump sum fee designated in Article 4 to be paid by the Owner to the Design Consultant in connection with the performance of the Basic Services by the Design Consultant.
- 1.6 **Preliminary Programming**. The Preliminary Programming or "Program" is the preliminary written summary of the requirements of the facility which sets forth the Owner's design objectives, constraints and criteria, including space requirements and relationships, quality levels, flexibility and expandability, special equipment and systems and site requirements, as described in Exhibit A. The Design Consultant shall use the preliminary programming work of the Owner as a starting point for all final programming as part of the Design Consultant's Basic Services. All final programming and space profiling is the expressed responsibility of the Design Consultant.

- 1.7 Management Plan. The Management Plan is the description and definition of the phasing, sequencing and timing of the major project activities for design, construction procurement, construction and occupancy as described in Exhibit B.
- 1.8 Design Phase Change Order. A Design Phase Change Order is the form of documentation from the Owner approving and authorizing a modification to the Program, Budget, Management Plan, or previously approved Design Phase documents.

ARTICLE 2

RELATIONSHIP OF THE PARTIES

- 2.1 Design Consultant Services. The Design Consultant shall provide professional architectural/engineering services for the Project in accordance with the terms and conditions of this Agreement and all applicable codes and laws. The Design Consultant's performance of services shall be as professional consultant to the Owner to carry out the activities of Project design and construction administration and to provide the technical documents and supervision to achieve the Owner's Project objectives.
- 2.2 Owner Representation. The Owner shall designate a Project Manager to serve as the Owner's Representative. The Owner's Representative has no design responsibilities of any nature. None of the activities of the Owner's Representative supplant or conflict with the design, budget or any other services and responsibilities customarily furnished by the Design Consultant or sub-consultants in accordance with generally accepted architectural/engineering practices except as otherwise modified by this Agreement. Instructions by the Owner to the Design Consultant relating to services performed by the Design Consultant will be issued or made by or through and in accordance with procedural, organizational, and documentation standards established by the Owner's Representative. Communications and submittals of the Design Consultant to the Owner and Contractor shall be in writing and issued or made in accord with similar procedural and documentation standards established by the Owner's Representative. The Owner's Representative shall have the authority to establish procedures, consistent with this Agreement, to be followed by the Design Consultant and Contractor and to call periodic conferences to be attended by the Design Consultant, and his sub-consultants, throughout the term of this Agreement.
- 2.3 Other Consultants. The Owner may provide drawings, consultation, recommendations, suggestions, data and/or other information relating to the Project from other Consultants under separate contract with the Owner, including but not limited to: Surveyor, Utility Locating Service, Geo-technical Consultant, and/or Materials Testing Consultant. The Design Consultant is responsible for the coordination of survey, existing utility location, geo-technical services, and/or material testing, including all coordination with surveyor, soils engineers, utility locating contractor, City and/or County officials, required for Project.
- 2.4 Design Consultant Representation.
 - 2.4.1 The Design Consultant shall provide a list of all consultants (and sub-consultants if applicable) which the Design Consultant intends to utilize on the Project prior to commencing work on the Project. The list shall include such information on the qualifications of the consultants as may be requested by the Owner. The Owner will review the consultants proposed. The Design Consultant shall not retain a consultant to which the Owner has a reasonable objection. The Design Consultant shall use individuals or firms that are licensed and regularly engaged in the fields of expertise required for this Project. In addition, the Design Consultant shall use an individual or firm with specific expertise in roofing for any projects containing any roofing work. The Design Consultant will also require regular inspections by roofing manufacturer and certification that roofing system was installed in accordance with installation guidelines.

- 2.4.2 The Design Consultant shall provide to the Owner a list of the proposed key project personnel of the Design Consultant and its consultants to be assigned to the Project. This list shall include such information on the professional background of each of the assigned personnel as may be requested by the Owner, through the Owner's Representative. Such key personnel and consultants shall be satisfactory to the Owner and shall not be changed except with the consent of the Owner unless said personnel cease to be in the Design Consultant's (or its consultants, if applicable) employ.
- 2.4.3 Security Background Checks. The Design Consultant is responsible for requesting and paying for criminal history checks on all individuals providing services under this contract who will be obtaining County identification badges and allowed unescorted access to County facilities. Background checks must be provided by Checkmate, Intelius, Been Verified, or be from a North Carolina State agency. The Sheriff's Office will conduct background investigations for those Design Consultant employees who will be working at the Courthouse or Detention Center. A criminal history will not automatically disqualify a Design Consultant's employee from employment on a County contract unless explicitly mandated by law.

The Design Consultant will send the results of the background checks to their County point of contact who will provide them to the Durham County Security Manager. The Security Manager will individually assess and determine the degree to which the nature of a person's criminal conduct has a direct and/or specific negative bearing on a person's fitness or ability to perform contract services in Durham County buildings. The Security Manager will consult the Legal Office on any negative determinations. The Security Manager will notify the Design Consultant's County point of contact of the results of the review. A Design Consultant can appeal a negative determination by the Security Manager to the County Manager for final disposition. Appeals need to be submitted in writing to the contract point of contact within 30 days of notice of a decision to remove or deny an individual from working the County contract due to adverse information in the background check.

This information will be updated annually by the Contractor, 90 days prior to the renewal or extension of the contract, and submitted to their County point of contact who will provide them to the Durham County Security Manager. Personnel without a currently approved background check will have their access to those buildings restricted.

Additional background screening may be necessary at specific county buildings. The Contractor shall provide names of all individuals in the Contractor communications log and to the County Representative. This information will be reviewed annually.

For those Contractor employees who will be working at the Courthouse or Detention Center, the Sheriff's Office will make the security determination. The Contractor will provide the results of their background check to the Major for Support Services who will conduct an additional investigation and then individually assess and determine the degree to which the nature of a person's criminal conduct has a direct and/or specific negative bearing on a person's fitness or ability to perform contract services in the Courthouse or Detention Facility. A Contractor can appeal a negative determination to the Chief Deputy for final disposition. Appeals need to be submitted in writing to the Chief Deputy within 30 days of notice of a decision to remove or deny an individual from working the contract due to adverse information in the background check. While an appeal is pending, the employee will not be allowed access to the Courthouse or Detention Facility.

This information will be updated by the Contractor and submitted to the Sheriff's Office annually, 90 days prior to the renewal or extension of the contract. Personnel without a currently approved background check will have their access to those buildings restricted.

- 2.4.4 The Design Consultant shall receive, compile and report all M/WBE participation of all of its sub-consultants and vendors of this project in a format acceptable to Owner at the commencement of design, and on a monthly basis, should any change from the preliminary submission occur.
- 2.5 Division of Responsibilities/Services. The Design Consultant understands and agrees that should the Owner's Representative or other consultant provide the Design Consultant with any estimating assistance, cost or time control recommendations or other consultation, recommendations or suggestions, any or all such activities on the part of the Owner's Representative, consultant, or any other representative of the Owner shall in no way relieve the Design Consultant of the responsibility of fulfilling its obligations and responsibilities under this Agreement.
- 2.6 Compliance with Laws. Design Consultant shall abide by all statutes, rules, regulations, laws, and executive orders Federal, State and Local as they relate to, but are not limited to, (i) services in general, (ii) payment of employees, subcontractors and agents, (iii) the Occupational Safety and Health Administration, (iv) the Fair Labor Standards Act, and (v) the Wage and Hour Division. In the event Design Consultant is determined by the final order of a court or appropriate agency to be in violation of any Federal, State or Local statute, rule, regulation, law or executive order or this provision, this Contract may be canceled, terminated or suspended in whole or in part by COUNTY and Design Consultant may be declared ineligible for further COUNTY contracts.

ARTICLE 3 BASIC SERVICES

3.1 Scope of Services.

- 3.1.1 The Basic Services to be provided by the Design Consultant shall be performed in the phases described hereinafter and shall include architectural, landscape architectural, civil engineering, structural engineering, mechanical engineering, electrical engineering, information technology, and all other services customarily furnished by an architect/engineer and its consultants in accordance with generally accepted architectural and engineering practices consistent with the terms of this Agreement. The Basic Services to be performed by the Design Consultant consist of professional tasks which have as their objective design, production of technical documents and construction administration to provide the Owner with a complete and properly functioning facility. The Basic Services shall be performed in accordance with the standard of care set forth in this Agreement. The facility shall be suitable for the Owner's purposes, be structurally sound, satisfy the Owner's requirements, comply with all applicable codes and laws, and be completed on a timely basis and within the approved construction budget.
- 3.1.2 This Agreement describes the Design Consultant's Basic Services in seven phases. Each of these phases (Design Narrative, Schematic Design, Design Development, Construction Documents, Permitting and Bid/ Negotiation, Construction, and Final Completion of Design Services) may be divided to facilitate bidding of separate trade contracts or phased construction activities. The Owner shall have the right to determine early, late and other separate contract awards and may modify the Management Plan to change the number and times of issue of various contract document packages at no additional compensation to the Design Consultant so long as there are no more than 4 bid packages (which packages are exclusive of individual material purchase

orders, bid package alternates, typical single and multi-prime bids and rework by the Design Consultant of documents already completed.)

- 3.1.3 The services described below are under the Project Phases in which they customarily occur. This order is for convenience only and does not necessarily reflect the sequence in which a service will actually be performed, or necessarily limit the Project, or a designated portion of the Project, to one of each Phase. The Owner reserves the right to designate the phasing of segregated portions of the Work and to modify the Management Plan, within the terms and conditions of this Agreement.
- 3.1.4 At existing facilities where additions and/or renovations are to take place, the Design Consultant is to verify, by on-site analysis and inspection, the compatibility of all existing systems, including, but not limited to fire alarm, security, video surveillance, CATV, voice / data, telephone, intercom, mechanical and electrical. The Design Consultant shall report, in writing, to the Owner any compatibility issues and make appropriate written recommendations to the Owner.
- 3.1.5 The Design Consultant agrees to design a facility utilizing high performance guidelines such as can be found in the Triangle J High Performances Guidelines, and advise the Owner of opportunities to construct an environmentally sound and safe project, including, but not limited to indoor air quality, day lighting, humidity control, mold issues and other environmental issues.
- 3.1.6 The Design Consultant shall use the preliminary programming work of the Owner as a starting point for all final programming as part of the Design Consultant's Basic Services. All final programming and space profiling is the expressed responsibility of the Design Consultant. The Design Consultant will measure the existing facility to verify the accuracy of existing drawings, should they exist.

3.2 Design Narrative Phase.

- 3.2.1 The Design Consultant shall examine and analyze available information provided by the Owner and shall advise and recommend as to additional information necessary to begin specific design work on the Project. The Design Consultant shall provide written acknowledgment of receipt of Design Guidelines matching the revision referenced in subparagraph 3.3.4 and the Educational Specifications.
- 3.2.2 Upon analysis of all available information and prior to initiating any design tasks, the Design Consultant shall participate in a Pre-Design Project Analysis on the dates specified in the Management Plan contained in Exhibit B or as may subsequently be approved. The Design Consultant shall have in attendance the individuals who will represent the primary architectural and engineering disciplines on the project and others as may be requested by the Owner's Representative. The Design Consultant shall take and transcribe minutes of the sessions.
- 3.2.3 Upon conclusion of the Pre-Design Project Analysis and in accordance with the Management Plan, the Design Consultant shall prepare a report to the Owner (hereinafter referred to as the Design Narrative) which is the Design Consultant's interpretation of the Project requirements, design parameters and objectives, and results of the Pre-Design Project Analysis. To the maximum extent possible, the Design Narrative will contain diagrammatic studies and pertinent text relative to: design concept; Program of Requirements; analysis of alternatives; internal functions; human, vehicle and material flow patterns; general space allocations; detailed analysis of operating functions; studies of adjacency, vertical and horizontal affinities; and outline descriptions of major building components and systems. Allow the Owner seven (7) working days for review.
- 3.2.3 Upon written authorization from the Owner to proceed, and based on the approved Design Narrative, the Construction Contract Award Price (CCAP), Preliminary Programming, and the Management Plan (Exhibits A and B), the Design Consultant shall prepare Schematic Design

Studies consisting of drawings and other documents illustrating the design concept, scale and relationship of the Project components for approval by the Owner.

3.3 Schematic Design Phase.

- 3.3.1 The Design Consultant shall provide the Owner's Representative periodically with copies of Schematic Design Studies for the Owner's Representative's review during the Schematic Design Phase. At the end of the Schematic Design Phase the Design Consultant shall provide the Owner's Representative with four (4) full size complete sets of prints of the drawings and other documents for approval by the Owner.
- 3.3.2 The Design Consultant shall participate as requested in meetings with Owner's staff to review the project, receive the Owner's input and provide responses to input.
- 3.3.3 The Design Consultant shall prepare the necessary documents and make presentations as scheduled to the Board of Commissioners and/or its committees as determined by the Owner, and other agencies as required by Owner. Documents required for presentation shall be mounted and of appropriate color for site plans, floor plans and elevations.
- 3.3.4 Documents prepared by the Design Consultant for final Schematic Design Phase submittal shall include drawings and a written report. The drawings shall include, but not be limited to, a proposed site utilization study of the property of the Project, schematic plans of all floor plan conditions, and simplified elevations indicating the fundamentals of the architectural concept. The report shall include the status of the work in accordance with the Management Plan, a summary of programmed versus actual square footage by room or area and net to gross comparisons in a format defined by the Owner; such discussion of design factors, if any, as are pertinent in the opinion of the Design Consultant; and descriptions of proposed engineered systems, construction methods, materials and work to be included in the construction contracts. Further, the report should include any minutes from meetings or telephone conferences with, or letters from review agencies with responses, and responses to all review comments from staff from previous reviews. The Design Consultant shall submit an estimate and breakdown of the Construction Contract(s) Award Price(s) (CCAP) no later than two (2) business days in advance of the scheduled SD review meeting. The Design Consultant shall prepare such estimates in the form prescribed by the Owner to assure itself that the project cost is within the CCAP.
- 3.3.5 A statement from the Design Consultant with the final Schematic Design Phase submittal shall be included that verifies and acknowledges that all of the applicable Design Guidelines and Educational Specifications have been incorporated in the documents unless specifically noted in writing.
- 3.3.6 The Design Consultant shall submit a written statement indicating that local governing authorities are aware of the project, and the necessary requirements of such agency will be met.
- 3.3.7 To be considered acceptable for final Schematic Design Phase submittal, the documents shall contain all of the following unless otherwise agreed in writing:
 - A. Architectural
 - (i) Plans (at 1/8" scale) showing complete building layout, and identifying areas, room by room, showing square footage with comparisons to program standards, and core areas and their relationships.
 - (ii) Preliminary building section and elevations indicating location and size of fenestration.
 - (iii) Preliminary furniture layouts of critical spaces (i.e. dining area, media center).
 - (vi) Site plan with building located and overall grading plan with a minimum of 5'- 0" contour lines. All major site development such as orientation, access road paving, walls and outside

support buildings, structured parking facilities, programmed play areas, and paved parking lots should be shown.

(vii) Gross and net area calculations separated to show conformance with the Program of Requirements.

(viii) Preliminary Building Code Summary.

B. Structural

(i) Narrative of structural system (precast, structural steel with composite deck, structural steel with bar joists, etc.).

(ii) Identification of foundation requirements (fill requirements, piles, caissons, spread, footings, etc.).

C. Mechanical

(i) Block heating, ventilating and cooling loads calculations including skin versus internal loading.

(ii) Single-line drawings of all mechanical equipment spaces, duct chases and pipe chases.

(iii) Location of all major equipment in allocated spaces.

(iv) Location of all service entrances.

D. Electrical

(i) Lighting fixtures roughly scheduled showing types of fixtures to be used.

(ii) Major electrical equipment roughly scheduled indicating size and capacity.

(iii) Complete preliminary one-line electrical distribution diagrams with indications of final location of service entry, transformers and emergency generator, if required.

(iv) Description of specialized electrical systems (fire alarm, intercom, voice/data, MATV).

(v) Legend showing all symbols used on drawings.

(vi) Projected energy use.

3.3.8 Schedule and conduct a Schematic Design review meeting with the Owner, issue minutes, and deliver all required submittals. Allow ten working days for Owner's review. Documents not complying with Subparagraph 3.3.7 shall be returned to the Design Consultant for correction at no additional charge to the Owner and with no change to the overall Project design schedule.

3.3.9 Upon written notice from the Owner indicating acceptance and approval of the Schematic Design, the structural bay sizes, floor elevations and exterior wall locations (building "footprint") may not be changed except by a Design Phase Change Order.

3.4 Design Development Phase.

3.4.1 The Design Consultant shall prepare from the approved Schematic Design Studies, for further approval by the Owner, the Design Development Documents consisting of drawings and other documents to fix and describe the size and character of the entire Project as to structural, mechanical and electrical systems, materials and such other essentials as may be appropriate.

3.4.2 Design Development Documents prepared by the Design Consultant shall include drawings and a written report in more detail than the Schematic Design Documents and shall take into account the Owner's comments on the previous submittal. The report shall include the status of the work in accordance with the Management plan, a summary of programmed versus actual square footage by room or area in a format defined by the Owner, such discussion of design

factors, if any, as are pertinent in the opinion of the Design Consultant; and outline descriptions of proposed engineered systems, construction methods, materials and work to be included in the construction contracts. Drawings shall include dimensioned site development plan, floors plans, elevations, and typical sections indicating proposed construction. Drawings shall also include information on major finishes as well as diagrammatic drawings illustrating fundamentals of major engineered systems, i.e., structural, mechanical and electrical. The Design Consultant shall submit an estimate and breakdown of the Construction Contract(s) Award Price(s) (CCAP) no later than two (2) business days in advance of the scheduled DD review meeting. The Design Consultant shall prepare such estimates in the form prescribed by the Owner to assure itself that the project cost is within the CCAP.

- 3.4.3 A statement from the Design Consultant with the final Design Development Phase submittal shall be included that verifies and acknowledges that all of the applicable Design Guidelines and Educational Specifications have been incorporated in the documents unless specifically noted in writing. The Design Consultant shall not incorporate asbestos-containing materials in the Project.
- 3.4.4 The Design Consultant shall submit the final Design Development package, meeting minutes, etc. to show how review comments made in Schematic Design have been addressed. It should be clear from the notes where the specific item was incorporated into the Design Development submittal or an explanation if it was not incorporated.
- 3.4.5 The Design Consultant shall provide the Owner's Representative periodically with copies of in-progress Design Development Documents during the Design Development Phase. At the end of the Design Development Phase the Design Consultant shall provide the Owner's Representative with four (4) full size complete sets of prints of the drawings and other documents for approval by the Owner. Return Owner's marked up set as Schematic Design Documents. The documents for this final Design Development Phase submittal shall contain all of the following unless otherwise agreed in writing:
 - A. Architectural
 - (i) Project phasing plan.
 - (ii) Building Code Summary Sheet.
 - (iii) Life safety plans showing all fire walls and egress calculations.
 - (iv) Floor plans (at 1/8" scale) with final room locations including all openings.
 - (v) Wall sections showing final dimensional relationships, materials and component relationships.
 - (vi) Identification of all fixed and loose equipment, furniture, and furnishings.
 - (vii) Room inventory data sheets showing locations of furniture and equipment for each typical room. Owner will provide lists of furniture and equipment and format to Design Consultant. Hard copies and digital formats (if desired) will be provided to the Design Consultant.
 - (viii) Finish schedule identifying all finishes.
 - (ix) Preliminary door and window and hardware schedule showing final quantity plus type and quality levels.
 - (x) Virtually complete site plan including grading and drainage.
 - (xi) Preliminary development of details, including millwork details and large scale blow-ups.
 - (xii) Legend showing all symbols used on drawings.

- (xiii) Outline of materials to be specified in the CD phase.
- (xiv) Reflective ceiling development including ceiling grid and all devices that penetrate the ceiling (i.e., light fixtures, sprinkler heads, ceiling register or diffusers, etc.).
- B. Structural
 - (i) Plan drawings with all structural members located and sized.
 - (ii) Final building elevations.
 - (iii) Outline of materials to be specified in the CD phase.
 - (iv) Foundation drawings.
- C. Plumbing
 - (i) Piping, fixtures and equipment substantially located and sized.
- D. Mechanical
 - (i) Heating and cooling load calculations for each space and major duct or pipe runs sized to interface structural.
 - (ii) Major mechanical equipment scheduled indicating size and capacity.
 - (iii) Ductwork and piping substantially located and sized.
 - (iv) Above ceiling and/or mechanical room layouts to verify all, structural, mechanical, plumbing, electrical and fire protection systems fit in available spaces.
 - (v) Devices in ceiling located.
 - (vi) Legend showing all symbols used on drawings.
 - (vii) Outline of materials to be specified in the CD phase.
 - (viii) Completed life cycle cost analysis.
- E. Electrical
 - (i) All power consuming equipment and load characteristics.
 - (ii) Total electric load.
 - (iii) Major electrical equipment (switchgear, distribution panels, emergency generator, transfer switches, UPS system, etc.) dimensioned and drawn to scale into the space allocated.
 - (iv) Preliminary site lighting design coordinated with Duke Power or applicable power company.
 - (v) Outline of materials to be specified in the CD phase.
 - (vi) Lighting, power, telecommunications and office automation devices and receptacles shown in plan.
 - (vii) Preliminary light fixture schedule.
 - (viii) One line diagram of specialized electrical systems (fire alarm, intercom, voice/data, MATV) showing location of control equipment/panels and devices.
 - (ix) Interior electrical loads estimate for systems furniture, receptacles, lighting, food service equipment, and any other special use areas, etc.
- F. Fire Protection
 - (i) Provide flow test information

(ii) Provide narrative of proposed fire protection system.

- 3.4.6 Schedule and conduct a Design Development review meeting with the Owner, issue minutes, and deliver all required submittals. Allow 10 working days for Owner's review. Documents not complying with Subparagraph 3.4.2 shall be returned to the Design Consultant for correction at no additional charge to the Owner and with no change to the overall Project design schedule.

3.5 Construction Documents Phase.

- 3.5.1 Upon written authorization from the Owner to proceed, the Design Consultant shall prepare from the approved Design Development Documents, Working Drawings and Specifications setting forth in detail the requirements for the construction of the entire Project. The Owner will provide the Conditions of the Contract (General and any Supplementary), Advertisement for Bids, Instructions to Bidders, time control specification provisions, and Construction Proposal Forms and Agreement(s) which the Design Consultant shall incorporate into the Construction Documents.
- 3.5.2 Construction Documents shall be packaged as prescribed in the Management Plan and be completed in accordance with its schedule.
- 3.5.3 Detailed drawings shall cover all work included in the Project or designated portion thereof. It is the responsibility of the Design Consultant to assure that the Project Construction Documents require that no asbestos-containing materials are to be incorporated in the Project.
- 3.5.4 Single or multiple contracts shall be as stated in the Management Plan, and the detailed drawings for each contract shall be prepared by the Design Consultant with appropriate designation noted thereon.
- 3.5.5 Specifications shall be prepared using the Construction Specifications Institute 16 division format. Specifications for products, materials and equipment shall be written in full compliance with N. C. Gen. Stat. §133.3 and all other relevant laws and building codes. Brand names may be used to specify a particular product to be bid as an alternate only in accordance with State law.
- 3.5.6 The Design Consultant shall update room data sheets to show furniture and equipment layouts as needed and requested by the Owner for each typical room. Owner will provide lists of furniture and equipment and format to the Design Consultant. When completed, final hard copies and digital information (if possible) will be provided by the Design Consultant to the Owner.
- 3.5.7 The Design Consultant shall provide a color board with exterior and interior color selection for review, approval and use by the Owner. The approved color board shall be submitted for use by the Owner with the 100% Construction Documents.
- 3.5.8 The Design Consultant shall provide the Owner's Representative periodically with copies of in-progress Construction Documents during this phase. Additionally, and in accordance with the Management Plan, the Design Consultant shall submit for approval by the Owner four (4) full size sets of preliminary Construction Documents at the stage of 60% completeness along-with a written report. Return Owner's marked up set of Design Development Documents. The report shall incorporate the status of the work in accordance with the Management Plan and a summary of programmed versus actual square footage in a format defined by the Owner by room or area. The Design Consultant shall submit an estimate and breakdown of the Construction Contract(s) Award Price(s) (CCAP) no later than two (2) business days in advance of the scheduled 60% CD review meeting. The Design Consultant shall prepare such estimates in the form prescribed by the Owner to assure itself that the project cost is within the CCAP. The documents for this 60% Construction Document submittal shall, at a minimum,

satisfy all of the requirements of the Design Development Phase, plus all of the following unless otherwise agreed in writing:

A. General

- (i) Complete index of drawings
- (ii) Vicinity plan
- (iii) Building Code Summary
- (iv) Life safety plans
- (v) Energy data
- (vi) Accessibility summary
- (vii) U.L. details

B. Civil / Landscaping

- (i) Copy of the Site Survey
- (ii) Site plan satisfactory for site plan approval
- (iii) Site demolition plan
- (iv) Staking plan
- (v) Erosion control plan
- (vi) Grading plan
- (vii) Site utility plan
- (viii) Storm drainage plan, details and schedule
- (ix) Paving plans and details
- (x) Landscaping plans and details, plant schedule

C. Architectural

- (i) Demolition plans
- (ii) Key plans with final room numbers as approved by DPS
- (iii) Critical sections and details identified and drawn
- (iv) Roof plan with all penetrations
- (v) Kitchen layout and equipment schedule
- (vi) Exterior elevations with control joints located
- (vii) Enlarged toilet room layout with all fixtures and dimensions
- (viii) Toilet room elevations
- (ix) Reflected ceiling plan with all fixtures located and ceiling height identified
- (x) Bulkhead and lintel details
- (xi) Finish plan and schedule
- (xii) Door and hardware schedule, elevations, and head and jamb details
- (xiii) Masonry details
- (xiv) Roof details

- (xv) Stair details
- (xvi) Elevator sections and details if applicable
- (xvii) Furniture layout
- (xviii) Casework elevations

D. Structural

- (i) Demolition plans
- (ii) Footing plans and details
- (iii) Reinforcing steel plans
- (iv) Structural steel plans

E. Plumbing

- (i) Demolition plan
- (ii) Fixture schedule
- (iii) Plumbing plans
- (iv) Enlarged toilet room plans
- (v) Riser diagrams for waste and vent, water, storm drainage, and gas
- (vi) Plumbing site plan
- (vii) Plumbing details

F. Mechanical

- (i) Demolition plan
- (ii) Ductwork and piping completely located and sized
- (iii) Complete equipment schedules
- (iv) Mechanical room enlarged plans and sections
- (v) Schematic control diagrams
- (vi) Mechanical details

G. Electrical

- (i) Demolition plan
- (ii) Fixture schedule
- (iii) Electrical site plan
- (iv) Power plan with panels located and identified
- (v) Lighting plan
- (vi) Complete plans for auxiliary systems including but not limited to, fire alarm, voice/data, intercom, MATV, and security
- (vii) Riser diagrams for all systems
- (viii) Panel schedule

Fire Protection

- (i) Demolition plan

- (ii) Fire protection plan with location of all hose and valve cabinets identified
 - (iii) Preliminary fire protection design calculations
- 3.5.9 Schedule and conduct a 60% Construction Documents review meeting with the Owner, issue minutes, and deliver all required submittals. Allow 10 working days for Owner's review. Documents not complying with Subparagraph 3.5.8 shall be returned to the Design Consultant for correction at no additional charge to the Owner and with no change to the overall Project design schedule.
- 3.5.10 After review and approval of the 60% Construction Documents and written notice to proceed to Final Construction Documents phase by the Owner, the Design Consultant shall continue with preparation of final Construction Documents and Bid Documents, including final Specifications for all authorized work on the Project and shall incorporate in those final documents the comments and any modifications and changes desired by the Owner and any modifications required for compliance with all applicable codes, regulations, standards, the approved program, and prior written approvals and instructions of the Owner. The resulting final Construction Document submittal is to be a complete, fully coordinated, integrated package, suitable for bidding distribution, without any significant addenda or further clarification required.
- 3.5.11 The Design Consultant shall participate in such reviews and meetings as are necessary to ensure that the project design conforms to all applicable codes and all requirements of responsible agencies and will make any changes to the Construction Documents which are required for issuance of all permits and legal authorizations needed to construct the Project.
- 3.5.12 The Design Consultant shall submit all relevant applications for all required building permits within a reasonable time to ensure receipt of final comments in time to issue any required addenda to the Bidding Documents.
- 3.5.13 At the completion of the construction documents phase, the Design Consultant shall submit to the Owner six (6) sets of 100% complete documents (four (4) sets to be full size and two (2) sets to be half size, and 4 sets of specifications) prepared by the Design Consultant for final Construction Documents Phase submittal which shall include the final working drawings and specifications. Return Owner's marked up set of 60% Construction Documents.
- 3.5.14 A statement from the Design Consultant with the final Construction Document Phase submittal shall be included that verifies and acknowledges that all of the applicable Design Guidelines have been incorporated in the documents unless specifically noted in writing.
- 3.5.15 The Design Consultant shall submit with the final Construction Document package, meeting minutes, etc. to show how review comments made in Design Development have been addressed. It should be clear from the notes if the specific item was incorporated into the Construction Document submittal or not (with an explanation).
- 3.5.16 Schedule and conduct a Final Construction Documents review meeting with the Owner, issue minutes, and deliver all required submittals. Allow 10 working days for Owner's review. The Design Consultant shall prepare or update the Owner's Property Accounting Drawings for the Project in a computerized format acceptable to the Owner. Digital files in .DWG or .DXF file format are acceptable.
- 3.6 Permitting and Bidding/Negotiation Phase.
 - 3.6.1 Prepare and issue Agreement(s) between Owner and Contractor(s). After receiving written authorization from the Owner, the Design Consultant shall proceed with the Permitting and Bidding/Negotiation Phase. There may be more than one Permitting and Bidding/Negotiation Phase, depending upon the Management Plan.

- 3.6.2 The Design Consultant shall receive, compile, and report all W/MBE participation of all contractors, sub-contractors and vendors of this project in a format acceptable to Owner.
- 3.6.3 The Design Consultant shall coordinate and document the reproduction, distribution and retrieval of the bidding documents. Further, the Design Consultant shall coordinate and document the collection and return of deposits or payments. In addition to the bidders, documents shall be issued to all required code authorities, contractors, plan room, services, and others, as the Owner designates.
- 3.6.4 The Design Consultant shall request, expedite and submit all information necessary to obtain all necessary permits, licenses and approvals, required for the construction, use or occupancy of permanent structures or for permanent changes in existing facilities, unless otherwise agreed in writing.
- 3.6.5 The Design Consultant shall prepare such clarifications and addenda to the bidding documents as may be required. The Design Consultant will provide these to the Owner for review prior to issuance to all holders of bid documents.
- 3.6.6 The Design Consultant will schedule and conduct Pre-Bid Conferences with prospective bidders to review the Project. The Design Consultant shall provide knowledgeable representatives, including representatives of its consultants, to participate in these conferences to explain and clarify Bidding Documents. Within two (2) days after the Pre-bid Conference the Design Consultant shall deliver to the Owner, if needed, a final Addendum.
- 3.6.7 The Design Consultant shall assist the Owner's Representative and the Owner in obtaining bids.
- 3.6.8 The Design Consultant shall prepare a certified bid tabulation and recommendation to the Owner concerning the Contract Award.
- 3.6.9 Should first bidding or negotiation produce prices in excess of the approved CCAP, the Design Consultant shall participate with the Owner's Representative in such re-bidding, re-negotiation, and re-design, at no additional expense to the Owner, as may be necessary to obtain price(s) within the approved CCAP or price(s) acceptable to the Owner. The Owner will assist in re-design decisions. All re-design must be approved by the Owner.
- 3.6.10 Should the Design Consultant re-design or conduct re-bidding under its responsibilities set out in the preceding paragraph, its Construction Phase and Post Construction Phase services shall be extended to take re-design/re-bid delays into account at no additional expense to the Owner.
- 3.6.11 The Design Consultant shall assist the Owner's Representative in the preparation of the Agreement(s) between Owner and Contractor(s) for the Owner's execution. The Owner's Representative will coordinate award(s) and Notice(s) to Proceed for the Owner.
- 3.7 Construction Phase.
 - 3.7.1 The Construction Phase for each portion of the Project will commence with the award of the Construction Contract and will terminate when the Owner makes the Final Completion payment to the Contractor.
 - 3.7.2 The Design Consultant shall consult with the Owner and participate in all decisions as to the acceptability of subcontractors and other persons and organizations proposed by the Contractor for various portions of the work.
 - 3.7.3 The Design Consultant shall receive, compile, track and report all W/MBE participation of all contractors, sub-contractors and vendors of this project in a format acceptable to Owner. Reports will be made to the Owner on a monthly basis, utilizing a pay application cover sheet to be supplied and certified by the contractor (format to be provided by Owner).

- 3.7.4 The Design Consultant shall review and approve shop drawings, samples, and other submissions of Contractor(s) as well as the Work performed by the Contractor(s) for conformance with the design concept of the Project and for compliance with the Contract Documents. The Design Consultant shall prepare one final color board for the use of the Owner and one to be kept on the jobsite containing the Owner approved submittal samples. The review and return of submittals shall be accomplished by the Design Consultant within fourteen (14) calendar days from date of receipt except when otherwise authorized by the Owner's Representative.
- 3.7.5 The Design Consultant shall provide necessary Project drawings, in electronic format, to the electrical or data contractor for creation of data "as built" submittal and approval drawings, and to the general contractor for site layout/staking.
- 3.7.6 The Design Consultant shall conduct Pre-installation meetings of all trades as required by the Design Guidelines to review the installation procedures of the contractors prior to the placement of the work. These Pre-installation meetings will be coordinated around construction progress meetings as possible, to accommodate the schedule of the Design Consultant and Owner.
- 3.7.7 The Owner's Representative will establish with the Design Consultant procedures to be followed for review and processing of all shop drawings, catalogue submissions, project reports, test reports, maintenance manuals, and other necessary documentation, as well as requests for changes and applications for extensions of time.
- 3.7.8 The Design Consultant shall, when requested by the Owner's Representative, prepare Change Order documentation.
- 3.7.9 The Design Consultant shall render to the Owner's Representative, within two (2) working days unless otherwise authorized by the Owner's Representative, interpretations of requirements of the Contract Documents. The Design Consultant shall make all interpretations consistent with the intent of and reasonably inferable from the Contract Documents. The Design Consultant's decision in matters relating to artistic effect shall be final if consistent with the intent of the Contract Documents.
- 3.7.10 Should errors, omissions or conflicts in the drawings, specifications or other Contract Documents by the Design Consultant be discovered, the Design Consultant will prepare and submit to the Owner's Representative, within two (2) working days unless otherwise authorized by the Owner's Representative, such amendments or supplementary documents and provide consultation as may be required, for which the Design Consultant shall make no additional charges to the Owner.
- 3.7.11 The Owner's Representative shall be the point of contact for the Owner, except when the Owner shall direct otherwise. All instructions to the Contractor(s) shall be issued by the Design Consultant except when is directed otherwise by the Owner's Representative.
- 3.7.12 The Design Consultant will have access to the Work at all times. All site visits, observations and other activities by the Design Consultant shall be coordinated with the Owner's Representative and written report of such visits made promptly to the Owner's Representative.
- 3.7.13 The Design Consultant and its consultants (including, but not limited to, the civil, structural, roofing, mechanical and electrical disciplines) shall make such periodic visits to the Project site as may be necessary to familiarize themselves generally with the progress and quality of the Work and to determine in general if the Work is proceeding in accordance with the Contract Documents. On the basis of such on-site observations, the Design Consultant and its consultants shall take the appropriate steps to guard the Owner against defects and deficiencies in the Work of the Contractor. If the Design Consultant observes any work that does not conform to the Contract Documents, the Design Consultant shall immediately make an oral and written report

of all such observations to the Owner's Representative. The Design Consultant and its consultants shall not be required to make exhaustive or full-time on-site observations to check the quality or quantity of the Work, but shall make as many observations as may be reasonably required to fulfil their obligations to the Owner. The Design Consultant shall not be responsible for construction means, methods, techniques, sequences or procedures, or safety precautions and programs in connection with the Work.

- 3.7.14 Periodic visits of the Design Consultant shall be not less than once weekly. Each engineering discipline shall make periodic visits not less than once every two weeks, during the course of work applicable to its discipline. During critical work phases, each engineering discipline may be required to make periodic visits weekly, or as needed, at no additional cost to Owner. The engineering disciplines shall prepare and submit a report on each visit, submitted via the Design Consultant to the Owner's Representative within three (3) working days of the visit.
- 3.7.15 The Design Consultant shall immediately notify the contractor and Owner in writing if the Project falls more than 14 days behind schedule on any critical path activity. The Design Consultant shall immediately request a recovery plan from the contractor and make appropriate written recommendation to the Owner.
- 3.7.16 The Design Consultant shall render written field reports relating to the periodic visits and observations of the Project required by Subparagraph 3.7.14 within three (3) working days to the Owner's Representative in the form required by the Owner's Representative.
- 3.7.17 The Design Consultant shall hold construction progress meetings attended by the Owner's Representative and representatives of each Prime Contractor every two (2) weeks or more often as required by the project in critical phases. The Design Consultant shall render written minutes of this meeting within three (3) working days to all participants in a format acceptable to the Owner's Representative.
- 3.7.18 Based upon observations at the site and upon the Contractor's applications for payment, the Design Consultant shall determine the amount owing to the Contractor(s), pursuant to the terms of the Owner/Contractor Agreement, and shall issue Certificates for Payment to the Owner in such amounts. The Design Consultant's signing of a Certificate of Payment shall constitute a representation by the Design Consultant to the Owner, based upon the Design Consultant's observations at the site and the data comprising the Application for Payment, that the Work has progressed to the point indicated, that to the best of the Design Consultant's knowledge, information and belief, the quality of the Work appears to be in accordance with the Contract Documents (subject to: an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion; the results of any subsequent tests required by the Contract Documents; minor deviations from the Contract Documents correctable prior to completion; and to any specific qualifications stated in the Certificate for Payment), and that the Contractor is entitled to payment in the amount certified. By signing a Certificate for Payment to the Owner, the Design Consultant shall not be deemed to represent that it has made any examination to ascertain how and for what purpose the Contractor has used the monies paid on account of the Construction Contract Sum.
- 3.7.19 If, in accordance with its duty, the Design Consultant advises the Owner's Representative of non-conforming work as stated in subparagraph 3.7.13, the Design Consultant shall confirm the non-conformance in writing to the Owner's Representative within two (2) days of observation.
- 3.7.20 The Design Consultant and the Owner's Representative jointly shall have authority to condemn or reject Work on behalf of the Owner when in the Owner's Representative's or the Design Consultant's opinion the Work does not conform to the Contract Documents. Whenever in the Owner's Representative's or the Design Consultant's reasonable opinion it is considered necessary or advisable to insure the proper implementation of the intent of the Contract

Documents, the Owner's Representative shall have the authority to require special inspection or testing of any Work in accordance with the provisions of the Contract Documents whether or not such Work is fabricated, installed or completed.

- 3.7.21 The Design Consultant shall obtain governing agency occupancy approval if any exceptions arise related to the design or specified materials.

3.8 Final Completion of Design Services Phase.

- 3.8.1 When the Contractor notifies the Design Consultant that the Work is substantially complete, the Design Consultant and its consultants shall inspect the Work and prepare and submit to the Owner's Representative punch lists of the Work of the Contractor(s) which is not in conformance with the Contract Documents. The Design Consultant shall transmit such punch lists to the Contractor(s). The Owner may request that the Design Consultant inspect and prepare a punch list on any portion of the Work.
- 3.8.2 The Design Consultant shall receive, compile, and report all W/MBE participation of all contractors, sub-contractors and vendors of this project, utilizing a pay application cover sheet to be supplied and certified by the contractor (format to be provided by Owner).
- 3.8.3 The Design Consultant shall provide assistance in the original operation of any equipment or system such as initial start-up, testing, adjusting and balancing.
- 3.8.4 The Design Consultant and/or its consultants shall observe, review test data, and certify the original operation of any equipment or system such as initial start-up testing, adjusting and balancing to make sure that all equipment and systems are properly installed and functioning in accordance with the design and specifications.
- 3.8.5 The Design Consultant shall review and approve the Contractor-furnished maintenance and operating instructions, schedules, guarantees, bonds, and certificates of inspection as required by the Construction Documents and forward all approved copies to the Owner's Representative for use by the Owner. In addition, the Design Consultant shall conduct such observations as necessary to ensure all material and equipment warranties are in compliance with applicable specifications.
- 3.8.6 The Design Consultant and its consultants shall conduct up to two (2) comprehensive Final Completion inspections per construction contract at the request of the Owner. If more than two (2) Final Completion inspections are required, through no fault of the Design Consultant, the additional inspections shall be deemed additional services.
- 3.8.7 The Design Consultant shall obtain from the Contractor(s) drawings, prints, and other data necessary for the accurate preparation of the record drawings.
- 3.8.8 The Design Consultant shall make a recommendation in writing to the Owner regarding liquidated damages for each of the prime contractors, as may be applicable.
- 3.8.9 Upon correction of the deficiency reports (punch lists), and acceptance of all other close-out submittals and certificates of the Contractor, the Owner's Representative and the Design Consultant shall review and approve the Application for Final Payment and forward it to the Owner for execution. In addition, the Design Consultant shall certify in writing that the work conforms to the contract documents. The Design Consultant shall issue AIA Substantial Completion Certificates for each Contractor.
- 3.8.10 The Design Consultant shall prepare a set of reproducible sealed Mylar record drawings and digital files, in .DWG or .DXF format on CD ROM, showing significant changes in the Work made during the construction process, based on marked-up contract drawings, prints, and other data furnished by the Contractor(s) and the applicable Addenda, Clarifications, and Change Orders which occurred during the Project.

- 3.8.11 The Design Consultant will report the use of sub-consultants, their function, contract amount and MBE classification to the Owner at the conclusion of the Project. The Design Consultant shall receive, compile and report all W/MBE participation of all of its sub-consultants and vendors of this project in a format acceptable to Owner.
- 3.8.12 Submit a new property accounting drawing for new buildings or a corrected drawing for renovation/addition projects.
- 3.8.13 Conduct and document the 12 month warranty inspection, approximately 50 weeks after the substantial completion date.
- 3.9 Design Consultant's Professional Responsibility and Standard of Care.
 - 3.9.1 By execution of this Agreement, the Design Consultant warrants that (a) it is an experienced and duly licensed firm or individual having the ability and skill necessary to perform all the Services required of it under this Agreement in connection with the design and construction of a project having the scope and complexity of the Project contemplated herein; (b) it has the capabilities and resources necessary to perform its obligations hereunder; and (c) it is familiar with all current laws, rules and regulations which are applicable to the design and construction of the Project (such laws, rules and regulations including, but not limited to, all local ordinances, requirements of building codes of city, county, state and federal authorities which are applicable to the Project, local sanitary laws and rules and regulations, and all orders and interpretations by governing public authorities of such ordinances, requirements, codes, laws, rules and regulations in effect at the time of commencement of services on the Project), and that all drawings, specifications and other documents prepared by the Design Consultant shall be prepared in accordance with and shall accurately meet, reflect and incorporate all such laws, rules and regulations.
 - 3.9.2 The Design Consultant hereby represents and agrees that the drawings, specifications and other documents prepared by it pursuant to this Agreement shall be complete and functional, except as to any deficiencies which are due to causes beyond the control of the Design Consultant, and that the Project, if constructed in accordance with the drawings, specifications and other documents, shall be structurally sound and a complete and properly functioning facility in accordance with the terms of this Agreement. Any suggestions, recommendations or review comments by the Owner shall not reduce or diminish the Design Consultant's responsibilities pursuant to this Agreement.
 - 3.9.3 The Design Consultant shall be responsible for any errors, inconsistencies or omissions in the drawings, specifications, and other documents. The Design Consultant will correct at no additional design cost to the Owner any and all errors and omissions in the drawings, specifications and other documents prepared by the Design Consultant. The Design Consultant further agrees, at no additional cost, to render assistance to the Owner in resolving problems relating to the design or specified materials.
 - 3.9.4 It is the responsibility of the Design Consultant to make certain that, at the time the project is bid, all drawings, specifications and other documents are in accordance with applicable laws, statutes, building codes and regulations and that appropriate reviews and approvals are requested and obtained from federal, state and local governments.
 - 3.9.5 It shall be the responsibility of the Design Consultant throughout the period of performance under this Agreement to exercise the abilities, skills and care customarily used by Design Consultants of the training and background needed to perform the services required under this Agreement who practice in the Durham County/Durham City/Wake County/Research Triangle Park area or similar communities.
- 3.10 Project Requirements.

3.10.1 A component of the Project Construction Budget is the Construction Contract Award Price, herein referred to as CCAP. **The CCAP for this Project is:** _____
The CCAP for this Project, or designated portion thereof, may be modified in writing only in the form of a Design Phase Change Order, executed by the Owner and Design Consultant. The Design Consultant shall prepare drawings, specifications and other documents necessary so that the construction contract bid from a responsive, responsible bidding contractor, acceptable to the Owner, will be within the CCAP.

3.10.2 During all phases of the Project the Design Consultant shall prepare such estimates as it deems necessary, at no additional cost to the Owner, to assure itself that the estimated Project cost is within the CCAP and shall supply such data, information or estimates as the Owner may require to substantiate the Design Consultant's contention that the Project cost is within the CCAP.

3.10.3 With each Design Phase submittal and each interim, revisionary or subsequent design submittal of the Design Consultant to the Owner, the Design Consultant shall make the following statement in writing:

"The drawings, specifications, and other documents submitted herewith, in my/our professional opinion, fulfill the Program of Requirements and the work indicated by them may be purchased by the Owner in a construction contract or contracts, the total price of which (CCAP) will not exceed _____ (\$_____). Further, in my/our professional opinion, the above mentioned documents submitted herewith have been prepared in accordance with the Design Consultant Services Agreement."

With each Design Phase submittal and each interim, revisionary or subsequent design submittal of the Design Consultant to the Owner and with his certification of the Final Payment to the contractor, the Design Consultant shall make the following statement in writing:

"No asbestos-containing building materials have been specified and to the best of my/our knowledge and belief none have been incorporated into this Project."

3.10.4 Incorporated herein and made a part of this Agreement by reference as Exhibit A is the Preliminary Programming which defines the physical and environmental parameters for the Project and establishes the design objectives and criteria. No deviations from the Preliminary Programming shall be allowed without written approval for change, in the form of a Design Phase Change Order executed by the Owner and Design Consultant.

3.10.5 Incorporated herein and made a part of this Agreement by reference as Exhibit B is the Management Plan for the Project which defines the sequence and timing of the design and construction activities. The Management Plan is the schedule to be adhered to by the Design Consultant. No deviation from the Management Plan shall be allowed without written approval for a change in the Management Plan, in the form of a Design Phase Change Order executed by the Owner and Design Consultant. Should the Owner determine that the Design Consultant is behind schedule due to no fault of the Owner; the Design Consultant shall expedite and accelerate its efforts, including additional manpower and/or overtime, to maintain the approved design schedule at no additional cost to the Owner.

3.10.6 Incorporated herein and made a part of this Agreement by reference are the Specifications, or the relevant portions thereof, which establish the space, furniture and equipment requirements for the Project. The Design Consultant shall comply with the requirements of the Educational Specifications in performing its services pursuant to this Agreement. The Design Consultant shall use the preliminary programming work of the Owner as a starting point for all final programming as part of the Design Consultant's Basic Services. All final programming and space profiling is the expressed responsibility of the Design Consultant.

3.11 Project Conferences.

- 3.11.1 Throughout all phases of the Project, the Design Consultant and its consultants shall meet periodically with the Owner when reasonably requested. Participants shall be as determined by the Owner. As a minimum, regularly scheduled meetings which the Design Consultant will attend include:
- A. Design Consultant Orientation.
 - B. Pre-design conferences every other week, or more often, as required by Owner.
 - C. Pre-design Project Analysis Sessions, three days maximum, attendees as designated the Owner.
 - D. Design conferences on an every other week basis.
 - E. Pre-bid conference for each bid package.
 - F. Pre-construction conference for each bid package.
 - G. Pre-installation meetings of all trades as required by Article 3.7.6.
 - H. Construction progress meetings on an every other week basis for each bid package.
 - I. Substantial Completion, Final Completion and completion of warranty period inspections for each construction contract.
- 3.11.2 The Design Consultant shall be responsible for scheduling and attending any meetings necessary to properly coordinate the design effort including, without limitation, meetings with governing agencies, code officials and applicable utilities.
- 3.11.3 The Design Consultant shall be responsible for preparing accurate and complete minutes of all Project conferences and distributing same to all participants.
- 3.12 Serving as Witness.
- 3.12.1 The Design Consultant shall provide fact testimony in public hearings, arbitration proceedings, and legal proceedings, and such fact testimony shall be provided with compensation for Design Consultant's time and expenses.
- 3.13 Construction Warranty.
- 3.13.1 The Design Consultant and its consultants shall assist the Owner in resolution of warranty issues as may be required to determine responsibility for deficiencies.
- 3.13.2 The Design Consultant and its consultants shall conduct an inspection of the project one (1) month prior to warranty expiration and provide to the Owner a written report specifying any warranty deficiencies which may exist.

ARTICLE 4

COMPENSATION

- 4.1 Basic Services Compensation.
- The Owner shall compensate the Design Consultant in accordance with the terms and conditions of this Agreement, including the following:
- 4.1.1 For the Basic Services of the Design Consultant, Basic Services Compensation shall be an amount not to exceed of **Thirty-eight thousand and No/100 Dollars (\$38,000.00)**
 - 4.1.2 For the purposes of Subparagraph 4.1.1, no amount is to be included within the scope of the CCAP for the cost of land, rights-of-way or other non-construction costs which are the responsibility of the Owner.

- 4.1.3 For the purposes of Subparagraph 4.1.1, no labor and materials furnished by the Owner for the Project shall be included with the scope of the CCAP.
 - 4.1.4 For the purposes of Subparagraph 4.1.1, should the Owner request additions to the Project which would cause a change or changes in the scope of the Program of Requirements or previously approved designs or design criteria, the CCAP shall be increased by the aggregate amount of such change(s) and the revised and adjusted CCAP shall be the figure used in determining the Design Consultant's fee. The percentage shown in Paragraph 4.1.1 shall be applied to such increased CCAP.
 - 4.1.5 In the event the Owner requests changes to the Project or elects not to complete the work or any portion thereof, which would decrease the most recently approved CCAP, basic compensation due the Design Consultant, as to such deletion or decrease, shall be adjusted downwards for remaining services to be performed but not for services already performed to the date of receipt by the Design Consultant of the written requested change or notice of the intent not to complete part or all of the work, in accordance with the basic payment schedule set forth in Paragraph 4.2 hereof.
 - 4.1.6 The Basic Services Compensation stated in Paragraph 4.1.1 includes all compensation and other payments due the Design Consultant (manpower, overhead, profit, direct costs, travel, copies, postage, telephone and facsimile service, etc.) in the performance of the Basic Services.
 - 4.2 Payments to the Design Consultant.
 - 4.2.1 Payments for Basic Services, shall be made upon presentation of the Design Consultant's statement of services, fully supported by invoices, time cards, and certifications that all sub-consultants have been paid, and other documentation as requested by the Owner.
- 100%
- 4.2.2 Payments due the Design Consultant under the Agreement shall bear interest at the legal rate commencing thirty (30) days after the date the billing is received by the Owner.
 - 4.2.5 Reimbursable Expenses incurred while performing Basic or Additional Services shall be billed at cost plus 10 percent. Reimbursable Expenses shall include such reasonable, actual expenditures made by the Design Consultant, his employees, or his professional consultants in the interest of the Project, limited to the following: the reasonable expense of transportation and living when traveling from the Design Consultant's office to a location outside of the Triangle Area of North Carolina in connection with the Project; and expense of reproductions, postage and handling of Drawings and Specifications, beyond those for the Design Consultant's and sub-consultants' use and those required as the phase submittals. Before incurring any Reimbursable Expenses, the Design Consultant must request and receive written authorization from the Owner.
 - 4.2.6 If the Project is suspended for more than six months or abandoned in whole or in part by the Owner, the Design Consultant shall be paid compensation for services performed prior to receipt of written notice from the Owner of such suspension or abandonment. If the Project is resumed after being suspended for more than twelve months, the Design Consultant's Basic Services Compensation shall be equitably adjusted.
 - 4.2.7 Deductions shall be made from the Design Consultant's Basic Services Compensation for Liquidated Damages identified in Paragraph 4.5.
 - 4.3 Additional Services Compensation.

- 4.3.1 With respect to any Additional Services, as described in Article 7 herein, performed by the Design Consultant hereunder, the Design Consultant and Owner shall negotiate an equitable adjustment to the Basic Services Compensation. However, if negotiations are not successful prior to the time the additional services are needed, the Owner may direct the Design Consultant to proceed with the Additional Services on a time spent basis with Additional Services Compensation based on the hourly rate schedule submitted to the Owner by the Design Consultant for this project.:
- 4.3.2 Payments for Additional Services of the Design Consultant shall be made upon presentation of the Design Consultant's statement of services, fully supported by invoices, time cards, and other documentation as requested by the Owner.
- 4.4 Accounting Records.
- 4.4.1 Records of the Design Consultant with respect to Additional Services and payroll, and consultant and other expenses (including Reimbursable Expenses) pertaining to the Project, shall be kept according to generally accepted accounting principles and shall be available to the Owner or its authorized representative for inspection and copying at mutually convenient times.
- 4.4.2 At the request of the Owner or its authorized representative, the Design Consultant will supply in a timely manner and certify as accurate, unaltered copies of all time sheets, invoices, and other documents to substantiate and document any and all Additional Services and Reimbursable Expenses.
- 4.5 Liquidated Damages.
- 4.5.1 Should the Design Consultant fail to provide to the Owner those documents required for review by the Owner (Schematic Design, Design Development, 60% Construction Documents and 100% Construction Documents) on or before the dates identified in Exhibit B to this Agreement, (or such later date as may result from extension of time granted by Owner), and delay is caused by no fault of the Owner, Design Consultant shall pay the Owner, as liquidated damages the daily amount of _____ Dollars (\$ _____) for each consecutive calendar day that the submittal to the Owner remains incomplete, which sum is agreed upon as a reasonable and proper measure of damages which the Owner will sustain per day by failure of the Design Consultant to complete work within time as stipulated; it being recognized by the Owner and the Design Consultant that the injury to the Owner which could result from a failure of the Design Consultant to complete on schedule is uncertain and cannot be computed exactly. In no way shall costs for liquidated damages be construed as a penalty on the Design Consultant. The Design Consultant will not be held responsible for delays in obtaining approvals that are caused by approval agencies, provided that timely submission to the approval agency has been made by the Design Consultant.
- 4.5.2 Should the Design Consultant fail to publish the Construction Documents for bid on or before the date identified in Exhibit B to this Agreement for publication, (or such later date as may result from extension of time granted by Owner), Design Consultant shall pay the Owner, as liquidated damages the daily amount of five - hundred dollars (\$500.00) for each consecutive calendar day that all of the required documents are not published, which sum represents the approximate cost to expedite the construction work by one day and is agreed upon as a reasonable and proper measure of damages which the Owner will sustain per day by failure of the Design Consultant to complete and publish the design work within time as stipulated. The Design Consultant will not be held responsible for delays in obtaining approvals that are caused by approval agencies, provided that timely submission to the approval agency has been made by the Design Consultant.
- 4.5.3 The amount of liquidated damages set forth in Article 4.5.1 and 4.5.2 may be assessed concurrently. The items of cost included in the assessment of liquidated damages are added review expense and additional expense to reduce the time allowed for construction of the Project.

This provision for liquidated damages does not bar Owner's right to enforce other rights and remedies against the Design Consultant, including but not limited to, specific performance or injunctive relief.

ARTICLE 5

PERIOD OF SERVICE

- 5.1 Specific dates relating to the period of services are set forth in proposal provided by Design Consultant to the Owner.
- 5.2 Unless earlier terminated as provided in Article 11 hereof, this Agreement shall remain in force for a period which may reasonably be required for the Basic Services and Additional Services hereunder. However, the provisions of the Agreement relating to Professional Responsibility (Paragraph 3.2); Construction Warranty (Paragraph 3.6); Professional Liability coverage (Article 9); Indemnification (Article 10); and Ownership of Documents/Confidential Information (Article 13) shall remain in effect after termination of the other provisions of the Agreement.
- 5.3 If the Project is delayed through no fault of the Design Consultant, all specific dates noted in the schedule agreed to by Owner and Design Consultant that are affected by the delay will be adjusted by the number of calendar days of the delay.
- 5.4 If the Owner materially revises the Project, a reasonable time extension and/or credit shall be negotiated between the Design Consultant and the Owner.

ARTICLE 6

OWNER'S RESPONSIBILITIES

- 6.1 The Owner shall provide full information regarding the requirements for the Project.
- 6.2 The Owner shall examine documents submitted by the Design Consultant and shall render decisions pertaining thereto promptly, to avoid unreasonable delay in the progress of the Design Consultant's Services.
- 6.3 If required for this Project, the Owner shall furnish a certified land survey of the site, giving as applicable, grades and lines of streets, alleys, pavements and adjoining property; rights-of-way, restrictions, easements, encroachments, zoning, deed restrictions, boundaries and contours of the site; locations, dimensions and data pertaining to existing buildings, other improvements and trees; and full information concerning available service and utility lines, both public and private, above and below grade, including inverts and depths. All associated work will be coordinated by Design Consultant as part of the Basic Services.
- 6.4 The Owner shall pay for the services of a soils engineer or other consultant, when such services are deemed necessary by the Design Consultant or Owner's Representative, to provide reports, test borings, test pits, soil bearing values, percolation tests, air and water pollution tests, ground corrosion and resistivity tests and other necessary operations for determining subsoil, air and water conditions, with appropriate professional interpretations thereof. All associated work will be coordinated by Design Consultant as part of the Basic Services.
- 6.5 The Owner shall pay for structural, mechanical, chemical and other laboratory tests, inspections and reports as required by law that are not otherwise called for in this Agreement. All associated work will be coordinated by Design Consultant as part of the Basic Services.
- 6.6 The Owner shall furnish such legal, accounting, and insurance counseling services as the Owner may deem necessary for the project and such auditing services as it may require to ascertain how, or for what purposes, the Contractor has used the moneys paid to it under the Construction Contract.

- 6.7 All services, information, surveys and reports required of the Owner shall be furnished at the Owner's expense and the Design Consultant shall be entitled to rely upon their accuracy and completeness.
- 6.8 The Owner shall furnish information and approvals required of it expeditiously, for orderly progress of the Work.
- 6.9 The Owner shall pay for and the Design Consultant shall request, expedite, and obtain all necessary permits, licenses, approvals, easements, assessments, and charges required for the construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

ARTICLE 7

ADDITIONAL SERVICES

- 7.1 If any of the following Additional Services are authorized in advance by the Owner in writing, the Design Consultant shall furnish or obtain from others the authorized Additional Services. If authorized in advance, in writing by the Owner, the Design Consultant shall be paid for these Additional Services by the Owner pursuant to Article 4.3, to the extent they exceed the obligations of the Design Consultant under this Agreement. Additional Services may include:
 - 7.1.1 Providing fully detailed presentation models or presentation renderings, not included in Basic Services.
 - 7.1.2 Providing financial feasibility or other special studies, not included in Basic Services.
 - 7.1.3 Providing planning surveys or alternative site evaluations.
 - 7.1.4 Providing design services relative to future facilities, systems and equipment which are not intended to be constructed as part of the Project other than general planning and Master Planning for future work as indicated by the Preliminary Programming.
 - 7.1.5 The services of this acoustician not covered in the Basic Services shall be considered additional services.
 - 7.1.6 Making major revisions in Drawings, Specifications or other documents when such revisions are inconsistent with written approvals or instructions previously given by the Owner.
 - 7.1.7 Preparing supporting data and other services in connection with an Owner-initiated change order if the Basic Compensation is not commensurate with the services required of the Design Consultant.
 - 7.1.8 Providing operating and maintenance manuals, training personnel for operation and maintenance, and consultation during operations other than initial start-up, and coordinating with the Contractor(s) to provide in electronic format, as designated by the Owner's Representative, detailed product and warranty information for input to the Owner's Facility Management computer system.
 - 7.1.9 Providing soils sampling, classification and analysis; however, analysis of existing soils information and soils analysis during the Design Phase and recommendations needed during the Construction Phase of the Project are not considered additional services.
 - 7.1.10 Providing services of interior furnishings not included in the Basic Services.
 - 7.1.11 Providing professional services made necessary by the default of a Contractor or by major defects in the Work of the Contractor in the performance of the Construction Contract which the Design Consultant could not reasonably have prevented through inspection, observation or intervention.

- 7.1.12 Providing surveying services such as platting; mapping; subdivision agreements or recording subdivision plats, not included in the Basic Services.
- 7.1.13 Providing additional services prior to actual substantial completion of the Project made necessary by delays or defects in the work of the Contractor which the Design Consultant could not reasonably have prevented through inspection, observation or intervention which prolongs the Construction Contract time by more than 90 days.
- 7.1.14 Providing additional services and costs necessitated by out-of-town travel required by the Design Consultant and approved by the Owner other than visits to the Project and other than for travel required to accomplish the Basic Services.
- 7.1.15 Providing consultation concerning replacement of any Work damaged by fire or other cause during construction, and furnishing professional services of the type set forth in Basic Design Services as may be required in connection with the replacement of such Work.
- 7.1.16 Providing services after payment by the Owner of the Final Payment to the Design Consultant other than services called for in the Basic Services.
- 7.1.17 Providing any other services not otherwise included in this Agreement or not customarily furnished in accordance with generally accepted architectural practices consistent with the terms of this Agreement.

ARTICLE 8

NOTICES

- 8.1 Any notice required by this Agreement or other communications to either party by the other shall be in writing and deemed given when delivered personally or when deposited in the United States Post Office, first class, postage prepaid, addressed as follows, or to such other address as shall be duly given by notice meeting the requirement of this Article.

To Owner: Durham County
 Attn: Utilities Division
 5926 NC HWY 55 E.
 Durham, NC 27713

To Design Consultant: Black & Veatch Corporation
 11000 Regency Parkway
 Suite 410
 Cary, NC 27518

ARTICLE 9

INDEMNIFICATION

- 9.1 Notwithstanding anything to the contrary contained herein, the Design Consultant shall indemnify and hold harmless the Owner and their agents and employees from and against all claims, damages, losses and expenses, including but not limited to attorney's fees, arising out of or resulting from (1) the Design Consultant's performance or failure to perform its obligations under this Agreement and (2) any claim, damage, loss or expense attributable to bodily injury, sickness, disease or death, or to injury to or destruction of personal and/or real property including the loss of use resulting wherefrom and caused by any negligent act or omission of the Design Consultant, anyone directly or indirectly employed by the Design Consultant or anyone for whose acts the Design Consultant may be liable. Such obligation shall not be construed to negate, abridge or otherwise reduce any

other right or obligation of indemnity which would otherwise exist as to any party or person described in this Article.

- 9.2 Except as otherwise set forth in this Agreement, the Design Consultant and the Owner shall not be liable to each other for any delays in the performance of their respective obligations and responsibilities under this Agreement which arise from causes beyond their control and without their fault or negligence, including but not limited to, any of the following events or occurrences: fire, flood, earthquake, epidemic, atmospheric condition of unusual severity, war, and strikes. Owner shall not be liable to the Design Consultant for acts or failures to act by the Contractor.

ARTICLE 10 INSURANCE

- 10.1 DESIGN CONSULTANT shall procure and maintain for the duration of the contract the following insurance coverage from an insurance company(s) possessing a rating of A-VII or higher from the A.M. Best Company and licensed to do business in North Carolina. All of the policies required of the DESIGN CONSULTANT shall contain a waiver of subrogation provision to waive all rights of recovery under subrogation or otherwise against the COUNTY. In the event DESIGN CONSULTANT'S Insurance Policy or Certificate of Insurance conflicts with the aforesaid language concerning "waiver of subrogation" this contract shall govern. DESIGN CONSULTANT shall advise the COUNTY of any cancellation, non-renewal, or material change in any policy within ten (10) days of notification of such action and provide updated certificates of insurance evidencing renewals within fifteen (15) days of expiration. DESIGN CONSULTANT'S insurance shall be primary and any insurance or self-funded liability programs maintained by the COUNTY shall not contribute with respect to the DESIGN CONSULTANT'S insurance. COUNTY shall not be listed as an additional insured on any Insurance Policy or Certificate of Insurance of the DESIGN CONSULTANT. In the event DESIGN CONSULTANT'S Insurance Policy or Certificate of Insurance conflicts with the aforesaid language concerning "additional insured" this contract shall govern.

Commercial General Liability: Insurance Services Office (ISO) Form CG 00 01 on an "occurrence" basis, including products and completed operations, property damage, bodily injury, and personal & advertising injury with limits no less than **\$2,000,000** per occurrence and **\$5,000,000** aggregate. Products-completed operations coverage shall be provided for a minimum of six (6) years following the completion of the project..

Commercial Automobile Liability: ISO Form CA 00 01 covering any auto with limit not less than **\$1,000,000** per accident for bodily injury and property damage.

Worker's Compensation and Employers Liability: as required by The State of North Carolina, with statutory limits, and Employers Liability Insurance with a limit of no less than **\$1,000,000** per occurrence.

Professional Liability (Errors & Omissions): Shall be a limit of not less than **\$5,000,000** per occurrence or claim, and **\$5,000,000** aggregate with an extended reporting period of not less than six (6) years following the completion of the project.

By requiring insurance herein, the COUNTY does not represent that coverage and limits will necessarily be adequate to protect DESIGN CONSULTANT, and such coverage and limits shall not be deemed as a limitation on DESIGN CONSULTANT's liability under the indemnities granted

to the COUNTY in this Contract. DESIGN CONSULTANT shall provide the COUNTY a valid certificate of insurance, in advance of the performance of any work, exhibiting coverage required. DESIGN CONSULTANT shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein.

The failure of the COUNTY at any time to enforce the insurance provisions, to demand such certificates of insurance, or to identify a deficiency shall not constitute a waiver of those provisions, nor reduce the obligations of the DESIGN CONSULTANT to maintain such insurance or to meet its obligations under the indemnification provisions.

Notwithstanding the foregoing, nothing contained in this section shall be deemed to constitute a waiver of the governmental immunity of the COUNTY, which immunity is hereby reserved to the COUNTY.

ARTICLE 11

DISPUTE RESOLUTION PROCEDURE

- 11.1 To prevent disputes and litigation, it is agreed by the parties that any claim or dispute between the County and the Design Consultant, arising from this Agreement or the construction process, shall be sent to a qualified mediator mutually agreed by both parties to address the issue. Such request shall be submitted to the County Manager in writing within ten (10) days of the claim or dispute. Upon receipt of a timely written claim the Manager, or his designee, shall notify the Mediator who will conduct a mediation and notify the Design Consultant in writing of the decision within forty five (45) calendar days from the date of the submission of the claim or dispute, unless the Mediator requires additional time to gather information or allow the parties to provide additional information. The Mediator's orders, decisions and decrees shall be non-binding. Mediation, pursuant to this Section, shall be a pre-condition to initiating litigation concerning the dispute. During the pendency of any dispute and after a determination thereof, the parties to the dispute shall act in good faith to mitigate any potential damages including utilization of construction schedule changes and alternate means of construction. The costs of the mediation shall be divided equally between the parties to the dispute.
- 11.2 The mediation session shall be private and shall be held in Durham County, North Carolina. Mediation under this Article 11 shall not be the cause for a delay of the Project which is the focus of the dispute.
- 11.3 If the disputed issue cannot be resolved in mediation or either party disagrees with the results of the mediation, the parties may seek resolution in the General Court of Justice in the County of Durham and the State of North Carolina. If a party fails to comply in strict accordance with the requirements of this Article, the non-complying party specifically waives all of its rights provided hereunder, including its rights and remedies under State law.

ARTICLE 12

TERMINATION OF AGREEMENT

- 12.1 If: (a) the Owner abandons the Project or the Project is stopped for more than six (6) months due to actions taken by the Owner, or under an order of any court or other public authority having jurisdiction, or as a result of an act of government, such as a declaration of a national emergency

making materials unavailable through no act or fault of the Design Consultant or its agents or employees, or (b) the Owner has failed to substantially perform in accordance with the provisions of this Agreement due to no fault of the Design Consultant and such non-performance continues without cure for a period of thirty (30) days after the Owner receives from the Design Consultant a written notice of such non-performance (including a detailed explanation of the actions of the Owner required for cure), the Design Consultant may, upon fifteen (15) days' additional written notice to the Owner, terminate this Agreement, without prejudice to any right or remedy otherwise available to the Owner, and recover from the Owner payment for all services performed to the date of the notice terminating this Agreement.

- 12.2 Upon the appointment of a receiver for the Design Consultant, or if the Design Consultant makes a general assignment for the benefit of creditors, the Owner may terminate this Agreement, without prejudice to any right or remedy otherwise available to the Owner, upon giving three (3) days written notice to the Design Consultant. If an order for relief is entered under the bankruptcy code with respect to the Design Consultant, the Owner may terminate this Agreement by giving three (3) days written notice to the Design Consultant unless the Design Consultant or the trustee: (a) promptly cures all breaches; (b) provides adequate assurances of future performance; (c) compensates the Owner for actual pecuniary loss resulting from such breaches; and (d) assumes the obligations of the Design Consultant within the statutory time limits.
- 12.3 If the Design Consultant persistently or repeatedly refuses or fails, except in cases for which an extension of time is provided, to supply sufficient properly skilled staff or proper materials, or persistently disregards laws, ordinances, rules, regulations or orders of any public authority jurisdiction, or otherwise substantially violates or breaches any term or provision of this Agreement, then the Owner may, without prejudice to any right or remedy otherwise available to the Owner, and after giving the Design Consultant seven (7) days written notice, terminate this Agreement.
- 12.4 Upon termination of this Agreement by the Owner under Paragraph 11.2 and 11.3 the Owner shall be entitled to furnish or have furnished the Services to be performed hereunder by the Design Consultant by whatever method the Owner may deem expedient. Also, in such cases, the Design Consultant shall not be entitled to receive any further payment until completion of the Work; and the total compensation to the Design Consultant under this Agreement shall be the amount which is equitable under the circumstances. If the Owner and the Design Consultant are unable to agree on the amount to be paid under the foregoing sentence, the Owner shall fix an amount, if any, which it deems appropriate in consideration of all of the circumstances surrounding such termination, and shall make payment accordingly.
- 12.5 The Owner may, upon thirty (30) days written notice to the Design Consultant, terminate this Agreement, in whole or in part, at any time for the convenience of the Owner, without prejudice to any right or remedy otherwise available to the Owner. Upon receipt of such notice, the Design Consultant shall immediately discontinue all services affected unless such notice directs otherwise. In the event of a termination for convenience of the Owner, the Design Consultant's sole and exclusive right and remedy is to be paid for all work performed and to receive equitable adjustment for all work performed through the date of termination. The Design Consultant shall not be entitled to be paid any amount as profit for unperformed services or consideration for the termination of convenience by the Owner.
- 12.6 Should the Owner terminate this agreement as provided for under this Article, the Owner will acquire such drawings, including the ownership and use of all drawings, specifications, documents and materials relating to the Project prepared by or in the possession of the Design Consultant. The Design Consultant will turn over to the Owner in a timely manner and in good unaltered condition all original drawings, specifications, documents, materials, and computer files related to the project.

ARTICLE 13

SUCCESSORS/ASSIGNMENT

- 13.1 This Agreement shall inure to the benefit of and be binding on the heirs, successors, assigns, trustees and personal representatives of the Owner, as well as the permitted assigns and trustees of the Design Consultant.
- 13.2 The Design Consultant shall not assign, sublet or transfer its interest in this Agreement without the written consent of the Owner, except that the Design Consultant may assign accounts receivable to a commercial bank or financial institution for securing loans, without prior approval of the Owner.

ARTICLE 14

OWNERSHIP OF DOCUMENTS/CONFIDENTIAL INFORMATION

- 14.1 Drawings and Specifications as instruments of service are and shall remain the joint property of the Design Consultant and the Owner whether the Project for which they are made is built or not. Said documents and design concept are not to be used by the Design Consultant on other projects. The Owner shall retain reproducible copies of Drawings and Specifications for information and reference and use in connection with the Owner's use and occupancy of the Project and for the Owner's future requirements of the Project's facilities including without limitation any alteration or expansion in any manner the Owner deems appropriate without additional compensation to the Design Consultant. The use of the Design and Specifications, by any person or entity, for the purpose other than the Project as set forth herein, shall be at the full risk of such person or entity and the Design Consultant shall be relieved of any liability whatsoever, including claims for personal injury, property damage, or death as a result of such other use.
- 14.2 In order for the Design Consultant to fulfill this Agreement effectively, it may be necessary or desirable for the Owner to disclose to the Design Consultant confidential and proprietary information and trade secrets pertaining to the Owner's past, present and future activities. The Design Consultant hereby agrees to treat any and all information gained by it as a result of the Services performed hereunder as strictly confidential. The Design Consultant further agrees that it will not disclose during the period of this Agreement or thereafter to anyone outside of the authorized Project team (1) Owner's trade secrets or (2) Owner's confidential and proprietary information.

ARTICLE 15

ADDITIONAL PROVISIONS

- 15.1 The Owner and Design Consultant agree to endeavor to provide written notification and to negotiate in good faith prior to litigation concerning claims, disputes, and other matters in question arising out of or relating to this Agreement or the breach thereof.
- 15.2 Nothing herein contained shall be construed to require the parties to provide written notifications or engage in negotiations prior to the institution of litigation nor to submit for alternative dispute resolution by a third party or parties any such claim, dispute or other matter in question between the parties.
- 15.3 Whenever renderings, photographs of renderings, photographs of models, photographs, drawings, announcements, or other illustration or information of the Project are released for public information, advertisement or publicity, appropriate and proper credit for architectural and other services shall be given to the Design Consultant and Owner respectively.

- 15.4 The payment of any sums by the Owner shall not constitute a waiver of any claims for damages by the Owner for any breach of the Agreement by the Design Consultant.
- 15.5 This Agreement and its Exhibits and Attachments represent the entire and integrated agreement between the Owner and the Design Consultant and supersede all prior negotiations, representations or agreements, either written or oral. This Agreement may be amended only by written instrument signed by both Owner and Design Consultant.
- 15.6 This Agreement shall be governed by the laws of the State of North Carolina, U.S.A. All actions relating in any way to this Contract shall be brought in the General Court of Justice in the County of Durham and the State of North Carolina.
- 15.7 If any one or more of the provisions contained in this Agreement, for any reason, are held to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provisions thereof and this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.
- 15.8 Except where specifically stated otherwise, all periods of time stated in terms of days shall be considered periods calculated in calendar days.
- 15.9 The headings or captions within this Agreement shall be deemed set forth in the manner presented for the purposes of reference only and shall not control or otherwise affect the information set forth therein or interpretation thereof.
- 15.10 For the purpose of this Agreement unless the context clearly indicates otherwise, the singular includes the plural, and the plural includes the singular.
- 15.11 This Agreement may be executed in any number of counterparts, each of which shall be deemed an original, and the counterparts shall constitute one and the same instrument, which shall be sufficient evidence by any one thereof.
- 15.12 E-Verify. As a condition of payment for services rendered under this agreement, Design Consultant shall comply with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes. Further, if Design Consultant provides the services to the County utilizing a subcontractor, the Design Consultant shall require the subcontractor to comply with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes as well. The Design Consultant shall verify, by affidavit, compliance of the terms of this section upon request by the COUNTY.
- 15.13 Employment Advertising Requirements. The Design Consultant shall post local job openings, in connection with this contract, with the City of Durham's Office of Economic and Workforce Development, the North Carolina Department of Commerce-Division of Employment Services (formerly ESC, Employment Security Commission) and with the Durham County Department of Social Services throughout term of this Agreement; provided that the foregoing requirement does not limit the Design Consultant's ability to advertise and/or otherwise post job openings with other organizations or media outlets.
- 15.14 Iran Divestment Act Certification. (Applicable only to contracts/agreements valued at \$1,000.00 or more). Design Consultant by signing/executing this contract certifies that as of the date of this contract Design Consultant is not on the Final Divestment List as created by the State Treasurer pursuant to North Carolina General Statute 147-86.58 and in compliance with the requirements of the Iran Divestment Act and North Carolina General Statute 147-86.59. CONSULTANT shall not utilize in the performance of this contract any subcontractor that is identified on the Final Divestment List.

In witness whereof, each individual executing this agreement acknowledges that he/she/it is authorized to execute this agreement and further acknowledges the execution of this agreement the day and year first written above.

OWNER: COUNTY OF DURHAM

DocuSigned by:
By: Wendell M. Davis
Wendell Davis, County Manager

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.

DocuSigned by:
George K. Quick
George K. Quick, Durham County Chief Financial Officer

BLACK & VEATCH INTERNATIONAL COMPANY

DocuSigned by:
By: Jeff Coggins
EA5413341A750485 Principal/Owner

Name/Title: Jeff Coggins
Associate Vice-President

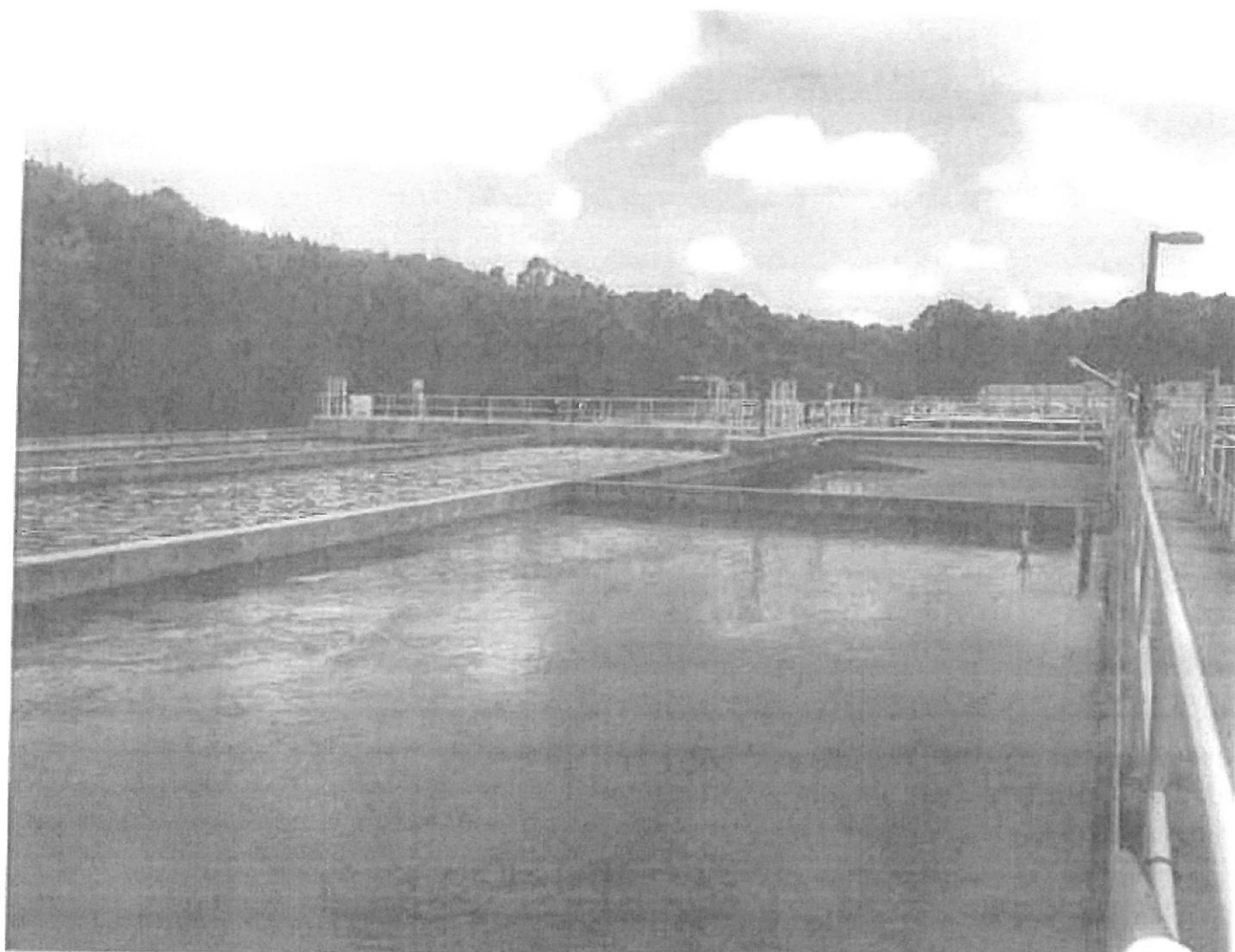
ATTACHMENT 1

SCOPE OF SERVICES

This Scope of Services is an integral part of the contract between the COUNTY OF DURHAM (hereinafter referred to as "County"), and BLACK AND VEATCH INTERNATIONAL COMPANY (hereinafter referred to as "Contractor"), which contract is dated January 12, 2017.

CONTRACTOR hereby agrees to provide services and/or materials to the County pursuant to the provisions set forth below.

- I. Background/Purpose: The purpose and intent of this request is to establish a contract with Black and Veatch International Company for preliminary engineering design of an improved aeration method to augment existing brush aerators in one oxidation ditch at the TWWTP.
- II. References: The following documents are incorporated herein by reference to them:
 - (1) Triangle Wastewater Treatment Plant efficiency and Resiliency Improvements (RFQ No. 17-012)
 - (2) Contractor Statement of Qualifications submitted in response to RFQ No. 17-012.
 - (3) Scope of Services prepared by the Contractor detailing the specific work associated with this task and fee.
- III. Work/Requirements: The Contractor will complete the work described in the attached "Scope of Services" for the preliminary engineering design of an improved aeration method in one oxidation ditch at the TWWTP. The initial phase of the work shall consist of the seven tasks outlined in the "Scope of Services": 1. Project Implementation and General Administration; 2. Project Initiation Workshop and Data Reconnaissance; 3. Aeration System Improvements; 4. Aeration System Evaluation and Life Cycle Cost Analysis; 5. Preliminary Engineering Design Development; 6. Preliminary Engineering Design Workshop; and 7. Supplemental Services.
- IV. Schedules/Timelines: Work shall commence upon contract execution and be completed on or before June 30, 2017.
- V. Transmittal/Delivery/Accessibility: The primary mode of transmittal will be through e-mail and through the submittal of paper copies of plans and specifications. Meetings will be held at the TWWTP. Our primary contact at Black and Veatch is John Brinkley, Phone: (919) 463-3047, Cell: (919) 697-0254 E-mail: BrinkleyJW@bv.com. Kyle Manning, Desk: (919) 560-9039, Cell: (919) 291-2168, E-mail: kmanning@dcconc.gov, will be the primary Durham County contact with Joe Pearce, Desk: (919) 560-9035, Cell: (919) 201-3356, E-mail: jpearce@dcconc.gov, as the secondary contact.
- VI. Payment: Invoices and/or additional submittals shall be forwarded to County Primary Contact for review. Upon payment authorization, invoices will be paid net 30. Invoices and forms submitted MUST reference Durham County Funds Reservation Number assigned to this contract. Authorization of payments will be forwarded to the Finance Department dependent on receipt of all forms. The County may withhold payment if required reports or submittals are not received. For this work the contractor will be paid per submitted monthly invoices, up to an annual total not to exceed of \$38,000, in accordance with Durham County Policies and Terms of Agreement following work completion. Invoices should be mailed to Durham County Utility Division – TWWTP, ATTN: Accounts Payable, 5926 Highway 55 East, Durham, NC 27713.



Statement of Qualifications – RFQ No. 17-012

Triangle Wastewater Treatment Plant Efficiency and Resiliency Improvements

Durham County, NC
11 October 2016



BLACK & VEATCH
Building a world of difference.®



BLACK & VEATCH INTERNATIONAL COMPANY
11000 REGENCY PARKWAY, STE. 410, CARY, NC 27518
+1 919-463-3047 | BRINKLEYW@BV.COM

October 7, 2016

Ms. Hilda W. Williams - Senior Procurement Specialist
Durham County
200 East Main Street, 4th Floor
Durham, NC 27701

Re: RFQ No. 17-012
Triangle Wastewater Treatment Plant Efficiency & Resiliency Improvements

Dear Ms. Williams:

Black & Veatch is pleased to submit our proposal for addressing the aeration system improvement, as the first of other improvements being considered to enhance the efficiency and resiliency at the Triangle County Wastewater Treatment Plant. We understand the importance of an efficient aeration system as integral component of the treatment process for reducing operational costs and ensuring effective treatment for regulatory compliance. Furthermore, we know the importance of making a smart investment decision to address the current deficiency, not only to reduce O&M costs but is also improve reliability. *Our approach is value driven and is based on using our in-depth experience of your process and world renowned expertise to provide a cost-effective solution that maximizes project value and reduces your risk.* Our approach provides Durham County the following benefits:

A project manager, who was a former senior process engineer with Kruger that has in-depth knowledge and experience with your process and what needs to be considered in the design of the aeration system improvements which minimizes design errors and risk to Durham County;

A local project team who has recently completed an aeration system evaluation similar to that being considered by Durham County to improve the efficiency and reduce energy costs at the Muddy Creek WWTP for Winston-Salem and can readily be mobilized to this project, thereby reducing engineering costs and time to get up to speed;

A local construction company, OCI, which is a subsidiary to our firm to provide reviews on engineering estimates from a contractor's perspective as well as perform constructability reviews, which provides the County more accurate project estimates, controls costs, and reduces construction risk;

An MBE company, Milhouse Engineering, that works within our office, will perform up to 10% of the project, and understands our processes, which streamlines coordination efforts and reduces engineering costs; and

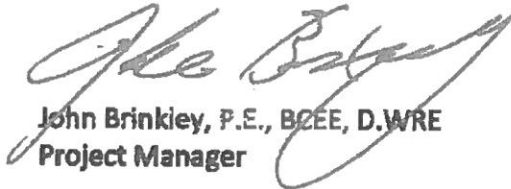


A project management partnership approach where we listen to understand our client's requirements and expectations, so that we can focus on delivering you a high quality product within your schedule and budget.

Black & Veatch is excited about the opportunity to work with Durham County on this project to determine the optimal solution that maximizes value, reduces O&M costs, and improves reliability at the Triangle County Wastewater Treatment Plant. Should you have any questions regarding our proposal, please contact me at (919) 463-3047 or BrinkleyJW@bv.com

Very truly yours,

BLACK & VEATCH INTERNATIONAL COMPANY



John Brinkley, P.E., BCEE, D.WRE
Project Manager

2. Explanation of Approach

IMPORTANCE OF UNDERSTANDING THE ISSUES & REQUIREMENTS

The energy associated with an aeration system typically represents 50% to 70% of the operational costs at a wastewater treatment plant. We understand the installation of a more efficient aeration system to replace the failed brush aerator is the first of other future improvements that are being undertaken by Durham County to increase the reliability, optimize the throughput, and maximize the operational efficacy of the Triangle Wastewater Treatment Plant (TWWTP). Additional future improvements being considered include:

- Drain system for the oxidation ditches and clarifiers to facilitate maintenance of the equipment, which currently requires portable pumps for dewatering the structures.
- Overflow pipe from the influent pump station to the existing lagoon as means of mitigating a potential overflows and improving system reliability by providing additional time for operators to react to a pump failure if communication is lost.
- Alternative supplemental carbon sources to increase the denitrification rates in the secondary anoxic zones and/or integrated fixed film technology to increase the biomass, since there is not enough hydraulic head to make beneficial use of the existing return activated sludge (RAS) bleed offline.

Understanding the problem and process is the first step toward developing a cost-effective solution. The ability to efficiently transfer oxygen to the process biology is critical to performance of the biological treatment process and has a direct implication on the annual operational cost of a WWTP. We understand the problem and Durham County's desire to investigate a more efficient aeration system are as follows:

- Brush aerators (rotors) become overloaded and trip out due to the limited rotor blade submergence of 10.5 inches of the available 12 inches, thereby limiting the available installed oxygen capacity.

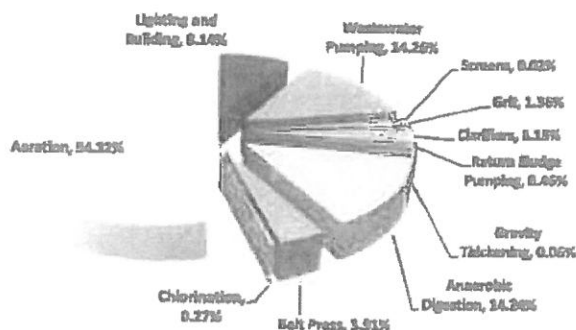


Figure 1. Typical Energy Costs for a WWTP

- Limitations in the installed oxygen capacity are potentially requiring plant to operate two of the three treatments in lieu of one train at the 4.6 mgd average daily flow, thereby increasing operational costs.

- For example, the existing brush aerators have a standard oxygen transfer rate of 3.0 -3.4 lbs O₂/hp•hr depending on the rotor blade submergence compared to a fine bubble diffused aeration system, which has an SOTR of 6.6 – 10 lbs O₂/hp•hr.

How does this SOTR between the current brush aerator and a fine bubble aeration system compare to improving overall efficiency and reducing operational costs?

One 75 horsepower brush aerator can transfer approximately 240 lbs O₂/hr (based 10.5 inch submergence at 3.2 lbs O₂/BHP/hr), whereas a fine bubble aeration system with the equivalent installed horsepower could transfer around 600 lbs O₂/hr. This means that a 30 horsepower (based on 8.0 lbs O₂/hp•hr) fine bubble aeration system could deliver the equivalent oxygen capacity of one 75 horsepower brush aerator, thereby providing an annual savings of \$17,600 based on \$0.06/kWh.

Additional work associated with the aeration system improvements includes repairing the leaking expansion joint of the oxidation ditch. Black & Veatch has extensive repair experience involving this issue and will investigate repair options, such as flexible joint sealing systems by Sika or other products.

We understand the Kruger biological nutrient removal process, as well as the objectives of this project and offer Durham County the following unique benefits unmatched by our competition:

- A project manager who was a former senior process engineer with Kruger, who has also served as the lead process/project as a consultant engineer for several BNR processes that also use this technology, which include the 12 mgd North Cary Water Reclamation Facility Expansion and the 1.65 mgd Northeast Brunswick County Regional Wastewater Treatment Plant and who understands the considerations that must be factored into a fine bubble aeration system into an existing oxidation ditch;

- Unrivaled process modeling capabilities that go beyond design but have allowed us to optimize the efficiency of operations as well as maximize throughput of existing WWTPs, thereby allowing clients the ability to maximize the

value of their assets and at times re-rate their treatment plants for minimal costs;

- An understanding of the existing automatic dissolved oxygen (DO) control system and how the proposed aeration improvements will be integrated to simplify operations, thereby allowing the blower(s) to operate continuously while the existing brush aerators turn on/off to supplement the oxygen requirements based on the existing DO control system, as well as equipping the blower(s) with manually operated variable frequency drives (VFDs) to allow the flexibility of adjusting the air delivery rate based on seasonal plant loadings while minimizing costs;

APPROACH TO AN OPTIMAL SOLUTION

The aeration efficiency improvement project is an important project to maximizing the treatment capacity of the oxidation while reducing energy costs and improving the overall resiliency of the process. We recognize that Durham County is not only seeking an engineering consultant who understands the process and issue, but also considers the following:

- Listens to the concerns of operational staff and involves them in the solution development process;
- Develops a cost-effective design recommendation that provides a quality final product that minimizes operational and maintenance costs, provides flexibility, considers the future improvements, the end-user during and after the construction process;
- Understands the schedule and need to get the improvements implemented by beginning summer 2017; and
- Provides quality construction documents to eliminate change orders and support on time delivery.

However, we also recognize to be successful and maximize value for Durham County, we must also:

- Streamline the project management and execution approach to balance engineering costs and construction value providing more for less;
- Streamline the project management and execution approach to balance engineering cost with construction value providing more for less;
- Leverage our process expertise of the Kruger system, our in-depth modeling capabilities, aeration

■ World class expertise such as Dr. James Barnard in biological nutrient removal and blower experts, such as Julie Gass, who is one of the main committee members on the new ASME PTC-13 blower standard to work with our local team and Durham County to provide unmatched value; and

- A team who is currently developing a design for the Muddy Creek WWTP in Winston-Salem, which is very comparable in scope, thereby minimizing time to get up to speed which reduces engineering costs.

system design, and control expertise to determine the most optimal cost-effective solution that reduces O&M costs and simplifies operations and maintenance; and

- Incorporate the experience of our construction company which is a subsidiary of Black & Veatch to perform constructability reviews, repair recommendations for expansion joint and engineering estimates to reduce construction risks and increase project value.

■ Approach this project from a holistic perspective with consideration to identifying other opportunities to improve resiliency and efficiency of the treatment plant operations.

Key aspects of our approach are provided in the following sections and have been developed based on leveraging our process knowledge and experience with executing similar projects to deliver a successful project that maximizes value.

Effective and seamless project management is the foundation

of our approach. We will leverage the local knowledge of our project manager's experience with the Kruger process in conjunction with our nationally renowned team of experts, and local staff who are working with the City of Winston-Salem on a similar project to deliver a successful project tailored to Durham County. Furthermore, we will engage our local construction subsidiary, OCI, during the design development process. Durham County will realize the following benefits from the approach which include the following:

- A project manager that has a working knowledge of the process and understanding of the project

Driving Value through World Class Expertise with a Local Delivery Focus

Our Approach Provides Smart Investment to Maximize Value for Durham County through:

- Clear understanding of Durham County's project objectives and issues
- Experience with the Kruger process and equipment at Triangle Co. WWTP – means no learning curve
- Nationally renowned leaders in nutrient removal and aeration system design optimal solution
- Leverage local construction subsidiary OCI – cost control and reduced construction risk
- A focus on risk minimization through effective project coordination and contract development
- Effective approaches to driving engineering and reducing costs

objectives who can readily disseminate this knowledge to a team whom he has been managing on a similar project, thereby streamlining engineering time and costs.

- Leverage expertise in biological process modeling to determine oxygen requirements for design optimization of the aeration system improvements to reduce project costs in conjunction with determining if additional treatment capacity is available for optimizing plant operations.

- Engage nationally renowned process mechanical engineers who recently conducted work on a similar project in North Carolina to perform a technology evaluation and life cycle analysis to determine the most cost-effective solution.

- Incorporate our local MBE firm that works within our office to develop an electrical and controls design that accounts for the existing automatic DO control system which simplifies the operation, provides flexibility, and reduces capital cost.

- Reduce construction risk and maximize project value by using our construction subsidiary, OCI.

- Provide a local experienced engineering team that desires Durham County as a longstanding future client who will strive to ensure the County's satisfaction during and after this project.

- Work as a partner with Durham County to identify other improvements that should be considered, as an overall effort to improve the resiliency and efficiency of the plant.

Black & Veatch also excels in meeting our commitments and client's expectations through a project management partnership approach developed toward understanding our

client's business. Many of our projects are from existing clients, as a result of delivering high quality and innovative solutions while ensuring effective cost, schedule, and information management.

- **Cost Management:** Our budget strategy includes effective management of engineering and construction cost through the use of regular budget updates. We will work with Durham County to understand the budget requirements at the outset of project and will develop a solution and manage the overall project to meet this budget. Our financial prowess and the ability to leverage our construction arm, OCI, to review engineering estimates, as well as perform constructability reviews allows us the ability to control and optimize the cost of the design while minimizing construction risk.

- **Schedule Management:** MS Project will be used to develop the schedule and manage resource allocation and will be used to identify the critical path based on the project tasks and durations, thereby allowing the prioritization of resources to maintain the project either on or ahead of schedule. A schedule update will be provided to Durham County, as part of the monthly engineering report to allow tracking of the progress of the project.

- **Information Management:** We will utilize a ProjectWise/ SharePoint data management system to manage data and communication to reduce paperwork and organize documentation that is readily accessible. In addition, we will provide Durham County a one page monthly engineering report provides a "snap shot" of the project and includes; current and projected accomplishments, budget status, schedule status, and scope changes/value added to date.

DELIVERING VALUE THROUGH AN EFFECTIVE PROJECT WORK PLAN

Our project work plan illustrates a four phase approach to complete the project: preliminary engineering phase, detailed design, permitting and bidding, and construction. We will use a workshop approach in completing the first two phases utilizing frequent meetings and workshops to ensure good communication between Durham County staff and the Black & Veatch team and to allow for direct input from all members of the project team in making critical decisions. This type of approach will provide for efficient, early decision making by a fully integrated project team of Black & Veatch and Durham County professionals. We have found this approach very successful on other projects by ensuring full O&M staff input throughout the project, minimizing rework and providing high quality solutions. A brief description of the primary efforts, deliverables and critical decisions occurring in each of the project phases is provided below.



Preliminary Engineering Phase

The most critical phase is the preliminary engineering phase in which the primary components of the design are developed and finalized and the project construction cost is fully realized. This stage of the project allows Black & Veatch to work with Durham County to develop an optimal solution through workshops that meets the project objectives and is within the budget before significant engineering costs have been expended. We envision an initial project kickoff workshop and a follow-up workshop to discuss the critical decisions listed as follows.

DELIVERABLES

- Technical memorandum consisting of basis of design, conceptual drawings, equipment requirements and controls
- Preliminary Cost Opinion
- Updated Project Schedule

CRITICAL DECISIONS

- Selection and sizing of aeration system equipment
- Control methodology, level of complexity, and integration with existing aeration system

PRIMARY EFFORTS

- Perform process modeling using BioWin to quantify the oxygen demand requirements for developing an operating envelope necessary for optimizing the aeration design.
- Evaluate up to three aeration system alternatives by performing both a qualitative analysis, as well as a life cycle analysis
- Identify level of automation of aeration system and control system integration and optimization.
- Develop material requirements and specify repair process for the leaking expansion joint.
- Complete preliminary MOPO and constructability review to identify sequencing issues, operability issues, and construction impacts.
- Develop preliminary cost opinion for all project elements and finalize project scope and schedule.

An effective preliminary engineering phase will provide benefit in expediting and reducing potential for design changes during the detailed design phase of the project for the aeration system improvements. As part of the technical memorandum, we will identify other efficiency improvements, like those being considered by Durham County with budgetary estimates for implementation considerations in addition to the aeration system.

Detailed Design Phase

We will perform the detailed design phase of the project in two levels representing 50% and 100%. This will be possible based on the preliminary engineering work and will allow for an expedited design process providing engineering efficiencies. We will use a workshop approach where workshops are held at the beginning of each design level to review previous work as well as to discuss, plan and make key decisions necessary to progress the design to the next level.

DELIVERABLES

- Intermediate and final construction contract documents including drawings and specifications.
- Updated Cost Opinion at 50% and 100%.
- Updated Project Schedule.

CRITICAL DECISIONS

- Organization of construction documents to coordinate with Durham County requirements

PRIMARY EFFORTS

- Develop detailed design drawings and specifications for final design scope.
- Develop construction contract documents.
- Develop construction permit application documents for authorization to construct (ATC) permit.
- Complete MOPO and constructability evaluations at each design deliverable.
- Develop project sequencing and contingency planning to ensure reliable operation and maintenance during construction.

Permitting and Bidding Phase

The permitting and bidding phase is expected to be straight forward due to the size and complexity of the project and we do not anticipate any major issues.

DELIVERABLES

- Construction permit applications for ATC permit.
- Final bid documents.
- Final Cost Estimate.

CRITICAL DECISIONS

- Construction schedule.
- Bid schedule.

PRIMARY EFFORTS

- Develop application for ATC permit.
- Develop final construction bid documents for distribution to bidders.
- Contact construction contractors to elicit interest in bidding the project.
- Bid evaluation and recommendation of award.

Construction Phase

Construction phase services will consist of turnkey construction administration and inspection services. We will also work closely with Durham County engineering and management staff to ensure full collaboration and cooperation throughout the construction period. The proactive approach we utilize ensures the quality of the constructed facilities is high while focusing on an atmosphere that creates unity between the Owner, Engineer, Contractor and Suppliers. This approach creates a deep sense of commitment to overall success of the project and has helped to minimize the risk of construction cost escalation, schedule delays, quality reduction and claims. Finally, and most importantly we will ensure project quality is very high resulting in a high value project for Durham County.

8. Hourly Rates

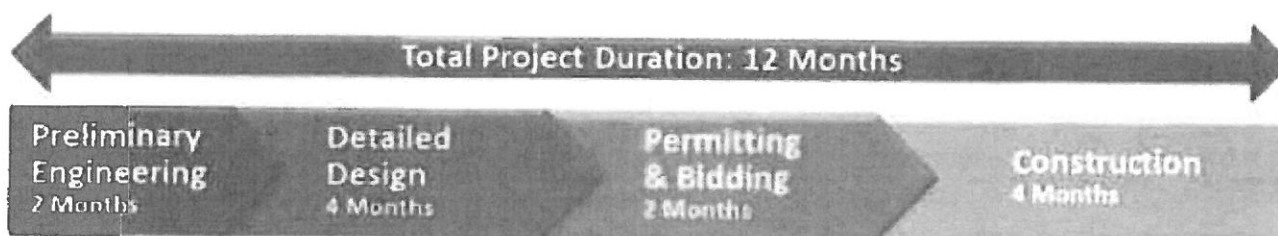
Our current billing rates for general services are provided to the right. Experience and compensation for staff at a given level vary so we often customize these rates for specific projects based on actual resources.

Standard Billing Rate Schedule	
Classification	2015 Billing Rates, \$
Principal	230
Project Manager	190
Engineering Manager	195
Project Engineer	160
Technical Specialist	185
Process Specialist	185
Civil Engineer 04	155
Civil Engineer 03	145
Civil Engineer 02	135
Civil Engineer 01	105
CAD Drafter	95
Senior Project Admin	105
Secretary / Clerical	65
Note: custom rates are used for specialized support professionals as needed and approved by Owner	

9. Schedule

The figure below provides an illustration of our preliminary schedule for completing the services for the first efficiency improvements (aeration system) necessary for a successful project. The most important phase is the preliminary engineering phase consisting of aeration system evaluations, equipment selection, conceptual system layout and control methodology, and preliminary cost estimating of each project

component. This is followed by the detailed design phase which will consist of a two-step design approach (50% and 100%) to reduce cost while developing the construction documents, the permitting and bidding phase consisting of an authorization to construction permit and construction bidding and the construction phase.



10. M/WBE Participation

We have partnered with Milhouse Engineering, a minority firm, in a mentor-protégé relationship that has proven successful on numerous jobs in Black & Veatch's northeast offices and we are extending that successful relationship to

the Carolinas. Milhouse has put professionals in our offices and will perform up to 10% of the electrical engineering work under the direct supervision of Charlie Browning and to the standards of Black & Veatch.