Administration of Project: East Providence School District

Project Name Martin Middle School Renovation and Addition Response Deadline Date August 11, 2023 Time 10:00 a.m.

Project Location 111 Brown St Project Number EPSD.DISTRICT.2023.009

City / County East Providence, Rhode Island 02914

Owner Representative Superintendent of Schools or designee Owner East Providence School District

RFP Date of Issuance: July 27, 2023

RFP Submission date: August 11, 2023 at 10:00am

Proposals should be submitted electronically via www.bidnetdirect.com

Please use the attached sheet for the cost breakdown of the tests.

General Information:

The East Providence School District "Owner" is seeking qualified companies to provide Quality Assurance Construction Inspections and Material Testing Services on the construction of proposed addition and renovation of Martin Middle School. The Owner will evaluate the proposals and select the most responsive and responsible inspection and testing agency submitting the most advantageous proposal taking into consideration experience, qualifications, references and cost. Certificate of Non-Collusion must be signed and included with proposal response.

Project Description:

This project encompasses the phased construction of a remodeled and new comprehensive middle school of approximately 170,000 SF to serve 600 students in grades 6-8 and 240 students in PreK education. The current design envisions a three floor addition on the north side of the building for grades 6-8, and a 2 floor addition on the south side for the PreK education center. The existing gymnasium and auditorium will undergo light renovations as part of this project. Martin Middle School will be fully operational during all construction phases.

Upon occupancy of the new 3 floor addition at Martin Middle School, the existing vacated academic wing will be demolished to allow for development of a new student commons, driveways, parking areas and play areas. The project's scope includes abatement and demolition services required to complete the work.

Project Team:

Owner:	East Providence School District
Owner's Project Manager:	Peregrine Group, LLC
Architect:	Ai3 Architects, Inc.
Structural Engineer:	Pare Corporation
Civil Engineer:	Pare Corporation

Construction Manager: Shawmut Design and Construction

Project Schedule: (subject to change)

Phase 1 Middle School addition	Start October 2023	Complete July 2025
Phase 2 Pre-K Demo/ addition-	Start July 2025	Complete August 2026
Phase 3 Site Improvements-	Start March 2026	Complete August 2026

Documents:

A. Certificate of Non-Collusion (must be submitted with proposal)
B. Project plans and specifications are available for downloading from the following link:
   https://www.dropbox.com/scl/fo/8llp9ziniw4wjgvyc193m/h?rlkey=33jk0imcub0l5sgbpyly3syt3&dl=0
C. Testing Lab Services
D. Cost Proposal

Bid Rejection:

The East Providence School District ("Owner") reserves the right to accept or reject any bid proposals due to informalities if in the best public interest.

Insurance:

Upon award, the successful bidder will be required to provide a current certificate of insurance naming the East Providence School District, City of East Providence, Peregrine Group LLC, , Ai3 Architects, Inc., and Shawmut Design and Construction as additional insured. The Owner reserves the right to require the vendor to carry specific limits that will be provided at a later date.

Evaluation Criteria:

The Owner will consider the following criteria in evaluation proposals:

1.) Prior similar experience best illustrating current qualifications for the specific project.
2.) Past Performance of the firm, if any, with regard to public and private projects in Rhode Island.
3.) Current workload and ability to undertake the contract based on the number and scope of projects for which the firm is currently under contract.
4.) Competitiveness of hourly rates and unit costs of proposed services.

Time for Award:

The Owner intends to award this contract September, 2023. Firms responding to this invite must have the ability to start work immediately upon notification of award and attend kick-off meeting with project team.

Governing Law:

The contract shall be governed by the laws of The State of Rhode Island.

MBE/WBE Policy:

In accordance with RI Gen. Law § 37-14.1-1, it is the policy of the State of Rhode Island to support the fullest possible participation of firms owned and controlled by minorities (MBEs) and women (WBEs). Pursuant to §§ 37-14.1-2 and 37-14.1-6, MBEs and WBEs shall be included in all state purchasing, including, but not limited to, the procurement of goods,

services, construction projects, or contracts funded in whole or in part with state funds, or funds which, in accordance with a federal grant or otherwise, the state expends or administers. MBEs and WBEs shall be awarded a minimum of fifteen percent (15%) of the dollar value of the entire procurement or project. MBE participation credit shall only be granted for firms duly certified as MBEs or WBEs by the State of Rhode Island, Division of Equity, Diversity & Inclusion at (401) 574-8670.

Questions:

Questions should be emailed directly to Peregrine Group, LLC., Anne DaSilva at adasilva@peregrinegrp.com no later than 10am July 31, 2023. All questions will be answered via email.

Contract & Billing:

The contract will be entered into directly between the East Providence School District and the selected vendor.

ATTACHMENT A

CERTIFICATION OF NON-COLLUSION

The undersigned certifies under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word “person” shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

_____

(Signature of individual submitting bid or proposal)

_____

(Name of business)

Section 01 45 29
TESTING LABORATORY SERVICES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section consists of the following:
1. Quality assurance.
2. Laboratory responsibilities.
3. Laboratory reports.
4. Limits on testing laboratory authority.
5. Construction Manager responsibilities.
6. Construction Manager submittals.
7. Schedule of inspections and tests.
8. Concrete in situ relative humidity, calcium chloride and acidity/alkalinity testing.

1.2 RELATED REQUIREMENTS

A. Section 01 81 19 - CONSTRUCTION INDOOR AIR QUALITY

B. Section 01 91 13 - GENERAL COMMISSIONING REQUIREMENTS

C. Section 01 91 19 - BUILDING ENCLOSURE COMMISSIONING REQUIREMENTS

D. Section 03 30 00 - CAST-IN-PLACE CONCRETE.

E. Section 04 20 00 - UNIT MASONRY.

F. Section 05 12 00 - STRUCTURAL STEEL FRAMING.

G. Section 05 31 00 - STEEL DECKING.

H. Section 07 81 00 – APPLIED FIREPROOFING.

I. Section 07 84 00 – FIRESTOPPING.

J. Section 07 92 00 - JOINT SEALANTS.

K. Section 08 43 13 - ALUMINUM-FRAMED STOREFRONTS.

L. Section 08 44 13 - GLAZED ALUMINUM CURTAIN WALL.

M. Section 08 43 15 - BULLET RESISTANT ALUMINUM STOREFRONT FRAMING SYSTEM

N. Section 08 44 26 - STRUCTURAL GLASS CURTAIN WALL

O. Section 08 51 13 - ALUMINUM WINDOWS

P. Section 32 13 13 – SITE CONCRETE.

Q. Division 21 – FIRE SUPPRESSION.

R. Division 22 – PLUMBING.

S. Division 23 – HEATING, VENTILATING AND AIR CONDITIONING.

T. Division 26 – ELECTRICAL.

U. Division 27 – COMMUNICATIONS.

V. Division 28 – ELECTRONIC SAFETY AND SECURITY.

W. Division 31 – EARTHWORK.

X. Division 32 – EXTERIOR IMPROVEMENTS.

Y. Division 33 – UTILITIES.

1.3 REFERENCES

A. Comply with applicable requirements of the following standards and those others referenced in this Section, under the provisions of Section 01 42 00 - REFERENCES. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.

1. ANSI/ASTM D 3740 - Standard Practice for Minimum Requirements for Agencies Engaged in the. Testing and/or Inspection of Soil and Rock.
2. ANSI/ASTM E 329 - Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction.
3. ASTM F 1869 – Standard Test Method for Measuring Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
4. ASTM F 2170 – Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-Situ Probes.
5. ASTM F 710 – Standard Practice for Preparing Concrete Floors and Other Monolithic Floors to Receive Resilient Flooring.

1.4 QUALITY ASSURANCE

A. Comply with requirements of ANSI/ASTM D 3740 and ANSI/ASTM E 329.

B. Laboratory: Authorized to operate in state in which Project is located.

C. Laboratory staff: Maintain a full time specialist on staff to review services. Provide registered Engineer on staff for all review of services related to structural testing.

D. Testing Equipment: Calibrated at reasonable intervals with devices of an accuracy traceable to either the National Bureau of Standards (NBS) Standards or accepted values of natural physical constraints.

1.5 LABORATORY RESPONSIBILITIES

A. Cooperate with Architect and Construction Manager in performance of services; provide qualified personnel promptly on notice.

1. Attend preconstruction conferences and progress meetings, as requested.

B. Acquaint Owner’s Project Manager, Architect, and Construction Manager's superintendent with testing procedures and with all special conditions encountered at the site.

C. Perform specified Inspection, sampling, and testing of products and construction methods in accordance with specified standards as specified in individual technical specification sections:
   1. Comply with specified standards, ASTM, ANSI, and other recognized authorities.
   2. Conduct and interpret the tests and state in each report whether the test specimens comply with the requirements, and specifically state any deviations therefrom.
   3. Obtain Construction Manager's written acknowledgment of each inspection, sampling, and test made. Test samples of mixes submitted by Construction Manager.
   4. Ascertain compliance of materials and mixes with requirements of Contract Documents.

D. Promptly notify Architect and Construction Manager of irregularities, deficiencies, or non-conformance of Work or Products which are observed during performance of services.

E. Promptly submit written report of each test and inspection; one copy each to Architect, Owner’s Project Manager, Construction Manager, and one copy to Project Record Documents File.

F. Perform additional inspections and tests required by Architect/Engineer.

1.6 LABORATORY REPORTS

A. After each test, promptly distribute directly from the testing laboratory, copies of laboratory report to:
   1. Owner’s Project Manager.
   2. Architect's office.
   3. Consulting engineer's office.
   4. Construction Manager's office.
   5. Municipal Inspectional Services Department, if required.

B. Include in report the following information:
   1. Date issued.
   2. Project title and number.
   3. Testing laboratory name, address, and telephone number.
   4. Name and signature of laboratory inspector.
   5. Date and time of sampling.
   6. Record of temperature and weather conditions (as appropriate to test).
   7. Identification of product and Specifications Section.
   8. Location of sample or test in the Project.
   9. Type of inspection or test.

10. Results of tests and compliance with Contract Documents.
11. Interpretation of test results, when requested by Architect.
12. Observations regarding compliance with Contract Documents.

1.7 LIMITS ON TESTING LABORATORY AUTHORITY

A. Laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents.

B. Laboratory may not approve or accept any portion of Work.

C. Laboratory may not assume any duties for Construction Manager.

D. Laboratory has no authority to stop the Work.

1.8 CONSTRUCTION MANAGER RESPONSIBILITIES

A. Coordinate and cooperate with laboratory personnel, provide access to Work.
   1. Monitor each inspection, sampling, and test.
   2. Provide Laboratory or Agency with written acknowledgment of each Inspection, sampling, and test.
   3. Within 24 hours notify Architect and Owner's Project Manager in writing of reasons for not acknowledging Laboratory results.

B. Secure and deliver to the Laboratory or designated location, adequate quantities of representational samples of materials proposed to be used and which require testing, along with proposed mix designs.

C. Furnish incidental labor and facilities:
   1. To provide access to Work to be tested.
   2. To obtain and handle samples at the Project site or at the source of the Product to be tested.
   3. To facilitate inspections and tests.
   4. For storage and curing of test samples.

D. Furnish verification of materials and equipment compliance with Contract Documents.

E. Notify Architect/Engineer and laboratory 24 hours prior to expected time for operations requiring inspection and testing services.

F. Identify materials to be tested or inspected by Testing Laboratory or Agency.

G. After determination of need for testing or inspecting by Owner's Project Manager, notify Laboratory sufficiently in advance, minimum five days, of operations to allow for its assignment of personnel and scheduling of tests.
   1. When tests or inspections cannot be performed after such notice, reimburse Owner for laboratory personnel and travel expenses incurred due to Construction Managers negligence.

H. Make arrangements with laboratory and pay for additional samples and tests required for the following conditions:
   1. Initial testing indicates Work does not comply with Contract Documents.
   2. Construction Manager requested testing for additional testing and laboratory services beyond specified requirements.

1.9 CONDUCT OF INSPECTIONS AND TESTS

A. The Construction Manager shall notify the Owner's Project Manager, Architect, and Testing Laboratory a minimum of 72 hours before the performance of work to permit the proper conduct of Owner-authorized inspections and tests.

B. Representatives of Testing Laboratory will inspect the manufacture, assembly, and placement of materials as required and as authorized by the Owner, and report their findings to the Architect, Owner's Project Manager, and Construction Manager.

C. Work shall be checked as it progresses, but failure to detect any defective work or materials shall in no way prevent later rejection when such defect is discovered nor shall it obligate the Owner to accept such work.

1.10 SCHEDULE OF TESTING AND LABORATORIES BY OWNER

A. General: Except as otherwise specified, Owner will appoint, employ, and pay services of independent firm(s) to perform inspection and testing and other services specified herein, in individual specification Sections, and as additionally required by the Architect.
   1. Installer responsible for engaging testing agent for any re-testing. All units experiencing failure are required to be re-tested.
   2. Retesting required includes original test area plus two additional test areas.
   3. Refer to Section 01 91 19 - BUILDING ENCLOSURE COMMISSIONING REQUIREMENTS for additional testing criteria for building envelope systems.

B. General Construction Tests: Requirements for testing, observations, and inspections are described in individual specification sections; the schedule provided below is not intended to completely describe all of the inspection and testing Work required for this Contract, and is only furnished as a guide.
   1. Section 03 30 00 - CAST-IN-PLACE CONCRETE:
      a. Testing of cement mix and aggregates.
      b. Concrete test cylinders.
   2. Section 04 20 00 - UNIT MASONRY:
      a. One day per week observation of masonry installation, grout, mortar and prism testing.
      b. Three cylinders tested for compressive strength at 10 days; ASTM C 91 tests.
   3. Section 05 12 00 - STRUCTURAL STEEL FRAMING: Testing of welds of field and shop fabricated components. Testing of bolting.
      a. Bolt torque testing.
      b. Welding X-ray and ultrasonic tests as specified.

c. Coating thickness of primer coats.

4. Section 05 31 00 - STEEL DECKING: Periodic inspection of steel decking installation prior to concrete placement.
5. Section 07 27 13 – Modified Sheet Air Barrier: Performance testing of in-place work:
   a. Test mock-up for air and water infiltration in accordance with ASTM E1186 (air leakage location) or ASTM E 783 (air leakage quantification), and ASTM E1105 (water penetration).
   b. Adhesion Testing: Test mock-up of fluid-applied and sheet applied materials for adhesion in accordance with AABA 0002-2019, or in accordance with ASTM D903.
6. Section 07 81 00 – APPLIED FIREPROOFING: Testing and certification of adhesion, density and thickness of installation.
7. Section 07 84 00 - FIRESTOPPING: Certification of method and type of application for opening and rating required. Verification installation is in compliance with FM and UL criteria.
8. Section 07 92 00 - JOINT SEALANTS: Perform adhesion tests in accordance with manufacturer's instructions and ASTM C1193, Method A, Field-Applied Sealant Joint Hand-Pull Tab.
9. Section 08 51 13 - ALUMINUM WINDOWS: In-place testing of specified limits of air infiltration and water resistance according to ASTM E 783 Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors, and ASTM E 1105 – Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform Cyclic Static Air Pressure Difference. The AAMA 1/3 reduction of design pressure for testing under ASTM E1105 will not be permitted.
10. Section 08 43 13 - ALUMINUM-FRAMED STOREFRONTS: In-place testing of specified limits of air infiltration and water resistance according to ASTM E 783 Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors, and ASTM E 1105 – Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform Cyclic Static Air Pressure Difference. The AAMA 1/3 reduction of design pressure for testing under ASTM E1105 will not be permitted.
11. Section 08 44 13 - GLAZED ALUMINUM CURTAIN WALL: In-place testing of specified limits of air infiltration and water resistance according to ASTM E 783 Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors, and ASTM E 1105 – Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform Cyclic Static Air Pressure Difference. The AAMA 1/3 reduction of design pressure for testing under ASTM E1105 will not be permitted.
12. Section 08 43 15 - Bullet Resistant Aluminum Storefront Framing System: In-place testing of specified limits of air infiltration and water resistance according to ASTM E 783 Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors, and ASTM E 1105 – Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform

Cyclic Static Air Pressure Difference. The AAMA 1/3 reduction of design pressure for testing under ASTM E1105 will not be permitted.

13. Section 08 44 26 - Structural Glass Curtain Wall: In-place testing of specified limits of air infiltration and water resistance according to ASTM E 783 Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors, and ASTM E 1105 – Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform Cyclic Static Air Pressure Difference. The AAMA 1/3 reduction of design pressure for testing under ASTM E1105 will not be permitted.
14. Section 32 13 13 – SITE CONCRETE: Concrete test cylinders
15. Division 31, 32, 33 - EARTHWORK, EXTERIOR IMPROVEMENTS, UTILITIES sections: Continuous observations basis during the installation of the foundation, footings, structural slab, and during backfilling and grading of the site. Testing bearing surfaces prior to the installation of the backfill and foundations. Sampling and compaction testing of fill materials.
    a. Chemical testing of fill materials.
    b. Proctor tests for compaction.

C. Special Tests and Inspections: Owner will engage a testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner.

1. Testing agency will notify Architect, and Construction Manager promptly of irregularities and deficiencies observed in the Work during performance of its services.
2. Testing agency will submit a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Construction Manager and to authorities having jurisdiction.
3. Testing agency will submit a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
4. Testing agency will interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
5. Testing agency will retest and re-inspect corrected work.

1.11 SCHEDULE OF TESTING AND LABORATORIES BY CONSTRUCTION MANAGER

A. Construction Manager shall employ and pay for services of an approved independent testing laboratory to perform inspection and testing specified under this Article and as additionally in individual specification sections

1. Submit to Architect/Engineer a minimum of three independent testing laboratories for each type of testing specified by individual specification sections and those required by the referenced applicable codes, regulations and standards.
2. Employment of testing laboratory shall in no way relieve Construction Manager of obligation to perform work in accordance with requirements of Contract Documents.

B. Earthwork: Lab tests to determine suitability of all fill materials shall be paid for by Construction Manager.
   1. Owner reserves the right to retain and pay for his own testing for checking purposes

C. Concrete Paving and General Concrete Work: Concrete mix design testing shall be paid for by Construction Manager. Owner reserves the right to retain and pay for his own testing for checking purposes.

D. Moisture content testing of interior and exterior wood prior to application of field painted coatings.

E. Local Authority Inspections: The Construction Manager is also responsible for coordinating and cooperating with local requirements for inspections by local Authorities.

1.12 SCHEDULE OF TESTING AND LABORATORIES BY SUBCONTRACTORS OR TRADE CONTRACTORS

A. Respective Trade contractors and subcontractors shall employ and pay for services of an approved independent testing laboratory to perform inspection and testing specified under this Article and as additionally in individual specification sections
   1. Submit to Architect a minimum of three independent testing laboratories for each type of testing specified by individual specification sections and those required by the referenced applicable codes, regulations and standards.
   2. Employment of testing laboratory shall in no way relieve Construction Manager of obligation to perform work in accordance with requirements of Contract Documents

B. Waterproofing, Dampproofing and Caulking Trade Contract: Testing required in Section 07 92 00 - JOINT SEALANTS including chemical analysis, adhesive strength, compatibility with adjacent materials and elasticity.

C. Site Civil Subcontract: Perform pressure, leakage and chlorination testing as specified in Division 33 - UTILITIES.

D. Carpeting Subcontract: Moisture Vapor Emission and acidity/alkalinity (pH)Testing of concrete slabs and floors:
   1. Carpeting subcontractor will employ and pay for services of an independent testing laboratory to perform moisture vapor emission, and pH tests on concrete slabs. The testing shall be witnessed by the Construction Manager, Carpeting Subcontractor and Owner’s Project Manager.
      a. Moisture Vapor Emission and pH Testing on all concrete slabs over-which a carpeted floor (broadloom or tile) is required.
   2. Requirements: As specified under Part 3 of this Section.
      a. Submit test data to the Construction Manager, Architect and Owner’s Project Manager.
      b. Provide additional testing in the event test results indicate higher moisture content than recommended by the flooring material and coating material manufacturers for the installation of their products. Perform such additional testing, at no additional cost to the Owner, after procedures

have been performed to reduce moisture content to ratings acceptable to the various flooring manufacturers and their adhesive manufacturers.

E. Plumbing Trade Contract: At least the following tests shall be performed. Conform to requirements specified in individual Division 22 Specification Sections. The test shall be performed and paid for by the Trade contractor and witnessed by the Construction Manager, Owner's Project Manager and authorities having jurisdiction:

1. Water supply piping hydrostatic pressure test.
2. Sanitary piping test before fixture installation: Cap pipes and fill to highest point in system.
3. Plumbing fixture operation.

F. Fire Suppression Trade Contract: At least the following tests shall be performed. Conform to requirements specified in individual Division 21 Specification Sections. The test shall be performed and paid for by the Trade contractor and witnessed by the Construction Manager, Owner's Project Manager and authorities having jurisdiction:

1. Fire protection system flushed and pressure tested.

G. Heating, Ventilation and Air Conditioning Trade Contract: All HVAC work shall be tested by an independent testing and balancing agency, approved by Owner. Conform to requirements specified in individual Division 23 Specification Sections. The tests shall be performed and paid for by the Trade contractor and witnessed by the Construction Manager, Owner's Project Manager and authorities having jurisdiction. Adjustments shall be made by the Trade contractors directed by the Owner's Project Manager. At least the following tests shall be performed:

1. Piping hydrostatic tests.
2. Air and water balancing.
3. Thermostat control monitoring and testing.
4. Boiler efficiency testing.
5. Energy Management System operation.

H. Electrical Trade Contract: At least the following tests shall be performed. Conform to requirements specified in individual Division 26 Specification Sections. The tests shall be performed and paid for by the Trade contractor and witnessed by the Construction Manager, Owner's Project Manager and authorities having jurisdiction:

1. Polarity tests.
2. Operation of all circuits.
3. Testing of emergency system.
4. Security systems.
5. Generation system.
6. Grounding systems.
7. Voice/Video/Data networking testing.

I. Electrical Trade Contract: Conform to requirements specified in individual Division 26 Specification Sections. At least the following tests shall be performed and paid for by the Trade contractor:

1. Operation of every component of entire system.

J. Electrical Trade Contract: At east the following tests will be performed. Conform to requirements specified in individual Division 26 Specification Sections. The test shall be performed and paid for by the Trade contractor and witnessed by the Construction Manager, and Owner's Project Manager:

1. All smoke and heat detectors.
2. Proper operation as required by authorities having jurisdiction.

K. Where no testing requirements are described but the Owner's Project Manager or Architect decides that testing is required, testing will be performed under current pertinent standards for testing.

1.13 FOLLOW-UP AND CORRECTIVE ACTION

A. The Construction Manager and the Owner's Project Manager will note the test record on the Testing Log to acknowledge test procedures and results. If follow-up or corrective action is needed, the Construction Manager shall submit to the Owner's Project Manager two written copies of proposed follow-up or corrective plans and obtain the Owner's Project Manager's written approval before proceeding.

1. Cost of Testing: If tests indicate that materials or work do not comply with requirements, the Construction Manager shall pay for all retesting, and shall remove and replace non-complying work at no additional cost to the Owner.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 CONCRETE IN SITU RELATIVE HUMIDITY, CALCIUM CHLORIDE AND ACIDITY/ALKALINITY TESTING

A. Scope:

1. Provide in situ concrete relative humidity and surface pH testing to all concrete slabs specified to be covered with floor coverings or resinous coatings. Includes concrete placed as part of this Work which occurs below grade, above grade (suspended slabs), and slabs on grade.

B. Scheduling:

1. Testing shall take place after allowing concrete to dry for a minimum of 90 days. Testing to be scheduled no less than one, nor more than three weeks prior to scheduled flooring installation.
    a. DO NOT conduct testing unless the slab environment is identical to that In which the finished flooring Is to be installed.

C. Test result submittals:

1. Report all test results in chart form listing test dates, time, depth of test well, in situ temperature, relative humidity, moisture vapor and pH levels.

2. List test locations on chart and show same on marked up Floor Plan Drawings.
3. Submit results In duplicate. Deliver copies directly to Architect, Owner's Project Manager and Construction Manager.

D. Testing equipment: shall be equal to the following
1. For relative humidity testing:
   a. Digital Meter and Calibrated Humidity and Temperature probe kit as manufactured by Vaisala Inc. (Boston Office) 10D Gill Street, Woburn, MA, 01801.
      1) Minimum 2 point probe calibration.
2. For calcium chloride testing:
   a. Anhydrous calcium chloride testing in accordance with Rubber Manufacturer's Association (RMA) Test requirements.
   b. Test kits: Vaprecision, inc. 2941 West MacArthur Boulevard, Suite 135. Santa Ana, CA 92704.
3. For pH testing:
   a. pH test paper by Micro Essential Laboratory, Inc., P.O. Box 100824 4224 Avenue “H”, Brooklyn, NY 11210.
   b. Distilled or de ionized water.

E. Testing Procedures Quantification of Relative Humidity
1. The test site should be maintained at the same temperature and humidity conditions as those anticipated during normal occupancy. These temperature and humidity levels should be maintained for 48 hours prior and during test period. If meeting this criteria is not possible, then minimum conditions should be 75 degrees F (plus or minus 10 degrees F), and 50 percent (plus or minus 10 percent) relative humidity. When a building is not under HVAC control, a recording hygrometer or data logger shall be in place recording conditions during the test period. A transcript of this information must be Included with the test report.
2. The number of In situ relative humidity test sites is determined by the square footage of the facility. The minimum number of tests to be placed is equal to 3 in the first 1,000 square feet and 1 per each additional 1,000 square feet.
3. Drill test holes utilizing a roto hammer drill. Hole diameter shall not exceed outside diameter of the insertabie test sleeve by more than 0.04 inch. Drilling operation must be dry. Determine the thickness of the concrete slab from Construction Documents. Depths of test holes shall be as follows:
   a. For elevated slabs (not poured in pans): Drill test holes to a depth equal to 20 percent of the concrete thickness.
   b. For slabs on grade and elevated slabs in pans: Drill test holes to a depth equal to 40 percent of the concrete thickness.
4. Vacuum all concrete dust from test hole.
5. Insert a hole liner, or sleeve, to the full depth of test hole, assuring that the liner is capped or plugged at the end protruding from the concrete surface.
6. Permit the test site to acclimate, or equilibrate, for 72 hours prior to taking relative humidity readings.

7. Remove the sleeve plug and place a probe into the sleeve assuring that it reaches the bottom of the test hole.
8. Allow the probe to sit in the test sleeve for 30 minutes before taking readings.
9. Read and record temperature and relative humidity at the test site.

F. Testing Procedures - Quantification of Concrete Moisture Vapor Emission through Calcium Chloride Testing.

1. The test site should be maintained at the same temperature and humidity conditions as those anticipated during normal occupancy. These temperature and humidity levels should be maintained for 48 hours prior and during test period. If meeting this criteria is not possible, then minimum conditions should be 75 degrees F (plus or minus 10 degrees F) and 50 percent relative humidity (plus or minus 10 percent). When a building is not under HVAC control, a recording hygrometer or data logger shall be in place recording conditions during the test period. A transcript of this information must be included with the test report.
2. The number of vapor emission test sites is determined by the square footage of the facility. The minimum number of tests to be placed is equal to 3 in the first 1,000 square feet and 1 per each additional 1,000 square feet.
3. Tests sites are to be cleaned of all adhesive residue, curing compounds, paints, sealers, floor coverings, and similar materials. 24 hours prior to the placement of test kits.
4. Weigh test dish on site prior to start of test. Scale must report weight to 0.1 grams. Record weight and start time.
5. Expose Calcium Chloride and set dish on concrete surface.
6. Install test containment dome and allow test to proceed for 60 to 72 hours.
7. Retrieve test dish by carefully cutting through containment dome. Close and reseal test dish.
8. Weigh test dish on site recording weight and stop time.
9. Calculate and report results as pounds of emission per 1,000 square feet per 24 hours."

G. Testing Procedures Quantification of Acidity/Alkalinity (pH) Level

1. At or near the relative humidity test site and each vapor emission (calcium chloride) test site, perform pH test.
    a. At each testing site, lay down a loose 2 foot by 2 foot sheet of rubber flooring or non perforated polyethelene sheet backed by plywood. Leave in place for 48 hours.
    b. Remove rubber sheet/polyethelene and place several drops of distilled or de ionized water onto the concrete surface to form a puddle approximately 1 inches in diameter.
    c. Allow the water to set for approximately 60 seconds.
    d. Dip the pH paper into the water and remove immediately, compare color to chart provided by paper supplier to determine pH reading
2. Record and report results.

H. Testing Procedures:

1. Initial testing: Provide 3 tests for the first 1,000 square feet.
2. Add one test for each additional 1,000 square feet.
3. Concrete surface area to be tested shall be completely clean. Remove all adhesives, residue, debris and sealing compounds. Remove all dust by vacuum or other methods. Do not use chemicals of any kind to clean concrete.
4. Perform moisture tests in strict accordance with the kit manufacturer's Instructions. Moisture tests shall remain undisturbed for 60 to 72 hours.
5. Immediately after moisture test has been removed from test area, conduct pH test in area previously covered by plastic dome of moisture test kit.
6. After completion of tests submit 2 copies of test data to the Architect. Submit a copy of the test data to all installers of flooring materials and resinous flooring materials scheduled to be installed.
7. Provide additional testing in the event test results indicate higher moisture content than recommended by the flooring material and coating material manufacturers for the installation of their products. Perform such additional testing, at no additional cost to the Owner, after procedures have been performed to reduce moisture content to ratings acceptable to the various flooring and coating manufacturers.

End of Section

ATTACHMENT D

COST PROPOSAL
FOR
QUALITY ASSURANCE CONSTRUCTION INSPECTION
AND
MATERIALS TESTING SERVICES

I. SOILS & EARTHWORK

1. **Field Geotechnical Engineer** $_____/hour
   The engineer who will visually inspect the excavated sub-grade, estimate the bearing capacity and/or verify consistency with the test borings from the original geotechnical investigation and verify the suitability of the bearing strata. Once suitability is verified, he will prepare a report of acceptance accordingly.

2. **Soil Compaction & Moisture Content Testing** $_____/hour
   The technician will determine the soil moisture content (ASTM D 3017) and perform field compaction testing in accordance with ASTM D2922 (Nuclear Method) or ASTM D1556 (Sand Cone Method), observe and document the compaction procedures followed and daily report findings to all concerned.

3. **Electronic Nuclear Moisture-Density Gauge** $_____/day
   Usage Charge

4. **Modified Proctor** $_____ **/**each
   4 pt moisture-density relationship (ASTM D1557)

5. **Washed Sieve Analysis** $_____ /each
   Includes mechanical analysis and #200 wash (ASTM D422)

6. **Loam Analysis** $_____/each
   Includes organic content, pH, soil texture & classification nutrient along with recommendations for additives to bring nutrient content and pH to satisfactory levels for seeding.

II. CAST IN-PLACE CONCRETE

1. **Certified Concrete Batch Plant Inspector** $_____/hour
   (Proof of Inspector's Certification required)
   Inspector who will review the plant's QC procedures, verify the moisture content and gradation of both the fine and coarse aggregates then confirm adjustments to the batch weights accordingly, view the batching procedure, confirm batch ingredients & proportions and record yardage.

2. **ACI Certified Concrete Field Technician (ACI-CFTT**) $_____/hour
   (Proof of MCIB or ACI Certification required)

Technician who will sample the fresh concrete (ASTM C172), test the mix for slump (ASTM C143) and air content (ASTM C173), fabricate concrete cylinders ASTM C31); record temperature (ASTM C1064), concrete mix duration, workability, site added water, appearance, placement procedures & location, total yardage placed; and daily report to all concerned. Inspect curing, cold weather protection and hot weather protection procedures.

3. **Concrete Test Cylinders 4" x 8"** $_____/each
Compressive Strength Test (ASTM C31 & C39) slump (ASTM C143), air content (ASTM C231 or C173), temperature (ASTM C1064) and lightweight concrete unit weight (ASTM C567) for conformance with construction documents

4. **Mix Design Review** $_____/each
With computer generated analysis & report

5. **Vapor Emission & pH Testing of Concrete Floors** $_____/hour
Using Anhydrous Calcium Chloride kit $_____/test kit
(ASTM E 1907 & F 1869)

6. **Determination of Relative Humidity in Concrete Floors** $_____/hour
Using in-situ probes (ASTM F 2170-11) $_____/probe

III. MASONRY

1. **Field Masonry Inspector** $_____/hour
Inspector who will monitor grout, and/or mortar proportions, mixing procedure, prevailing temperature & fabricate mortar cubes and/or grout prisms. The Inspector will also monitor work activities for quantity, quality of workmanship and accuracy of placement for compliance to contract documents Conduct sufficient number of periodic field review of mortar and grout proportioning, mixing and consistency for conformance ACI 530.1. He will also check horizontal and vertical reinforcing steel, installation of control/expansion joints, mortar joints including tooling and filling of head joints, brick to stud anchors, brick wash down procedure, condition of cavity wall, weep holes, and construction of any specialized masonry flashing systems.

2. **IBC Certified Structural Masonry Special Inspector** $_____/hour
(Proof of Inspector's Certificate required)

3. **Laboratory Services**
a. Test Concrete Masonry Unit (ASTM C-140) $_____/set
Evaluation of units to ensure compliance with ASTM C-90 including:
Measurement, absorption, & compressive strength total for testing a set of 6 units.

b. Grout Prisms or cylinders (ASTM C1314) $_____/each

c. Strength Test CMU Prisms (ASTM C-1314) $_____/each
Made by Mason

d. Mortar or Non-Shrink Grout Cubes (ASTM C780) $_____/each

ATTACHMENT D

IV. STRUCTURAL & REINFORCING STEEL, JOISTS, DECK, STUDS, LIGHT GAUGE METAL FRAMING (LGMF), MISC. METAL, AND NON-DESTRUCTIVE EXAMINCATION (NDE)

1. **Formwork & Reinforcing Steel Inspection** $_____/hour
   Detailed visual inspection utilizing the approved shop drawings to insure all of the formwork and reinforcing conforms in all respects to the approved shop drawings and other contract documents including any field cutting or welding of rebar and cold weather protection provisions.

2. **Visual Steel Erection Inspection** $_____/hour
   Of all structural steel components and/or connections to include torque testing of any bolted connections, witnessing of impact wrench calibrations by a Skidmore Wilhelm Torque Tension Gauge, inspection of steel joist and/or trusses, steel deck, shear studs, light gauge metal framing & shear wall fasteners, misc. metals (such as steel pan stairs & railings), curtain wall framing, metal wall panels or veneers and any pre-cast connections.

3. **AWS Certified Welding Inspector** $_____ /hour

4. **Nondestructive Examination** $_____/hour
   Of any field weldments by an ASNT Certified Level II Technician to include:

   a. Ultrasonic Evaluation of full penetration welds

   b. Magnetic Particle or Dye Penetrant evaluation of fillet welds.

V. SPRAY FIREPROOFING

1. **ICC Certified Fireproofing Inspector** $_____/hour
   (Proof of Inspector's certification required)
   To perform an evaluation of the Sprayed-on Fireproofing for proper coverage, thickness & density (ASTM E-605) and adhesion (ASTM E-736).

   a. Adhesion Test $_____/each

   b. Density Test $_____/each

VI. FIRESTOPPING

1. **ICC Certified Fireproofing Inspector** $_____/hour
   (Proof of Inspector's certification required)
   To perform an evaluation of the Sprayed-on Fireproofing for proper coverage, thickness & density (ASTM E-605) and adhesion (ASTM E-736).

   a. Certification of method and type of application for Opening and rating required and in compliance with FM/ UL criteria $_____/each

ATTACHMENT D

VI. BUILDING ENVELOPE (ROOFING, AIR/VAPOR BARRIER, SIDING, WATERPROOFING, WINDOWS, STORE FRONT & CURTAIN WALLS)

1. **Visual Inspection of Building Envelope Components** $_____/hour
An experienced Technician who will check all materials and procedures for strict conformance to project specifications. The technician will inspect application of roofing, curtain wall, air barrier systems, flashings, waterproofing, thermal & sound insulation, waterproofing, caulking and/or other joint sealants and will prepare a daily report recording weather conditions and all work performed that day along with any deficiencies noted.

2. **Applicable Field Testing:**

a. Air and Water Infiltration Test $_____/day
(ASTM E 783 and ASTM E1105)
Includes all testing equipment and a 2-man crew. Field determination of air infiltration and water penetration of installed exterior windows, curtain walls and doors by uniform or cyclic static air pressure difference. Note: Any carpentry needed to field fabricate any specialized wooden test chambers is to be supplied by the GC.

b. Water Leakage Check (AAMA 501.2) $_____/hour
Utilizing a 2-man crew. Field hose test on metal framed windows & curtain walls.

c. Air Leak Testing (ASTM E1186 4.2.6) $_____/day
Smoke test, 2-man crew on air/vapor barrier assemblies.

d. Air Leak Testing (ASTM E1186 4.2.7) $_____/hour
1-man crew for testing of seams & fastener penetrations on the air/vapor barrier utilizing a vacuum leak detection unit.

e. Air/Vapor Barrier Adhesion Pull Test $_____/hour
(ASTM D4541)

e. Joint Sealant Adhesion Pull Test $_____/hour
(ASTM C1193)

VII. BITUMINOUS ASPHALT

1. **NETTCP Certified Bituminous Field Technician** $_____/hour
(Proof of Inspector's Certificate required)
Field Technician who will make certain that the preliminary paving surface is properly prepared for paving, check the delivery temperature of the mix, inspect the paving and rolling operation, check the pavement thickness and determine in place density in accordance with ASTM D-2950 utilizing a nuclear density gauge.

2. **Thickness Evaluation and/or coring of Pavement Mixture Field**
Specimens for lab analysis (in accordance with ASTM D-3549)

3. **Laboratory Tests**

   a. Preparation of Marshall Specimens (AASHTO T245) $_____/each set

   b. Bulk Specific Gravity of Mixtures (AASHTO T166) $_____/each

   c. Theoretical Maximum Specific Gravity (AASHTO T209) $_____/each

   d. Extraction of Bitumen from Mix & Gradation (AASHTO T164) $_____/each

VIII. MISCELLANEOUS

1. **QA/QC Consultant Services or research (if needed)** $_____/hour

2. **Registered Professional Engineer (if needed)** $_____/hour

3. **Cross Trained QA/QC Inspector (full time)** $_____/hour
   (One Dedicated Technician to perform multiple inspection disciplines including Soil Comp, Rebar, Concrete, Masonry & Bit Asphalt & Bldg Envelope Inspection and/or Testing)

4. **Mileage Expense to/from site per trip** $_____/trip

5. **Round Trip Travel time per site visit** $_____hours/trip

6. **Transportation of samples from the site to laboratory** $_____/trip

7. **Normal turnaround time for lab results is X working days from date received.**

   a. Requested "Rush" Laboratory Results will be charged at:
   24 hour turnaround time (or less) = regular rate x ( )
   24 to 48 hour turnaround time = regular rate x ( )

8. **Overtime rate (over 8 hours on site)** Base Rate x $_____
   2nd shift rates Base Rate x $_____
   3rd shift rates Base Rate x $_____
   Saturday Rate Base Rate x $_____
   Sunday/Holiday Rate Base Rate x $_____

Hourly rates assume a 4-hour minimum per site visit. Travel time is to be billed @ straight time rate (not OT rate). Inspectors will be required to sign in and out at the Owner's Project Representative's office to verify time spent on site. No additional time will be permitted to be billed for daily report preparation or for review of reports by Supervisor or P.E. Rates include all phone calls, report distribution to 4 parties and all other miscellaneous charges.