SCOPE OF WORK

Materials Testing Laboratory Building

NJ Department of Transportation Headquarters Complex
Ewing Township, Mercer County, N.J.

Project No. T0705-00

STATE OF NEW JERSEY

Honorable Philip D. Murphy, Governor
Honorable Tahesha L. Way, Lt. Governor

DEPARTMENT OF THE TREASURY

Elizabeth Maher Muoio, Treasurer

DIVISION OF PROPERTY MANAGEMENT AND CONSTRUCTION

Christopher Chianese, Director

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TABLE OF CONTENTS

SECTION **PAGE**

I. OBJECTIVE

The objective of this project is to design and construct a new state-of-the-art Materials Testing Laboratory Building at the New Jersey Department of Transportation (NJDOT) Headquarters Complex located in Ewing Township in Mercer Country.

II. CONSULTANT QUALIFICATIONS

A. CONSULTANT & SUB-CONSULTANT PRE-QUALIFICATIONS

The Consultant shall be a firm pre-qualified with the Division of Property Management & Construction (DPMC) in the following discipline(s):

- **P001 Architecture**

The Consultant shall also have in-house capabilities or Sub-Consultants pre-qualified with DPMC in:

- **P002 Electrical Engineering**
- **P003 HVAC Engineering**
- **P004 Plumbing Engineering**
- **P005 Civil Engineering**
- **P007 Structural Engineering**
- **P008 Elevators/ Conveyor Systems Engineering**
- **P009 Soils Engineering**
- **P010 Fire Protection Engineering**
- **P043 Fire Detection System**
- **P011 Environmental Engineering**
- **P015 Surveying**
- **P025 Estimating/ Cost Analysis**
- **P055 Energy Management Control Systems**

As well as, **any and all** other Architectural, Engineering and Specialty Disciplines necessary to complete the project as described in this Scope of Work (SOW).

III. PROJECT BUDGET

A. CONSTRUCTION COST ESTIMATE (CCE)

The initial Construction Cost Estimate (CCE) for this project is $42,474,549.

The Consultant shall review this Scope of Work and provide a narrative evaluation and analysis of the accuracy of the proposed project CCE in its technical proposal based on its professional experience and opinion.

B. CURRENT WORKING ESTIMATE (CWE)

The Current Working Estimate (CWE) for this project is $ 54,453,654.

The CWE includes the construction cost estimate and all consulting, permitting and administrative fees.

The CWE is the client agency's financial budget based on this project Scope of Work and shall not be exceeded during the design and construction phases of the project unless DPMC approves the change in Scope of Work through a Contract amendment.

C. CONSULTANT'S FEES

The construction cost estimate for this project ***shall not*** be used as a basis for the Consultant's design and construction administration fees. The Consultant's fees shall be based on the information contained in this Scope of Work document and the observations made and/or the additional information received during the pre-proposal meeting.

IV. PROJECT SCHEDULE

A. SCOPE OF WORK DESIGN & CONSTRUCTION SCHEDULE

The following schedule identifies the estimated design and construction phases for this project and the estimated durations.

PROJECT PHASE	**ESTIMATED DURATION (Calendar Days)**
1. Site Access Approvals & Schedule Design Kick-off Meeting	**14**
2. Investigation Phase/Program Phase	**90**
• *Project Team & DPMC Plan/Code Unit Review & Comment*	14
3. Schematic Design Phase	**90**
• *Project Team & DPMC Plan/Code Unit Review & Comment*	14
4. Design Development Phase	**90**
• *Project Team & DPMC Plan/Code Unit Review & Comment*	14

5. Final Design Phase	**90**
• *Project Team & DPMC Plan/Code Unit Review & Approval*	14
6. Final Design Re-Submission to Address Comments	**7**
• *Project Team & DPMC Plan/Code Unit Review & Approval*	14
7. DCA Submission Plan Review	**30**
8. Permit Application Phase	**7**
• *Issue Plan Release*	
9. Bid Phase	**42**
10. Award Phase	**28**
11. Construction Phase	**546**
12. Project Close Out Phase	**30**

B. CONSULTANT'S PROPOSED DESIGN & CONSTRUCTION SCHEDULE

The Consultant shall submit a project design and construction schedule with its technical proposal that is similar in format and detail to the schedule depicted in **Exhibit 'A'**. The schedule developed by the Consultant shall reflect its recommended project phases, phase activities, activity durations.

A written narrative shall also be included with the technical proposal explaining the schedule submitted and the reasons why and how it can be completed in the time frame proposed by the Consultant.

This schedule and narrative will be reviewed by the Consultant Selection Committee as part of the evaluation process and will be assigned a score commensurate with clarity and comprehensiveness of the submission.

V. PROJECT SITE LOCATION & TEAM MEMBERS

A. PROJECT SITE ADDRESS

The location of the project site is:

NJDOT HQ Complex
1035 Parkway Avenue
Ewing Township, NJ 08628

GPS Coordinates: 40.23596° N, -74.8138017° W

See **Exhibit 'B'** for the project site location map.

B. PROJECT TEAM MEMBER DIRECTORY

The following are the names, addresses, and phone numbers of the Project Team members.

1. DPMC Representative:

Name:	Cristina Zozzaro, Project Manager
Address:	Division of Property Management & Construction
	20 West State Street, 3rd Floor
	Trenton, NJ 08608-1206
Phone No:	(609) 777-4273
E-Mail:	Cristina.Zozzaro@treas.nj.gov

2. Department of Transportation:

Name:	Jitendra Patel, Project Manager
Address:	P.O. Box 600
	1035 Parkway Avenue
	Ewing, NJ 08625
Phone No:	(609) 963-2190
E-Mail:	Jitendra.Patel@dot.nj.gov

VI. PROJECT DEFINITION

A. BACKGROUND

1. General:

The New Jersey Department of Transportation (NJDOT) Materials Testing Building is located on the DOT Headquarters Complex in Ewing Township. The 42 buildings at the NJDOT HQ range in age from 23 years to over 80 years. The DOT buildings can be grouped into two categories: the first group can be described as office type buildings used for finance, administration, engineering, and operations functions. The second group can be described as industrial type buildings used for storage, repair, and maintenance of DOT equipment and vehicles (See **Exhibit 'B'** Site Maps). The DOT Materials Testing Laboratory, located at the Thiokol Complex, falls into the latter group. The Thiokol Complex buildings are used by the NJDOT Bureau of Materials (BOM) which provides the testing for materials utilized in state highways and roadways.

2. History:

The first Materials Laboratory Building (Old Materials Lab Building 18) for the DOT was constructed in 1935 and is still located at the NJDOT HQ Complex in Ewing. The Old Materials Laboratory Building was eventually vacated and material testing was relocated to the Thiokol Complex buildings, also located at the DOT Headquarters (see **Exhibit 'B'** Site Maps). Prior to ownership by the State in the 1990s, the Thiokol buildings were used as a commercial laboratory and manufacturing facility. The Thiokol buildings are a grouping of four (4) interconnected single story masonry buildings renovated in the mid-1990s. The Thiokol Complex buildings have become outdated and are not energy-efficient. Building improvement projects including HVAC system upgrades and fume hood replacements were considered in order to meet accreditation requirements by the Federal Highway Administration (FHWA) specifications. However, due to complexity and costs the projects were never executed.

The Old Materials Lab Building 18 is being renovated for future DOT usage under Project T0560-00. There has been soil remediation and soil treatment at the building site, new utilities have been established, and new storm drainage and sanitary sewer systems were either replaced and/or improved. The building adjacent to the Old Materials Lab, the Foran building (see **Exhibit 'B'** Site Map), was recently demolished under Project T0641-00. A limited soil investigation is being conducted by the LSRP, Dresdner Robin at this property. The results of this soil investigation will be provided to the Consultant.

3. New Building:

The NJDOT arranged with Ronald A. Sebring Associates, LLC in December 2023 to conduct a Preliminary Feasibility Study for the new state-of-the-art Materials Testing Laboratory Building (see **Exhibit 'D'** Preliminary Feasibility Study). The study reviewed three potential site locations for the new building. DOT has decided the new Materials Testing Laboratory Building will be located and constructed at the former Foran Building (see **Exhibit 'B'** Site Map). The study also includes building space programming and specific requirements per space. A preliminary design schedule and construction schedule is included in the study along with building codes and regulatory approvals required for the construction of the new Material Testing Laboratory Building.

The Consultant shall review all zoning requirements ensuring the new building can be built at this DOT preferred location. If this location after review is determined not feasible, the Consultant shall conduct a survey of the other locations at the DOT HQ and present their findings to the DOT for the new building location. The new Materials Testing Laboratory Building shall be designed at the Agency approved final location.

The Preliminary Feasibility Study shall be used for the information only in the design, programming, and construction of the new Materials Laboratory Building. The Consultant shall review and verify during the Investigation Phase/ Program Phase the information and new building requirements provided in the Preliminary Feasibility Study.

A construction management firm will be procured under a separate project, T0705-01, to oversee the construction of the new building from design phase through close-out phase. The commissioning of the HVAC systems along with other building systems will be included in the construction management T0705-01 scope of work.

B. FUNCTIONAL DESCRIPTION OF THE BUILDING

The Materials Testing Laboratory Facility at the Thiokol Complex provides the in-house testing of construction materials including asphalt, cement, concrete, steel, aggregates, soil and various liquids. The laboratories are equipped with the specialized equipment used for testing (see **Exhibit 'E'** Equipment Inventory). There are common guidelines and standards that require space and environmental room conditions to be met (See **Exhibit 'D'** Space Programming). The building has become outdated where laboratory space has reached its useful life. There are individual laboratories that need repair of the compressed air to operate the equipment. Testing equipment has become sophisticated and advanced through the years requiring appropriate ventilation, fume hoods and secure spaces for the material and equipment storage.

There are currently approximately 125 building occupants including laboratory testing staff, DOT administration, and supervisory personnel that occupy the buildings at the Thiokol

Complex. The Independent Assurance Group (IAG) that monitors testing and compliance also has dedicated office space in the building.

The existing buildings at the Thiokol Complex are no longer adequately spaced to perform the required functions and the building systems are outdated, inadequate, and not energy efficient (See **Exhibit 'C'** Photos).

II. CONSULTANT DESIGN RESPONSIBILITIES

A. INVESTIGATION PHASE/ PROGRAM PHASE

The Consultant shall evaluate existing documentation, perform independent findings, and provide services that result in a final design and construction of a new state-of-the-art Materials Testing Laboratory Building located at the NJDOT HQ in Ewing Township. The Consultant shall meet with the Project Team and review the building programmed space and supporting systems as outlined within the Study with the intent to evaluate alternate layouts and analysis, including cost efficiencies, as applicable. The Consultant shall refine the programmed space, as necessary. The Consultant shall design each laboratory as per the current code requirements. The Consultant shall review and use the Preliminary Feasibility Study for informational use only. The Consultant shall not use any findings/information provided in the document for the design of the new building. The Consultant shall review and verify any information provided in the study and any additional information needed shall be verified for the design of this project.

The Consultant shall provide the design and specifications based on their expertise with the NJDOT and Federal Highway Administration (FHWA) project funding requirements, laboratory space design and compliance, and building construction standards and guidelines, where applicable.

The following are suggestions from the Preliminary Feasibility Study and are to be included in the design:

- The layout of the laboratories shall be designed by the Consultant as per the laboratory equipment specifications.
- All laboratories to have humidity and temperature controls.
- Basement space to include electrical switch gear and mechanical equipment.
- Building compliance with the applicable NJ Barrier-Free Sub-code and the Americans with Disabilities Act meeting Accessibility Guidelines.
- First floor to include office space for the Independent Assurance Group (IAG).

- Exterior secure spaces for material storage bins and laboratory gas tanks.

- Bays with overhead doors used for the delivery and removal of test materials and equipment.

- An adjacent enclosed office space to laboratories for reviewing testing results and lab support activities.

- Corridors shall be designed to provide a minimum width and height to accommodate forklift movement between labs.

A geotechnical survey and engineering report shall be generated by a NJ Professional Engineer (PE) to be used in the Office of Plan and Code Review and for DCA plan approval.

The Consultant shall include in the design of each laboratory space its own specific environmental requirements for temperature and humidity. According to the Preliminary Feasibility Study, a temperature of 72°F and 50% relative humidity is required to be maintained in all labs and throughout the building. However, the Consultant shall verify the temperature and humidity requirements of each laboratory and provide the design as per the verified code requirements.

The Consultant shall provide the design, specifications and quantity of fume hoods, duct work, and exhaust fans for each laboratory equipped space to meet all accreditation requirements by any state and/or federal agency. The fume hoods shall be connected via duct work to the exhaust fans on the roof. Exhaust fans will be included in the design and specifications of the HVAC system.

The Design Consultant shall perform an updated inventory of the material testing equipment being relocated to the new facility (see **Exhibit 'F'** EQUIPMENT INVENTORY). The Consultant shall include an equipment relocation phasing schedule for the transfer and relocation of all laboratory testing equipment being utilized in the new Materials Testing Laboratory Building.

Additional laboratory equipment, space specifications, and environmental documentation will be provided to the consultant at the pre-proposal meeting (see **Exhibit 'E'** SPACE PROGRAMMING).

Executive Order 215:
The consultant shall prepare and submit to the New Jersey Department of Environmental Protection (DEP) an Environmental Assessment (EA) or Environmental Impact Statement (EIS) as applicable and get all approvals and permits for this project.

D & R Canal Commission:
The site is located within the D&R Canal Commission's Zone B, which requires review and approval for any Major Project. The consultant shall prepare and submit documentation to the D&R Canal Commission for approval as a Major Project.

B. NEW BUILDING DESIGN REQUIREMENTS

1. General:

The Consultant shall provide design, construction administration, permitting and bid/award services to construct a new state-of-art New Jersey Department of Transportation Materials Testing Laboratory building (NJDOT) located at the DOT HQ in Ewing Township. The NJDOT Bureau of Materials (BOM) will relocate from its current location at the Thiokol Complex buildings to the new facility that will be located on the site of the old Foran Building adjacent to the Old Materials Lab Building, also known as Building 18 (see **Exhibit 'B'** Site Maps). However, the Consultant shall design each laboratory as per the current code requirements.

The new Materials Testing Laboratory Building shall be designed for the testing of construction materials including asphalt, cement, concrete, steel, aggregates, soil, and various liquids. The new building will also be used for training and specialized certifications.

The Consultant shall review and utilize the "Preliminary Feasibility Study" dated December 16, 2023, for informational purposes only to provide the design and construction documents for the new Materials Testing Laboratory Building. The Consultant shall provide the design and specifications for a new building to include but not limited to the following:

- The new state-of-the art building shall have a minimum area of 90,000 sq.ft. excluding the basement.

- Each laboratory space shall have its own environmental climate controls, meet HVAC requirements, and include the necessary quantity of fume hoods, as per the current code requirements.

- Each laboratory space shall have all utilities (gas, electric, water, compressed air) required for a modern material testing laboratory.

- Office and cubicle spaces and data and electrical outlets/receptacles as per furniture layout (furniture to be provided by a DOT appointed vendor).

- A parking area for the employees and visitors.

- A canopy covered pedestrian connector between the new Materials Testing Laboratory Building and the adjacent Old Materials Laboratory Building 18.

The Consultant shall provide a design for the covered pedestrian connector between the new building and any adjacent existing building, if the final location is decided at any other location.

The following systems shall be included in the design of the new Materials Testing Laboratory Building:

- A fire alarm and fire protection system, as per the proprietary JCI system.
- An Access Control System with security cameras for the Avigilon Security System.
- The HVAC system shall be tied into the existing BMS at the Ewing Headquarters.
- A water filtration treatment system.
- Audio/Visual system for the training room, conference room, and meeting room.
- Hardwired computer network system.
- Automated humidity system in curing room of the concrete laboratory and cement laboratory.

Additional items to be included in the design of the new building:

- A new generator sized to provide back-up power to the entire facility.
- Parking spaces with Electric Voltage (EV) chargers.

2. Building Footings/ Foundations & Slabs on Grade:

The Consultant shall design a footing/foundation for the new Material Testing Laboratory building based on the findings of the geotechnical investigation.

3. Structural Calculations:

The Consultant shall include in the design signed and sealed structural calculations including seismic zone, design loads and allowable material stresses used in the design for all new buildings.

4. Fume Hoods:

The Consultant shall provide the design, specifications, and quantity of fume hoods and related duct work, and exhaust fans, and filters necessary for each laboratory equipped space to meet all accreditation requirements by any state and/or federal agency. The fume hoods are connected via

duct work to the exhaust fans on the roof. Exhaust fans will be included in the design and specifications of the HVAC system.

5. HVAC System:

As guided by the State's Energy Master Plan, the Consultant shall provide new state of the art HVAC systems throughout the facility with required number of zones to address air quality, air flow/laminar flow and proper pressurization contingent on the room/area. Each laboratory shall be evaluated for meeting equipment air ventilation/circulation specifications across laboratory workspace and office areas. Fume hoods shall be variable volume with system controls contingent on the use and hazard level.

The new building's HVAC system shall be tied into the existing BMS at the DOT Ewing HQ. The HVAC system controls shall be commissioned in a separate project (T0705-01). Specific individual space temperature, humidity requirements, and controls shall be defined and verified during the building programming. A temperature of 72°F and 50% relative humidity is required to be maintained in all labs and throughout the building. The Curing Lab room at the Concrete Lab requires near 100% humidity.

Any HVAC that serves only laboratory needs should be locally controlled and managed, with BMS integration for viewing only (if at all). Any HVAC that serves more than just laboratory needs can be controlled and managed via full BMS integration.

The consultant shall provide a design following a set of core objectives that the consultant shall aim for in their design, factoring in not only the baseline codes & standards but also other applicable industry sources such as ASHRAE Guidelines as below:

a. Indoor Environment:

Ensure the indoor environment is acceptable for all intended purposes, including both regular occupancy and lab functions. This includes addressing all relevant attributes within the environment such as temperature, humidity, air pressure, air flow, contaminants, etc.

b. Energy Efficiency:

Ensure the HVAC systems are optimized for energy efficient operation. The new design shall align with the goals of the Energy Savings Improvement Program (ESIP). The Consultant should assess the energy impact of their proposed design in relation to the ESIP goals, for which the project team can review & comment so that any necessary changes can be incorporated into the final design.

c. Reliability:

Ensure the HVAC systems are reliable so that there is lower risk of failure and can continue operating even after partial failures. For example, the systems should be able to continue operating on local control after a network communication loss. There should be adequate redundancy in the critical systems so that standby equipment can take over operation when lead equipment fails.

d. Serviceability:

Ensure the HVAC systems are serviceable by maintenance staff. The equipment shall be reasonably accessible for service personnel without requiring substantial effort. Furthermore, serviceability is significantly improved by adding redundancy in the critical systems (see above), which allows standby equipment to be serviced while lead equipment is operating.

6. BBPVC Exception 6 Design:

The Consultant shall provide a design for a continuous boiler monitoring system (CBMS) that meets the New Jersey Department of Labor and Workforce Development, Division of Public Safety and Occupational Safety and Health, Bureau of Boiler and Pressure Vessel Compliance (BB&PVC) Exception 6 requirements under NJSA 34:7-1(6). This will eliminate the need for a licensed operating engineer on a twenty-four hour basis.

The Consultant shall provide for secondary control devices, (i.e. temperature, pressure, low water fuel cutoff) as necessary.

The CBMS system is expected to include a remote station, cameras (so that all four sides of the boiler can be viewed remotely), an emergency communication system and backup emergency power with a UPS.

7. Roofing System:

Provide a new roofing system for the new DOT Material Testing Laboratory for review and approval by the DOT and project team.

8. Building Interior Finishes:

The Consultant shall review the Preliminary Feasibility Study and make recommendations for the interior finishes of the New Materials Testing Laboratory Building. The design for the interior finishes shall include but not limited to cabinets, countertops, office partitions, doors, safety equipment, laboratory equipment, lighting, etc. and be presented to the project team for review and approval. Interior finishes shall be based on cost, durability, and ease of

maintenance. The design documents shall note, furniture will be supplied under a separate DOT contract with the Agency's furniture vendor.

9. Building Exterior Finishes:

The Consultant shall provide 3D Renderings of different façade systems and associated estimated costs of each for the approval of the DOT/DPMC. The façade system shall be incorporated in the final design after the approval of DOT.

The Consultant shall provide for Agency review and approval all building exterior finishes as described in the Preliminary Feasibility Study along with recommendations that shall be presented to the project team and the DOT for review and approval.

10. Laboratory Equipment:

The Consultant shall review the laboratory inventory equipment, (See **Exhibit 'F'** Equipment Inventory**)**, and verify the equipment in each laboratory space. The Consultant shall decide in coordination with the DOT, the equipment being relocated to the new building and the equipment which has reached its serviceable life requiring replacement. DOT will supply any new equipment which needs replacement. The Consultant shall provide a detailed equipment layout and specifications of each laboratory space for the existing and new lab equipment for the approval of DOT. The Consultant shall design all the utilities required for the new and existing laboratory equipment for installation in the laboratory spaces.

Some laboratory testing equipment, (i.e. concrete cylinder breaking machine, rebar testing machine, etc.) will require a concrete foundation and/or a concrete housekeeping pad. The Consultant should incorporate these specific laboratory requirements into the design of the new facility.

11. Furniture:

The Consultant shall include in the design the furniture layout for the new building. This includes the design and specifications of the furniture for the individual laboratory, office, and management spaces.

The furniture design shall be coordinated with DOT Vendor Paramount Facility Management Solutions. Furniture will be supplied and installed by Paramount under a separate DOT contract with the Vendor. However, data jacks and electrical receptacles design and installation will be under this project in coordination with furniture vendor Paramount.

The Consultant shall provide a design for the inbuilt or prefabricated working platforms for the laboratories which will be supplied and installed by the contractor.

12. Data, Communications, and Security Equipment:

The Consultant shall meet with the appropriate representatives of the DOT and project team to determine the type of equipment to be purchased and installed by the Agency and identify those on the drawings.

Construction documents shall include wiring circuits for all proposed data, communication and security equipment for the new building. Documents shall include the wire sizes, switch and panel schedules, conduits, panels, hangers, supports, mounting brackets, termination outlets, switches, and other related components for the equipment. The location, capacity, and space requirements for all of the equipment shall be indicated. Tie-in details to existing the main power source or electrical signal shall be indicated on the drawings as appropriate.

13. Elevator:

The building's elevator shall satisfy the requirements of the New Jersey Barrier-Free Subcode. The building will be new construction and the entire building including the site accessible route will need to comply with the requirements of the New Jersey Barrier-Free Subcode, ICC/ANSI A117.1 and the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

14. Compressed Air System:

The Consultant shall specify the compressed air system be sized to meet the specifications of the testing equipment in each laboratory.

15. Generator and UPS System:

Provide a generator and UPS system(s) to provide continuous operation of the critical loads of the various technical areas and laboratory equipment to ensure that any laboratory operations are not disrupted by the 10 second delay when switching over to generator power. The nature, size, and locations of critical operations and lab functions shall be determined in the Investigation Phase/Program Phase of the project.

The UPS systems shall be sized per the load requirements plus a safety factor. The UPS systems shall include all instruments and controls for proper system operation. The system status panel shall have an appropriate audio/visual alarm to alert operators of potential problems and shall be tied to all appropriate remote panels and the Central Monitoring System/BMS.

16. Fire Detection:

Based on the Construction documents, provide the design and specifications for a complete installation of a building fire alarm and fire protection system for the new Materials Testing Laboratory Building that is tied to the existing central monitoring system.

The tests must be witnessed and approved by the Department of Community Affairs (DCA). The Consultant shall provide ample notification time when arranging the test with DOT, DPMC, Contractor, and equipment manufacturers.

17. Fire Suppression System:

The construction documents shall include a fire suppression system for the new Materials Testing Laboratory Building.

A water flow test shall be conducted at the site to determine the available water pressure and flow for the proposed suppression system. The water flow test shall be witnessed by DPMC's Plan Review Unit and the results/report shall be submitted to the DPMC Plan Review Unit before the submission of the design drawings.

The fire suppression system design shall include, but not be limited to, complete construction documents showing the layout and sizes of the sprinkler piping and locations of all sprinkler heads on the floor plans of the buildings. Signed and sealed hydraulic calculations, and water pressure data for the fire suppression sprinkler system shall be submitted to the DPMC Plan Review Unit.

Fire suppression system/sprinkler shop drawings shall be submitted to DPMC's Plan Review Unit for approval prior to fabrication and installation of the systems.

Include in the construction documents the requirement for the fire suppression system to be tested after installation is complete by an independent Testing Lab hired by the Contractor. The tests must be witnessed and approved by the Department of Community Affairs (DCA). The Consultant shall provide ample notification time when arranging the test with DCA, DPMC, Contractor, and equipment manufacturers.

The consultant shall carryout hydrant flow test to determine the water pressure. The Consultant shall provide a design for the fire pumps if the existing water pressure is not sufficient for the design requirements.

18. Plumbing:

The total quantity of plumbing fixtures required to be provided within the building is to be tabulated in accordance with the National Standard Plumbing Code. The actual occupant load for the building shall be verified by the Consultant.

Based on the new building design the Consultant shall provide a plumbing system for the new Materials Testing Laboratory Building. Construction documents shall include the location of all equipment associated with plumbing and related piping components. Separate riser diagrams shall be shown for fuel oil, gas service, sanitary drain and vent system, hot and cold water

distribution system and storm drainage system. Equipment connections shall be identified on all schematic and riser diagrams. Include a fixture schedule on the drawings listing each fixture, description, trap & vent sizes, values, and hot and cold water connection pipe sizes.

Include all design details and information required for the proper fire stopping for all floor and wall penetrations of building elements (walls, partitions, etc.).

19. Electrical:

Provide an electrical distribution system for the Materials Testing Laboratory Building and all site lighting fixtures.

Electrical drawings shall include all supply service equipment, lighting, power, communications, fire alarm, security, and specialized systems. Riser diagrams, showing service equipment, feeders and panels, branch circuits must be shown. Wire sizes, switch and panel schedules shall be provided. Location, capacity, space requirements of all major items or equipment must be indicated.

Lighting features must indicated typical lighting arrangements, types of fixtures, proposed light intensities, emergency and egress lighting. All lighting specified shall be energy efficient.

All lighting specified shall be energy efficient and have occupancy sensors where applicable.

20. Security:

The Consultant shall provide construction documents that shall include wiring, outlet/power connections, support brackets and shelving for security cameras and card readers. Consultant shall determine the location of security cameras and card readers to be installed in coordination with Motorola/Avigilon and DOT Support Services. Contact information will be provided upon award. Construction documents shall include security systems for the new buildings including, but not limited to, access/intrusion detection devices, window and door protection, interior lighting, computer, communication, paging, and microphone systems.

21. Training Room/Conference Room:

The Design Consultant shall verify the occupancy load required for the training and conference rooms and provide accommodation for additional personnel.

All these rooms should be equipped with essential audio and visual equipment, including speakers, microphones, projectors or screens, and appropriate electrical and network wiring for seamless connectivity. This setup will ensure effective communication, presentations, and multimedia usage.

22. Space Signage:

Interior signage shall include, but is not limited to, identification of functional areas, services, directional, room numbers and names.

C. SITE WORK

1. Parking Lots & Roadways:

Construction documents shall include paving roadways and parking lots for the new building as needed. Consultant shall, as part of the Program Phase, evaluate and estimate the cost and provide a written report to the Project Team.

Parking lot and roadway surfaces shall be bituminous concrete and shall have appropriate stripping, signage and lighting. Concrete curbing shall be installed along the edge of all new roadways and around the perimeter and islands of the parking lots. Handicap curb cuts shall be included at appropriate locations. All grading shall provide appropriate slopes for storm water runoff to curbs, gutters and inlets tied into the existing site drainage system.

All existing parking stripping and roadway traffic lines, including those not impacted by construction, shall be repainted. All costs associated with evaluating, estimating, preparing written reports and providing design services for repairing and stripping parking lots and roadways shall be included in the consultant's lump sum fee proposal.

2. Electric Vehicle (EV) Charging Station Installation:

The consultant shall provide a design for the level 2 and level 3 charging stations in the BOM Lab Building Parking Lot. The number of charging stations will be decided depending on the location of the building.

3. Sidewalk:

Evaluate the existing path of travel, and any new areas requiring access (i.e., truck delivery area, loading dock, new parking areas, etc.). Construction documents shall include concrete sidewalks from the parking lot(s) to the new Material Testing Laboratory Building and other areas of the site requiring pedestrian or staff access. Incorporate barrier free access ramps and curb cuts, wherever the barrier free path of travel is required.

4. Site Lighting:

Pole mounted site lighting shall be integrated into the architectural and landscape design for the parking areas, paths, pedestrian sidewalks, stairs, roadways, and other areas or equipment requiring proper illumination for visibility, surveillance and personnel safety. Spacing and

heights of the light poles shall ensure proper coverage of the areas illuminated. Lighting levels shall comply with approved design standards and be sufficient to support areas of surveillance. Lamps shall be high efficiency type and have photocell dusk to dawn operational features. Add lighting where new roadways, parking lots, exterior material storage areas (including truck parking), and walkways are added.

5. Secure Fencing & Gates:

Construction documents shall include any agency required secure gates and/or fencing, as necessary.

6. Storm Water Management:

The Consultant shall evaluate surfaces considered pervious or semi-pervious. Storm water management measures for water quality for the project shall meet the requirements of N.J.A.C.7:8 Storm Water Management. Where possible and beneficial, utilization of pervious surfaces shall be a consideration. Existing storm water drainage infrastructure shall be modified as required to be in compliance with N.J.A.C.7:8 Storm Water Management.

Specific to this site and subdivision, include analysis for whether a DEP MS4 public complex storm water permit is needed. If required, provide assistance to prepare and file with the NJDEP regulatory authority.

The soil testing reports generated from further hazardous soil testing and site soil remediation shall be used for a storm water management grading plan, as recommended in the Preliminary Feasibility Study. However, the Consultant shall provide their own recommendations for the requirements of a storm water management grading plan.

7. Landscaping:

Construction documents shall include a landscaping plan to include, but not limited to, required seeding, sod, shrubs, bushes, trees, and buffering with adjacent properties where required.

8. Exterior Signage:

Construction documents shall include exterior site signage. Propose specifications for signage using a clearly visible sign from roadway. Must have enhanced visibility at night. Directional signage on property directing visitors, deliveries, material drop off, material pick-up, etc. shall be clearly delineated. The exterior signage at the street, shall be illuminated and of a size/shape as determined by the DOT.

Construction documents shall include signage in accordance with the NJ Uniform Construction Code requirements.

D. SITE GEOTECHNICAL ASSESSMENT

The Consultant shall analyze the soil conditions in the locations of the new building to determine the soil classification and engineering properties. This information shall be used in the design of footings/foundations and slabs. All soil boring/test pit data obtained shall be included in the construction documents for Contractor reference.

E. SITE REQUIREMENTS

1. Existing Information:

Any civil/site drawings from the recent adjacent property construction will be provided to the Consultant. Consultant shall obtain all additional field measurements and record all data necessary to provide an accurate site survey of the existing conditions. Items shall include, but not limited to, any new site roadways, sidewalks, curbing, parking lots and islands, storm drainage inlets, utility manhole covers, fences, trees, rock formations, site lighting, signage, and other relevant physical landscape features.

2. Site Survey Drawing:

Consultant shall provide a scaled survey drawing that depicts the dimensioned locations of the hardscape, landscape, and landmark features that are to remain, those that are to be removed, and those that are to be constructed.

Include adjoining highways and streets outside the property lines where appropriate for ingress and egress information.

3. Topographic Survey:

Consultant shall obtain all field measurements and record all data necessary to provide an accurate topographic survey of the facility. Surface features shall include, but not be limited to the public streets, alleys, roadways, parking lot surface area, sidewalks and curbing, utility rims, and other appropriate objects.

Consultant shall provide a topographic survey drawing that depicts the location and elevation of the existing and new surface features of the construction site. Contours shall be accurately plotted to an acceptable scale and labeled with spot elevations at high, low, and critical points. Property lines shall be indicated within the construction site, and base lines or random traverse points shall be tied to the existing structures where appropriate. Show datum, benchmark, and north arrow in relation to the property lines. Benchmarks must be well defined and described.

Consultant shall, prior to initiating any site design work, determine if any portion of the site is classified as wetlands. Consultant shall comply with N.J.A.C. 7:7A, Freshwater Wetlands

Protection Act. Consultant shall prepare "Wetlands Delineation" plan identifying potential wetlands areas and submit to NJDEP to secure a "Letter of Interpretation" (LOI). All site work shall comply with the LOI.

4. Temporary Construction Site:

Construction documents shall provide information on the appropriate drawing(s) that locate all temporary site construction roads, construction office trailer(s), dumpsters, material and equipment storage trailers and Contractor parking areas.

Construction documents shall include requirements for any fence and/or gates and construction site lighting as applicable.

Temporary utilities shall be provided for the trailers installed by the Contractors.

F. SOIL INVESTIGATION

A soil investigation is being done and a minimum environmental cleanup will be provided at the new building site as per the DEP requirements for the demolition of the Foran Building Project T0641-00. A full environmental cleanup for the new building location shall be provided under this scope.

The consultant shall carry out detailed soil investigation as per the NJDEP Guidelines. The Consultant shall conduct soil borings, collect soil, and ground water samples. The Consultant shall conduct a full panel of tests on the soil to characterize it for disposal and test the ground water for volatile and semi-volatile compounds.

A limited soil investigation is currently carried out at the Foran Building site by the consultant Dresdner Robin. We do not yet have soil investigation conducted but will provide the results to the consultants once available during the consultant selection process as an addendum so that they can include an LSRP in their design team and account for the design fees.

G. SITE SOIL EROSION AND SEDIMENT CONTROL APPLICATION

Consultant shall submit the Application for Soil Erosion and Sediment Control (SESC) Plan Certification to the NJDOT Office of Landscape Architecture and Environmental Solution. The submission and design requirements, documentation, drawings, calculations, meetings, etc. required for the application shall conform with the guidelines and procedures published by that District Office.

H. UTILITIES

1. General:

The Consultant shall provide the design and specifications for mechanical, electrical, plumbing and fire protection systems. The Consultant shall provide the design for the utilities based on their experience with similar projects.

Provide signed and sealed heating and cooling load calculations to the DPMC Design & Code Review Unit that will substantiate the recommended size of the new HVAC system.

Provide all riser diagrams and schedules for all utilities systems and any related controls and auxiliary equipment. Include all pipe sizes and symbol legends on the drawings. Specify the requirements for all hangers, supports, equipment and piping insulation, identification tags, descriptive labels, thermometers, gages, etc.

Identify and include in the design the purchase of any manufacturer's recommended spare parts and special tools or instruments needed for the operation or maintenance of the equipment as part of this project.

Specify appropriate manufacturer's warranties for the utility systems, auxiliary equipment, hardware, and related components.

Include a flow test requirement for any new sprinkler heads being installed as part of this project. Calculations are also required by Code and shall be submitted to the DPMC Manager of Plan & Code Review Unit.

Specify that the Contractor or approved representative shall conduct a performance test, approved by the Consultant, of the utility systems, controls, and all ancillary equipment to ensure they operate properly and as per the manufacturer's specifications. Any appropriate air distribution system shall be balanced by adjusting all dampers, registers, etc. to obtain proper air flow to all areas of the building(s).

2. Underground Utilities:

Construction documents shall identify the size and location of any underground utility lines, both existing and new. The utility line sizes, locations and elevations shall be shown on the design drawings for Contractor reference.

Provide a design to relocate or realign any existing utility line that may interfere with the installation of any new construction.

3. Utility Upgrade Allowance:

The Consultant shall estimate all design and construction administration costs associated with the potential upgrades to the utilities serving the site and include that amount in their fee proposal line item entitled **"Utility Upgrade Allowance"**. Refer to paragraph **X.C**.

4. Utility Verification Letter:

Consultant shall obtain written verification from all appropriate utility authorities certifying they can provide adequate capacity for the new buildings. Letters pertaining to gas, water, sanitary, electrical, and telephone/data communication service must be obtained which confirm adequate pressures, flows, specific consumption or loads and approximate date of service.

5. Electric:

Construction documents shall provide adequate electrical service to the new building including details for tie-in to the main electrical supply line and equipment. Include schematic drawings of the electric distribution system of the facility indicating all components of the distribution system including, but not limited to, panels, subpanels, breakers, transformers, meters and lines. The Consultant shall coordinate with the PSE&G company representatives as required for service improvements.

6. Fire Main Service:

The Consultant shall provide a design for the fire main connection to the building for the fire suppression design.

7. Sanitary Sewer:

Construction documents shall provide an adequate sanitary sewer system to the new building including details for tie-in to the new building. Include schematic drawings of the sanitary sewer distribution system indicating all components of the distribution system including, but not limited to, pipe sizes, manholes, cleanouts, valves and backflow preventers. Consultant shall coordinate with the sewer authority representatives as required for service improvements.

Consultant shall determine, and include in the construction documents, any requirements for the construction contractor to coordinate with the sewer authority including, but not limited to, inspections, termination and/or tie-in fees, construction contract limit lines, material and equipment to be provided by both parties.

8. Gas Supply and Distribution System:

The Consultant shall determine if gas supply to the new building is compatible with the State's

Energy Master Plan. If so, construction documents shall provide adequate gas service, if available, to the new buildings including details for tie-in to new equipment. Include schematic drawings indicating the size and location of all gas line components including, but not limited to, piping, valves and meters. Consultant shall coordinate with PSE&G representatives as required for service improvements.

Consultant shall determine, and include in the construction documents, any requirements for the construction contractor to coordinate with the gas utility including, but not limited to, inspections, termination and/or tie-in fees, construction contract limit lines, material and equipment to be provided by both parties.

9. Domestic Water Service:

Construction documents shall provide adequate water service to the facility including details for tie-in to the new building systems. Include schematic drawings indicating the size and location for all water supply components including, but not limited to, piping, valves and meters. Consultant shall coordinate with water utility representatives as required for service improvements.

Consultant shall determine, and include in the construction documents, any requirements for the construction contractor to coordinate with the water utility including, but not limited to, inspections, termination and/or tie-in fees, construction contract limit lines, material to be provided by both parties.

10. Telephone/Network Data Communication Service:

The Consultant shall provide a design for the telephone/data service to the new building.

11. Covered Materials Storage Bins:

The Consultant shall provide the design for the covered materials storage bins for the storage of aggregates and other materials.

12. Hazardous Materials Storage:

The Consultant shall provide the design for the covered storage area for the hazardous materials.

13. Oxygen Cylinders Storage:

The Consultant shall provide the design for the covered storage area of oxygen cylinders.

14. Code Update:

The Consultants shall be responsible for updating the design for the any Code and Standards updates as per the DCA/DPMC Code Review during and after the design at no additional cost to the State.

I. DESIGN MEETINGS & PRESENTATIONS

1. Design Meetings:

Conduct the appropriate number of review meetings with the Project Team members during each design phase of the project so they may determine if the project meets their requirements, question any aspect of the contract deliverables, and make changes where appropriate. The Consultant shall describe the philosophy and process used in the development of the design criteria and the various alternatives considered to meet the project objectives. Selected studies, sketches, cost estimates, schedules, and other relevant information shall be presented to support the design solutions proposed. Special considerations shall also be addressed such as: Contractor site access limitations, utility shutdowns and switchover coordination, phased construction and schedule requirements, security restrictions, available swing space, material and equipment delivery dates, etc. It shall also be the responsibility of the Consultant to arrange and require all critical Sub-Consultants to be in attendance at the design review meetings.

Record the minutes of each design meeting and distribute within three (3) calendar days to all attendees and those persons specified to be on the distribution list by the Project Manager.

2. Design Presentations:

The minimum number of design presentations required for each phase of this project is identified below for reference:

Investigation Phase/ Program Phase: One (1) oral presentation at phase completion.

Schematic Phase: One (1) oral presentation at phase completion.

Design Development Phase: One (1) oral presentation at phase completion.
Final Design Phase: One (2) oral presentation at phase completion.

J. EXISTING DOCUMENTATION

Copies of the following documents will be provided to each Consulting firm at the pre-proposal meeting to assist in the bidding process.

- ANX-4429-S3 (Soil) Testing of Sample: May 8, 2024, ANS Consultants, Inc.

- ANX-4429-S4 (Concrete) Testing of Sample: May 8, 2024, ANS Consultants, Inc.
- DPMC T0640-00 HVAC System Design Development Booklet: May 13, 2022, Gillan & Hartmann, Inc.

Review these documents and any additional information that may be provided at a later date such as reports, studies, surveys, equipment manuals, as-built drawings, etc. The State does not attest to the accuracy of the information provided and accepts no responsibility for the consequences of errors by the use of any information and material contained in the documentation provided. It shall be the responsibility of the Consultant to verify the contents and assume full responsibility for any determination or conclusion drawn from the material used. If the information provided is insufficient, the Consultant shall take the appropriate actions necessary to obtain the additional information required.

All original documentation shall be returned to the provider at the completion of the project.

VIII. PERMITS & APPROVALS

A. NJ UNIFORM CONSTRUCTION CODE PLAN REVIEW AND PERMIT

The project construction documents must comply with the latest adopted edition of the NJ Uniform Construction Code (NJUCC).

The latest NJUCC Adopted Codes and Standards can be found at:

http://www.state.nj.us/dca/divisions/codes/codreg/

1. NJ Uniform Construction Code (NJUCC) Plan Review

Consultant shall estimate the cost of the NJUCC Plan Review by DCA and include that amount in their fee proposal line item entitled **"Plan Review and Permit Fee Allowance"**, refer to paragraph X.A.

Upon approval of the Final Design Phase Submission by DPMC, the Consultant shall submit the construction documents to the Department of Community Affairs (DCA), Bureau of Construction Project Review to secure a complete plan release.

As of July 25, 2022, the Department of Community Affairs (DCA) is only accepting digital signatures and seals issued from a third party certificate authority.

Procedures for submission to the DCA Plan Review Unit can be found at:

https://www.state.nj.us/dca/divisions/codes/forms/pdf_bcpr/pr_app_guide.pdf

Consultant shall complete the "Project Review Application" and include the following on Block 5 as the "Owner's Designated Agent Name":

Trevor M. Dittmar, DPMC
PO Box 235
Trenton, NJ 08625-0235
Trevor.Dittmar@treas.nj.gov 609-984-5529

The Consultant shall complete the NJUCC "Plan Review Fee Schedule", determine the fee due and pay the NJUCC Plan Review fees, refer to Paragraph X.A.

The NJUCC "Plan Review Fee Schedule" can be found at:

http://www.state.nj.us/dca/divisions/codes/forms/pdf_bcpr/pr_fees.pdf

2. NJ Uniform Construction Code Permit

Upon receipt of a complete plan release from the DCA Bureau of Construction Project Review, the Consultant shall complete the NJUCC permit application and all applicable technical sub-code sections. The "Agent Section" of the application and certification section of the building sub-code section shall be signed. These documents, with **six (6) sets of DCA approved, signed and sealed construction documents** shall be forwarded to the DPMC Project Manager.

The Consultant may obtain copies of all NJUCC permit applications at the following website:

https://www.nj.gov/dca/divisions/codes/resources/constructionpermitforms.html
All other required project permits shall be obtained and paid for by the Consultant in accordance with the procedures described in Paragraph VIII.B.

3. Prior Approval Certification Letters:

The issuance of a construction permit for this project may be contingent upon acquiring various "prior approvals" as defined by N.J.A.C. 5:23-1.4. It is the Consultant's responsibility to determine which prior approvals, if any, are required. The Consultant shall submit a general certification letter to the DPMC Plan & Code Review Unit Manager during the Permit Phase of this project that certifies all required prior approvals have been obtained.

In addition to the general certification letter discussed above, the following specific prior approval certification letters, where applicable, shall be submitted by the Consultant to the DPMC Plan & Code Review Unit Manager: Soil Erosion & Sediment Control, Water & Sewer Treatment Works Approval, Coastal Areas Facilities Review, Compliance of Underground Storage Tank Systems with N.J.A.C. 7:14B, Pinelands Commission, Highlands Council, Well

Construction and Maintenance; Sealing of Abandoned Wells with N.J.A.C. 7:9D, Certification that all utilities have been disconnected from structures to be demolished, Board of Health Approval for Potable Water Wells, Health Department Approval for Septic Systems. It shall be noted that in accordance with N.J.A.C. 5:23-2.15(a)5, a permit cannot be issued until the letter(s) of certification is received.

4. Multi-building or Multi-site Permits:

A project that involves many buildings and/or sites requires that a separate permit shall be issued for each building or site. The Consultant must determine the construction cost estimate for *each* building and/or site location and submit that amount where indicated on the permit application.

5. Special Inspections:

In accordance with the requirements of the New Jersey Uniform Construction Code N.J.A.C. 5:23-2.20(b), Bulletin 03-5 and Chapter 17 of the International Building Code, the Consultant shall be responsible for the coordination of all special inspections during the construction phase of the project.

Bulletin 03-5 can be found at:
http://www.state.nj.us/dca/divisions/codes/publications/pdf_bulletins/b_03_5.pdf

a. Definition:

Special inspections are defined as an independent verification by a certified special inspector for **Class I buildings and smoke control systems in any class building**. The special inspector is to be independent from the Contractor and responsible to the Consultant so that there is no possible conflict of interest.

Special inspectors shall be certified in accordance with the requirements in the New Jersey Uniform Construction Code.

b. Responsibilities:

The Consultant shall submit with the permit application, a list of special inspections and the agencies or special inspectors that will be responsible to carry out the inspections required for the project. The list shall be a separate document, on letter head, signed and sealed.

B. OTHER REGULATORY AGENCY PERMITS, CERTIFICATES AND APPROVALS

The Consultant shall identify and obtain all other State Regulatory Agency permits, certificates,

and approvals that will govern and affect the work described in this Scope of Work. An itemized list of these permits, certificates, and approvals shall be included with the Consultant's Technical

Proposal and the total amount of the application fees should be entered in the Fee Proposal line item entitled, **"Plan Review and Permit Fee Allowance."**

The Consultant may refer to the Division of Property Management and Construction "Procedures for Architects and Engineers Manual", Paragraph "**9. REGULATORY AGENCY APPROVALS"** which presents a compendium of State permits, certificates, and approvals that may be required for this project.

The Consultant shall determine the appropriate phase of the project to submit the permit application(s) in order to meet the approved project milestone dates.

Where reference to an established industry standard is made, it shall be understood to mean the most recent edition of the standard unless otherwise noted. If an industry standard is found to be revoked, or should the standard have undergone substantial change or revision from the time that the Scope of Work was developed, the Consultant shall comply with the most recent edition of the standard.

IX. ENERGY REBATE AND INCENTIVE PROGRAMS

The Consultant shall review any and all programs on the State and Federal level to determine if any proposed upgrades to the mechanical and/or electrical equipment and systems for this project qualify for approved rebates and incentives.

The Consultant shall review the programs available on the "New Jersey's Clean Energy Program" website at: http://www.njcleanenergy.com as well as federal websites and New Jersey electric and gas utility websites to determine if and how they can be applied to this project.

The Consultant shall identify all applicable rebates and incentives in their technical proposal and throughout the design phase.

The Consultant shall be responsible to complete the appropriate registration forms and applications, provide any applicable worksheets, manufacturer's specification sheets, calculations, attend meetings, and participate in all activities with designated representatives of the programs and utility companies to obtain the entitled financial incentives and rebates for this project.

All costs associated with this work shall be estimated by the Consultant and the amount included in the base bid of its fee proposal.

X. ALLOWANCES

A. PLAN REVIEW AND PERMIT FEE ALLOWANCE

The Consultant shall obtain and pay for all of the project permits in accordance with the guidelines identified below.

1. Permits:

The Consultant shall determine the various permits, certificates, and approvals required to complete this project.

2. Permit Costs:

The Consultant shall estimate the application fee costs for all of the required project permits, certificates, and approvals (excluding the NJ Uniform Construction Code permit) and include that amount in its fee proposal line item entitled **"Plan Review and Permit Fee Allowance"**. A breakdown of each permit and application fee shall be attached to the fee proposal for reference. **NOTE:** The NJ Uniform Construction Code permit is excluded since it will be paid for by the State.

3. Applications:

The Consultant shall complete and submit all permit applications to the appropriate permitting authorities and the costs shall be paid from the Consultant's permit fee allowance. A copy of the application(s) and the original permit(s) obtained by the Consultant shall be given to the DPMC Project Manager for distribution during construction.

4. Consultant Fee:

The Consultant shall determine what is required to complete and submit the permit applications, obtain supporting documentation, attend meetings, etc., and include the total cost in the base bid of its fee proposal under the "Permit Phase" column.

Any funds remaining in the permit allowance will be returned to the State at the close of the project.

B. SITE GEOTECHNCIAL ALLOWANCE

The Consultant shall estimate the costs to complete the soils analysis and soils contamination testing and include that amount on their fee proposal line item entitled **"Site Geotechnical Allowance",** refer to paragraph VII.E.

The Consultant shall attach a detailed cost breakdown sheet for use by DPMC during the proposal review and potential fee negotiations. The cost breakdown sheet shall include a description of the tasks to be performed and the estimated cost of each task.

Any funds remaining in the Site Geotechnical Allowance will be returned to the State at the close of the project.

C. UTILITY UPGRADE ALLOWANCE

Consultant shall estimate the costs to provide design and construction administration services for the potential upgrades to the utilities serving the site and include that amount on their fee proposal line item entitled "**Utility Upgrade Allowance**", refer to paragraph VII.H.3.

Consultant shall attach a detailed cost breakdown sheet for use by DPMC during the proposal review and potential fee negotiations. The cost breakdown sheet shall include a description of the tasks to be performed and the estimated cost of each task .Any funds remaining in the Utility Upgrade Allowance will be returned to the State at the close of the project.

XI. SOW SIGNATURE APPROVAL SHEET

This Scope of Work shall not be considered a valid document unless all signatures appear in each designated area below.

The client agency approval signature on this page indicates that they have reviewed the design criteria and construction schedule described in this project Scope of Work (including the subsequent contract deliverables and exhibits) and verifies that the work will not conflict with the existing or future construction activities of other projects at the site.

SOW PREPARED BY: Alison F. Gottlieb 9/17/2024

ALISON F. GOTTLIEB, PROJECT MANAGER DATE
DPMC PROJECT PLANNING & INITIATION

SOW APPROVED BY: James Wright 9/17/2024

JAMES WRIGHT, MANAGER DATE
DPMC PROJECT PLANNING & INITIATION

SOW APPROVED BY: Dennis W. Meszaros 9/17/2024

DENNIS W. MESZAROS, PROJECT MANAGER DATE
NEW JERSEY DEPARTMENT OF TRANSPORTATION

SOW APPROVED BY: Cristina Zozzaro 9/18/2024

CRISTINA ZOZZARO, PROJECT MANAGER DATE
DPMC PROJECT MANAGEMENT GROUP

SOW APPROVED BY: Jeanette M Barnard 10.11.24

JEANNETTE BARNARD, DEPUTY DIRECTOR DATE
DIV PROPERTY MGT & CONSTRUCTION

XII. CONTRACT DELIVERABLES

The following are checklists listing the Contract Deliverables that are required at the completion of each phase of this project. The Consultant shall refer to the DPMC publication entitled "Procedures for Architects and Engineers," 3.0 Edition, dated September 2022 available at https://www.nj.gov/treasury/dpmc/Assets/Files/ProceduresforArchitectsandEngineers.pdf for a detailed description of the deliverables required for each submission item listed. References to the applicable paragraphs of the "Procedures for Architects and Engineers" are provided.

Note that the Deliverables Checklist may include submission items that are "S.O.W. Specific Requirements". These requirements will be defined in the project specific scope of work and included on the deliverables checklist.

This project includes the following phases with the deliverables noted as "Required by S.O.W" on the Deliverables Checklist:

- **INVESTIGATION PHASE/PROGRAM PHASE**
- **SCHEMATIC DESIGN PHASE**
- **DESIGN DEVELOPMENT PHASE**
- **FINAL DESIGN PHASE**
- **PERMIT APPLICATION PHASE**
- **BIDDING AND CONTRACT AWARD**
- **CONSTRUCTION PHASE**
- **PROJECT CLOSE-OUT PHASE**

XIII. EXHIBITS

A. SAMPLE PROJECT SCHEDULE FORMAT
B. PROJECT SITE MAPS
C. PHOTOS
D. PRELIMINARY FEASIBILITY STUDY
E. SPACE PROGRAMMING
F. EQUIPMENT INVENTORY

END OF SCOPE OF WORK

DPMC Project No.: T0705-00

Deliverables Checklist
Investigation Phase/ Program Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
12.3.1.	A/E Statement of Site Visit						
12.3.2.	Narrative Description of Project						
12.3.3.	Building Code Information Questionnaire						
12.3.4.	Space Analysis						
12.3.5.	Special Features						
12.3.6.	Catalog Cuts						
12.3.7.	Site Evaluation						
12.3.8.	Subsurface Investigation						
12.3.9.	Surveys						
12.3.10.	Fine Arts Inclusion						
12.3.11.	Design Rendering						
12.3.12.	Regulatory Approvals						
12.3.13.	Utility Availability						
12.3.14.	Diagrammatic Sketches/Drawings (6 Sets)						
12.3.15.	Specifications (6 Sets)						
12.3.16.	Current Working Estimate/Cost Analysis						
12.3.17.	Project Schedule						
12.3.18.	Formal Presentation						
12.3.19.	Scope of Work Compliance Statement						
12.3.20.	Program Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

DPMC Project No.: T0705-00

Deliverables Checklist
Schematic Design Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
13.4.1.	A/E Statement of Site Visit						
13.4.2.	Narrative Description of Project						
13.4.3.	Building Code Information Questionnaire						
13.4.4.	Space Analysis						
13.4.5.	Special Features						
13.4.6.	Catalog Cuts						
13.4.7.	Site Evaluation						
13.4.8.	Subsurface Investigation						
13.4.9.	Surveys						
13.4.10.	Arts Inclusion						
13.4.11.	Design Rendering						
13.4.12.	Regulatory Approvals						
13.4.13.	Utility Availability						
13.4.14.	Drawings (6 Sets)						
13.4.15.	Specifications (6 Sets)						
13.4.16.	Current Working Estimate/Cost Analysis						
13.4.17.	Project Schedule						
13.4.18.	Formal Presentation						
13.4.19.	Scope of Work Compliance Statement						
13.4.20.	Schematic Design Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

DPMC Project No.: T0705-00

Deliverables Checklist
Design Development Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
14.4.1.	A/E Statement of Site Visit						
14.4.2.	Narrative Description of Project						
14.4.3.	Building Code Information Questionnaire						
14.4.4.	Space Analysis						
14.4.5.	Special Features						
14.4.6.	Catalog Cuts						
14.4.7.	Site Evaluation						
14.4.8.	Subsurface Investigation						
14.4.9.	Surveys						
14.4.10.	Arts Inclusion						
14.4.11.	Design Rendering						
14.4.12.	Regulatory Approvals						
14.4.13.	Utility Availability						
14.4.14.	Drawings (6 Sets)						
14.4.15.	Specifications (6 Sets)						
14.4.16.	Current Working Estimate/Cost Analysis						
14.4.17.	Project Schedule						
14.4.18.	Formal Presentation						
14.4.19.	Plan Review/Scope of Work Compliance Statement						
14.4.20.	Design development Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

DPMC Project No.: T0705-00

Deliverables Checklist
Final Design Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
15.4.1.	A/E Statement of Site Visit						
15.4.2.	Narrative Description of Project						
15.4.3.	Building Code Information Questionnaire						
15.4.4.	Space Analysis						
15.4.5.	Special Features						
15.4.6.	Catalog Cuts						
15.4.7.	Site Evaluation						
15.4.8.	Subsurface Investigation						
15.4.9.	Surveys						
15.4.10.	Arts Inclusion						
15.4.11.	Design Rendering						
15.4.12.	Regulatory Approvals						
15.4.13.	Utility Availability						
15.4.14.	Drawings (6 Sets)						
15.4.15.	Specifications (6 Sets)						
15.4.16.	Current Working Estimate/Cost Analysis						
15.4.17.	Project Schedule						
15.4.18.	Formal Presentation						
15.4.19.	Plan Review/Scope of Work Compliance Statement						
15.4.20.	Final Design Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

DPMC Project No.: T0705-00

Deliverables Checklist
Permit Application Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
16.1.	N.J. UCC Permit Application						
16.4.	Drawings, Signed and Sealed (6 Sets)						
16.5.	Specifications, Signed and Sealed (6 Sets)						
16.6.	Current Working Estimate/Cost Analysis						
16.7.	Project Schedule						
16.8.	Plan Review/Scope of Work Compliance Statement						
16.9.	Permit Application Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC Project Manager the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

DPMC Project No.: T0705-00

Deliverables Checklist
Bidding and Contract Award Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
17.1.1.	Notice of Advertising						
17.1.2.	Bid Proposal Form						
17.1.3.	Bid Clearance Form						
17.1.4.	Drawings (6 Sets)						
17.1.5.	Specifications (6 Sets)						
17.1.6.	Construction Schedule						
17.3	Pre-Bid Conference/Mandatory Site Visit						
17.3.1.	Meeting Minutes						
17.4	Bulletins						
17.5	Post Bid Meeting						
17.6.	Contract Award "Letter of Recommendation"						
17.8.	Bid Protests - Hearings						
17.9.	Bidding and Contract Award Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

DPMC Project No.: T0705-00

Deliverables Checklist
Construction Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
18.2.	Pre-Construction Meeting						
18.3.	Submittal Log						
18.4.	Construction Schedule						
18.5.	Project Progress Meetings						
18.7.	Contractor's Invoicing and Payment Process						
18.8.	Contractor Submittals						
18.10.	Testing						
18.11.	Shop Drawings (6 Sets)						
18.12.	As-Built & Record Set Drawings (6 Sets)						
18.13.	Change Orders						
18.14.	Construction Photographs						
18.15.	Field Observations						
18.17.	Construction Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

DPMC Project No.: T0705-00

Deliverables Checklist
Project Close-Out Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
19.3.	Development of Punch List and Inspection Reports						
19.5.	Determination of Substantial Completion						
19.6.	Correction/Completion of Punch List						
19.7.	Submission of Close-Out Documentation						
19.7.1.	As-Built and Record Sets of Drawing (6 Sets)						
19.8.	Final Payment						
19.9.1.	Contractors Final Payment						
19.9.2.	A/E's Final Payment						
19.10.	Project Close-Out Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

February 7, 1997
Rev.: January 29, 2002

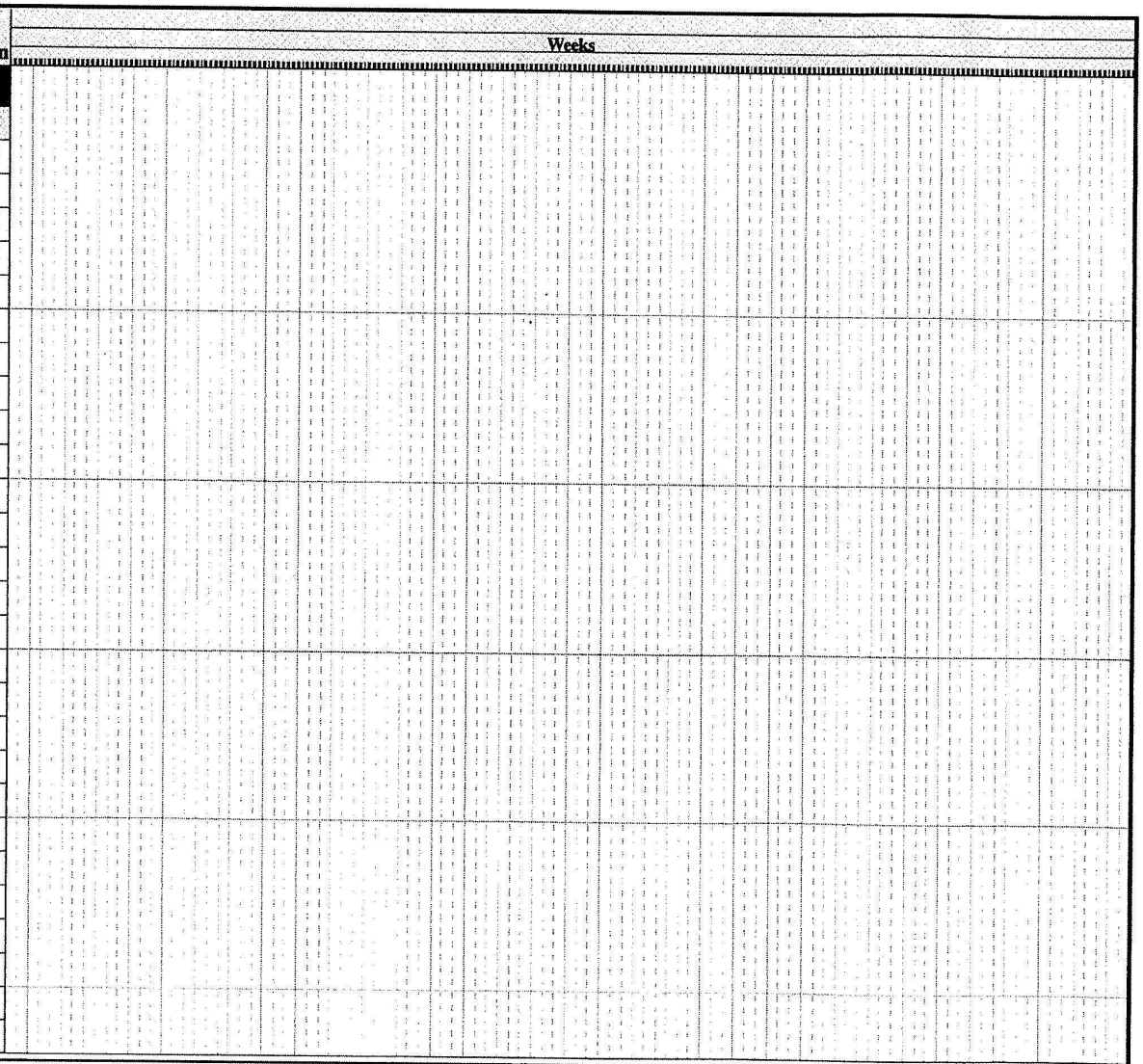
Responsible Group Code Table

The codes below are used in the schedule field "GRP" that identifies the group responsible for the activity. The table consists of groups in the Division of Property Management & Construction (DPMC), as well as groups outside of the DPMC that have responsibility for specific activities on a project that could delay the project if not completed in the time specified. For reporting purposes, the groups within the DPMC have been defined to the supervisory level of management (i.e., third level of management, the level below the Associate Director) to identify the "functional group" responsible for the activity.

CODE	DESCRIPTION	REPORTS TO ASSOCIATE DIRECTOR OF:
CM	Contract Management Group	Contract Management
CA	Client Agency	N/A
CSP	Consultant Selection and Prequalification Group	Technical Services
A/E	Architect/Engineer	N/A
PR	Plan Review Group	Technical Services
CP	Construction Procurement	Planning & Administration
CON	Construction Contractor	N/A
FM	Financial Management Group	Planning & Administration
OEU	Office of Energy and Utility Management	N/A
PD	Project Development Group	Planning & Administration

EXHIBIT 'A'

Activity ID	Description	Rspn
<PROJ>		
Design		
CV3001	Schedule/Conduct Predesign/Project Kick-Off Mtg.	CM
CV3020	Prepare Program Phase Submittal	AE
CV3021	Distribute Program Submittal for Review	CM
CV3027	Prepare & Submit Project Cost Analysis (DPMC-38)	CM
CV3022	Review & Approve Program Submittal	CA
CV3023	Review & Approve Program Submittal	PR
CV3024	Review & Approve Program Submittal	CM
CV3025	Consolidate & Return Program Submittal Comments	CM
CV3030	Prepare Schematic Phase Submittal	AE
CV3031	Distribute Schematic Submittal for Review	CM
CV3037	Prepare & Submit Project Cost Analysis (DPMC-38)	CM
CV3032	Review & Approve Schematic Submittal	CA
CV3033	Review & Approve Schematic Submittal	PR
CV3034	Review & Approve Schematic Submittal	CM
CV3035	Consolidate & Return Schematic Submittal Comment	CM
CV3040	Prepare Design Development Phase Submittal	AE
CV3041	Distribute D. D. Submittal for Review	CM
CV3047	Prepare & Submit Project Cost Analysis (DPMC-38)	CM
CV3042	Review & Approve Design Development Submittal	CA
CV3043	Review & Approve Design Development Submittal	PR
CV3044	Review & Approve Design Development Submittal	CM
CV3045	Consolidate & Return D.D. Submittal Comments	CM
CV3050	Prepare Final Design Phase Submittal	AE
CV3051	Distribute Final Design Submittal for Review	CM
CV3052	Review & Approve Final Design Submittal	CA
CV3053	Review & Approve Final Design Submittal	PR
CV3054	Review Final Design Submitl for Constructability	OCS



NOTE:
Refer to section "IV Project Schedule" of the Scope of Work for contract phase durations.

DBCA - TEST

Sheet 1 of 3

Bureau of Design & Construction Services

EXHIBIT 'A'

Activity ID	Description	Rspn	Weeks
CV3055	Review & Approve Final Design Submittal	CM	
CV3056	Consolidate & Return Final Design Comments	CM	
CV3060	Prepare & Submit Permit Application Documents	AE	
CV3068	Prepare & Submit Bidding Cost Analysis (DPMC-38)	CM	
Plan Review-Permit Acquisition			
CV4001	Review Constr. Documents & Secure UCC Permit	PR	
CV4010	Provide Funding for Construction Contracts	CA	
CV4020	Secure Bid Clearance	CM	
Advertise-Bid-Award			
CV5001	Advertise Project & Bid Construction Contracts	CP	
CV5010	Open Construction Bids	CP	
CV5011	Evaluate Bids & Prep. Recommendation for Award	CM	
CV5012	Evaluate Bids & Prep. Recommendation for Award	AE	
CV5014	Complete Recommendation for Award	CP	
CV5020	Award Construction Contracts/Issue NTP	CP	
Construction			
CV6000	Project Construction Start/Issue NTP	CM	
CV6001	Contract Start/Contract Work (25%) Complete	CON	
CV6002	Preconstruction Meeting	CM	
CV6003	Begin Preconstruction Submittals	CON	
CV6004	Longest Lead Procurement Item Ordered	CON	
CV6005	Lead Time for Longest Lead Procurement Item	CON	
CV6006	Prepare & Submit Shop Drawings	CON	
CV6007	Complete Construction Submittals	CON	
CV6011	Roughing Work Start	CON	
CV6012	Perform Roughing Work	CON	
CV6010	Contract Work (50%+) Complete	CON	
CV6013	Longest Lead Procurement Item Delivered	CON	
CV6020	Contract Work (75%) Complete	CON	

NOTE:
Refer to section "IV Project Schedule" of the Scope of Work for contract phase durations.

Bureau of Design & Construction Services

EXHIBIT 'A'

Activity ID	Description	Rspn	Weeks
CV6014	Roughing Work Complete	CON	
CV6021	Interior Finishes Start	CON	
CV6022	Install Interior Finishes	CON	
CV6030	Contract Work to Substantial Completion	CON	
CV6031	Substantial Completion Declared	CM	
CV6075	Complete Deferred Punch List/Seasonal Activities	CON	
CV6079	Project Construction Complete	CM	
CV6080	Close Out Construction Contracts	CM	
CV6089	Construction Contracts Complete	CM	
CV6090	Close Out A/E Contract	CM	
CV6092	Project Completion Declared	CM	

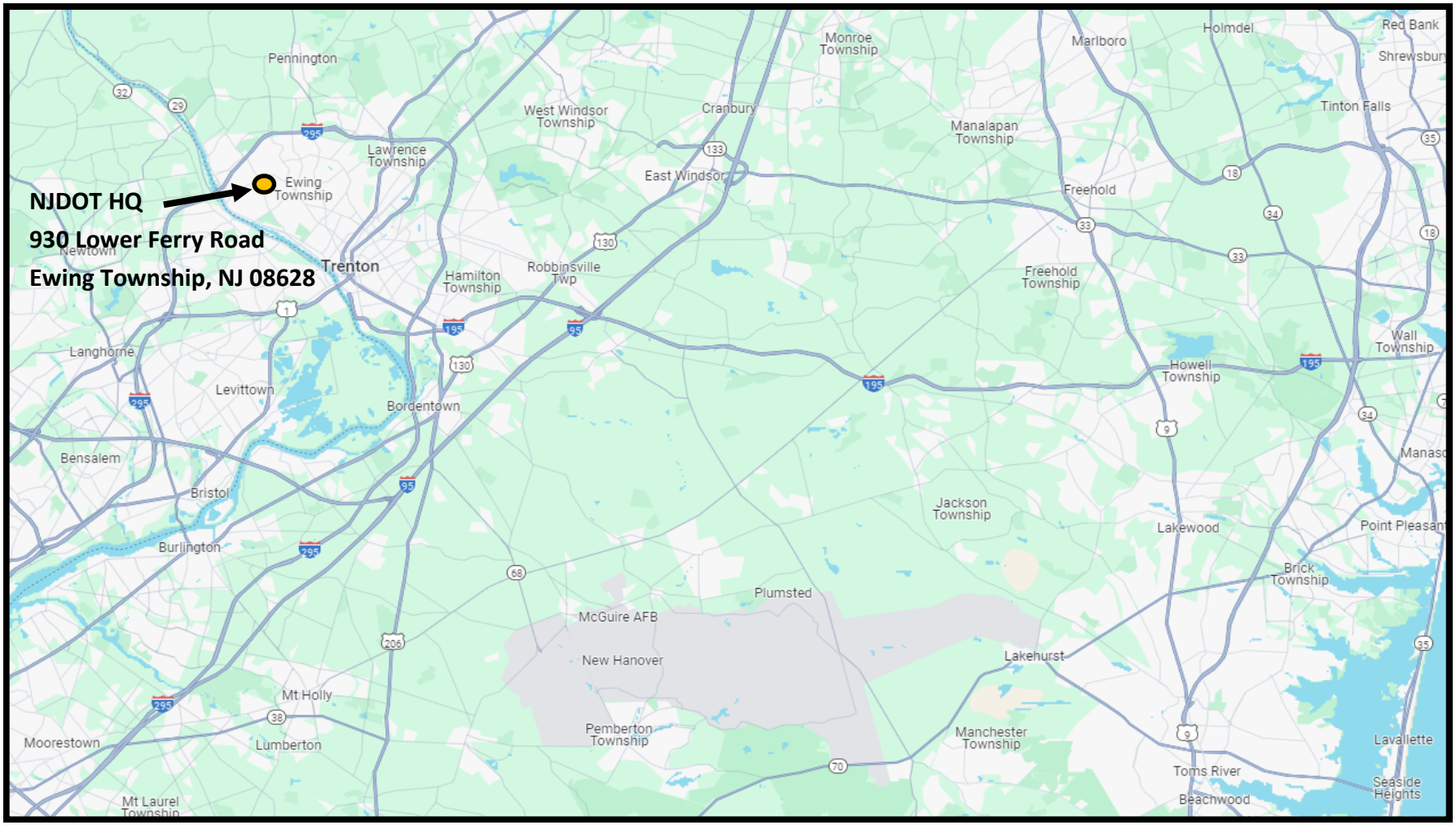
NOTE:
Refer to section "IV Project Schedule" of the Scope of Work for contract phase durations.

DBCA - TEST

Sheet 3 of 3

Bureau of Design & Construction Services

EXHIBIT 'A'



Project Site Location Map

NJDOT Headquarters

EXHIBIT ‘B’

Project Site

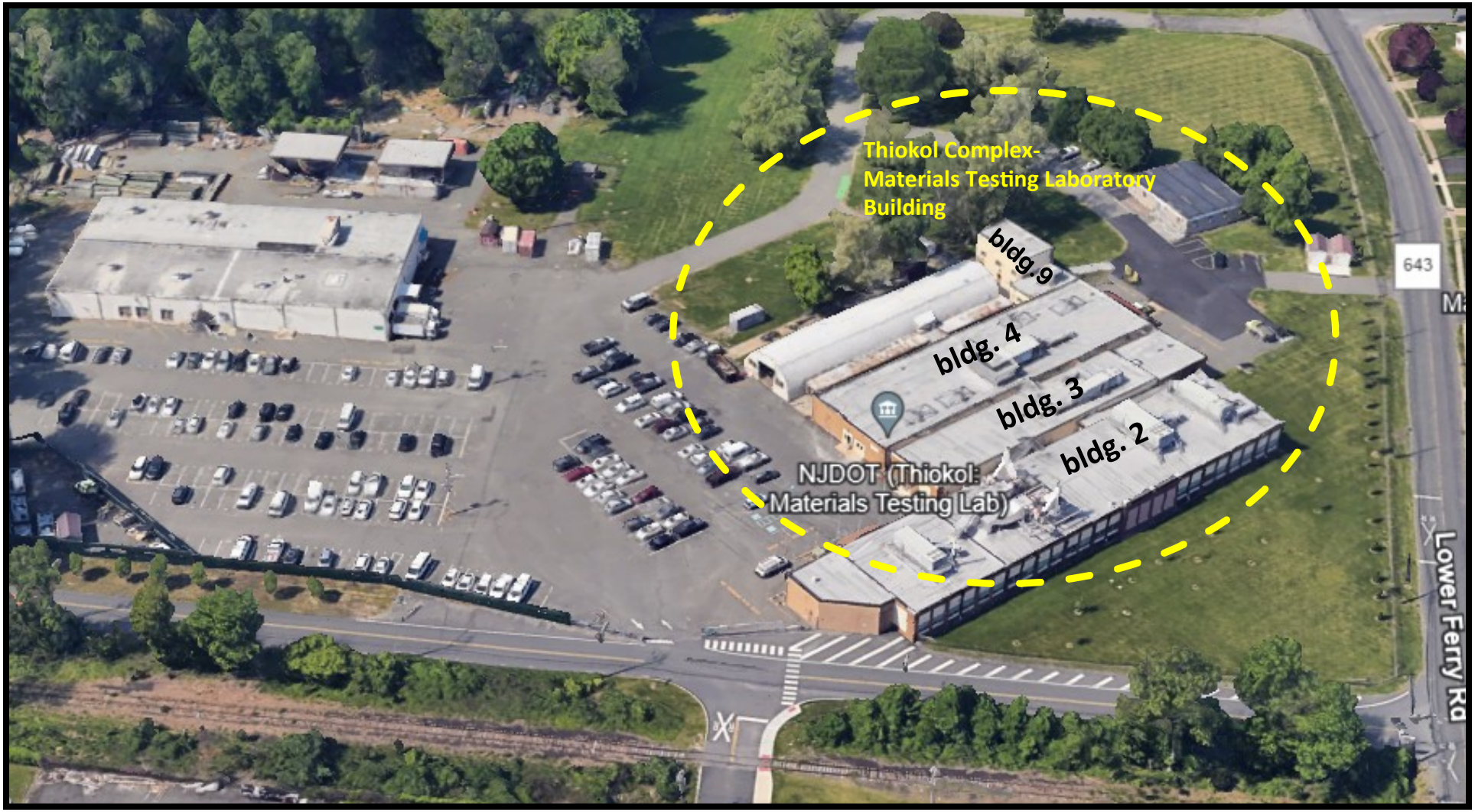
NJDOT Headquarters

EXHIBIT 'B'

Project Site

Thiokol Complex - New Materials Testing Laboratory

EXHIBIT 'B'



Project Site

Thiokol Complex

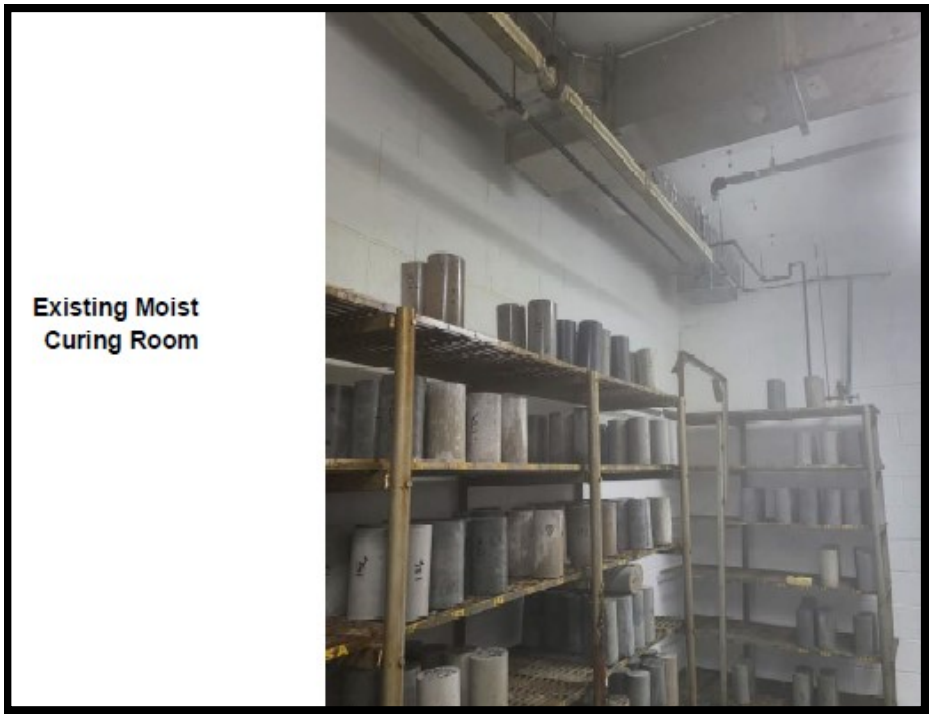
EXHIBIT 'B'

Project Site

New Location - Materials Testing Laboratory

EXHIBIT 'B'

Climate Controlled Space

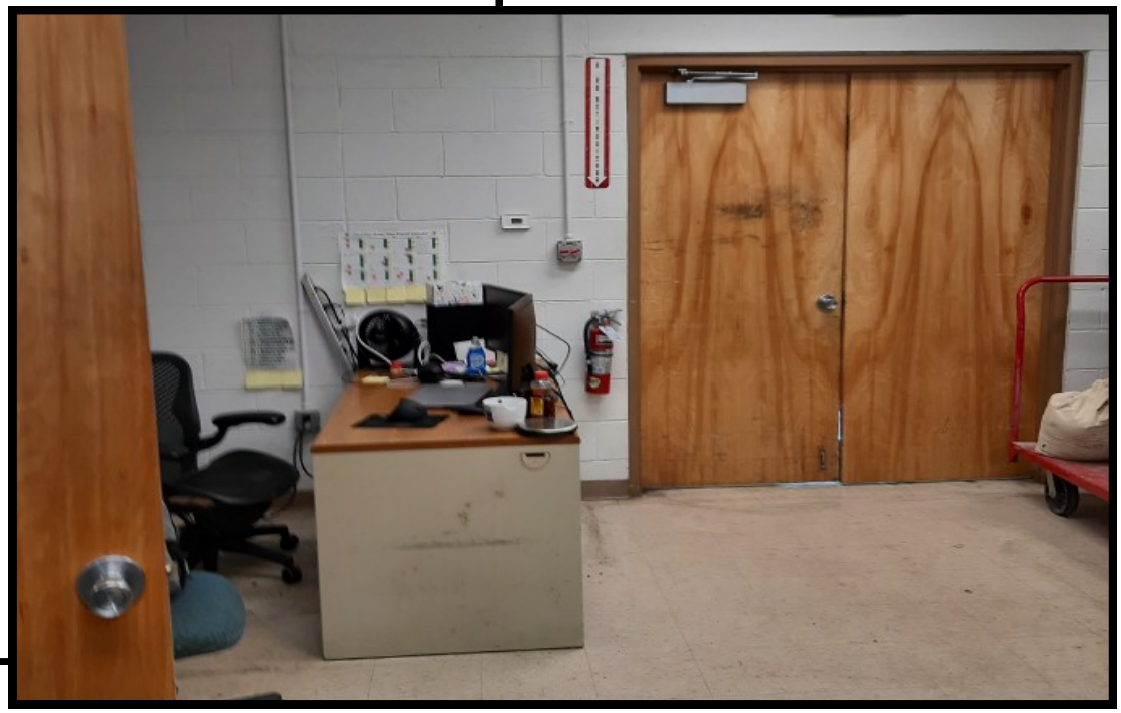


Testing Equipment Exhaust

Photos

Thiokol Complex - Materials Testing Laboratory

EXHIBIT 'C'



Laboratory Space Desk Area

Photos

Thiokol Complex - Materials Testing Laboratory

EXHIBIT ‘C’

PRELIMINARY FEASIBILITY STUDY
NEW MATERIALS TESTING LABORATORY BUILDING
NJDOT HEADQUARTERS COMPLEX
NJ DEPARTMENT OF TRANSPORTATION
EWING, MERCER COUNTY, NEW JERSEY

RONALD A. SEBRING ASSOCIATES, LLC, ARCHITECTURE AND DESIGN
1000 WASHINGTON STREET, SUITE 201, TOMS RIVER, NJ 08753 (732) 701-9444 FAX 701-9919
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Prepared December 16, 2023, by

David A. Clark, R.A.
Principal Architect

EXHIBIT 'D'

TABLE OF CONTENTS

EXECUTIVE SUMMARY

- The NJDOT wishes to construct a new approximate 80,000 square foot two-story Materials Storage Testing Laboratory Building to Replace the existing occupied building.
- The Program estimates 50,000 square feet to be allocated to the First Floor, 30,000 square feet to the Second Floor and a partial 10,000 square foot basement.
- The new building is to be located within the NJDOT Headquarters Complex in Ewing Township, New Jersey.
- The new building may be constructed at a separate location from the existing building, or at the same location if the existing building is demolished prior. The latter alternative will require temporary relocation of the occupants and essential operations for the duration of demolition and construction.
- Maintaining continuous operation of the Materials Testing Laboratory operations is essential.
- The Materials Testing Laboratory provides in-house testing of construction materials including asphalt, cement, concrete, steel, aggregates, soil, and various liquids.
- All laboratories and the offices of the Independent Assurance Group (IAG) must be located on the first floor (grade level) of the building. Staff toilet rooms shall also be provided on the first floor level.
- The new building must be designed in compliance with the applicable NJ Barrier-Free Subcode and the Americans with Disabilities Act Accessibility Guidelines.
- The existing quad-wide modular office building located on the site to the west of the existing building complex may be removed/demolished.
- Parking must be provided for all staff.
- The actual occupant load for the building will be approximately 100 to 125 occupants, with approximately 50% laboratory staff and the remainder administrative and supervisory personnel.
- It is intended that the majority of the existing equipment is to be relocated and reutilized in the new building. The Design Professional will be required to document and provide a full inventory of existing and new equipment and furnishings as part of the design.
- Each laboratory has its own environmental requirements which must be addressed in the design. A temperature of 72 degrees F and 50% relative humidity is required to be maintained in all labs and throughout the building.
- The total estimated construction cost to demolish the existing building and construct a new Materials Testing Laboratory building, including sitework, is approximately $44,356,909.
- When soft costs, including design fees and DPMC fees, are added, the total Working Estimate is approximately $59,537,348.

INTRODUCTION

The New Jersey Department of Transportation (NJDOT) wishes to construct a new approximate 80,000 square foot two-story Materials Testing Laboratory Building within their Headquarters Complex in Ewing Township, New Jersey. The building is utilized to perform testing of various construction materials including asphalt, cement, concrete, aggregates, soil, salt, and steel. The new building will replace the existing occupied building. The existing building is no longer adequate spatially to perform the required functions and the building systems are outdated, inadequate, and not energy-efficient. In addition to the 80,820 square foot areas on the first and second floors, a partial basement is desired to house mechanical and electrical space. For the purposes of this Study a basement of 10,000 square feet in area is assumed.

The new building may be constructed at a separate location from the existing building, or at the same location if the existing building is demolished prior. The latter alternative will require temporary relocation of the occupants and essential operations for the duration of demolition and construction. Maintaining continuous operation of the Materials Testing Laboratory operations is essential.

The NJDOT and the representatives of the Materials Testing Laboratory met with David A. Clark, R.A. of Ronald A. Sebring Associates, LLC on September 27, 2023 and provided design programming data consisting of a listing of all required spaces along with approximate required areas of each. On that same day, a walkthrough of the existing Facility was conducted to review the existing operations and individual laboratory functions, spatial, and equipment layout requirements. Attendees included Jitendra Patel of NJDOT Division of Support Services, Rajesh Kabaria and La Zhao of NJDOT Bureau of Materials, Mark Gillace and Ryan Rathbin of NJDOT Materials Testing, and David A. Clark, R.A. of Ronald A. Sebring Associates, LLC.

On November 20, 2023 a review meeting was held at the NJDOT headquarters and the draft version of this Study was reviewed. As a result of this meeting and subsequent comments, the program areas were increased to provide for two (2) future laboratory spaces on the First Floor, and a common receiving area totaling 6,500 square feet, and an additional 5,000 square feet of storage space added to the Second Floor. Also added was a request that all labs include the same fixtures, services (compressed air and vacuum, dust control, etc.), ventilation, and environmental control capacity, as required to allow the use of each lab to be changed to another in the future, if desired by NJDOT.

BACKGROUND AND CURRENT CONDITION

The current Department of Transportation Materials Storage Building consists of a grouping of four (4) interconnected masonry and steel framed single-story buildings and one metal framed single-story Quonset hut.

A physical conditions assessment of the existing buildings was not conducted as part of this study. Based on our experience with the building and general observations, the building envelope is not energy-efficient, and in some areas, is allowing moisture intrusion. HVAC systems are inadequate to provide the continuous controlled interior environmental conditions and ventilation required for the laboratories. The compressed air system is not functioning, and air tanks are stored within the laboratories that require compressed air for testing. There is no full building water filtration system. The existing building layout does not provide for efficient maneuvering and transportation of materials from the loading/unloading dock to and from the laboratories. The buildings lack central file storage and file cabinets are positioned throughout hallways, common areas, and offices.

Photographs of existing conditions within the building are presented in Appendix “B”.

EXHIBIT 'D'

BUILDING PROGRAM

Program Required Spaces

The essential Building Program spaces and functions that must be located on the First Floor of the new building, provided by the NJDOT Bureau of Materials, are included in a spreadsheet titled "Bureau of Materials – Current and Proposed – First Floor". The spreadsheet accounts for the required areas of each required space but does not consider circulation space or infrastructure space for IT and Data closets, mechanical spaces, reception, and toilet facilities. The total estimated area of just the essential spaces is 30,000 square feet. During subsequent meetings and walkthrough it was determined that additional spaces were to be added to the First Floor Program, including a Preparation Room, Loading/Unloading Area, and a Common Batching Area, and two (2) Future Laboratories, which add 9,000 square feet to the base areas for the First Floor. To account for circulation and infrastructure spaces, a minimum of 20% should be added to the base required area. Adding approximately 800 square feet to provide toilet rooms brings the total minimum area of the First Floor of the Materials Testing Laboratory Building to 50,760 square feet. This represents a square footprint area of approximately 225'-0" x 225'-0".

The Second Floor will primarily contain engineer and administration offices, break room, storage, and conference and training space as well as additional toilet facilities totaling approximately 25,000 square feet. Accounting for circulation and mechanical space, the second floor area is anticipated to be approximately 30,060 square feet.

The provision of a basement was mentioned as desired and should be considered to provide mechanical space and electrical service space. For the purposes of this Study, we are assuming a basement area occupying approximately 25 percent of the First Floor area, or 10,000 S.F. This will provide adequate space for mechanical equipment and electrical switchgear and distribution. Proper waterproofing and foundation drainage must be considered in the design of the foundation and site. Windowless stories are required to be provided with an automatic fire suppression (sprinkler) system.

The relationships between associated laboratory spaces and between the laboratory spaces and loading areas and common batching and preparation rooms will be important considerations in the design of the building's interior layout and is considered and provided within this Study.

The total actual occupant load of the building is anticipated to be 100 to 125 occupants. Approximately 50 occupants will be operating within the laboratories and the remainder will be administrative and supervisory staff. Occupying of the Future Laboratories will increase the anticipated occupant load to 65.

In addition to the program spaces that must be included within the building, outdoor storage space is also required. Three (3) covered material storage bins for aggregates are to be located along the outside of the building near the Loading / Unloading Area. The canopy shall be designed to protect the aggregates from weather but also to allow for depositing of the materials by dump truck. Covered space must also be provided for the storage of hazardous materials that are the by-product of testing. The materials are typically stored in metal drums and within secure fencing. Space along the exterior of the building must also be provided for secure storage of gas tanks.

The NJDOT provided "Bureau of Materials – Current and Proposed – First Floor" spreadsheet and the Building Program breakdown based on the data provided at the Pre-Study Meeting are presented on the following pages:

Bureau of Materials - Current and Proposed - First Floor

Laboratories	Current Lab area including Storage (SqFt)	Estimated Lab Area Requirement (SqFt)			No. of Employee working in Lab		Area Required for Office (SqFt)	TOTAL AREA	Specific requirement for lab
		Lab Area	Storage	Total	Current	Maximum			
1	2	3	4	5	6	7	8	(5 + 8)	
Density lab	5500	2000	400	2400	5	6	600	3000	Near Loading and Disposal area Saw cutting
Liquids Lab		2000	400	2400	5	6	600	3000	
Pavement Analysis		1500	400	1900	2	2	200	2100	
Research Lab)		2000	400	2400	4	7	700	3100	2-labs, Curing, Saw cutting
Aggregate Lab	2200	3000	400	3400	4	6	600	4000	2-Labs; Need 500 sqft separate rm reserch purpose
Cement Lab	1800	3000	400	3400	3	4	400	3800	
Chemical Lab	3400	4000	400	4400	7	8	800	5200	4-Separate labs (Physical, Chemical, Admixure & Paint) Storage for Gas cylinders, Curing, Distil water
Concrete Lab	2200	2200	400	2600	5	5	500	3100	Moist-Cure Room Near Loading and Disposal area, ceiling height, Saw cutting
Steel Lab	600	1000	300	1300	2	3	300	1600	Ceiling height
IAG	600	0	500	500	6	6	600	1100	No lab.
Total	**15700**	**20700**	**3500**	**24700**	**37**	**47**	**5300**	**30000**	**safety (eye wash, shower, chemical storage) Fume Hood, Gas-Dry Air-Vaccume, Dust collection. Humidity, Tempreture, hood, ovens Disposal facility (Concrete Cylinder/HMA Core/Aggregate etc.., Paints, Admixures, Asphalt, Epox…..Steel)**
Additional add during walk through									
Preparation Rm	1000	1000	0	1000	0	0	0	1000	for Asphalt lab, Welding, Wet Sawcutting, Sample Preparation
Loading/Unloading	1000	1000	0	1000	0	0	0	1000	
Common Batch area	1000	1000	0	1000	0	0	0	1000	for ACI , aggregate lab, Cement lab, Separate Drain

Note: This initial Program has been revised as part of this Study. Refer to Appendix "C" for current Building Program.

EXHIBIT 'D'

Specific Program Requirements per Space

During the Programming Meeting and walkthrough of the existing Material Testing Laboratory Building, additional requirements specific to each Program Space were identified. The following is a list of requirements and elements that will be necessary to include for each Program Space:

DENSITY LAB

The Density Laboratory is utilized for the testing of asphalt samples. Equipment includes a large oven for the preparation of samples, and a large ventilation hood. A saw-cutting area is required within this space. The space requires significant ventilation due to the extent of odors produced by the testing and cutting operations. Dust collection is also required specifically in the dried sample area.

The Density Lab requires a laboratory area of approximately 2,000 square feet, office space of 600 square feet, and storage area of 400 square feet.

The Density Lab should be adjacent and connected to the Loading and Unloading Area and the Batching Area and also the Pavement Analysis, Liquids, and Research Laboratories.

PAVEMENT ANALYSIS LAB

The Pavement Analysis Laboratory is utilized for the testing of asphalt samples. Equipment includes a large oven for the preparation of samples that are heated to remove asphalt, and a large ventilation hood utilized for equipment cleaning. The space requires significant ventilation due to the extent of odors produced by the testing operations. The space will contain table mounted sieve shakers. Dust collection is also required specifically in the dried sample area.

The Pavement Analysis Lab requires a laboratory area of approximately 1,500 square feet, office space of 200 square feet, and storage area of 400 square feet.

The Pavement Analysis Lab should be adjacent and connected to the Density, Liquids, and Research Laboratories.

LIQUIDS LAB

The Liquids Laboratory is utilized for the testing of asphalt liquid samples. In addition to the testing equipment, multiple fume hoods and independent regulated compressed air is required. The space will require ample counter space and a minimum of two sinks. The space requires significant ventilation due to the extent of odors produced by the testing operations.

The Liquids Lab requires a laboratory area of approximately 2,000 square feet, office space of 600 square feet, and storage area of 400 square feet.

The Liquids Lab should be adjacent and connected to the Density, Pavement Analysis, and Research Laboratories.

RESEARCH LAB

The Research Laboratory is utilized for the development of test methods and procedures. The operations include saw-cutting, grinding and welding, and construction of crates, which should be performed in a separate space. The new building will include a Batching Area that will contain space for these functions and the Research Lab will need to be located adjacent to the Batching Area. Maintaining these loud and dust producing operations in a separate room from the Research Lab is desired, however, a saw-cutting area is also

required within this space. The Research Lab should be separated into two separate laboratory spaces with the storage and office areas located between.

The Research Lab requires two laboratory areas of approximately 1,000 square feet each, office space of 700 square feet, and storage area of 400 square feet.

The Research Lab should be new to the Batching Area and adjacent and connected to the Density, Pavement Analysis, and Liquids Laboratories.

CEMENT LAB

The Cement Laboratory is utilized for the testing of portland cement, grout, patching materials, and pozzolan samples. Equipment includes a prism breaking machine. Fume hoods are required. The space requires dust collection and specific humidity and temperature control to maintain conditions of 73 degrees F temperature and 50% relative humidity.

The Cement Lab requires a laboratory area of approximately 3,000 square feet, office space of 400 square feet, and storage area of 400 square feet.

The Cement Lab should be near to the Batching Area.

CONCRETE LAB

The Concrete Laboratory is utilized for the testing of concrete materials and samples. The space requires dust collection and specific humidity and temperature control to maintain conditions of 74 degrees F temperature and 50% relative humidity. A separate curing room is required that is subject to very high humidity and must be maintained at specific temperature and relative humidity requirements. The design of the curing room should carefully consider the materials utilized in the enclosure including the walls, ceilings, doors, frames and hardware, and the storage racks for sample storage since the near 100% humidity results in excessive condensation. The Laboratory will require staging space.

The Concrete Lab requires a laboratory area of approximately 2,200 square feet, office space of 500 square feet, and storage area of 400 square feet. The ceiling within the Concrete Lab shall be 14’-0” in height.

The Concrete Lab should be adjacent and connected to the Loading and Unloading Area and the Batching and Preparation Areas.

AGGREGATE LAB

The Aggregate Laboratory is utilized for the testing of various aggregates. The operations include heating and drying, separation of large from smaller aggregates utilizing sieve shakers. The sieve shakers within this laboratory are large and produce excessive noise and vibration. The shakers should be mounted on housekeeping pads with vibration isolation. Each shaker will require independent dust collection. The Aggregate Lab should be separated into two separate laboratory spaces, one for coarse aggregates and one for fine aggregates, with the storage and office areas located between. The fine aggregate laboratory area will require ample counter space. A separate room should be provided for research purposes.

The Aggregate Lab requires two laboratory areas of approximately 1,250 square feet each, a research room of 500 square feet, office space of 600 square feet, and storage area of 400 square feet.

CHEMICAL LAB

The Chemical Laboratory is utilized for the testing of various chemicals including soils, cement, concrete, admixtures, paints and coatings, and various other construction related chemicals. The Chemical Lab must be separated into four (4) separate and independent with all spaces receiving compressed air and vacuum connections along the counters at each work station.

The independent laboratory areas are as follows:

- Physical Laboratory
- Chemical Laboratory
- Admixtures Laboratory
- Paint Laboratory

The chemical and Paint Laboratories will each require two (2) fume hoods. One (1) additional fume hood shall be provided for use as a standby.

Distilled water must be provided as well as a secure area for storage of gas cylinders.

The Chemical Lab requires four (4) laboratory areas of approximately 1,000 square feet each, office space of 800 square feet, and storage area of 400 square feet.

STEEL LAB

The Steel Laboratory is utilized for the testing of strength of steel members and reinforcing. The main equipment includes one (1) large and one (1) smaller tension compression test machine, each with hydraulic cabinet and dedicated computer. The large machine requires a minimum 14’-0” ceiling height. The machines test reinforcing bars to the point of breaking, which is very loud. Personnel retreat to the office when the machine is utilized to break large reinforcing bars. All walls surrounding the space should be masonry and the ceiling materials should be chosen to resist impact and to provide sound transmission resistance.

The Steel Lab requires a testing area of 1,000 square feet, office space of 300 square feet, and storage area of 300 square feet.

The Steel Lab should be adjacent or near to the Loading, Preparation, and Batching Areas.

INDEPENDENT ASSURANCE GROUP OFFICES

The Independent Assurance Group (IAG) monitors compliance with testing requirements and regulations and their offices must be located on the first Floor along withal of the Laboratories.

The IAG offices will require 1,100 square feet in total. 600 square feet is to be dedicated to office space and 500 square feet for file storage.

FILE STORAGE

The Materials testing Laboratory is required to maintain current files and archives and a great deal of space is required for file storage. High-Density file storage systems should be considered in the design to conserve floor space and to allow for future file storage needs. The Design Professional will need to obtain data from the Facility and determine the actual space required for file storage. The Building Program includes 10,000 square feet of storage to be provided on the Second Floor. The basement will not contain storage areas.

PLUMBING FACILITIES

Based on the size and use of the building, it is recommended that toilet rooms be provided on both floors of the building. Each of the Men's toilet rooms may contain at a minimum, two (2) water closets, one (1) urinal, and the Women's toilet rooms three (3) water closets and three (3) lavatories. Additional fixtures are desired and the 800 square feet allotted to each floor is adequate to support additional fixtures. An accessible drinking fountain and/or bottle filling station and a Janitors closet with a service sink should be provided on each floor.

BATCHING AREA

The Batching Area will need to be approximately 1,000 square feet in area and will be utilized for concrete batching, ACI preparation, and for an LA abrasion machine. The abrasion machine is utilized to measure the degradation of mineral aggregate using a rotating drum and several steel balls. The machine is very loud when in operation and sound transmission resistance of the enclosing construction will be necessary. The space must also contain a saw-cutting area to support the physical labs (cement and concrete).

The space will need to contain storage cabinets, large floor drains, and a separate washout drain for concrete.

PREPARATION AREA

The Preparation Area will be utilized for welding, grinding, and for the making of molds. This space will also be utilized for the making of crates.

The space will need to be approximately 1,000 square feet in area.

LOADING AND UNLOADING AREA

The Loading / Unloading area shall be designed to accommodate delivery of materials by truck at grade level for intake. For debris removal a raised dock platform shall be provided through the provision of lowered grade level. The design of the Loading / Unloading Area and the routes to all laboratories through the building shall consider maneuverability for movement of materials on pallet jacks. Restaurant style two-way swing doors shall be utilized where practical and where fire-resistance rating is not required.

COMMON RECEIVING AREA

A separate Common Receiving Area of approximately 500 square feet is required to receive samples. The Common Receiving Area will need to be located adjacent to the Loading and Unloading Area.

EXTERIOR MATERIAL STORAGE BINS

Three (3) covered material storage bins for aggregates are to be located along the outside of the building near the Loading / Unloading Area. The canopy shall be designed to protect the aggregates from weather but also to allow for depositing of the materials by dump truck.

EXTERIOR HAZARDOUS MATERIALS STORAGE AREA

Covered space must be provided for the storage of hazardous materials that are the by-product of testing. The materials are typically stored in metal drums and within secure fencing. Space along the exterior of the building must also be provided for secure storage of gas tanks.

FIRST AND SECOND FLOOR PROGRAM AREAS TABLES

Tables indicating the program space areas, approximate dimensions, occupancy, specific program requirements, and relationships to other program spaces, are presented in Appendix "C".

BUILDING CODE AND REGULATORY APPROVALS

Building Code Criteria

The following analysis is based on the currently adopted building codes. It is anticipated that the codes will be updated by the State of New Jersey in 2026. Designs that are submitted for Final Design Plan Review prior to the adoption of the new codes, or within the typical 6-month grace period, will be permitted to be designed under the currently adopted codes.

The design consultant will need to determine the most appropriate construction classification (also referenced as construction type) for the building based on the type of construction, proximity to property lines and adjacent buildings, and whether it is cost-effective to utilize compartmentalized fire-rated construction vs. providing automatic fire suppression (sprinkler) systems throughout the building. The type of construction will determine the level of fire-resistance rated construction elements that will need to be incorporated into the construction.

The building will primarily accommodate office and laboratory uses that are both included in the same B-Business Use Group. Other uses contained within the building will include Storage and Assembly. Based on the Building Program, the Storage area and the Assembly areas will each likely exceed the maximum 10 percent of floor area which would allow them to be considered accessory occupancies. These occupancy areas will either need to be separated from the main use with fire-resistance rated construction in accordance with the Code, or the entire building would need to comply with the height and area limitations of the Building Code for the most restrictive Use. If the areas are separated with fire-resistance rated construction, then a tabulation based on the ratios between the occupancies is applied to determine the height and area limits. It should be noted that no fire separation is required between the S-1 and B uses per Table 508.4 of the International Building Code (IBC).

USE GROUPS AND AREAS

B Business Use Areas Total* =	64,820 S.F.
A-3 Assembly Use Areas Total =	6,000 S.F.
S-1 Storage Moderate Hazard Areas Total =	10,000 S.F.

*Includes accessory mechanical and circulation areas.

CONSTRUCTION CLASSIFICATION (CONSTRUCTION TYPE)

Based on Table 504.3 of the IBC, the maximum allowable building height for even the least restrictive construction type (VB) is 40’-0”, however, the S-1 maximum allowable stories is one (1) if an automatic fire suppression (sprinkler) system is not provided. VB construction type will not be able to be utilized as the floor area will exceed the limitations of Table 506.2 of the IBC.

Based on review of the applicable Tables for height and area limitations, the least restrictive allowable Construction Type for the Building is Type IIB. This can be achieved if the Assembly uses (Training and Conference Rooms) are located on the second floor and are separated from the remainder with 1-hour fire-resistance rated construction. This is considered separated mixed-use under the IBC. If the separation is not provided, then the arrangement would be considered non-separated mixed use and the Construction Type would need to be upgraded to IIA to comply with the area limitations. The difference between IIA and IIB construction is that IIA construction requires 1-hour fire-resistance rated assemblies for the primary structural frame, interior and exterior bearing walls, and floor and roof construction throughout the building.

Mechanical and electrical rooms will need to be separated and/or provided with automatic fire suppression (sprinkler) systems based on thresholds of Btu per hour and volts/amps respectively.

ACCESSIBILITY REQUIREMENTS

The building will exceed 10,000 square feet and therefore will require an elevator to satisfy the requirements of the new Jersey Barrier-Free Subcode.

The building will be new construction and the entire building including the site accessible route will need to comply with the requirements of the New Jersey Barrier-Free Subcode, ICC/ANSI A117.1 and the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

PLUMBING FIXTURE COUNT

The total quantity of plumbing fixtures required to be provided within the Building is to be tabulated in accordance with the National Standard Plumbing Code. Based on the Building Program data provided by the Client Agency, the actual occupant load for the building is 125 occupants. The Training and Conference Rooms may accommodate additional personnel, and this should be considered by the Design Professional and verified with the Client Agency when determining the required plumbing fixtures for the Building.

Based on the 125 occupants and the population being equally divided between men and women (63 each), the following are the minimum requirements for plumbing fixtures:

For Business uses the following are the minimum requirements for plumbing fixtures:

Male

(3) Water Closets [1 of which may be a urinal]
(2) Lavatories

Female

(3) Water Closets
(3) Lavatories

Two (2) drinking water facilities will need to be provided and one (1) service sink provided per floor.

For Assembly uses the following are the minimum requirements for plumbing fixtures:

Male

(2) Water Closets [1 of which may be a urinal]
(2) Lavatories

Female

(2) Water Closets
(2) Lavatories

One (1) drinking water facility will need to be provided and one (1) service sink provided per floor.

A separate enclosed Lactation Room should be provided within the building. The room should contain counter space, a sink, and space for a reclining chair. The room should be enclosed within sound transmission resistant construction.

ENERGY CODE

The building design must be in accordance with the ASHRAE 90.1 standard in effect at the time the design is submitted for Final Design Plan Review. The current adopted version is 2019.

SPECIAL INSPECTIONS

The building falls into the parameters of a Class I Building per the New Jersey Uniform Construction Code which requires that Special Inspections be conducted by approved and certified third-party inspectors during construction. Limiting the first (largest) floor building area to less than 37,500 square feet will place the building into Class II which does not require special inspections and would save on construction costs. For purposes of this Study, the building is considered Class I as the Program requires over 50,000 square feet of area on the First Floor.

Regulatory Agency Requirements (Prior Approvals)

D&R CANAL COMMISSION

The site is located within the D&R Canal Commission's Zone B, which requires review and approval for any Major Project. This would be any project that disturbs 1 acre of land or there will be 1/4 acre or more of impervious surface (This requirement is cumulative for all impervious surface since 1980 on a given site). The areas of the building footprint alone will approach 1-acre and the demolition of the existing building and provision of parking will likely result in a disturbance of 5-acres +/-. therefore, review and approval of the D&R Canal Commission will be required as a Major Project.

The Commission reviews for visual, stormwater, stream corridor, and traffic impact and reviews groundwater recharge, runoff quantity, water quality calculations prepared and submitted by the Civil Engineer for the Project. The estimated fees based on the current fee schedule totals $8,000.

Ample time should be considered in the Project Schedule for stormwater management design and engineering and for the review and approval of the D&R canal Commission.

MERCER COUNTY SOIL CONSERVATION DISTRICT

The area of disturbance will exceed 5,000 square feet and a Soil Erosion and Sediment Control Permit will be required. The final site design will need to be reviewed and approved by the Mercer County Soil Conservation District. The estimated fee, based on the current fee schedule, totals $2,375.

LOCAL ZONING (EWING TOWSHIP) N/A

The property is owned and operated by the State of New Jersey and local zoning ordinances do not apply. For projects of this scale, a courtesy submission to the local authority is customary, but is not required.

ENVIRONMENTAL REQUIREMENTS

Interior Environment

Each laboratory has its own environmental requirements that must be addressed in the design. Specific individual space temperature and humidity requirements and controls shall be defined during the building programming as part of the Design Professional's programming. A temperature of 72 degrees F and 50% relative humidity is required to be maintained in all labs and throughout the building. The curing room at the Concrete Lab requires near 100% humidity.

RECOMMENDATIONS

Construction Type and Code Related Features

The building may be constructed as Type IIB provided that it is protected throughout with an automatic fire suppression (sprinkler) system, the assembly uses are located on the second floor, which is of smaller area, and the assembly areas are separated from the remainder of the building with 1-hour fire-resistance rated construction. If the building is placed in close proximity to property lines or other buildings on the site, exterior wall fire resistance rating and opening limitations may apply. Type IIB construction is economical as there are no requirements for fire-resistance rated construction above what is described above.

Plumbing Fixtures and Toilet Rooms

One set of Men's and Women's toilet rooms may be provided to satisfy the plumbing fixture requirements of the Code. Based on the size and use of the building, it is recommended that toilet rooms be provided on both floors of the building. The Men's toilet rooms should contain, at a minimum, two (2) water closets, one (1) urinal, and the Women's toilet rooms should contain three (3) water closets and three (3) lavatories. An accessible drinking fountain and/or bottle filling station and a Janitors closet with one (1) service sink should be provided on each floor.

Phasing

The design consultant will need to coordinate with the NJDOT to address construction phasing. All phasing requirements should be included in Division One of the Project Specifications.

PHASING OPTION ONE:

Phasing Option One applies if the new building will be constructed at a different location than the existing building.

- Construct new building.
- Relocate equipment from existing building into new building.
- Relocate personnel from existing building into new.
- Demolish existing building and construct new parking area.

PHASING OPTION TWO:

Phasing Option Two applies if the new building will be constructed at the same location as the existing.

- Vacate existing building relocating personnel to an alternate Facility.
- Salvage existing equipment from existing building and store in offsite Facility.
- Demolish existing building.
- Construct new building and parking area.
- Relocate equipment from storage into new building.
- Relocate personnel from temporary facility into new building.

Pre-Design Investigation

Based on previous projects undertaken at the Fernwood and Thiokol sites, where unfavorable soil conditions, debris, and even hazardous materials contamination were found to be present, it is highly recommended that a thorough geotechnical survey and engineering report be conducted throughout the areas proposed for the new building and related site improvements. The geotechnical data obtained from the investigation will also be valuable for use in stormwater management design.

A site-specific geotechnical report, prepared by a New Jersey licensed engineer, will be required by the Office of Plan and Code Review and DCA to obtain plan approval.

CONCEPTUAL SITE LOCATIONS

Site Locations

Three potential building locations were considered and are presented in Appendix "C" of this Study. The conceptual site layouts include the footprint of the first floor of the building and associated site improvements, including parking, loading, and circulation. Potential wetlands buffers and Code required clearances are considered in this design scheme, providing 300'-0" clearance to Gold Run stream.

SCHEME 1:

This scheme locates the new Materials Testing Laboratory Building in the vicinity of the existing building and to the west. The existing modular office building will need to be demolished. When the new building is constructed, equipment can be relocated from the existing building into the new and then personnel relocated. The existing building would then be razed and a new parking lot, accommodating up to 230 cars, constructed on the site.

SCHEME 2:

The scheme places the new Materials Testing Laboratory Building at the location of the existing parking lot to the east of the Geodetic Survey Building. The Geodetic Survey Building will need to be relocated (demolished and reconstructed) to accommodate the footprint of the new building. The existing modular office building may remain. Similar to Scheme One, when the new building is constructed, equipment can be relocated from the existing building into the new and then personnel relocated. The existing building would then be razed and a new parking lot, accommodating up to 167 cars, constructed on the site. The parking area will accommodate less vehicles than Scheme One due to the relocation of the Geodetic Survey Building.

SCHEME 3:

The scheme places the new Materials Testing Laboratory Building at the location of the former Foran Building which is in the process of demolition. This Scheme utilizes the area previously occupied by the Foran Building and its parking area and utilizes the area where Building No.18A was previously demolished to provide for a parking area adjacent to the new building. The existing parking lots located to the south and west would be utilized to serve the building occupants. Similar to Scheme One, when the new building is constructed, equipment can be relocated from the existing building into the new and then personnel relocated. The existing building would then be razed.

PRELIMINARY CONSTRUCTION COST ESTIMATE

Construction Cost Estimates

An order of magnitude per square foot construction cost estimate is presented in Appendix "A".

The total cost of the proposed Project is estimated to be approximately $44,119,941including sitework and the demolition of the existing building. When soft costs, including design fees and DPMC fees, are added, the total Working Estimate is approximately $59,219,336.

DESIGN AND CONSTRUCTION SCHEDULE

The following durations should be considered in preparation of a schedule for the Project and Scope of Work:

Project Alert - A/E Selection	150 Calendar Days
Schematic Design	60 Calendar Days
DPMC/NJDOT Review	14 Calendar Days
Design Development	60 Calendar Days
DPMC/NJDOT Review	14 Calendar Days
Final Design	60 Calendar Days
DRCC Review and Approval	76 Calendar Days*
DPMC/NJDOT Review	14 Calendar Days
Final Design2	7 Calendar Days
DPMC/NJDOT Review	14 Calendar Days
DCA Submission and Review	45 Calendar Days**
Permit-Bid Documents	7 Calendar Days
Bid and Award	70 Calendar Days
Construction	370 Calendar Days***
Close-out	30 Calendar Days
Total	973 Calendar Days

*D&R Canal Commission review and approval is a required prior approval that must be received prior to submission to the DCA for plan review. The actual review and approval duration is unknown and can range from 30 to 90 calendar days, or even greater. The review can occur concurrently with the initial Final Design review performed by the DPMC Office of Plan and Code Review. The time included in the above schedule reflects 90 calendar days less the 14 days included for DPMC/NJDOT Review.

** DCA submission and plan review will be required based on the inclusion of plumbing, mechanical, and elevator trades and the overall scale of the Project. The anticipated time-frame for this phase, based on recent experience, can vary between 30 and over 90 calendar days depending on the reviewers assigned to the Project and the ability of the A/E to provide submissions meeting the DCA's intake requirements for the E-File system.

*** Construction Duration is approximate and includes time for submittal review, mobilization, phasing, site and building construction, and punch list inspections. The actual duration will vary based on phasing, underground soil conditions, and lead-times for materials at time of bid.

RIGHT TO REVISIONS

The findings in this report are based upon information available to us at the time of our assessment review. We reserve the right to update, add, or delete any information contained herein once our review and analysis of any new information is complete.

APPENDIX “A”

CONSTRUCTION COST ESTIMATES

2 PAGES

EXHIBIT 'D'

CONSTRUCTION COST ESTIMATE - PRELIMINARY FEASIBILITY STUDY
NEW MATERIALS TESTING LABORATORY BUILDING
NJ DEPARTMENT OF TRANSPORTATION - TRENTON, MERCER COUNTY, NJ
12/16/2023

NEW FACILITIES

(1) New 80,000 +/- Square Foot Office / Laboratory Building w/ 10,000 Square Foot Partial Basement

BASIC BUILDING COST			
Steel frame with concrete masonry walls and exterior face brick or split faced block.			
Includes Contractor's overhead and profit. Based on R.S. Means Square Foot Building Costs 2023.			
Laboratory (50,160 Square Feet): $235.80 /S.F.	50,760 Square Feet at $235.80		**$11,969,208**
Office (30,060 Square Feet): $210.40 /S.F.	30,060 Square Feet at $210.40		**$6,324,624**
Basement (10,000 Square Feet) $58.90/S.F	10,000 Square Feet at $58.90		**$589,000**
Demolition of Existing Building Including Hazardous Materials	702,000 Cubic Feet at $2.68		**$1,881,360**
TOTAL	90,820 Square Feet	TOTAL:	**$20,764,192**

ADDITIVES		
Items not included in "Basic Building Cost" requiring increase from the basic square foot construction cost.		
SECURITY CAMERAS	$1,275 /Each (12)	$10,200
LABORATORY - METAL CABINETS	$552 /L.F. (2500)	$1,380,000
LABORATORY - COUNTERTOPS	$300 /L.F. (2800)	$840,000
SPRINKLER SYSTEM	$5.25/S.F. (95000)	$498,750
FURNITURE / OFFICE PARTITIONS / DOORS	$11.43 /S.F. (40000)	$457,200
SAFETY EQUIPMENT	$485 /Each (6)	$2,910
PARTIAL DEDUCTION FOR EXISTING LAB. EQUIPMENT	$-17.15 /S.F. (40,000)	($686,000)
TRANSFERRING OFFICE EQUIPMENT	(LUMP SUM)	$115,000
TRANSFERRING LABORATORY EQUIPMENT	(LUMP SUM)	$190,000
FUME HOOD w/ DUCTWORK	$11,400 /Each (2)	$22,800
LOADING DOCK w/ CANOPY & LEVELER	$16,675 /Each (2)	$33,350
SITEWORK AND SITE LIGHTING	$16.00/S.F. (158,000)	$2,528,000
ELEVATOR	$96,000 /Each (1)	$96,000
800 SQUARE FOOT MATERIAL STORAGE BIN	(LUMP SUM)	$84,000
WATER TREATMENT SYSTEM	$108,025 /L.S.	$108,025
HOUSEKEEPING PADS w/ VIBRATION ISOLATION	(LUMP SUM)	$8,500
SOUND RESISTANT CONSTRUCTION	(LUMP SUM)	$30,000
SUBTOTAL INCLUDING ALL ADDITIVE CONSTRUCTION FEATURES		**$26,482,927**

ADJUSTMENTS TO CONSTRUCTION COST	
LOCATION FACTOR (1.11 Based on Means Construction Cost Data)	$2,939,605
LABOR ADJUSTMENT (PLA) (Labor estimated 40% of CCE, Increase Factor 29.7% of Labor)	$3,495,397
CONTINGENCY (10%)	$3,291,793
HISTORIC COST INCREASE TO 2026 Mid-Construction (2.5 years = 22.5%)	$8,147,187
ADJUSTED TOTAL COST - NEW BUILDING AND SITE CONSTRUCTION	**$44,356,909**

SOFT COSTS	
DESIGN FEES (12% of Construction Cost)	$5,322,829
CM FEES (6% of Construction Cost)	$2,661,415
DPMC DESIGN CONTINGENCY (10% of Design Fee)	$532,283
DPMC CONSTRUCTION CONTINGENCY (5% of Construction Cost)	$2,217,845
DPMC MANAGEMENT FEE (8% of Construction Cost)	$3,548,553
AFFIRMATIVE ACTION (1/2% Construction Cost)	$221,785
DCA PERMIT FEES (1 1/2% Construction Cost)	$665,354
REGULATORY PERMIT FEES (D&R Canal Commission / Soil Erosion)	$10,375
TOTAL ALL COSTS - NEW BUILDING AND SITE CONSTRUCTION	**$59,537,347**

CONSTRUCTION/DEMOLITION COST PER SQUARE FOOT INCLUDING ADDITIVES	**$488.40**
BUILDING AREA SQUARE FOOT TOTAL (ALL FLOORS)	**90,820**
SOFT COSTS	**$14,515,084**
TOTAL COSTS	**$59,537,348**

CONSTRUCTION COST ESTIMATE - PRELIMINARY FEASIBILITY STUDY
NEW MATERIALS TESTING LABORATORY BUILDING
NJ DEPARTMENT OF TRANSPORTATION - TRENTON, MERCER COUNTY, NJ
12/16/2023

NEW FACILITIES (BUILDING CONSTRUCTION ONLY - NO SITEWORK OR DEMOLITION)

(1) New 80,000 +/- Square Foot Office / Laboratory Building w/ 10,000 Square Foot Partial Basement

BASIC BUILDING COST			
Steel frame with concrete masonry walls and exterior face brick or split faced block.			
Includes Contractor's overhead and profit. Based on R.S. Means Square Foot Building Costs 2023.			
Laboratory (50,760 Square Feet): $235.80 /S.F.	50,760 Square Feet at $235.80		**$11,969,208**
Office (30,060 Square Feet): $210.40 /S.F.	30,060 Square Feet at $210.40		**$6,324,624**
Basement (10,000 Square Feet) $58.90/S.F	10,000 Square Feet at $58.90		**$589,000**
TOTAL	90,820 Square Feet	TOTAL:	**$18,882,832**

ADDITIVES		
Items not included in "Basic Building Cost" requiring increase from the basic square foot construction cost.		
SECURITY CAMERAS	$1,275 /Each (12)	$10,200
LABORATORY - METAL CABINETS	$552 /L.F. (2500)	$1,380,000
LABORATORY - COUNTERTOPS	$300 /L.F. (2800)	$840,000
SPRINKLER SYSTEM	$5.25/S.F. (95000)	$498,750
FURNITURE / OFFICE PARTITIONS / DOORS	$11.43 /S.F. (40000)	$457,200
SAFETY EQUIPMENT	$485 /Each (6)	$2,910
PARTIAL DEDUCTION FOR EXISTING LAB. EQUIPMENT	$-17.15 /S.F. (40,000)	($686,000)
TRANSFERRING OFFICE EQUIPMENT	(LUMP SUM)	$115,000
TRANSFERRING LABORATORY EQUIPMENT	(LUMP SUM)	$190,000
FUME HOOD w/ DUCTWORK	$11,400 /Each (2)	$22,800
LOADING DOCK w/ CANOPY & LEVELER	$16,675 /Each (2)	$33,350
ELEVATOR	$96,000 /Each (1)	$96,000
800 SQUARE FOOT MATERIAL STORAGE BIN	(LUMP SUM)	$84,000
WATER TREATMENT SYSTEM	$108,025 /L.S.	$108,025
HOUSEKEEPING PADS w/ VIBRATION ISOLATION	(LUMP SUM)	$8,500
SOUND RESISTANT CONSTRUCTION	(LUMP SUM)	$30,000
SUBTOTAL INCLUDING ALL ADDITIVE CONSTRUCTION FEATURES		**$22,073,567**

ADJUSTMENTS TO CONSTRUCTION COST	
LOCATION FACTOR (1.11 Based on Means Construction Cost Data)	$2,450,166
LABOR ADJUSTMENT (PLA) (Labor estimated 40% of CCE, Increase Factor 29.7% of Labor)	$2,913,419
CONTINGENCY (10%)	$2,743,715
HISTORIC COST INCREASE TO 2026 Mid-Construction (2.5 years = 22.5%)	$6,790,695
ADJUSTED TOTAL COST - NEW BUILDING AND SITE CONSTRUCTION	**$36,971,563**

SOFT COSTS	
DESIGN FEES (12% of Construction Cost)	$4,436,588
CM FEES (6% of Construction Cost)	$2,218,294
DPMC DESIGN CONTINGENCY (10% of Design Fee)	$443,659
DPMC CONSTRUCTION CONTINGENCY (5% of Construction Cost)	$1,848,578
DPMC MANAGEMENT FEE (8% of Construction Cost)	$2,957,725
AFFIRMATIVE ACTION (1/2% Construction Cost)	$184,858
DCA PERMIT FEES (1 1/2% Construction Cost)	$554,573
REGULATORY PERMIT FEES (D&R Canal Commission / Soil Erosion)	$10,375
TOTAL ALL COSTS - NEW BUILDING AND SITE CONSTRUCTION	**$49,626,212**

CONSTRUCTION COST PER SQUARE FOOT INCLUDING ADDITIVES (NEW BUILDING ONLY)	**$407.09**
BUILDING AREA SQUARE FOOT TOTAL (ALL FLOORS)	**90,820**
SOFT COSTS	**$12,100,076**
TOTAL COSTS NEW BUILDING ONLY	**$49,626,213**

APPENDIX “B”

PHOTOGRAPHS

8 PAGES

Existing Exterior Material Storage Bins for Aggregates

Existing Loading and Unloading Area

EXHIBIT 'D'

**Existing Concrete Lab.
Compressive Strength Test
Equipment Shown**

**Existing Moist
Curing Room**

EXHIBIT 'D'

Existing Aggregates Lab

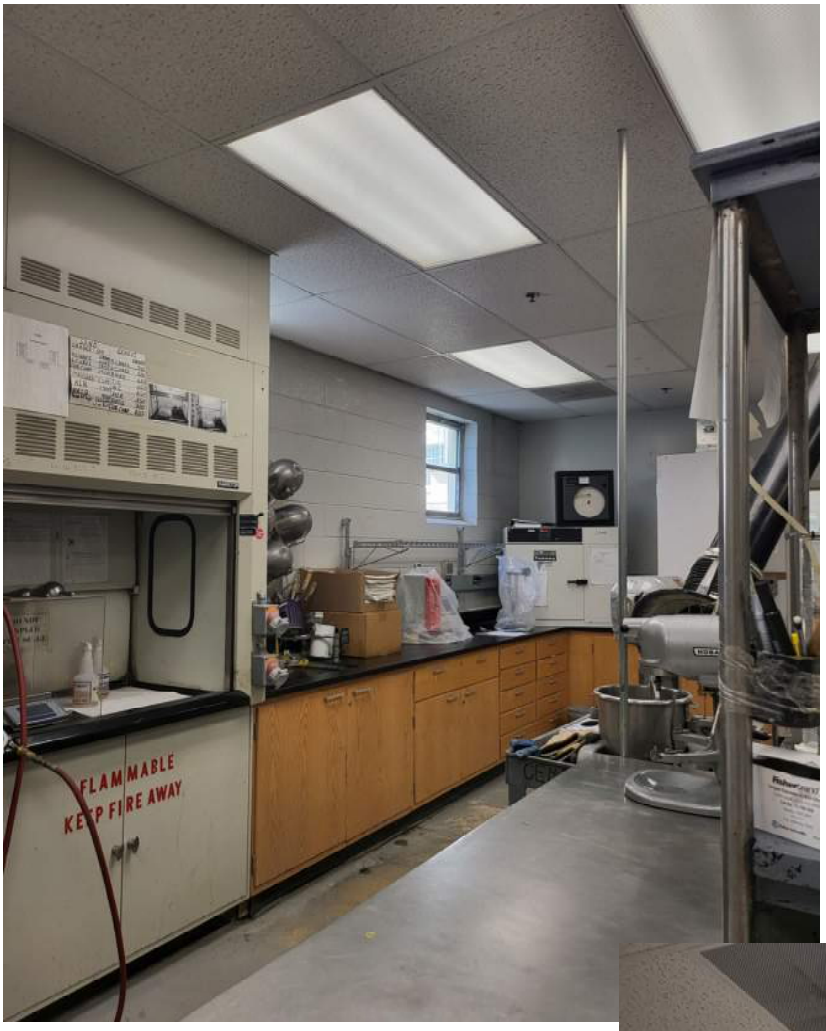
Existing Aggregates Lab.
Large Shakers on
Housekeeping Pads

EXHIBIT 'D'

Existing Cement Lab

Existing Aggregates Lab.
Dryers and Ovens

EXHIBIT 'D'



**Existing Cement Lab.
Fume Hood and Typical
Countertops and Cabinets
Shown**

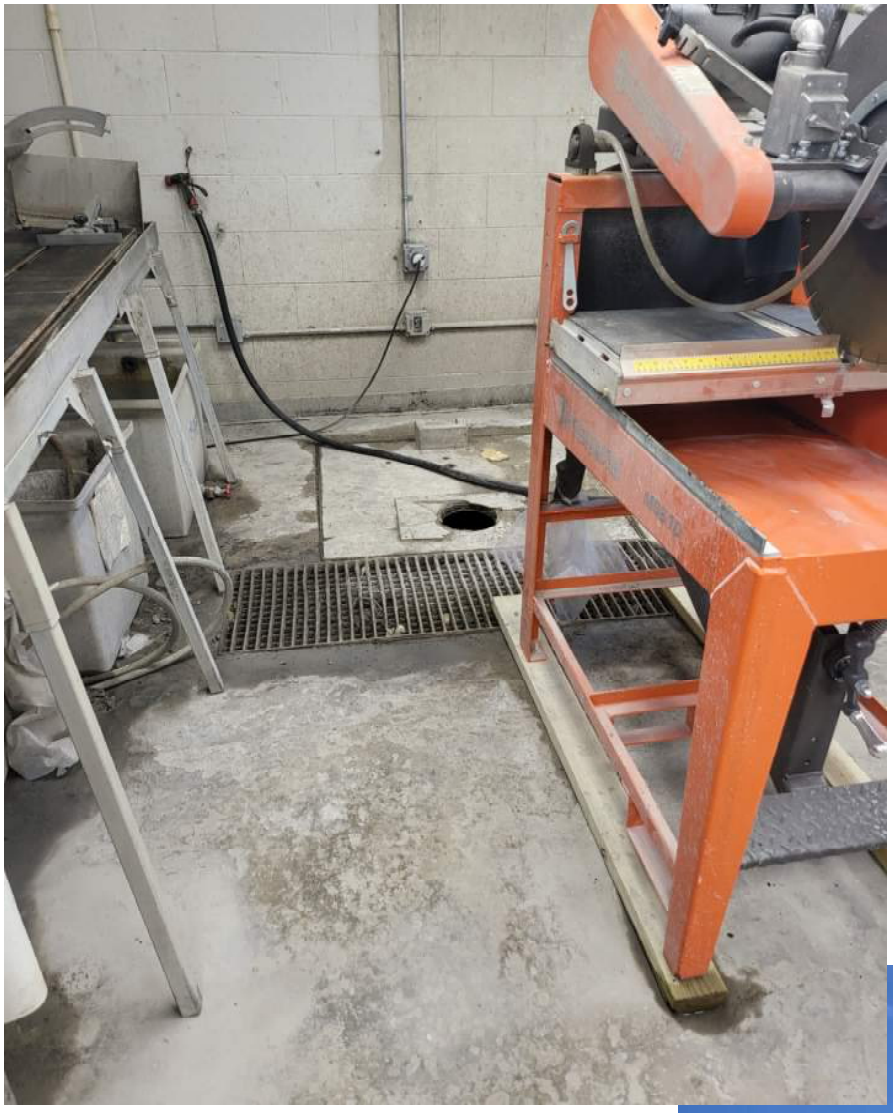
Existing Cement Lab

EXHIBIT 'D'

Fume Hoods

Existing Laboratory Equipment

EXHIBIT 'D'



Existing Preparation and Batching Equipment. Note Washout Drain

Existing Exterior Secure and Covered Hazardous Materials Storage Area

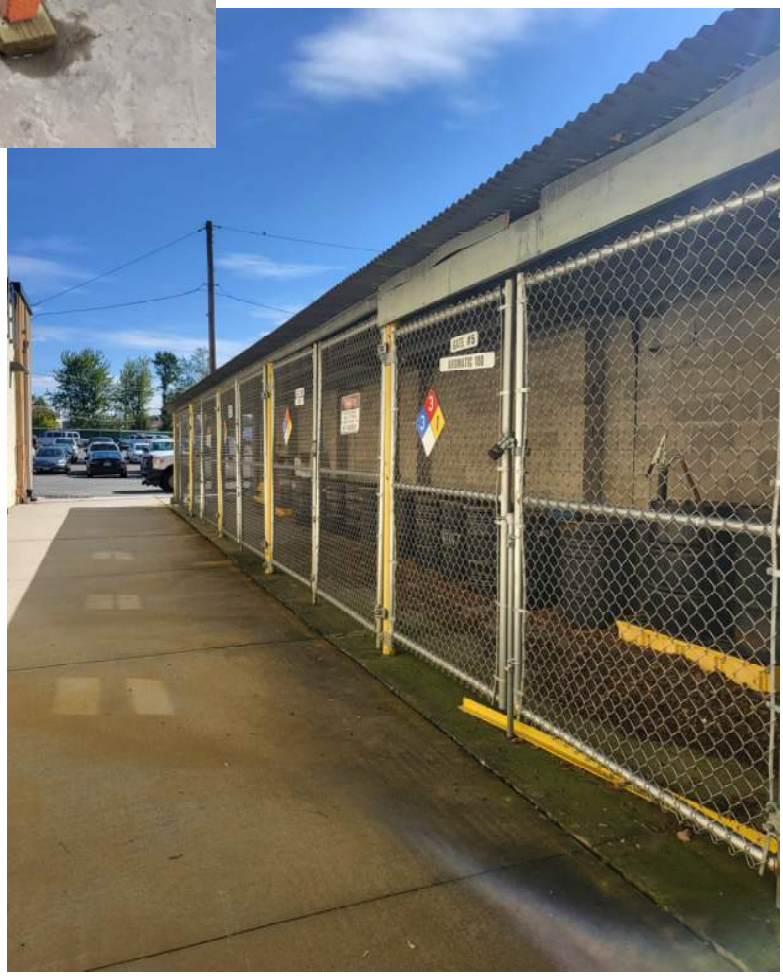


EXHIBIT 'D'

Existing Laboratory Equipment and Typical Countertops and Cabinets

Existing Gas Cylinder Storage

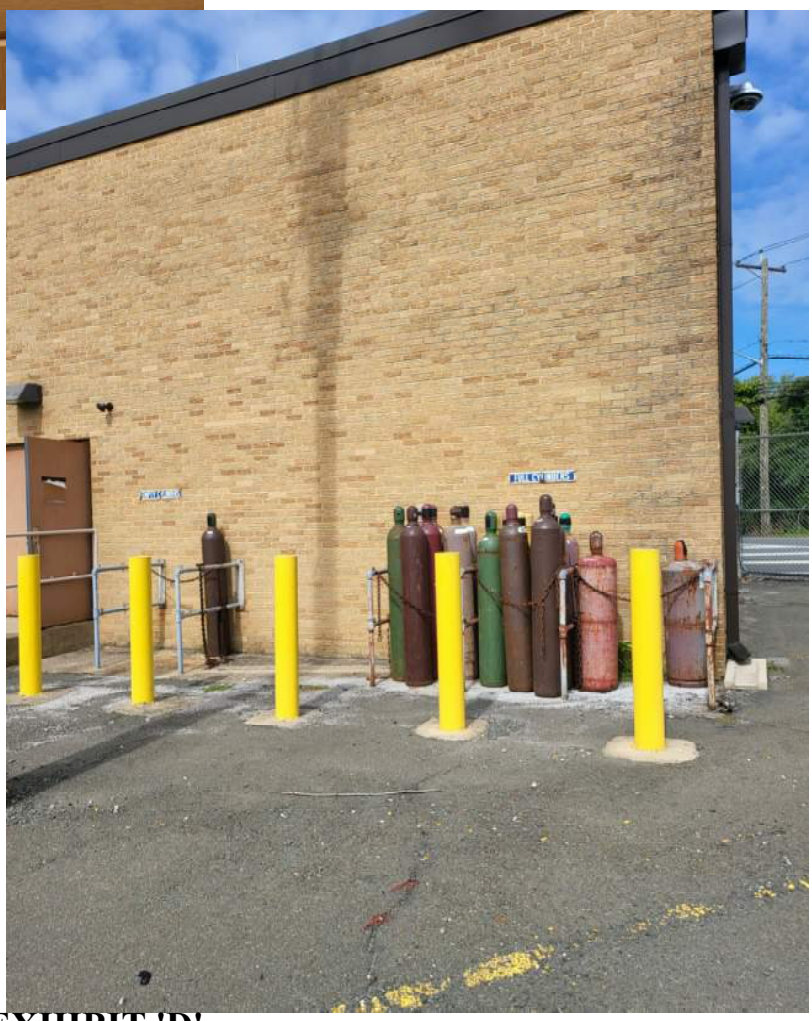


EXHIBIT 'D'

APPENDIX “C”

FIRST AND SECOND FLOOR PROGRAM AREAS TABLES

(2) 11” x 17” PAGES

NEW MATERIALS TESTING LABORATORY BUILDING - FIRST FLOOR PROGRAM AREAS

PROGRAM SPACE	REQUIRED LAB AREA	REQUIRED OFFICE AREA	REQUIRED STORAGE AREA	REQUIRED TOTAL SPACE AREA	APPROXIMATE TOTAL SPACE DIMENSIONS	OCCUPANTS	RELATED (ADJACENT) SPACES	NOTES
DENSITY LAB	2,000 S.F.	600 S.F.	400 S.F.	3,000 S.F.	50' x 60'	6	LOADING / BATCH / LIQUIDS / PAVEMENT / RESEARCH	Ventilation, Large Hood, Large Oven, Dust Collection System, Saw Cutting*
PAVEMENT ANALYSIS	1,500 S.F.	200 S.F.	400 S.F.	2,100 S.F.	40' x 53'	2	DENSITY / LIQUIDS / RESEARCH	Ventilation, Large Hood, large Oven, Dust Collection System, Sieve Shakers
LIQUIDS LAB	2,000 S.F.	600 S.F.	400 S.F.	3,000 S.F.	50' x 60'	6	DENSITY / PAVEMENT / RESEARCH	Ventilation, Multiple Fume Hoods, Independent Compressed Air, Two Sinks, Excess Counter Space
RESEARCH LAB	2,000 S.F.	700 S.F.	400 S.F.	3,100 S.F.	50' x 62'	7	BATCH /LIQUIDS / PAVEMENT / DENSITY	Two separate laboratory rooms 1,000 S.F. each. Storage room shall be between the labs. Sawcutting*
CEMENT LAB	3,000 S.F.	400 S.F.	400 S.F.	3,800 S.F.	56' x 68'	4	BATCH	Ventilation, Multiple Fume Hoods, Dust Collection
CONCRETE LAB	2,200 S.F.	500 S.F.	400 S.F.	3,100 S.F.	50' x 62'	5	BATCH / PREPARATION/ LOADING	14'-0" Ceiling Height
AGGREGATE LAB	3,000 S.F.	600 S.F.	400 S.F.	4,000 S.F.	50' x 80'	6		Two separate laboratory rooms fine and coarse 1,250 S.F. each. 500 S.F. Research Room. Ventilation, Large Shakers on housekeeping Pads, Dust Collection individual at each Shaker, Dryers and Ovens
CHEMICAL LAB	4,000 S.F.	800 S.F.	400 S.F.	5,200 S.F.	60' x 87'	8		Four separate Laboratory Rooms 1,000 S.F. each (Physical, Chemical, Admixtures, Paint), Five Fume Hoods, Gas Cylinder Storage, Distilled Water
STEEL LAB	1,000 S.F.	300 S.F.	300 S.F.	1,600 S.F.	30' x 54'	3	LOADING / BATCHING / PREPARATION	Must have Masonry Walls, 14'-0" Ceiling Height
FUTURE LAB	3,000 S.F.	600 S.F.	400 S.F.	4,000 S.F.	50' x 80'	6		
FUTURE LAB	3,000 S.F.	600 S.F.	400 S.F.	4,000 S.F.	50' x 80'	6		
INDEPENDENT ASSURANCE GROUP (IAG) OFFICES	0 S.F.	600 S.F.	500 S.F.	1,100 S.F.	30' x 37'	6		This office space must be located on the first floor level
BATCHING AREA	1,000 S.F.	0 S.F.	0 S.F.	1,000 S.F.	25' x 40'	0	LOADING / LIQUIDS / PAVEMENT / RESEARCH	Batching Room is for Concrete batching, Steel ACI Preparation, loud Abrasion Machine. Equipment Vibration Isolation and Sound Resistant Construction required. Large floor drains and separate washout drain.
PREPARATION AREA	1,000 S.F.	0 S.F.	0 S.F.	1,000 S.F.	25' x 40'	0	LOADING / LIQUIDS / PAVEMENT / RESEARCH	Preparation Room is for Grinding and Welding, Mold Casting, and Crate Construction
LOADING / UNLOADING AREA	0 S.F.	0 S.F.	1,000 S.F.	1,000 S.F.	25' x 40'	0	DENSITY / CONCRETE / STEEL / RESEARCH / COMMON RECEIVING	Exterior access with grade level and elevated loading entrances.
COMMON RECEIVEING AREA	0 S.F.	0 S.F.	500 S.F.	500 S.F.	20' x 25'	0	LOADING / UNLOADING	Exterior access with grade level and elevated loading entrances.
TOILET ROOMS				800 S.F.				At least one set of toilet rooms must be provided on the First Floor
SUBTOTAL FIRST FLOOR	28,700 S.F.	6,500 S.F.	6,300 S.F.	42,300 S.F.		65		
CIRCULATION AND INFRASTRUCTURE SPACE (20%)				8,460 S.F.				
TOTAL REQUIRED FIRST FLOOR SPACE				50,760 S.F.				

*Batch Room will be utilized for sawcutting, preparation of molds, grinding, welding, and similar operations that create excessive noise, dust, and sparks.
** All laboratories to heave humidity and temperature controls set to meet regulations / standards applicable to their use.
*** Ceiling heights to be 11'-0" minimum at all laboratories, except 14'-0" height is required at the Steel and Concrete Labs.
****Corridors shall be designed to provide a minimum width and height to accommodate forklift movement between labs and the Loading/Unloading Area. Forklift movement will occur only when the corridors and associated spaces are otherwise vacated to alleviate the need for striping, bollards, or guiderails.

NEW MATERIALS TESTING LABORATORY BUILDING - SECOND FLOOR PROGRAM AREAS

PROGRAM SPACE	REQUIRED AREA	APPROXIMATE TOTAL SPACE DIMENSIONS	OCCUPANTS PER PROGRAM	OCCUPANTS PER CODE FOR MEANS OF EGRESS	NOTES
OFFICES	6,250 S.F.	60' x 105'	50	42	
CONFERENCE	3,000 S.F.	50' x 60'	0	428	
TRAINING	3,000 S.F.	50' x 60'	0	200	
BREAK ROOM	2,000 S.F.	40' x 50'	0	133	
TOILET ROOMS / LACTATION	800 S.F.	20' x 50'	0	20	
STORAGE	10,000 S.F.	50' x 100'	0	17	
SUBTOTAL SECOND FLOOR	25,050 S.F.		50	840	
CIRCULATION AND INFRASTRUCTURE SPACE (20%)	5,010 S.F.				
TOTAL REQUIRED SECOND FLOOR SPACE	**30,060 S.F.**				

EXHIBIT 'D'

APPENDIX “D”

CONCEPTUAL SITE PLAN DRAWINGS

(3) 24” x 36” PAGES

PRELIMINARY FEASIBILITY STUDY
NEW MATERIALS TESTING LABORATORY BUILDING
NJDOT HEADQUARTERS COMPLEX
EWING, MERCER COUNTY, NEW JERSEY

CONCEPTUAL SITE PLAN
SCHEME ONE

DAVID A. CLARK
ARCHITECT 17149

RONALD A. SEBRING ASSOCIATES, LLC
ARCHITECTURE AND DESIGN

1000 WASHINGTON STREET, SUITE 201
TOMS RIVER, NJ 08753
(732) 701-9444 FAX 701-8919 E-MAIL ARCHITECTS@RASALLC.COM

SUBMISSION	BY	DATE
STUDY	DC	11/07/23

S1

EXHIBIT 'D'

PRELIMINARY FEASIBILITY STUDY
NEW MATERIALS TESTING LABORATORY BUILDING
NJDOT HEADQUARTERS COMPLEX
EWING, MERCER COUNTY, NEW JERSEY

CONCEPTUAL SITE PLAN
SCHEME TWO

DAVID A. CLARK
ARCHITECT 17149

RONALD A. SEBRING ASSOCIATES, LLC
ARCHITECTURE AND DESIGN

1000 WASHINGTON STREET, SUITE 201
TOMS RIVER, NJ 08753
(732) 701-9444 FAX 701-8919 E-MAIL ARCHITECTS@RASALLC.COM

SUBMISSION	BY	DATE
STUDY	DC	11/07/23

S2

EXHIBIT 'D'

DAVID A. CLARK
ARCHITECT 17149

PRELIMINARY FEASIBILITY STUDY
NEW MATERIALS TESTING LABORATORY BUILDING
NJDOT HEADQUARTERS COMPLEX
EWING, MERCER COUNTY, NEW JERSEY

CONCEPTUAL SITE PLAN
SCHEME THREE

RONALD A. SEBRING ASSOCIATES, LLC
ARCHITECTURE AND DESIGN
1000 WASHINGTON STREET, SUITE 201
TOMS RIVER, NJ 08753
(732) 701-9444 FAX 701-9919 E-MAIL ARCHITECTS@RASALLC.COM

SUBMISSION	BY	DATE
STUDY	DC	12/15/23

S3

EXHIBIT 'D'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 11/18/2021

Room Designation: Building 2, Room 31

Room Function: Bituminous Lab Test (Cores-Density)

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: George Schwarz **Title:** Principal Engineer **Date:** 12-08-21 **Initials:** GS

1. Laboratory Equipment Summary:

Hoods: Type: Exhaust Qty 1 Size 9' x 8' Face Velocity 100 fpm

Hood Services: Exhaust hood for asphalt fumes and manual crushing of asphalt

Ovens: Type _____ Quantity 1

Frequency of Use (# of days/week) 5/52

Duration of Use (Hours) 8.5

2. HVAC:

Temperature Requirements: ASHRAE Comfort Standard 70°F (Heating) & 75° F (Cooling)

Tolerance: + / - 3° F

Humidity Requirements: N/A Tolerance _____

Supply Air Filtration: RTU - Pre-Filter MERV 7, Final Filter MERV 14

Exhaust Air Filtration: N/A

Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

Special Exhaust Requirements: N/A

Air Recirculation: N/A

Hours of Use: Approximately 8 - 10 hours/day

Space Pressurization Criteria: N/A

3. Special Equipment:

- Blue M Oven

EXHIBIT 'E'

- **Special Conditions to be Considered:**

  Material Sample: Testing performed within the Room - Source: NJDOT Material Approval Procedures (MAP) List www.state.nj.us/transportation/eng/materials

• MAP 101: Aggregates	☐ Yes	✓ N/A
• MAP 102: HMA Plant	☐ Yes	✓ N/A
• MAP 103: Concrete Plant	☐ Yes	✓ N/A
• MAP 104: Cement	☐ Yes	✓ N/A
• MAP 105: Air Admixture	☐ Yes	✓ N/A
• MAP 106: Chemical Admixture	☐ Yes	✓ N/A
• MAP 107: Flyash	☐ Yes	✓ N/A
• MAP 108: Slag	☐ Yes	✓ N/A
• MAP 109: Silica Fume	☐ Yes	✓ N/A
• MAP 110: VMA	✓ Yes	☐ N/A
• MAP 111: Corrosion	☐ Yes	✓ N/A
• MAP 112: Quick-Setting Patch Material	☐ Yes	✓ N/A
• MAP 113: Non-shrink Grout	☐ Yes	✓ N/A
• MAP 114: Epoxies	☐ Yes	✓ N/A
• MAP 115: Prefabricated Modular Walls	☐ Yes	✓ N/A
• MAP 116: MSE Walls	☐ Yes	✓ N/A
• MAP 117: Rebar Coupler	☐ Yes	✓ N/A
• MAP 118: Sign Sheeting	☐ Yes	✓ N/A
• MAP 119: Paint (IEU & OEU)	☐ Yes	✓ N/A
• MAP 120: Paint	☐ Yes	✓ N/A
• MAP 121: Guide Rail End Treatment	☐ Yes	✓ N/A
• MAP 122: Guide Rail Blockout	☐ Yes	✓ N/A
• MAP 123: Ho Joint Sealant	☐ Yes	✓ N/A
• MAP 124: Cold Joint Sealant	☐ Yes	✓ N/A
• MAP 125: Poly Joint Adhesive	☐ Yes	✓ N/A
• MAP 129: Inertial Barrier	☐ Yes	✓ N/A
• MAP 130: Precast and Prestressed Concrete Producers	☐ Yes	✓ N/A
• MAP 131: Reinforced Concrete Pipe Producers	☐ Yes	✓ N/A
• MAP 132: Asphalt Release Agents	☐ Yes	✓ N/A
• MAP 133: Asphalt Binders	☐ Yes	✓ N/A

EXHIBIT 'E'

•	MAP 134: Polymer Structural Members	☐ Yes	✓ N/A
•	MAP 135: Compressive Crash Cushions	☐ Yes	✓ N/A
•	MAP 136: Jointed Precast Concrete Pavement System	☐ Yes	✓ N/A

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 11/18/2021

Room Designation: Building 2, Room 32

Room Function: Bituminous Lab Test(Extraction)

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: Gaelle Schwarz **Title:** Principal Engineer **Date:** 12-08-21 **Initials:** GS

1. Laboratory Equipment Summary:

Hoods: Type: Fume Qty 3 Size (2) 8', (1) 9' Face Velocity100 fpm

Hood Services: Asphalt Fume

Ovens: Type Cleary/Burndt Quantity 5

Frequency of Use (# of days/week) 5/52

Duration of Use (Hours) 8.5

2. HVAC:

Temperature Requirements: ASHRAE Comfort Standard 70°F (Heating) & 75° F (Cooling)

Tolerance: + / - 3° F

Humidity Requirements: N/A Tolerance _____

Supply Air Filtration: RTU - Pre-Filter MERV 7, Final Filter MERV 14

Exhaust Air Filtration: N/A

Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

Special Exhaust Requirements: N/A

Air Recirculation: N/A

Hours of Use: Approximately 8 - 10 hours/day

Space Pressurization Criteria: N/A

3. Special Equipment:

- Ignitor Oven

EXHIBIT 'E'

- Blue M Oven, TPS (Double Door)
- Blue M Oven (Single Door)
- (3) Thermo Ovens
- Barnstead Pyro Clean (Back up Oven)

- **Special Conditions to be Considered:**

Material Sample: Testing performed within the Room - Source: NJDOT Material Approval Procedures (MAP) List www.state.nj.us/transportation/eng/materials

• MAP 101: Aggregates	☐ Yes	✓ N/A
• MAP 102: HMA Plant	☐ Yes	✓ N/A
• MAP 103: Concrete Plant	☐ Yes	✓ N/A
• MAP 104: Cement	☐ Yes	✓ N/A
• MAP 105: Air Admixture	☐ Yes	✓ N/A
• MAP 106: Chemical Admixture	☐ Yes	✓ N/A
• MAP 107: Flyash	☐ Yes	✓ N/A
• MAP 108: Slag	☐ Yes	✓ N/A
• MAP 109: Silica Fume	☐ Yes	✓ N/A
• MAP 110: VMA	☐ Yes	✓ N/A
• MAP 111: Corrosion	☐ Yes	✓ N/A
• MAP 112: Quick-Setting Patch Material	☐ Yes	✓ N/A
• MAP 113: Non-shrink Grout	☐ Yes	✓ N/A
• MAP 114: Epoxies	☐ Yes	✓ N/A
• MAP 115: Prefabricated Modular Walls	☐ Yes	✓ N/A
• MAP 116: MSE Walls	☐ Yes	✓ N/A
• MAP 117: Rebar Coupler	☐ Yes	✓ N/A
• MAP 118: Sign Sheeting	☐ Yes	✓ N/A
• MAP 119: Paint (IEU & OEU)	☐ Yes	✓ N/A
• MAP 120: Paint	☐ Yes	✓ N/A
• MAP 121: Guide Rail End Treatment	☐ Yes	✓ N/A
• MAP 122: Guide Rail Blockout	☐ Yes	✓ N/A
• MAP 123: Ho Joint Sealant	☐ Yes	✓ N/A
• MAP 124: Cold Joint Sealant	☐ Yes	✓ N/A
• MAP 125: Poly Joint Adhesive	☐ Yes	✓ N/A
• MAP 129: Inertial Barrier	☐ Yes	✓ N/A

EXHIBIT 'E'

•	MAP 130: Precast and Prestressed Concrete Producers	☐ Yes	✓ N/A
•	MAP 131: Reinforced Concrete Pipe Producers	☐ Yes	✓ N/A
•	MAP 132: Asphalt Release Agents	☐ Yes	✓ N/A
•	MAP 133: Asphalt Binders	☐ Yes	✓ N/A
•	MAP 134: Polymer Structural Members	☐ Yes	✓ N/A
•	MAP 135: Compressive Crash Cushions	☐ Yes	✓ N/A
•	MAP 136: Jointed Precast Concrete Pavement System	☐ Yes	✓ N/A

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 11/18/2021

Room Designation: Building 2, Room 33

Room Function: Bituminous Lab Test(Extraction)

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: George Schwarz **Title:** Principal Engineer **Date:** 12-08-21 **Initials:** GS

1. **Laboratory Equipment Summary:**

   Hoods: Type: Exh Qty 1 Size 1' diameter Face Velocity 100 fpm

   Hood Services: General Exhaust

   Ovens: Type _____ Quantity 0

   Frequency of Use (# of days/week) _____

   Duration of Use (Hours) _____

2. **HVAC:**

   Temperature Requirements: ASHRAE Comfort Standard 70°F (Heating) & 75° F (Cooling)

   Tolerance: + / - 3° F

   Humidity Requirements: N/A Tolerance _____

   Supply Air Filtration: RTU - Pre-Filter MERV 7, Final Filter MERV 14

   Exhaust Air Filtration: N/A

   Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

   Special Exhaust Requirements: N/A

   Air Recirculation: N/A

   Hours of Use: Approximately 8 - 10 hours/day

   Space Pressurization Criteria: N/A

3. **Special Equipment:**

   - None

- **Special Conditions to be Considered:**

EXHIBIT 'E'

Material Sample: Testing performed within the Room - Source: NJDOT Material Approval Procedures (MAP) List www.state.nj.us/transportation/eng/materials

• MAP 101: Aggregates	✓ Yes	☐ N/A
• MAP 102: HMA Plant	☐ Yes	✓ N/A
• MAP 103: Concrete Plant	☐ Yes	✓ N/A
• MAP 104: Cement	☐ Yes	✓ N/A
• MAP 105: Air Admixture	☐ Yes	✓ N/A
• MAP 106: Chemical Admixture	☐ Yes	✓ N/A
• MAP 107: Flyash	☐ Yes	✓ N/A
• MAP 108: Slag	☐ Yes	✓ N/A
• MAP 109: Silica Fume	☐ Yes	✓ N/A
• MAP 110: VMA	☐ Yes	✓ N/A
• MAP 111: Corrosion	☐ Yes	✓ N/A
• MAP 112: Quick-Setting Patch Material	☐ Yes	✓ N/A
• MAP 113: Non-shrink Grout	☐ Yes	✓ N/A
• MAP 114: Epoxies	☐ Yes	✓ N/A
• MAP 115: Prefabricated Modular Walls	☐ Yes	✓ N/A
• MAP 116: MSE Walls	☐ Yes	✓ N/A
• MAP 117: Rebar Coupler	☐ Yes	✓ N/A
• MAP 118: Sign Sheeting	☐ Yes	✓ N/A
• MAP 119: Paint (IEU & OEU)	☐ Yes	✓ N/A
• MAP 120: Paint	☐ Yes	✓ N/A
• MAP 121: Guide Rail End Treatment	☐ Yes	✓ N/A
• MAP 122: Guide Rail Blockout	☐ Yes	✓ N/A
• MAP 123: Ho Joint Sealant	☐ Yes	✓ N/A
• MAP 124: Cold Joint Sealant	☐ Yes	✓ N/A
• MAP 125: Poly Joint Adhesive	☐ Yes	✓ N/A
• MAP 129: Inertial Barrier	☐ Yes	✓ N/A
• MAP 130: Precast and Prestressed Concrete Producers	☐ Yes	✓ N/A
• MAP 131: Reinforced Concrete Pipe Producers	☐ Yes	✓ N/A
• MAP 132: Asphalt Release Agents	☐ Yes	✓ N/A
• MAP 133: Asphalt Binders	☐ Yes	✓ N/A
• MAP 134: Polymer Structural Members	☐ Yes	✓ N/A

EXHIBIT 'E'

- MAP 135: Compressive Crash Cushions ☐ Yes ✓ N/A
- MAP 136: Jointed Precast Concrete Pavement System ☐ Yes ✓ N/A

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 11/18/2021

Room Designation: Building 2, Room 34

Room Function: Bituminous Lab Test (Liquids)

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: George Schwarz **Title:** Principal Engineer **Date:** 12-08-21 **Initials:** GS

1. Laboratory Equipment Summary:

Hoods: Type: FumeQty 8 Size (5) 5', (3) 4' Face Velocity100 fpm

Hood Services: Asphalt fumes

Ovens: Type RTFO Vacuum Environmental, PAV Quantity 5

Frequency of Use (# of days/week) 5/52

Duration of Use (Hours) 8.5

2. HVAC:

Temperature Requirements: ASHRAE Comfort Standard 70°F (Heating) & 75° F (Cooling)

Tolerance: + / - 3° F

Humidity Requirements: N/A Tolerance _____

Supply Air Filtration: RTU - Pre-Filter MERV 7, Final Filter MERV 14

Exhaust Air Filtration: N/A

Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

Special Exhaust Requirements: N/A

Air Recirculation: N/A

Hours of Use: Approximately 8 - 10 hours/day

Space Pressurization Criteria: Pyroclean Unit - Pressure Sensitive

3. Special Equipment:

- Pyroclean, Applied Test Systems (Space pressure sensitive)

EXHIBIT 'E'

- Kinexus Machine, everyday/full day
- Kochler Viscometer, everyday/full day

- **Special Conditions to be Considered:**

Material Sample: Testing performed within the Room - Source: NJDOT Material Approval Procedures (MAP) List www.state.nj.us/transportation/eng/materials

• MAP 101: Aggregates	☐ Yes	✓ N/A
• MAP 102: HMA Plant	☐ Yes	✓ N/A
• MAP 103: Concrete Plant	☐ Yes	✓ N/A
• MAP 104: Cement	☐ Yes	✓ N/A
• MAP 105: Air Admixture	☐ Yes	✓ N/A
• MAP 106: Chemical Admixture	☐ Yes	✓ N/A
• MAP 107: Flyash	☐ Yes	✓ N/A
• MAP 108: Slag	☐ Yes	✓ N/A
• MAP 109: Silica Fume	☐ Yes	✓ N/A
• MAP 110: VMA	☐ Yes	✓ N/A
• MAP 111: Corrosion	☐ Yes	✓ N/A
• MAP 112: Quick-Setting Patch Material	☐ Yes	✓ N/A
• MAP 113: Non-shrink Grout	☐ Yes	✓ N/A
• MAP 114: Epoxies	☐ Yes	✓ N/A
• MAP 115: Prefabricated Modular Walls	☐ Yes	✓ N/A
• MAP 116: MSE Walls	☐ Yes	✓ N/A
• MAP 117: Rebar Coupler	☐ Yes	✓ N/A
• MAP 118: Sign Sheeting	☐ Yes	✓ N/A
• MAP 119: Paint (IEU & OEU)	☐ Yes	✓ N/A
• MAP 120: Paint	☐ Yes	✓ N/A
• MAP 121: Guide Rail End Treatment	☐ Yes	✓ N/A
• MAP 122: Guide Rail Blockout	☐ Yes	✓ N/A
• MAP 123: Ho Joint Sealant	☐ Yes	✓ N/A
• MAP 124: Cold Joint Sealant	☐ Yes	✓ N/A
• MAP 125: Poly Joint Adhesive	☐ Yes	✓ N/A
• MAP 129: Inertial Barrier	☐ Yes	✓ N/A
• MAP 130: Precast and Prestressed Concrete Producers	☐ Yes	✓ N/A
• MAP 131: Reinforced Concrete Pipe Producers	☐ Yes	✓ N/A

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 11/18/2021

Room Designation: Building 2, Room 35

Room Function: Bituminous Lab Test (Research)

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: George Schwarz **Title:** Principal Engineer **Date:** 12-08-21 **Initials:** GS

1. Laboratory Equipment Summary:

Hoods: Type: Fume Qty 1 Size 9' Face Velocity 100 fpm

Hood Services: Asphalt fumes

Ovens: Type Environmental Quantity 3

Frequency of Use (# of days/week) 5/52

Duration of Use (Hours) 8.5

2. HVAC:

Temperature Requirements: ASHRAE Comfort Standard 70°F (Heating) & 75° F (Cooling)

Tolerance: +/- 3° F

Humidity Requirements: N/A Tolerance _____

Supply Air Filtration: RTU - Pre-Filter MERV 7, Final Filter MERV 14

Exhaust Air Filtration: N/A

Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

Special Exhaust Requirements: N/A

Air Recirculation: N/A

Hours of Use: Approximately 8 - 10 hours/day

Space Pressurization Criteria: N/A

3. Special Equipment:

- Instrotek AMPT, 3 days/week, 8 hours/day

EXHIBIT 'E'

- Troxler Gyratory Compactor, everyday, 4 hours/day
- ESPEC Environmental Chamber, 1 day/week, 4 hours/day
- Rainhem/Marshall Compactor, Not used
- (3) Blue Ovens, 5 days/week, 8.5 hours/day

- **Special Conditions to be Considered:**

Material Sample: Testing performed within the Room - Source: NJDOT Material Approval Procedures (MAP) List www.state.nj.us/transportation/eng/materials

● MAP 101: Aggregates	✓ Yes	☐ N/A
● MAP 102: HMA Plant	☐ Yes	✓ N/A
● MAP 103: Concrete Plant	☐ Yes	✓ N/A
● MAP 104: Cement	☐ Yes	✓ N/A
● MAP 105: Air Admixture	☐ Yes	✓ N/A
● MAP 106: Chemical Admixture	☐ Yes	✓ N/A
● MAP 107: Flyash	☐ Yes	✓ N/A
● MAP 108: Slag	☐ Yes	✓ N/A
● MAP 109: Silica Fume	☐ Yes	✓ N/A
● MAP 110: VMA	✓ Yes	☐ N/A
● MAP 111: Corrosion	☐ Yes	✓ N/A
● MAP 112: Quick-Setting Patch Material	☐ Yes	✓ N/A
● MAP 113: Non-shrink Grout	☐ Yes	✓ N/A
● MAP 114: Epoxies	☐ Yes	✓ N/A
● MAP 115: Prefabricated Modular Walls	☐ Yes	✓ N/A
● MAP 116: MSE Walls	☐ Yes	✓ N/A
● MAP 117: Rebar Coupler	☐ Yes	✓ N/A
● MAP 118: Sign Sheeting	☐ Yes	✓ N/A
● MAP 119: Paint (IEU & OEU)	☐ Yes	✓ N/A
● MAP 120: Paint	☐ Yes	✓ N/A
● MAP 121: Guide Rail End Treatment	☐ Yes	✓ N/A
● MAP 122: Guide Rail Blockout	☐ Yes	✓ N/A
● MAP 123: Ho Joint Sealant	☐ Yes	✓ N/A
● MAP 124: Cold Joint Sealant	☐ Yes	✓ N/A
● MAP 125: Poly Joint Adhesive	☐ Yes	✓ N/A
● MAP 129: Inertial Barrier	☐ Yes	✓ N/A

EXHIBIT 'E'

•	MAP 130: Precast and Prestressed Concrete Producers	☐ Yes	✓ N/A
•	MAP 131: Reinforced Concrete Pipe Producers	☐ Yes	✓ N/A
•	MAP 132: Asphalt Release Agents	☐ Yes	✓ N/A
•	MAP 133: Asphalt Binders	☐ Yes	✓ N/A
•	MAP 134: Polymer Structural Members	☐ Yes	✓ N/A
•	MAP 135: Compressive Crash Cushions	☐ Yes	✓ N/A
•	MAP 136: Jointed Precast Concrete Pavement System	☐ Yes	✓ N/A

EXHIBIT 'E'

•	MAP 132: Asphalt Release Agents	☐ Yes	✓ N/A
•	MAP 133: Asphalt Binders	✓ Yes	☐ N/A
•	MAP 134: Polymer Structural Members	☐ Yes	✓ N/A
•	MAP 135: Compressive Crash Cushions	☐ Yes	✓ N/A
•	MAP 136: Jointed Precast Concrete Pavement System	☐ Yes	✓ N/A

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 11/18/2021

Room Designation: Building 2, Room 2

Room Function: Chemistry Lab Test (Atomic Absorption "A.A.S")

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: George Schwarz **Title:** Principal Engineer **Date:** 12-08-21 **Initials:** GS

1. **Laboratory Equipment Summary:**

   Hoods: Type: Hamilton Fume Safe Aire Qty 1 Size 28-1/2" Sash Face Velocity100 fpm

   Solvent/Flammable Storage Requirements: N/A Vented: _____

   Acid Storage (Existing): Perchloric Acid, Ammonium Nitrate (Solid), Lithium Borates (Solid)

   Hood Services: N/A

   Hoods: Type: N/A Qty N/A Size N/A Face Velocity N/A

   Solvent/Flammable Storage Requirements: N/A Vented: N/A

   Acid Storage Requirements: N/A

   Hood Services: N/A

2. **HVAC:**

   Temperature Requirements: ASHRAE Comfort Standard 70°F (Heating) & 75° F (Cooling)

   Tolerance: + / - 3° F

   Humidity Requirements: 50% Tolerance +/- 5 %

   Supply Air Filtration: RTU - Pre-Filter MERV 7, Final Filter MERV 14

   Exhaust Air Filtration: N/A

   Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

   Special Exhaust Requirements: N/A

   Air Recirculation: N/A

   Hours of Use: Approximately 8 - 10 hours/day

EXHIBIT 'E'

Space Pressurization Criteria: N/A

3. **Special Equipment:**

- X-Ray Spectrometer - XRF Panalytical (Uses Water Chiller "HASKRIS" to keep temperature down) 4 hours/day, 5 days/week max.
- ICP Machine (Requires 125 cfm air flow through unit) 7 hours/day, 5 days/week max.
- Fusion Machine - Katanax 4 hours/day, 5 days/week
- Fusion Machine adjacent to Fume Hood: Abandoned in Place.

- **Special Conditions to be Considered:**

Material Sample: Testing performed within the Room - Source: NJDOT Material

Per Meeting #2 on 11-5-2021 MAP 101 through 136 not applicable.

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 11/18/2021

Room Designation: Building 2, Room 24

Room Function: Chemistry Lab Test (General)

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: George Schwarz **Title:** Principal Engineer **Date:** 12-08-21 **Initials:** GS

1. Laboratory Equipment Summary:

Hoods: Type: Hamilton Safe Aire Qty 7 Size 28-1/2" Sash Face Velocity 100 fpm

Solvent/Flammable Storage Requirements: N/A Vented: _____

Acid Storage(Existing): Perchloric Acid, Sulfuric Acid, Ammonium Hydroxide, Hydrochloric Acid, Nitric Acid, Ammonium Nitrate (Solid)

Hood Services: N/A

Hoods: Type: N/A Qty N/A Size N/A Face Velocity N/A

Solvent/Flammable Storage Requirements: N/A Vented: N/A

Acid Storage Requirements: N/A

Hood Services: N/A

2. HVAC:

Temperature Requirements: ASHRAE Comfort Standard 70°F (Heating) & 75° F (Cooling)

Tolerance: + / - 3° F

Humidity Requirements: 50% Tolerance +/-5%

Supply Air Filtration: RTU - Pre-Filter MERV 7, Final Filter MERV 14

Exhaust Air Filtration: N/A

Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

Special Exhaust Requirements: N/A

Air Recirculation: N/A

EXHIBIT 'E'

Hours of Use: Approximately 8 - 10 hours/day

Space Pressurization Criteria: N/A

3. **Special Equipment:**

- Lindberg Blue M Oven (110 deg C / 5 days a week, 8 hours/day) Maximum Use
- Thermo Scientific Still 3 days/week, 7 hours/day
- Fisher Scientific Oven Overnight testing 4 nights/week

- **Special Conditions to be Considered:**

Material Sample: Testing performed within the Room - Source: NJDOT Material

Per Meeting #2 on 11-5-2021 MAP 101 through 136 not applicable.

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 11/18/2021

Room Designation: Building 2, Room 27

Room Function: Chemistry Lab Test (General)

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: George Schwarz **Title:** Principal Engineer **Date:** 12-08-21 **Initials:** GS

1. Laboratory Equipment Summary:

Hoods: Type: _____ Qty 0 Size _____ Face Velocity____

Solvent/Flammable Storage Requirements: Paint Vented: _____

Acid Storage (Existing): _____

Hood Services: N/A

Hoods: Type: N/A Qty N/A Size N/A Face Velocity N/A

Solvent/Flammable Storage Requirements: N/A Vented: N/A

Acid Storage Requirements: N/A

Hood Services: N/A

2. HVAC:

Temperature Requirements: ASHRAE Comfort Standard 70°F (Heating) & 75° F (Cooling)

Tolerance: + / - 3° F

Humidity Requirements:50% Tolerance +/- 5%

Supply Air Filtration: RTU - Pre-Filter MERV 7, Final Filter MERV 14

Exhaust Air Filtration: N/A

Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

Special Exhaust Requirements: N/A

Air Recirculation: N/A

Hours of Use: Approximately 8 - 10 hours/day

Space Pressurization Criteria: N/A

EXHIBIT 'E'

3. **Special Equipment:**

- Furnace Ovens (2), 450 deg C, 550 deg C, 750 deg C, 8 hours/day, 5 days/week maximum use

- **Special Conditions to be Considered:**

Material Sample: Testing performed within the Room - Source: NJDOT Material

Per Meeting #2 on 11-5-2021 MAP 101 through 136 not applicable.

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 11/18/2021

Room Designation: Building 2, Room 25

Room Function: Chemistry Lab Test (Paint)

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: GEORGE SCHWARZ **Title:** PRINCIPAL ENGINEER **Date:** 12-08-21 **Initials:** GS

1. **Laboratory Equipment Summary:**

   Hoods: Type: Hamilton Safe Aire Qty 1 Size 28-1/2" Sash Face Velocity 100 fpm

   Solvent/Flammable Storage Requirements: Paint, Compressed Gas Vented: _____

   Acid Storage (Existing): Toluene, Acetone

   Hood Services: N/A

   Hoods: Type: 2nd Qty N/A Size N/A Face Velocity N/A

   Solvent/Flammable Storage Requirements: N/A Vented: N/A

   Acid Storage Requirements: N/A

   Hood Services: 2nd hood is no longer used, to be removed from space in the near future

2. **HVAC:**

   Temperature Requirements: ASHRAE Comfort Standard 70°F (Heating) & 75° F (Cooling)

   Tolerance: + / - 3° F

   Humidity Requirements: 50% Tolerance +/- 5 %

   Supply Air Filtration: RTU - Pre-Filter MERV 7, Final Filter MERV 14

   Exhaust Air Filtration: N/A

   Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

   Special Exhaust Requirements: N/A

   Air Recirculation: N/A

   Hours of Use: Approximately 8 - 10 hours/day

EXHIBIT 'E'

Space Pressurization Criteria: N/A

3. **Special Equipment:**

- 2 Ovens, 110 deg C, 4 hours/day, 5 days/week, maximum use
- Centrifuge below hood, 4 days/week, 2 hours/day
- LECO Unit, 4 days/week, 6 hours/day

- **Special Conditions to be Considered:**

Material Sample: Testing performed within the Room - Source: NJDOT Material

Per Meeting #2 on 11-5-2021 MAP 101 through 136 not applicable.

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 11/18/2021

Room Designation: Building 2, Room 1

Room Function: Chemistry Lab Test (Special Projects)

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: George Schwarz **Title:** Principal Engineer **Date:** 12-08-21 **Initials:** GS

1. **Laboratory Equipment Summary:**

   Hoods: Type: Hamilton Safe Aire Qty1 Size N/A Face Velocity 100 fpm

   Solvent/Flammable Storage Requirements: N/A Vented: N/A

   Acid Storage (Existing): Acetone, Potassium Bromide (Solid)

   Hood Services: N/A

   Hoods: Type: N/A Qty N/A Size N/A Face Velocity N/A

   Solvent/Flammable Storage Requirements: N/A Vented: N/A

   Acid Storage Requirements: N/A

   Hood Services: N/A

2. **HVAC:**

   Temperature Requirements: ASHRAE Comfort Standard 70°F (Heating) & 75° F (Cooling)

   Tolerance: + / - 3° F

   Humidity Requirements: 50% Tolerance + / - 5%

   Supply Air Filtration: RTU - Pre-Filter MERV 7, Final Filter MERV 14

   Exhaust Air Filtration: N/A

   Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

   Special Exhaust Requirements: N/A

   Air Recirculation: N/A

   Hours of Use: Approximately 8 - 10 hours/day

   Space Pressurization Criteria: N/A

EXHIBIT 'E'

3. **Special Equipment:**

- 1 Oven, Temperature at 110 deg C for 17 hours (Overnight Only, also used for 25 minutes at 125 deg C) Oven is in use for 5 days a week maximum

- **Special Conditions to be Considered:**

Material Sample: Testing performed within the Room - Source: NJDOT Material

Per Meeting #2 on 11-5-2021 MAP 101 through 136 not applicable.

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 11/18/2021

Room Designation: Building 2, Room 23

Room Function: Testing

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: George Schwarz **Title:** Principal Engineer **Date:** 12-08-21 **Initials:** GS

1. **Laboratory Equipment Summary:**

   Hoods: Type: None Qty ____ Size _____ Face Velocity____

   Hood Services: _____

   Ovens: Type None Quantity _____

   Frequency of Use (# of days/week) _____

   Duration of Use (Hours) _____

2. **HVAC:**

   Temperature Requirements: ASHRAE Comfort Standard 70°F (Heating) & 75° F (Cooling)

   Tolerance: +/- 3° F

   Humidity Requirements: N/A Tolerance _____

   Supply Air Filtration: RTU - Pre-Filter MERV 7, Final Filter MERV 14

   Exhaust Air Filtration: N/A

   Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

   Special Exhaust Requirements: N/A

   Air Recirculation: N/A

   Hours of Use: Approximately 8 - 10 hours/day

   Space Pressurization Criteria: N/A

3. **Special Equipment:**

   - Press: 10 times/year, 5 min/test
   - Asphalt Pavement Analyzer: 4 days/week, 10 hours/day

EXHIBIT 'E'

- Ingersol Rand Compressor - Cycles ON/OFF
- Enclosure supporting analyzer: 10 times/year, 2 to 6 hours/test

- **Special Conditions to be Considered:**

  Material Sample: Testing performed within the Room - Source: NJDOT Material

  Per Meeting #2 on 11-5-2021 MAP 101 through 136 not applicable.

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 11/18/2021

Room Designation: Building 4, Room 8

Room Function: Physical Lab Test (Aggregate)

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: George Schwarz **Title:** Principal Engineer **Date:** 12-08-21 **Initials:** GS

1. Laboratory Equipment Summary

Hoods: Type: None Qty ____ Size _____ Face Velocity____

Hood Services: _____

Ovens: Type Blue M Quantity 2

Frequency of Use (# of days/week) (1st) 5 days/week, (2nd) 1.5 days/week

Duration of Use (Hours) 8 hours/ day

2. HVAC:

Temperature Requirements: ASHRAE Comfort Standard 70°F (Heating) & 75° F (Cooling)

Tolerance: + / - 3° F

Humidity Requirements: N/A Tolerance _____

Supply Air Filtration: RTU - Pre-Filter MERV 7, Final Filter MERV 14

Exhaust Air Filtration: N/A

Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

Special Exhaust Requirements: N/A

Air Recirculation: N/A

Hours of Use: Approximately 8 - 10 hours/day

Space Pressurization Criteria: N/A

3. Special Equipment:

- (3) Gilson testing shaking screens, 5 days/week, 3 hours/day

EXHIBIT 'E'

- (2) Blue M Batch Ovens (Free Standing)

- **Special Conditions to be Considered:**

  Material Sample: Testing performed within the Room - Source: NJDOT Material

  Per Meeting #2 on 11-5-2021 MAP 101 through 136 not applicable.

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 11/18/2021

Room Designation: Building 4, Room 21

Room Function: Physical Lab Test (Cement)

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: GEORGE SCHWARZ **Title:** PRINCIPAL ENGINEER **Date:** 12-08-21 **Initials:** GS

1. **Laboratory Equipment Summary:**

   Hoods: Type: Fume Qty 2 Size _____ Face Velocity____

   Hood Services: General Purpose, No Chemicals

   Ovens: Type Tenney Quantity 1

   Frequency of Use (# of days/week) 5

   Duration of Use (Hours) 8+ hours/day

2. **HVAC:**

   Temperature Requirements: 23 deg. C Tolerance +/- 4 deg C

   Humidity Requirements: > 50% Tolerance _____

   Supply Air Filtration: RTU - Pre-Filter MERV 7, Final Filter MERV 14

   Exhaust Air Filtration: N/A

   Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

   Special Exhaust Requirements: N/A

   Air Recirculation: N/A

   Hours of Use: Approximately 8 - 10 hours/day

   Space Pressurization Criteria: N/A

3. **Special Equipment:**

   - Tenney Oven on counter

EXHIBIT 'E'

- Mixers, couple of times/week
- Tinius Olsen Compression Machine for Grout (Infrequently Used)
- Tenney Moisture Chamber Free Standing (Always "On")
- PGC Water bath (Always "On")

- **Special Conditions to be Considered:**

  Material Sample: Testing performed within the Room - Source: NJDOT Material

  Per Meeting #2 on 11-5-2021 MAP 101 through 136 not applicable.

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 11/18/2021

Room Designation: Building 4, Room 21B

Room Function: Physical Lab Test (Cement)

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: George Schwarz **Title:** Principal Engineer **Date:** 12-08-21 **Initials:** GS

1. Laboratory Equipment Summary:

Hoods: Type: None Qty _____ Size _____ Face Velocity____

Hood Services: _____

Ovens: Type None Quantity _____

Frequency of Use (# of days/week) _____

Duration of Use (Hours) _____

2. HVAC:

Temperature Requirements: 23 deg. C Tolerance +/- 4 deg C

Humidity Requirements: > 50% Tolerance _____

Supply Air Filtration: RTU - Pre-Filter MERV 7, Final Filter MERV 14

Exhaust Air Filtration: N/A

Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

Special Exhaust Requirements: N/A

Air Recirculation: N/A

Hours of Use: Approximately 8 - 10 hours/day

Space Pressurization Criteria: N/A

3. Special Equipment:

- Provide dedicated humidifer for this room so the humidity can be increased (to

EXHIBIT 'E'

practical higher RH) during infrequent testing. The system and room will not be designed to maintain > 95% RH.

- **Special Conditions to be Considered:**

  Material Sample: Testing performed within the Room - Source: NJDOT Material

  Per Meeting #2 on 11-5-2021 MAP 101 through 136 not applicable.

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 11/18/2021

Room Designation: Building 4, Room 24

Room Function: Physical Lab Test (Curing)

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: George Schwarz **Title:** Principal Engineer **Date:** 12-08-21 **Initials:** GS

1. **Laboratory Equipment Summary:**

   Hoods: Type: None Qty ____ Size _____ Face Velocity____

   Hood Services: _____

   Ovens: Type Blue M Quantity 1

   Frequency of Use (# of days/week) Infrequent

   Duration of Use (Hours) 24-48 hours per use

2. **HVAC:**

   Temperature Requirements: 23 deg C Tolerance +/- 4 deg C

   Humidity Requirements: > 50% Tolerance _____

   Supply Air Filtration: RTU - Pre-Filter MERV 7, Final Filter MERV 14

   Exhaust Air Filtration: N/A

   Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

   Special Exhaust Requirements: N/A

   Air Recirculation: N/A

   Hours of Use: Approximately 8 - 10 hours/day

   Space Pressurization Criteria: N/A

3. **Special Equipment:**

   - Blue M Oven (free standing)

- **Special Conditions to be Considered:**

EXHIBIT 'E'

Material Sample: Testing performed within the Room - Source: NJDOT Material

Per Meeting #2 on 11-5-2021 MAP 101 through 136 not applicable.

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 12/23/2021 (Rev per 12/22/2021 mtg)

Room Designation: Building 4, Room 4

Room Function: Physical Lab Test (General Testing)

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: GEORGE SCHWARZ **Title:** PRINCIPAL ENGINEER **Date:** 12-23-21 **Initials:** GS

1. Laboratory Equipment Summary:

Hoods: Type: None Qty _ Size _____ Face Velocity____

Hood Services: _____

Ovens: Type _____ Quantity 1

Frequency of Use (# of days/week) 5

Duration of Use (Hours) 8 + hours/day

2. HVAC:

Temperature Requirements: 23 deg C Tolerance +/- 4 deg C

Humidity Requirements: > 50% Tolerance _____

Supply Air Filtration: RTU - Pre-Filter MERV 7, Final Filter MERV 14

Exhaust Air Filtration: N/A

Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

Special Exhaust Requirements: N/A

Air Recirculation: N/A

Hours of Use: Approximately 8 - 10 hours/day

Space Pressurization Criteria: N/A

3. Special Equipment:

- 5 ton portable AC unit

EXHIBIT 'E'

- Despatch oven (free standing)
- (2) Tenney moisture chambers (full day)
- PGC with sodium sol'n maintains sol'n at 23 deg C

- **Special Conditions to be Considered:**

  Material Sample: Testing performed within the Room - Source: NJDOT Material

  Per Meeting #2 on 11-5-2021 MAP 101 through 136 not applicable.

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 11/18/2021

Room Designation: Building 4, Room 4

Room Function: Physical Lab Test (General Testing)

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: George Schwarz **Title:** Principal Engineer **Date:** 12-08-21 **Initials:** GS

1. **Laboratory Equipment Summary:**

   Hoods: Type: Fume Qty 2 Size _____ Face Velocity____

   Hood Services: General Purpose, no chemicals

   Ovens: Type _____ Quantity 1

   Frequency of Use (# of days/week) 5

   Duration of Use (Hours) 8 + hours/day

2. **HVAC:**

   Temperature Requirements: 23 deg C Tolerance +/- 4 deg C

   Humidity Requirements: > 50% Tolerance _____

   Supply Air Filtration: RTU - Pre-Filter MERV 7, Final Filter MERV 14

   Exhaust Air Filtration: N/A

   Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

   Special Exhaust Requirements: N/A

   Air Recirculation: N/A

   Hours of Use: Approximately 8 - 10 hours/day

   Space Pressurization Criteria: N/A

3. **Special Equipment:**

   - 5 ton portable AC unit

EXHIBIT 'E'

- Despatch oven (free standing)
- (2) Tenney moisture chambers (full day)
- PGC with sodium sol'n maintains sol'n at 23 deg C

- **Special Conditions to be Considered:**

  Material Sample: Testing performed within the Room - Source: NJDOT Material

  Per Meeting #2 on 11-5-2021 MAP 101 through 136 not applicable.

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 12/23/2021 (Rev per 12/22/2021 mtg)

Room Designation: Building 4, Room 24

Room Function: Physical Lab Test (Curing)

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: GEORGE SCHWARZ **Title:** PRINCIPAL ENGINEER **Date:** 12-23-21 **Initials:** GS

1. Laboratory Equipment Summary:

Hoods: Type: Fume Hood Qty 2 Size _____ Face Velocity____

Hood Services: General Purpose, no chemicals

Ovens: Type Blue M Quantity 1

Frequency of Use (# of days/week) Infrequent

Duration of Use (Hours) 24-48 hours per use

2. HVAC:

Temperature Requirements: 23 deg C Tolerance +/- 4 deg C

Humidity Requirements: ≥ 50% Tolerance _____

Supply Air Filtration: RTU - Pre-Filter MERV 7, Final Filter MERV 14

Exhaust Air Filtration: N/A

Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

Special Exhaust Requirements: N/A

Air Recirculation: N/A

Hours of Use: Approximately 8 - 10 hours/day

Space Pressurization Criteria: N/A

3. Special Equipment:

- Blue M Oven (free standing)

- **Special Conditions to be Considered:**

EXHIBIT 'E'

Material Sample: Testing performed within the Room - Source: NJDOT Material

Per Meeting #2 on 11-5-2021 MAP 101 through 136 not applicable.

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 11/18/2021

Room Designation: Building 4, Room 1

Room Function: Physical Lab Test (PCC Batch)

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: George Schwarz **Title:** Principal Engineer **Date:** 12-08-21 **Initials:** GS

1. **Laboratory Furniture Requirements:**

   Hoods: Type: Fume Qty1 Size _____ Face Velocity____

   Hood Services: General Purpose, Always "On" No Chemicals

   Ovens: Type Despatch Quantity 1

   Frequency of Use (# of days/week) < 10 times/year

   Duration of Use (Hours) 8 (each use)

2. **HVAC:**

   Temperature Requirements: 23 deg C Tolerance +/- 4 deg C

   Humidity Requirements: NA Tolerance _____

   Supply Air Filtration: RTU - Pre-Filter MERV 7, Final Filter MERV 14

   Exhaust Air Filtration: N/A

   Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

   Special Exhaust Requirements: N/A

   Air Recirculation: N/A

   Hours of Use: Approximately 8 - 10 hours/day

   Space Pressurization Criteria: N/A

3. **Special Equipment:**

   - Cutting occasionally occurs in the space

EXHIBIT 'E'

- **Special Conditions to be Considered:**

  Material Sample: Testing performed within the Room - Source: NJDOT Material

  Per Meeting #2 on 11-5-2021 MAP 101 through 136 not applicable.

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 11/18/2021

Room Designation: Building 4, Room 7

Room Function: Physical Lab Test (RO-Tap)

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: George Schwarz **Title:** Principal Engineer **Date:** 12-08-21 **Initials:** GS

1. **Laboratory Equipment Summary:**

   Hoods: Type: None Qty ____ Size _____ Face Velocity____

   Hood Services: _____

   Ovens: Type None Quantity _____

   Frequency of Use (# of days/week) _____

   Duration of Use (Hours) _____

2. **HVAC:**

   Temperature Requirements: ASHRAE Comfort Standard 70°F (Heating) & 75° F (Cooling)

   Tolerance: + / - 3° F

   Humidity Requirements: N/A Tolerance _____

   Supply Air Filtration: RTU - Pre-Filter MERV 7, Final Filter MERV 14

   Exhaust Air Filtration: N/A

   Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

   Special Exhaust Requirements: N/A

   Air Recirculation: N/A

   Hours of Use: Approximately 8 - 10 hours/day

   Space Pressurization Criteria: N/A

3. **Special Equipment:**

   - Shaker, 5 days/week, 5 times/day, 10 mins/use

EXHIBIT 'E'

- Refrigerator

- **Special Conditions to be Considered:**

  Material Sample: Testing performed within the Room - Source: NJDOT Material

  Per Meeting #2 on 11-5-2021 MAP 101 through 136 not applicable.

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 11/18/2021

Room Designation: Building 4, Room 5

Room Function: Physical Lab Test (Soil)

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: George Schwarz **Title:** Principal Engineer **Date:** 12-08-21 **Initials:** GS

1. Laboratory Equipment Summary:

Hoods: Type: None Qty ____ Size _____ Face Velocity____

Hood Services: _____

Ovens: Type Despatch Quantity 2

Frequency of Use (# of days/week) (1) 5 days/week, (2) 2.5 days/week

Duration of Use (Hours) 8 + hours/day

2. HVAC:

Temperature Requirements: ASHRAE Comfort Standard 70°F (Heating) & 75° F (Cooling)

Tolerance: + / - 3° F

Humidity Requirements: N/A Tolerance _____

Supply Air Filtration: RTU - Pre-Filter MERV 7, Final Filter MERV 14

Exhaust Air Filtration: N/A

Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

Special Exhaust Requirements: N/A

Air Recirculation: N/A

Hours of Use: Approximately 8 - 10 hours/day

Space Pressurization Criteria: N/A

3. Special Equipment:

- (2) Despatch Ovens

EXHIBIT 'E'

- Ploog Eng. Sand Shaker on counter, 5 days/week, 5 times/day, 10 min/use
- Shell Lab Oven on counter, low temp oven infrequently used but when used duration 24 hours to 48 hours

- **Special Conditions to be Considered:**

  Material Sample: Testing performed within the Room - Source: NJDOT Material

  Per Meeting #2 on 11-5-2021 MAP 101 through 136 not applicable.

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 11/18/2021

Room Designation: Building 4, Room 3

Room Function: Physical Lab Test (Steel Testing)

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: GEORGE SCHWARZ **Title:** PRINCIPAL ENGINEER **Date:** 12-08-21 **Initials:** GS

1. **Laboratory Equipment Summary:**

   Hoods: Type: None Qty ____ Size _____ Face Velocity____

   Hood Services: _____

   Ovens: Type None Quantity _____

   Frequency of Use (# of days/week) _____

   Duration of Use (Hours) _____

2. **HVAC:**

   Temperature Requirements: ASHRAE Comfort Standard 70°F (Heating) & 75° F (Cooling)

   Tolerance: + / - 3° F

   Humidity Requirements: N/A Tolerance _____

   Supply Air Filtration: RTU - Pre-Filter MERV 7, Final Filter MERV 14

   Exhaust Air Filtration: N/A

   Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

   Special Exhaust Requirements: N/A

   Air Recirculation: N/A

   Hours of Use: Approximately 8 - 10 hours/day

   Space Pressurization Criteria: N/A

3. **Special Equipment:**

   - (2) Tinius Olsen Compression Machines, 5 days/week, <12 times/day, 10 min/use

EXHIBIT 'E'

- **Special Conditions to be Considered:**

  Material Sample: Testing performed within the Room - Source: NJDOT Material

  Per Meeting #2 on 11-5-2021 MAP 101 through 136 not applicable.

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 11/18/2021

Room Designation: Building 9

Room Function: Cylinders

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: George Schwarz **Title:** Principal Engineer **Date:** 12-08-21 **Initials:** GS

1. **Laboratory Equipment Summary:**

   Hoods: Type: None Qty ____ Size _____ Face Velocity____

   Hood Services: _____

   Ovens: Type None Quantity _____

   Frequency of Use (# of days/week) _____

   Duration of Use (Hours) _____

2. **HVAC:**

   Temperature Requirements: ASHRAE Comfort Standard 70°F (Heating) & 75° F (Cooling)

   Tolerance: + / - 3° F

   Humidity Requirements: N/A Tolerance _____

   Supply Air Filtration: RTU - MERV 13 (if RTU is replaced)

   Exhaust Air Filtration: N/A

   Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

   Special Exhaust Requirements: N/A

   Air Recirculation: N/A

   Hours of Use: Approximately 8 - 10 hours/day

   Space Pressurization Criteria: N/A

3. **Special Equipment:**

   - Compression Table Several tests/day, 10 min/test

EXHIBIT 'E'

- **Special Conditions to be Considered:**

  Material Sample: Testing performed within the Room - Source: NJDOT Material

  Per Meeting #2 on 11-5-2021 MAP 101 through 136 not applicable.

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 11/18/2021

Room Designation: Building 4, Room 26

Room Function: Environmental Chamber

Room Area Required: _____

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: George Schwarz **Title:** Principal Engineer **Date:** 12-08-21 **Initials:** GS

1. **HVAC:**

   Temperature Requirements: 23 deg C Tolerance +/-2 deg C

   Humidity Requirements: > 95% Tolerance _____

   Supply Air Filtration: RTU - Pre-Filter MERV 7, Final Filter MERV 14

   Exhaust Air Filtration: N/A

   Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

   Special Exhaust Requirements: N/A

   Air Recirculation: N/A

   Hours of Use: Approximately 8 - 10 hours/day

   Space Pressurization Criteria: N/A

2. **Special Equipment:**

   None

3. **Special Conditions to be Considered:**

   Material Sample: Testing performed within the Room - Source: NJDOT Material

   Per Meeting #2 on 11-5-2021 MAP 101 through 136 not applicable.

EXHIBIT 'E'

PROGRAMMING ROOM DATA SHEET

DPMC Project No.: T0640-00 **Gillan & Hartmann Project No.:** 2021-153

Date: 11/18/2021

Room Designation: Between Building 4 & 9

Room Function: Receiving

Information Obtained From: _____

DPMC Sign Off:

Name: _____ **Title:** _____ **Date:** _____ **Initials:** _____

User Agency Sign Off:

Name: GEORGE SCHWARZ **Title:** PRINCIPAL ENGINEER **Date:** 12-08-21 **Initials:** GS

1. **Laboratory Equipment Summary:**

   Hoods: Type: None Qty ____ Size _____ Face Velocity____

   Hood Services: _____

2. **HVAC:**

   Temperature Requirements: ASHRAE Comfort Standard 70°F (Heating) & 75° F (Cooling)

   Tolerance: + / - 3° F

   Humidity Requirements: N/A Tolerance _____

   Supply Air Filtration: RTU - MERV 13 (if RTU is replaced)

   Exhaust Air Filtration: N/A

   Supply Air Change Rate:Basis: Fume Hood, Code Minimum or Oven/Equipment

   Special Exhaust Requirements: N/A

   Air Recirculation: N/A

   Hours of Use: Approximately 8 - 10 hours/day

   Space Pressurization Criteria: N/A

3. **Special Equipment:**

   - None.

EXHIBIT 'E'

4. **Special Conditions to be Considered:**

Material Sample: Testing performed within the Room - Source: NJDOT Material

Per Meeting #2 on 11-5-2021 MAP 101 through 136 not applicable.

EXHIBIT 'E'

6.1.1

NEW JERSEY DEPARTMENT OF TRANSPORTATION
CEMENT TESTING LABORATORY
INVENTORY OF MAJOR EQUIPMENT

1/24/24

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM
No. 325 Sieve	Gilson			CT-1	2019	2019	New	4-21A
Balance	Mettler	Toledo	AG204	CT-2	2001	2001	New	4-21A
Blaine	Humboldt	25413	-	CT-3	2018	2018	New	4-21A
Freezer 10.1	G.E.	CA105MC	-	CT-4	Pre-1990	Pre-1990	New	4-21
Vicat	Humboldt	H3050	A191	CT-7	2017	2017	New	4-21
Vicat	Humbolt	H3050	A191	CT-7A	2017	2017	New	4-21A
Standard Sand	Gilson	HM-107/108	107/108	CT-8				4-21
Mixer	Hobart	N-50A	31-1243-236	CT-10	2001	2001	New	4-21
Mixer	Hobart	N-50	1243-236	CT-11	2001	2001	New	4-21
Mixer	Hobart	N-50A	31-1244-272	CT-12	2001	2001	New	4-21
Mixer	Hobart	A 120T	11-459-727	CT-13	Pre-1990	Pre-1990	New	4-21
Balance	A&D	EP-20KA	3806066	CT-14				4-21
Length Comparator	ELE	34-8507		CT-15	2017	2017	New	4-21
Oven	Blue M	OV-18C	18C256	CT-16				4-21A
Penetrometer	Humboldt	H-4133	1158	CT-17	2020	2020	New	4-21
Compression Machine	Tinius Olsen	120K	209450	CT-18	Pre-1990	Pre-1990	New	4-21
Autoclave	Boekel	Autoclave	341-6	CT-21	2001	2001	New	4-21
Flow Table	Humbolt	3620		CT-22	Pre-1990	Pre-1990	New	4-21
Bar Molds	Humboldt			CT-24				4-21
Bar Molds	Humboldt			CT-25				4-21
Bar Molds	Humboldt			CT-26				4-21
Oven	Despatch	LBB-2-27-1	172577	CT-33	2006	2006	New	4-01
Air Content Measure	Humboldt		276	CT-36	2003	2003	New	4-21
Bearing Block	Tinius Olsen			CT-37	2005	2005	New	4-21
Spray Nozzle	Humboldt			CT-38	2017	2017	New	4-21A
Tampers (3)	Gilson			CT-39	2020	2020	New	4-21

EXHIBIT 'F'

6.1.1

NEW JERSEY DEPARTMENT OF TRANSPORTATION
CEMENT TESTING LABORATORY
INVENTORY OF MAJOR EQUIPMENT

1/24/24

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM
Temperature Recorder, W/B	Omega	CT87LF	01321879	CT-40	2001	2001	New	4-21
Cube Molds	Humbolt	IT-2820		CT-41	2001	2001	New	4-21
Cube Molds	Humbolt	IT-2820		CT-42	2001	2001	New	4-21
Lab Temperature Recorder	Omega	CT87LF		CT-45	2001	2001	New	4-21
Compression Machine	Tinius Olsen	500KN CEP	130007	CT-89	2022	2022	Used	4-21
Computer for Tinius Olsen	Dell	GX280		CT-47	2001	2001	New	4-21
Temp Chamber	TPS	TJR	0900000099-01	CT-49	2009	2009	New	4-21
Moist Cabinet	Binder	KMF-720	720	CT-87	2019	2022	New	4-04
Balance	Mettler	XS-6001-S	1123200587	CT-51	2009	2009	New	4-21
Moist Cabinet	Binder	KMF-720	720	CT-88	2022	2022	New	4-04
Fluke 52 II, Digital Thermometer	52-2	56230515		CT-67		2022	New	4-21B
Kessler (autoclave), HG Thermometer		481073		CT-81A	2010	2001	New	4-21
Gage Blocks 0.05"-4"	Starrett	RS81B	8378	CT-56	2008	2008	New	4-21B
Autoblaine	Ibertest	Ibertest	3301278-09	CT-57	2018	2018	New	4-21
Scale	Mettler	C-1005		CT-58	2009	2009	New	4-21
Lime Bath Water	Fonma	C511		CT-59	2009	2009	New	4-21
Flow Table with Counter	Humbolt	C-230		CT-60	2009	2009	New	4-21
Scale	Sartorius	TE1502S	23150065	CT-61	2009	2009	New	4-21
Caliper Digital	Mitutioy	1ZRR-4	500-19720	CT-62	2009	2009	New	4-21B
Timers	Traceable	210422720		CT-69-1,2,	2023	2023	New	4-21B
Chipmunk	Braun	VB60		CT-80	Pre-1990	Pre-1990	New	4-01
Glass Thermometers	VWR			CT-81 B/C	2010	2010	New	4-21
Sieve 20	Gilson			CT-83	2021	2021	New	4-21
Sieve 50	Gilson			CT-84	2021	2021	New	4-21
Flow Mold	Humboldt			CT-85	2017	2017	New	4-21
Flow Caliper	Humboldt			CT-86	2019	2019	New	4-21

EXHIBIT 'F'

6.1.1

NEW JERSEY DEPARTMENT OF TRANSPORTATION
CEMENT TESTING LABORATORY
INVENTORY OF MAJOR EQUIPMENT

1/24/24

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM
Graduate	Fisher			CT-29	2010	2010	New	4-21
Graduate	Fisher			CT-30	2010	2010	New	4-21
Digital Hygrometer	Thomas Scientific	1235C78	230202136	CT-54	2023	2023	New	4-21

EXHIBIT 'F'

	A	B	C	D	E	F	G	H	I	J
1	NEW JERSEY DEPARTMENT OF TRANSPORTATION									
2	6.1.1			CHEM LABORATORY SPECIAL PROJECTS					Apr-24	Rev.7
3				INVENTORY OF MAJOR EQUIPMENT						
4	Special Project #2-01									
5	EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM	Comment
6	Balance	Mettler	AG204	1119283462	SP-1	2000	2000	New	2-01	Good
7	PH Meter	ATI Orion	370	B06349	SP-3	1996	1996	New	2-01	Good
8	IR Spectrophotometer	Perkin Elmer	Spectrum One	55804	SP-4	2000	2000	New	2-01	Good
9	UT Cleaner	Fisher	FS20H	155688	SP-7	2001	2001	New	2-02	Good, Used for XRF
10	Hotplate	Lindberg	GS	927099	SP-10	1988	1988	New	2-01	Remove / Replace
11	Vaccuum Oven	Hypor Thermo	6002	12735	SP-15	1983	1983	New	2-01	Not in Service / Replace/Leave in place
12	Oven	Blue M / Thermo	LB305745	2037090834233	SP-16	2009	2009	New	2-01	Good
13	Press	X-Press	3630	10027	SP-17	2008	2008	New	2-01	Good
14	Water Bath	Blue M / Lindberg	1140	9206	SP-18	2001	2001	New	2-01	Good
15	Colorimeter	Color Flex	45 / 0	CX1593	SP-19	2009	2009	New	2-01	Wont calibrate, Replace soon, Good
16	Soil Analyzer	Thermo Fisher	Niton XL3T 950	51730	SP-20	2000	2000	New	2-01	Good
17	Reflectometer	GR3	GR3	1031	SP-21	2000	2000	New	2-03	Good, Locker
18	Air Data Multimeter	Shortridge	ADM-860C	M11277	SP-22	2000	2000	New	2-01	Good
19	Hydrometer / Thermometer	Control Co.	4088	T-18	SP-24	2012	2012	New	2-01	Replace
20	Hatr	Perkin Elmer			SP-25				2-01	Good, IR Accessory for Paint
21	Paint Analyzer	Thermo Scientific	Niton XLP	25109	SP-26				Maintenance	Good
22	PH-Meter	Orion	Star	A211	SP-27	2019	2019	New	2-01	Good

EXHIBIT 'F'

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF MATERIALS
COARSE AGGREGATE LABORATORY RM. 4-08
INVENTORY OF MAJOR EQUIPMENT

3/26/2024

EQUIPMENT	MANUFACTURER	MODEL	MFG #	LAB #	VERIFICTION INTERVAL	ROOM
TM-3 SIEVE SHAKER 1	GILSON	TS-3	20042	CA-32	12 MONTHS	RM 4-08
TM-3 SIEVE SHAKER 2	GILSON	TS-3	`20041	CA-33	12 MONTHS	RM 4-08
TM-3 SIEVE SHAKER 3	GILSON	TM-3	2934	CA-3	12 MONTHS	RM 4-08
ELECTRIC BATCH OVEN 1	BLUE M	366	DC-6293	CA-4	6 MONTHS	out of service RM 4-08
ELECTRIC BATCH OVEN 2	BLUE M	366	DC-7507	CA-5	6 MONTHS	RM 4-08
LARGE SPLITTER	GILSON	SP-1	N/A	CA-6		RM 4-08
SMALL SPLITTER	SOILTEST	SL-280	NA	CA-13		RM 4-08
BALANCE SCALE	OHAUS	EX12001	B90102 1472	CA-36	12 MONTHS	RM 4-08
BALANCE SCALE	OHAUS	EX35001	B91345 30091	CA-23	12 MONTHS	RM 4-08
SCALE 400#	FAIRBANKS	H90-5150	H173454	CA9		RM 4-08
BENCH SCALE	AND	GP30KS	14734053	CA-29	12 MONTHS	RM 4-08
AGGRAGATE WASHER	PLOOG ENG	GRAVEL WASHER	W600	CA-11		RM 4-08
FLAT AND ELONGATED TESTER	NA	NA	NA	CA-34	12 MONTHS	RM 4-08
TANK	GILSON	SGA120	NA	CA-19		RM 4-08
CLEAN &WEIGHT	GILSON	NA	NA	CA-21		RM 4-08
UNIT WEIGHT BUCKET	HUMBOLT	H3663.1	NA	CA-24	12 MONTHS	RM 4-08
UNIT WEIGHT BUCKET	HUMBOLT	H3663.1	NA	CA-37		
LA MACHINE	GILSON	HM-70A	LA-452	CA-31	24 MONTHS	RM 4-01
LA MACHINE STEEL BALLS	SET 1 & 2 NA	NA	NA	1 TO 12 1 TO 12	24 MONTHS	RM 4-01
SODIUM SULFATE CONTAINERS	NA	NA	NA		12 MONTHS	RM 4-08
FLAKINESS TESTER	GILSON	NA	NA	CA-28		RM 4-08

Verification interval corrected from 12 to 24 months

Added STEEL BALLS SET 2

EXHIBIT 'F'

6.1.1

NEW JERSEY DEPARTMENT OF TRANSPORTATION
CONCRETE TESTING LABORATORY
INVENTORY OF MAJOR EQUIPMENT 1 OF 2

04/11/24

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM	
600K #Compression Machine	Tinius Olsen	602	315905	CS-1	2015	2015	NEW	9-01	
Moist Room	-	-	-	CS-2	1996	1996	NEW	4-26	
125# Scale	Ohaus	Champ	16437336FF	CS-7	2000	2000	NEW	4-01	out of service
Slump Cone	Forney	---	N/A	CS-9- B	2020	2021	NEW	4-01	
225# Scale	Detecto	2331	580978	CS-12	Pre-1990	Pre-1990	NEW	4-01	out of service
Temperture/Humidty Recorder	Honeywell	Truline		CS-16	2003	2003	NEW	4-26	
Computer for Tinius Olsen	Dell	Optiplex 9020		CS-21	2015	2015	NEW	9-01	
3 1/2 Cu. Ft. Mixer	Kushlan	LA-1210	1002231	CS-28	2019	2019	NEW	4-01	
Pressure Air Meter	Forney	LA-0316	N/A	CS-29	2020	2021	NEW	4-24	
Volumetric Air Meter	Forney	MN-LA-0306	N/A	CS-30	2020	2021	NEW	4-24	
Grinder for Core	UTEST	UTC-1040		CS-31	2019	2019	New	4-28	
12" Calipers	Starlett	EC799B-12/300		CS-27	2021	2021	New	9-01	

6.1.1

NEW JERSEY DEPARTMENT OF TRANSPORTATION
CONCRETE TESTING LABORATORY
INVENTORY OF MAJOR EQUIPMENT 2 OF 2

11/29/22

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM
18" Calipers	Westward	29AD39		CS-29	2021	2021	NEW	9-01
Thermometer	Tel-Tru		T-5	CS-30				9-01
Grinder for Core	UTEST	UTC-1040		CS-31	2019	2019	New	4-28
Thermometer	Tel-Tru		T-4	CS-32				
150 # Scale	ADAM	CPW+-150		CS-33				

EXHIBIT 'F'

6.1.1

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BITUMINOUS TESTING LABORATORY DENSITY LAB
INVENTORY OF MAJOR EQUIPMENT 1 OF 1

3/7/24

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM
Balance	Ohaus	EX 12001	B908265217	BD2-1	2019	2019	NEW	2-32
Balance	Ohaus	EX 12001	B908265219	BD2-2	2019	2019	NEW	2-32
Vibrating Table	Syntron	VP-51-DI	GPVT1398	BD2-3	2019	2019	NEW	2-32
Vibrating Table	Syntron	VP-51-DI	GPVT1399	BD2-4	2019	2019	NEW	2-32
Oven	Blue M TPS	DC-1406-FPM	136550	BD2-5	2019	2019	NEW	2-32
Timing Device	Traceable	5017	191932107	BD2-6	2019	2019	NEW	2-32
Timing Device	Traceable	5017	191930574	BD2-7	2019	2019	NEW	2-32
Timing Device	Traceable	5017	191930498	BD2-8	2019	2019	NEW	2-32
Vacuum Pump	HyVAC	91506-001	711901	BD2-9	2019	2019	NEW	2-32
Pump Saver	Instrotek		689	BD2-10	2019	2019	NEW	2-32
Flukemeter	FLUKE		47570327WS	BD2-12	2019	2019	NEW	2-32
Absolute pressure guage	Karol Warner	9210	8264	BD2-13	2019	2019	NEW	2-32
Pycnometers	Gilson	1-5, 7,8		BD2-14	2019	2019	NEW	2-32

EXHIBIT 'F'

6.1.1

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BITUMINOUS TESTING LABORATORY DENSITY LAB
INVENTORY OF MAJOR EQUIPMENT 1 OF 2

3/7/24

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM
Oven	Blue M, DC-1406-F-ST350	SPX	84103	BD-3	2004	2004	NEW	2-31
Vibrating Table	Synitron	CT164	115/60/1	BD-5	1992	1997	NEW	2-31
Vacuum Pump	Welch	1402B-01	EF101468	BD-8	2005	2005	NEW	2-31
Vibrating Table	Synitron	VP-51-D1	GPVT1199	BD-11	2010	2010	NEW	2-31
Pressure Gauge (2)	Supco	DPG25V		BD-12	2010	2010	NEW	2-31
Water Bath Gauges	True Temp JBJ	TT up to 1000 Watt		BD-13	2023	2024	New	2-31
Water Bath Gauges	Finnex	TT up to 1000 Watt		BD-14	2023	2024	New	2-31
Water Bath Gauges	Finnex	TT up to 1000 Watt		BD-15	2023	2024	New	2-31
Caliper	Mitutoyo	CD12C	47835	BD-16	2010	2010	NEW	2-31
Caliper	Mitutoyo	CD18	0022797	BD-17				2-31
Timing Devices	VWR Traceable	111909291		BD-19				2-31
Timing Devices	VWR Traceable	11909278		BD-20				2-31
Dual Timing Devices	Control Company	5017	160684945	BD-21	2017	2017	New	2-31
Ruler	Westcott			BD-25				2-31

6.1.1

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BITUMINOUS TESTING LABORATORY DENSITY LAB
INVENTORY OF MAJOR EQUIPMENT 2 OF 2

3/7/24

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM
Ruler	Gaebal	512		BD-26				2-31
Core Spilitter	Walker	93226		BD-4				2-31
Flukemeter	Fluke	Fluke 51-2 Thermo.	36580211WS	BD-27				2-31
Pressure Gauge	Karol Warner	9210		BD-28	2015	2015	New	2-31
Pycnometer (11) OOS								2-31
Pyncometer Acrylic 1 - 8	Gilson	SG-16A	_____	1 - 8	2023	2023	New	2-31
Thermometer (1)		3N9295		BD-29				2-31
Scale	Ohaus	EX12001	B844670372	BD-30	2018	2018	New	2-31
Scale	Ohaus	EX12001	B844670371	BD-31	2018	2018	New	2-31
12" Calipers	Mitutoyo	CD-12" ASX	0034972	BD-32	2022	2022	New	2-31
18" Calipers	Mitutoyo	CD-18" C	0038210	BD-33	2022	2022	New	2-31

EXHIBIT 'F'

NEW JERSEY DEPARTMENT OF TRANSPORTATION

6.1.1 FINE AGGREGATE TESTING LABORATORY 3/18/24

INVENTORY OF MAJOR EQUIPMENT 1 OF 5

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM
Ro-Tap Shaker	W.S. Tyler	RX-29	3956	SA-1	1990	1997	New	4-07
Ro-Tap Shaker	W.S. Tyler	RX-29	24868	SA-2	2017	2017	New	4-07
Sound Enclosure	W.S. Tyler	R-300050	2328	SA-3	1990	1997	New	4-07
Sound Enclosure	W.S. Tyler	R-300060	3793	SA-4	1990	1991	New	4-07
Balance	Ohaus	Voyager	E18711922 0228	SA-5	2001	2001	New	4-05
Oven	Shel Lab	SM05HP-2	4004020	SA-6	2019	2019	New	4-05
Blender	Hamilton Beach	936-1	7115-936001/33903	SA-7	1990	1990	New	4-05
Hot Plate	Thermolyne	HP-2625-R	2210/39902	SA-12	2000	2000	New	4-05
Drill Press	Walker-Turner	1113-41	0001515/39 900	SA-14	Pre- 1990	Pre-1990	New	4-07
Proctor Sample Ejector	Humbolt	H-4155		SA-15	1990	1990	New	4-05
Large Splitter	Gilson Co.	SP-1		SA-16	1990	1990	New	K-Hut
Small Splitter	Soiltest	CL-2804		SA-18	Pre- 1990	Pre-1990	New	4-05

NEW JERSEY DEPARTMENT OF TRANSPORTATION

6.1.1 FINE AGGREGATE TESTING LABORATORY 3/18/24

INVENTORY OF MAJOR EQUIPMENT 2 OF 5

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM
Aggregate Washer	Ploog Engineering	W600	5069228/05 8068	SA-20	1990	1994	New	4-05
Hydrometer Bath	Humboldt	HL4239A		SA-29	2017	2017	New	4-05
Plastic Index Tester	Humbolt	H-4226	-	SA-31	1990	Not In Use	New	4-05
Unit Weight Bucket				SA-35				4-05
Digital Scale	Mettler	SG16001	2116154889	SA-51	1999	1999	New	4-05
Micro Riffle Splitter	Microscal	SRLF	1186	SA-52	2000	2000	New	4-05
3” Sieve Shaker (2)	Gilson	SS-5	401	SA-53	2000	2000	New	4-05
Ultra Sonic Bath	NEY	104H		SA-54	1996	1996	New	4-05
Mechanical Compactor	Ploog	W6000	57371	SA-56	2001	2001	Used	4-05
Scale	Mettler	PG5002-5	1120121603	SA-60	2000	2000	New	4-05

EXHIBIT 'F'

Mixer	Hobart	C100	1535585	SA-61	Pre- 1990	Pre-1990	New	4-05

NEW JERSEY DEPARTMENT OF TRANSPORTATION
FINE AGGREGATE TESTING LABORATORY
6.1.1 INVENTORY OF MAJOR EQUIPMENT 3 OF 5 3/18/24

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM
Medium Sliptter	Humbolt	H-3966		SA-63	2003	2003	New	4-05
Oven	Despatch	LBB2-18-1	170737	SA-64	2001	2001	New	4-05
Oven	Despatch	LBB2-18-1	170738	SA-65	2001	2001	New	4-05
Oven	Despatch	LB12181	172578	SA-66	1992	1992	New	4-04
Sodium Water Bath	PGC	9421-1100A	911201	SA-67	2009	2009	New	4-04
Sand Equlivant Shaker	Ploog	SC1165	411465	SA-68	2010	2010	New	4-05
Large Splitter	Gilson	SP-1		SA-69	2010	2010	New	4-05
SS Detect	Barnstead	M120227	1.5031E+12	SA-70	2010	2010	New	4-05
SS Detect	Barnstead	M134825	1.4081E+12	SA-70	2010	2010	New	4-05
Scale	Ohaus	EX12001	B901021473	SA-71	2019	2019	New	4-05
Ultra Sonic Cleaner (tank)	Zenith	T800-2	T800-2-117-9772	SA-72	2018	2018	New	4-05
Ultra Sonic Cleaner (generator)	Zenith	G4-80	G4-80-117-9771	SA-73	2018	2018	New	4-05

NEW JERSEY DEPARTMENT OF TRANSPORTATION
FINE AGGREGATE TESTING LABORATORY
6.1.1 INVENTORY OF MAJOR EQUIPMENT 4 OF 5 3/18/24

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM
Pedestal Fan	Chelsea	K55HXKKM-3356	78597	CT-32	Pre- 1990	Pre-1990	New	4-04
Sieve, Wire Cloth								
Proctor Hammer								
Proctor Molds								
Straight Edges, Beveled								
Caliper	Mitutoyo	CD-6	13066642					
Weighted Foot Assembly								

EXHIBIT 'F'

Grooving Tool								
Pycmometer								
Dry Surface Mold, Conical								
Dry Surface Tamper								

NEW JERSEY DEPARTMENT OF TRANSPORTATION

6.1.1 FINE AGGREGATE TESTING LABORATORY 3/18/24

INVENTORY OF MAJOR EQUIPMENT 5 OF 5

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM
Thermometers	Fluke	52 II		TH-2				
Thermometers	Fisher	1029		TH-3				
Thermometers	SAMMA FT-15	1002		TH-4				
Excursion-Trac Platinum Thermometer	Traceable	6426	221349487	TH-6				
Sieve Calibration Comparator	Nikon	V-12A	OE22505-ML	SA-99	1992	1992	New	4-05
Load Frame (CBR)	Humboldt	Master Loader 5030	1808ADB673	SA-74	2019	2019	New	4-05
Load Cell (CBR)	Humboldt	HM-23000.100	800929	SA-75	2019	2019	New	4-05
Load Displacement Indicator (CBR)	Humboldt	HM-23000.100	16239	SA-76	2019	2019	New	4-05

Added

EXHIBIT 'F'

6.1.1 NEW JERSEY DEPARTMENT OF TRANSPORTATION 04/17/2024
BITUMINOUS TESTING LABORATORY LIQUIDS LAB
INVENTORY OF MAJOR EQUIPMENT 1 OF 6

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM	Note
Electronic Balance OOS	Mettler	PJ6000	J15392	BL-2	1988	1988	NEW	2-34	Out of Service
Vacuum Oven	Fisher Scientific	285A	1508090628917	BL-10	2009	2009	NEW	2-34	
Penetrometer	Humbolt	H-1240	07021240	BL-11	2007	2007	NEW	2-34	
Water Bath	Cole-Parner	12107-20	G30952	BL-13	2004	2004	NEW	2-34	
Water Bath	VWR	Isotemp 3028	103191009	BL-14	2002	2002	NEW	2-34	
Manual Flash Point Teste	Koehler			BL-19	1992	1992	NEW	2-34	
Hot Plate, Mini	Scientific	210	33918556	BL-21	1992	1992	NEW	2-34	
Computer	BBR	BL-PC-8	210989-11	Tag: 901222			NEW	2-34	
	TA DSR	BL-PC-9	150814-11	Tag: 142352			NEW	2-34	
	MANERN	BL-PC-7	130315-11	Tag: 138637			NEW	2-34	
	BBR	BL-PC-10	150814-11	Tag: 140626			NEW	2-34	
Water Bath	Polyscience	2212-01113			2023		NEW	2-34	
Water Bath	Polyscience	2212-01112			2023		NEW	2-34	

6.1.1 NEW JERSEY DEPARTMENT OF TRANSPORTATION 4/17/2024
BITUMINOUS TESTING LABORATORY LIQUIDS LAB
INVENTORY OF MAJOR EQUIPMENT 2 OF 6

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM	
DSR	Malvern	KNX2100	MAL1053107	BL-29	2011	2011	NEW	2-34	
Pressure Aging Vessel	Prentex	9300	93438	BL-33	2008	2008	NEW	2-34	
BBR	Cannon	TE-BBR	3504-A409	BL-36	2009	2009	NEW	2-34	
BBR Chiller	Cannon	TE-BBR:AWHE-	3504-A409	BL-36A			NEW	2-34	

6.1.1 NEW JERSEY DEPARTMENT OF TRANSPORTATION 04/17/2024
BITUMINOUS TESTING LABORATORY LIQUIDS LAB
INVENTORY OF MAJOR EQUIPMENT 3 OF 6

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM	
Electronic Balance	Mettler	PB303-S/Q-F	1129393376	BL-37	2009	2009	NEW	2-34	
Electronic Balance	Mettler	XS6001S	1112373972	BL-38	2009	2009	NEW	2-34	
Vaccum Pump	Welch	T55JXCHW-1331		BL-41	2010	2010	NEW	2-34	
Chiller	VWR	1162	907377	Bl-42			New	2-34	
Water Bath OOS	Cannon	M-1		BL-43			New	2-34	Back up
Hot Plate	Thermo Scientific	HPA2235MO	01706170605987	BL-44	2019	2019	New	2-34	
Chiller (OOS)	Poly Science		F08500435	BL-45				2-34	Out of Service
Water Bath	Poly Science	8006A11B	3C1721702	BL-46	2017	2017	NEW	2-34	Back up
Flash Tester	Anton Paar	107122CLA5	60050359	BL-49	2017	2017	New	2-34	

EXHIBIT 'F'

RTFO	James Cox & Sons	CS325B	1275-15	BL- 50	2017	2017	NEW	2-34	

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN	ROOM	
Rotational Viscometer	Brookfield	DV2TRVTJO	8715265	BL-51	2017	2017	NEW	2-34	
Saybolt Viscometer	Koehler	K21414	K2141410006Q	BL - 54	2017	2017	NEW	2-34	
Electronic Balance	Mettler Toledo	XS60015	1123173971	BL-53	2017	2017	NEW	2-34	
Constant Temperature Bath	Cannon	CT2000	1657-A4517	BL-56	2018	2018	New	2-34	
Constant Temperature Bath	Cannon	CT2000	1658-A4517	BL-55	2018	2018	New	2-34	
Computer	TA-2			BL-PC-8				2-34	
Computer	Cannon BBR-2			BL-PC-9				2-34	
Computer (OOS)	Malvern			BLPC-7				2-34	
Mold for T51					2017	2017	New	2-34	
Mold for T301					2017	2017	New	2-34	
Flow Meter (2)					2017	2017	New	2-34	Out of Service
Pyconmeter Glass			20,25						
Sieves			Various Sizes						
Computer	Malvern		137184	BLPC-7				2-34	Out of Service
Flash Cups				3,4 & 5	2017	2017	New	2-34	
TA DSR	T/A	DHR-1	5332-1966	BL-52	2017	2017	New	2-34	

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM	
PAV	Applied Test Systems	18-17326-2	831981	BL-59	2018	2018	New	2-34	
Digital Vaccum Regulator	Cannon	DVR-1500V	1649-A4417	BL-57	2018	2018	New	2-34	
Chiller	Solid State Cooling Systems	Thermo Cube	4014824	BL-58	2018	2018	New	2-34	
Rotational Viscometer	Brookfield	DVRVTJO	86007890	BL-60	2019	2019	New	2-34	
Hot Plate	Thermo Scientific	FB1315M	1126061301180608	BL-61	2019	2019	New	2-34	Back up
Auto Penetrometer	Anton Paar	PNR 12-146375	60079152	BL-62	2019	2019	New	2-34	
Water bath	VWR	AP28R-30	1903-03344	BL-63	2019	2019	New	2-34	
Rolling Thin Film Oven	ATS	MO-36	19-19390-1	BL-64	2019	2019	New	2-34	
Muffle Furance	Thermo Scientific	FB1315M	1126061301180608	BL-65	2019	2019	NEW	2-34	
Balance	Mettler	AF200	G40664	BL-66	2000	2000	New	2-34	
Drying Oven	Thermo Scientific	PR305225M	300399992	BL-67	2020	2020	NEW	2-34	
PyroClean	Applied Test Systems	DWG-2-9202	19-19018-1	BL-68	2020	2020	NEW	2-34	
BBR	Cannon	TE BBR SD	4121-A-2022	BL-69	2022	2022	New	2-34	

EXHIBIT 'F'

INVENTORY OF MAJOR EQUIPMENT 6 OF 6									
EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM	
Vacuum Oven	Thermo Scientific	3625A	300499589	BL-70	2022	2022	NEW	2-34	
Computer	For BBR		NJDOT:140626	BL-71	2022	2022	NEW	2-34	
Scale	Ohaus	EX12001	B908265216	BL-72	2022	2022	New	2-34	
Balance	Mettler Toledo	XSR3035	SN-C241046257	BL-73	2022		New	2-34	

EXHIBIT 'F'

6.1.1 NEW JERSEY DEPARTMENT OF TRANSPORTATION
BITUMINOUS TESTING LABORATORY PAVEMENT ANALYSIS
INVENTORY OF MAJOR EQUIPMENT 1 OF 2 Mar-24

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM
Oven	Blue M	DL-1126A	D2-428	BA-3	1992	1999	New	2-32
Balance	Mettler PM 11N	PM11N	056754	BA-5	1989	1989	New	2-32
Constant Temp Bath	Blue M-Bath 3		M9818	BA-12	Pre 1970	Pre 1970	New	2-23
Oven	Barnstead	OV134210	1342039696	BA-15	2000	2000	New	2-32
OOS Sieve Shaker	Ro-Tap, Taylor	RX-30	24291	BA-16	2005	2005	New	2-33
Sieve Shaker	Ro-Tap Taylor	RX-30	14709	BA-19	2019	2019	New	2-33
Balance	Mettler	PM-11N	M71924	BA-20	1989	1997	New	2-33
Balance	Ohaus	ETK 210	1119252002	BA-21	2000	2004	New	2-33
Sieves 8” Dia.	Newark Wire Cloth			Various Size	Oct-98	Mar-98	New	2-33
Sieves 12” Dia.	USA Standard			Various Size	2005	2005	New	2-33
OOS Aggregate Washer				BA-22	2006	2006	New	2-33
Core Splitter	Westward	3ZC61G		BA-23	Pre 1990	Pre 1990	New	2-33
Bath	Zenith Ultrasonic	T800-2	T800-2-0217-9412	BA-26	2017	2017	New	2-32
Power Source	Zenith Ultrasonic	G-4-80	G4-80-0217-9411	BA-26A	2017	2017	New	2-32

6.1.1 NEW JERSEY DEPARTMENT OF TRANSPORTATION
BITUMINOUS TESTING LABORATORY PAVEMENT ANALYSIS
INVENTORY OF MAJOR EQUIPMENT 1 OF 2 Mar-24

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM
Ignition Oven	ThermoScienitifc	F85930	1146757201171009	BA - 27	2017	2017	New	2-32
Ignition Oven	ThermoScienitifc	F85930	1146759701171010	BA - 28	2017	2017	New	2-32
Ignition Oven	ThermoScienitifc	F85930	1146759901171011	BA - 29	2017	2017	New	2-32
Table Top Agg Washer	Karol Warner	Motor - GF12N010-BMLC1AX	79527022016	BA-30	2018	2018	New	2-33
Sieve Shaker	Ro-TAP	RX-30	18052	BA-32	2022	2022	New	2-33
Sieve Shaker	Ro-Tap	RX-30	18363	BA-33	2022	2022	New	2-33
Aggregate Washer	Karol warner	HM-52	2096 Servial #		2023	2023	New	2-33

EXHIBIT 'F'

6.1.1

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BITUMINOUS TESTING LABORATORY RESEARCH LAB
INVENTORY OF MAJOR EQUIPMENT 1 OF 5

03/19/24

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM
Balance	Mettler	AE 200	M71451	BR-1	1999	1999	New	2-35
Balance	Mettler	PM-11N	M71921	BR-2	1987	1987	New	2-35
Constant Temp Bath	Pine Instruments	AFPW160		BR-5	1995	1995	New	2-35
Constant Temp. Bath	VWR	1186	G05043	BR-6	2001	2002	New	2-35
Corelok (OOS)	Instrotek	I225	1533	BR-8	2001	2001	New	3-58
Corelok	Instrotek	I225	1534	BR-9	2001	2001	New	3-58
Crafco Lab Melter	Daton Electric	J82R0168	02DA69696R	BR-10	Pre 1997	2001	New	2-35
Delta Band Saw	Delta International	28-203	93A93462	BR-11	1997	1997	New	2-24
Environmental Chamber (OOS)	Blue M	1002-8C-1	VR8-346	BR-12	1991	1991	New	2-23
Gyratory Compactor	Troxler	D-4845-01-00	133396	BR-13	1995	1995	New	3-58
Hardness Tester	Shore		DRCL	BR-14	Pre 1970	Pre 1970	New	2-35
Balance	A & D	FP-12K	6503777	BR-15	2005	2005	New	2-35
Instron Testing M/C	Instron	4507	H2174	BR-17	1991	1991	New	2-35

6.1.1

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BITUMINOUS TESTING LABORATORY RESEARCH LAB
INVENTORY OF MAJOR EQUIPMENT 2 OF 5

3/19/24

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN	ROOM
Marshall Compactor	**Rainhart**	**112C4**	**645**	**BR-18**	**1989**	**1989**	**New**	**2-35**
Flow Meter + Loading Jack								
Molds, Marshall Specimen	1							
Breaking Head	N/A							
Compaction Hammer	2							
Plungers + Molds	1 & 2							
Mixer (SHRP)	Hobart	A-200T	31-1065-021	BR-21	1995	1995	New	2-24
Oven	Blue M		13X23093	BR-23	1995	1996	New	2-35
Oven	Blue M	DC-256-C-ST-350	DC-8933	BR-24	2002	2002	New	2-35
Rubber Grinding M/C	Tool Line		C4016038	BR-25	Pre 1990	Pre 1990	New	4-01
Ductility Machine	Humboldt	H-1068X	1068594	BR-26	2006	2006	New	2-33
Durometer	Rex	05-2	0118062	BR-27	2006	2006	New	2-35
Gyratory Compactor	**Troxler**			**BR-30**	**2011**	**2011**	**NEW**	**2-35**
Ram Face								
Base Plate Face								

NEW JERSEY DEPARTMENT OF TRANSPORTATION

EXHIBIT 'F'

6.1.1 BITUMINOUS TESTING LABORATORY RESEARCH LAB 3/19/24

INVENTORY OF MAJOR EQUIPMENT 3 OF 5

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM
Molds (3)								
Bore Gauge	113736							
Master Ring								
Thermometer, Range 10 C to 232 C	Fluke 51-2							
Timer	72285592							
Environmental Chamber	Espec	BTZ-133	0612437	BR-31	2011	2011	NEW	2-35
Mixer	Hobart	N-50	1406633	BR-32	2000	2000	New	2-35
NIS Computer	Dell	Optiplex		BRPC-1				2-35
Computer for AMPT	LG	Core I3		BRPC-3				2-35
Laptop for Load Frame	Dell	Insprion N5110		BRPC-4				2-24
AMPT	InstroTek	096	AMPTN096	BR-33	2011	2011	New	2-35
Belt / Disc Sander	Dayton	49G990		BR-35	2015	2015	New	2-24
Environmental Chamber and bending apparatus	IPC Global	0002-5200	060	BR-36	2011	2011	New	2-24

NEW JERSEY DEPARTMENT OF TRANSPORTATION

6.1.1 BITUMINOUS TESTING LABORATORY RESEARCH LAB 3/19/24

INVENTORY OF MAJOR EQUIPMENT 4 OF 5

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM
Asphalt Pavement Analyzer	Pti		10-127	BR-37	2011	2011	New	2-24
Vibratory compactor	Vibco	10-128	092925	BR-38	2011	2011	New	2-23
Caliper (c06b)	Mitutoyo	CD-6"CSX	10332170	BR-40	2000	2000	New	2-35
Marshall Load Frame	Gilson	MS-86		BR-41	2017	2017	New	3-58
Scale	Ohaus Exploxer		B812589386	BR-42	2019	2019	New	2-35
Overlay	PavTest	B215	N.B215/AG/001	BR-43	2017	2017	New	2-35
Wet Saw	Titan	9333111	28175902	BR-44	2018	2018	New	4-01
Vibratory Table/ Vacuum Pump	Gilson	SGA-5R	1487	BR-45	2019	2019	New	2-35
Thermometer	Gilson	ASTM 17C	4891					2-35
Thermometer	Gilson	ASTM 15C	6263					2-35
Thermometer	GIlson	ASTM 113C	3M9602					2-35
Thermometer	Gilson	ASTM 15C	6362					2-35
Shear Jig 6"	Pine Test Instruments	AFPBH6ST		BR-47	2021	2021	New	2-35
Fluke	Fluke 51-2		90050314	BR-46	2021	2021	New	2-35

EXHIBIT 'F'

NEW JERSEY DEPARTMENT OF TRANSPORTATION

6.1.1 BITUMINOUS TESTING LABORATORY RESEARCH LAB 3/19/24

INVENTORY OF MAJOR EQUIPMENT 5 OF 5

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM
Load Frame	Gilson	HM-398F	4343	BR-48	2022	2022	New	2-24
Constant Temp Bath	Blue M Bath 3		M9818	BA-12	Pre 1970	Pre 1970	New	2-24
Enviromental Cooler	American Cube Mold	N/A		BR-49	2020	2020	New	2-24
Smart Jig/ Tablet	Instrotek		268	BR-50	2022	2022	New	2-24
Lottman Breaking Head 6"	Karol Warner			BR-51	2022	2022	New	2-24
Lottman Breaking Head 6"	Karol Warner			BR-52	2022	2022	New	2-24
Lottman Breaking Head 4"	Humboldt Mfg	H-1342		BR-53	2022	2022	New	2-24
Shear Jig 6"	Karol Warner			BR-54	2022	2022	New	2-24
Shear Jig 6"	Karol Warner			BR-55	2022	2022	New	2-24
Computer	Dell		OT7570	BRPC-5				2-24
Computer	Dell		OKXGVD	BRPC-6				2-24
Laptop	Dell		E5570	BRPC-7				2-24
Temperature Bath	Blum M	MW-12400-1	M9-818					2-24
APA #2	PTI	APA JR	23-4040	BR-56	2023	2023	New	24-Feb

EXHIBIT 'F'

6.1.1

NEW JERSEY DEPARTMENT OF TRANSPORTATION
STEEL TESTING LABORATORY
INVENTORY OF MAJOR EQUIPMENT 1 OF 2

4/20/23

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM
Torque Wrench	Proto	6141AB	-	S-1	2001	2001	NEW	4-03
400,000 Compression Machine	Tinius Olsen	Super L VMC Universal	351219	S-2	1992	1992	NEW	4-03
400,000#Compression Machine	Tinius Olsen	Super L Universal	194230	S-3	2001	2001	NEW	4-03
Bolt Tension Calibrator	Skidmore-Wilhem M-3	13374	13374	S-4	2000	2000	NEW	4-03
Grinder	Craftsman	---	39917	S-15	Pre-1990	Pre-1990	NEW	4-03
Reinforcing Steel Bending Machine	ALBA	D42L	7211630400	S-16			NEW	4-03
Hardness Tester	Rockwell	574	R574-00-0355	S-17			NEW	4-03
Scale	Mettler Toledo	MS16001L	B612256517	S-18	2016	2016	NEW	4-03
Proof Load Anaylizer	Miutoyo	215-515	23504	S-19	Pre-1990	Pre-1990	NEW	4-03
Extensometer	Tinius Olsen		161740	S-20			NEW	4-03
Extensometer	Tinius Olsen		163248	S-21			NEW	4-03
Extensometer	Tinius Olsen		113252	S-22			NEW	4-03
Caliper	Mitutoyo	CD 8-CS	0184175	S-23			NEW	4-03

6.1.1

NEW JERSEY DEPARTMENT OF TRANSPORTATION
STEEL TESTING LABORATORY
INVENTORY OF MAJOR EQUIPMENT 1 OF 2

4/20/23

EQUIPMENT	MANUFACTURER	MODEL	MFG. #	LAB #	DATE RECEIVED	DATE IN SERVICE	CONDITION WHEN RECEIVED	ROOM
Micrometer	Mitutoyo	342-351	4.94637E+12	S-24			NEW	4-03

EXHIBIT 'F'