SCOPE OF WORK

Fire Suppression and Alarm Systems

East Jersey State Prison
Rahway, Middlesex County, NJ

Project No. C0965-00

STATE OF NEW JERSEY

Honorable Mikie Sherrill, Governor
Honorable Dr. Dale G. Caldwell, Lt. Governor

DEPARTMENT OF THE TREASURY

Aaron Binder, State Treasurer

DIVISION OF PROPERTY MANAGEMENT AND CONSTRUCTION

Thomas A. Edenbaum, Director

Date: April 10, 2026

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I. OBJECTIVE

The objective of this project is to replace the existing fire alarm system throughout the facility at the Department of Corrections (DOC) East Jersey State Prison. Additionally, the fire suppression system will be evaluated for replacement and/or upgrades, as needed, to comply with the current fire safety codes.

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):

- **P010 Fire Protection Engineering**

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

- **P025 Estimating/ Cost Analysis**
- **P037 Asbestos Design**
- **P038 Asbestos Safety Control Monitoring**
- **P065 Lead Paint Evaluation**

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 $4,024,800.

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 $5,590,000.

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 after notification from the consultant during the design process and in a revised CWE deliverable.

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. The Consultant's proposed design and construction schedule shall be in Gantt chart format and calendar day durations with start and finish dates for each task.

PROJECT PHASE	ESTIMATED DURATION (Calendar Days)
1. Site Access Approvals & Schedule Design Kick-off Meeting	**14**
2. Investigation Phase	**42**
• *Project Team & DPMC Plan/Code Unit Review & Comment*	14
3. Design Development Phase	**42**
• *Project Team & DPMC Plan/Code Unit Review & Comment*	14
4. Final Design Phase	**42**
• *Project Team & DPMC Plan/Code Unit Review & Approval*	14
5. Final Design Re-Submission to Address Comments	**7 (See Note)**
• *Project Team & DPMC Plan/Code Unit Review & Approval*	14
6. Permit Application Phase	**7**
• *Issue Plan Release*	

7. Bid Phase	**42**
8. Award Phase	**28**
9. Construction Phase	**240**
10. Project Close Out Phase	**30**

Note: The Final Design Phase is considered complete upon the release of Construction Documents by the DPMC Code Group and/or the Department of Community Affairs (DCA).

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, and 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:

East Jersey State Prison
1100 Woodbridge Road
Rahway, New Jersey 07065

GPS Coordinates: 40.591141° N, -74.267178° 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: Andrew Boden, Project Manager
Address: Division of Property Management & Construction
20 West State Street, 3rd Floor
Trenton, NJ 08608-1206
Phone No: (609) 306-0315
E-Mail: Andrew.Boden@treas.nj.gov

2. Department of Corrections Representative

Name: Stefan J. Viau, Project Manager
Address: Department of Corrections
P.O. Box 863
Trenton, New Jersey, 08625
Phone No: (609) 292-4036 ext. 5246
E-Mail: Stefan.J.Viau@doc.nj.gov

VI. PROJECT DEFINITION

A. BACKGROUND

1. Facility/Buildings Background

East Jersey State Prison (formerly "Rahway State Prison") is a maximum-security prison operated by the New Jersey Department of Corrections (DOC), in Avenel, Rahway Township, New Jersey (see **Exhibit 'B'** Project Site Location Map). The facility was established in 1896 as Rahway State Prison, and was the first reformatory in New Jersey, officially opening in 1901.

The East Jersey State Prison (EJSP) facility currently holds approximately 1300 incarcerated persons and employees approximately 800 guards on staff. It is a walled prison with four housing wings, administration, and support buildings connected to a central Rotunda building. The remainder of the area within the prison walls are filled with additional housing and support buildings in a campus configuration with a single recreational field (see **Exhibit 'B'** Project Location Map).

2. Fire Protection System Project(s) Background

The following is a brief sequence of the fire protection related projects completed at EJSP.

In 2009, under project DPMC no. C0844-00 (New Fire Detection System Buildings 2-7), a new fire protection system including the fire detection system, alarm system, wiring, conduit, detectors, annunciator panels, and all other related components in Buildings no. 2 through 7 were installed to address the missing components of the fire detection system.

During the survey/needs assessment in 2010 of the C0844-00 project, the Middlesex Water Company and the NJ DOC conducted an internal plumbing inspection of the water supply lines located in meter pits outside the facility walls along the Route 1 and Rahway Avenue. The three lines are used for domestic use and fire protection supply at EJSP. It was discovered one of the water supply lines did not have the proper fire meter and the other lines were missing check valve equipment. The existing meter pits were found not to be large enough to accommodate all the new equipment required.

DPMC project no. C0882-00 (Meter Valve Installation) was initiated in 2010 to install a new fire meter, supplied by Middlesex Water Company, and the check valve equipment on the 8-inch line in the meter pit along Route 1. Additional manholes were constructed to accommodate the extra equipment and minimize the cost of construction. The other 8-inch and 6-inch line located in the Rahway Avenue Meter Pit required an additional check valve to be installed for each line.

In 2015, during testing for the installation of the fire meter and check valves, DOC requested water flow data for the design and installation of a fire sprinkler system at EJSP. Following results of the water flow tests and calculations, it was recommended by the Middlesex Water Company to separate service lines for domestic and fire services (See **Exhibit 'C'** C0882-01 Fire Pump Calculations and Water Company Letter). Eventually, both projects (C0844-00 and C0882-00) were combined under DPMC No. C0882-01. There were 2 new fire pump houses constructed under this project to accommodate these recommendations.

In 2018, under DPMC No. C1009-00, a Fire Safety Study was initiated to address and correct safety code violations given by the NJ State Fire Marshall inspection. The violations are related to lack of fire suppression/ sprinkler systems, the water supply systems, lack of automatic addressable fire alarm systems, and other concerns throughout the buildings such as exit signage and emergency lighting. The Consultant conducted their own inspection and provided a report with recommendations for fire protection improvements and associated construction costs by building. The cost estimates included A/E fees, DPMC fees. contingencies, allowances, permit fees and escalation factors. Fire protection components were rated for physical condition and renovation or replacement requirements (See **Exhibit 'D'** C1009-00 Fire Safety Study Report - Part 1 & 2). The complete report, all drawings, documentation, correspondence, fire pump inspections, calculation results, equipment specifications, etc. for the completed projects will be

provided to the Consultant. Due to lack of funding, recommendations included in the Report have not been completed.

B. FUNCTIONAL DESCRIPTION OF THE FACILITY

1. Facility and Water Supply Description

Recently, EJSP has upgraded the water supply piping at the facility, separating the domestic water supply and the fire sprinkler suppression system, as recommended by the Middlesex Water Company. Two (2) new fire pump houses were installed to separate the water supply service lines for domestic and fire suppression services. All record drawings and test results for these projects will be supplied to the Consultant.

As a result of separating the services, the water supply for the fire suppression is partially composed of re-purposed domestic water supply piping. The Report notes the concern that the water supply pipes may be unreliable under the extreme water pressure levels expected with operation of the new fire pumps. The insufficient water supply impacts the hydrants and the sprinkler systems throughout the facility causing sprinkler systems to be offline. There are also trouble lights showing on the monitoring systems. Testing and calculation reports will be provided to the Consultant (See **Exhibit 'E'** Photos.)

2. Fire Protection Systems Description

The objective of this C0965-00 project is to replace the Fire Suppression and Alarm Systems at the EJSP facility by making the appropriate repairs and/or improvements to comply with the current Uniform Fire Safety Code. Under this project, the Consultant will investigate and provide a code compliant design with updated construction cost estimates for providing new fire suppression and alarm systems at the facility. The Consultant will review and verify previous completed projects to develop the design of the new fire suppression and alarm systems. All documentation will be provided to the Consultant and to be used as a guide in the development of the new fire protection systems.

A recent site visit at the EJSP facility was held with the DOC to discuss project goals and concerns. Any necessary phasing will be addressed during the design development phase. The facility will remain open, and the facility will be in operation during the design and construction of the project.

Presently, an associated project C1091-00 is in development for (2) High Voltage Transformers Replacements at the Rotunda Building. One of the transformers is not operating in the Rotunda's basement. Drawings related to this building and project shall be provided to the Consultant.

3. Building Descriptions

Rotunda Building
The Rotunda Building, Building No. 2, was built in 1901, is a masonry structure covered by a large dome. The Rotunda is the center of programming circulation and egress for the four main housing cell wings and the main prison exit. The building has 4 levels. The first level is the main location for central control and is the focal point of the facility. Hazardous materials are present at the facility. (See **Exhibit 'B'** Project Site.)

The four (4) floors areas of the Rotunda include:

- Basement consists of mechanical equipment. Provides access to the basements for all 4 wings and building 10. 13,671 square feet.
- First Floor consists of offices/admin, Rotunda center sally port, walk thru, main fire alarm panel, control center panels, CPU, and printer, fire guard command station, communications center. 16,971 square feet.
- Second Floor Auditorium consists of fixed seating and a raised stage for film, lecture, and performance purposes. 5,938 square feet.
- Rotunda Dome. 13,697 square feet.

The Rotunda has six sides and is connected to one structure on each side. The attached buildings are as follows (See **Exhibit 'B'** EJSP Site Map):

Wing 1, Building No. 3

- Attached to the North-East Face of the Rotunda.
- Approximately 113 years old.
- A four-tiered general confinement cell wing.
- The cell block configuration has cells which are back-to-back with a plumbing chase in the center and walkway outside the cells toward the exterior walls which have windows for natural light.
- Identical to Building no. 4 built later.

Wing 2, Building No. 4

- Attached to the North-West face of the Rotunda.
- Approximately 80 years old.
- The upper level is utilized as a two-story dorm space.
- The lower two levels are doubled bunked cells.
- Maintenance department in basement level

Wing 3, Building No. 5

- Attached to the South-West face of the Rotunda.
- Approximately 57 years old. Newest of the wings connected to the Rotunda.
- A three-tier cell wing.
- The double bunked perimeter loaded cells open to a 3-story central area.

- The upper walkways are enclosed with fencing and there is a central bridge that spans in the center at both upper levels.

Wing 4, Building No. 6

- Attached to the South-East face of the Rotunda.
- Approximately 109 years old.
- Masonry structure is 4 stories high with a pitched roof.

'Tie-To', Building No. 7

- Attached to the West face of the Rotunda.
- Approximately 111 years old.
- Masonry structure is 4 stories high with a pitched roof.
- Connects passageway between the Rotunda building and the Dining Hall to the west on first level.
- Multifunctional building with upper levels for medical, hospital, and out-patient spaces.

Administration, Building No. 1

- Attached to the East face of the Rotunda.
- Main Entry with Office Spaces.

The following list of buildings was generated during the previous DPMC No. C1009-00 Fire Safety Study, however buildings 1819 & 1822 are in disrepair and are unoccupied and buildings 1847, 7778-7782 are operated by ADTC (DHS). These noted buildings will not be included in the investigation phase for the fire protection systems (see **Exhibit 'B'** Site Layout).

The following list is not final and may be added to or subtracted from based on facility needs, code requirements, Project Team, Agency and/or other factors as determined in the design phase.

Note that the Building I.D. represents the number assigned to the building in the State's Land & Building Asset Management System (LBAM) and not the building number onsite.

Building List

Building ID (LBAM)	Building Name
1803	Administration Building
1804	Rotunda
1805	Cell Wing # 1
1806	Cell Wing # 2
1807	Cell Wing # 3
1808	Cell Wing # 4
1809	Tie-To & Hospital (2nd Floor)
1810	Officer Dining Room
1811	Old Kitchen (Used for Storage)
1812	Inmates Dining Room

(Building List cont'd)

1813	Chapel
1814	Laundry, Inmate Commissary & Repair Shop
1816	New School (Education & State Use)
1817	Vocational Schools
1819*	Voc Ed Body Shop
1820	Down Under Control Station
1821	State Use Furniture Shop
1822*	State Use Furniture Panel Shop
1824	Cell Wing # 5
1825	Cell Wing # 7
1826	Tractor Storage Barn
1827	Greenhouse
1828	Band Room Building
1829	Storeroom
1830	Inside Visit Building
1831	State Use Machine Shop
1833	Visitor Registration
1834	Vehicle Repair & Mailroom
1835	Lock Shop
1836	Outside Kitchen
1842	Control Point
1843	Visitors Strip/Frisk Room
1844	Visitors Picnic Shelter #1
1845	Visitors Picnic Shelter # 2
1847*	ADTC STU Annex
1848	Substation
1853	Pond Storage Bldg
1854	Guard Tower # 2 NE Corner
1855	Guard Tower # 7 SE Corner
1856	Guard Tower # 6 South Wall
1857	Guard Tower # 3 Sallyport
1858	Guard Tower # 5 SW Corner
1859	Guard Tower # 4 NW Corner
2131	Office Trailer #1
2132	Office Trailer #2
2133	Storage Trailer #1
2134	Storage Trailer #2
4112	Female Officers Locker Room
4116	Construction Trailer
4118	Business Office Trailer
4122	Outside Kitchen and Loading Dock
4123	Dry Food Storage Trailers (7)
5138	Maintenance Storage

(Building List cont'd)

7778*	STU Support Trailer 1 (DHS)
7779*	STU Support Trailer 2 (DHS)
7780*	STU Support Trailer 3 (DHS)
7781*	STU Support Trailer 4 (DHS)
7782*	STU Support Trailer 5 (DHS)
7854	Rahway CAMP Visitor's Trailer
7855	Rahway CAMP Storage Shed
7856	Pond Storage Shed
7857	Gas Storage Building (By Pond)
7858	Gas Storage Shed (By Pond)
7859	Frisk Shack

***Note** – Buildings 1819 & 1822 are in disrepair and are unoccupied; Buildings 1847, 7778-7782 are operated by ADTC. The noted buildings have been removed from the investigation.

VII. CONSULTANT DESIGN RESPONSIBILITIES

A. INVESTIGATION PHASE

1. Facility Protection Systems Integration

The Consultant will investigate the existing fire protection systems in the buildings listed above to identify those areas that will require new fire protection systems and related components. Items to investigate shall include, but not be limited to, the fire suppression water supply system, fire alarm panels, fire detection system devices, wiring, ceiling grids, wall systems, conduits, etc.

This information shall also be used to identify the areas of the building that will be impacted by the fire protection construction work and potential removal of hazardous materials.

The Consultant will verify that the existing electric supply and fire alarm panels have adequate capacity and zones for the new fire alarm and fire suppression systems components. Document the location of the fire alarm panels, switch gear, zone detectors, sensors, wiring & raceways, and all equipment and systems that are monitored by the panels.

Determine the existing conditions of all areas that will be impacted by the installation of the new fire alarm system and the site-specific design requirements for this project

The investigation shall include but not be limited to the following:

- Provide an analysis of which manufacturers can meet the non-proprietary, over-the-counter, open protocol, and addressability needs of the facility.

- Identify all existing fire detection system components, both operable and inoperable, that shall be removed and replaced as part of this project.
- Identify all fire suppression system and flow control valves that require monitoring by the new fire detection system.
- Identify building systems and components that require monitoring (duct work, air handlers, etc.) and any other conditions that need to be monitored by the fire detection system.
- Consult with facility staff and identify the appropriate location for all new remote annunciator panels. Determine the design requirements for space needs, existing equipment relocation, electrical power, tie-in to the main alarm panel, and provisions for a protected environment at each panel site location where required.
- Identify the location and space requirements for the main fire alarm panel.
- Identify all existing operable and reusable communication, voice/data cabling and associated IT racks to determine the existing lines and/or equipment can be reused for intra-campus fire suppression and alarm communication.
- Identify methods of intra-building communication which may include but not limited to cellular, satellite, and fiber optic connections.
- Identify the design requirements and exact routing of all new electrical distribution power wiring, if necessary, to the fire detection system and related components and the upgrades required for any existing electrical system component.
- Identify all obstructions that must be altered, relocated, or removed in order to install the new fire detection system.
- Identify the requirements for power to run the system and the availability of output devices to enable local as well as remote monitoring.
- Identify the design requirements for backup power, through batteries and/or UPS, so that a loss of power, for any reason will not limit the operation of the detection and annunciation of the system.
- Survey the existing suppression system and make design provisions to tie the suppression system into new panels as necessary.
- Consultant shall provide recommendations to connect the existing panels that are still supported by the manufacturers to the new main panel.
- Consultant shall verify the location of any fuel burning appliances that may trigger the requirement for CO detector equipment.

2. Fire Protection Systems Investigation Report

An updated investigation report, similar to the completed C1009-00 Fire Safety Study, shall be presented by the Consultant and submitted to the Project Manager. The new Fire Safety will include updated cost estimates and DPMC fees for the investigated buildings. The document shall be presented in an 8 ½" x 11" bound booklet that contains a Table of Contents describing all the information contained in the document and an Executive Summary with a list of recommendations. The investigation report shall be submitted in a hard copy report (four copies) and digital copy as part of the Investigation Phase.

An oral presentation shall be made to the Project Team describing the findings of the investigation conducted and the recommendations for upgrade or replacement. The Consultant may not proceed with the design phase of the project until the Project Team has reviewed the report and approved the recommendations made for this project.

All supporting documentation such as calculations, photographs, drawings, catalog cuts, correspondence, meeting minutes, and any other data obtained shall be included in the report appendix for reference.

All cost data shall be in sufficient detail for each related division of the latest CSI format and shall also be summarized on the DPMC 38 Cost Analysis form(s).

B. WATER SUPPLY SYSTEM

Survey the existing water supply system of the facility to determine if the capacity is adequate for the new fire suppression system.

1. Hydrant Tests

The Consultant and/or a pre-qualified Testing Lab shall conduct field tests of the nearest fire hydrants and determine the static and residual pressures and flow rates of water being supplied to the buildings. Schedule the fire hydrant testing such that representatives of the Client Agency, DPMC Code Plan Review Unit, the local Fire Department, the local Municipal Water Company, DCA Code Inspector, and Fire Protection Engineer may witness the test. All costs associated with the hydrant tests shall be estimated by the Consultant and the amount included in the base bid of their fee proposal.

2. Hydraulic Calculations

The hydrant test results shall be used as the basis for hydraulic calculations to verify that there is adequate water pressure volume and flow for the building sprinkler systems. Signed and sealed calculations must be submitted to the DPMC Plan & Code Review Unit for record, review and approval. The Consultant shall estimate the costs associated with the potential requirement to upgrade the building water supply system and enter that amount in their fee proposal line item entitled **"Water Supply System Upgrade Allowance",** refer to paragraph **XIII.E.**

3. Water Supply System Improvement Design Criteria

The potential water supply design shall include all upgrades to the existing water delivery system required to meet codes for a fully suppressed building. Provide details on the drawings and information for all new water supply components such as: pumps and control systems, water supply lines, gate valves, water meters and pits, line flushing valves, line flushing procedure, fire hydrants, restraints, valve boxes, manholes, permit requirements, etc. Size any new water supply

line to provide suppression for the remaining portion of the buildings.

4. Water Supply System Upgrade Allowance

If the underground water supply line must be replaced or upgraded or a new waterline needs to be installed, the Consultant shall show the dimensioned location and elevation of the new water line and all existing underground utility lines in that construction area. This information will eliminate the potential of the lines intersecting at critical crossing points. Drawings shall show the path of the new water line from the existing water main and shall indicate the size and length.

Details showing the location and method of the potential new water line tie-in to the main lines shall be shown on the drawings including the new water meter and meter pits if required. The line shall have individual water line shut off valves and detector double check backflow preventer device. Identify how the main water line will be restrained from movement on the plans with details such as thrust blocks, tie rods or mechanical joints. Include all tests, procedures, and disinfection requirements for the water line. Provide construction administration services during all phases of the water line installation.

Pipe trenching size details, bedding, backfill materials, and dewatering requirements shall be identified on the drawings. Include all site restoration work needed including lawn areas, sidewalks and driveways. If roadway repaving is required, provide exact details of paving depths and construction materials and methods that comply with DOT standards.

All design coordination and submissions, meetings, permits and approval requirements with the local utility companies must be determined and provided by the Consultant.

The Consultant shall estimate the costs associated with the potential requirement to upgrade the building water supply systems and enter that amount into the fee proposal line item entitled **"Water Supply System Upgrade Allowance",** refer to paragraph **XIII.E."**

C. FIRE ALARM SYSTEM

1. Existing Conditions

A fully engineered and code approved design of the new fire alarm system shall be provided by the Consultant. The system layout shall be shown on the interior floor plan of the building and coordinated with the ceilings, lighting, HVAC ductwork and diffusers, wiring conduit, and other obstructions. Identify the location of all walls, partitions, concealed spaces, and closets. The design shall be in accordance with NFPA 13 (2019), NFPA 72 (2019) and the International Building Code (IBC) New Jersey 2021. The Consultant shall provide the design in accordance to NFPA 101 and NFPA 99 standards for a Healthcare Facility.

The Consultant should submit all required fire alarm calculations and drawings including wiring

riser diagrams, candela ratings of devices, battery calculations and any other information required by section 907.1.2 of the 2021 NJ IBC on a basis of design. The Consultant should also submit any information required by chapter 27 of NFPA 13 (2019) including hydraulic calculations, pipe sizing, head types, etc. on a basis of design.

2. New System Design Criteria

Provide fire protection for all material storage areas and identify the storage commodity description and classification, storage area height, and storage arrangement.

Design documents and specifications shall indicate the type of system and the name of the desired manufacturer and two alternate manufacturers of each type of equipment proposed. Provide the design and specifications to replace all of the existing fire alarm detectors, peripheral devices and panels at the facility with a new non-proprietary system.

Provide a design to relocate any existing equipment necessary to install the new fire alarm system such as conduit, piping, ductwork, suspended ceiling system components, panels, light fixtures, mechanical equipment, etc.

In addition, address the following as may be applicable:

- System shall be a non-proprietary, over-the-counter, open protocol and fully addressable network system.
- The fire alarm system shall specify the limitations on the number of panels that can be networked within a closed loop.
- Protection of the fire alarm system from electrical surges, spikes, sags, over-voltages, brownouts, and electrical noise.
- Addressability of devices and notifications made to the building fire alarm control panels and the facility main fire alarm station panel.
- All programmable devices must be able to have their addresses set without special equipment, tools, or programs. Changing of vandalized heads or devices must be able to be completed by facility maintenance staff without the requirement of special software or tools.
- Software requirements and compatibility with new devices.
- New smoke detectors shall be appropriate for the institution and approved by facility staff. Install heat detectors rather than smoke detectors in high humidity locations.
- As applicable, duct detectors shall be installed so they are accessible for repair or replacement. They shall be located in areas ensuring laminar flow across the detector. Do not locate them downstream of humidity injection points. Each duct detector shall have a LED that can be easily observed and located by the fire company and other interested parties. Each duct sensor shall be self-compensating for the effects of air velocity, temperature, humidity, and atmospheric pressure and not require field adjustments to compensate for the above effects.

- The building fire alarm control panels shall be wired to all peripheral alarm and initiating devices and tied into remote annunciator panels located in a convenient area near the fire department entrance to the buildings and shall be readily accessible and readily visible to fire fighters. The building fire alarm control panels and annunciator panels shall be tied into the existing or a new electrical power source at their location in the building.
- Consult with facility staff and provide additional annunciator panels in locations as needed.
- Consultant shall also include in their design any necessary remote annunciator panels necessary for each closed loop to independently report to the same central control room.
- Provide a riser diagram drawing for the building fire alarm control panels that identifies their connections to the various circuits and peripheral initiating devices.
- Any new low voltage wiring, if necessary, from the fire alarm panels to the peripheral devices shall be concealed and run in wire mold or conduit, whichever is more appropriate for the building conditions, security requirements, efficiency, and cost effectiveness. Any exposed wiring installed above the ceiling shall be plenum fire rated cable in accordance with NEC Article 760 or must be protected in conduit. Protect exposed fire alarm wiring from potential rodent damage.
- The fire detection systems shall have emergency battery backup that is sized in accordance with all applicable codes. The battery supply shall be calculated to operate loads in a supervisory mode for twenty-four (24) hours for central station systems and remote supervisory systems. Batteries shall be sized at 125% of the calculated size to compensate for deterioration and aging during the battery life cycle. Battery calculations shall be submitted to the DPMC Code & Design Review Unit for record.
- Provide a battery charging circuit for each standby battery bank in the system. The charger shall be automatic in design, adjusting the charge rate to the condition of the batteries. All system battery charge rates and terminal voltages shall be read using the fire alarm control panel LCD display in the service mode indicating directly in volts and amps.
- Address redundancy within the system such that a failure of the alarm system within one building does not impact other buildings.
- Provide design and specifications for a self-monitoring fire alarm system. Provide upgrades as necessary to the central control station to meet the requirements of Chapter 8 of NFPA 72 (Supervising Station).
- The building fire alarm panel, annunciators, and each power supply, addressable circuit, audible circuit, visual circuit, amplifier, etc. shall be designed to have 25% spare capacity. System operating hardware shall be functionally expandable by installing additional solid state plug-in modules. Note that the installation of additional plug-in modules shall not require the replacement of existing equipment, components, or accessories.
- The central fire alarm annunciator panel shall be located in the EJSP central control room located in the Rotunda and shall be networked to all the remote building new fire alarm control panels and have the ability to monitor and communicate with all of the buildings' addressable initiating devices. The Consultant shall ensure the EJSP central control room

in the Rotunda meets all requirements described in the current NFPA 72 Section 8.4 entitled "Proprietary Supervising Station Systems" and provide a design for any required upgrades to the area to meet the criteria described. The center shall have two separate communications links with local fire authorities.

3. Building Interior Finishes

The design documents shall address the restoration of all building interior finishes that are impacted by the installation of the fire protection system component items. Finishes shall include, but not be limited to patching, painting, and the relocation of lighting, signage, alarms, ventilators, louvers, curtain tracts, wood trim, ceiling systems, etc.

Procedures required to control and eliminate odors related to paint, cleaning agents, etc. must be addressed in the design documents to prevent potential problems with the building occupants. Materials with minimal odors and fumes should be specified.

4. Phasing and Testing

The Consultant shall provide a phasing plan. Each unit work has to be complete with new equipment installed, tested and accepted before starting the next phase (next building or part of building) throughout the campus.

The Consultant shall prepare for the possibility of partially de-occupying sections of buildings while the new system is installed in parallel with the existing system and then cut over one section at a time to ensure continuous coverage. The facility will notify the residents when each building needs to shut down the system to perform the work.

5. System Tests

A written "Acceptance Test Procedure" (ATP) for testing the new fire detection system and components, as applicable, shall be prepared by the Consultant in accordance with all applicable codes and standards and included in the specification.

Upon completion of the system installation, the system manufacturer shall be responsible for the performance of the ATP, demonstrating the function of the system and verifying the correct operation of all system components, circuits and programming.
The system test shall be witnessed and approved by the Department of Community Affairs (DCA). The Consultant shall provide ample notification time when arranging the demonstration with DCA, DPMC Project Team members, Client Agency, Contractor, and the equipment manufacturer.

Upon final acceptance of the system, the Contractor shall provide a complete as-built color-coded wiring diagram. The diagram shall include a written statement signed by the Contractor

and manufacturer's representative that the diagram has been corrected to include field changes and does represent the system installed.

All equipment testing shall be conducted in the presence of the Consultant and designated representatives of the DPMC, Client Agency, Contractors and DCA. The Consultant shall be responsible for the coordination and scheduling of all tests. All test results shall be collected and bound in a manual for reference.

All test stations shall be located in areas where testing does not affect occupants or programs.

The fire detection manufacturer shall provide system training to the facility personnel as described in **Section XI** of this document.

6. DCA Coordination

The Consultant shall coordinate the DCA fire sub-code official and fire inspector during the final design phase and walk through the proposed placement of devices to support the design prior to final design submission.

7. Spare Parts

A spare parts list shall be prepared and items purchased as part of this project for all critical items necessary for the successful operation of the fire detection system such as detectors, fire alarm fuses, switches, relays, LED lights, etc. Instructions shall be included for the operation and care of the system. Written instructions shall also be included with the final equipment and maintenance brochure.

D. FIRE SUPPRESSION SYSTEM

1. Existing Conditions

Survey the interior of the buildings and show all existing spaces, ceiling construction, location of walls and partitions, and the occupancy of each room on the drawings. Identify the location of all equipment located above the ceilings to determine the appropriate routing of the new sprinkler mains, branches, and head locations. Provide a design to relocate any existing equipment necessary to install the new sprinkler system such as conduit, piping, ductwork, suspended ceiling system components, panels, light fixtures, mechanical equipment, etc. If hazardous materials are detected during the survey the consultant shall refer to section **VII.F**. for detailed removal and disposal direction.

2. New System Design Criteria

A fully engineered and code approved design of the new sprinkler system shall be provided by

the Consultant. The design shall include, but not be limited to a scaled layout of the new sprinkler piping and all related system components. The system layout shall be shown on the current interior floor plan of the building and coordinated with the ceilings, lighting, HVAC ductwork and diffusers, wiring conduit, and other obstructions. Identify the location of all walls, partitions, concealed spaces, closets, and bathroom areas. The design shall be in accordance with NFPA 13 (2019) and the International Building Code (IBC). The Consultant shall provide the design in accordance to NFPA 101 and NFPA 99 standards for a Correctional Facility.

Provide fire protection for all material storage areas and identify the storage commodity description and classification, storage area height, and storage arrangement.

All new sprinkler heads shall be an "institutional" type head, concealed if possible and shall be approved by the Client Agency/Project Team. Heads shall be anti-ligature in design.
Design documents and specifications shall indicate the type of system and the name of the desired manufacturer and two alternate manufacturers of each type of equipment proposed including but not limited to: pipe material, size and wall thickness, and center to center dimension of the sprinkler heads, control valves, check valves, backflow preventers, line flushing valves, drain pipes, air compressors, jockey pumps, fire pumps, and test connections, etc. Details of the hanger type and location, sleeves, braces, and methods of securing the sprinkler system shall be provided including calculations that indicate they meet all support and seismic requirements.

A statement shall be included in the specifications and on the drawings that states: "If the sprinkler Contractor prepares shop drawings that differ in design from those supplied by the Consultant, they shall submit them, through the Consultant, to DPMC Plan & Code Review Unit for approval prior to fabrication and installation of the system".

3. Alarms/ Monitoring/Control

All valves which control the flow of water to water based fire suppression systems shall be provided with tamper alarm switches.

Provide each sprinkler system and/or zone with a water flow alarm switch.

As applicable, all non-addressable alarm initiating, supervisory and status monitored devices shall be integrated into the building fire alarm system.

4. Fire Detection System Integration

The new sprinkler system, sprinkler main valve supervision, flow and tamper switches must be integrated with any upgraded fire detection system in the building and must comply with both NFPA 13 (2019) and NFPA 72.

5. Sprinkler System Valves & Drains

Provide all system wet and dry valves, compressors, and Siamese connections per the requirements of NFPA 13. All hydrants, control valves, check valves, backflow preventers, line flushing valves, drain pipes, air compressors, jockey pumps, fire pumps, and test connections shall be shown.

Each system shall have a single control valve designed to shut off both the domestic and sprinkler systems and a separate valve for the domestic system only. The sprinkler system main valve supervision, flow and tamper switches must be integrated with the fire detection system of the building and must comply with NFPA 72 current code.

Design all test valves and drains as needed. As applicable, dry systems must be designed to completely drain after testing without special procedures and no low spots will be allowed in the piping. It is preferred that all drains shall discharge to the exterior of the building.

Where required by the Insurance Underwriter or Client Agency, provide durable locks and chains for each interior valve controlling water to a sprinkler or standpipe system and each outside valve controlling fire water into the building or on the site, so that these valves may be locked in the fully open position.

All control, drain, and test connection valves shall be provided with permanently marked weather proof metal or rigid plastic identification signs attached with corrosion resistant materials.

6. Pipe Penetration

All new piping installed in the buildings shall be sealed where it passes through the floors and walls of the structure and the material must afford the required fire rating of that floor and wall. Details of the pipe penetrations shall be included on the design drawings indicating the type ‘O’ penetration, how they will be sealed and the type of material to be used.

7. Seismic Design

Design shall conform to all seismic design requirements for the construction site locations.

8. Sprinkler Riser Diagram

A sprinkler piping riser diagram shall be provided identifying the routing and interface of the new system piping to the existing or upgraded water supply line and related components. The drawings shall provide a full height cross section of the area where the sprinkler system is being installed including the ceiling construction and location of any structural obstructions. Drawings shall include all standard fire safety symbols and occupancy of each area or room.

9. Riser Main Drain Connection

Each fire suppression pipe riser shall have its own main drain connection. This connection will be run "full open" for two minutes to measure flow and pressure of the system during the annual test. Gauge connections shall also be provided. The discharge point of these drains shall be at a location that will not cause damage to the building.

10. Sprinkler System Controls

Sprinkler system controls shall be vertically mounted and accessible without the need for a ladder. Service side and system side pressure gauges shall be provided installed and legible from a standing position.

11. System Operation

The existing fire detection system must remain operational during the installation of new system components and the installation of the new fire suppression system.

12. Building Interior Finishes

The design documents shall address the restoration of all building interior finishes that are impacted by the installation of the fire suppression system component items such as the sprinkler pipe, attachment devices, heads, soffits, ceiling tiles, etc.

Finishes shall include, but not be limited to patching, painting, and the relocation of lighting, signage, alarms, ventilators, louvers, curtain tracts, wood trim, ceiling systems, etc. necessary to install the sprinkler pipe, attachment devices, heads and all other components of the system.

Procedures required to control and eliminate odors related to paint, cleaning agents, etc. must be addressed in the design documents to prevent potential problems with the building occupants. Materials with minimal odors and fumes should be specified.

13. Sanitation

Sanitation requirements such as flushing of the lines, chemical treatments, and pipe cleaning details shall be included in the design documents for all piping components. Readily removable fittings shall be provided at the end of all cross mains to facilitate the flushing process.

14. Equipment Tests

Upon completion of the project, and prior to issuance of the Certificate of Approval, the Contractor shall test the complete fire suppression and detection system making adjustments as required to secure all necessary approvals. The Consultant shall identify the testing requirements

in the specifications including the hydrostatic test pressures, the test duration under pressure, and the amount of allowable leakage per hour.

All equipment testing shall be conducted in the presence of the Consultant and designated representatives of the DPMC, Client Agency, Contractors and DCA. The Consultant shall be responsible for the coordination and scheduling of all tests. All test results shall be collected and bound in a manual for reference.

Locate test/drain connections so that their discharge will not cause damage to the building or site. Provide splash blocks where test and drain connections are discharged to grade. All test stations shall be located in areas where testing does not affect occupants or programs, and water discharge does not pool or freeze.

E. CONTRACTOR USE OF THE PREMISIS

Refer to **Exhibit 'F'** to find "Special Project Procedures Rules for East Jersey State Prison" and work with the Project Team to add any additional special security and policy requirements that must be followed during all work conducted at the facility and include this information in Division 1 of the specifications.

Develop procedures for personnel to access the project site and provide the names and phone numbers of approved escorts when needed.

F. HAZARDOUS BUILDING MATERIALS

Consultant shall survey the building and related components and, if deemed necessary, collect samples of materials that will be impacted by the construction/demolition activities and analyze them for the presence of hazardous materials including:

1. Asbestos in accordance with N.J.A.C. 5:23-8, Asbestos Hazard Abatement Sub-code.

2. Lead in accordance with N.J.A.C. 5:17, Lead Hazard Evaluation and Abatement Code.

3. PCB's in accordance with 40 CFR 761, Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions. Consultant shall engage a firm certified in the testing and analysis of materials containing PCB's.

4. Mold.

Consultant shall document the procedure, process and findings and prepare a "Hazardous Materials Survey Report" identifying building components impacted by construction activities requiring hazardous materials abatement. Consultant shall provide three copies of the "Hazardous Materials Survey Report" to the Project Manager.

Consultant shall estimate the cost of hazardous materials sample collection, testing, analysis and preparation of the Hazardous Materials Survey Report and include that amount in the fee proposal line item entitled **"Hazardous Materials Testing and Report Allowance,"** refer to paragraph **XIII.B**.

Based on the Hazardous Materials Survey Report, Consultant shall provide construction documents for abatement of the hazardous materials impacted by the work in accordance with the applicable code, sub-code and Federal regulations.

Consultant shall estimate the cost to prepare construction documents for hazardous materials abatement and include that amount in the fee proposal line item entitled **"Hazardous Materials Abatement Design Allowance,"** refer to paragraph **XIII.C**.

Consultant shall estimate the cost to provide "Construction Monitoring and Administration Services" for hazardous materials abatement activities and include that amount in the fee proposal line item entitled **"Hazardous Materials Construction Administration Allowance,"** refer to paragraph **XIII.D**.

There shall be no "mark-up" of sub-consultant or subcontractor fees if sub-consultants or subcontractors are engaged to perform any of the work defined in paragraph **VII.F** "**Hazardous Building Materials."** All costs associated with managing, coordinating, observing and administrating sub-consultants and subcontractors performing hazardous materials sampling, testing, analysis, report preparation, hazardous materials construction administration services shall be included in the consultant's lump sum fee proposal.

G. 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: One (1) oral presentation at phase completion.

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

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

H. 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.

- DBC-C323: Water Line Replacement Rahway State Prison, 12/8/86, Barnickel Engineering Corp.
- DPMC Project No C0882-01: Meter Valve Installation and New Fire Detection System, As-Built 11-9-16, Gannett Fleming
- DBC Project No. C0588: New Jersey Statewide Correctional Facilities Infrastructure/ Support Facility Inventory, November 30, 1995, Vitetta Group
- DPMC Project No. C1009-00: Fire Safety Study East Jersey State Prison, July 31, 2020, Stonewater Architecture LLC
- DMPC Project No. C0882-00: Hydraulic Calculations & Product Submittals for East Jersey State Prison, January 20, 2016, Gabe Scanga, Inc.
- DBC N039-01: Security Improvements Rahway State Prison, 12/7/82 As-Built, Brown and Hale Architects

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 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:

https://www.nj.gov/dca/codes/codreg/ucc.shtml

The Consultant shall complete the NJUCC permit application and all applicable technical sub-code sections with all technical site data required. The Agent section of the application and certification section of the building sub-code section shall be signed. These 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/codes/resources/constructionpermitforms.shtml

All other required project permits shall be obtained and paid for by the Consultant in accordance with the procedures described in Paragraph VIII.B.

1. 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; and Notification to Adjoining Property Owners with N.J.A.C. 5:23-2.17(c). 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.

2. 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.

3. Special Inspections

In accordance with the requirements of the NJUCC 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:

https://www.nj.gov/dca/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 NJUCC.

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, **"Permit Fee Allowance."**

The Consultant may refer to the DPMC "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. BIDDING AND CONTRACT AWARD RESPONSIBILITIES

The Bidding and Contract Award Phase commences with receipt of the required permits, UCC plan release and verification that funding is in place for construction. The Consultant shall refer to the DPMC "Procedures for Architects and Engineers Manual", Paragraph "17. BIDDING AND CONTRACT AWARD" for all requirements for this phase available at https://www.nj.gov/treasury/dpmc/Assets/Files/ProceduresforArchitectsandEngineers.pdf.

X. CONSTRUCTION ADMINISTRATION RESPONSIBILITIES

The A/E and their sub-consultants shall, unless otherwise specified in the project specific Scope of Work, provide site administration during the construction of the project. The services required of such site administration shall include, but shall not be limited to, attend and chair the pre-construction meeting, conduct weekly field observations, attend and chair regularly scheduled bi-weekly job meetings, review/approve shop drawings, submittals, and respond to RFI's.

The Consultant shall refer to the DPMC "Procedures for Architects and Engineers Manual", Paragraph "18. CONSTRUCTION PHASE" for all construction administration requirements available at https://www.nj.gov/treasury/dpmc/Assets/Files/ProceduresforArchitectsandEngineers.pdf.

XI. PROJECT CLOSE-OUT PHASE

The DPMC Project Manager has the full responsibility for the planning, scheduling, and execution of project close-out activities. The A/E is responsible to cooperate with the DPMC Project Manager in the planning, scheduling, and execution of project close-out activities. The Consultant shall refer to the DPMC "Procedures for Architects and Engineers Manual", Paragraph "19. PROJECT CLOSE-OUT PHASE" for all requirements available at https://www.nj.gov/treasury/dpmc/Assets/Files/ProceduresforArchitectsandEngineers.pdf.

XII. 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.

XIII. ALLOWANCES

A. 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 NJUCC permit) and include that amount in its fee proposal line item entitled **"Permit Fee Allowance."** A breakdown of each permit and application fee shall be attached to the fee proposal for reference.

NOTE: The NJUCC 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.

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

B. HAZARDOUS MATERIALS TESTING AND REPORT ALLOWANCE

The Consultant shall estimate the costs to complete the hazardous materials survey, sample collection, testing and analysis and preparation of a "Hazardous Materials Survey Report" noted in paragraph **VII.B** and enter that amount on the fee proposal line item entitled **"Hazardous Materials Testing and Report Allowance,"** 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, but not be limited to, the following information:

- Description of tasks and estimated cost for the following:
    - Sample collection;
    - Sample testing; and,
    - Preparation of a Hazardous Materials Survey Report.

Any funds remaining in the Hazardous Materials Testing and Report Allowance will be returned to the State at the close of the project.

C. HAZARDOUS MATERIALS ABATEMENT DESIGN ALLOWANCE

The Consultant shall estimate the costs to prepare construction documents for hazardous materials abatement noted in paragraph **VII.B** and enter that amount on the fee proposal line item entitled **"Hazardous Materials Abatement Design Allowance."** 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 Hazardous Materials Abatement Design Allowance will be returned to the State at the close of the project.

D. HAZARDOUS MATERIALS CONSTRUCTION ADMINISTRATION ALLOWANCE

The Consultant shall estimate the cost to provide Construction Monitoring and Administration Services for hazardous materials abatement as noted in paragraph **VII.B** and enter that amount on the fee proposal line item entitled "**Hazardous Materials Construction Administration Allowance.**" 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 Hazardous Materials Construction Administration Allowance will be returned to the State at the close of the project.

XIV. 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 4/10/2026

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

SOW APPROVED BY: James Wright 4/10/2026

JAMES WRIGHT, MANAGER DATE
DPMC PROJECT PLANNING & INITIATION

SOW APPROVED BY: Stefan Viau 4/13/2026

STEFAN J. VIAU, PROJECT MANAGER DATE
DEPARTMENT OF CORRECTIONS

SOW APPROVED BY: Andrew Boden 4/13/2026

ANDREW BODEN, PROJECT MANAGER DATE
DPMC PROJECT MANAGEMENT GROUP

SOW APPROVED BY: Jeanette M Barnard 5.13.26

JEANETTE M. BARNARD, DEPUTY DIRECTOR DATE
DIV PROPERTY MGT & CONSTRUCTION

XV. 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;

DESIGN DEVELOPMENT PHASE;

FINAL DESIGN PHASE;

PERMIT APPLICATION PHASE;

BIDDING AND CONTRACT AWARD;

CONSTRUCTION PHASE; and

PROJECT CLOSE-OUT PHASE

XVI. EXHIBITS

A. SAMPLE PROJECT SCHEDULE FORMAT
B. PROJECT SITE LOCATION MAP
C. HYDRAULIC CALCS & WATER COMPANY LETTER
D. C1009-00 FIRE SAFETY STUDY REPORT - PART 1 & 2
E. PHOTOS
F. EJSP SPECIAL PROJECT PROCEDURES

END OF SCOPE OF WORK

Deliverables Checklist
Investigation 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 in CSI Format						
13.4.17.	Project Schedule						
13.4.18.	Formal Presentation						
13.4.19.	Scope of Work Compliance Statement						
13.4.20.	Investigation Design Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						
Investigation Report	Hard copy report (four copies) and digital copy						

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

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 in CSI Format						
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

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 in CSI Format						
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.:C0965-00

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 in CI Format						
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

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

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

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

Typical DPMC Project - Random Selection of Design Consultant

ID	Task Name	Start	Finish	Duration
0	**Typical Project Model**	**Mon 5/19/...**	**Fri 4/9/27**	**691 days**
1	**Project Initiation Phase**	**Mon 5/19/25**	**Mon 7/14/25**	**57 days**
2	Project Funding Received	Mon 5/19/25	Mon 5/19/25	1 day
3	Schedule Site Visit	Thu 5/22/25	Thu 5/22/25	1 day
4	Site Visit	Fri 5/30/25	Fri 5/30/25	1 day
5	Prepare Draft SOW	Mon 6/2/25	Fri 6/6/25	5 days
6	Distribute Draft SOW for Review	Mon 6/9/25	Mon 6/9/25	1 day
7	Review SOW	Tue 6/10/25	Mon 6/23/25	10 days
8	Review SOW	Tue 6/10/25	Mon 6/23/25	10 days
9	Review SOW	Tue 6/10/25	Mon 6/23/25	10 days
10	Receive Comments Revise SOW	Tue 6/24/25	Mon 6/30/25	5 days
11	Distribute Final SOW for Review & Signature	Tue 7/1/25	Tue 7/1/25	1 day
12	Review & Sign SOW	Wed 7/2/25	Wed 7/2/25	1 day
13	Review & Sign SOW	Mon 7/7/25	Mon 7/7/25	1 day
14	Review & Sign SOW	Thu 7/10/25	Thu 7/10/25	1 day
15	Forward SOW to Procurement	Mon 7/14/25	Mon 7/14/25	1 day
16	**Consultant Selection Phase**	**Tue 7/15/25**	**Mon 9/1/25**	**49 days**
17	Prepare Solicitation, Advertise Proj	Tue 7/15/25	Wed 7/16/25	2 days
18	Select Firms - Random Selection	Thu 7/17/25	Thu 7/17/25	1 day
19	Conduct Preproposal Meeting	Mon 7/28/25	Mon 7/28/25	1 day
20	Consultant Questions Due - Prepare and Issue Addenda	Tue 7/29/25	Tue 7/29/25	1 day
21	Receive Proposals - Distribute for Review	Tue 8/12/25	Tue 8/12/25	1 day
22	Review & Rank Proposals	Wed 8/13/25	Tue 8/19/25	5 days
23	Review & Rank Proposals	Wed 8/13/25	Tue 8/19/25	5 days
24	Review & Rank Proposals	Wed 8/13/25	Tue 8/19/25	5 days
25	Determine Rankings, Open Fee Proposals and Distribute to Committee	Wed 8/20/25	Wed 8/20/25	1 day
26	Negotiate Fee	Thu 8/21/25	Wed 8/27/25	5 days
27	Provide Funding for Consultant Contract	Thu 8/28/25	Thu 8/28/25	1 day
28	Complete Recommendation to Awa	Thu 8/28/25	Fri 8/29/25	2 days
29	Consultant Contract Award	Sat 8/30/25	Mon 9/1/25	2 days
30	**Design Phase**	**Sun 9/7/25**	**Fri 5/8/26**	**244 days**
31	Design Contract "Kick-Off" Meeting	Sun 9/7/25	Mon 9/8/25	2 days
32	Program Design Phase	Tue 9/9/25	Mon 10/6/25	28 days
33	Receive Program Submittal & Distribute for Review	Tue 10/7/25	Thu 10/9/25	3 days

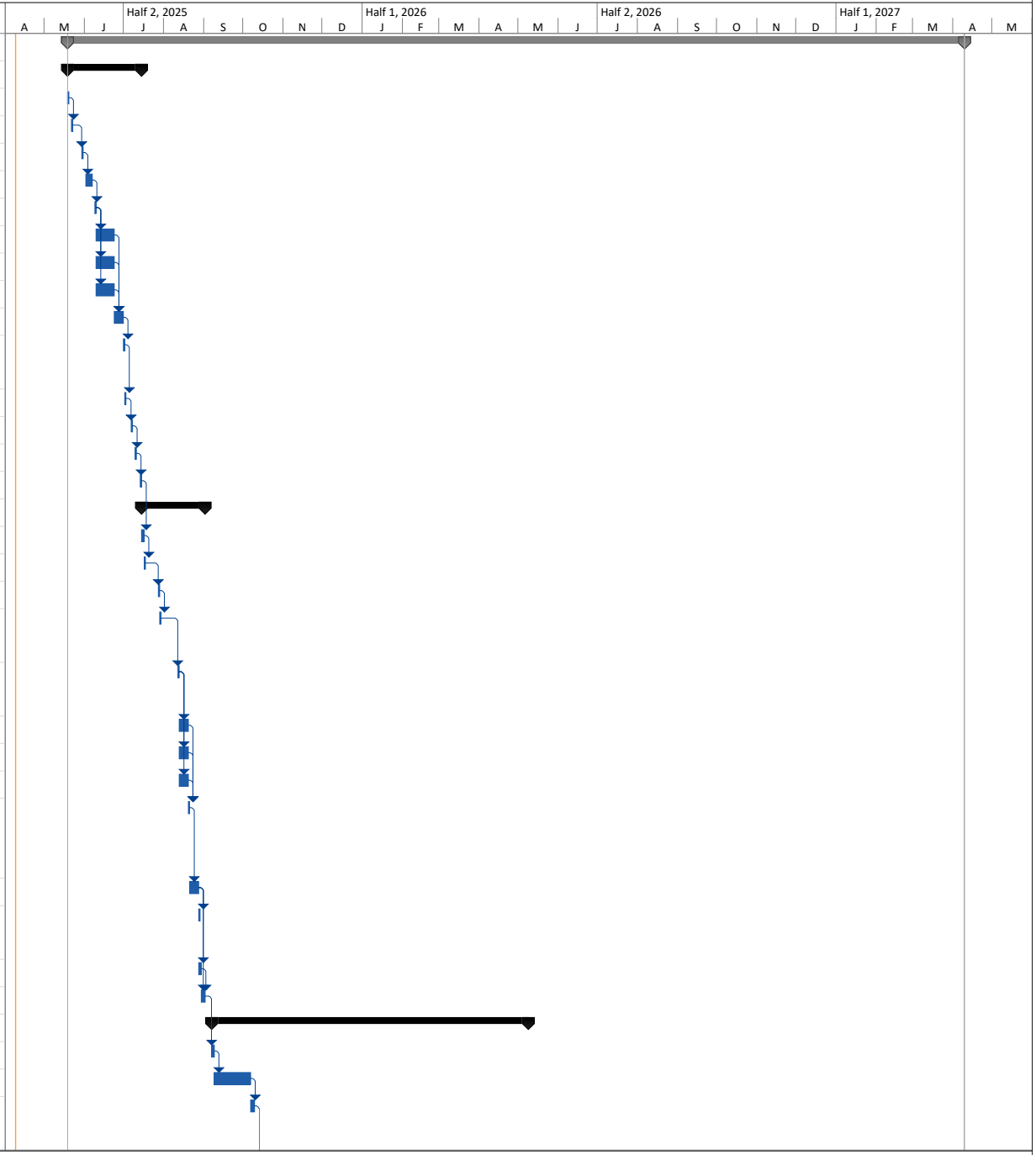


EXHIBIT 'A'

Typical DPMC Project - Random Selection of Design Consultant

ID	Task Name	Start	Finish	Duration
34	Program Phase Presentation/Submittal	Fri 10/10/25	Fri 10/10/25	1 day
35	Review Program Phase	Mon 10/13/25	Fri 10/24/25	10 days
36	Review Program Phase	Mon 10/13/25	Fri 10/24/25	10 days
37	Review Program Phase	Mon 10/13/25	Fri 10/24/25	10 days
38	Receive Program Phase Comments, Review & Consolidate and Forward to Consultant	Mon 10/27/25	Wed 10/29/25	3 days
39	Schematic Design Phase	Thu 10/30/25	Wed 11/26/25	28 days
40	Receive Schematic Submittal & Distribute for Review	Thu 11/27/25	Mon 12/1/25	3 days
41	Schematic Phase Presentation/Submittal	Tue 12/2/25	Tue 12/2/25	1 day
42	Review Schematic Phase	Wed 12/3/25	Tue 12/16/25	10 days
43	Review Schematic Phase	Wed 12/3/25	Tue 12/16/25	10 days
44	Review Schematic Phase	Wed 12/3/25	Tue 12/16/25	10 days
45	Receive Schematic Phase Comments, Review & Consolidate and Forward to Consultant	Wed 12/17/25	Fri 12/19/25	3 days
46	Design Development (DD) Design Phase	Sat 12/20/25	Fri 1/16/26	28 days
47	Receive DD Submittal & Distribute for Review	Mon 1/19/26	Wed 1/21/26	3 days
48	DD Phase Presentation/Submittal	Thu 1/22/26	Thu 1/22/26	1 day
49	Review DD Phase	Fri 1/23/26	Thu 2/5/26	10 days
50	Review DD Phase	Fri 1/23/26	Thu 2/5/26	10 days
51	Review DD Phase	Fri 1/23/26	Thu 2/5/26	10 days
52	Receive DD Phase Comments, Review & Consolidate and Forward to Consultant	Fri 2/6/26	Tue 2/10/26	3 days
53	Final Design Phase	Wed 2/11/26	Tue 3/10/26	28 days
54	Final Submittal & Distribute for Rev	Wed 3/11/26	Fri 3/13/26	3 days
55	Final Phase Presentation/Submittal	Sat 3/14/26	Mon 3/16/26	2 days
56	Review Final Phase	Tue 3/17/26	Mon 3/30/26	10 days
57	Review Final Phase	Tue 3/17/26	Mon 3/30/26	10 days
58	Review Final Phase	Tue 3/17/26	Mon 3/30/26	10 days
59	Review Final Phase	Tue 3/17/26	Mon 3/30/26	10 days
60	Receive Final Phase Comments, Review & Consolidate and Forward to Consultant	Tue 3/31/26	Thu 4/2/26	3 days
61	Final/Permit Design Phase	Fri 4/3/26	Thu 4/16/26	14 days

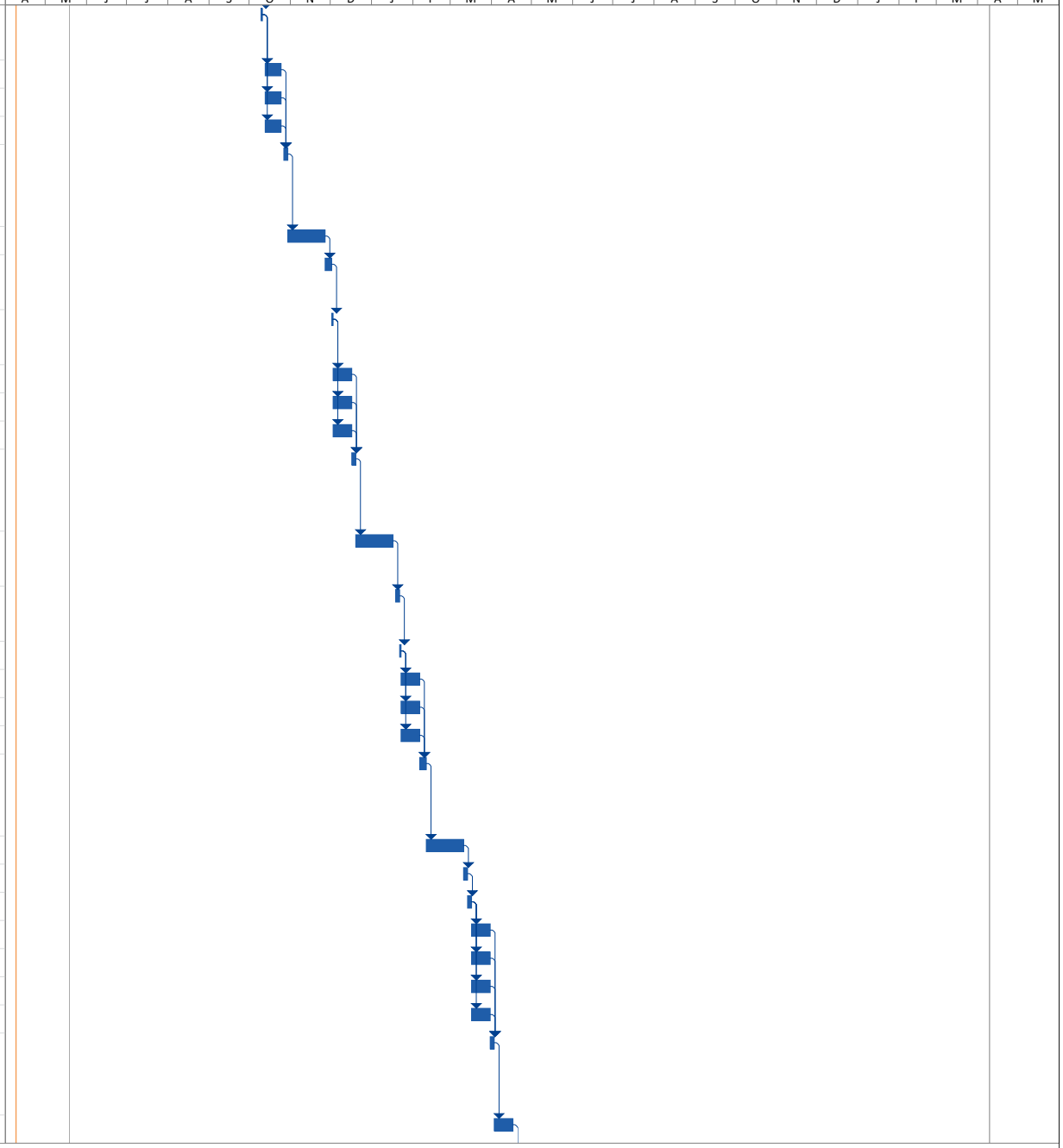


EXHIBIT 'A'

Typical DPMC Project - Random Selection of Design Consultant

ID	Task Name	Start	Finish	Duration
62	Final/Permit Submittal & Distribute for Review	Fri 4/17/26	Tue 4/21/26	3 days
63	Review Final/Permit Phase	Wed 4/22/26	Tue 5/5/26	10 days
64	Receive Final/Permit Phase Approval and Forward to	Wed 5/6/26	Fri 5/8/26	3 days
65	**Permit Acquisition Phase**	**Wed 4/22/26**	**Fri 5/22/26**	**31 days**
66	Prepare UCC Application, Bid Clearance & Submit Bid Package	Sat 5/9/26	Fri 5/15/26	7 days
67	Provide Funding for Construction	Wed 4/22/26	Wed 4/22/26	1 day
68	Secure Bid Clearance Including Funding Verification	Mon 5/18/26	Fri 5/22/26	5 days
69	**Advertise-Bid-Award Phase**	**Mon 5/25/26**	**Thu 7/23/26**	**60 days**
70	Advertise Project for Construction	Mon 5/25/26	Mon 5/25/26	1 day
71	Conduct Pre-Bid Meeting	Tue 6/9/26	Tue 6/9/26	1 day
72	Contractor Questions Due - Prepare and Issue Bulletin	Mon 6/15/26	Wed 6/17/26	3 days
73	Construction Bids Due - Open Bids	Tue 6/23/26	Tue 6/23/26	1 day
74	Conduct Post Bid Review Meeting	Mon 6/29/26	Mon 6/29/26	1 day
75	Prepare and Submit Recommendation for Award	Tue 6/30/26	Wed 7/1/26	2 days
76	Prepare and Submit Recommendation for Award	Thu 7/2/26	Fri 7/3/26	2 days
77	Prepare Contract and Schedule Award Meeting	Mon 7/6/26	Fri 7/10/26	5 days
78	Conduct Contract Award Meeting/Issue NTP	Thu 7/16/26	Thu 7/16/26	1 day
79	Sign/Seal UCC Permit Applications	Thu 7/16/26	Thu 7/16/26	1 day
80	Secure UCC Permit from DCA	Fri 7/17/26	Thu 7/23/26	5 days
81	**Construction Phase**	**Fri 7/24/26**	**Wed 1/20/27**	**181 days**
82	Conduct Construction "Kick-Off Meeting"	Fri 7/24/26	Fri 7/24/26	1 day
83	Complete Construction - Achieve Substantial Completion	Sat 7/25/26	Wed 1/20/27	180 days
84	**Project Close-Out Phase**	**Thu 1/21/27**	**Fri 4/9/27**	**79 days**
85	Complete Punch List	Thu 1/21/27	Fri 2/19/27	30 days
86	Close Out Construction Contract	Mon 2/22/27	Fri 2/26/27	5 days
87	Close Out Consultant Contract	Mon 3/1/27	Fri 4/9/27	30 days

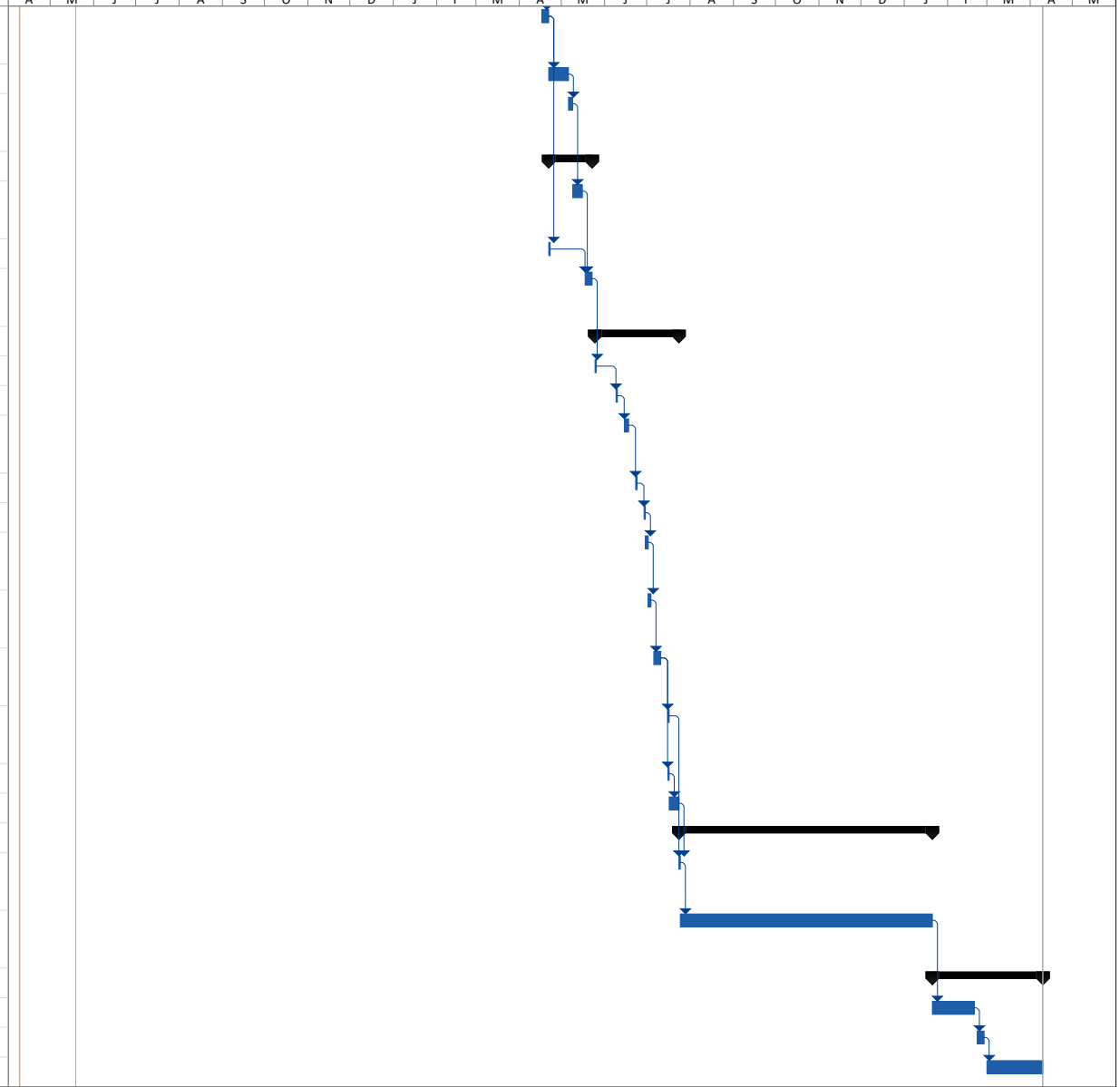


EXHIBIT 'A'

Typical DPMC Project - Random Selection of Design Consultant

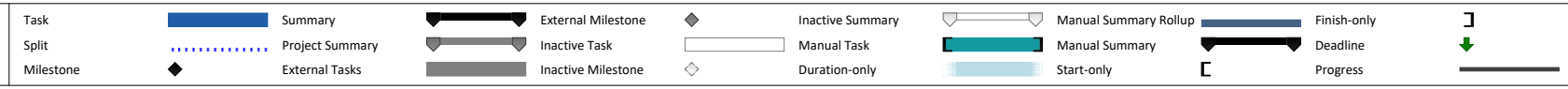
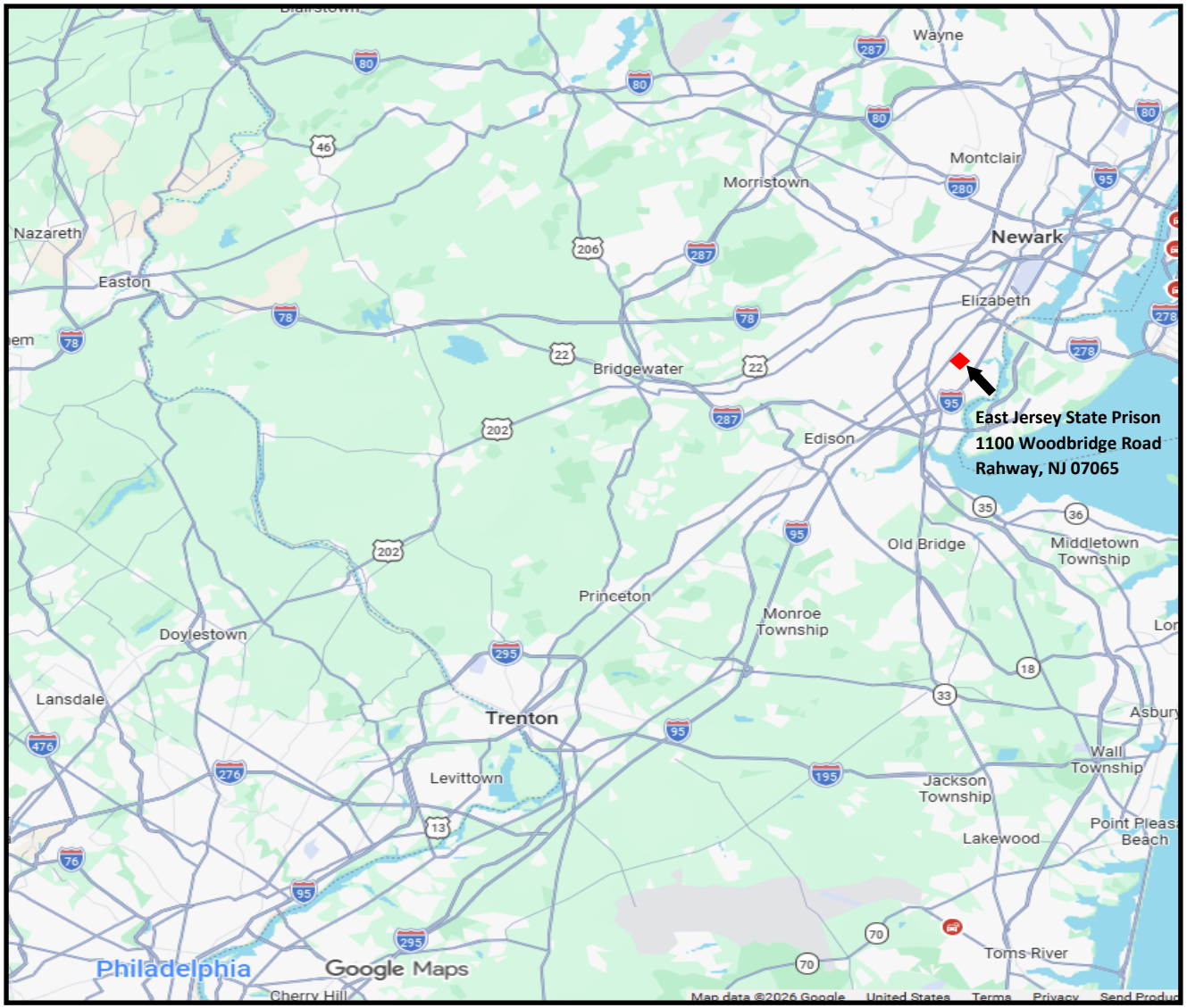


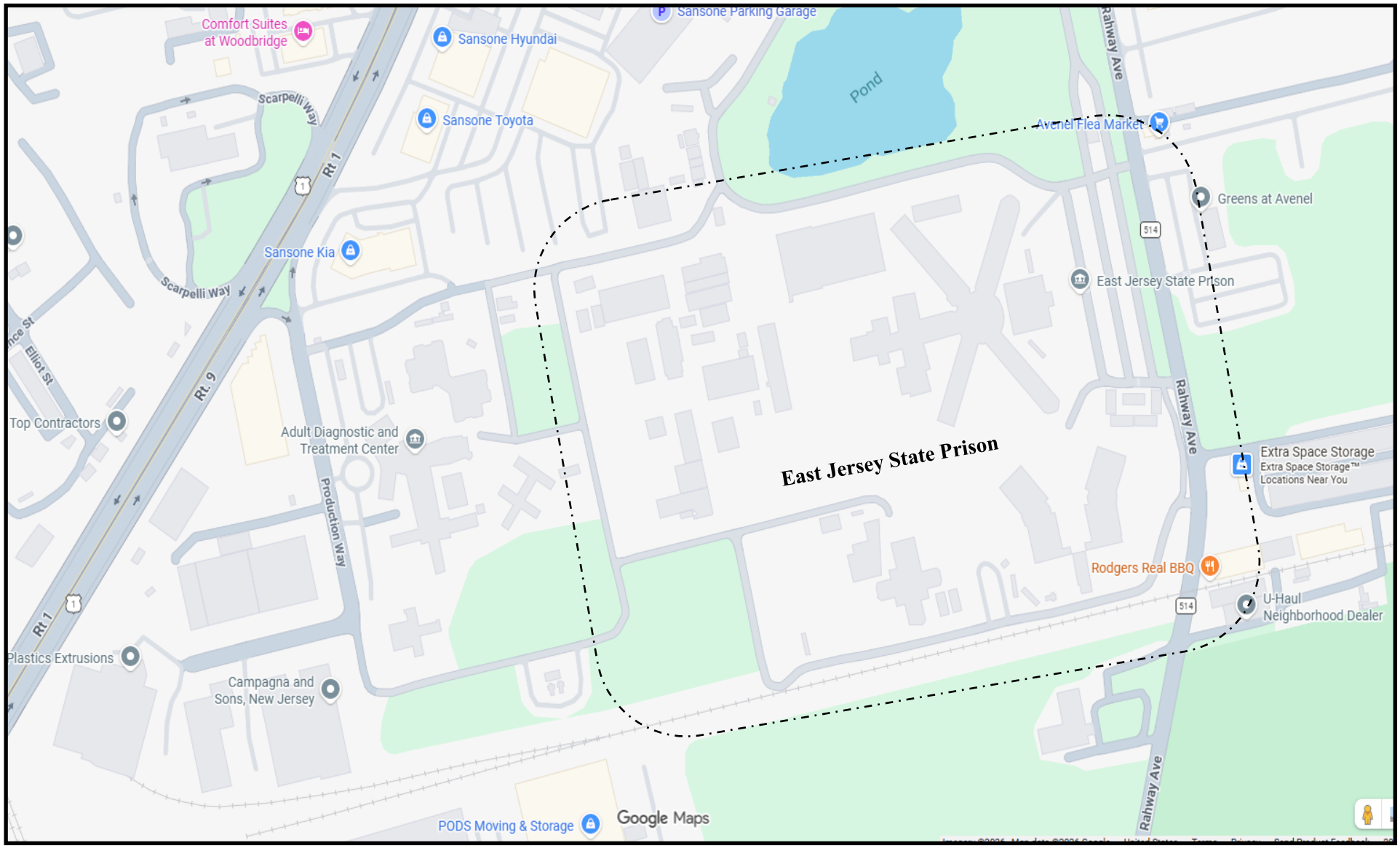
EXHIBIT 'A'



Project Site Location Map

East Jersey State Prison

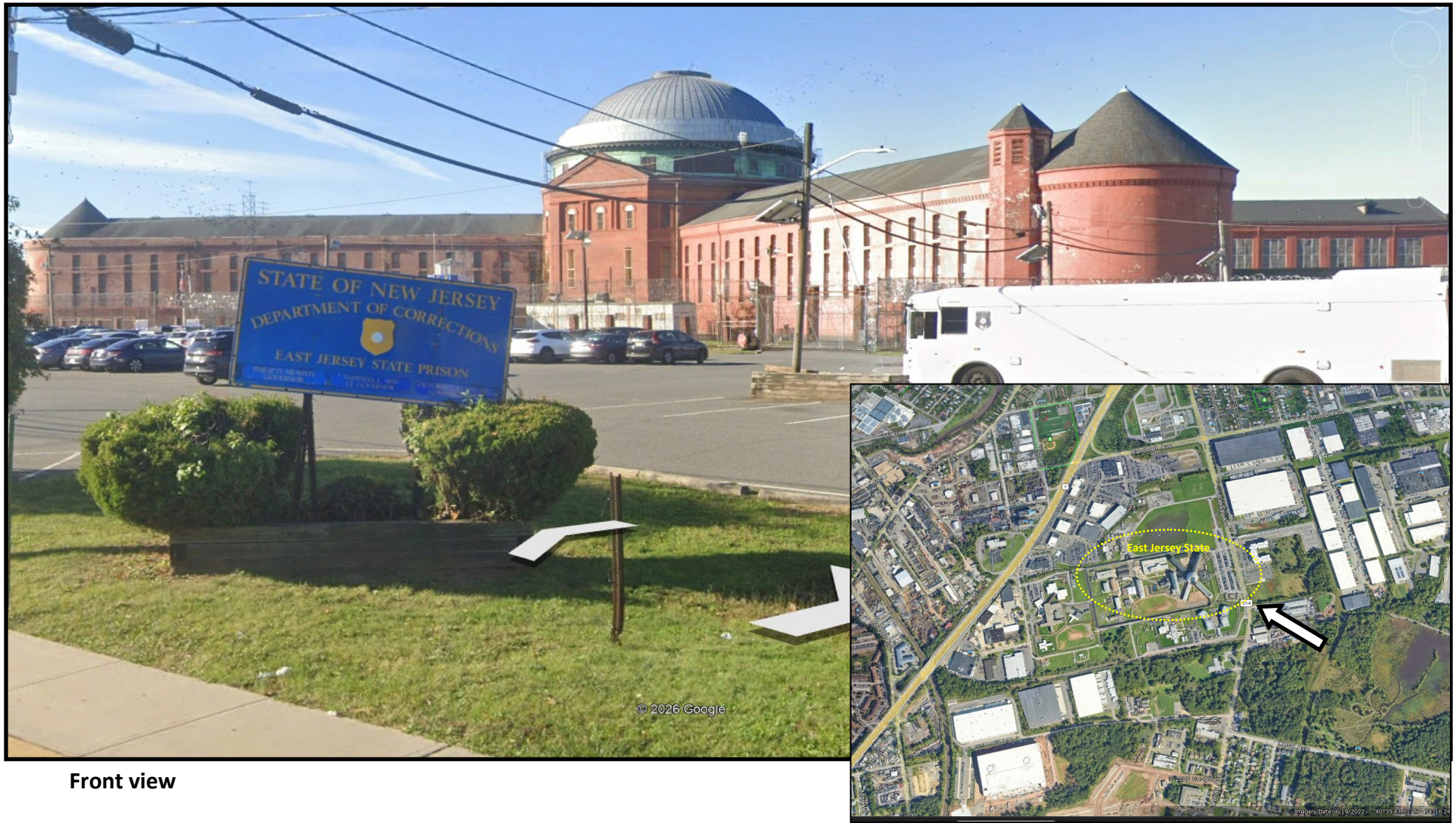
EXHIBIT ‘B’



Project Location Map

East Jersey State Prison

EXHIBIT 'B'



Front view

Project Site

East Jersey State Prison

EXHIBIT ‘B’

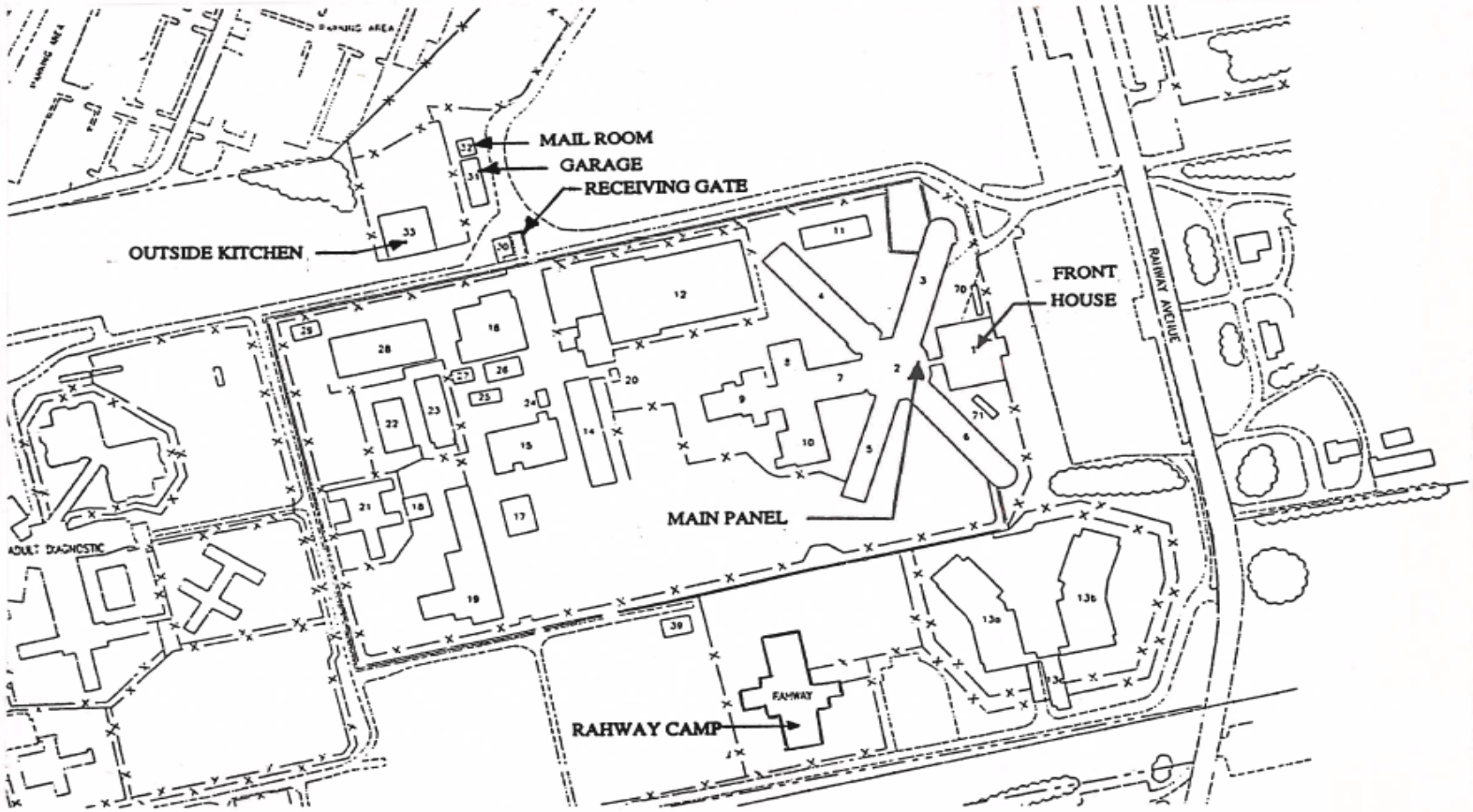
Top View - Full Facility

Project Site

East Jersey State Prison

EXHIBIT 'B'

EAST JERSEY STATE PRISON, MIDDLESEX COUNTY, NEW JERSEY



Bldg No.	Building Name
01	Administration
02	Rotunda
03	Wing 1
04	Wing 2
05	Wing 3
06	Wing 4
07	"Tie-To" Building
08	ODR/IDR
11	Chapel
12	Old Laundry
13	ACSU "A&B"
13A	ACSU "C&D"
13B	ACSU Support
14	New School
15	Vo-Tech
16	Machine Shop
17	Auto Shop
18	Down Under Control
19	State Use
20	Control Point
21	Wing 6
22	Wing 5
23	Wing 7
24	Band Hall
25	Greenhouse/Storage
26	Tractor Storage
27	Storage
28	Visitor's
29	Visitor Pavilions
31	Vehicle Repair/Mail
32	Mail Room
33	Process Kitchen
39	Electric Power House
70	Officer Trailer
71	Business Trailer

DIRECTIONS: From Trenton, take NJ Turnpike North. Get off Exit 12 (Carteret, Rahway exit) Make a right after you get off the exit, you will be on Roosevelt Avenue in Carteret. Take Roosevelt Avenue all the way down until you can't go any further. There will be a traffic light; make a left on Rahway Avenue; East Jersey State Prison will be on the right side. Park in the main parking lot and enter through the Administration Building.

EXHIBIT 'B'

GABE SGANGA, INC.

90 MAIN STREET
FARMINGDALE, NJ 07727

HYDRAULIC CALCULATIONS
&
PRODUCT SUBMITTALS
FOR

EAST JERSEY STATE PRISON

RAHWAY, NJ

REVISED DATE: JANUARY 20, 2016

FRANK E. PANNONE
PROFESSIONAL ENGINEER

1064A LONG BEACH BOULEVARD
NORTH BEACH, NJ 08008
PHONE: (609) 361-9188 | FAX: (609) 494-8417

N.J.P.E. 12861 | P.A.P.E. 21098-E | N.Y.P.E. 39616

EXHIBIT 'C'

EXHIBIT 'C'

CALCULATION SUMMARY

Project Name : East Jersey State Prison

Project Location:

Drawing No. :

City: Rahway, NJ

Design Areas

Design Area Name	Calc. Mode (Model)	Occupancy	Area of Application	Total Water	Pressure @ Source	Min. Density	Min. Pressure	Min. Flow	Calculated Heads	Hose Streams	Margin To Source
			(ft^2)	(gpm)	(psi)	(gpm/ft^2)	(psi)	(gpm)	#	(gpm)	(psi)
1	Demand (HW)	Ord. Grp. II	1080	496	Required 71	0.2	18.4	24	9	250	13.7

EXHIBIT 'C'

HYDRAULIC CALCULATIONS
for

Job Information

Project Name : East Jersey State Prison

Contract No. :

City: Rahway, NJ

Project Location:

Date: 7/15/2015

Contractor Information

Name of Contractor: Arrow Fire Protection, LLC

Address: 32 Fox Hill Road

City: Branchville, NJ 07826

Phone Number: 973-948-3473

E-mail:

Name of Designer: KW

Authority Having Jurisdiction: Rahway

Design

Remote Area Name	1
Remote Area Location	Pump House #1
Occupancy Classification	Ord. Grp. II
Density (gpm/ft²)	0.2
Area of Application (ft²)	1080
Coverage per Sprinkler (ft²)	120
Number of Calculated Sprinklers	9
In-Rack Demand (gpm)	0
Special Heads	
Hose Streams (gpm)	250
Total Water Required (incl. Hose Streams) (gpm)	496
Required Pressure at Source (psi)	71
Type of System	Wet
Volume - Entire System (gal)	611.9 gal

Water Supply Information

Date	07/10/15
Location	Rahway Ave,
Source	W1

Notes

Entire Building Calculated

File: P:\Arrow Fire Protection\Jobs\15-002-012-0 (East Jersey State Prison)\04-CMSD Drawings\SHOP DRAWING - FP-101 - PH 1 REV (1-20-16).dwg

EXHIBIT 'C'

Hydraulic Analysis for : 1

Calculation Info

Calculation Mode	Demand
Hydraulic Model	Hazen-Williams
Fluid Name	Water @ 60F (15.6C)
Fluid Weight, (lb/ft³)	N/A for Hazen-Williams calculation.
Fluid Dynamic Viscosity, (lb·s/ft²)	N/A for Hazen-Williams calculation.

Water Supply Parameters

Supply 1 : W1

Flow (gpm)	Pressure (psi)
0	90
2000	20

Supply Analysis

Node at Source	Static Pressure (psi)	Residual Pressure (psi)	Flow (gpm)	Available Pressure (psi)	Total Demand (gpm)	Required Pressure (psi)
W1	90	20	2000	88.5	496	71

Hoses

Inside Hose Flow / Standpipe Demand (gpm)	
Outside Hose Flow (gpm)	
Additional Outside Hose Flow (gpm)	250
Other (custom defined) Hose Flow (gpm)	
Total Hose Flow (gpm)	250

Sprinklers

Ovehead Sprinkler Flow (gpm)	246
InRack Sprinkler Flow (gpm)	0
Other (custom defined) Sprinkler Flow (gpm)	0
Total Sprinkler Flow (gpm)	246

Other

Required Margin of Safety (psi)	0
W1 - Pressure (psi)	71
W1 - Flow (gpm)	246
Demand w/o System Pump(s)	N/A

EXHIBIT 'C'

Hydraulic Analysis for : 1

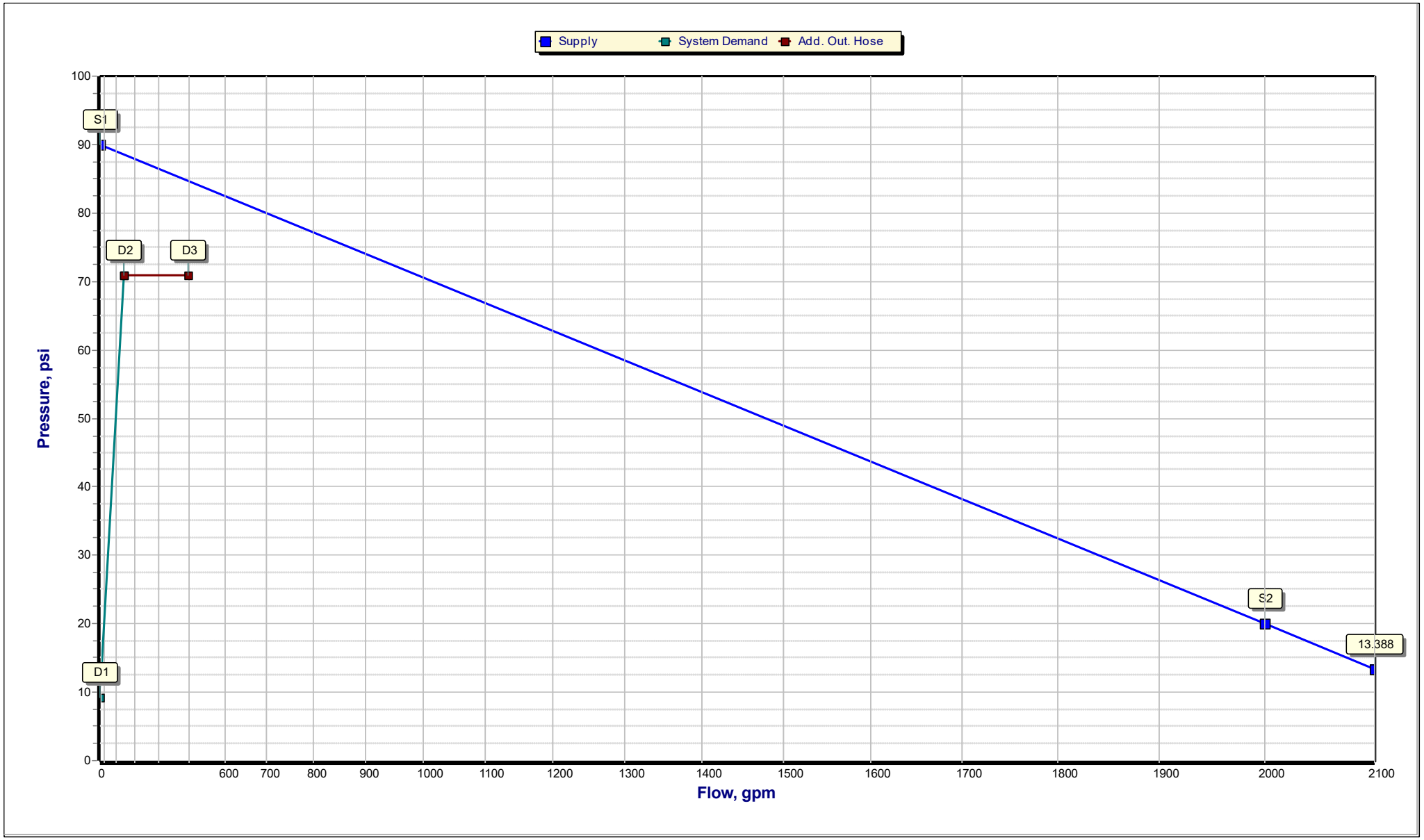


EXHIBIT 'C'

Hydraulic Analysis for : 1

Graph Labels

Label	Description	Values	
		Flow (gpm)	Pressure (psi)
S1	Supply point #1 - Static	0	90
S2	Supply point #2 - Residual	2000	20
D1	Elevation Pressure	0	9.2
D2	System Demand	246	71
D3	System Demand + Add.Out.Hose	496	71

Curve Intersections & Safety Margins

Curve Name	Intersection		Safety Margin	
	Pressure (psi)	Flow (gpm)	Pressure (psi)	@ Flow (gpm)
Supply	88.1	280.9	13.7	496

Open Heads

Head Ref.	Head Type	Coverage	K-Factor	Required			Calculated		
				Density	Flow	Pressure	Density	Flow	Pressure
		(ft^2)	($gpm/psi^{½}$)	(gpm/ft^2)	(gpm)	(psi)	(gpm/ft^2)	(gpm)	(psi)
A1	Overhead Sprinkler	120	5.6	0.2	24	18.4	0.21	25.2	20.2
A2	Overhead Sprinkler	120	5.6	0.2	24	18.4	0.221	26.5	22.4
A3	Overhead Sprinkler	120	5.6	0.2	24	18.4	0.258	30.9	30.5
A4	Overhead Sprinkler	120	5.6	0.2	24	18.4	0.2	24	18.4
A5	Overhead Sprinkler	120	5.6	0.2	24	18.4	0.211	25.3	20.4
A6	Overhead Sprinkler	120	5.6	0.2	24	18.4	0.246	29.5	27.8
A7	Overhead Sprinkler	120	5.6	0.2	24	18.4	0.215	25.8	21.2
A8	Overhead Sprinkler	120	5.6	0.2	24	18.4	0.226	27.2	23.5
A9	Overhead Sprinkler	120	5.6	0.2	24	18.4	0.264	31.7	32

EXHIBIT 'C'

Node Data

Node# Elev	Type Hgroup	K-Fact. Open/Closed	Discharge Overdischarge	Coverage Density	Tot. Pres. Elev. Pres.	Req. Pres. Req. Discharge
ft		gpm/psi½	gpm gpm	ft² gpm/ft²	psi psi	psi gpm
A4 16.17	Overhead Sprinkler HEAD	5.6 Open	24 0	120 0.2	18.4 -9.2	18.4 24
A1 11.75	Overhead Sprinkler HEAD	5.6 Open	25.2 1.2	120 0.21	20.2 -7.3	18.4 24
A5 16.17	Overhead Sprinkler HEAD	5.6 Open	25.3 1.3	120 0.211	20.4 -9.2	18.4 24
A7 11.75	Overhead Sprinkler HEAD	5.6 Open	25.8 1.8	120 0.215	21.2 -7.3	18.4 24
A2 11.75	Overhead Sprinkler HEAD	5.6 Open	26.5 2.5	120 0.221	22.4 -7.3	18.4 24
A8 11.75	Overhead Sprinkler HEAD	5.6 Open	27.2 3.2	120 0.226	23.5 -7.3	18.4 24
A6 16.17	Overhead Sprinkler HEAD	5.6 Open	29.5 5.5	120 0.246	27.8 -9.2	18.4 24
A3 11.75	Overhead Sprinkler HEAD	5.6 Open	30.9 6.9	120 0.258	30.5 -7.3	18.4 24
A9 11.75	Overhead Sprinkler HEAD	5.6 Open	31.7 7.7	120 0.264	32 -7.3	18.4 24
11 16.17	Node NODE				29.8 -9.2	
08 11.75	Node NODE				32.6 -7.3	
01 11.75	Node NODE				34.2 -7.3	
06 10.75	Node NODE				36.4 -6.8	
05 10.75	Node NODE				37.1 -6.8	
02 10.75	Node NODE				38.1 -6.8	
04 10.75	Node NODE				39.5 -6.8	
12-O 4.08	Node NODE				46.2 -3.9	
12-I 4	Node NODE				51.2 -3.9	
13-O 3.08	Node NODE				53.1 -3.5	
13-I 3	Node NODE				57 -3.5	
14 2	Node NODE				60.5 -3	
15-O 2	Node NODE				60.5 -3	
15-I 2	Node NODE				60.5 -3	
16-O 2	Node NODE				60.5 -3	
16-I 2	Node NODE				60.5 -3	

EXHIBIT 'C'

Node Data

Node# Elev	Type Hgroup	K-Fact. Open/Closed	Discharge Overdischarge	Coverage Density	Tot. Pres. Elev. Pres.	Req. Pres. Req. Discharge
ft		gpm/psi½	gpm gpm	ft² gpm/ft²	psi psi	psi gpm
17-O 2	Node NODE				60.5 -3	
17-I 2	Node NODE				67.1 -3	
18-O 2	Node NODE				67.1 -3	
18-I 2	Node NODE				67.1 -3	
19-O 2	Node NODE				67.1 -3	
19-I 2	Node NODE				67.8 -3	
20-O 2	Node NODE				67.8 -3	
20-I 2	Node NODE				67.8 -3	
21 2	Node NODE				67.8 -3	
W1 -5	Supply SUPPLY		-246		71 0	

EXHIBIT 'C'

PIPE INFORMATION

Node 1 Node 2	Elev 1 Elev 2	K-Factor 1 K-Factor 2	Flow added (q) Total flow (Q)	Nominal ID Actual ID	Fittings quantity x (name) = length	L F T	C Factor Pf per ft	total (Pt) elev (Pe) frict (Pf)	NOTES
	(ft)	(gpm/psi½)	(gpm)	(in)	(ft)	(ft)	(psi)	(psi)	
Path No: 1									
A4	16.17	5.6	24	1		11.15	120	18.4	
A5	16.17	5.6	24	1.049		0	0.1817	0	
						11.15		2	
A5	16.17	5.6	25.3	1	1x(us.Tee-Br)=5	8.62	120	20.4	
11	16.17		49.3	1.049		5	0.6891	0	
						13.62		9.4	
11	16.17		29.5	1.25	1x(us.Tee-Br)=6	5.42	120	29.8	
05	10.75		78.8	1.38		6	0.4324	2.3	
						11.42		4.9	
05	10.75		82.6	2	1x(us.Tee-Br)=10	0.65	120	37.1	
04	10.75		161.4	2.067		10	0.2279	0	
						10.65		2.4	
04	10.75		84.6	2	1x(coupling)=1	6.67	120	39.5	
12-O	4.08		246	2.067		1	0.4976	2.9	
						7.67		3.8	
12-O	4.08		0	2		1	0	46.2	CV-1 FR
12-I	4		246	0		0	5	0.0	Check
						1		5	Ref: 35 ** ***
12-I	4		0	2	1x(us.45)=2	0.89	120	51.2	
13-O	3.08		246	2.067		2	0.4976	0.4	
						2.89		1.4	
13-O	3.08		0	2		0.11	0	53.1	Butterfly 8000
13-I	3		246	0		0	36.18	0.0	***
						0.11		3.9	
13-I	3		0	2	1x(us.90)=5	1	120	57	
14	2		246	2.067		5	0.4976	0.4	
						6		3	
14	2		0	6	1x(coupling)=1	1.66	120	60.5	
15-O	2		246	6.065		1	0.0026	0	
						2.66		0	
15-O	2		0	6		1	0	60.5	BFV-N
15-I	2		246	0		0	0.022	0	***
						1		0.0	
15-I	2		0	6	1x(coupling)=1	3.52	120	60.5	
16-O	2		246	6.065		1	0.0026	0	
						4.52		0.0	
16-O	2		0	6		1	0	60.5	Gate A2360
16-I	2		246	0		0	0.003	0	***
						1		0	
16-I	2		0	6	1x(coupling)=1	1.48	120	60.5	
17-O	2		246	6.065		1	0.0026	0	
						2.48		0	
17-O	2		0	6		1	0	60.5	Ames4000SS
17-I	2		246	0		0	6.5408	0	***
						1		6.5	
17-I	2		0	6	1x(coupling)=1	1.52	120	67.1	
18-O	2		246	6.065		1	0.0026	0	
						2.52		0	

EXHIBIT 'C'

PIPE INFORMATION

Node 1 Node 2	Elev 1 Elev 2	K-Factor 1 K-Factor 2	Flow added (q) Total flow (Q)	Nominal ID Actual ID	Fittings quantity x (name) = length	L F T	C Factor Pf per ft	total (Pt) elev (Pe) frict (Pf)	NOTES
	(ft)	(gpm/psi½)	(gpm)	(in)	(ft)	(ft)	(psi)	(psi)	
Path No: 1									
18-O	2		0	6		1	0	67.1	Gate A2360
18-I	2		246	0		0	0.003	0	***
						1		0	
18-I	2		0	6	1x(coupling)=1	2.04	120	67.1	
19-O	2		246	6.065		1	0.0026	0	
						3.04		0	
19-O	2		0	6		1	0	67.1	DCV DetChk
19-I	2		246	0		0	0.6998	0	***
						1		0.7	
19-I	2		0	6	1x(coupling)=1	2.41	120	67.8	
20-O	2		246	6.065		1	0.0026	0	
						3.41		0	
20-O	2		0	6		1	0	67.8	Gate A2360
20-I	2		246	0		0	0.003	0	***
						1		0	
20-I	2		0	6	1x(us.90)=14	1.1	120	67.8	
21	2		246	6.065		14	0.0026	0	
						15.1		0.0	
21	2		0	8	3x(us.90)=86.74	202.83	140	67.8	
W1	-5		246	8.39		86.74	0.0004	3	
						289.57		0.1	
W1								**71**	
Path No: 2									
A1	11.75	5.6	25.2	1		11.15	120	20.2	
A2	11.75	5.6	25.2	1.049		0	0.1984	0	
						11.15		2.2	
A2	11.75	5.6	26.5	1	1x(us.Tee-Br)=5	8.62	120	22.4	
08	11.75		51.7	1.049		5	0.7518	0	
						13.62		10.2	
08	11.75		30.9	1.25	1x(us.Tee-Br)=6	1	120	32.6	
06	10.75		82.6	1.38		6	0.4714	0.4	
						7		3.3	
06	10.75		0	2		10.5	120	36.4	
05	10.75		82.6	2.067		0	0.0659	0	
						10.5		0.7	
05								**37.1**	

EXHIBIT 'C'

PIPE INFORMATION

Path No: 3

A7	11.75	5.6	25.8	1		11.15	120	21.2	
A8	11.75	5.6	25.8	1.049		0	0.2076	0	
						11.15		2.3	
A8	11.75	5.6	27.2	1	1x(us.Tee-Br)=5	8.62	120	23.5	
01	11.75		52.9	1.049		5	0.7868	0	
						13.62		10.7	
01	11.75		31.7	1.25	1x(us.Tee-Br)=6	1	120	34.2	
02	10.75		84.6	1.38		6	0.4931	0.4	
						7		3.5	
02	10.75		0	2	1x(us.Tee-Br)=10	9.85	120	38.1	
04	10.75		84.6	2.067		10	0.0689	0	
						19.85		1.4	
04								**39.5**	

Path No: 4

A6	16.17	5.6	29.5	1	1x(us.Tee-Br)=5	2.38	120	27.8	
11	16.17		29.5	1.049		5	0.2668	0	
						7.38		2	
11								**29.8**	

Path No: 5

A3	11.75	5.6	30.9	1	1x(us.Tee-Br)=5	2.38	120	30.5	
08	11.75		30.9	1.049		5	0.2906	0	
						7.38		2.1	
08								**32.6**	

Path No: 6

A9	11.75	5.6	31.7	1	1x(us.Tee-Br)=5	2.38	120	32	
01	11.75		31.7	1.049		5	0.3038	0	
						7.38		2.2	
01								**34.2**	

* Pressures are balanced to a high degree of accuracy. Values may vary by 0.1 psi due to display rounding.

* Maximum Velocity of 23.52 ft/s occurs in the following pipe(s): (12-O-04), (13-O-12-I), (14-13-I)

** Flow rate through device "%s" exceeds the maximum flow value assigned in the device curve.
*** Device pressure loss (gain in the case of pumps) is calculated from the device's curve. If the device curve is printed with this report, it will appear below. The length of the device as shown in the table above comes from the CAD drawing. The friction loss per unit of length is calculated based upon the length and the curve-based loss/gain value. Internal ID and C Factor values are irrelevant as the device is not represented as an addition to any pipe, but is an individual item whose loss/gain is based solely on the curve data.

EXHIBIT 'C'

CALCULATION SUMMARY

Project Name : East Jersey State Prison

Project Location:

Drawing No. :

City: Rahway, NJ

Design Areas

Design Area Name	Calc. Mode (Model)	Occupancy	Area of Application	Total Water	Pressure @ Source	Min. Density	Min. Pressure	Min. Flow	Calculated Heads	Hose Streams	Margin To Source
			(ft^2)	(gpm)	(psi)	(gpm/ft^2)	(psi)	(gpm)	#	(gpm)	(psi)
2	Demand (HW)	Ord. Grp. II	1200	514.4	Required 71.3	0.2	18.4	24	10	250	13

EXHIBIT 'C'

HYDRAULIC CALCULATIONS
for

Job Information

Project Name : East Jersey State Prison

Contract No. :

City: Rahway, NJ

Project Location:

Date: 7/15/2015

Contractor Information

Name of Contractor: Arrow Fire Protection, LLC

Address: 32 Fox Hill Road

City: Branchville, NJ 07826

Phone Number: 973-948-3473

E-mail:

Name of Designer: KW

Authority Having Jurisdiction: Rahway

Design

Remote Area Name	2
Remote Area Location	Pump House #2
Occupancy Classification	Ord. Grp. II
Density (gpm/ft²)	0.2
Area of Application (ft²)	1200
Coverage per Sprinkler (ft²)	120
Number of Calculated Sprinklers	10
In-Rack Demand (gpm)	0
Special Heads	
Hose Streams (gpm)	250
Total Water Required (incl. Hose Streams) (gpm)	514.4
Required Pressure at Source (psi)	71.3
Type of System	Wet
Volume - Entire System (gal)	271.6 gal

Water Supply Information

Date	07/10/15
Location	Production Way
Source	W1

Notes

Entire Building Calculated

EXHIBIT 'C'

Hydraulic Analysis for : 2

Calculation Info

Calculation Mode	Demand
Hydraulic Model	Hazen-Williams
Fluid Name	Water @ 60F (15.6C)
Fluid Weight, (lb/ft³)	N/A for Hazen-Williams calculation.
Fluid Dynamic Viscosity, (lb·s/ft²)	N/A for Hazen-Williams calculation.

Water Supply Parameters

Supply 1 : W1

Flow (gpm)	Pressure (psi)
0	90
2000	20

Supply Analysis

Node at Source	Static Pressure (psi)	Residual Pressure (psi)	Flow (gpm)	Available Pressure (psi)	Total Demand (gpm)	Required Pressure (psi)
W1	90	20	2000	88.3	514.4	71.3

Hoses

Inside Hose Flow / Standpipe Demand (gpm)	
Outside Hose Flow (gpm)	
Additional Outside Hose Flow (gpm)	250
Other (custom defined) Hose Flow (gpm)	
Total Hose Flow (gpm)	250

Sprinklers

Ovehead Sprinkler Flow (gpm)	264.4
InRack Sprinkler Flow (gpm)	0
Other (custom defined) Sprinkler Flow (gpm)	0
Total Sprinkler Flow (gpm)	264.4

Other

Required Margin of Safety (psi)	0
W1 - Pressure (psi)	71.3
W1 - Flow (gpm)	264.4
Demand w/o System Pump(s)	N/A

EXHIBIT 'C'

Hydraulic Analysis for : 2

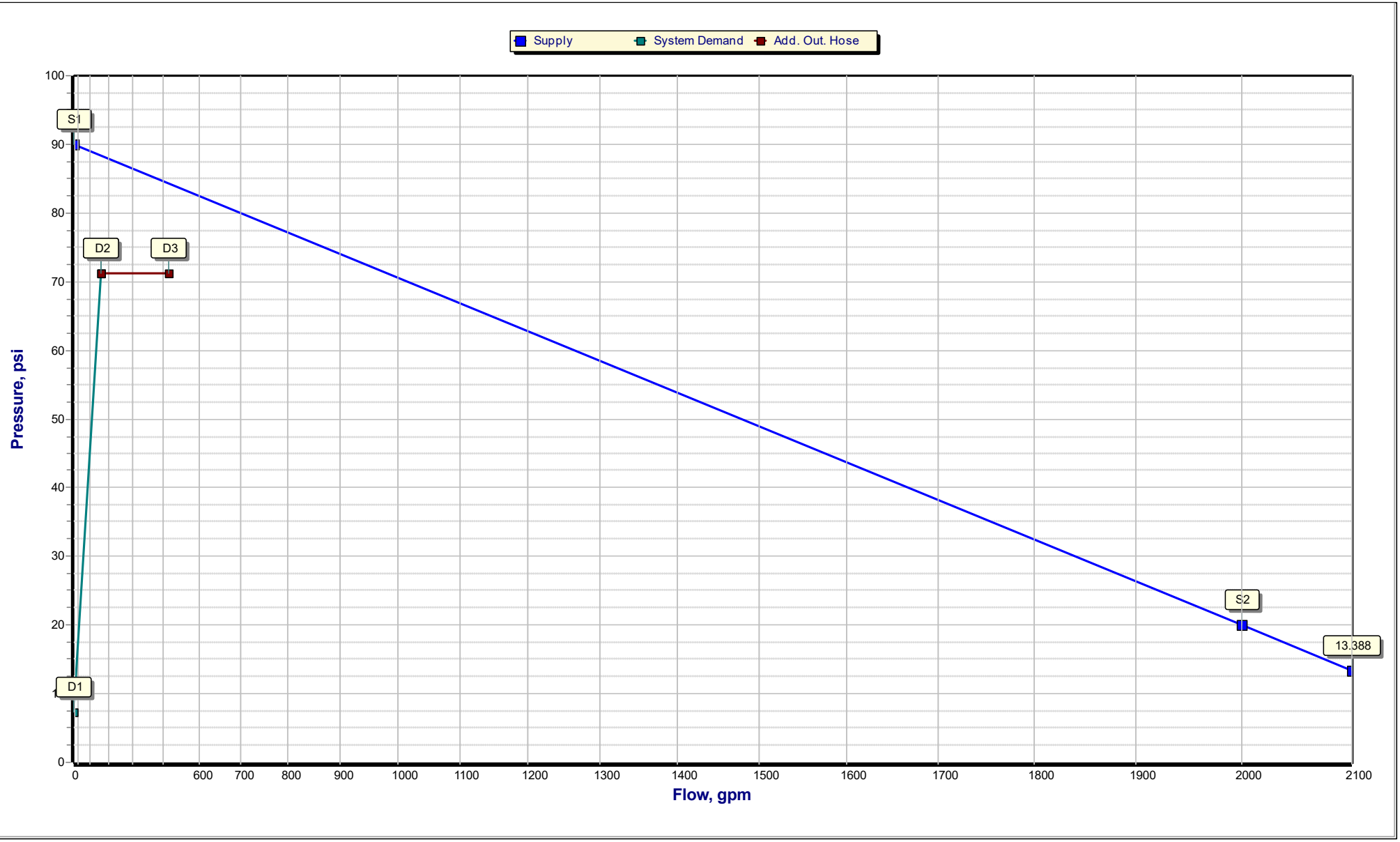


EXHIBIT 'C'

Hydraulic Analysis for : 2

Graph Labels

Label	Description	Values	
		Flow (gpm)	Pressure (psi)
S1	Supply point #1 - Static	0	90
S2	Supply point #2 - Residual	2000	20
D1	Elevation Pressure	0	7.4
D2	System Demand	264.4	71.3
D3	System Demand + Add.Out.Hose	514.4	71.3

Curve Intersections & Safety Margins

Curve Name	Intersection		Safety Margin	
	Pressure (psi)	Flow (gpm)	Pressure (psi)	@ Flow (gpm)
Supply	87.9	299.6	13	514.4

Open Heads

Head Ref.	Head Type	Coverage	K-Factor	Required			Calculated		
				Density	Flow	Pressure	Density	Flow	Pressure
		(ft^2)	($gpm/psi^{½}$)	(gpm/ft^2)	(gpm)	(psi)	(gpm/ft^2)	(gpm)	(psi)
B1	Overhead Sprinkler	120	5.6	0.2	24	18.4	0.2	24	18.4
B10	Overhead Sprinkler	120	5.6	0.2	24	18.4	0.231	27.7	24.5
B2	Overhead Sprinkler	120	5.6	0.2	24	18.4	0.21	25.2	20.2
B3	Overhead Sprinkler	120	5.6	0.2	24	18.4	0.216	26	21.5
B4	Overhead Sprinkler	120	5.6	0.2	24	18.4	0.237	28.4	25.8
B5	Overhead Sprinkler	120	5.6	0.2	24	18.4	0.226	27.1	23.4
B6	Overhead Sprinkler	120	5.6	0.2	24	18.4	0.205	24.6	19.3
B7	Overhead Sprinkler	120	5.6	0.2	24	18.4	0.215	25.8	21.2
B8	Overhead Sprinkler	120	5.6	0.2	24	18.4	0.222	26.6	22.5
B9	Overhead Sprinkler	120	5.6	0.2	24	18.4	0.242	29.1	27

EXHIBIT 'C'

Node Data

Node# Elev	Type Hgroup	K-Fact. Open/Closed	Discharge Overdischarge	Coverage Density	Tot. Pres. Elev. Pres.	Req. Pres. Req. Discharge
ft		gpm/psi½	gpm gpm	ft² gpm/ft²	psi psi	psi gpm
B1 12	Overhead Sprinkler HEAD	5.6 Open	24 0	120 0.2	18.4 -7.4	18.4 24
B6 12	Overhead Sprinkler HEAD	5.6 Open	24.6 0.6	120 0.205	19.3 -7.4	18.4 24
B2 12	Overhead Sprinkler HEAD	5.6 Open	25.2 1.2	120 0.21	20.2 -7.4	18.4 24
B7 12	Overhead Sprinkler HEAD	5.6 Open	25.8 1.8	120 0.215	21.2 -7.4	18.4 24
B3 12	Overhead Sprinkler HEAD	5.6 Open	26 2	120 0.216	21.5 -7.4	18.4 24
B8 12	Overhead Sprinkler HEAD	5.6 Open	26.6 2.6	120 0.222	22.5 -7.4	18.4 24
B5 12	Overhead Sprinkler HEAD	5.6 Open	27.1 3.1	120 0.226	23.4 -7.4	18.4 24
B10 12	Overhead Sprinkler HEAD	5.6 Open	27.7 3.7	120 0.231	24.5 -7.4	18.4 24
B4 12	Overhead Sprinkler HEAD	5.6 Open	28.4 4.4	120 0.237	25.8 -7.4	18.4 24
B9 12	Overhead Sprinkler HEAD	5.6 Open	29.1 5.1	120 0.242	27 -7.4	18.4 24
02 12	Node NODE				27.5 -7.4	
24 12	Node NODE				28.8 -7.4	
07 10.75	Node NODE				32.8 -6.8	
09 10.75	Node NODE				34.3 -6.8	
11-O 4.08	Node NODE				45.2 -3.9	
11-I 4	Node NODE				50.3 -3.9	
12-O 3.08	Node NODE				52.3 -3.5	
12-I 3	Node NODE				57.1 -3.5	
13 2	Node NODE				60.9 -3	
14-O 2	Node NODE				60.9 -3	
14-I 2	Node NODE				61 -3	
15-O 2	Node NODE				61 -3	
15-I 2	Node NODE				61 -3	
16-O 2	Node NODE				61 -3	
16-I 2	Node NODE				67.4 -3	

EXHIBIT 'C'

Node Data

Node# Elev	Type Hgroup	K-Fact. Open/Closed	Discharge Overdischarge	Coverage Density	Tot. Pres. Elev. Pres.	Req. Pres. Req. Discharge
ft		gpm/psi½	gpm gpm	ft² gpm/ft²	psi psi	psi gpm
17-O 2	Node NODE				67.4 -3	
17-I 2	Node NODE				67.4 -3	
18-O 2	Node NODE				67.4 -3	
18-I 2	Node NODE				68.1 -3	
19-O 2	Node NODE				68.1 -3	
19-I 2	Node NODE				68.1 -3	
20 2	Node NODE				68.2 -3	
23-O -5	Node NODE				71.3 0	
23-I -5	Node NODE				71.3 0	
W1 -5	Supply SUPPLY		-264.4		71.3 0	

EXHIBIT 'C'

PIPE INFORMATION

Node 1 Node 2	Elev 1 Elev 2	K-Factor 1 K-Factor 2	Flow added (q) Total flow (Q)	Nominal ID Actual ID	Fittings quantity x (name) = length	L F T	C Factor Pf per ft	total (Pt) elev (Pe) frict (Pf)	NOTES
	(ft)	(gpm/psi½)	(gpm)	(in)	(ft)	(ft)	(psi)	(psi)	
Path No: 1									
B1	12	5.6	24	1		10	120	18.4	
B2	12	5.6	24	1.049		0	0.1817	0	
						10		1.8	
B2	12	5.6	25.2	1.25		7.33	120	20.2	
B3	12	5.6	49.2	1.38		0	0.1804	0	
						7.33		1.3	
B3	12	5.6	26	1.25	1x(us.Tee-Br)=6	9.04	120	21.5	
02	12		75.1	1.38		6	0.3956	0	
						15.04		6	
02	12		55.5	1.5	1x(us.Tee-Br)=8	1.25	120	27.5	
07	10.75		130.6	1.61		8	0.5203	0.5	
						9.25		4.8	
07	10.75		0	2		9.83	120	32.8	
09	10.75		130.6	2.067		0	0.1541	0	
						9.83		1.5	
09	10.75		133.7	2	1x(coupling)=1	8.09	120	34.3	
11-O	4.08		264.4	2.067	1x(us.90)=5	6	0.5686	2.9	
						14.09		8	
11-O	4.08		0	2		1	0	45.2	CV-1 FR
11-I	4		264.4	0		0	5	0.0	Check
						1		5	Ref: 32 **
									***
11-I	4		0	2	1x(us.45)=2	0.89	120	50.3	
12-O	3.08		264.4	2.067		2	0.5686	0.4	
						2.89		1.6	
12-O	3.08		0	2		0.11	0	52.3	Butterfly 8000
12-I	3		264.4	0		0	43.4759	0.0	***
						0.11		4.7	
12-I	3		0	2	1x(us.90)=5	1	120	57.1	
13	2		264.4	2.067		5	0.5686	0.4	
						6		3.4	
13	2		0	6	1x(coupling)=1	1.66	120	60.9	
14-O	2		264.4	6.065		1	0.003	0	
						2.66		0	
14-O	2		0	6		1	0	60.9	BFV-N
14-I	2		264.4	0		0	0.0253	0	***
						1		0.0	
14-I	2		0	6	1x(coupling)=1	3.52	120	61	
15-O	2		264.4	6.065		1	0.003	0	
						4.52		0.0	
15-O	2		0	6		1	0	61	Gate A2360
15-I	2		264.4	0		0	0.0033	0	***
						1		0	
15-I	2		0	6	1x(coupling)=1	1.48	120	61	
16-O	2		264.4	6.065		1	0.003	0	
						2.48		0	
16-O	2		0	6		1	0	61	Ames4000SS
16-I	2		264.4	0		0	6.3725	0	***
						1		6.4	

PIPE INFORMATION

Node 1 Node 2	Elev 1 Elev 2	K-Factor 1 K-Factor 2	Flow added (q) Total flow (Q)	Nominal ID Actual ID	Fittings quantity x (name) = length	L F T	C Factor Pf per ft	total (Pt) elev (Pe) frict (Pf)	NOTES
	(ft)	(gpm/psi½)	(gpm)	(in)	(ft)	(ft)	(psi)	(psi)	
Path No: 1									
16-I	2		0	6	1x(coupling)=1	1.52	120	67.4	
17-O	2		264.4	6.065		1	0.003	0	
						2.52		0	
17-O	2		0	6		1	0	67.4	Gate A2360
17-I	2		264.4	0		0	0.0033	0	***
						1		0	
17-I	2		0	6	1x(coupling)=1	2.04	120	67.4	
18-O	2		264.4	6.065		1	0.003	0	
						3.04		0	
18-O	2		0	6		1	0	67.4	DCV DetChk
18-I	2		264.4	0		0	0.7514	0	***
						1		0.8	
18-I	2		0	6	1x(coupling)=1	2.41	120	68.1	
19-O	2		264.4	6.065		1	0.003	0	
						3.41		0.0	
19-O	2		0	6		1	0	68.1	Gate A2360
19-I	2		264.4	0		0	0.0033	0	***
						1		0	
19-I	2		0	6	1x(us.90)=14	1.1	120	68.1	
20	2		264.4	6.065		14	0.003	0	
						15.1		0.0	
20	2		0	8	1x(coupling)=3.21	66.28	140	68.2	
23-O	-5		264.4	8.39	2x(us.90)=57.83	61.04	0.0005	3	
						127.32		0.1	
23-O	-5		0	8		0.96	0	71.3	Gate A2360
23-I	-5		264.4	0		0	0.0019	0	***
						0.96		0	
23-I	-5		0	8		18.19	140	71.3	
W1	-5		264.4	8.39		0	0.0005	0	
						18.19		0	
W1								**71.3**	
Path No: 2									
B6	12	5.6	24.6	1		10	120	19.3	
B7	12	5.6	24.6	1.049		0	0.1899	0	
						10		1.9	
B7	12	5.6	25.8	1.25		7.33	120	21.2	
B8	12	5.6	50.3	1.38		0	0.1884	0	
						7.33		1.4	
B8	12	5.6	26.6	1.25	1x(us.Tee-Br)=6	9.04	120	22.5	
24	12		76.9	1.38		6	0.4133	0	
						15.04		6.2	
24	12		56.8	1.5	1x(us.Tee-Br)=8	1.25	120	28.8	
09	10.75		133.7	1.61		8	0.5434	0.5	
						9.25		5	
09								**34.3**	

EXHIBIT 'C'

PIPE INFORMATION

Path No: 3

B5	12	5.6	27.1	1		10.5	120	23.4	
B4	12	5.6	27.1	1.049		0	0.2273	0	
						10.5		2.4	
B4	12	5.6	28.4	1.25	1x(us.Tee-Br)=6	1.46	120	25.8	
02	12		55.5	1.38		6	0.2259	0	
						7.46		1.7	
02								**27.5**	

Path No: 4

B10	12	5.6	27.7	1		10.5	120	24.5	
B9	12	5.6	27.7	1.049		0	0.2374	0	
						10.5		2.5	
B9	12	5.6	29.1	1.25	1x(us.Tee-Br)=6	1.46	120	27	
24	12		56.8	1.38		6	0.2359	0	
						7.46		1.8	
24								**28.8**	

* Pressures are balanced to a high degree of accuracy. Values may vary by 0.1 psi due to display rounding.

* Maximum Velocity of 25.28 ft/s occurs in the following pipe(s): (11-O-09), (12-O-11-I), (13-12-I)

** Flow rate through device "%s" exceeds the maximum flow value assigned in the device curve.
*** Device pressure loss (gain in the case of pumps) is calculated from the device's curve. If the device curve is printed with this report, it will appear below. The length of the device as shown in the table above comes from the CAD drawing. The friction loss per unit of length is calculated based upon the length and the curve-based loss/gain value. Internal ID and C Factor values are irrelevant as the device is not represented as an addition to any pipe, but is an individual item whose loss/gain is based solely on the curve data.

EXHIBIT 'C'

MIDDLESEX WATER COMPANY

July 13, 2015

Ms. Christine Gollin
C&M Sprinkler Design
PO Box 493
Pocono Lake, PA 18347

Subject: **Flow Test** **Rahway Ave. (State Prison), Avenel**

Dear Ms. Gollin:

Pursuant to your request for flow data the following information was obtained on July 10, 2015 from hydrants (#196 and #146) on the 8" main in the vicinity of your request.

Static Pressure	90	psi
Nozzle	1	4"
Pitot	20	psi
Residual	48	psi
Flow @ 20 psi	2,000	gpm

Please be advised separate service lines are recommended for domestic and fire services. Each service shall also have a meter provided by Middlesex Water Company and a backflow prevention devise provided by the owner pursuant to the requirements of the Company's Cross Connection Control Plan in addition to those that may be required by the local plumbing official.

In the event that you require more detail regarding metering or cross connection control please feel free to contact Jim Hutchison, Superintendent of Distribution Service, at (732) 638- 7637 for assistance.

Sincerely,

Robert K. Fullagar, P.E.
Director of Distribution

c: Richard Risoldi
Chris Andreasen

EXHIBIT 'C'

C & M
SPRINKLER DESIGN, INC.

July 8, 2015

LH
7-8
Need new
Flow test

Middlesex Water
1500 Ronson Rd
Iselin, NJ 08830

Attn: Bob Fullagar

RE: East Jersey State Prison
Rahway, NJ

Streets: Rahway Avenue & Production Way

Dear Bob,

I would like to request current water flow information for the above referenced location.

We would appreciate if you could indicate the elevation of the water flow test hydrant(s) and hydrant numbers. Please email/mail a detail of any requirements such as meter pit details, backflow devices, and/or any spool setting for Water Company supplied devices, if required along with any other information that we may need.

The purpose of this request is for the design procedures and installation of a fire sprinkler system at this location.

Please feel free to contact me at 570.751.1311, if you have any questions or need any additional information. Please fax the results to 570.468.8837.

Sincerely,

Christine Gollin
C & M Sprinkler Design, Inc.

C & M Sprinkler Design, Inc.
PHYSICAL: 274 Route 940, Suite 12, Blakeslee, PA 18610 * MAILING: P.O. Box 493, Pocono Lake, PA 18347
Phone: 570.751.1311 * Fax: 570.468.8837
Email: sales@cmsprinkler.com * Website: www.cmsprinkler.com

EXHIBIT 'C'

MIDDLESEX WATER COMPANY

July 13, 2015

Ms. Christine Gollin
C&M Sprinkler Design
PO Box 493
Pocono Lake, PA 18347

Subject: **Flow Test** **Production Way (State Prison), Avenel**

Dear Ms. Gollin:

Pursuant to your request for flow data the following information was obtained on July 10, 2015 from hydrants (#275 and #262) on the 8" main in the vicinity of your request.

Static Pressure	90	psi
Nozzle	1	4"
Pitot	17	psi
Residual	52	psi
Flow @ 20 psi	2,000	gpm

Please be advised separate service lines are recommended for domestic and fire services. Each service shall also have a meter provided by Middlesex Water Company and a backflow prevention devise provided by the owner pursuant to the requirements of the Company's Cross Connection Control Plan in addition to those that may be required by the local plumbing official.

In the event that you require more detail regarding metering or cross connection control please feel free to contact Jim Hutchison, Superintendent of Distribution Service, at (732) 638- 7637 for assistance.

Sincerely,

Robert K. Fullagar, P.E.
Director of Distribution

c: Richard Risoldi
Chris Andreasen

EXHIBIT 'C'

C & M
SPRINKLER DESIGN, INC.

July 8, 2015

LH
7-8
Need new
flow test

Middlesex Water
1500 Ronson Rd
Iselin, NJ 08830

Attn: Bob Fullagar

RE: East Jersey State Prison
Rahway, NJ

Streets: Rahway Avenue & Production Way

Dear Bob,

I would like to request current water flow information for the above referenced location.

We would appreciate if you could indicate the elevation of the water flow test hydrant(s) and hydrant numbers. Please email/mail a detail of any requirements such as meter pit details, backflow devices, and/or any spool setting for Water Company supplied devices, if required along with any other information that we may need.

The purpose of this request is for the design procedures and installation of a fire sprinkler system at this location.

Please feel free to contact me at 570.751.1311, if you have any questions or need any additional information. Please fax the results to 570.468.8837.

Sincerely,

Christine Gollin
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PHYSICAL: 274 Route 940, Suite 12, Blakeslee, PA 18610 * MAILING: P.O. Box 493, Pocono Lake, PA 18347
Phone: 570.751.1311 * Fax: 570.468.8837
Email: sales@cmsprinkler.com * Website: www.cmsprinkler.com

EXHIBIT 'C'

Fire Safety Study

East Jersey Correctional Facility
Rahway, Middlesex County, NJ,

PROJECT #: C1009-00

STATE OF NEW JERSEY

Honorable Philip D. Murphy, Governor

Honorable Sheila Y. Oliver, Lieutenant Governor

DEPARTMENT OF THE TREASURY
Elizabeth Maher Muoio, State Treasurer

DIVISION OF PROPERTY MANAGEMENT AND CONSTRUCTION
Christopher Chianese, Director

DEPARTMENT OF CORRECTIONS
Marcus O. Hicks, Esq., Acting Commissioner

STONEWATER ARCHITECTURE LLC
99 Morningside Drive
Colonia, New Jersey 07067

Date: **July 31, 2020**

EXHIBIT 'D'

EXHIBIT 'D'

EXHIBIT 'D'

C1009-00 East Jersey State Prison
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EXHIBIT 'D'

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~~Building 09~~	~~Old Back Kitchen - Not Included in Study Recommended for Demolition (CLOSED) (Condemned)~~
Building 11	Chapel
Building 14	Industrial 1st Fl. State Use offices & storage; 2nd Fl. Clothing; 3rd Fl. New School
Building 15	Vocational Training, (3 buildings connected): 1st Fl. Offices, Welding & Auto Mechanic; Old Culinary Arts (CLOSED)
Building 16	Machine Shop (2 buildings connected): Machine Shop & Storeroom
Building 17	Auto Body Shop
Building 18	Down Under Control Station
Building 19	Furniture Shop (4 buildings connected): 3 Buildings - Storage; ~~Furniture Factory Recommended for Demolition (CLOSED) (Condemned)~~
Building 20	Control Point
Building 21	Front House Administration Building
Building 24	Band Room
Building 25	Green House
Building 26	Storage Barn
Building 27	Floral (Horticulture Shop)
Building 28	Visit Hall
Building 29	Visit Frisk Shack & Bathrooms with 2 Covered Pavilions
Building 30	Receiving Gate: Office, Visit Processing & Registration; Vehicle Sally Port
Building 31	Mail Room Garage & Utility
Building 32	Outside Repair & Lock Shop
~~Building 36~~	~~Outside Kitchen~~
~~Building 37~~	~~EJSP Powerhouse~~
Building 49	Women's Locker Trailer
Building 50	Business Office Trailer
Building 52	Rahway Camp Housing Unit Trailers (on ADTC grounds)
Building 53	Rahway Camp Visit Trailer (on ADTC grounds)
Building 54	NJDOC North Region Construction Unit Trailer
Building 55	Fire Safety Office Trailer (Vacant)
~~Building 56~~	~~Generators & fuel tanks (Main & 7W)~~
~~Building 57~~	~~Perimeter Wall & Sentry Boxes Guard Towers 1 through 7~~
Building 59	Steam Power House
~~Building 60~~	~~Steam Power House Generator~~
~~Building 61~~	~~Steam Power House Fuel Tanks (2) 20,000 gallons, (1) 10,000 gallons~~
Building 62	Fire Safety Center Engineering Offices (+6 sheds and 2 containers)
Building 63	Woodbridge Developmental Center Laundry (Vacant)
Building 64	Woodbridge Developmental Center Food Service/Warehouse (Temp IG Offices)
Building 65	Woodbridge Developmental Center State Fueling Station
~~Building 66~~	~~EJSP Complex Water Valve Pits and Fire Hydrants~~

Part - 4: **Cost Estimates by Building**

Part - 5: **DPMC Forms 38 By Building**

EXHIBIT 'D'

EXHIBIT 'D'

C1009-00 East Jersey State Prison
Part I - Fire Safety Report
Executive Summary

EXHIBIT 'D'

Executive Summary:

The list of buildings provided in this report was modified by the Department of Corrections in accordance with a revised Scope of Work Building List received from the DOC. Building names shown with a strikethrough line (~~strikethrough~~) in this report indicate those buildings removed from the scope of work by the DOC.

In addition to the evaluation of listed violations in the Scope of Work, we have been tasked with the additional scope of upgrading the existing structures to meet the New Jersey International Building Code 2015 building Code.

This report is divided into 2 phases however, please note that the Phase 1 - Violations Cost estimate is included in all charts and estimates. The second amount indicated in the charts and estimates is the Total Cost of work required to meet the 2015 building code. In order to obtain the cost of Phase 2 work, subtract the Phase 1 cost from the Total Cost amount.

To summarize, the DPMC 38 CCE to bring the Correctional facility into approximate compliance with the 2015 Building Code including both Phase 1 & Phase 2 is $74,773,042. The Phase 1 Estimated Cost as per the DPMC 38 form totals $42,337,413. Therefore, Phase 2 Total Cost, ($74,773,042 - $42,337,413) is $32,435,629.

Phase 2 Work work consists of the items required to meet the 2015 building code that are not also required to bring the structures into conformance with the Violations of the Life Safety Items listed in the violations provided by the Fire Inspection Reports.

Total Cost of Phase 1 with escalation of 3% is $42,337,413. for 2022, and $43,607,535 for 2023. Similarly with escalation with 3% will Phase II will be $32,435,629 for 2022 and $33,408,698 for 2023. Correspondingly the total costs for Phase 1 and Phase 2 will be $74,773,042 for 2022 and $77,016,233 for 2023.

Purpose of Study

The purpose of this feasibility study is to provide a snapshot of the existing condition of fire safety existing in the facility. This report includes a discussion of the existing condition of existing fire safety systems at the prison noted during inspections and interviews with prison staff. The plan will identify the cost of remedial work to upgrade the existing fire safety system. It identifies the necessary quantities and areas to receive upgrading and the approximate cost for each of the identified improvements.

The Scope of Work specifically references fire safety violations as cited by the State Fire Inspector. These violations include building egress, Fire Suppression Systems and Fire Alarm system issues. Based upon this, Egress upgrades to meet NFPA 101 Chapter 15 are not discussed. Where the violation indicates that additional egress be provided for buildings and areas with less than two means of egress, compliant additional egress is provided. Exit widths and door swings in primary egress routes are not addressed. Emergency lighting has been

provided in areas currently with substandard Emergency Lighting. Fire Suppression Systems have been added or upgraded at structures and building areas that are currently unprotected when located within the prison walls as well as the Camp Buildings with a cited fire suppression system. Buildings inside the walls with existing Suppression Systems have been indicated to be repaired or replaced. Fire suppression has also been provided in the CAMP buildings and Outside Kitchen based upon current violations. Fire alarm systems have been recently upgraded in Wings 1 through 4 and the Rotunda. While fire alarm panels have recently been installed in many of the other buildings inside the walls as part of the upgrade, these buildings have not been equipped with smoke detection, pull stations or signaling.

As with any consideration of feasibility and modification of structures erected between 1900 and 1990, the presence or absence of environmental hazards is included in this report and was used to determine the recommended method of performing the required work and has been included in the cost projections.

Phase I Violations:

Our design team completed field investigations and existing conditions evaluations for each building located on the campus as well as a limited site evaluation of specific existing utilities as part of the Fire Safety Study at the East Jersey State Prison in Rahway, NJ. The purpose of the evaluation is to resolve a number of Violations issued by the Fire Marshall for New Jersey Uniform Fire Safety Code deficiencies. The violations fit into five major categories;

1. Lack of required second means of egress from all spaces. (Insufficient number of exits from occupied spaces)
2. Lack of Lighted/ Conforming Exit signage. (Indicating routes to exit the building)
3. Lack of adequate emergency lighting. (Inadequate emergency light fixtures for egress paths from all spaces)
4. Lack of fire suppression (sprinkler systems) and functional water supply systems.
5. Lack of automatic fire detection (addressable fire alarm systems) and manual fire alarm devices.

This study concentrates on the solution to these Five deficiencies and the related site, civil and environmental components that will be required in order to execute the recommended solutions.

1. **Fire Egress Violations:** Several major buildings and spaces, including several cell blocks have received violations for poor or nonexistent access to a secondary means of egress. The areas cited in Fire Safety Violations and where

EXHIBIT 'D'

noted by our design team during building surveys, are noted on the plans. Resolution of these issues is complicated and beyond the scope of this study. These deficiencies, where noted, include proposal of simple remediation method and a lump sum budget cost included in the Feasibility Study Estimate for each location.

2. **Exit Signage Violations:** Where deficient exit signage cited in a Violation and where noted to be deficient by our design team during building surveys are noted on the plans and a budget price for the required work based upon a square foot cost and the area of the deficient building or space is applied to the cost estimate.

3. **Emergency Lighting Violations:** Where deficient emergency lighting is cited in a Violation and where noted to be deficient by our design team during building surveys have been noted on the plans and a budget price for the required work based upon a square foot cost and the area of the deficient building or space is applied to the cost estimate.

4. **Fire Suppression System Violations**:

   a. Site Fire Service Supply Piping: There is an existing fire water piping supply loop and new fire pump houses on the campus that are currently 'locked out' (disconnected). The lock out is due to concerns over the resiliency of the new fire water service loop that is partially composed of re-purposed domestic water supply piping. The concern is that these pipes will be unreliable under the extreme water pressure levels expected with operation of the new fire pumps.

   b. In addition to the Sprinkler Water Supply lock out above, the Supply loop also supplies hydrants on the campus (see campus site maps provided in the fire suppression section of the report for more detail).

   c. With the lock out situation, all the existing sprinkler systems are offline and showing trouble lights on the remote supervision and monitoring systems.

Where deficiencies in fire suppression systems are cited in Fire Safety Violations and where additional deficiencies are noted by our design team in other structures within the listed prison structures, it is noted on the plans and a budget price for the required work based upon a square foot cost is applied to the cost estimate.

5. **Fire Alarm Violations:** The existing fire detection coverage at the campus was upgraded within the last several years in buildings 1 through 5. For the balance of the prison, fire alarm service varies. There have been fire alarm panels recently installed in many of the other buildings inside the walls as part of the recent upgrade, but these buildings have not been equipped with smoke detection, pull

stations or signaling. We have included new systems for all structures included in our scope of work. Our recommendations include the replacement/ upgrade of the existing fire alarm systems that have not recently been upgraded with multiplexed point ID systems that will communicate to the existing centralized monitoring system in the main guard house. Our recommendations also include providing fire alarm coverage in all buildings regardless of size and those with recently installed fire alarm panels with no devices. Those buildings deemed too small to require a separate fire alarm control panel could be connected to the central monitoring system via control panels in adjacent buildings.

Fire Suppression System and Fire Alarm upgrades in response to Fire safety Violations permit continued occupancy of the prison as it currently exists. When considering repairs, renovations and alterations, corresponding sections of subchapter 6, of the N. J. State Uniform Construction Code is activated requiring a re-evaluation of the structures affected.

The stated requirements of the Fire Safety Code indicate that the facility must provide Fire Sprinklers throughout or comply with the Chapter 15 "Existing Detention and Correctional Occupancies" of the Life Safety Code, NFPA 101, 1985 edition.

Based upon the provision of a complete sprinkler system throughout, compliance with NFPA 101 Chapter 15 (1985) is not required. This includes all four wings, the Rotunda (building #22) and the link building, #10 and will permit continued use of the Prison cell blocks and secure areas into the foreseeable future.

Phase II - 2015 Building Code Compliance:

Full compliance with the 2015 Building for the Prison Structures is practically impossible, however, near compliance can be achieved by addressing the following major Chapters of the 2015 building code:

- Chapter 3 & 4 - Use and Occupancy Classification and Special Detailed Requirements Based on Use and Occupancy
    - The Prison Is classified as an Institutional Occupancy, I3. Currently, all prison structures are maintained under Condition 5 where all spaces, including sleeping areas, egress is locked and controlled by prison staff carrying keys.
    - 2015 Building code requires an egress strategy including electronic lock control and monitoring to increase safety by providing redundancy and flexibility in egress. Non-sleeping buildings in the prison currently gated and locked with keys can cause persons to be trapped inside, including the event of a fire or other emergency. These simple mechanical locks must be eliminated, and alternate security measures implemented to prevent entrapment.

- Chapter 5 - General Building Heights and Areas

- Compliance with Chapter 5 will require division of building areas or occupancies into fire divisions and fire areas to control fire and smoke spread in each structure. Current barred doors and metal fencing cannot provide fire or smoke separation and must be replaced with fire rated walls and doors. However, each new door will require monitoring and control to maintain security and serve for egress during an emergency.
- The Scope of Work for Code Compliance includes electronic access and monitoring systems to provide safe and secure access and egress.

- Chapter 6 - Types of Construction
  - This chapter defines each of the existing structures into classifications that describe their construction type and innate ability to contain or deter fire spread and to allow adequate time for egress.
  - Prison buildings include many heavy timber and wood structures that do not comply with the area limits.
  - The Code Compliance scope of work includes spray fire-proofing exposed steel and fire suppression systems to permit occupancy of these structures.

- Chapter 7 - Fire and Smoke Protection Features
  - This Chapter defines fire rated constructions, Fire and Smoke Barriers, Partitions and the separations required between buildings, floors, fire areas, shafts.
  - The Prison has many deficiencies regarding each of these requirements without the removal of grates and gates and the introduction of rated walls, fire and smoke doors.
  - The Code Compliance scope of work includes providing fire and smoke partitions, doors plus firestopping of wall and floor penetrations to complete the fire and smoke barriers between floors and occupancies.

- Chapter 8 - Interior Finishes

  - This Chapter provides definitions for permitted wall and floor finishes to slow and limit the rate of fire spread and smoke generation during a fire.
  - The Prison has many exposed combustible wood surfaces.
  - The Scope of Work for Code Compliance includes a complete fire suppression system. Non-compliant finishes will be replaced.

- Chapter 9 - Fire Protection Systems
  - This Chapter describes the requirements for Sprinkler and Standpipe systems, the distribution of Fire Extinguishers, Fire Alarm Systems and carbon monoxide detection.
  - The Scope of work for this project provides compliant Fire Suppression Systems and Fire alarm Systems.

- Chapter 10 - Means of Egress

- This Chapter includes tables for establishing the number of occupants to be accounted for in every space in a structure and ensuring an adequate amount of egress for these occupants.
- This Chapter sets egress requirements including number, corridor and door widths, railings and guard heights, exit signage, emergency lighting and construction.
- The Prison contains many deficiencies with regards to egress.
- The Code Compliance scope of work includes provision of additional egress corridors, stairs, doors, railings, guards, exit signage and emergency lighting.

- Chapter 11 - Accessibility.
  - This Chapter establishes the requirements for accessibility including ADA accessible routes, ramps, elevators and Toilets.
  - Past the Administration Building #21, The Prison is not compliant with this Chapter.
  - The Code Compliance scope of work includes accessible door hardware, ramps, elevators and lifts to provide Access to prison structures.
  - The Cost estimate includes provision for ADA review and design during the preliminary design phase.
  - The Code Compliance scope of work does not include the design or cost for provision of accessible toilets, drinking fountains or accessible egress routes.

The balance of the code deals with building system requirements. Few existing building systems comply with IBC 2015 requirements. Major Systems will need to be replaced or upgraded including:

- Chapter 12:
  - Ventilation throughout the prison is served primarily through “Natural Ventilation.” Where ventilation systems have been inspected, they were found to be exhaust fans only with makeup air/ ventilation systems inactive or missing major components.
  - Several buildings have vacant and unoccupied spaces. Decisions concerning whether re-occupancy is practical or desirable is beyond the scope of this study to determine. We have assumed that the intent is to have all these spaces prepared for occupancy.
  - Toilet and Bathroom Requirements, including Accessibility, are major cost factors. Developing a program for each building including number of fixtures, fixture locations and ADA requirements are intensive activities, left to future projects and design professionals.
  - Calculating toilet and plumbing requirements to meet code should be included in future design development projects.
  - We have not considered providing this service; however, we will provide a proposal if required.

- Chapter 13 is not applicable for NJ IBC compliance.

- Chapter 14 – Exterior Walls
  - The Prison consists of buildings that were constructed more than 40 years ago. There was little concern for energy conservation, insulation, infiltration, or door and window performance at that time.
  - Based upon visual inspection, the prison walls do not meet code required thermal performance.
  - Based upon visual inspection, the Prison windows and doors do not meet thermal performance or infiltration requirements.
  - Upgrade requirements and cost estimates to meet code requirements and pricing are not included in this study.

- Chapter 15 – Roof Assemblies and Rooftop Structures
  - Roof structures are assumed to be minimally insulated.
  - Compliance with current codes can not be determined, including performance requirements.
  - Calculating Upgrade requirements to meet code requirements and pricing is not included in this study.

- Chapters 16 & 17 – Structural Design & Special Inspections and Tests
  - Structural adequacy has not been considered.
  - No testing of materials is included In this study.
  - A cost item for testing should be included in Schematic or Preliminary Design Phases.

- The effects of application of the balance of New Jersey IBC 2015 on the current sections is not included in this study.

As previously indicated, the cost of this Phase 2 work is obtained by deducting the cost of Phase 1 from the Total 2015 Building Code Compliance Costs indicated in the Cost Estimates.

Environmental Concerns:

USA environmental consultants conducted a building by building review of the existing materials as well as a review of the provided environmental surveys to determine the most likely remediation activity required to execute the upgrades recommended in this report. In addition to Asbestos Containing Materials (ACM) we have provided recommendations for the treatment of lead-based paint and other environmental hazards that are likely to be encountered during the construction phase of this project.

Cost Estimate:

This study provides detailed findings and recommendations for each building on the campus as well as the overall site.

EXHIBIT 'D'

The cost estimate is similarly broken down by building with groupings for those buildings currently cited for fire code violations (Phase I) and Building Code Compliance (Phase II).

Limitations

1. This study does not include prison yards or open space work.

2. Building 10, Building 22, Building 23 and the Wings, (Buildings 1, 2, 3 and 4);
    a. In accordance with discussions with the Prison Staff, with regard to security, inmate supervision and safety;
        i. Security Procedures with regard to electronic door control are not discussed. a consultant will be required for this during schematic or preliminary design Phases.
    b. New Fire Egress Stairways indicated to supplement existing egress paths and provide additional emergency egress routes from all inmate holding areas will meet the requirements of NFPA 101.
        i. This report includes upgrades of doors and locks in connection with the use of the egress stairs during an emergency through additional video surveillance and central electronic lock control.
        ii. This report does not provide or locate secure holding areas inside or outside of adequate size at the recommended distance from the building for guard and inmate safety.

3. It is beyond the scope of this study to completely document each of the structures included in the study. Based upon this, all drawings included in the following report are diagrammatic in nature and all dimensions, areas and estimates derived therefrom are approximate. Cost estimates include development of complete measured drawings of existing structures during schematic or preliminary design phases.

Process

The design team for this study have performed site inspections, and visual surveys to confirm and/or establish existing conditions of every structure included in this study. Team members have incorporated plans into this report based upon data provided by the state or others and these diagrams generally compare with the existing structures.

The team met with facility management, maintenance managers, fire safety managers, and others to determine a project approach that addressed the list of violations included in the scope of work in order to provide compliant fire egress from all structures, compliant fire sprinkler coverage for the major buildings within the prison walls and a functional and compliant fire alarm system. These upgrades will increase the level of fire protection for the structures as well as inmate, guard and civilian worker safety.

Egress:

The structures were inspected and note taken of fire egress deficiencies within the scope of the fire inspection violations provided by the Department of Correction. These include

EXHIBIT 'D'

providing a minimum of 2 means of egress from every floor in the facility, door swings, exit signage and emergency lighting.

Fire Sprinkler Systems:
The prison has recently upgraded the water supply piping to the facility separating the domestic water supply to each building from the fire sprinkler and hydrant supply system including the addition of 2 fire pump houses.

We have indicated the areas where secure fire sprinkler systems are required; where non secure fire sprinkler systems are required; and where there are partial existing sprinkler systems that can be partially or completely reused. We have evaluated the sprinkler piping in some areas recommended replacement to achieve compliance or recommended replacement of systems that are compromised by old or rusted piping.

Fire Alarm System:
The fire alarm system was recently upgraded throughout the Main Building. We have reviewed the installation and the violations concerning this. These violations have been reviewed and upgrades and replacements recommended including a proposal for an extensive commissioning process to assure all alarm troubles are resolved within the construction process.

The prison is a high security Institutional Occupancy I-3; Condition 4 and 5 facility.
The original portions of the building are 119 years old.

While Smoke detectors appear to be required according to IBC Section 907.2.6.3.3, they were not designed for, or installed in the cells as part of the recent design. The detectors were likely not installed in cells during the recent upgrade as they would have been destroyed because the protective covers would have been ceiling mounted on the already low ceilings. Despite this omission, the recent smoke detection system installation seems to have been approved.

This question will ultimately be resolved when sprinklers are installed in each cell. IBC Section 907.2.6.3.3, Exception 3 permits the omission of smoke detection in each cell when the cells are equipped with sprinkler heads.

Carbon monoxide detection is not required in the vast majority of the buildings as there are no fossil fuel burning systems. The exception to this is the steam and generator building and the auto shop building.

Accessibility

The Prison has few Accessible accomodations. The main entrance to the Rotunda from the Administration Building is inaccessible due to the existing stair. We have included lifts, ramps and elevators in the scopes of work however addressing the accessible toilet issues are beyond the scope of this study.

Energy Conservation

The existing prison consists of buildings constructed before energy costs were a major component of building operations. Most of the buildings are uninsulated and the windows are single glazed. Many improvements are possible, but are not included in this report.

The Prison is served by an Off Site Steam Plant that provides the heat for all included prison structures. The piping system from Building #59 enters the site on the south side of the prison on raised stanchions. The piping branches to feed buildings to either side as the pipes proceed toward the Rotunda. The steam passes underground through pipe tunnels to the balance of the prison structures terminating in the Rotunda Basement. From the Rotunda Basement the pipes split to feed Buildings 1 through 4.
The pipes and insulation in the steam tunnels is in poor condition with some asbestos insulation and there are both steam and condensate leaks evident in many locations, including in the unused portions of Building #8.

It is our opinion that the majority of this steam piping and corresponding valves and accessories will require replacement in the near future, however, it is beyond the scope of this study to provide measurements or cost data.

Emergency Power and Electric Service

A complete evaluation of the emergency electrical generation system at the prison and testing of circuits should be included in subsequent surveys as the Prison is served by multiple Emergency Generator plants located around the site.

Evaluation of and existing emergency generators, emergency power capacity, emergency switch over circuitry services are not included in the scope of this report.

This report includes emergency lighting and exit signage provided with line voltage primary power with battery backup.

Environmental Assessment

USA Environmental Management, Inc., (USAEMI) conducted the environmental field assessment in September 2019. Site technicians included Richard J. Reynolds and Mathieu Chapuis. Both inspectors are certified under the United States Environmental Protection Agency (EPA), the Asbestos Hazard Emergency Response Act (AHERA) Asbestos Building Inspectors. Additionally, Mr. Reynolds is a State of New Jersey, Department of Health / EPA Model Lead Inspector/Risk Assessor. All inspectors have significant experience in

EXHIBIT 'D'

asbestos-containing material (ACM) surveys, lead-based/containing paint assessments and hazardous materials assessments.

As part of the Fire Safety Study of East Jersey State Prison (State of New Jersey, Department of the Treasury, Division of Property Management and Construction Project No. C1009-00), USAEMI's primary focus was to audit, visually inspect and document existing environmental conditions which may adversely impact any fire safety upgrades within the facility. USAEMI proffers the following summary of findings with regards to potential asbestos and lead-based/containing impacts in the buildings included in the scope of work. Costs estimates are developed to provide the using agency a budgetary framework for planning and implementing any upgrades.

Asbestos Impacts Description:

USAEMI was provided with an Asbestos Management Plan (AMP) for the subject facility as prepared by Environmental Connection, Inc., dated September 17, 2009. USAEMI audited the AMP prior to conducting the site inspection and has incorporated the AMP's findings into the Fire Safety Study (DPMC C1009-00).

The following general recommendations are provided to assist in the renovation or demolition of the existing structures with ACM. Note that any building material that is not identified as homogenous with those addressed in this report must be considered as ACM unless additional testing indicates otherwise.

The following work practices should be followed whenever activities involving any ACM occur at this Facility.

- Ensure any ACM is managed in accordance with Federal, State and Local regulations.
- Decontaminate/clean-up any damaged ACM in areas where activities are to occur.
- Remediate any ACM that may be disturbed during renovation or demolition.
- Always keep any ACM adequately wet before, during, and after removal operations.
- Conduct activities in a manner which produces no visible emissions to the outside air.
- Handle and dispose of all ACM in accordance with Federal, State and Local regulations.
- Maintain this report as a component of the historical record for the buildings.

Lead-Based/Containing Paint Impacts Description:

The current United States Department of Labor, Occupational Safety and Health Administration (OSHA) regulations under 29 CFR 1926.62 set the following limits for lead exposure including a lead permissible exposure limit (PEL) of 50 micrograms per cubic meter ($\mu g/m^3$), and an action level of 30 $\mu g/m^3$, as determined using an 8-hour time weighted average. Since lead paint has been determined to be a health threat, assessment of building for the presence of lead paint is recommended in order to prevent occupational exposure to personnel or the general public, and to enact appropriate control measures for lead hazards.

EXHIBIT 'D'

OSHA and EPA regulations must be followed when renovation or demolition work affects any lead-based paint or paints with detectable lead levels referred to as paint containing lead (PCL) or lead-containing paint (LCP).

As per OSHA, disturbance of paint containing lead requires special training and initial exposure monitoring at a minimum. OSHA standard 29 CFR 1926.62 (Lead in Construction Standard) is invoked if any lead is present in paint or other coatings, since there is no minimum concentration level, as opposed to the EPA and HUD definitions of lead-based paint in child occupied facilities and public/private housing. These standards set forth the regulations that apply with regards to construction or renovation of painted materials or structures that contain detectable amounts of lead and not necessarily lead pigment containing items that have been manufactured. Due to the age of the facility and the absence of any inspection data verifying any lead content, all painted surfaces throughout all buildings shall be treated as LCP and thus 29 CFR 1926.62 (Lead in Construction Standard) protocol shall be in effect for all Fire Safety related renovations.

Bird Droppings (Guano):

Throughout the survey, substantial droppings (guano) was observed in several interior spaces. Birds have intruded the areas due exterior exposures from structural damages and/or unsealed windows. Guano contamination can contribute to amplified biological growth and the unsanitary conditions may cause health hazards for occupants to the space. The areas should be decontaminated by a qualified contractor (a State of New Jersey, Department of the Treasury, Division of Property Management & Construction, classified contractor of C103- Microbial Remediation) prior to re-occupancy and any Fire Safety upgrades. The buildings observed to contain guano contamination are listed below:

- Building 14 – Industrial Building (Basement)
- Building 15 – Vocational/Tech School (East Side)
- Building 19 – State Use Building (South End) (The referenced portio of this building will be removed under a separate project)
- Building 22 - Rotunda (Auditorium)

Asbestos Findings:

USAEMI's observations combined with an audit of the existing AMP offers the following summary of potential asbestos impacts for remediation. The following building summaries include a list of suspect materials that have been confirmed or assumed to contain asbestos and have the potential to be impacted during renovations intended to meet the project's directive. The summaries do not include all observed suspect materials, only those which have the potential for impact with Fire Safety upgrades.

EXHIBIT 'D'

USAEMI noted existing conditions that should be addressed prior to any Fire Safety upgrades. Typical conditions with photographic documentation supporting these conditions are included.

Until sampling indicates otherwise, all assumed materials shall be treated as ACM. Any anticipated impacts to assumed or confirmed ACM, as a result of the Fire Safety upgrades, require abatement by a State of New Jersey, Department of Labor and Workforce Development asbestos abatement contractor. All references to Homogeneous Material Identification Numbers (ID No.) are related to this USAEMI generated report and not the 2009 AMP numbering unless otherwise noted.

EXHIBIT 'D'

EGRESS

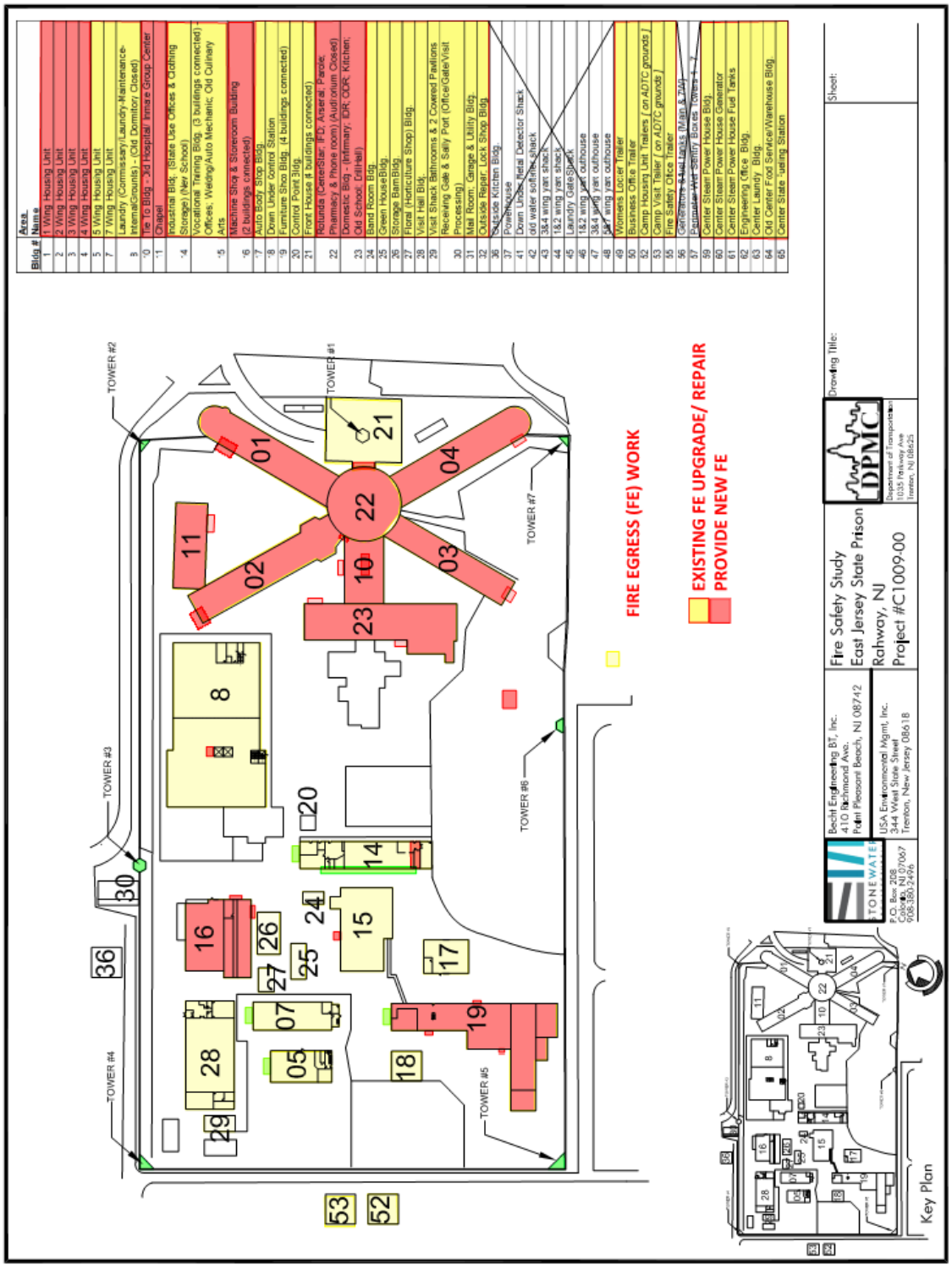

Area
Bldg.# Name
1 Wing Housing Unit
2 Wing Housing Unit
3 Wing Housing Unit
4 Wing Housing Unit
5 Wing Housing Unit
7 Wing Housing Unit
3 Laundry (Commissary/Laundry-Maintenance-Internal/Grounds) - (Old Dormitory Closed)
10 The 'o Bldg' - Old Hospital/ Inmate Group Center
11 Chapel
4 Industrial Bldg. (State Use Offices & Clothing Storage) (Met School)
4 Vocational Training Bldg. (3 buildings connected) - Offices, Welding/Auto Mechanic, Old Culinary Arts
6 Machine Shop & Storeroom Building (2 buildings connected)
7 Auto Body Shop Bldg.
8 Down Under control Station
9 Furniture Shop Bldg. (4 buildings connected)
20 Control Point 3ldg.
21 Front House (4 buildings connected)
22 Rotunda (Center/Star; IPD; Arsenal; Parole; Pharmacy & Phone room) (Auditorium Closed)
23 Domestic Bldg - (Infirmary; IDR; ODR; Kitchen; Old School; Drill Hall)
24 Band Room Bldg.
25 Green House-Bldg.
26 Storage Barn Bldg.
27 Floral (Horticulture Shop) Bldg.
28 Visit Hall Bldg.
29 Visit Shed; Bathrooms & 2 Covered Pavilions
30 Receiving Gate & Sally Port (Office/Gate/Visit Processing)
31 Mail Room; Garage & Utility Bldg.
32 Outside Repair; Lock Shop Bldg.
36 Outside Kitchen Bldg.
37 Powerhouse
41 Down Under Retail Detector Shack
42 old water softner shack
43 3&4 wing yard shack
44 1&2 wing yard shack
45 Laundry Gate Shack
46 1&2 wing yard outhouse
47 3&4 wing yard outhouse
48 5&7 wing yard outhouse
49 Womens Locker Trailer
50 Business Office Trailer
52 Camp Housing Unit Trailers (on ADTC grounds)
53 Camp Visit Trailer (on ADTC grounds)
55 Fire Safety Office Trailer
56 Gatehouse #4 and Locks (Main & 2W)
57 Dalmuster Hill Sentry Booths - Towers 1 - 2
59 Center Steam Power House Bldg.
60 Center Steam Power House Generator
61 Center Steam Power House Fuel Tanks
62 Engineering Office Bldg.
63 Center Laundry Bldg.
64 Old Center Food Service/Warehouse Bldg.
65 Center State Parking Station
TOWER #1
TOWER #2
TOWER #3
TOWER #4
TOWER #5
TOWER #6
TOWER #7
FIRE EGRESS (FE) WORK
EXISTING FE UPGRADE/ REPAIR
PROVIDE NEW FE
Key Plan
Drawing Title:
Sheet:
Fire Safety Study
East Jersey State Prison
Rahway, NJ
Project #C1009.00
DPMC
Department of Transportation
1035 Parkway Ave
Trenton, NJ 08625
Becht Engineering BT, Inc.
410 Richmond Ave.
Point Pleasant Beach, NJ 08742
USA Environmental Mgmt, Inc.
344 West State Street
Trenton, New Jersey 08618
STONEWATER
P.O. Box 208
Colonia, NJ 07067
908-380-2496

EXHIBIT 'D'

FIRE SUPPRESSION

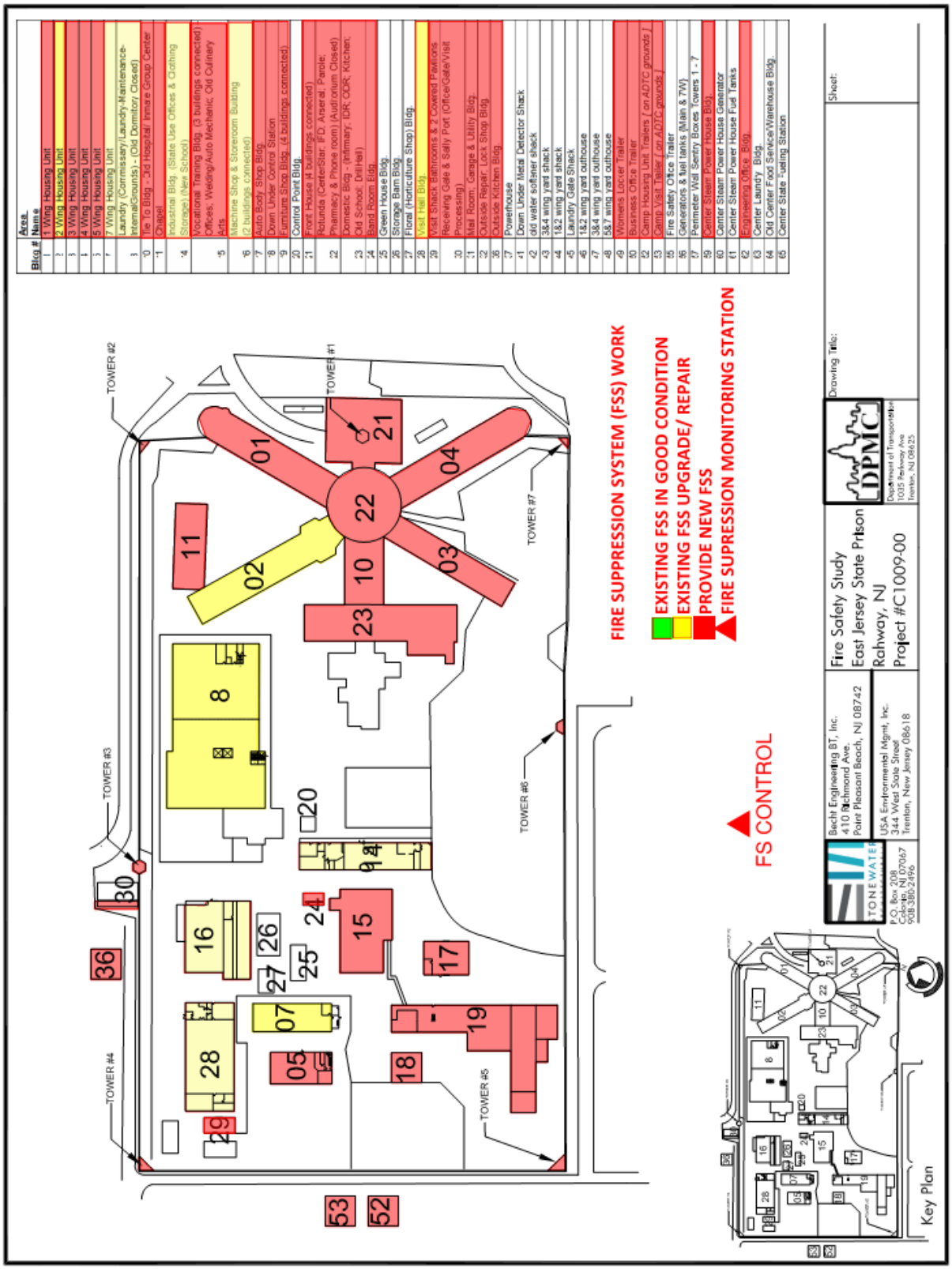
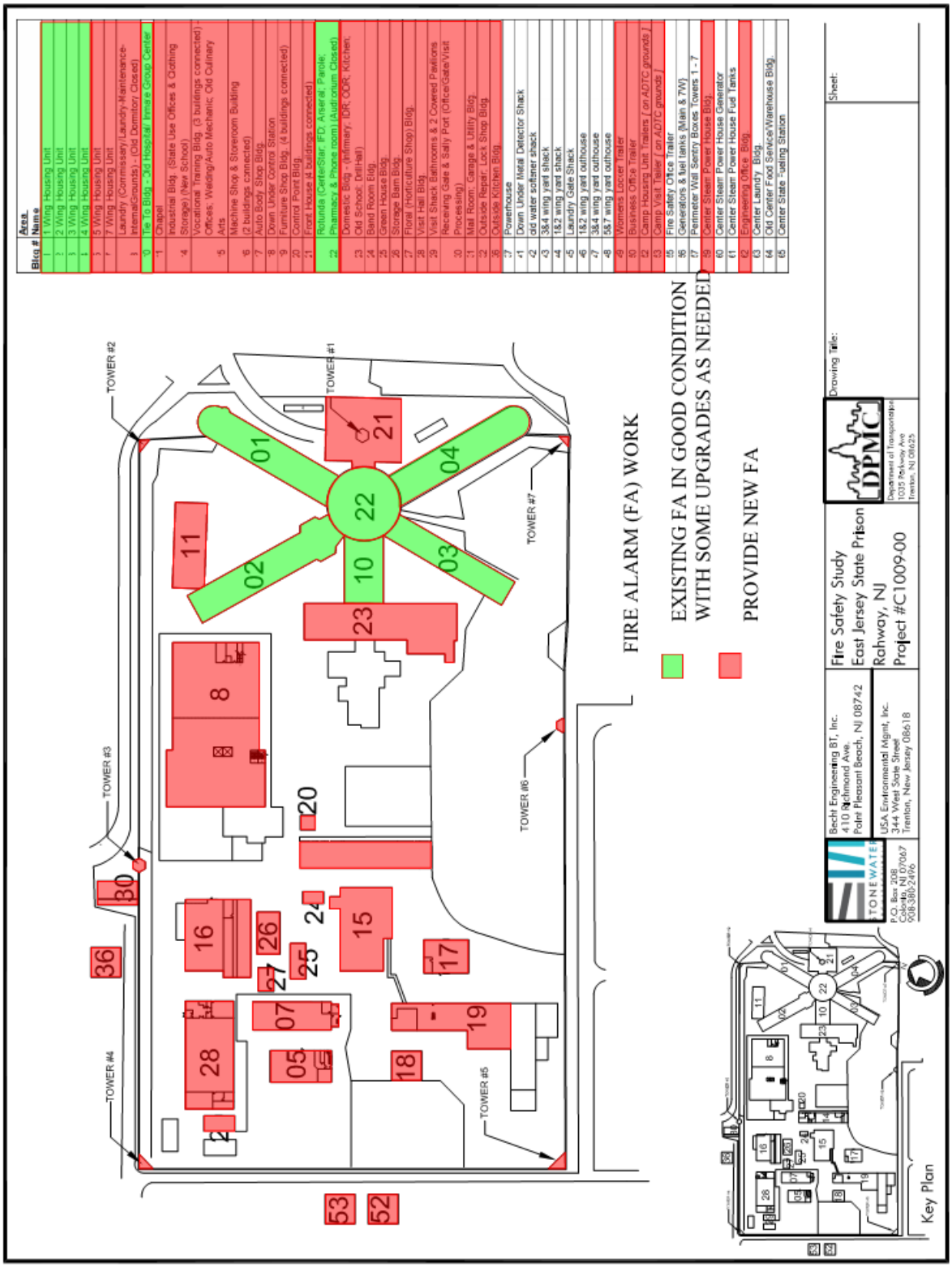


EXHIBIT 'D'

FIRE ALARM


Area
Bldg # Name
1 Wing Housing Unit
2 Wing Housing Unit
3 Wing Housing Unit
4 Wing Housing Unit
5 Wing Housing Unit
7 Wing Housing Unit
Laundry (Commissary/Laundry-Maintenance-Internal/Grounds) - (Old Dormitory Closed)
Tie To Bldg - 3rd Hospital/ Inmate Group Center
Chapel
Industrial Bldg. (State Use Offices & Clothing Storage) (New School)
Vocational Training Bldg (3 buildings connected) - Offices, Welding/Auto Mechanic, Old Culinary Arts
Machine Shop & Storeroom Building (2 buildings connected)
Auto Body Shop Bldg.
Down Under Control Station
Furniture Shop Bldg. (4 buildings connected)
Control Post Bldg.
Front House (4 buildings connected)
Rotunda (CenterStar, PD, Arsenal, Parole, Pharmacy & Phone room) (Auditorium Closed)
Domestic Bldg - (Infirmary, IDR, OOR, Kitchen, Old School, Drill Hall)
Band Room Bldg.
Green House Bldg.
Storage Barn Bldg.
Floral (Horticulture Shop) Bldg.
Visit Hall Bldg.
Visit Shack, Bathrooms & 2 Covered Pavilions
Receiving Gate & Sally Port (Office/Gate/Visit Processing)
Mail Room, Garage & Utility Bldg.
Outside Repair, Lock Shop Bldg.
Outside Kitchen Bldg.
Powerhouse
Down Under Metal Detector Shack
old water softener shack
3&4 wing yard shack
1&2 wing yard shack
Laundry Gate Shack
1&2 wing yard outhouse
3&4 wing yard outhouse
5&7 wing yard outhouse
Womens Locker Trailer
Business Office Trailer
Camp Housing Unit Trailers (on ADTC grounds)
Camp Visit Trailer (on ADTC grounds)
Fire Safety Office Trailer
Generators & fuel tanks (Main & 7W)
Perimeter Wall Sentry Boxes Towers 1 - 7
Central Steam Power House Bldg.
Center Steam Power House Generator
Center Steam Power House Fuel Tanks
Engineering Office Bldg.
Center Laundry Bldg.
Old Center Food Service/Warehouse Bldg.
Center State Fueling Station
TOWER #1
TOWER #2
TOWER #3
TOWER #4
TOWER #5
TOWER #6
TOWER #7
FIRE ALARM (FA) WORK
EXISTING FA IN GOOD CONDITION WITH SOME UPGRADES AS NEEDED
PROVIDE NEW FA
Drawing Title:
Sheet:
Fire Safety Study
East Jersey State Prison
Rahway, NJ
Project #C1009-00
Department of Transportation
1035 Parkway Ave
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410 Richmond Ave.
Point Pleasant Beach, NJ 08742
USA Environmental Mgmt, Inc.
344 West State Street
Trenton, New Jersey 08618
P.O. Box 208
Colonia, NJ 07067
908-380-2496
Key Plan

EXHIBIT 'D'

C1009-00 East Jersey State Prison
Part 2 - Cost Estimate Summary
By Building

EXHIBIT 'D'

EXHIBIT 'D'

STONEWATER ARCHITECTURE LLC

PROJECT COST BY BUIILDING

State ID	EJSP Building List: Facility ID	Building Description: Identification/Use	Building Area	Egress - Stairs/ ADA/ Elevator	Doors - Smoke, Fire & Security	Partitions - Smoke & Fire	Signage - Lighted & Exit	Sprinklers	Lighting - Emergency	Fire Alarm - A&/M System	Hazmat	DPMC 38 CCE Phase 1 Cost	DPMC 38 CCE Total Cost
	Main Building Includes the following:												
1805	Building 01	Inmate Housing Unit	60,146	**x**	x	x	x	x	x		x	$ 3,613,119	$ 5,982,687
1806	Building 02	Inmate Housing Unit	71,447	x	x	x	x	x	x		x	$ 3,677,299	$ 6,338,940
1807	Building 03	Inmate Housing Unit	35,454	x	x	x	x	x	x		x	$ 2,418,336	$ 3,770,221
1808	Building 04	Inmate Housing Unit	51,600	x	x	x	x	x	x		x	$ 3,119,965	$ 5,573,252
1809	Building 10	Tie To: 1st Floor Circulation & Security; 2nd Fl Old Hospital; 3rd Fl Inmate Group Center	27,534	x	x	x	x	x	x		x	$ 2,324,791	$ 3,545,892
1804	Building 22	Rotunda: 1st Fl. IFD-Arsenal-Parole; 2nd Fl - Pharmacy-Phone room & Auditorium	51,250	x	x	x	x	x	x		x	$ 3,093,475	$ 5,571,859
1810	Building 23	Domestic Building: 1st Fl – IDR, Kitchen & ODR; 2nd Fl Infirmary & Old School; 3rd Fl. Drill Hall	46,254	x	x	x	x	x	x	x	x	$ 4,871,222	$ 7,119,954
	Main Building	**TOTAL**	343,685									$ 23,118,207	$ 37,902,805
	Accessory Prison Buildings												
1824	Building 05	Inmate Housing Unit: 1st & 2nd Floors (Vacant)	9,072		x		x	x	x	x	x	$ 844,662	$ 1,778,814
1812 - 1825	Building 07	Dining & Inmate Housing: 1st Floor Dining Hall; 2nd Floor Housing Unit (Vacant)	10,556	x	x		x	x	x	x	x	$ 478,511	$ 1,466,204
1814	Building 08	Laundry – Basement Commissary; 1st Fl Laundry, Maintenance & Internal Grounds; 2ND Fl. Dormitory (CLOSED)	79,021	x	x	x	x	x	x		x	$ 715,859	$ 10,071,530
1813	Building 11	Chapel	6,656	x	x	x	x	x	x	x	x	$ 662,900	$ 802,919
1816	Building 14	Industrial 1st Fl. State Use offices & storage; 2nd Fl. Clothing; 3rd Fl. New School	33,704	x	x	x	x	x	x	x	x	$ 647,222	$ 3,443,826

EXHIBIT 'D'

PROJECT COST BY BUIILDING

State ID	EJSP Building List: Facility ID	Building Description: Identification/Use	Building Area	Egress - Stairs/ ADA/ Elevator	Doors - Smoke, Fire & Security	Partitions - Smoke & Fire	Signage - Lighted & Exit	Sprinklers	Lighting - Emergency	Fire Alarm - A&/M System	Hazmat	DPMC 38 CCE Phase 1 Cost	DPMC 38 CCE Total Cost
1817	Building 15	Vocational Training, (3 buildings connected): 1st Fl. Offices, Welding & Auto Mechanic; Old Culinary Arts (CLOSED)	16,394		x	x	x	x	x	x	x	$ 1,087,420	$ 1,316,176
1831	Building 16	Machine Shop (2 buildings connected): Machine Shop & Storeroom	23,161	x	x		x	x	x	x	x	$ 2,051,768	$ 3,181,552
1819	Building 17	Auto Body Shop	3,731		x		x	x	x	x	x	$ 846,847	$ 872,815
1820	Building 18	Down Under Control Station	2,225		x		x	x	x	x	x	$ 368,130	$ 425,735
1822-1821	Building 19	Furniture Shop (4 buildings connected): Storage; ~~Furniture Shop (CLOSED) (Condemned)~~	12,105	x	x		x	x	x	x	x	$ 925,238	$ 1,211,814
1842	Building 20	Control Point	100		x		x		x	x	x	$ -	$ 39,763
1803	Building 21	Front House Administration Building	12,430	x	x		x	x	x	x	x	$ 1,399,204	$ 1,817,482
1828	Building 24	Band Building	618		x		x	x	x	x	x	$ 238,501	$ 268,596
1827	Building 25	Green House	1,394		x		x	x	x	x	x	$ 261,319	$ 318,158
1826	Building 26	Storage Barn	2,394		x		x	x	x	x	x	$ 329,102	$ 393,671
1829	Building 27	Floral (Horticulture Shop)	899		x		x	x	x	x	x	$ 260,611	$ 297,267
1830	Building 28	Visit Hall	12,975		x		x	x	x	x	x	$ 710,190	$ 792,856
1843	Building 29	Visit Frisk Shack & Bathrooms with 2 Covered Pavilions	1,180		x		x	x	x	x	x	$ 361,228	$ 399,469
1833	Building 30	Receiving Gate: Office, Visit Processing & Registration; Vehicle Sally Port	968		x		x	x	x	x	x	$ 377,514	$ 479,703
1834	Building 31	Mail Room & Utility	2,618		x		x	x	x	x	x	$ 385,808	$ 481,636
1835	Building 32	Outside Repair Garage & Lock Shop	887		x		x	x	x	x	x	$ 308,697	$ 369,525
1836	~~Building 36~~	~~Outside Kitchen~~	~~7,914~~										
	~~Building 37~~	~~EJSP Powerhouse~~	~~1,879~~										
	~~Building 41~~	~~Down Under Metal Detector Shack~~	~~15~~										
	~~Building 42~~	~~Old Water Softener Shack~~	~~300~~										
4112	Building 49	Women's Locker Trailer	4,206	x			x	x	x	x	x	$ 240,016	$ 300,397

EXHIBIT 'D'

PROJECT COST BY BUIILDING

State ID	EJSP Building List: Facility ID	Building Description: Identification/Use	Building Area	Egress - Stairs/ ADA/ Elevator	Doors - Smoke, Fire & Security	Partitions - Smoke & Fire	Signage - Lighted & Exit	Sprinklers	Lighting - Emergency	Fire Alarm - A&/M System	Hazmat	DPMC 38 CCE Phase 1 Cost	DPMC 38 CCE Total Cost
4118	Building 50	Business Office Trailer	3,118	x			x	x	x	x	x	$ 234,367	$ 295,679
7778, 7779, 7780, 7781, 7782	Building 52	Rahway Camp Housing Unit Trailers (on ADTC grounds)	9,005	x	x		x	x	x	x	x	$ 915,885	$ 1,156,317
7864	Building 53	Rahway Camp Visit Trailer (on ADTC grounds)	1,189	x	x		x	x	x	x	x	$ 296,496	$ 388,975
4116	Building 54	NJDOC North Region Construction Unit Trailer	300	x	x		x	x	x	x	x	$ 267,238	$ 338,783
	Building 55	Fire Safety Office Trailer (Vacant)	200	x	x		x	x	x	x	x	$ 228,514	$ 299,129
	~~Building 56~~	~~Generators & fuel tanks (Main & 7W)~~											
	~~Building 57~~	~~Prison Perimeter Wall & Sentry Boxes Guard~~											
		~~Tower 1~~	99										
		~~Tower 2~~	~~360~~										
~~1857~~		~~Tower 3~~	~~551~~										
~~1859~~		~~Tower 4~~	~~265~~										
~~1858~~		~~Tower 5~~	~~266~~										
		~~Tower 6~~	~~315~~										
		~~Tower 7~~	~~360~~										
2876	Building 59	Steam Power House	8,177		x		x	x	x	x	x	$ 757,206	$ 768,797
	Building 60	Steam Power House Generator	50									$ -	$ -
	Building 61	Steam Power House Fuel Tanks (2)-20,000 gallons, (1)-10,000 gallons	-									$ -	$ -
2877	Building 62	Fire Safety Center Engineering Offices	8,736		x		x	x	x	x	x	$ 744,263	$ 755,850
2878	Building 63	Woodbridge Developmental Center Laundry (Vacant)	2,420	x	x		x	x	x	x	x	$ 351,335	$ 386,972
2875 - 4122	Building 64	Woodbridge Developmental Center Food Service/Warehouse (Temp IG Offices) – To be Demolished	24,242		x		x	x	x	x	x	$ 1,593,677	$ 1,607,038

PROJECT COST BY BUIILDING

State ID	EJSP Building List: Facility ID	Building Description: Identification/Use	Building Area	Egress - Stairs/ ADA/ Elevator	Doors - Smoke, Fire & Security	Partitions - Smoke & Fire	Signage - Lighted & Exit	Sprinklers	Lighting - Emergency	Fire Alarm - A&/M System	Hazmat	DPMC 38 CCE Phase 1 Cost	DPMC 38 CCE Total Cost
	Building 65	Woodbridge Developmental Center State Fueling Station	2,710				x	x	x	x	x	$ 329,478	$ 342,789
	Building 66	EJSP Complex Water Valve Pits and Fire Hydrants	-									$ -	$ -
											Total Cost	**$ 42,337,413**	**$ 74,773,042**

Scope of Work Key

1 Egress - Stairs
2 Doors - Smoke, Fire and Security
3 Partitions - Smoke & Fire
4 Signage - Lighted & Exit
5 Sprinklers
6 Lighting - Emergency
7 Fire Alarm - A&/M System
8 Hazmat - Lead, Asbestos & PCB

PROJECT COST ANALYSIS

DPMC NUMBER: C1009-00

Date: 7/31/2020

Project Phase: **Scope of Work**

Project Name: **Fire Safety Study Phase #1 Violations w/ 1 year Escalation**

Location: **East Jersey State Prison, Rahway, Middlesex County, NJ**

Cost Phase "C" - Construction				
1	General Construction		29,948,957	
2	Structural Steel		394,760	
3	Plumbing		0	
4	HVAC		636,771	
5	Electrical		2,635,934	
6.a	Other Trades (specify):		0	
6.b	Other Trades (specify):	Escalation Included	0	
7	**TOTAL CONSTRUCTION COST ESTIMATE (CCE) (Lines 1 thru 6)**			**33,616,422**
Cost Phase "D" - Design				
8	Consultant Design Fee		3,361,642	
9	Consultant Construction Administration Fee		0	
10	Asbestos Remediation Design Fee		135,273	
11	Asbestos Monitoring Fees		0	
12	Survey Services			
13	Testing Services		0	
14	Roofing Inspection		0	
15	Other (specify):	Allowances		
16	**TOTAL DESIGN SERVICES (Lines 8 thru 15)**			**3,496,915**
Cost Phase "K" - Affirmative Action				
17	Affirmative Action	(1/2 % of Line 7)		**168,082**
Cost Phase "M " - Management Fees				
18	DPMC Management Fee	(8% of Line 7)		**2,689,314**
Cost Phase "N" - Construction Management				
19	Construction Management Services (CM/CPM)			**0**
Cost Phase "O" - Contingency				
20	Construction	(5% of Line 7)	1,680,821	
21	Design	(10% of Line 16)	349,692	
22	**TOTAL PROJECT CONTINGENCY (Lines 20 & 21)**			**2,030,513**
Cost Phase "P" - Permits				
23	U.C.C. (DCA or DPMC) Plan Review Fee		168,082	
24	U.C.C. Permit/Field Inspection/C.O. Fee		168,082	
25	Soil Conservation		0	
26	Other (specify):		3	
27	**TOTAL PERMIT FEES (Lines 23 thru 26)**			**336,167**
Cost Phase "R" - Arts Inclusion				
28	Arts Inclusion Allowance			**0**
Cost Phase "B" - Other Costs				
29	Other (specify):		0	
30	Other (specify):		0	
31	**TOTAL OTHER COSTS (Lines 29 & 30)**			**0**
32	**CURRENT WORKING ESTIMATE (CWE) (Lines 7+16+17+18+19+22+27+28+31)**			**$42,337,413**

DPMC-38 Revised 9/02 (automated form)

EXHIBIT 'D'

EXHIBIT 'D'

PROJECT COST ANALYSIS

DPMC NUMBER: C1009-00

Date: 7/31/2020

Project Name: **Fire Safety Study Phase #2 Violations w/ 1 year Escalation**

Project Phase: **Scope of Work**

Location: **East Jersey State Prison, Rahway, Middlesex County, NJ**

Cost Phase "C" - Construction			
1 General Construction		15,938,787	
2 Structural Steel		1,032,671	
3 Plumbing		73,985	
4 HVAC		8,155,305	
5 Electrical		537,371	
6.a Other Trades (specify):		0	
6.b Other Trades (specify):	1 yr Escalation Included		
7 TOTAL CONSTRUCTION COST ESTIMATE (CCE) (Lines 1 thru 6)			**25,738,119**
Cost Phase "D" - Design			
8 Consultant Design Fee		2,573,812	
9 Consultant Construction Administration Fee		0	
10 Asbestos Remediation Design Fee		0	
11 Asbestos Monitoring Fees		0	
12 Survey Services		0	
13 Testing Services		0	
14 Roofing Inspection		0	
15 Other (specify):	Allowances		
16 TOTAL DESIGN SERVICES (Lines 8 thru 15)			**2,573,812**
Cost Phase "K" - Affirmative Action			
17 Affirmative Action	(1/2 % of Line 7)		**128,691**
Cost Phase "M " - Management Fees			
18 DPMC Management Fee	(8% of Line 7)		**2,059,050**
Cost Phase "N" - Construction Management			
19 Construction Management Services (CM/CPM)			**0**
Cost Phase "O" - Contingency			
20 Construction	(5% of Line 7)	1,286,906	
21 Design	(10% of Line 16)	257,381	
22 TOTAL PROJECT CONTINGENCY (Lines 20 & 21)			**1,544,287**
Cost Phase "P" - Permits			
23 U.C.C. (DCA or DPMC) Plan Review Fee		193,036	
24 U.C.C. Permit/Field Inspection/C.O. Fee		193,036	
25 Soil Conservation		0	
26 Other (specify):		5,599	
27 TOTAL PERMIT FEES (Lines 23 thru 26)			**391,671**
Cost Phase "R" - Arts Inclusion			
28 Arts Inclusion Allowance			**0**
Cost Phase "B" - Other Costs			
29 Other (specify):		0	
30 Other (specify):		0	
31 TOTAL OTHER COSTS (Lines 29 & 30)			**0**
32 CURRENT WORKING ESTIMATE (CWE) (Lines 7+16+17+18+19+22+27+28+31)			**$32,435,629**

DPMC-38 Revised 9/02 (automated form)

EXHIBIT 'D'

EXHIBIT 'D'

Main Fire Alarm System Panel

Operational Alarm Annunciator

Not Operational Alarm Annunciator

Photos

East Jersey State Prison

EXHIBIT ‘E’

EAST JERSEY STATE PRISON
RAHWAY, NEW JERSEY

SPECIAL PROJECT PROCEDURES
RULES FOR EAST JERSEY STATE PRISON

The local Administration of East Jersey State Prison is charged with the responsibility of the custody of their inmates. All non-state employees are responsible and must comply with the following rules for their own protection as well as the safety of both the construction and prison operation. This procedure is issued only as guidelines. The Institution reserves the right to add, delete or change anything herein mentioned without prior notice. These rules plus specific Institution rules must be adhered to:

A. Approval of Construction Workers by the Prison:

1. You are being admitted to a New Jersey State Prison due to your employer having been awarded a State contract for a construction project. Admittance to a maximum-security state prison is a privilege granted by the Superintendent of the facility and by law may be denied at his discretion.

2. Each construction worker must give their approval for a criminal history background check before a photo ID will be issued by the prison authorities. A criminal history will result in the rejection of the construction worker.

B. Construction Crew Entry and Exit Procedures:

1. Work crews going into any area of the prison will check in at the Outer Front Door at approximately 7:00 AM. Photo passes will be issued by the Outer Front Door Officer. Work crews must enter and leave the Institution in a group. At this time an escort officer will take an inventory of the crews tools. This officer will then escort the construction crew to the job site.

   Any construction worker entering or leaving the Institution must agree to submit to a pat frisk of your person and property. You will not be permitted to bring into the Institution any alcoholic beverages, medication, drugs, weapons or any other items considered to be contraband by the Institution. Failure to agree to submit to this frisk will ban you from entering the Institution.

   Any construction worker suspected of being under the influence of any intoxicating beverages or drugs will be denied entrance to the Institution.

2. Hours at work will normally be from 6:00 AM until 3:00 PM. If necessary to work earlier or later arrangements will be made with the Construction Sergeant.

3. Construction workers must provide their own carry in lunch. Construction crews are not permitted to leave for lunch and the prison will not supply any food for that purpose. (No food or beverages in glass containers will be allowed in).

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4. All construction workers must have some type of positive identification preferably a current driver's license.

5. Speed limits, all reserved and no parking areas must be obeyed. If a specific area is assigned for the construction crew to use they must park only in this area.

6. Beepers (pocket pagers) and portable cellular telephones are not allowed inside the security perimeter of the Institution. Personal items are to be kept locked in vehicles outside the security perimeter of the Prison.

7. Construction worker can not be in possession. No firearms, ammunition, hunting knives, or other articles of this nature on the grounds.

C. Construction Worker Conduct while on Job Site:

1. No workman is to fraternize or argue with the inmates. Any difficulties with inmates and/or prison staff should be handled through the Construction Sergeant, Control Point Sergeant, or Center-keeper.

2. Do not give anything to or take anything from the inmates.

3. Construction vehicles operated on site will abide by Institutional speed and parking regulations. Lock all cars and trucks. Demobilize all vehicles and equipment when unattended. Turn vehicle keys over to escort officers.

4. No photographs are to be taken of any prison facility without permission.

5. No alcohol or drugs are to be used on the grounds.

6. Construction workers are to remain in their work area and not wonder around the Institution.

D. Tool Accountability and Safety:

1. All tools and equipment are to be treated as a threat to the security of the Prison and should be removed each day. If permission is granted, by the Construction Sergeant, for any tools to remain on site, a written inventory will be kept of the approved tools and it will be the responsibility of the contractor to secure these tools in a locked trailer or gang box at the end of every work day. Any additions or deletion of tools to the approved inventory of items allowed to remain inside the Institution must be approved by the Construction Sergeant.

   All ladders are to be removed from the inside security perimeter of the prison each day. Ladders may be stored overnight in the outside vehicle compound if advanced permission is given. If permission is granted the ladders must be chained and locked to the fence.

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All scaffolding must be taken down. The scaffolding will be chained and locked in an approved area of the Institution. Locks and chains must be supplied by the contractor and a key must be supplied to the Institution.

2. The escort officer assigned to the construction crew working inside the prison is responsible for the supervision of high security tools including but not limited to, large electric drill, large hammers, hack saws, etc. The work crew must remember that this is a maximum-security prison and as such cooperation with the escort officers is essential.

   Upon leaving the job site, the escort officer will again inventory all tools, check the area for any hazardous material before allowing the construction crew to leave the job site.

3. Warning lights must be displayed at all dangerous areas at night.

4. Institutional Fire Regulations shall be strictly adhered to. Contact the Institutional Fire Marshall when in doubt.

5. All excavations will be protected as directed by the DPMC Inspector and those across any road must be covered with plates.

   All tools and equipment must be kept under your control at all times. Should a tool be lost or misplaced report it at once to the Correction Officer assigned to your detail.

THE FOLLOWING LAWS OF THE STATE OF NEW JERSEY ARE OUTLINED:
(For Informational Purposes)

1. 2C:29-6 – Any person who takes into or from any Institution or place of detention, or upon any land set apart or authorized by Law for use in connection therewith, or who directly or indirectly gives, sells, furnishes or otherwise delivers to any prisoner, inmate or patient in custody, any drug, liquor, knife, dagger, pistol, explosive matter or any other article prohibited by Law or by the rules governing the institution or place of detention, or the lands used in connection therewith, is guilty of a violation of New Jersey State Law.

2. 2C:29-6 – Any person without authority of law, visits a jail, workhouse, or correctional institution and communicate with any prisoner therein, without the consent of the officer or other person having charge thereof, is guilty of violation of New Jersey State Law.

REVISED JUNE 28, 1990

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