

APPENDIX C

DESIGN CONSULTANT'S DESIGN AND CONSTRUCTION PHASE SERVICES

1. General

- 1.1.** The Design Consultant's Design Services shall be performed in accordance with the Design Consultant Agreement, the Design Manual, and as may be further delineated or modified by the Appendix A for the specific Task Order Project. Design Services shall be delivered in the following phases, each of which is further defined below:
 - 1.1.1. Schematic Design Phase.
 - 1.1.2. Design Development Phase.
 - 1.1.3. Construction Documents Phase.
 - 1.1.4. Bidding and Contract Award Phase.
 - 1.1.5. Constructability Review Phase.
 - 1.1.6. Construction Phase.
 - 1.1.7. Project Close-Out Phase.
 - 1.1.8. Post-Occupancy Review Phase.
- 1.2.** A written Notice to Proceed for each project phase shall be provided to the Design Consultant by the Authority prior to commencement of such services.
- 1.3.** The Design Consultant's Design Services may include other services as authorized in writing by the Authority, in accordance with the Design Consultant Agreement and Appendix A. Such other services may include the following:
 - 1.3.1. Other Basic Services
 - 1.3.1.1. Facilities Condition Assessment.
 - 1.3.1.2. Building Survey, Inventory and Documentation.
 - 1.3.1.3. Environmental Screening Report.
 - 1.3.1.4. Wetlands Investigation and Flood Hazard Assessment
 - 1.3.1.5. Hazardous Materials and Universal Waste Survey and Report.
 - 1.3.1.6. Preliminary Geotechnical Investigation and Report.
 - 1.3.1.7. Historical and Cultural Resources Evaluation and Report.
 - 1.3.1.8. Preliminary Assessment and Report.
 - 1.3.1.9. Site Investigation Activities and Report.
 - 1.3.1.10. Executive Order 215 Report.
 - 1.3.1.11. Property Acquisition Environmental Cost Estimate Report.

- 1.3.1.12. Traffic Impact Evaluation and Report.
- 1.3.1.13. Preliminary Storm Water Management Investigation and Report.
- 1.3.1.14. Testing and Inspection Services
- 1.3.1.15. Commissioning Services

1.3.2. The Design Consultant's Services may also include other similar or related services as enumerated and authorized by the Authority.

1.4. In the event that invasive or destructive investigations in existing facilities are deemed to be necessary for completion of the Design Consultant's Services, the Design Consultant shall obtain the approval of the Authority and the Project School District for such invasive or destructive testing activities, and shall coordinate the scheduling of these activities with all other Design activities and the Project School District's schedule in order to minimize impact on the Project School District's operations.

2. **Schematic Design Phase:** Upon authorization by the Authority, and based upon the approved Project scope, budget, and schedule, the Design Consultant shall proceed Schematic Design Phase Services which may include the following:

2.1. Educational Planning Services and Educational Specifications

2.1.1. If required by Appendix A, the Design Consultant shall undertake detailed interviews with representatives of the Project School District and review the Project School District's current curricular and other materials in order to develop a full and complete understanding of its educational requirements as applicable to the proposed Project. Educational planning services shall be sufficient to prepare detailed Educational Specifications and Schematic Plans as described below, and shall without limitation consider the following:

- 2.1.1.1. Demographic, social and cultural features of the Project School District.
- 2.1.1.2. Organization of educational programs across the Project School District, and the proposed School Facility Project's place within the District.
- 2.1.1.3. All educational programs to be delivered in the proposed School Facility Project.
- 2.1.1.4. Organization of the educational programs and the necessary organization of programmatic elements.
- 2.1.1.5. Essential and preferred adjacencies and separations among all programmatic elements.
- 2.1.1.6. Detailed facility features, furnishings and equipment needed to support teaching and learning for each space within the School Facility Project.

- 2.1.1.7. The Project School District’s practices and systems for information technology and communications, for teaching and learning, administrative, and security purposes.
- 2.1.1.8. Student movement patterns throughout the school day and for pre- and after-school activities.
- 2.1.1.9. Site activities and features including outdoor physical education facilities, play areas, parking, service and loading, and pedestrian and vehicular site circulation.
- 2.1.1.10. School security policies, procedures and features.
- 2.1.1.11. Use of the proposed School by organizations other than the Project School District.
- 2.1.2. The Design Consultant shall prepare Educational Specifications in a format provided by or acceptable to the Authority and in accordance with the requirements of the New Jersey Department of Education (DOE) and N.J.A.C. 6A:26-5.2.
- 2.1.3. The Design Consultant shall submit draft Educational Specifications to the Authority and Project School District for review and comment and shall meet with the Authority and the Project School District to review such comments. The Design Consultant shall revise the Educational Specifications as may be requested by the Authority and shall provide copies of revised Educational Specifications to the Authority for review and acceptance and subsequent submission to DOE.

2.2. Schematic Design Documents

- 2.2.1. Based on the Final Pre-design Report and accepted Educational Specifications (if any), and comments and other input from Authority and the Project School District, the Design Consultant shall prepare Schematic Design Documents in a format acceptable to the Authority and in accordance with the requirements of DOE and N.J.A.C. 6A:26-5.3.
- 2.2.2. The Schematic Design Documents shall consist of drawings, written materials and other documents as may be required to illustrate the proposed scale and relationships of the Project’s components, and may include site and floor plans, building sections and elevations, diagrams, sketches, models and perspectives.
- 2.2.3. The Schematic Design Documents shall include, as applicable, phasing and logistical requirements and an assessment of the impact of construction activities on ongoing use and operation of the facilities by the Project School District.
- 2.2.4. The Design Consultant shall submit draft Schematic Design Documents to the Authority and Project School District for review and comment and shall meet with the Authority and the Project School District to review such comments. The Design Consultant shall revise the Schematic plans as may be requested by

the Authority and shall provide copies of revised Schematic plans to the Authority for review and acceptance and subsequent submission to DOE.

2.3. Construction Cost Estimate (CCE): Based on the Schematic Design Documents and other documents as accepted by the Authority and the Project School District, the Design Consultant shall prepare its Schematic Design Construction Cost Estimate in a format provided by or acceptable to the Authority.

2.3.1. If requested by the Authority, the Design Consultant shall meet with the Authority to review its CCE and, if necessary, to reconcile its CCE with the Authority's own CCE or secure approval of the updated CCE.

2.4. Schedule: The Design Consultant shall review its Schedule and make any revisions necessitated by the Schematic Design Documents and other documents, and submit its updated Schedule to the Authority for review and acceptance.

2.4.1. If requested by the Authority, the Design Consultant shall meet with the Authority to review its updated Schedule and, if necessary, to reconcile its updated Schedule with the Authority's own Schedule or secure approval of the updated Schedule.

2.5. Educational Adequacy Submission: The Design Consultant shall prepare and submit copies of the accepted Schematic Design, Educational Specifications, and/or other required documents for the Authority's and District's approval and subsequent submission to the New Jersey Department of Education pursuant to N.J.A.C. 6A:26-5.3, and shall make such revisions as are required to secure DOE approval of the educational adequacy of the Schematic Design Documents or a determination by DOE that the Project has no impact on educational adequacy.

2.6. Planning Board Review: If requested by the Authority, the Design Consultant shall participate in one meeting with the local Planning Board to review and discuss any technical comments that it may have in response to the Authority's schematic design submission.

3. Design Development Phase Services: Upon authorization by the Authority, the Design Consultant shall proceed with Design Development Services which may include the following:

3.1. Detailed Materials and Systems Review: The Design Consultant shall meet with the Authority and the Project School District in order to review the Project School District's standards for materials and systems in detail, and shall deliver a report including the following:

3.1.1. Detailed comparison of the Authority's Materials and Systems Standards with Project School District standards, documenting resolution of any areas of conflict as accepted by the Authority.

3.1.2. Detailed review of the Project School District's information technology and communication standards, practices and equipment.

3.1.3. Detailed review of the Project School District's security policies, practices and procedures, and equipment and design features associated therewith.

- 3.1.4. Detailed review of the Project School District's policies, practices, procedures, and equipment and design features for food service, health services, and any other educational or support activities requiring specialized design features and/or equipment.
- 3.1.5. Review, confirmation and update, where necessary, of Project School District's requests for proprietary specifications, and preparation of proprietary specification requests for review and action by the Authority.
- 3.1.6. Prepare any necessary requests for variance from the Authority's Materials and Systems Standards for review and action by the Authority.

3.2. Design Development Documents

- 3.2.1. Based upon the accepted Schematic Design and the detailed materials and systems review, the Design Consultant shall develop drawings, outline specifications, and other information to produce the Design Development Documents.
- 3.2.2. The Design Development Documents shall consist of drawings and other documents to fix and describe the Project's size and character as to sitework, architectural, structural, mechanical, electrical and other systems, equipment and materials, and such other information as may be necessary to define fully all features and characteristics of the Project.
- 3.2.3. For addition and renovation work, the Design Development Documents shall include the following, as applicable:
 - 3.2.3.1. A Summary of the Work which shall include a description of project sequencing, phasing, and scheduling as well as other procedural requirements necessary for execution of the Work.
 - 3.2.3.2. An updated assessment of the impact of construction activities on ongoing use and operation of the facilities by the Project School District.
 - 3.2.3.3. Detailed descriptions of proposed disposition of all existing building systems in each affected area of the existing facilities, including continued use, extension or modification to serve additions and/or renovated spaces, discontinuation and removal, or abandonment in place. Systems may include but are not limited to mechanical, electrical, plumbing, fire protection, life safety and communication systems
- 3.2.4. The Design Development Documents shall include an updated Program Comparison highlighting any changes that have taken place during the Design Development Phase.
- 3.2.5. The Design Consultant shall submit the Design Development Documents to the Authority and Project School District for review and comment at 50% completion and at 100% completion, and shall meet with the Authority to

review such comments, and shall make such revisions as are necessary to secure the Authority's acceptance of the Design Development Documents.

3.3. Uniform Construction Code and Best Practices Documents and Review: The Design Consultant shall perform an analysis of the design and prepare code compliance drawings to establish its compliance with the New Jersey Uniform Construction Code and Best Practices Standards for Schools Under Construction or Being Planned for Construction.

3.3.1. The Design Consultant shall participate in one meeting with the Authority and the New Jersey Department of Community Affairs to review the requirements of the Uniform Construction Code and Best Practices Standards and their application to the project, and shall make any necessary modifications to deliverables in order to ensure that the Design Development documents are consistent with all code requirements.

3.4. Other Regulatory Requirements: The Design Consultant shall initiate all other regulatory reviews and approvals indicated by the Authority as the Design Consultant's responsibility, and shall assist the Authority in its fulfillment of other regulatory requirements associated with the Project.

3.5. Construction Cost Estimate: Based on the Design Development drawings and other documents as accepted by the Authority and the Project School District, the Design Consultant shall prepare its Design Development CCE in a format provided by or acceptable to the Authority.

3.5.1. If requested by the Authority, the Design Consultant shall meet with the Authority to review the updated CCE and, if necessary, to reconcile the updated CCE with the previously approved CCE or secure approval of the updated CCE.

3.6. Schedule: The Design Consultant shall review its Schedule and make any revisions necessitated by the Design Development drawings and other documents, and submit its updated Schedule to the Authority for review and acceptance.

3.6.1. If requested by the Authority, the Design Consultant shall meet with the Authority to review its updated Schedule and, if necessary, to reconcile its updated Schedule with the Authority's own Schedule or secure approval of the updated Schedule.

4. Construction Documents Phase Services: Upon authorization by the Authority, the Design Consultant shall proceed with Construction Documents Services which may include the following:

4.1. Construction Documents

4.1.1. Based upon the accepted Design Development documents, the Design Consultant shall develop drawings, outline specifications, and other information to produce the Construction Documents setting forth in detail the requirements for the construction of the entire Project.

4.1.2. The Construction Documents, as may be supplemented from time to time, shall include all drawings and specifications required to bid and construct the Project

in its entirety in accordance with applicable codes and regulations, and to obtain all State and local permits and approvals necessary to complete the construction of the Project.

- 4.1.3. The Construction Documents shall include, as applicable, updated phasing and logistical requirements and an updated assessment of the impact of construction activities on ongoing use and operation of the facilities by the Project School District.
- 4.1.4. The Design Consultant shall submit the Construction Documents to the Authority and Project School District for review and comment at 60% completion and at 100% completion, and shall meet with the Authority to review such comments, and shall make such revisions as are necessary to secure the Authority's acceptance of the Construction Documents.
- 4.2. Construction Cost Estimate:** Based on the Construction Documents as accepted by the Authority and the Project School District, the Design Consultant shall prepare its Construction Documents CCE in a format provided by or acceptable to the Authority.
 - 4.2.1. If requested by the Authority, the Design Consultant shall meet with the Authority to review the updated CCE and, if necessary, to reconcile the updated CCE with the previously approved CCE or secure approval of the updated CCE.
- 4.3. Schedule:** The Design Consultant shall review its Schedule and make any revisions necessitated by the Construction Documents, and submit its updated Schedule to the Authority for review and acceptance.
 - 4.3.1. If requested by the Authority, the Design Consultant shall meet with the Authority to review its updated Schedule and, if necessary, to reconcile its updated Schedule with the Authority's own Schedule or secure approval of the updated Schedule.
- 4.4. OSC Submission:** If required by the Authority, the Design Consultant shall provide procedural and design specifications for inclusion in the Authority's submission to the Office of the State Comptroller (OSC) and shall revise specifications as may be necessary to secure OSC approval to advertise the project.
- 4.5. Final Educational Adequacy Submission:** If required by the Authority, the Design Consultant shall prepare and submit copies of the detailed plans and specifications for the Authority's review and subsequent submission to the New Jersey Department of Education pursuant to N.J.A.C. 6A:26-5.4, and shall make such revisions as are required to secure final DOE approval of the educational adequacy of the plans and related Project documents.
- 4.6. Regulatory Reviews and Approvals**
 - 4.6.1. Following the Authority's acceptance of the Construction Documents, the Design Consultant shall submit the Project to the New Jersey Department of Community Affairs for plan review, and shall make such revisions, with the Authority's knowledge and acceptance, as are necessary to secure plan release under the requirements of the Uniform Construction Code (N.J.A.C. 5:23).

- 4.6.2. The Design Consultant shall secure all other regulatory reviews and approvals indicated by the Authority as the Design Consultant's responsibility, and shall assist the Authority in its fulfillment of other regulatory requirements necessary for construction and occupancy of the Project.

5. Bidding and Contract Award Phase Services: Upon authorization by the Authority, the Design Consultant shall proceed with Bidding and Contract Award Phase Services which may include the following:

5.1. Assistance During Bidding

- 5.1.1. The Design Consultant shall assist the Authority with preparation of the Information Package.
- 5.1.2. The Design Consultant shall attend the pre-bid meeting and site tour conducted for bidders.
- 5.1.3. The Design Consultant shall provide responses to all bidder questions regarding the Construction Documents, and shall prepare revised drawings, sketches, and other modifications to the Construction Documents as necessitated in response to bidder questions. Responses shall be provided to the Authority in writing, with modifications to the Construction Documents as necessary, within three business days of submission of questions.
- 5.1.4. The Design Consultant shall review and provide written comments on the Authority's draft addenda.
- 5.1.5. The Design Consultant shall assist the Authority in review of the successful bidder's price proposal, including participation in a meeting with the Authority and the successful bidder. The Design Consultant shall provide a written explanation of any significant variances between the bidder's price proposal and the Design Consultant's cost estimate.

5.2. GC Task Order Option - If the Authority, in its sole discretion, elects to pursue award of a Contract for Construction through use of an existing Task Order Contract for Construction, the Design consultant shall, upon request of the Authority:

- 5.2.1. Meet with the Authority and the proposed Task Order Contractor to review the Construction Documents and discuss Project requirements for construction;
- 5.2.2. Review the Task Order Contractor's proposal for Construction Work, and shall request, as appropriate, any additional information or documentation needed to evaluate the Task Order Contractor's proposal;
- 5.2.3. Make a recommendation to the Authority with regard to the award of a Task Order Contract for Construction;

5.3. Conformed Documents

- 5.3.1. Within 14 calendar days of the issuance of the Notice of Award, the Design Consultant shall incorporate all addendum modifications to the Construction Documents and complete a conformed set of Construction Documents, for review and acceptance by the Authority.

5.3.2. Following the Authority's acceptance of the conformed Construction Documents, the Design Consultant shall evaluate the need for amended plan release. If addendum modifications to the Construction Documents necessitate amended plan release, the Design Consultant shall submit the Project to the New Jersey Department of Community Affairs for amended plan review, and shall make such revisions, with the Authority's knowledge and acceptance, as are necessary to secure amended plan release.

6. Constructability Review Phase Services: Upon authorization by the Authority, the Design Consultant shall provide the following Constructability Review Phase services:

6.1. Constructability Meetings

6.1.1. The Design Consultant shall participate in one initial meeting and two progress meetings of no less than two hours each, at two-week intervals, with the SDA and the Contractor's participants in its Constructability Review, to review the Contractor's progress and preliminary findings.

6.1.2. The Design Consultant and its Subconsultants shall participate in one full-day final meeting with the SDA to review the findings of the Constructability Review.

6.2. Requests for Information and Constructability Log: The Design Consultant shall review and respond in writing to all requests for information and provide its written comments on the Contractor's Constructability Log within seven days of the issuance of each update to the Constructability Log.

6.3. Comments on Constructability Review Report: The Design Consultant shall provide its written comments on the Contractor's Constructability Review Report. The Design Consultant shall comment on each Design Deficiency listed in the Report, indicating whether it concurs or disagrees with the Contractor's identification of each Deficiency, together with one of the following:

6.3.1. In the case of concurrence, the Design Consultant shall explain briefly the steps necessary to correct the Design Deficiency in the Documents.

6.3.2. In the case of disagreement, the Design Consultant shall explain in writing why the identified condition does not constitute a Design Deficiency or does not require correction. Such explanation shall in no way relieve the Design Consultant of its responsibilities or the Authority of its rights under the terms of the Agreement.

6.4. Resolution of disagreements concerning Design Deficiencies: The Design Consultant shall participate in discussion with the Authority as necessary to support its position with respect to contested Design Deficiencies. Following such discussion and its review of the Contractor's Constructability Review Report and the Design Consultant's comments thereon, the Authority shall issue direction to the Design Consultant with respect to correction of all Design Deficiencies.

- 6.5. Correction of Design Deficiencies:** Upon direction by the Authority, the Design Consultant shall immediately undertake correction of all Design Deficiencies for review and acceptance by the Authority.
- 6.6. Updated Conformed Documents:** If the Constructability Review results in changes to the design, the Design Consultant shall provide an updated set of conformed Construction Documents incorporating all revisions, for review and acceptance by the Authority.
- 6.7. Amended Plan Release:** Following its correction of all Design Deficiencies and updating of the conformed Construction Documents, the Design Consultant shall evaluate the need for amended plan release. If amended plan release is required, the Design Consultant shall make such revisions and, following review and acceptance by the Authority, shall make submission(s) to the Department of Community Affairs until amended plan release is secured.
- 7. Construction Phase Services:** Upon Authorization by the Authority, the Design Consultant shall provide Construction Phase Services which may include the following:
- 7.1. Submittal Review:** The Design Consultant shall review and approve or reject Submittals prepared by or for the Contractor, including shop drawings, product data, samples and other Submittals, to confirm that the Submittals are consistent with and in compliance with requirements of the Construction Documents.
- 7.1.1. The Design Consultant shall review each Submittal within seven calendar days of receipt to determine whether additional information is required to adequately review a given Submittal, and notify the Contractor at once if additional information is needed.
- 7.1.2. The Design Consultant shall approve or reject each Submittal within fourteen days of receipt of a complete Submittal.
- 7.1.3. The Design Consultant shall maintain a record of Submittals and copies of Submittals submitted by the Contractor, with receipt and return dates and Submittal status for each.
- 7.1.4. The Design Consultant shall review and approve or reject revised Submittals prepared by the Contractor in response to the Design Consultant's review comments.
- 7.1.5. The Design Consultant shall provide the Authority with a copy of each Submittal, with action taken, promptly following review and acceptance or rejection.
- 7.1.6. The Design Consultant's review pursuant to this Section shall be for the purpose of determining whether the items or equipment specified in Submittals are consistent with the requirements of the Contract Documents, and such review shall not be deemed to be undertaken for the purpose of determining the accuracy and completeness of each Submittal, determining that any other details such as dimensions and quantities have been complied with, or of substantiating instructions for installation and performance of equipment or systems, all of which shall remain the Contractor's responsibility, unless otherwise specified in

the Contract for Construction. The Design Consultant's review pursuant to this Section also shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Design Consultant, of construction means, manners, methods, techniques, sequences or procedures. The Design Consultant's approval of specific items shall not indicate approval of an assembly of which the item is a component.

- 7.2. Site Observations:** The Design Consultant shall make visits to the Site during construction for general observation of quality and progress and to determine if the Construction Work is proceeding in accordance with the Contract for Construction and Applicable Laws, statutes, ordinances, codes, rules and regulations, other than those pertaining to Contractor's construction means and methods.
- 7.2.1. The Design Consultant shall visit the Site weekly during periods of active construction and at other times reasonably requested by the Authority, and shall promptly notify the Authority in writing of Contractor's failure to comply with the above requirements.
- 7.2.2. The Design Consultant shall report promptly to the Authority in writing about the progress and quality of the Construction Work following each weekly Site visit, and endeavor to guard the Authority against defects and deficiencies in the Construction Work.
- 7.2.3. The Design Consultant shall inform the Authority about the progress and quality of the Construction Work, and endeavor to guard the Authority against defects and deficiencies in the Construction Work.
- 7.2.3.1. Should the Design Consultant observe or become aware of conditions that require action to guard the Project and the Authority against defects and deficiencies in the Construction Work, the Design Consultant shall so notify the Authority in writing within three days of observing or becoming aware of such conditions.
- 7.2.4. The Design Consultant shall report to the Authority any failure of the Contractor to carry out the Construction Work in accordance with the Contract for Construction and any work, factors, data or information that fails to conform to, or that may otherwise indicate any nonconformity with, the Contract for Construction of which it knows or reasonably should have known.
- 7.2.4.1. The Design Consultant shall recommend that the Authority reject Construction Work on the Project that does not conform to the Contract for Construction by immediately notifying the Authority in writing.
- 7.2.5. The Design Consultant shall notify the Construction Manager and the Authority's on-Site representatives immediately if the Design Consultant has actual knowledge of hazardous site conditions or site conditions which may result in an imminent danger on the Site to occupants or persons on or in the vicinity of the Site.

- 7.3. Requests for Information:** The Design Consultant shall review and provide written responses, including supplemental information or sketches as necessary and appropriate, to Requests for Information (RFIs) submitted by the Contractor. The Design Consultant shall provide such response to the Authority within seven days of receipt of the RFI.
- 7.4. Change Orders:** The Design Consultant shall assist the Authority and CM to evaluate, recommend and prepare Change Orders, Proposal Requests, and Construction Change Directives with supporting documentation and data if deemed necessary by the Authority.
- 7.4.1. The Design Consultant shall evaluate and prepare specific written recommendations, including evaluation of costs, to the Construction Manager and the Authority, within seven days of receipt of a Contractor's Proposal or other response to a Proposal Request, Contract Change Request or Construction Change Directive.
- 7.4.1.1. If the nature of the work described in the Proposal Request or Contract Change Request is complex, the Authority may grant the Design Consultant additional time for its evaluation, if requested in writing.
- 7.4.2. The Design Consultant, upon request of the Authority, shall attend meetings in connection with Change Orders, Proposal Requests or Construction Change Directives.
- 7.5. Amended Plan Release:** When Change Orders, RFIs or other information result in modifications to the Construction Documents, the Design Consultant shall evaluate the need for amended plan release. If amended plan release is required, the Design Consultant shall make such modifications and, following review and acceptance by the Authority, shall make submission(s) to the Department of Community Affairs until amended plan release is secured.
- 7.6. Contractor's Invoices:** The Design Consultant shall be responsible for certifying to the Authority the amounts due to the Contractor under the Contract for Construction.
- 7.6.1. The Design Consultant shall review and certify the amounts due the Contractor within five business days after receipt of the Contractor's invoice.
- 7.6.2. The Design Consultant's certification of payment shall constitute a representation to the Authority, based on the Design Consultant's on-site observations, the data contained in the Contractor's invoice and any other facts, data or information known to it, to the best of its knowledge, information and belief, that:
- 7.6.2.1. The Construction Work on the Project has progressed to the point indicated;
- 7.6.2.2. The quality of the Construction Work is generally in accordance with the Contract for Construction; and
- 7.6.2.3. The Contractor is entitled to payment in the amount certified.
- 7.7. Other Construction Phase Services**

- 7.7.1. The Design Consultant shall advise the Authority regarding existing or anticipated disputes and/or Claims that may arise between the Authority and the Contractor.
 - 7.7.2. The Design Consultant shall advise the Authority as to the necessity of special inspections.
 - 7.7.3. The Design Consultant shall receive, review and comment on results and certifications of testing and inspections, and make recommendations for correction of non-conforming Work.
- 7.8. Construction Management Services** – In the event that the Authority elects not to engage a Construction Manager for the Project, the Design Consultant’s Construction Phase Services may also include the following:
- 7.8.1. Serve as the Authority’s Project Representative and administrate the Contract for Construction;
 - 7.8.2. Serve as the conduit for communications between the Contractor and the Authority;
 - 7.8.3. Produce and issue "Project Directories," which shall consist of all information, including but not limited to, names, company affiliations, business address, e-mail addresses, telephone and fax numbers (land line and cellular) necessary to allow proper communication among all persons involved in the Project;
 - 7.8.4. Schedule and conduct a Pre-Construction Conference with the Authority and the Contractor within three days of the Effective Date of the Contract for Construction, which conference shall include review of the Construction Documents, Subcontractors, key personnel, scheduling, staffing, contract administration procedures, site utilization, logistics, scheduling, Project School District logistical and scheduling limitations, procedures for processing field decisions, submittals, substitutions, invoices, Change Orders and other pertinent issues consistent with the Authority’s Specification Section 01200 “Preconstruction Conference”;
 - 7.8.5. Schedule and conduct weekly Project Progress meetings, take attendance and meeting minutes for same, and issue meeting minutes within two (2) days of each meeting. The Design Consultant’s transmittal shall notify all participants that attendees of a meeting must advise Design Consultant, in writing and within three (3) Days of receipt, of any perceived error or omission in the minutes being transmitted by Design Consultant;
 - 7.8.6. Receive, respond to or otherwise resolve Contractor Requests for Information (“RFIs”);
 - 7.8.7. Prepare Proposal Requests on behalf of the Authority;
 - 7.8.8. Receive and review Contractor Construction Change Requests (“CCRs”), and make recommendations to the Authority with regard to such CCRs;
 - 7.8.9. Prepare Change Orders for execution and issuance;

- 7.8.10. Upon request by the Authority, prepare Construction Change Directives and issue same;
- 7.8.11. Maintain Contract Modification Logs, tracking and including all RFIs, Architect's Supplemental Instructions ("ASIs"), Requests for Proposals, CCRs, Change Orders, and CCDs. If requested by the Authority, the Design Consultant shall create and maintain such logs using the Authority's Primavera Expedition project information tracking system;
- 7.8.12. Establish and maintain all Construction Phase records and technical documentation, consistent with the Authority's file documentation system. Such records or technical documentation may include, but are not limited to, project correspondence, the Contractor's daily reports, the Design Consultant's Field Reports, design plans, drawings, specifications, Submittals, all permits and approvals, samples, Contractor's Invoice information, bids, contracts, schedules, tests, inspections, payroll records, safety records and claims-related documentation. The Design Consultant shall maintain such records for the Term of the Project and make them available and easily accessible to the Authority. Upon final completion of the Project, and before Final Payment will be made to the Design Consultant, all documents, files and records shall be turned over to the Authority in hard copy and electronic formats;
- 7.8.13. Communicate with the Contractor directly. Communications by and with the Design Consultant's Subconsultants shall be through the Design Consultant;
- 7.8.14. The Design Consultant, upon request of the Authority, shall attend meetings in connection with Change Orders, Proposal Requests or CCD's;
- 7.8.15. Observe the performance of all testing and control samples performed by the Contractor, including deferred tests; Schedule and attend all Code Inspections, and track and enter into the Authority's Expedition Database all inspection dates and any Inspection Reports documenting the results of such inspections, whether generated by DCA officials, or generated by alternate inspecting entities;
- 7.8.16. Track any conditions or items identified in any Inspection Reports as incomplete, noncompliant with code, or otherwise in need of further attention from the Contractor, by documenting such items in hard copy and electronic form, and, if requested by the Authority, by entering such items into the Authority's Expedition Database;
- 7.8.17. Assist the Contractor in following up on such incomplete, noncompliant or open items or conditions to ensure the completion of any action steps necessitated by such items or conditions and the resolution of any outstanding issues identified by the Inspection Reports;
- 7.8.18. Advise the Authority as to the necessity of special inspections, and schedule and attend such inspections and perform tracking and follow-up on items or conditions identified in such special inspections until resolution;
- 7.8.19. Receive and review certifications of inspections, tests, etc.;

- 7.8.20. Advise the Authority regarding existing or anticipated disputes and/or Claims that may arise between the Authority and the Contractor;
- 7.8.21. Monitor the Contractor's compliance with the Construction Schedule and advise the Authority of the progress of the Construction Work and any deviations from the most current Construction Schedule;

8. **Project Close-Out Phase Services:** The Design Consultant shall cooperate with the Authority and its agents in the planning, scheduling and execution of project close-out activities including the following:

- 8.1. **Inspections:** Upon notice from the Contractor that the Work is complete, the Design Consultant shall participate in any and all pre-final and final inspections, along with representatives of the Contractor, the Authority, the Construction Manager, and the Project School District.
- 8.2. **Punchlist:** Upon notice from the Contractor that the Work is complete, the Design Consultant, in conjunction with the Authority, the Construction Manager and the Project School District, shall inspect the Work and assist the Construction Manager in preparation of the Punchlist of incomplete, defective or unsatisfactory Work items, and shall develop a schedule for completion or correction by the Contractor.
 - 8.2.1. When the Design Consultant and Construction Manager are satisfied that the Punchlist is complete, the Design Consultant shall forward the Punchlist and all supporting documentation to the Authority for review and acceptance and issuance to the Contractor.
- 8.3. **Substantial Completion:** Once the Punchlist has been prepared, if the Design Consultant determines in conjunction with the Authority that the contractual completion status of the Construction Contract supports a finding that Substantial Completion has been met, the Design Consultant shall issue a certificate of Substantial Completion, with the executed Temporary Certificate of Occupancy attached, in a format acceptable to the Authority, to the Contractor.
- 8.4. **Phased Construction:** In the case of phased construction and/or partial occupancy, the Design Consultant shall provide multiple inspections, Punchlists, and certificates of Substantial Completion corresponding to the phases of construction and/or partial occupancy.
- 8.5. **Project Close out Submission Checklist:** The Design Consultant shall create a Project close-out submission checklist, and shall assist the Authority in obtaining all required documentation, certifications and other deliverables required of the Contractor under the Construction Contract and identified on such checklist.
- 8.6. **Final Completion:** Upon receipt of all required documentation and notice from the Contractor that all outstanding items on the Punchlist have been completed, the Design Consultant shall perform its final inspection, in conjunction with the Construction Manager and the Project School District, to confirm that all Punchlist items have been completed. Upon finding all Punchlist items complete, the Design Consultant shall issue

its certificate of Final Completion, with the executed Certificate of Occupancy attached, in a format acceptable to the Authority, to the Contractor.

8.6.1. The Design Consultant shall assist the Authority in the creation and issuance of a Final Completion Checklist Form (NJSDA Form 710), including documentation and certification of all Punchlist items.

8.7. Record Drawings: The Design Consultant shall prepare Record Drawings incorporating all changes, notations, and other data provided by the Contractor in the As-Built Documents.

8.7.1. The Design Consultant shall monitor the Contractor's timely preparation and updating of As-Built Documents and notify the Contractor and the Authority of any failure in the completion of as-built drawings.

8.7.2. If applicable, the Design Consultant shall verify that the Contractor has adequately prepared a Site survey consistent with the Authority's Land Title Conveyance Survey Requirements as part of the required As-Built Documents.

8.7.3. The Design Consultant shall place the following statement on the Record Drawings: "The As-Built information added to this drawing has been supplied by the Contractor. The (Architect) (Engineer) assumes no responsibility or liability for its accuracy other than conformity with the design concept and general adequacy of the As-Built information to the best of the (Architect's) (Engineer's) knowledge."

8.7.4. The Design Consultant shall complete the Record Set within 30 days of receipt of the As-Built Documents.

8.8. Construction Management Services – In the event that the Authority elects not to engage a Construction Manager for the Project, the Design Consultant's Project Close-Out Phase Services may be expanded or otherwise modified accordingly.

9. Post-Occupancy Review Phase Services: The Design Consultant shall assist in the resolution of the Contractor's obligations in accordance with its warranty and guarantee for this Project as such arise.

9.1. Warranty Inspection: Approximately eleven months after Final Payment to the Contractor, the Design Consultant shall conduct, in conjunction with the Construction Manager, the Authority and the Project School District, a walk-through and warranty inspection at the Project Site.

9.1.1. The Design Consultant shall prepare, and within ten days of the walk-through shall submit, a written report to the Authority setting forth the findings of the inspection.

9.1.2. The Design Consultant shall, upon completion by the Contractor of any work to correct deficiencies, latent defects or warranty work discovered in the walk-through and warranty inspection (but not later than thirty days after the end of the one-year warranty period), re-inspect the Construction Work and within ten

Days of reinspection, shall submit a final report to the Authority documenting the findings of the reinspection.

10. **Other Basic Services:** Following completion of Predesign Services (if any) and in a manner coordinated with all Design Services, the Design Consultant shall provide the following services when authorized by the Authority:

10.1. Facilities Condition Assessment: The Design Consultant shall undertake a condition assessment of existing facilities as identified for inclusion or possible inclusion in the Project Scope.

10.1.1. **Objectives of Facilities Condition Assessment:** The Facilities Condition Assessment may be undertaken to address one or more of the following objectives, as determined by the Authority:

10.1.1.1. To inform the Authority in its decision-making about the scope of the proposed Project.

10.1.1.2. To collect information about the existing facilities with sufficient detail and accuracy to inform the subsequent planning of additions and/or renovations.

10.1.1.3. To assess the condition of existing facilities in regard to performance, functionality, life-cycle and compliance with applicable codes and standards.

10.1.2. **Content of Facilities Condition Assessment:** The Facilities Condition Assessment may include one or more of the following, for building(s) and site and organized by building element, as directed by the Authority:

10.1.2.1. Description.

10.1.2.2. Photographs, captioned and keyed to building plans.

10.1.2.3. Current functional condition.

10.1.2.4. Life expectancy.

10.1.2.5. Code analysis, standards and compliance.

10.1.2.6. Educational adequacy.

10.1.2.7. Measurement and documentation of physical dimensions.

10.1.2.8. Determination of capacities of existing systems.

10.1.2.9. Feasibility of extension or expansion of existing systems.

10.1.2.10. Cost estimating and analysis, which may include comparison of replacement and upgrade costs, life cycle cost comparisons and similar analyses.

10.1.2.11. All survey data, interviews, field notes, cost calculations, review comments, etc. shall be included in the Facility Assessment as appendices.

10.1.3. The Facilities Condition Assessment shall include all building elements affected by or identified for inclusion or possible inclusion in the Project Scope.

10.1.4. Building elements in the Facilities Condition Assessment shall be organized in the same manner as directed by the Authority for project specifications.

10.2. Building Survey, Inventory and Documentation: The Design Consultant shall inspect all existing building and site conditions affected by the proposed Project Scope, to provide base information sufficient for development of the Schematic Design and subsequent project phases. Deliverables shall include but are not limited to the following:

10.2.1. Measurement and documentation of all building spaces, whether affected by the proposed Project Scope or not, including:

10.2.1.1. Floor plans showing room names, areas, ceiling heights, and built-in furnishings and equipment.

10.2.1.2. An updated room inventory listing room types, areas, ceiling heights, and built-in furnishings and equipment.

10.2.2. Review with the Project School District and the Authority portions of the latest version of the District's approved Long-Range Facilities Plan that are applicable to the Project, identifying the status of items that may affect or be affected by the Project.

10.2.3. Detailed survey and documentation of all building elements affected by the proposed Project Scope, including dimensions, finishes, major structural elements, food service equipment, and mechanical, electrical, plumbing, fire protection, life safety and communication systems.

10.2.4. A detailed evaluation and written report of the current performance, functional condition, capacity and code status of existing mechanical, electrical, plumbing, fire protection, life safety and communication systems. Systems shall be evaluated with respect to their suitability for continued use, extension or modification to serve additions and/or renovated spaces, and discontinuation and removal or abandonment in place.

10.2.5. Identification, during the course of the above activities, of any other significant condition deficiencies or previously unknown conditions of which it becomes aware.

10.3. Environmental Screening Report (ESR)

10.3.1. The Consultant shall develop the Environmental Screening Report ("ESR") to assess the likelihood of obtaining the various environmental, historical and cultural, and land use approvals necessary to develop the site as an educational facility.

10.3.1.1. The ESR shall identify, on a preliminary basis, potential insurmountable technical and administrative obstacles that may exist on a proposed schools facility project, or in close proximity to the

proposed site. Specifically, the ESR shall provide an identification of potential fatal flaws that cannot be overcome, in order to inform the Authority in its possible elimination of a particular site from further consideration if land use approvals are incompatible with preliminary project requirements.

- 10.3.1.2. Examples of the technical and administrative factors that shall be considered in the ESR include utility availability, known environmental quality concerns and regulatory conflicts, potential compatibility of neighboring land uses and community impacts, historic and cultural and natural resource impacts, and endangered species.
- 10.3.2. The Consultant shall prepare an ESR for submission to the NJDEP by the Authority in support of the application and approval process for land acquisition by the Department of Education pursuant to N.J.A.C. 6A: 26-7.1. The Consultant shall complete and submit a Permit Identification Form to the Authority for subsequent submission to NJDEP to assist in facilitating the permitting process.
- 10.3.3. Within the ESR, the Consultant shall assess the following elements. If any of these elements were completed by another party in support of other predesign or site feasibility work, the Consultant shall reference those findings in the ESR, and include copies of the associated reports and accompanying documentation as an Appendix to the ESR.
 - 10.3.3.1. Availability of Sewer Service: The Consultant shall affirm that (1) the site is located in an approved sewer service area and there is sufficient capacity to connect to an existing sewage collection line, and the treatment facility has adequate capacity to treat the wastewater for the proposed maximum enrollment; or (2) in the case that the proposed site is not serviced by an approved sewer service area, the Consultant shall indicate the likelihood of the site being suitable for a discharge to groundwater from either a package treatment plant or a septic system.
 - 10.3.3.1.1. The Consultant shall obtain a “Will Serve Letter” from the local sewerage authority that confirms the availability and willingness to accept sewerage in the specific quantity necessary for the proposed Project.
 - 10.3.3.1.2. If applicable, the affirmation shall also include the status with respect to the locally approved Water Quality Management Plan (WQMP).
 - 10.3.3.1.3. If the location of the proposed school site is inconsistent with the WQMP the Consultant shall include an estimated timetable for approval of a WQMP

Amendment by the local, County and State agencies in the ESR.

- 10.3.3.2. Availability of Potable Water Supply: The Consultant shall affirm that a local water purveyor serves the proposed School Facilities Project, and its capacity exists within the system to service the proposed maximum enrollment.
 - 10.3.3.2.1. The Consultant shall obtain a “Will Serve Letter” from the local water purveyor that confirms the availability and willingness to supply potable water in the specific quantity necessary for the proposed Project.
 - 10.3.3.2.2. Alternatively, if potable water is not available at the proposed site, provide a statement from a professional engineer or licensed geologist indicating the likelihood that there is sufficient groundwater available to provide for the drilling of potable water wells, and that necessary approvals for withdrawal may be obtained.
- 10.3.3.3. Identification of Potential Coastal and/or Freshwater Wetlands: The Consultant shall affirm the absence or presence of wetlands at the Site, and if required prepare a Letter of Interpretation (LOI) for submission to NJDEP.
 - 10.3.3.3.1. The Consultant shall review published wetlands information and produce photo-documentation of the wetlands area, including a sketch map outlining the extent of wetlands and a list of permits that may be necessary to construct the proposed school site.
 - 10.3.3.3.2. In the event that the subject Site is not encumbered by wetlands, including streams and ditches, the Consultant shall, at a minimum, provide a statement that in his/her professional opinion the subject Site does not contain regulated wetlands.
- 10.3.3.4. Identification of Streams, Flood Hazard Areas or Other Water Bodies: The Consultant shall determine the presence or absence of streams or other open water bodies on the proposed site.
 - 10.3.3.4.1. The Consultant shall provide a report that is based on a review of published data, photo documentation of the stream or water body, and include a sketch map showing the 100- and 500-year flood hazard area delineations, if applicable.
 - 10.3.3.4.2. If the Consultant’s review of associated flood hazard maps indicates that the proposed activities are regulated by the Flood Hazard Areas Control Act rules, the

Consultant shall determine if a flood hazard area permit is required prior to undertaking any proposed construction activity within the flood hazard area.

- 10.3.3.4.3. The ESR shall also indicate whether construction activity would require a stream encroachment permit.
- 10.3.3.5. Identification of Dedicated Open Space: The Consultant shall determine if any land-related encumbrances exist on the proposed site, including but not limited to deed restrictions, institutional controls, classification exception areas, easements, and protective covenants or rights of way.
 - 10.3.3.5.1. The Consultant shall determine if any Green Acres covenants exist based on a review of the municipal and/or county Recreation and Open Space Inventories (ROSI) or documents on file with the NJDEP's Green Acres Program.
- 10.3.3.6. Identification of Historic and/or Archeological Resources: The Consultant shall document the potential presence or absence of historic or archeological resources on or adjacent to the site eligible for inclusion on the New Jersey Register of Historic Places.
 - 10.3.3.6.1. The Consultant shall prepare a report that documents the methods used in the investigation and provides photo documentation on any structures over 50 years old.
 - 10.3.3.6.2. If historic sites, historic districts, or archeological resources are identified on or adjacent to the site of the proposed school, the Consultant shall provide additional documentation including historic background information and maps, and determine whether the need exists for additional evaluation.
- 10.3.3.7. Identification of Threatened or Endangered Plant or Animal Species: The Consultant shall consult readily available databases to determine the presence or absence of State or Federal threatened or endangered plant or animal species on or immediately adjacent to the proposed site.
- 10.3.3.8. Assessment of the Potential of Soil and/or Groundwater Quality Concerns: The Consultant shall incorporate the substantive findings of the Preliminary Assessment Report (PA) into the ESR.
 - 10.3.3.8.1. If site investigation and/or remedial investigations were completed for the property, the Consultant shall incorporate the substantive findings of these investigations into the ESR.

- 10.3.3.9. Investigation of Prior or Current Environmental Enforcement Actions, Site Remediation Activities and Regional Context: The Consultant shall complete a search of municipal, county, state, and federal records to determine whether the proposed site, or immediately adjacent sites, are (or were previously) the subject of environmental enforcement actions or remedial actions.
 - 10.3.3.9.1. It is expected that most of this information may be readily available from a commercial environmental database product and may be extracted from the PA Report if previously completed.
- 10.3.3.10. Review of the following:
 - 10.3.3.10.1. NJDEP Known Contaminated Sites List.
 - 10.3.3.10.2. Facilities that report under the Toxic Release Inventory.
 - 10.3.3.10.3. Major facilities permitted for Hazardous Air Pollutants; facilities regulated under the Discharge Prevention Control and Countermeasure Program.
 - 10.3.3.10.4. Hazardous waste treatment, storage and/or disposal facilities.
 - 10.3.3.10.5. Pipelines transmitting petroleum products and hazardous substances.
 - 10.3.3.10.6. In addition to any map supplied in a commercial environmental database product, the Consultant shall consult NJDEP's GeoWeb geographical information system to affirm the accuracy of the database product.
 - 10.3.3.10.7. If "orphan properties" are listed in the database product, but were not identified on a map due to incomplete or inaccurate address information, the Consultant shall document that visual inspection of the vicinity was conducted in an attempt to reconcile the incomplete information.
- 10.3.3.11. Identification of Adjacent Land Uses: In addition to the above, the Consultant shall identify whether the following property uses exist within 500 feet of the proposed site boundary: highway ramps; railroads; airports; high voltage power lines; high pressure utility lines; dumps; agricultural uses (pesticides); cemeteries; junkyards; landfills; chemical plants; refineries; large above-ground fuel storage tanks; gasoline service stations; automobile repair shops; dry cleaners; and nail salons.
- 10.3.3.12. Applicability of Madden Legislation: In consultation with the Authority, the Consultant shall request from the local construction

official a letter confirming that their records do not identify a prior use of the property that involved any of the following uses as defined in the Madden Legislation: Factory/industrial Facility (Group F); High Hazard Use (Group H); Storage (Group S); Nail Salon or Dry Cleaner (Group B); Gasoline station (Group M); or Agriculture.

- 10.4. Wetlands Investigation and Flood Hazard Assessment:** The Consultant shall build upon the Environmental Screening Report above and as appropriate perform a wetlands investigation on the Site in accordance with all applicable regulatory and code requirements, including but not limited to NJDEP freshwater wetlands regulations.
- 10.4.1. The wetlands investigation shall include but shall not necessarily be limited to an on-site inspection by a qualified trained professional wetlands specialist who shall perform soil probes and plant and habitat observations as may be necessary to determine whether or not wetlands are present.
 - 10.4.2. The Consultant shall prepare a Wetlands Evaluation Report detailing the results of the wetlands investigation and shall make a recommendation for any further action warranted by such results.
 - 10.4.2.1. If the wetlands evaluation report indicates the presence of wetlands on the Site, the Consultant shall include with the report a cost estimate to: (i) physically delineate the limits of all such wetland areas on the Site, by staking and/or flagging their limits; and (ii) precisely locate soil probes and wetland delineation points on the topographic base map.
 - 10.4.3. If required, the Consultant shall prepare the following:
 - 10.4.3.1. A list of potential NJDEP Individual and/or Statewide General Permits (“SGP”) necessary to conduct construction activities within the delineated wetland.
 - 10.4.3.2. An application to the NJDEP for a Letter of Interpretation (“LOI”) and approval of the wetland delineation.
 - 10.4.3.3. A freshwater wetlands application for submission to the NJDEP.
 - 10.4.4. In the event that the subject Site is not encumbered by wetlands including streams and ditches, the Consultant shall, at a minimum, provide a statement that in his/her professional opinion the subject Site does not contain regulated wetlands.
 - 10.4.5. In the event that a State Open Water (e.g., creek, stream, river, etc.) exists on or adjacent to the site, the Consultant shall: (1) prepare and submit all necessary applications; (2) obtain a Flood Hazard Area verification from NJDEP or other governing bodies on behalf of the Authority; and (3) prepare the necessary signed survey documents to enable the legal recording of any restriction with the County.

10.5. Hazardous Materials and Universal Waste Survey and Report: In conformance with all applicable regulations, the Consultant shall provide for the sampling and analysis to identify Asbestos Containing Materials (ACM), Lead-Based Paint (LBP), Mold and Mildew, Polychlorinated Biphenyls (PCBs) and Universal Wastes, Lead in Drinking Water (site-specific) and Radon in areas that will be disturbed, or have the potential to be disturbed, either during invasive and destructive investigations or performance of work anticipated to be part of a related project scope of work.

10.5.1. The Survey and Report shall address the following:

- 10.5.1.1. Suspect ACM (friable and non-friable and non-friable organically-bound) within each individual building and affected site area, such as interior and exterior pipe/duct insulations, equipment and boiler insulations, fire brick, HVAC units, plaster materials, floor and ceiling tiles, mastics/glues, roofing materials, glazing caulks, wire wrap, fireproofing.
- 10.5.1.2. Suspect LBP, such as floor, wall or ceiling finishes and/or equipment housing paint materials.
- 10.5.1.3. Suspect areas of moisture intrusion (within portions of buildings to remain) potentially supporting excessive growth of mold and mildew, inclusive of an opinion on the primary and secondary root causes for the moisture.
- 10.5.1.4. Suspect Universal Waste, such as PCB equipment and transformers, caulking, light ballasts, fluorescent light tubes, hazardous materials that may need to be lab packed, radioactive sources (such as emergency signs and fire detectors), emergency lights and batteries, and electrical switches containing mercury.

10.5.2. The Consultant shall request and review documented historical information such as warranties, as-built drawings, contract documents, maintenance records; the Project School District's Asbestos Management Plan and AHERA report, 3-year re-inspection reports; and all relevant reports previously conducted by the Authority and others.

- 10.5.2.1. The Consultant's review of the AHERA Management Plan shall determine the following:
 - 10.5.2.1.1. Which building materials were actually sampled and found to contain asbestos.
 - 10.5.2.1.2. Which materials were assumed to contain asbestos.
 - 10.5.2.1.3. The analytical methods used.
 - 10.5.2.1.4. The appropriateness of those methods compared to current standards (see detail on TEM requirement below).

- 10.5.3. If directed by the Authority, the Consultant shall prepare a sampling plan based on suspect materials present and undertake sampling as authorized.
- 10.5.3.1. The Consultant shall ensure that all invasive or destructive testing investigations are coordinated with the Project School District in advance of scheduling the work. The Consultant shall confirm with the Authority or Authority's representative the exact areas under investigation, the exact nature of demolition and/or renovation work, and the extent of materials that will be disturbed or accessed.
- 10.5.3.2. The Consultant shall identify all structural, mechanical, flooring, and roofing systems that are suspect or to be disturbed by other investigations, and investigate those that are suspect.
- 10.5.3.3. The Consultant shall complete invasive or destructive investigations to enable the inspection of hidden and concealed spaces. The Consultant shall include invasive and destructive sampling methodologies including coring, drilling, and other sampling methodologies. All Sampling shall be performed by qualified asbestos sampling technicians. If the sampling is being done in occupied spaces, all sample locations shall be repaired.
- 10.5.3.4. The Consultant shall use equipment that will allow visual examination and photo documentation of all accessible spaces. If hidden or inaccessible areas are to be disturbed, or are likely to be disturbed, the Consultant shall provide a detailed description of the procedures to be employed to find hidden or concealed ACM. (For example, if asbestos pipe insulation is suspected in a wall cavity, the Consultant shall describe, by location, where the wall was opened for examination.) The report shall identify where attempts were made to access concealed areas but could not be accessed, and include a qualifying statement that due to the age of the structure and knowledge of site development these concealed areas may contain undiscovered ACM.
- 10.5.3.5. The Consultant shall ensure that polarized light microscopy (PLM) and "stop-positive" methods are employed to assess all potential ACM. For all investigation and abatement activities, transmission electron microscopy (TEM) analytical techniques shall be employed for all materials found to contain less than 1% asbestos fiber using PLM, not just for non-friable organically bound (NOB) materials (as is more typical for this method).
- 10.5.3.5.1. The Authority emphasizes that NJ Department of Labor field inspectors regularly verify ACM and non-ACM claims using TEM, regardless of material type. Therefore the Authority requires this level of analysis to allow direct comparison of results.

- 10.5.3.6. The Consultant shall document in tabular format where the ACM exists, provide a description of the material, the condition of the ACM (e.g., the type, level and amount of damage), the method of analysis, and the estimated quantities.
- 10.5.3.7. The Consultant shall prepare a narrative report that summarizes the ACM survey in a manner to promote ease of comprehension. At a minimum, the ACM section of the hazardous materials report shall include the following sections:
 - 10.5.3.7.1. Background Information and Scope of Work.
 - 10.5.3.7.2. Building Description.
 - 10.5.3.7.3. Identification of Qualified Inspector/Firm Affiliation/Laboratory Information.
 - 10.5.3.7.4. Survey Methodology and Material Location Plans.
 - 10.5.3.7.5. Asbestos Identification Process and Conclusions.
- 10.5.3.8. The Consultant shall conduct a visual inspection of all existing buildings and structures that are to be included in any renovation or addition work, to determine if they are being impacted by water infiltration. The visual inspection shall focus on signs of water staining and/or microbial growth, and will include checking humidity levels with a moisture meter in all floors, wings, basements, and crawlspaces that may be included in the scope of renovation or addition.
 - 10.5.3.8.1. All mold inspections, testing and remediation activities shall be in conformance with DCA, DHSS and DOL requirements.
- 10.5.3.9. If signs of water infiltration, water damage, or active microbial growth are observed and/or relative humidity levels are not within established American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) guidelines of 30-60% (ASHRAE 55), these areas shall be identified for abatement and the sources of the moisture shall be identified. In addition, all HVAC units that service areas of water infiltration or mold growth should be visually inspected and identified for subsequent cleaning.
- 10.5.3.10. The Consultant shall investigate existing buildings and structures that are to be included in the renovation or addition or demolition work, to determine the presence of equipment and fixtures containing PCB and/or Universal Wastes, to include but not limited to batteries, fluorescent lights, and radioactive smoke detectors and emergency exit signs.

- 10.5.3.11. The Consultant shall prepare a PCB and Universal Waste Inventory identifying all of the aforementioned items suspected of containing PCB and/or Universal Wastes. The Inventory report shall clearly define the federal and state regulatory requirements applicable to PCB and/or Universal Waste items for handling, storage, and marking.
- 10.5.3.12. The Consultant shall submit a Hazardous Material and Universal Waste Survey Report that presents a detailed inventory of the materials and conditions encountered, with appropriate exhibits. The report shall be organized by building (if multiple buildings), building area, or as otherwise requested by the Authority.
 - 10.5.3.12.1. The Report shall summarize all work accomplished, and shall include all laboratory data, sketch plans identifying the location of all samples obtained, summary tables identifying all analytical results, including but not limited to detection and friability levels of all ACM/non-ACM, concentrations of Total Lead, and TCLP analyses for disposal, and a comparison of all such levels and concentrations to residential action levels as determined by NJDEP and the United States Environmental Protection Agency (the "USEPA").
 - 10.5.3.12.2. The Report shall include an itemized inventory of all suspected ACM and LBP materials found to exist in each individual building in an itemized format with a corresponding cost estimate to successfully abate such conditions in accordance with all applicable regulatory agency and code requirements. Documentation such as field data sheets and photographs shall appear in appendices to the Report.
- 10.5.4. The Consultant shall perform a sampling and analysis of potable water systems within the building(s) to determine the presence and concentration of lead. The associated report shall include the identification of all potable water sources (and locations) that contain lead above State/Federal action levels. Upon request, the Consultant shall provide cost estimates for successfully abating such conditions in accordance with all applicable regulatory and code requirements.
- 10.5.5. The Consultant shall conduct testing for the presence and concentration of radon. Where levels are identified equal to or greater than 4.0 pCi/L, the Consultant shall provide recommendations for remediation measures, with preliminary budget costs for such measures.

10.6. Preliminary Geotechnical Investigation and Report

- 10.6.1. The Consultant shall complete a subsurface investigation program consisting of multiple supervised test borings and test pits at select locations within the proposed site in order to:
 - 10.6.1.1. Explore, in a comprehensive manner, the subsurface soil and groundwater conditions at selected locations within the site.
 - 10.6.1.2. Estimate the geotechnical engineering properties of the encountered materials.
 - 10.6.1.3. Evaluate the general site foundation requirements and recommend appropriate types of foundations for support of the proposed structure.
 - 10.6.1.4. Present recommendations relative to the support and sub-drainage requirements of the lowest level floor slabs.
 - 10.6.1.5. Identify a seismic site class in accordance with the latest version of the International Building Code, New Jersey Edition.
 - 10.6.1.6. Discuss general earthwork operations or considerations consistent with the recommended site and foundation solutions.
- 10.6.2. The borings shall be performed with either truck-mounted or all-terrain-vehicle drilling equipment and shall extend to depths that will provide sufficient preliminary geotechnical and geologic information to set forth a recommendation for the type of foundation necessary for the proposed structure.
 - 10.6.2.1. All field work shall be performed under the oversight of a licensed professional engineer experienced in conducting geotechnical investigations.
 - 10.6.2.2. The Consultant shall locate the explorations in the field, maintain continuous logs of the explorations as the work proceeds, and observe the soil sampling operations in order to develop the required subsurface information.
 - 10.6.2.3. Soil samples suitable for identification purposes shall be extracted from the borings at closely spaced intervals in accordance with the procedures of the Standard Penetration Test.
 - 10.6.2.4. Drilling and representative sampling shall be accomplished in accordance with ASTM D 1586, and laboratory testing shall be accomplished in accordance with the Unified Soil Classification System.
 - 10.6.2.5. The Consultant shall perform all sampling and testing necessary in order to complete the geotechnical investigation, and shall, at a minimum, identify soil and rock types, densities, bearing capacities and groundwater elevation.

- 10.6.2.6. All borings shall be backfilled and/or grouted to existing grade.
- 10.6.3. The Consultant may be directed to collect environmental soil and groundwater samples at select geotechnical boring locations. Groundwater sampling may be accomplished through the installation of temporary well points within the borings. The purpose of the groundwater investigation is to determine groundwater flow direction and a general sense of groundwater quality.
- 10.6.4. The Consultant shall prepare a geotechnical base map. All boring and test pit locations shall be accurately surveyed and located on the geotechnical base map.
- 10.6.5. The Preliminary Geotechnical Report shall describe the Consultant's findings, address the suitability of subsurface conditions to support the project, and indicate any limitations on building placement or construction based on preliminary geotechnical findings.
 - 10.6.5.1. This Report is not intended to meet code compliance; rather, it is intended to provide sufficient information to support development, evaluation and selection of conceptual options for the placement and design of the proposed Project.
 - 10.6.5.2. The Report shall include the geotechnical base map and logs for all test pits and borings, drawings, profiles and testing results.
 - 10.6.5.3. The Report shall summarize the geotechnical work accomplished, describe in a general sense the earthwork needs of the Site to support the project, and provide recommendations and suggestions for the most cost effective type(s) of foundation system(s) for construction of the school.
 - 10.6.5.4. The Report shall include a preliminary estimate of the volume and cost to remove unsuitable soils, fill, miscellaneous debris, and former building foundations.

10.7. Historical and Cultural Resources Evaluation and Report: If the Site contains structures over fifty years old or is in or near a Historic District registered by the State, the Consultant shall undertake an evaluation to determine the historic significance of buildings and resources and any archaeological resources on the Site.

- 10.7.1. The Consultant's services shall be provided by a historic preservation specialist with experience in New Jersey, pre-qualified by the Authority, and having met the minimum professional qualification standards promulgated by the National Park Service, 36 C.F.R. § 61.
- 10.7.2. The Consultant shall conduct a file search and on-Site investigation to identify the likelihood of archaeological or historic resources on and near the Site, and a review of any previously completed and/or ongoing historic investigations or reports conducted by the State of New Jersey or other agencies.
- 10.7.3. If the Consultant's file search and on-Site investigations indicate that significant historic and/or archaeological resources exist on or adjacent to the Site, the

Consultant shall, in consultation with the Authority, perform further investigation to determine the impacts of the proposed school facilities and to explore ways to avoid, minimize or mitigate adverse impacts.

- 10.7.4. The Historic and Cultural Resources Report shall set forth the locations and boundaries and origins of all historic structures, districts or archeological resources on the Site and relevant surrounding area.
- 10.7.5. The Report shall set forth the results of the file search and on-site investigation, and shall contain photo documentation of all buildings affected by the proposed school project and in the vicinity of the proposed school site.
 - 10.7.5.1. Photographs shall include a minimum of two facades and two exterior building corners.
- 10.7.6. The Report shall include the Consultant's recommendations, if any, for preservation through avoidance, adaptive reuse, or minimization of impacts. If these steps are not seen as practical, the Consultant shall make recommendations on mitigation, including but not limited to archival recording, alternate design considerations to minimize impacts, preservation of component artifacts, or archeological recovery.
- 10.7.7. The Report shall address the requirements of both Executive Order 215 and the regulations of the New Jersey Register of Historic Places.
 - 10.7.7.1. In the event that properties listed on the Register will be affected by the proposed school project, the Consultant shall, in consultation with the Authority, prepare an application for submission to the NJDEP pursuant to the regulations of the State Register Act.
 - 10.7.7.2. The Report shall be summarized in the E.O. 215 report and included as an appendix.

10.8. Preliminary Assessment and Report: If a Preliminary Assessment was previously completed, the Consultant, in consultation with the Authority, shall determine whether the report can be relied upon, or whether a new report or update is necessary. If a new report is necessary, the Consultant shall conduct all appropriate inquiry and prepare an environmental report in compliance with both N.J.A.C. 7:26E-3.1 and ASTM E-1527-13 (Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process).

- 10.8.1. Objectives of the Preliminary Assessment are as follows:
 - 10.8.1.1. To identify potential areas of concern ("AOCs") and any previously recognized environmental conditions at the site.
 - 10.8.1.2. To establish an appropriate Site Investigation ("SI") scope of work to document soil and groundwater quality.
- 10.8.2. Preparation of the Report by a Licensed Site Remediation Professional ("LSRP") is not required.

10.8.3. The Preliminary Assessment Report shall, at a minimum, include the following:

- 10.8.3.1. An evaluation of the potential presence of urban historic fill, to support development of an appropriate soil management plan in conjunction with the proposed Project.
- 10.8.3.2. A certification that the inquiry into the property and the resulting report was prepared by a “Qualified Environmental Professional” as defined by the USEPA, and meeting the qualifications set forth in the ASTM Standard for conducting Phase I Environmental Site Assessments.
- 10.8.3.3. A visual inspection of the property and adjacent properties, completed by a Qualified Environmental Professional.
- 10.8.3.4. Identification of the presence of existing groundwater monitoring wells within 200 feet of the property using visual means and/or electronic records available from the NJDEP Bureau of Water Allocation.
- 10.8.3.5. A summary of interviews with personnel having knowledge of the site development history.
- 10.8.3.6. An evaluation and interpretation of historical Sanborn Fire Insurance Maps, historical aerial photographs, USGS topographic maps and geologic maps, and any other maps, surveys, or written materials provided by the Project School District.
- 10.8.3.7. A review of publicly-available environmental databases for indications of potential environmental concerns on, or within a mile of the property.
- 10.8.3.8. A review of available government records and the records of public utilities, local building/engineering departments, and fire department, to assist in defining the site development history.
- 10.8.3.9. An evaluation of commonly known or reasonably attainable information, including the degree of obviousness of the presence of contamination and the ability to detect the presence of such contamination.

10.8.4. If no areas of concern are identified by the Consultant, provide a review and certification by an LSRP that additional investigation or remediation activities are not warranted and that a remedial action outcome (RAO) is appropriate.

10.9. Site Investigation Activities and Report: The Consultant shall develop a Site Investigation Work Plan to comply with the requirements of N.J.A.C. 7:26E-3.1 and to

enable the development of preliminary remedial action cost estimates. The following elements may be required:

- 10.9.1. Soil and Groundwater Sampling and Analyses and Report: The Consultant shall complete an assessment of soil and groundwater quality to inform future construction activities.
 - 10.9.1.1. Groundwater samples may be collected via direct push technologies or by installing temporary well points to determine impacts to groundwater.
 - 10.9.1.2. Sufficient groundwater samples shall be collected to preliminarily evaluate and affirm groundwater quality and basic hydrogeologic conditions at the site, such as regional groundwater elevations and gradients.
 - 10.9.1.3. The Consultant shall be responsible for mobilizing all equipment necessary to conduct the investigation and collect the necessary samples, as well as providing qualified personnel necessary to operate the equipment and record the investigation.
 - 10.9.1.4. The Consultant shall be responsible for the quality and accuracy of the information collected, and shall provide for the safe and accessible storage of this information.
 - 10.9.1.5. All site investigation costs shall be maintained by tax block and lot numbers.
- 10.9.2. Surface Geophysical Survey and Report
 - 10.9.2.1. The Consultant shall conduct a Surface Geophysical Survey in order to inform any or all of the following:
 - 10.9.2.1.1. Early site development, remediation, and demolition design activities.
 - 10.9.2.1.2. Location of unknown underground tanks or underground utilities.
 - 10.9.2.1.3. Identification of pre-existing foundations and obstructions.
 - 10.9.2.1.4. Location of subsurface structures remaining after site demolition and site remediation actions are complete.
 - 10.9.2.2. In consultation with the Authority and before any Survey activities are authorized, the Consultant shall develop a Geophysical Survey proposal and Work Plan based on specific Project objectives and goals and a strong understanding of the site history and existing site conditions. The proposal and Work Plan shall include the following:

- 10.9.2.2.1. Affirmation that the Consultant has communicated to its sub-consultant (if the surface geophysical work is subcontracted) available information with respect to the site development.
- 10.9.2.2.2. A detailed Work Plan including a brief site description; the goals and objectives of the survey; the proposed equipment and methodologies to meet the objectives; and a summary of the site-specific limitations, factors, and external interferences that may affect the ability of the survey to measure certain physical parameters.
- 10.9.2.2.3. A quality control plan.
- 10.9.2.2.4. A proposed test pit and trench excavation program (including proposed excavation equipment and depth of excavation) as a contingency to confirm or refute the results of the surveys, and to identify buried materials.
- 10.9.2.3. Depending on Site-specific conditions the surface geophysical survey shall incorporate two or more techniques, electromagnetic terrain conductivity (EM), ground-penetrating radar (GPR) using both high frequency and low frequency antennas, and/or radiodetection line tracing, with options to include a metal detector and fluxgate magnetometer.
- 10.9.2.4. The Consultant's Geophysical Survey Report shall include the supporting geophysical survey plans and data profiles, conclusions, and an assessment of the data measurement error, noise, interference, interpreter prejudices, and other factors that may affect the ambiguity, uncertainty, or reliability of the survey.
 - 10.9.2.4.1. The results of the surface geophysical surveys shall be shown on scaled site plans and figures to inform future site investigation and construction decisions.
- 10.9.2.5. If necessary, recommend additional investigative activities, such as test pits, which may be required in order to confirm existing conditions to the extent necessary to inform the development and evaluation of conceptual options. Upon authorization by the Authority, complete such additional investigative activities as Allowance Services, and incorporate the findings in an updated Geophysical Survey Report.

10.10. Executive Order 215 Report: The Design Consultant shall prepare a report in accordance with Executive Order No. 215 (1989) ("E.O. 215") for submission of the project to the NJDEP Office of Program Coordination. The tasks to be incorporated may include but are not limited to development of the following:

- 10.10.1. Environmental Screening Report.

- 10.10.2. Preliminary Assessment.
- 10.10.3. Site Investigations.
- 10.10.4. Wetland Investigation and Determination.
- 10.10.5. Hazardous Materials and Universal Waste Report including Asbestos Containing Materials (ACM), Lead-Based Paint, Lead in Drinking Water, Radon, Mold and PCB Investigation.
- 10.10.6. Traffic Feasibility Analysis and Report.
- 10.10.7. Historic and Cultural Resources Report.

10.11. Property Acquisition Environmental Cost Estimate Report

- 10.11.1. The Consultant shall develop a Property Acquisition Environmental Cost Estimate Report (PAECER) for each property under consideration for acquisition or for groups of properties under single ownership, in order to:
 - 10.11.1.1. Summarize environmental conditions based on preliminary assessments, site investigations and other studies.
 - 10.11.1.2. Estimate the cost of remedial activities in the event that the Authority decides to move forward with acquisition and remediation of the proposed properties in order to build the proposed Project.
- 10.11.2. The Consultant shall develop the report from an analysis of studies conducted at the properties to be acquired, based on the use of the site for educational purposes. Cost estimates shall be based on the Consultant's professional experience with projects of similar scope and complexity.
- 10.11.3. For each property under consideration, the PAECER shall include, at a minimum, the following:
 - 10.11.3.1. A brief summary of the environmental investigations conducted at the property.
 - 10.11.3.2. A site plan showing the location of each AOC, soil sampling locations, monitoring wells, and all other significant items on the Site.
 - 10.11.3.3. A tabular summary, in accordance with NJDEP requirements, showing the results of the soil and/or ground water sampling on the property.
 - 10.11.3.4. The Consultant's recommendations for remedial actions, if any.
 - 10.11.3.5. Itemized cost estimates for specific soft costs (such as environmental investigation and reporting, design, permits, fees, oversight, post excavation sampling, long term stewardship obligations) and hard costs (such as soil or groundwater remedial actions, engineering control installation, asbestos abatement, and

UST removal) which may be required to complete the remedial actions recommended for the property.

- 10.11.3.6. A projected schedule for completing remediation.
- 10.11.4. The Consultant shall prepare an Environmental Summary Memorandum (ESM) for each PAECER. This one-page summary is required by law to alert the property owner that there may be environmental concerns associated with this property. The ESM must be consistent with the format required by the Authority, who will assist with the selection of the most appropriate ESM for the subject property.
- 10.11.5. The report shall also include as a separate attachment cost estimates for building demolition and site clearing on the Site. These cost estimates shall include the following:
 - 10.11.5.1. Hard and soft costs associated with demolition, including demolition engineering plans, specifications, permits, utility disconnects, and contractor costs.
 - 10.11.5.2. The cost of any necessary off-site remediation.
 - 10.11.5.3. A projected schedule for clearing and building demolition activities.
- 10.11.6. Suggested outline of the PAECER:
 - 10.11.6.1. Executive Summary
 - 10.11.6.2. Introduction
 - 10.11.6.2.1. Purpose, Scope, and Project Description
 - 10.11.6.2.2. Brief Physical Site Description
 - 10.11.6.2.3. Brief Description of AOCs
 - 10.11.6.3. Summary of Soil and Groundwater Sampling Data
 - 10.11.6.4. Identification of Appropriate and Relevant Remedial Action Objectives
 - 10.11.6.5. Identification of Remedial Alternatives
 - 10.11.6.6. Focused Evaluation and Preliminary Cost Estimate of Remedial Alternatives to Satisfy Remedial Action Objectives for Use of the Site as a School
 - 10.11.6.7. Recommendation for Remedial Action
- 10.11.7. Cost estimates should reflect cost to satisfy NJDEP technical requirements and LSRP requirements. All assumptions must be outlined.

10.12. Traffic Impact Evaluation and Report

- 10.12.1. The Design Consultant shall conduct a Traffic Impact Evaluation to assess traffic, parking, and existing traffic patterns in proximity to the Site. The tasks to be incorporated may include but are not limited to:
 - 10.12.1.1. A traffic engineering analysis, determining the capacity and existing levels of service (“LOS”) of roadways and highways serving the Site.
 - 10.12.1.2. Additional studies to address anticipated traffic requirements of local, county and State transportation agencies, and potential traffic mitigation improvements (both on-Site and off-Site).
 - 10.12.1.3. Traffic counts at all affected intersections shall be completed, as directed by the Authority.
 - 10.12.1.4. Review of the impact of phasing of the School Facilities Project (if any) and any related improvements.
 - 10.12.1.5. Detailed site distance analysis along all frontages in order to determine the best and most efficient location for all points of ingress and egress and maximize site distances for vehicles entering and exiting the site.
 - 10.12.1.6. Assessment of the current levels of service of the existing roadway network adjacent to the Site.
 - 10.12.1.7. Description of the project’s impact on the surrounding area and changes to the existing level of services necessitated by the Site’s intended use.
 - 10.12.1.8. Field inspection to obtain an inventory of existing roadway geometry, traffic control, and the location and geometry of such adjacent driveways and intersections as may be gathered without an instrument survey.
 - 10.12.1.9. Traffic volume recordings conducted during weekday AM and PM peak hours at adjacent intersections.
 - 10.12.1.10. Estimates of traffic to be generated by the proposed Project based on standard trip generation rates published by the Institute of Transportation Engineers, and/or trip generation research, including school buses, conducted by the Consultant. Site traffic shall be assigned to the adjacent roadway systems based upon the anticipated directional distribution.
 - 10.12.1.11. Capacity analyses of the affected roadways and intersections surrounding the Site to obtain existing and projected peak hour capacities and to define existing and projected levels of service.
 - 10.12.1.12. Recommendations for offsetting any negative impacts of the proposed School Facilities Project, including, but not limited to,

signalized intersections, modification to existing signal timing, roadway widening and/or roadway re-striping.

- 10.12.1.13. Proposed points of ingress and egress, which shall have been inspected for adequacy of geometric design, spacing from adjacent driveways, and conformance with generally accepted design standards.
 - 10.12.1.14. Recommendations for the Site's internal geometry to accommodate large wheel vehicles such as school buses, delivery trucks, refuse trucks and emergency vehicles, and any actions required to ensure that the geometry necessary for vehicle accommodation is maintained.
 - 10.12.1.15. A comparison of the proposed parking layout with respect to generally accepted design standards, local ordinances and demands experienced at similar developments, and recommendations for any actions required to ensure that an appropriate parking layout is maintained.
- 10.12.2. The Consultant shall include a traffic evaluation to comply with the Terrell James Law.
- 10.12.2.1. The evaluation shall take into consideration the utility of any previous traffic studies completed for the project.
 - 10.12.2.2. The Consultant shall identify all existing entry or exit ramps (if any) associated with a highway within 1,000-feet of the proposed school. If a determination is made that there is no feasible or prudent alternative, the Consultant shall assist the Authority in preparing required notifications to the Department of Transportation
 - 10.12.2.3. If requested by the Authority, the Consultant shall provide under separate cover an estimate of any necessary improvements that may be required to comply with the Terrell James Law.
- 10.12.3. Upon completion of the Study, the Consultant shall submit the Traffic Study Report and any presentation graphics required for the Authority's review, for local planning board courtesy review, and for any other presentations required by the Authority.

10.13. Preliminary Storm Water Management Investigation and Report

- 10.13.1. The Consultant shall undertake additional investigations to ascertain soil characteristics and depth to groundwater to support a schematic design of any subsurface detention/infiltration system. It is anticipated that these investigations may include:
 - 10.13.1.1. Installation of temporary well point(s) to provide a representative groundwater sample to determine if special handling requirements, or to determine if dewatering is necessary during construction.

- 10.13.1.2. Analysis of groundwater for parameters required by the local sewer utility.
- 10.13.1.3. Exploration and documentation of the subsurface physical and chemical soil characteristics and groundwater conditions at possible storm water management locations.
- 10.13.1.4. Determination of the seasonal high groundwater elevations, and if elevations indicate the viability of subsurface infiltration, in-situ percolation testing for use in storm water management design.
- 10.13.1.5. Identification of limitations presented by existing on-site and off-site infrastructure and development of solutions to mitigate those limitations, with estimates of associated costs.

10.13.2. The Preliminary Storm Water Management Report shall include the outcomes of all investigations, with supporting data, and indicate any limitations on storm water system design, placement or construction based on these findings.

10.14. Testing and Inspection Services: The Design Consultant shall be responsible for providing technical inspection and testing for the Project. All Testing and Inspection Services necessary or appropriate to perform the investigation obligations of the Predesign Phase (with the exception of infrared testing and/or moisture or other probes, which the Authority may require to be performed as Allowance Services in accordance with Section 2.25 of this Agreement) shall be performed or procured by the Design Consultant as part of the Basic Services, and the costs of such shall be included in the Design Consultant's lump sum price for the Basic Services. Other technical inspection and testing services may be necessary during the construction phase for code-related or special inspection requirements, and such services may be considered Allowance Services.

- 10.14.1. The Design Consultant shall, as needed, and upon prior written authorization from the Authority, engage duly qualified Professional Services Consultants necessary to provide the code-related or construction-phase technical inspection and testing required by this Agreement, a specific Task Order under this Agreement, and/or the Contract for Construction.
- 10.14.2. When procuring testing and technical inspection services for the Project that constitute Allowance Services or Additional Services, the Authority may require that the Design Consultant solicit fee proposals from three qualified testing and inspection firms and shall negotiate the fee, to secure appropriate services at a reasonable cost.
- 10.14.3. If Testing and Inspection Services are considered Allowance Services, and compensated through Allowance categories, the Design Consultant must comply with the provisions of Section 2.25 above, before procuring or performing Testing and Inspection services or invoicing for such services.
- 10.14.4. The Design Consultant shall direct, oversee and coordinate with these Professional Services Consultants. The Design Consultant shall receive a copy

of all inspection and testing reports from the Professional Services Consultants and shall provide a copy of such reports to the Authority and the Contractor. The Design Consultant shall review the inspection and testing reports prepared by the Professional Services Consultants and shall advise the Authority regarding the inspection and testing performed and the results of such inspection and testing.

10.14.5. The Design Consultant shall require that, and monitor to ensure that, all testing and technical inspection by the Professional Services Consultants engaged by the Design Consultant conforms to the following requirements.

10.14.5.1. All testing laboratories engaged or utilized for testing and inspection services shall:

- a) meet the “Recommended Requirements for Independent Laboratory Qualification” published by the American Council of Laboratories;
- b) meet basic requirements of ASTM E 329, “Standards of Recommended Practices for Inspection and Testing Agencies for Concrete and Steel as Used in Construction;
- c) be authorized to operate in the State of New Jersey;
- d) calibrate all testing equipment at reasonable intervals by devices of accuracy traceable to the National Institute of Standards and Technology (NIST) or the accepted value of natural physical conditions.

10.14.5.2. Testing laboratories are not authorized to:

- a) Release, revoke, alter or enlarge on requirements of the Agreement or the Contract for Construction;
- b) Approve or accept any portion of the Contractor’s Work; or
- c) Perform any duties of the Contractor.

10.14.6. The Design Consultant shall require that Testing laboratories and Technical Inspection Firms engaged to provide testing and inspection services for the Project shall:

10.14.6.1. Cooperate with the Design Consultant and Contractor and provide qualified personnel after due notice;

10.14.6.2. Perform specified inspections, sampling and testing of materials and methods of construction;

10.14.6.3. Comply with the specifications of the Contract for Construction;

10.14.6.4. Ascertain compliance of materials with requirements of contract documents;

- 10.14.6.5. Furnish the Design Consultant with written evaluation of proposed concrete design mixes, and other materials, submitted by contractor for evaluation;
- 10.14.6.6. Notify the Design Consultant and Contractor immediately of observed work or materials which fail to meet the requirements of contract documents
- 10.14.6.7. Perform additional tests as required by the Design Consultant or NJSDA;
- 10.14.6.8. Promptly submit a written report of each test and inspection to the Design Consultant and the Contractor and to other entities as designated by the design consultant. Each report shall include:
 - a) Date issued;
 - b) Project title and number;
 - c) Testing Laboratory name;
 - d) Name and signature of laboratory inspector;
 - e) Date and time of sampling or inspection;
 - f) Record of temperature and weather conditions;
 - g) Date of tests;
 - h) Identification of items or products tested and relevant specification sections governing such items or products;
 - i) Location within the Project where sample was collected;
 - j) Type of inspection;
 - k) Results of tests and evaluation of test results with respect to compliance with contract documents; and
 - l) Interpretation of test reports, when requested by the Authority or the Design Consultant.

10.15. Commissioning Services: If requested by the Authority, the Design Consultant shall provide Commissioning Services. The scope of such Commissioning Services, including provision of Commissioning Authority Services, if any, shall be determined by the Authority at the conclusion of the Predesign Phase.