

SCOPE OF WORK

New East Rutherford Winter Yard

NJDOT East Rutherford Yard
Bergen County, NJ

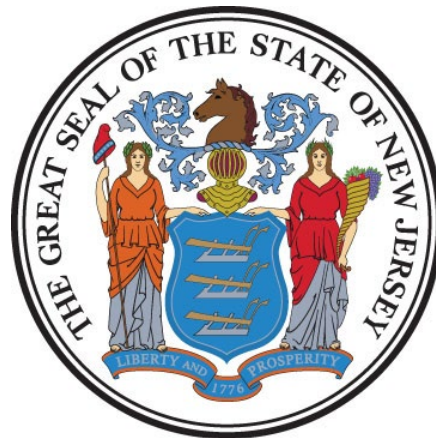
Project No. T0718-00

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: July 15, 2026

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B. PROJECT SITE LOCATION MAP

C. NJDOT EAST RUTHERFORD SALT DOME - SALT STORAGE FEASIBILITY STUDY (UPDATED 04-08-26)

I. OBJECTIVE

The objective of this project is to develop a modern winter maintenance facility in East Rutherford through the design and construction of a winter yard. The scope includes the construction of a salt storage structure capable of housing a minimum of 5,000 tons of road de-icing salt, calcium spray arm with a new reinforced concrete pad for calcium tanks, installation of new asphalt pavement integrated with a stormwater drainage system, and implementation of site lighting throughout the facility.

Additional work will include the installation of perimeter fencing with controlled gate access and landscaping improvements to enhance the overall site. The existing salt dome structure will be demolished and removed as part of this project. The completed facility will provide enhanced operational capacity for winter road maintenance activities in the East Rutherford area. See **Exhibit 'B'** for the project site location map.

II. CONSULTANT QUALIFICATIONS

A. CONSULTANT & SUB-CONSULTANT PRE-QUALIFICATIONS

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

- **P001 Architecture**

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

- **P002 Electrical Engineering**
- **P005 Civil Engineering**
- **P007 Structural Engineering**
- **P009 Soils Engineering**
- **P011 Environmental Engineering**
- **P013 Landscape Design**
- **P015 Land Surveying**
- **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 \$ 3,805,000.

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 \$ 4,752,445.

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.

<u>PROJECT PHASE</u>	<u>ESTIMATED DURATION (Calendar Days)</u>
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1. Site Access Approvals & Schedule Design Kick-off Meeting	14
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2. Schematic Design Phase	42
• <i>Project Team & DPMC Plan/Code Unit Review & Comment</i>	14
3. Design Development Phase	42
• <i>Project Team & DPMC Plan/Code Unit Review & Comment</i>	14
4. Final Design Phase	42
• <i>Project Team & DPMC Plan/Code Unit Review & Approval</i>	14
5. Final Design Re-Submission to Address Comments	7 (See Note)
• <i>Project Team & DPMC Plan/Code Unit Review & Approval</i>	14
6. Permit Application Phase	7
• <i>Issue Plan Release</i>	
7. DCA Submission Plan Review	30
8. Bid Phase	42
9. Award Phase	28
10. Construction Phase	266
11. 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.

PROJECT NAME: New East Rutherford Winter Yard
PROJECT LOCATION: NJDOT East Rutherford Yard
PROJECT NO: T0718-00
DATE: July 15, 2026

The consultant should factor in timing constraints for both submissions and construction activities, which must be scheduled outside the snow season operational period (October 1 to April 30). This will ensure that submittals and long-lead items can be submitted before the winter operation schedule begins, so construction can commence after April 30th.

V. PROJECT SITE LOCATION & TEAM MEMBERS

A. PROJECT SITE ADDRESS

The location of the project site is:

North Service Rd, East Rutherford,
Bergen County, NJ, 07073
Adjacent to Giant Stadium & Rt. 3
GPS: 40.8121541456, -74.0900837

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:	<u>Youstina A. Mansy, Project Manager</u>
Address:	<u>Division of Property Management & Construction</u> <u>20 West State Street, 3rd Floor</u> <u>Trenton, NJ 08608-1206</u>
Phone No:	<u>(609) 633-2077</u>
E-Mail:	<u>Youstina.Mansy@treas.nj.gov</u>

2. Department of Transportation Representative:

Name:	<u>Ted Theuri, Project Manager</u>
Address:	<u>Department of Transportation</u> <u>1035 Parkway Ave</u> <u>Ewing, New Jersey 08625</u>
Phone No:	<u>(609) 963-2714</u>
E-Mail:	<u>Ted.Theuri@dot.nj.gov</u>

VI. PROJECT DEFINITION

A. BACKGROUND

The NJDOT East Rutherford Yard is an active maintenance facility located within a highly developed area of Bergen County, in proximity to major regional infrastructure, including MetLife Stadium and road infrastructure. The yard serves as a critical operation base for winter maintenance activities and salt storage, and its layout reflects decades of incremental development.

The site is relatively large in overall area; however, its usable boundaries are constrained by adjacent roadways. While portions of the yard remain open and provide flexibility for equipment staging, material storage, or the potential placement of toilet facilities, such as restroom trailers, the proximity of perimeter roadways limits opportunities for significant horizontal expansion without disruption.

B. FUNCTIONAL DESCRIPTION

The New Jersey Department of Transportation (NJDOT) owns, operates, and maintains, the existing Salt Storage Dome at the East Rutherford Yard which mainly supports winter roadway operations throughout the surrounding region. The existing salt storage structure at the site consists of an approximately 120-foot diameter Salt Storage Dome and was constructed in approximately 1975, according to available historic aerial photographs of the area. While portions of the Salt Storage Dome have recently undergone roof replacement and structural repairs between 2021 and 2024, the Salt Storage Dome remains in a state of relative disrepair due to its age, exposure to corrosive materials, improper construction methods during repairs, and the inherent challenges associated with maintaining older salt storage facilities.

Ronald A. Sebring Associates, LLC (RASA) was contracted by the New Jersey Department of Transportation (NJDOT) to evaluate the feasibility of replacing the existing salt storage dome at the East Rutherford Maintenance Yard with a new, modern salt storage structure. See **Exhibit ‘C’ Salt Storage Feasibility Study (Updated 04-08-26)**.

VII. CONSULTANT DESIGN RESPONSIBILITIES

A. DESIGN REQUIREMENTS

1. General

The Consultant shall review the study by Ronald A. Sebring Associates, LLC (RASA), shown in **Exhibit ‘C’**.

The Consultant shall provide the design, specifications, bid/award, permitting and construction administration services to construct a new salt storage facility with a minimum capacity of 5000 tons of road de-icing salt.

The facility will feature an A-Frame design incorporating concrete sidewalls, wood glulam structural components, and concrete foundations. The design will prioritize both durability and cost-effectiveness.

Additional project components include:

- Installation of a new calcium tank pad and spray bar machine
- Site improvements: paving, site lighting, perimeter fencing, and yard gate
- Stormwater drainage system with Best Management Practices implementation.
- The existing salt dome shall be demolished as part of this project.

2. Site Lighting and Electrical Service

The Consultant shall perform a comprehensive analysis and design of exterior site lighting for the entire facility, including lighting around the new structure, parking areas, and the proposed salt storage structure and its surrounding location. A new high-efficiency LED site lighting system shall be installed to provide adequate nighttime illumination, with complete pole layout, fixture selection, base design, and electrical distribution systems.

The site lighting shall be integrated into the architectural and landscape design for parking areas, pedestrian pathways, sidewalks, roadways, and other areas requiring illumination for visibility, surveillance, and personnel safety. Light pole heights shall be optimized to ensure proper coverage, with lighting levels complying with approved design standards and sufficient to support surveillance requirements. All lamps shall be high-efficiency LED type with photocell controls for automatic dusk-to-dawn operation.

The Consultant shall evaluate the existing electrical power distribution system to verify adequate capacity for additional electrical loads from the new structure's lighting, receptacles, site lighting, and other electrical equipment. Construction drawings shall include complete documentation of all devices, wire types, conduit sizes, current demand factors, and switching and panel schedules. All new electrical components, including lighting fixtures, exhaust fans, heaters, and motors, shall be energy efficient.

3. Site Work

Construction documents shall include paving and parking spaces for the new salt storage structure. Parking lot and roadway surfaces shall be bituminous concrete with appropriate striping, signage, and lighting, designed to accommodate the weight of salt delivery trucks. Concrete curbing shall be installed along the edges of all new roadways and around parking lot perimeters and islands. All grading shall provide appropriate slopes to direct stormwater runoff

to curbs, gutters, and inlets connected to the new site drainage system. The Consultant shall identify any existing structures, fencing, or other elements requiring demolition or relocation to facilitate construction of the salt storage structure.

4. Secure Fencing & Gates

The Consultant shall design and provide construction documents for secure gates and fencing around the facility perimeter. The design shall include fence type, height, materials, and construction details using chain link or other approved materials with necessary security enhancements. Gate design shall include vehicular and pedestrian access sized to accommodate salt delivery trucks, maintenance vehicles, and emergency access, with secure locking mechanisms and necessary hardware. Automated gate operators and access control systems may be incorporated as required. Construction documents shall indicate fence and gate locations, layout plans, foundation details, and hardware specifications coordinated with site grading, utilities, and existing structures in compliance with applicable codes and standards.

5. Stormwater Design

The Consultant shall design a comprehensive stormwater drainage system including catch basins, inlets, pipes, manholes, swales, and outfall structures to collect and convey runoff from all impervious surfaces. The system shall incorporate Best Management Practices (BMPs) such as detention/retention basins, bioretention areas, vegetated swales, or oil/water separators to control runoff volume, reduce peak flow rates, and provide water quality treatment in compliance with all applicable federal, state, and local stormwater regulations including NPDES permit requirements. The Consultant shall perform hydrologic and hydraulic calculations to determine design storm frequencies, runoff volumes, and required storage capacities. Construction documents shall include grading plans, erosion and sediment control plans, and all necessary details, specifications, and calculations for the stormwater drainage system and BMP facilities.

6. Utility Services

The Consultant shall evaluate whether the existing electrical service is adequate for the new salt storage structure, calcium machine, site lighting, and ancillary facilities. If the existing service is insufficient, the Consultant shall provide design for upgraded electrical service including all necessary details for tie-in to the main electrical supply line and equipment. Construction documents shall include schematic drawings of the electrical distribution system indicating all components including panels, subpanels, breakers, transformers, meters, and distribution lines.

The Consultant shall coordinate with PSE&G representatives as required for service improvements and utility connections.

7. Generator Tie in Box

The Consultant shall provide design and specifications for a new generator tie-in box and associated equipment to ensure the new winter yard remains operational during utility power outages. The Consultant shall investigate the proposed electrical loads and determine the appropriate size and capacity for the tie-in box, including all necessary power and control wiring requirements. Construction documents shall include complete design details, equipment specifications, wiring diagrams, and installation requirements for the generator tie-in system.

8. Geotechnical Data

Provide a Geotechnical Report to identify any conditions that may affect the design for any footings, foundations, utility trenches, sidewalks, parking lots, etc. The geo-technical requirements shall include but not be limited to the following information:

1. Soil Borings: Obtain soil borings of sufficient quantity to identify any conditions that may affect the design for any footings, foundations, utility trenches, sidewalks, parking lots, etc. All soil boring data shall be included in the design documents for contractor reference.
2. Water Table: Identify the maximum elevation of the water table at the construction site to determine how it will affect the design for any footings, foundations, trenches, underground utilities, and site drainage. Provide a design to prevent water infiltration into the building if required.
3. Pavement Core: Take cores of the existing pavement and include the information in the project documents for the contractor's information.

9. Soil Investigation

The Consultant shall conduct soil investigation including collection of soil and groundwater samples from the site. Soil samples shall undergo a full panel of tests to characterize the material for waste classification. Groundwater samples shall be tested for volatile and semi-volatile compounds. All testing and classification shall be completed, and the Consultant shall prepare a soil investigation report documenting all findings and attach it to the project specifications to ensure proper handling and disposal of excavated materials in compliance with applicable regulations.

10. Demolition of the Salt Dome

The Consultant shall provide Design, Construction Administration, Permitting and Bid/Award services to demolish the existing Salt Storage Dome including calcium pad. The existing calcium tanks and spray arm will be removed by NJDOT.

11. Calcium Machine

The Consultant shall provide design for the spray bar, calcium machine, tanks and calcium pad. The design should include electrical service for the calcium machine. NJDOT will provide information during the design phase for the number of calcium tanks required.

12. Survey

The consultant shall perform boundary and topographic surveys of the facility site to support project design and development. The survey scope shall include identification of property boundaries, collection of existing ground surface elevations and topographic features; location of existing utilities, structures, pavement, and drainage features; and identification of significant trees and vegetation within the project limits. All survey work shall be conducted in accordance with applicable standards, and deliverables shall include certified boundary survey, topographic mapping, and digital files compatible with project design software.

13. Landscape Design

The consultant shall provide a landscaping design plan that includes, but is not limited to, all required seeding, sod, shrubs, bushes, trees, and buffering with adjacent properties where required on the site.

14. Additional Requirements and Prior Approvals

The Consultant shall address requirements in Treasury Circular 97-10 and NJAC 5:23-2.17.

Treasury circular [97-10](#) requirements.

- SHPO consultation
- RPR submission to DPMC Office of Real Property Acquisition and Disposition

[NJAC 5:23-2.17](#) - Demolition or removal of structures; abandoned wells

- Code requirements under 5:23-2.17
 - Notice to adjoining property owners
 - Soil Conservation District Approval (if applicable)
 - Certification that no asbestos remains
 - Utility disconnections
 - No abandoned wells or USTs

B. 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.B **“Hazardous Building Materials.”** All costs associated with managing, coordinating, observing and administering 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.

C. 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:

Schematic 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.

D. 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.

- **T0651-00: Salt Dome Structure Repair and Roof Replacement NJDOT East Rutherford Winter Yard, 6/8/21, Ronald A. Sebring Associates**

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 following information should be provided for the permit application and technical sections to be submitted:

Ownership in Fee:

Department of Transportation
1035 Parkway Ave,
Ewing Township, NJ 08618

Proposed work site:
NJDOT East Rutherford Yard.

Work site location:
East Rutherford Winter Yard
North Service Rd., East Rutherford 07073
Bergen County
Adjacent to Giant Stadium & Rt. 3

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.

PROJECT NAME: New East Rutherford Winter Yard
PROJECT LOCATION: NJDOT East Rutherford Yard
PROJECT NO: T0718-00
DATE: July 15, 2026

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: Lucy Ibrahim 07/15/2026
LUCY IBRAHIM, PROJECT MANAGER DATE
DPMC PROJECT PLANNING & INITIATION

SOW APPROVED BY: James Wright 7/15/2026
JAMES WRIGHT, MANAGER DATE
DPMC PROJECT PLANNING & INITIATION

SOW APPROVED BY: Dennis W. Meszaros 7/15/2026
DENNIS MESZAROS, MANAGER DATE
NJ DEPARTMENT OF TRANSPORTATION

SOW APPROVED BY: Goustina Mansy 07/17/2026
YOUSTINA MANSY, PROJECT MANAGER DATE
DPMC PROJECT MANAGEMENT GROUP

SOW APPROVED BY: Jeanette M. Barnard 8.10.26
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:

SCHEMATIC DESIGN 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. NJDOT EAST RUTHERFORD SALT DOME - SALT STORAGE FEASIBILITY STUDY (UPDATED 04-08-26)**

END OF SCOPE OF WORK

Deliverables Checklist Schematic Design Phase

A/E Name: _____

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

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

Consultant Signature

Date

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

[illegible]

Date

A/E Name: _____

[illegible]

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

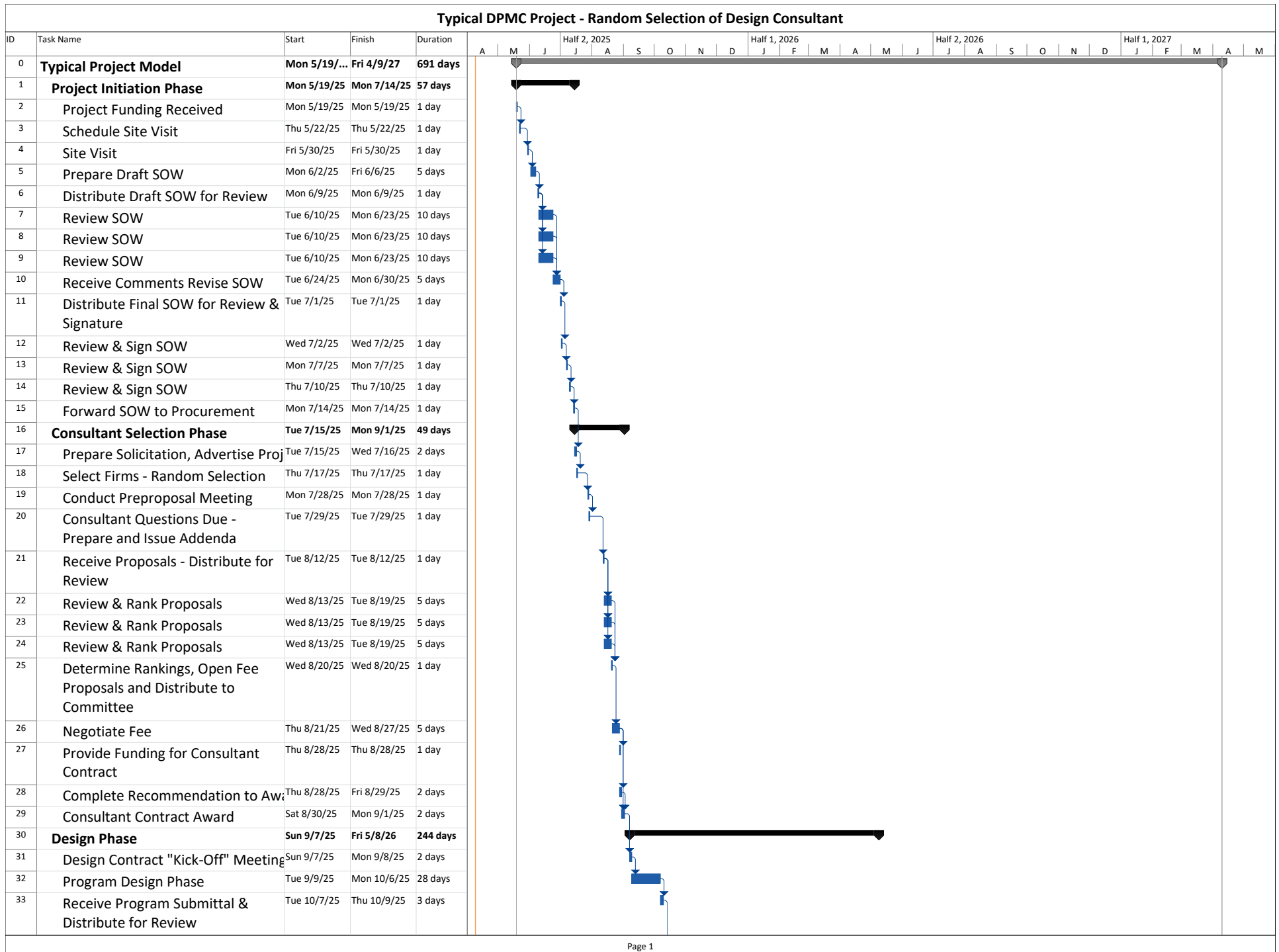
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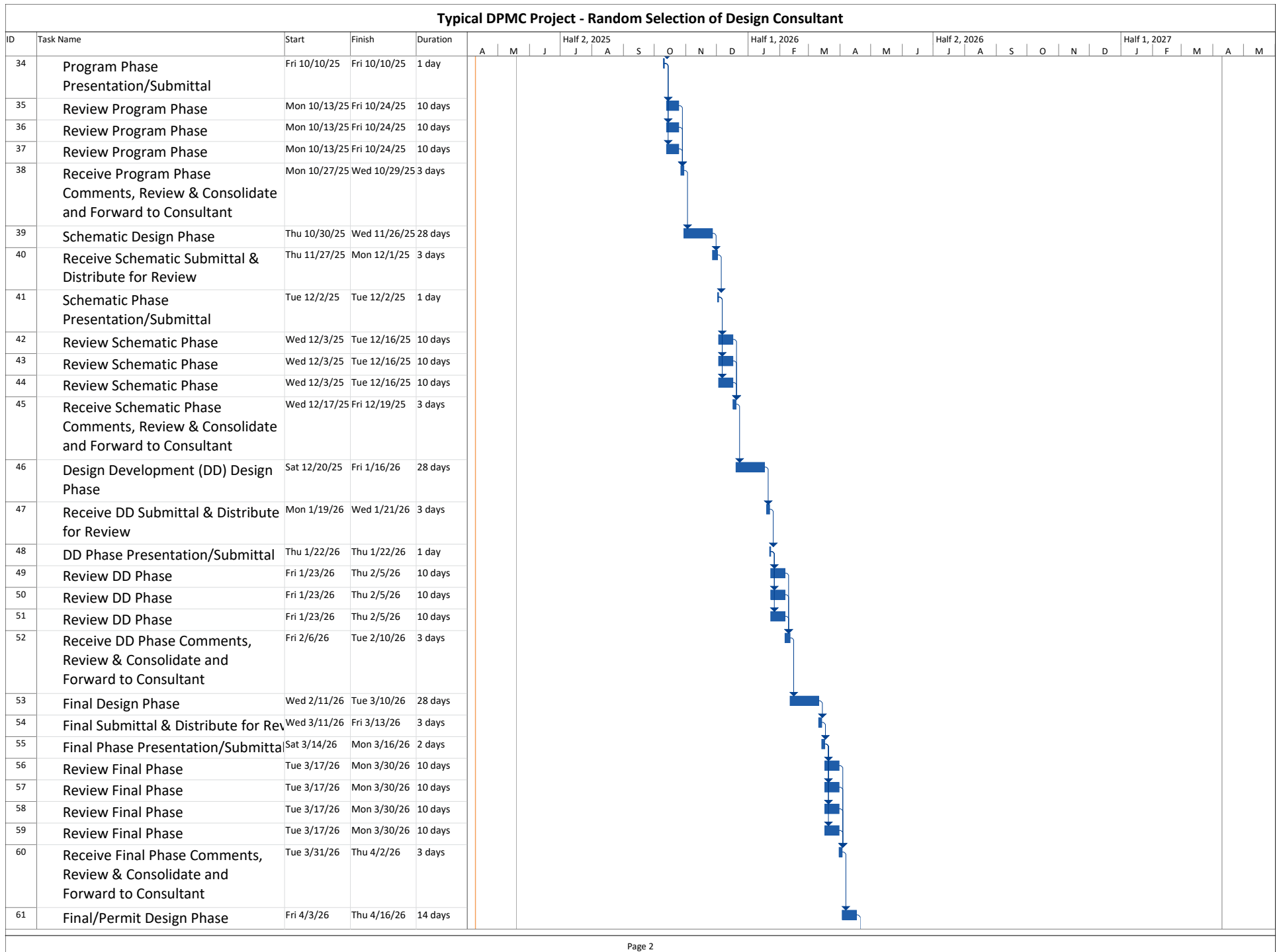
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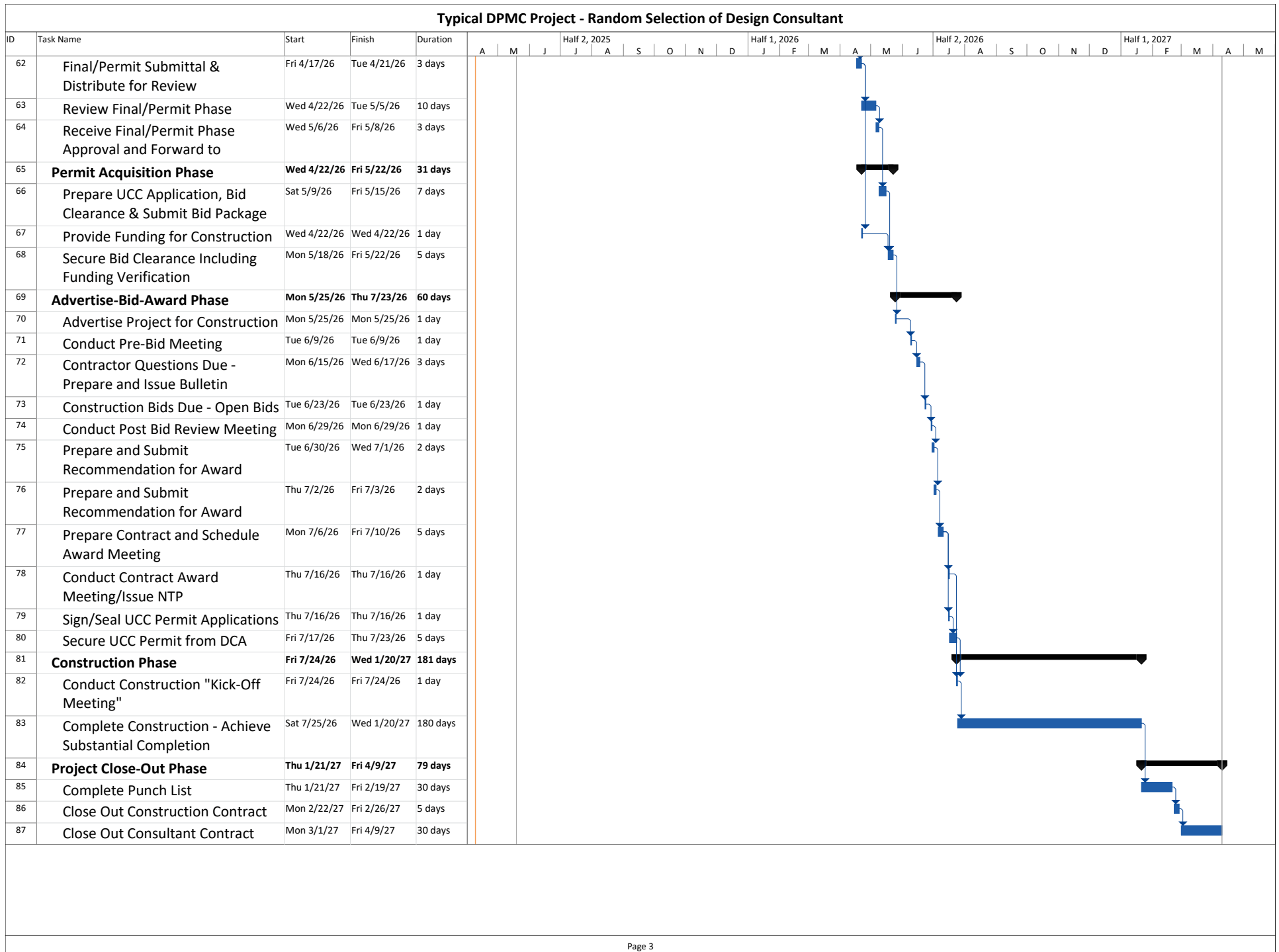
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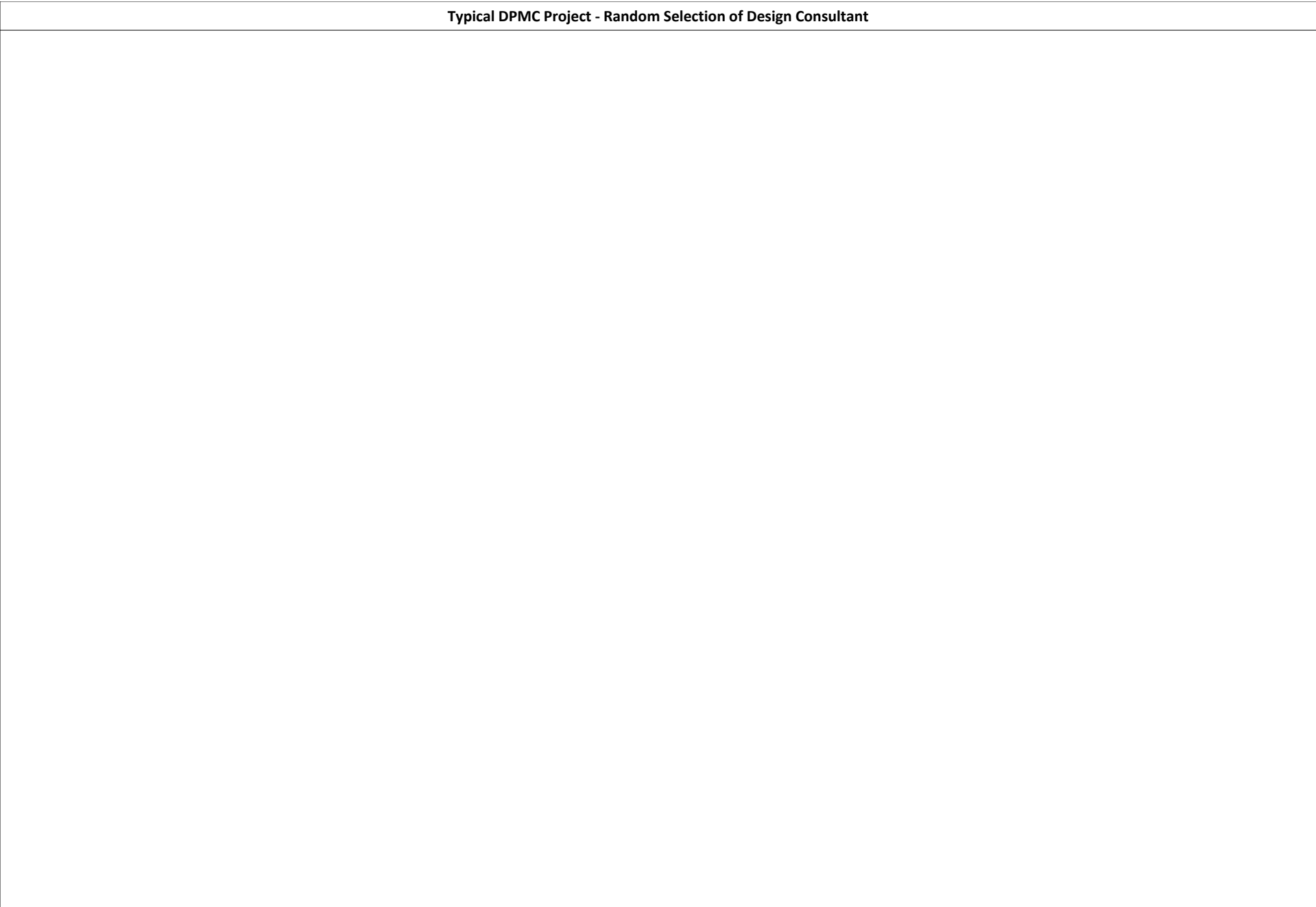
[illegible]

Date









Project: Typical Project Model
Date: Wed 4/9/25

Task		Summary		External Milestone		Inactive Summary		Manual Summary Rollup		Finish-only	
Split		Project Summary		Inactive Task		Manual Task		Manual Summary		Deadline	
Milestone		External Tasks		Inactive Milestone		Duration-only		Start-only		Progress	

EXHIBIT 'A'

NJDOT East Rutherford Yard

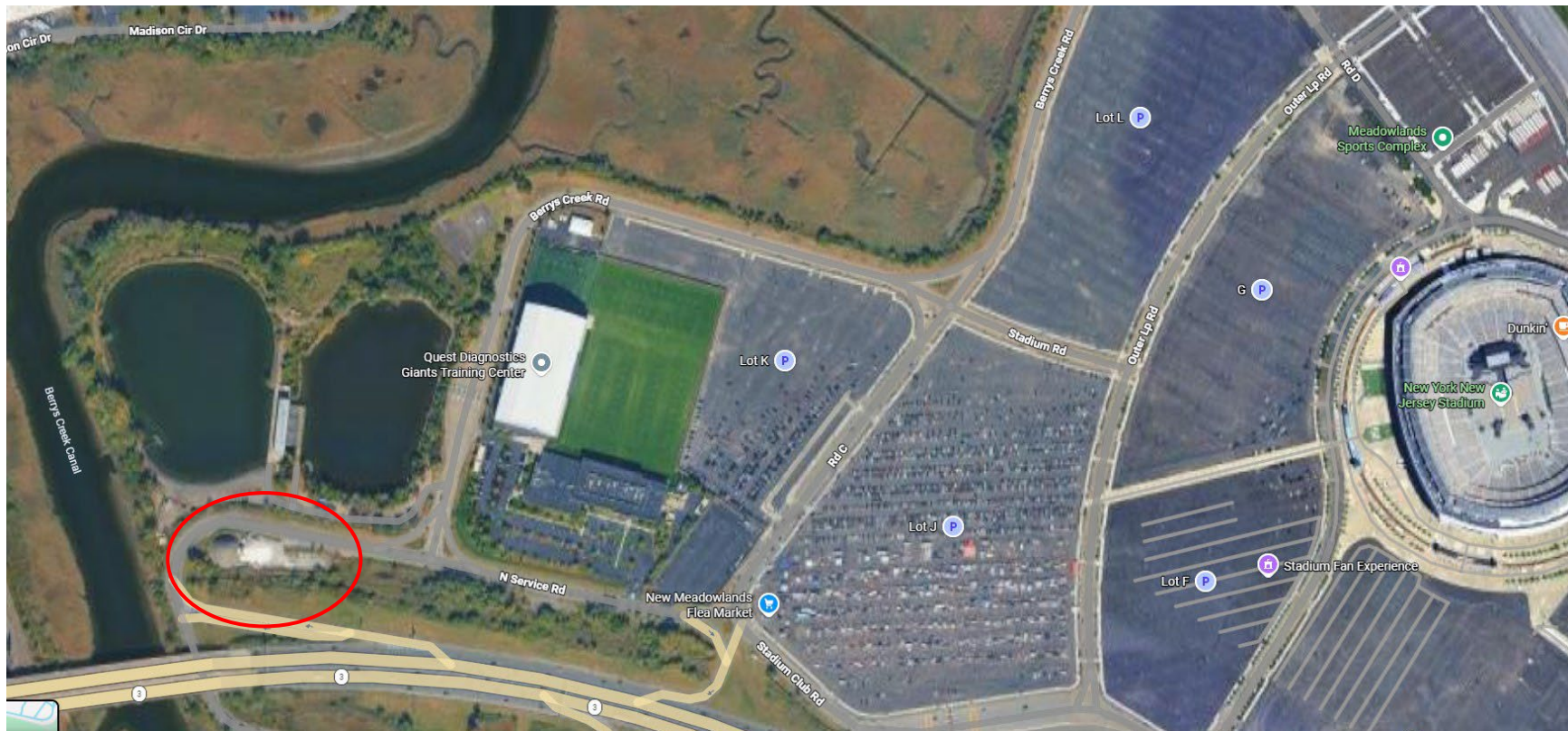


EXHIBIT 'B'

NJDOT East Rutherford Yard Salt Storage Feasibility Study

N Service Rd, East Rutherford, NJ 07073
GPS: 40.8121541456, -74.0900837



Prepared by

RONALD A. SEBRING ASSOCIATES, LLC, ARCHITECTURE AND DESIGN
1000 WASHINGTON STREET, SUITE 201, TOMS RIVER, NEW JERSEY 08753 PHONE: (732) 701-9444 FAX:
(732) 701-9919
E-MAIL: architects@rasallc.com

February 6, 2026

EXHIBIT 'C'

TABLE OF CONTENTS

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Options / Alternatives	Page 9 - 13
Demolition of Existing Salt Dome	Page 14 - 16
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Construction Cost Estimates	Page 18-23
Design and Construction Schedule	Page 24

Attachments:

Appendix "A" – Existing / Proposed Site Drawings
Appendix "B" – ASCE Hazards Report

EXECUTIVE SUMMARY

Ronald A. Sebring Associates, LLC (RASA) was contracted by the New Jersey Department of Transportation (NJDOT) to evaluate the feasibility of replacing the existing salt storage dome at the East Rutherford Maintenance Yard with a new, modern salt storage structure.

Existing Salt Dome Conditions

- Constructed circa 1975
- Wood-framed structure supported on a shallow reinforced concrete ring foundation
- Subject to long-term deterioration from salt exposure, over-stockpiling, and equipment impacts.
- Ongoing structural monitoring required
- Dome dimensions: approximately 120 feet in diameter and 30 feet in height. Approximate storage capacity estimated at 4,000–4,400 tons

Proposed Option 1 – Continue Maintaining Existing Dome

- Annual Maintenance Costs: Approximately \$75,000 per year
- Entrance reconstruction required within five (5) years
- Full roof replacement anticipated within 10–12 years
- 25-year projected cost: approximately \$2.83 million

Proposed Option 2 – New 5,000-Ton A-Frame Salt Storage Structure (Recommended)

- Modern concrete sidewall and glulam wood framed structure with concrete foundations
- Designed for 5,000 tons of salt storage
- Construction Cost Estimate (CCE): \$3,515,000 million
- Maintenance Allowance for minor annual maintenance: \$15,000 per year
 - 25-year maintenance total: \$375,000

Regulatory Requirements

- Demolition of existing dome and new construction regulatory requirements:
 - NJDEP stormwater regulations
 - Soil Conservation District requirements
 - NJ Uniform Construction Code
 - Erosion and sediment control approval required due to disturbance of 5,000 SF+

Optional Site Improvements such as fencing repairs, asphaltic pavement replacement, and site lighting, are included as options within the Study.

Conclusion: Construction of a new 5,000-ton A-Frame salt storage structure represents a durable and operationally efficient long-term solution for NJDOT's East Rutherford Maintenance Yard. While continued use of the existing dome is feasible in the short term, the new structure is the more reliable and "future-proof" option.

INTRODUCTION

Ronald A. Sebring Associates, LLC (**RASA**) was commissioned by the State of New Jersey, Department of Transportation (NJDOT), to conduct a Feasibility Study for the construction of a new Salt Storage Structure to replace the existing Salt Storage Dome at the East Rutherford Yard. This Study includes the evaluation of the existing salt dome, a conceptual layout for the proposed new Salt Storage Structure, and construction cost estimates.

PURPOSE



Proposed A-Frame Salt Storage Structure

The New Jersey Department of Transportation (NJDOT) owns, operated, and maintains, the existing Salt Storage Dome at the East Rutherford Yard which mainly supports winter roadway operations throughout the surrounding region. The existing salt storage structure at the site consists of an approximately 120-foot diameter Salt Storage Dome was constructed in approximately 1975, according to available historic aerial photographs of the area. While portions of the Salt Storage Dome have recently undergone roof replacement and structural repairs between 2021 and 2024, the Salt Storage Dome remains in a state of relative

disrepair due to its age, exposure to corrosive materials, improper construction methods during repairs, and the inherent challenges associated with maintaining older salt storage facilities.

The purpose of this Study is to explore the feasibility of demolishing the existing Salt Storage Dome and constructing a new, modern salt storage structure on the same site, with particular emphasis on NJDOT's preference for a 5,000-ton A-frame salt storage structure. This Study will evaluate whether the proposed structure can be accommodated within the



Existing East Rutherford Salt Dome

EXHIBIT 'C'

limits of the existing NJDOT yard and will assess the operational, logistical, and site-related implications associated with its construction and use.

In addition to evaluating replacement options, this Study will examine the costs and long-term considerations associated with continued maintenance of the existing salt dome. Although recent repairs have extended the service life of the structure, ongoing maintenance and future repair needs are required due to the dome's age and overall condition. A comparative assessment of maintaining the existing facility versus constructing a new salt storage structure will be presented to assist NJDOT in determining the most practical and cost-effective path forward.

Operational considerations are also considered. Maneuverability for salt spreading trucks, front-end loaders, and NJDOT personnel will be evaluated for both the existing and proposed conditions. The location and continued use of the on-site wetting /brining arm and associated storage tanks will also be considered, including the need for new concrete slab construction and electrical service to support brining operations, if needed.

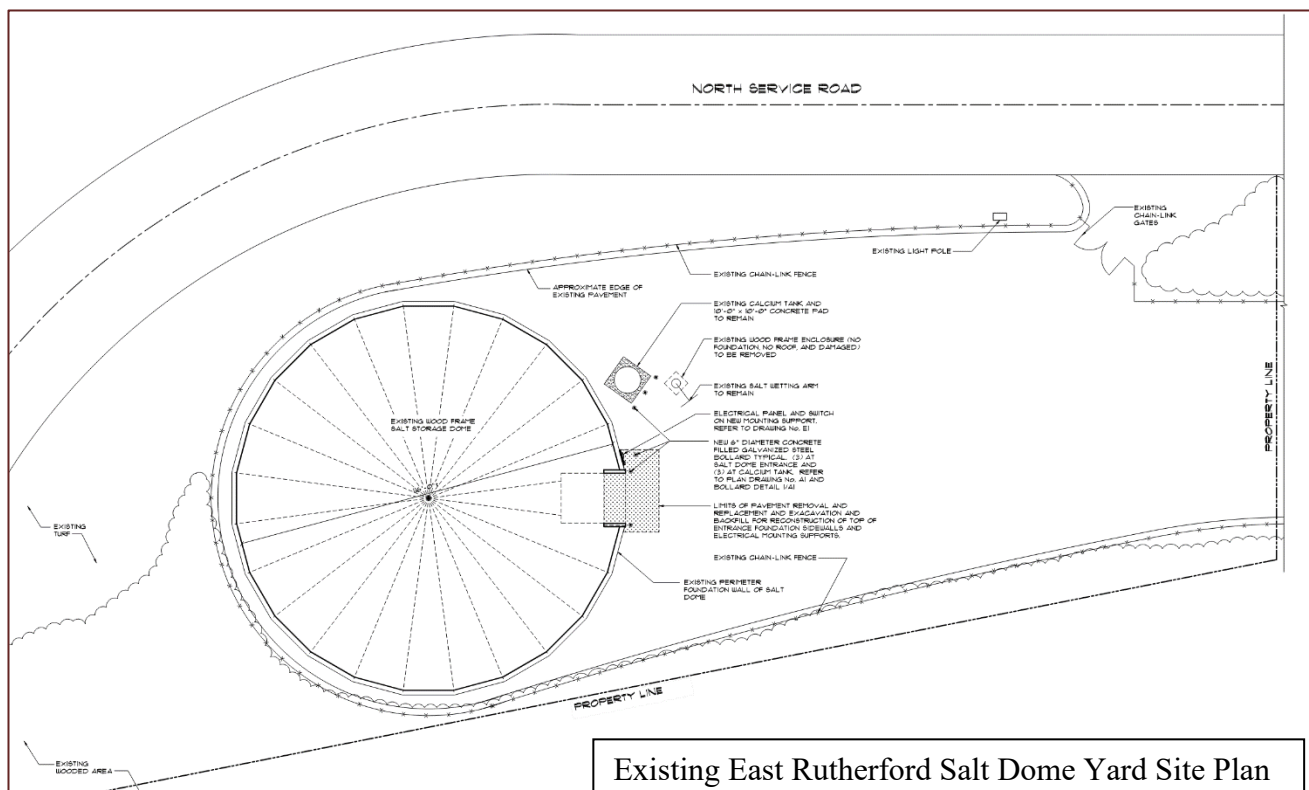


EXHIBIT 'C'

Utility considerations will be reviewed as part of the feasibility analysis. These include electrical service for site lighting and lighting of the interior of the new salt storage structure, brining operations, etc., as well as the potential need for sanitary sewer connections to support new toilet rooms or restroom trailers. The location of the nearest sanitary sewer infrastructure is currently unknown and is anticipated to be located at the nearby existing facility beyond the immediate yard limits; this Study will identify this uncertainty and discuss its potential implications.



Existing Salt Wetting Arm and Calcium Tank

Finally, the Study will document observed site conditions and identify optional minor site improvements that may be considered in conjunction with a new salt storage facility. These improvements may include repairs or replacement of damaged or missing fencing, rehabilitation of deteriorated asphalt pavement throughout the yard, and the provision of improved site lighting to enhance safety and functionality.

The findings of this Study are intended to provide NJDOT with a clear understanding of the feasibility, advantages, disadvantages, and order-of-magnitude costs associated with both maintaining the existing salt dome and constructing a new salt storage structure.

EXHIBIT 'C'

EXISTING CONDITIONS / SITE DESCRIPTION

Site Overview

The NJDOT East Rutherford Yard is an active maintenance facility located within a highly developed area of Bergen County, in proximity to major regional infrastructure, including MetLife Stadium and road infrastructure. The yard serves as a critical operation base for winter maintenance activities and salt storage, and its layout reflects decades of incremental development.

The site is relatively large in overall area; however, its usable boundaries are constrained by adjacent roadways. While portions of the yard remain open and provide flexibility for equipment staging, material storage, or the potential placement of toilet facilities, such as restroom trailers, the proximity of perimeter roadways limits opportunities for significant horizontal expansion without disruption.



Location of East Rutherford Yard / Salt Dome

Overview of East Rutherford NJDOT Yard Site

Existing Salt Dome Description

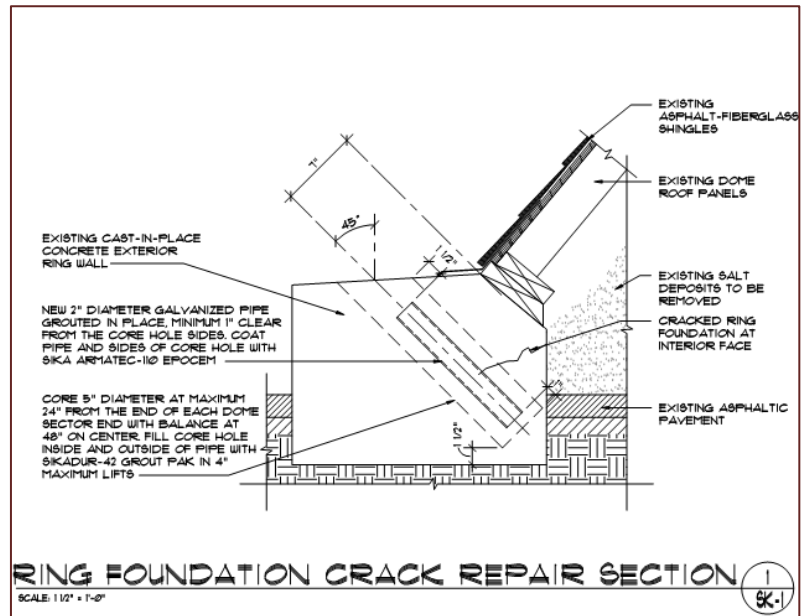
The existing Salt Storage Dome is an approximately 120-foot diameter salt dome constructed circa 1975. The roof structure is wood-framed geodesic dome utilizing pre-engineered and custom fabricated panels and bears on a relatively shallow ring foundation wall. The ring wall foundation system does not include substantial spread footings or deep foundations, with the exception of the entrance structure.

Based on available documentation and prior investigations, the salt dome has experienced structural distress associated with inadequate original foundation design and long-term exposure to salt-induced deterioration. Cracking and movement of the ring foundation wall were previously observed, necessitating structural repairs.



Interior of East Rutherford Salt Dome (2021)

Between 2021 and 2024, NJDOT implemented roof replacement and targeted structural repairs, including reinforced concrete pinning of the ring foundation wall, to address cracking and improve structural performance. These repairs were performed in accordance with a structural evaluation and repair design prepared by the Engineer of Record. While these improvements have extended the service life of the structure, they do not fully mitigate the inherent limitations associated with the dome's age, original construction methods, and long-term maintenance requirements.



Ring Foundation Perimeter Crack Repair Detail

The shallow ring foundation and wood framing system are particularly vulnerable to continued deterioration due to repeated salt exposure, moisture intrusion, and freeze-thaw cycles. Although recent repairs have stabilized known deficiencies, the structure will continue to require ongoing monitoring, maintenance, and future repairs. These anticipated efforts represent a long-term operational cost and risk to NJDOT.

Existing Site Conditions

The East Rutherford NJDOT Yard consists of an active paved maintenance yard with asphaltic pavement, perimeter fencing, site lighting, an existing salt storage dome, brining arm and storage tanks, and various stored equipment and materials. The yard is bounded by adjacent roadways and infrastructure and functions as a year-round NJDOT operations and maintenance facility. It is noted that primary use is during the winter operations season.

Truck maneuverability within the yard is a critical operational consideration, particularly during peak winter operations when salt delivery trucks, front-end loaders, and salt spreading vehicles operate simultaneously. The existing salt dome configuration influences circulation patterns and constrains turning movements in certain areas of the yard.

The yard is currently enclosed by approximately 8-foot-high perimeter fencing. The fencing is in a state of disrepair, with observed damage, deterioration, and missing components in various locations. Replacement or rehabilitation of perimeter fencing may be considered as part of optional site improvements associated with future salt storage upgrades.

Existing site lighting is limited and primarily serves one side of the yard. Illumination is not uniform across the facility, resulting in poorly lit areas that may affect safety, visibility, and nighttime operations.

The yard currently includes electrical service to support operations such as site lighting, dome interior lighting, ventilation, and the wetting arm; however, additional electrical capacity may be required to accommodate new salt storage structures, brine-making operations, site lighting, and ancillary facilities.

The site includes a calcium wetting arm and associated calcium storage tanks. Continued use of this equipment will require new or upgraded concrete slabs and electrical connections if the existing salt dome is demolished and replaced.

At present, the location of the nearest sanitary sewer connection is unknown. It is anticipated that sewer infrastructure may be located at an adjacent or nearby facility approximately 300' away from the existing structure. It is possible that the sanitary line travels along the roadway directly outside the immediate yard limits, but no visual indicators of this were located. This uncertainty is identified as a feasibility consideration, particularly with respect to the potential installation of permanent toilet rooms or restroom trailers.

The asphalt pavement throughout the yard exhibits varying degrees of distress, including cracking, patching, and localized failures consistent with heavy truck traffic and age. These conditions affect operational efficiency and may contribute to long-term maintenance concerns.

While full yard reconstruction is beyond the scope of this Study, minor site improvements—such as pavement repairs, fencing replacement, and localized grading—may be considered in conjunction with a new salt storage facility to improve overall functionality and safety.

In summary, the East Rutherford NJDOT Yard remains operational but is constrained by limited lighting, deteriorated fencing, and an older salt dome structure that has required repeated repairs.



Overview from Entrance of Yard

EXHIBIT 'C'

OPTIONS / ALTERNATIVES

Option No.1: Maintain Existing Salt Dome

The existing salt dome has served as the primary salt storage structure at the East Rutherford Yard for more than 40 years. It consists of a wood-framed dome supported on a shallow reinforced concrete ring foundation wall and was originally constructed using materials and design standards typical of the period.

Based on the approximate 120-foot diameter and 30-foot height of the existing salt dome, and accounting for operational constraints and stockpiling geometry, the practical usable capacity of the dome in regard to salt storage is estimated to be in the range of 4,000 to 4,400 tons. Due to over-stockpiling the salt, the existing dome has undergone significant deterioration to the underside of the structural dome panels. the base of the wood frame roof is at 2'-0" above the floor level and because it is angled inward at all sides it has been damaged by equipment used inside the dome.

Despite recent repairs, continued use of the dome would require ongoing inspection, maintenance, and periodic repairs to address deterioration of the wood framing, roof system, and foundation elements.

From an operational standpoint, the existing dome provides basic salt storage functionality but does not offer the efficiency, durability, or modern design features associated with newer salt storage structures. Due to the required ongoing structural monitoring required, and the predicted approximate five (5) years of continued operations remaining prior to significant repairs to the entrance trusses being required, per the Structural Evaluation prepared in 2023, this option would require significant funding and maintenance.

It is also recognized that the working personnel have damaged not only the East Rutherford Salt Dome, but many NJDOT Salt Domes due to the restrictive nature of the dome entrance construction.

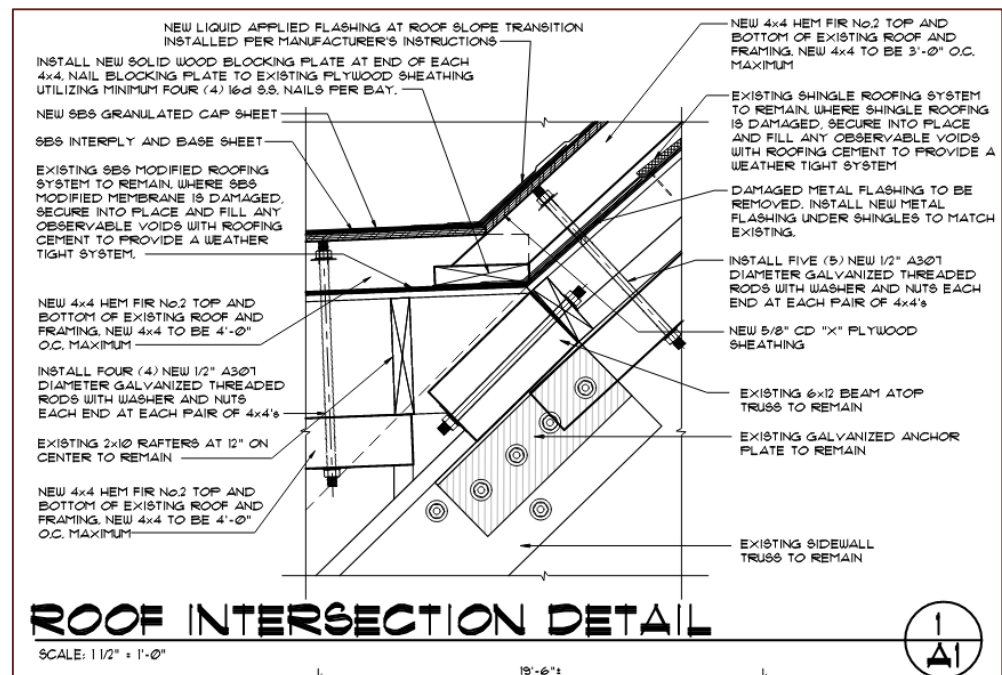


EXHIBIT 'C'

Option No.2: Demolition of Existing Salt Dome and Construction of New Salt Storage Structure

It is understood that a new A-Frame salt storage structure is NJDOT's preferred alternative for the East Rutherford Yard. An A-Frame structure designed to accommodate approximately 5,000 tons of road salt, is being used as a basis of design for this Study, as requested by the NJDOT.

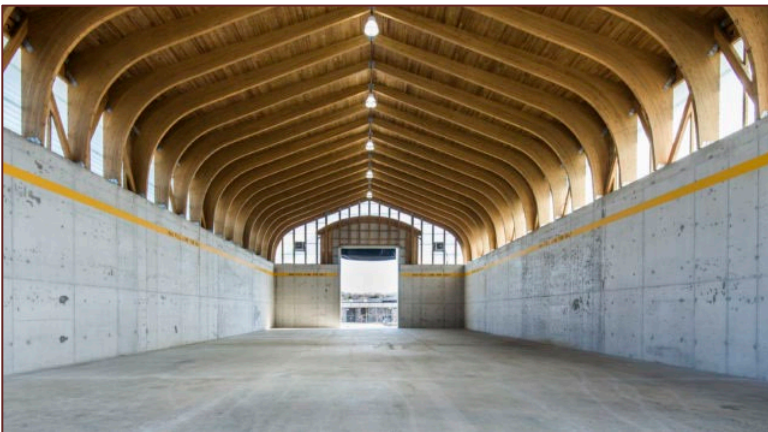
Modern A-Frame salt storage structures utilize high concrete sidewalls, clear-span glue-laminated timber framing, concrete foundations, and durable metal wall panels and roof systems designed for long-term exposure to salt and moisture. These materials provide improved resistance to corrosion and reduce long-term maintenance demands compared to older wood-framed dome structures.

From an operational perspective, the A-Frame configuration supports:

- Efficient loading and unloading of salt spreading trucks
- Clear circulation paths for delivery vehicles and loaders
- Improved safety through better visibility and lighting integration
- Simplified maintenance and inspection procedures

The A-Frame salt storage structures also incorporate large entrances for supplying and loading from the salt dome, minimizing the potential for damage to the structure during winter operations.

In addition, modern A-Frame salt storage structures are consistent with NJDEP stormwater and environmental requirements for covered, enclosed salt storage facilities, helping to minimize salt exposure to stormwater and surrounding areas.



Overview of Hightstown Salt Storage Structure

The NJDOT has begun to implement A-Frame Salt Storage Structures throughout the State, mainly constructed in a similar fashion to the photographs shown on the previous page. This A-Frame Salt Storage Structure is utilized as a basis for the Salt Storage Structure Replacement Option throughout this Study.

These modern A-Frame Salt Storage Structures are constructed consisting of a clear-span glue-laminated (glulam) timber framing system supported on high reinforced concrete walls. The walls sit atop a thick reinforced concrete slab. The structure is intended to provide durable, long-term bulk salt storage while protecting the primary structural elements from salt exposure and operational wear.



When placed, the concrete design mix should be developed to withstand heavy salt exposure. This typically consists of a low-permeability design mix with reduced water/cement ration, included air entrainment, and increased cement content to limit salt intrusion. Additionally, steel reinforcing within the concrete may be epoxy-coated to prevent rusting when / if contact with the salt occurs.

High reinforced concrete push walls are a defining feature of this structure and shall be designed to fully separate stored salt from the glulam framing system above. The height of the concrete walls limits direct salt contact with the timber, reducing moisture absorption, corrosion at connections, and deterioration of the framing. A continuous yellow “MAX FILL LINE FOR SALT” marking is recommended to be provided on the interior face of the concrete walls to clearly establish the maximum allowable salt storage elevation. The max fill line should be determined by the developing Structural Engineer to confirm the forces of the salt do not overload the structure. This visual control prevents salt from encroaching into the cavities between the timber framing and also serves to limit lateral loading on the concrete walls.

Above the concrete walls, the building incorporates extensive natural ventilation through metal siding, louvers, and open framing between the glulam arches. This ventilation reduces condensation and allows for drying of the structure, and providing the proper conditions for the stored salt. The glulam arches and secondary wood members remain fully exposed, allowing inspection and preventing concealed moisture accumulation.

The roof system consists of curved glulam arch framing with wood decking and a metal roof assembly. The large clear-span allows significant access for trucks and salt loaders.

EXHIBIT 'C'

New A-Frame Salt Structure

Building Code Criteria:

Use Group: S-2 (Low Hazard Storage)

Construction Class: Type II (Non-Combustible)

Risk Category: II

Applicable Codes:

- International Building Code
- National Electrical Code
- ASHRAE 90.1 Energy Standard for Sites and Buildings
- International Mechanical Code

An ASCE Hazards Report of the location was developed during this Study. The full report is included in the Appendices of this Study.

The general results are as follows:

Hazards Summary – East Rutherford
NJDOT Yard (ASCE/SEI 7-22)

- **Design Wind Speed:** 115 mph (3-second gust)
- **Hurricane Exposure:** Site is *not* in a hurricane-prone region
- **Seismic Design Category:** B (low to moderate seismic risk)
- **Mapped Ground Snow Load:** 46 psf
- **Design Ice Thickness:** 1.0 inch (with concurrent 46 mph wind at 15°F)
- **Flood Zone:** FEMA Flood Zone AE (regulated floodplain with Base Flood Elevation)
- **Elevation:** Approx. 8.6 ft (NAVD 88)

REPORT SUMMARY

Site Information

Elevation:	5 ft (NAVD 88)
Lat:	40.812149
Long:	-74.089943
Standard:	ASCE/SEI 7-22
Risk Category:	II
Soil Class:	Default

Wind

Wind Speed	115 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	96 Vmph
300-year MRI	106 Vmph
700-year MRI	115 Vmph
1,700-year MRI	124 Vmph
3,000-year MRI	129 Vmph
10,000-year MRI	140 Vmph
100,000-year MRI	160 Vmph
1,000,000-year MRI	185 Vmph

Seismic Data

S_s	0.28
S_1	0.051
S_{MS}	0.31
S_{M1}	0.11
S_{DS}	0.21
S_{D1}	0.071
T_L	6
PGA_M	0.18
V_{S30}	260
Seismic Design Category	B
Note	Where values of the multi-period 5%-damped MCER response spectrum are not available from the USGS Seismic Design Geodatabase, the design response spectrum shall be permitted to be determined in accordance with Section 11.4.5.2

Below is a general use table for the comparison of Maintaining the Existing Salt Dome and constructing a new A-Frame Salt Storage Structure.

Criteria	Option 1 – Maintain Existing Salt Dome	Option 2 – New A-Frame Salt Storage Structure (Preferred)
Structure Type	Wood-framed dome with shallow reinforced concrete ring foundation	Concrete sidewalls and A-Frame wood glulam structure on concrete foundations
Age of Facility	50+ Years Old	Proposed New Construction
Storage Capacity	Approximately 4,000 – 4,400 tons	Designed for approximately 5,000 tons
Structural System	Hem-Fir Select Structural lumber, proprietary pre-engineered plank barrier panels, shallow ring wall	Glulam Roof framing, modern foundations, durable concrete wall and metal siding systems
Salt Load Resistance	Relies on original foundation with localized repairs – Over Stockpiling of Salt causes significant wear to the Dome.	Designed to modern loading standards. Concrete design mix for salt resistance. Max fill line indicating fill limits.
Durability	Ongoing exposure to salt impacts wood and foundation	Materials selected for long-term salt exposure. Materials susceptible to salt exposure and deterioration are raised above salt fill line.
Maintenance Requirements	Continued inspections and periodic structural repairs anticipated	Reduced long-term maintenance
Operational Efficiency	Functional but constrained by dome geometry and minimal entrance opening.	Optimized for loader access and truck circulation
Integration with Brining	Existing layout supports brining	New layout can accommodate for brine operations
Environmental Compliance	Enclosed but aging structure, signs of water infiltration through underside of foundation	Fully NJDEP compliant modern enclosed structure
Construction Impact	Minimal short-term disruption	Requires demolition and new construction. Refer to Schedule.
Long-Term Viability	Limited by age and construction method, proprietary materials.	Supports long-term NJDOT operations
Overall Feasibility	Viable short-term with continued maintenance	Preferred long-term solution

EXHIBIT 'C'

DEMOLITION OF EXISTING SALT DOME

As Option No.2 for the construction of a new Salt Storage Structure, the demolition of the existing salt dome at the East Rutherford NJDOT Yard would be required. The existing dome is a wood-framed structure supported on a reinforced concrete ring foundation wall and includes a roof system, perimeter framing, and interior barrier elements designed to retain stored salt. Demolition activities would include removal of the dome superstructure, roof system, wood framing, and associated components, followed by removal of the ring foundation wall as required to support new construction.

Salt residue and material stockpiles within the dome would need to be removed prior to demolition. This would require coordination with NJDOT operations to relocate or temporarily store salt to maintain winter maintenance readiness. Demolition sequencing would be planned to minimize disruption to ongoing yard operations, particularly during peak winter months.

The demolition process would likely involve mechanical dismantling of the wood framing and roof structure, followed by concrete demolition of the ring foundation wall using saw-cutting, breaking, and removal methods. Material disposal would be performed in accordance with applicable environmental and waste management regulations. Based on previous Projects taken place at the subject Dome, it is not anticipated that hazardous materials would be encountered.

Prior Approvals

Demolition of the existing salt dome would involve ground disturbance, material removal, and potential exposure of salt-contaminated surfaces, all of which require compliance with NJDEP stormwater management and erosion control regulations.

Based on the existing Salt Dome's footprint, the demolition will require coverage under a NJPDES Construction Stormwater Permit, including preparation of a Soil Erosion and Sediment Control Plan and implementation of practices to prevent off-site runoff, sediment transport, and salt contamination. The East Rutherford Yard is also located nearby documented Wetlands, according to NJ Geoweb Data.

The NJDEP Construction Stormwater Permit requires the following:

- Preparation of a Stormwater Pollution Prevention Plan (SPPP)
- Implementation of **Best** Management Practices (BMPs)
- Regular site inspections and maintenance of erosion controls
- Documentation of compliance throughout construction

In addition, proper handling and disposal of demolition debris, including concrete, wood framing, and salt residue, would be required in accordance with NJDEP solid waste regulations. Any stockpiled salt material would need to be managed to prevent stormwater exposure during demolition activities.

As the demolition will result in ground disturbance exceeding 5,000 square feet. The project will be subject to review and approval by the local Soil Conservation District in accordance with the New Jersey Soil Erosion and Sediment Control Act (N.J.S.A. 4:24-39 et seq.).

It is understood that the NJDOT has their own, in-house, soils department, which may allow for the Soils District to be bypassed. The requirements for Soil Erosion and Sediment Control will still apply.

- Silt fencing along disturbed perimeter areas
- Stabilized construction entrances to prevent tracking of soil onto roadways
- Temporary berms or swales to control runoff
- Inlet protection for storm drains
- Temporary soil stabilization (mulch, seed, or matting)
- Permanent stabilization following construction (May not be required if all asphaltic pavement)

Temporary safety measures, including controlled work zones, fencing, and dust suppression, would be required to protect contractors and adjacent roadways. Given the site's proximity to major infrastructure and active roadways, traffic coordination and site access management may be necessary throughout demolition activities.

Based on available environmental mapping, the East Rutherford Yard is located adjacent to regulated wetlands areas. As a result, demolition and construction activities associated with the proposed salt storage structure will require review and approval from the New Jersey Department of Environmental Protection (NJDEP) under the Freshwater Wetlands Protection Act.

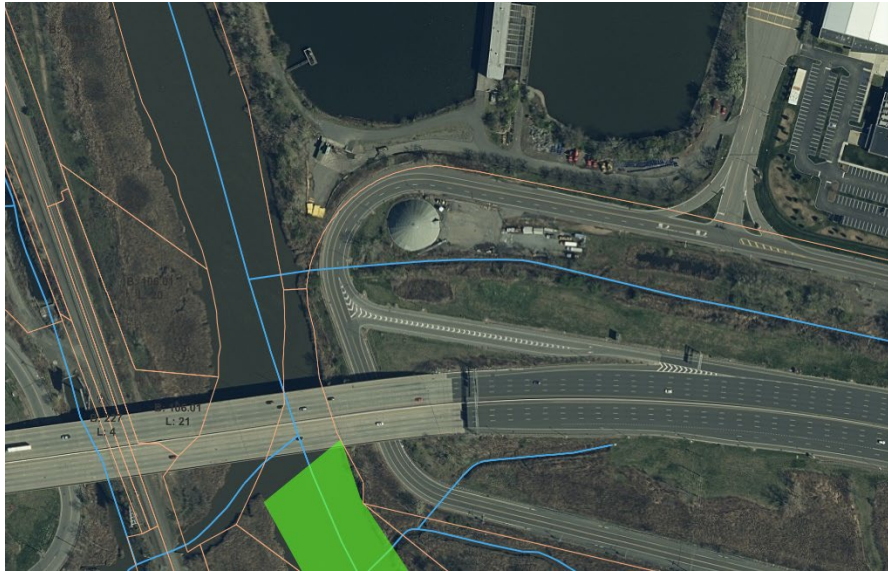
Depending on the extent of proposed disturbance determined during the design process, the project may require a Letter of Interpretation (LOI), a Freshwater Wetlands General Permit or Individual Permit, and associated transition area approvals. Coordination with NJDEP during the early design phase will be necessary to confirm wetland boundaries, identify applicable permit requirements, and ensure compliance with all environmental regulations prior to construction.

It is also recommended that a geotechnical survey and report for both structural bearing capacity and seismic features be conducted during the formal design of the new Structure. Also, analytical data for soil characterization should be completed as the site is stationed within a historic fill area.

Since the property is located outside the mapped Meadowlands and the New Jersey Sports and Exposition Authority (NJSEA) areas, and is also proposed to be constructed on State owned property, no review from these entities should be required for this Project.

The Meadowlands Zoning Map is attached as an Appendix to this Study.

EXHIBIT 'C'



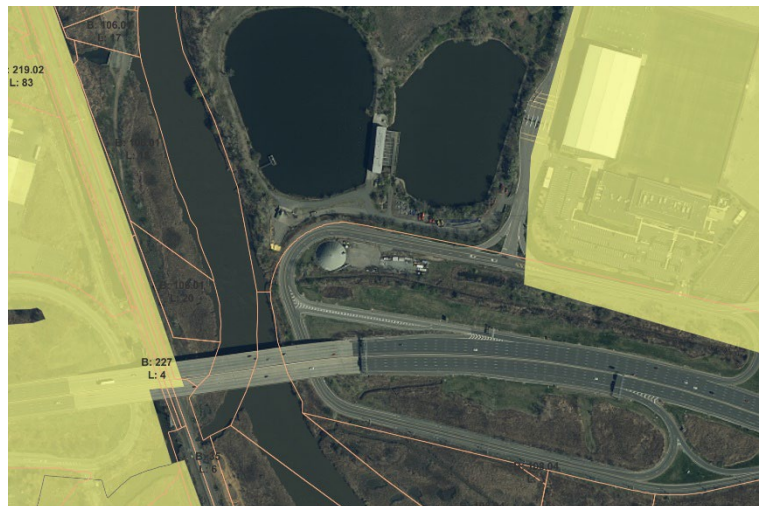
- ☐ Ammonia Parameter for New Jersey
- ☒ Canals and Water Raceways
- ☐ Category One (C1) Waters
- ☐ Drought Regions
- ☐ Head of Tide (HOT)
- ☐ Purveyor
- ☒ Stream Network 2020
- ☐ Sub-Watersheds (HUC14)
- ☐ Surface Water Quality Classification
- ☐ Surface Water Springs
- ☐ Tidal Climate Adjusted Flood Elevation (CAFE SLR 4ft) for New Jersey
- ☐ Tidal Climate Adjusted Flood

Above: Wetlands and Nearby Stream Through Site



Above: Historic Fill Area (Green)

Right: Noted Public Sewer Service (Yellow)



OPTIONAL SITE IMPROVEMENTS

The primary focus of this Study is the feasibility of replacing the existing salt dome with a new salt storage structure. However, during site observations, several existing site features were noted that may warrant future improvement to enhance overall yard functionality, safety, and durability.

These potential improvements include rehabilitation of deteriorated asphalt pavement, repair or replacement of damaged perimeter fencing, and upgrades to site lighting to improve nighttime visibility. Additional minor improvements, such as localized grading, drainage adjustments, and improved equipment staging areas, may also be considered as part of future capital planning.

At this time, these site improvements are identified for informational purposes only and are not considered part of the core project scope. Should NJDOT elect to pursue these improvements, they may be incorporated as optional items in a future Construction Cost Estimate (CCE) to allow flexibility in budgeting and project phasing. Approximate costs for each of the noted optional site improvements are included in the CCE below in a manner that allows for adding to the scope of work on an elective basis.



Left: Damaged Asphaltic Pavement

Right: Damaged Perimeter Fencing



CONSTRUCTION COST ESTIMATES

Option No.1: Maintain Existing Salt Dome

The continued use of the existing salt dome will require ongoing maintenance, periodic structural repairs, and future investments to address deterioration associated with age, material exposure, and operational impacts. For the purpose of this Study, the projected maintenance costs will be to 25 years.

Noted Conditions:

- The Structural Engineer of Record has indicated that continued monitoring of the salt dome is required to observe structural performance, particularly at the entrance opening where visible panel sagging has been noted. A maximum of five (5) years is anticipated until significant repairs and/or reconstruction of the Salt Dome Entrance and the adjacent dome panels is required.
- The salt dome roof was recently repaired/replaced; however, based on the quality of work and the material life expectancy with ongoing salt exposure, full roof replacement is anticipated within approximately 10 to 12 years. Selective replacement of damaged pre-engineered wood roof panels will also likely be required
- The existing salt dome is primarily constructed of wood framing and wood barrier panels. Prolonged exposure to salt and moisture accelerates material deterioration.
- Due to the restrictive entrance opening, NJDOT equipment frequently makes contact with the structure during loading operations.
- Salt over-stockpiling places excessive lateral pressure on the wood barrier panels.

Over a 10 to 12 year period, continued operation of the existing salt dome is anticipated to require:

- Regular maintenance expenditures
- At least one major structural repair project
- A full roof replacement
- Ongoing monitoring and operational repairs

Cost Estimate Breakdown on Following Page:

Cost Estimate Breakdown (Maintain Existing Salt Dome):

Cost Category	Estimated Cost
Yearly Ongoing Maintenance	
General Wood Repairs	\$37,500/ year
Foundation Repairs	\$12,500/ year
Operational Damage Repairs	\$25,000/ year
Total Annual Maintenance	\$75,000/ year
Structural Monitoring	\$5,000/ year (For Five (5) Years) = \$25,000
Entrance Reconstruction (5 yrs)	\$380,000
Roof Replacement (10–12 yrs)	\$550,000

Projection Costs to 25 Years:

Cost Component	Basis	25-Year Total
Recurring Annual Maintenance	\$75,000/year × 25 years	\$1,875,000
Structural Monitoring (capped)	\$5,000/year × 5 years	\$25,000
Entrance Reconstruction	Allowance at ~Year 5	\$380,000
Roof Replacement	Allowance at ~Year 10–12	\$550,000
Total		\$2,830,000

Option No.2: New 5,000 Ton Salt Storage Structure

The following Construction Cost Estimate (CCE) is a planning-level budget for the construction of a new 5,000-ton A-Frame salt storage structure at the East Rutherford NJDOT Yard. The estimate reflects anticipated site, structural, and utility-related construction costs based on prevailing wage public bid conditions and NJ DPMC procurement requirements.

The CCE includes the salt storage structure, foundations, slab-on-grade, entrance door, minor drainage accommodations, electrical service connections, brining arm accommodations, and a new reinforced concrete pad for brine tanks. Yard-wide site improvements such as asphalt pavement rehabilitation, perimeter fencing replacement, and site lighting upgrades are intentionally excluded and may be considered as optional items in the separate table included in this section.

Cost Estimate Breakdown on Following Page:

New 5,000 Ton Salt Storage Structure

Cost Category	Construction Costs	Notes / Basis
1. General Conditions / Mobilization	\$300,000	Field office, temp facilities, safety, logistics in active yard. Approximately 9% of Overall CCE.
2. Erosion & Sediment Controls (disturbance >5,000 SF)	\$60,000	SESC measures as required
3. Survey/Layout & Utility Markouts (construction support)	\$35,000	Construction staking / markouts
4. Site Prep / Clearing / Demo (limited to new work footprint)	\$175,000	Removal of Existing Salt Dome, Site Accommodations, Etc.
5. Earthwork / Excavation / Subbase / Minor Drainage	\$200,000	Minor grading, drainage accommodations, stone base, limited inlets/swales as needed
6. Dewatering (high groundwater)	\$50,000	Well points/sumps, pumping, monitoring during foundations
7. Foundations	\$250,000	Larger footings / frost depth / groundwater impacts
8. Reinforced Slab-on-Grade for Salt Storage	\$175,000	Salt storage slab (finish, additives for salt resistance, reinforcement,)
9. Load Bearing Concrete Walls, A-Frame Package (frame + roof/walls)	\$1,650,000	Concrete Walls, Glulam Structure and Roof Framing, Metal Roofing
10. Entrance Door / Sealed Accessway	\$100,000	Roll-up/curtain type system; seal accessway per NJDEP
11. Electrical Service Connections (structure + brining support)	\$75,000	Disconnects/ties, panel, conduits, limited equipment power
12. Calcium Salt Wetting Arm Accommodation / Relocation	\$50,000	Adjustments/tie-ins as needed (allowance)
13. Calcium Tank Pad (10" min reinforced slab)	\$80,000	Reinforced pad + edges/curbs as needed
14. Miscellaneous / Contingency	\$315,000	Unforeseen minor items within footprint – 10% +/- of CCE
TOTAL CONSTRUCTION COSTS:	\$3,515,000	Total Construction Cost. Costs Projected for a mid-2027 Construction Date.

EXHIBIT 'C'

Projection Costs to 25 Years: New 5,000 Ton Salt Storage Structure

A \$15,000/year maintenance allowance is reasonable due to the salt environment and heavy equipment use. Typical causes/uses for the anticipated maintenance costs include:

- Door system upkeep (roll-up/curtain door tracks, bottom seals, operators, weather-related damage, impact damage)
- Building envelope repairs (roof/wall panel fasteners, sealants at joints, minor leaks, localized corrosion protection touch-ups)
- Concrete slab maintenance (joint sealant replacement, crack sealing)
- Electrical servicing within the project footprint (minor repairs to conduits/fixtures/controls serving the structure and brining equipment due to vibration/impact/weather)

Total Maintenance Costs over 25-years: \$375,000.00

25-Year Projected Cost (Construction + Maintenance)

- **Construction of New Salt Storage Structure:** \$3,515,000
- **Add 25-year maintenance allowance:** \$375,000
- **25-year projected total:** \$3,890,000

Note: Final construction costs will be subject to detailed design, geotechnical investigations, contractor pricing, and prevailing market conditions.

Architect and Engineering Fees

The typical Architect and Engineering Fees for a State / DPMC Project of this scale is typically between 6% and 12% of the Construction Cost Estimate.

As this Proposed Project requires multiple divisions of Engineering (Civil / Mechanical / Electrical / etc.) the fees for this Project are likely to land at approximately 9% of the proposed Construction Cost of \$3,515,000.00.

Approximate Architect and Engineering Fees: \$316,350.00.

Additional DPMC / State additives are also required for a Project of this scale. Refer to the Appendix Containing the DPMC-38 Current Working Estimate (CWE) for additional information.

The Current Working Estimate for the Proposed Project is \$4,390,235.00.

Optional Improvements

The following optional site improvements are presented as lump-sum allowances for future consideration. These items are not required for construction of the new salt storage structure but may be included at NJDOT's discretion to improve overall yard functionality, safety, and operations.

Optional Item	Construction Costs	Description / Scope
Fencing Improvements	\$35,000	Removal of damaged perimeter fencing and installation of new 8-foot-high fencing, including posts & hardware
Asphalt Pavement Replacement (Approx. 10,000 SF)	\$65,000	Milling of existing asphalt, localized base repairs as required, placement of new asphalt pavement, striping, and adjustments around drainage structures.
Improved Site Lighting (Approx. 8 Poles)	\$100,000	Installation of new light poles, concrete foundations, LED fixtures, electrical trenching, wiring, and controls.
Temporary Toilet Facilities (Trailer-Style)***	\$220,000	Provision of a restroom trailer unit with concrete pad, water service, electrical connections, and sanitary sewer connection.***

*** Connection to the public sanitary sewer system would require coordination with the local sewer authority and may involve utility permits, right-of-way approvals, and potential NJDEP review depending on the connection location and discharge conditions. Additional survey, utility verification, and possible roadway or easement work may be required if the sewer connection extends beyond NJDOT property limits.

DESIGN AND CONSTRUCTION SCHEDULE

The following durations should be considered in preparation of a schedule for the Project and Scope of Work for the construction of the new A-Frame Salt Storage Structure:

Site Access and Approvals	21 Calendar Days
Schematic Design Phase	35 Calendar Days
DPMC/NJDOT Review	14 Calendar Days
Design Development Phase	45 Calendar Days
DPMC/NJDOT Review	14 Calendar Days
Final Design Phase	45 Calendar Days
DPMC/NJDOT Review	14 Calendar Days
Comment Responses	14 Calendar Days
Permit-Bid Documents	7 Calendar Days
Bid and Award	70 Calendar Days
Construction	266 Calendar Days***
Submittals / Coordination	30 Calendar Days
Shop Drawings	+14 Days
Long Lead Times	35 Calendar Days
Demolition of Existing Salt Dome	60 Calendar Days
On-Site Work	90 Calendar Days
Site Improvements	30 Calendar Days
Clean-Up / Punch List / Inspections	7 Calendar Days
Close-out	30 Calendar Days

Total	575 Calendar Days
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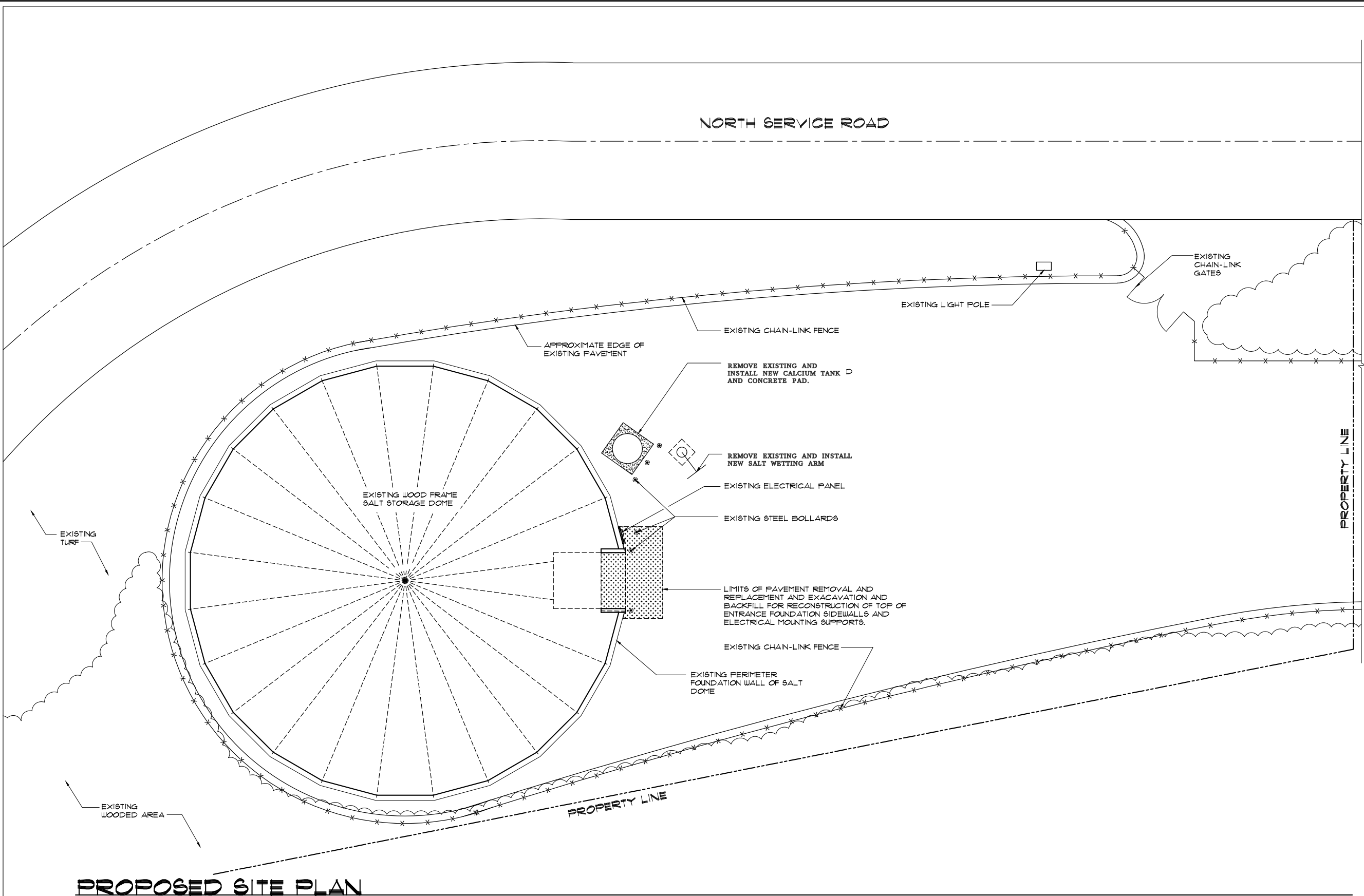
*** Construction Duration is approximate and includes time for submittal review, mobilization, phasing, site and building construction, and punch list inspections. The actual duration will vary based on phasing, underground soil conditions, and lead-times for materials at time of bid.

End of Study

Attachments:

Appendix "A" – Proposed Site Drawings
Appendix "B" – ASCE Hazards Report

Draft: Prepared 01/12/26 by:
Ronald A. Sebring Associates, LLC
1000 Washington Street, Suite 201
Toms River, NJ 08753



PROPOSED SITE PLAN

RONALD A. SEBRING
ASSOCIATES, LLC



ARCHITECTURE
AND
DESIGN

1000 WASHINGTON STREET
SUITE 201
TOMS RIVER, NJ 08753
ARCHITECTS@RASLLC.COM
(732) 709-9444

SUBMISSION	BY	DATE
DRAFT	ARC	01/12/26

DAVID A. CLARK
ARCHITECT 17149

NEW SALT STORAGE STRUCTURE FEASIBILITY STUDY
NJDOT EAST RUTHERFORD MAINTENANCE YARD
BERGEN COUNTY, NEW JERSEY, 07073
DRAFT SUBMISSION

DRAWING

SK-2



PROPOSED SITE PLAN

SCALE: 1"=20'-0"

NEW SALT STORAGE STRUCTURE FEASIBILITY STUDY
NJDOT EAST RUTHERFORD MAINTENANCE YARD
BERGEN COUNTY, NEW JERSEY, 07073
DRAFT SUBMISSION

DAVID A. CLARK
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TOMS RIVER, NJ 08753
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DRAWING

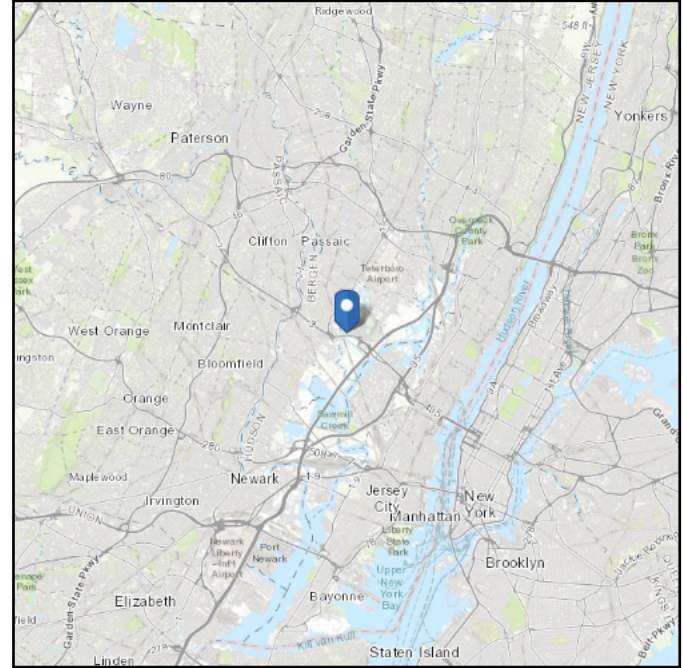
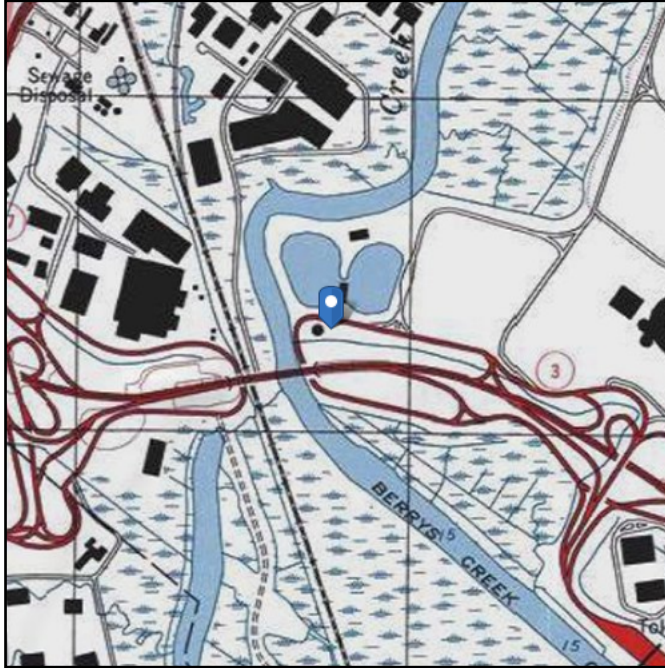
SK-1

ASCE Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-22
Risk Category: II
Soil Class: Default

Latitude: 40.812149
Longitude: -74.089943
Elevation: 5.97114461692964 ft (NAVD 88)



Wind

Results:

Wind Speed	115 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	96 Vmph
300-year MRI	106 Vmph
700-year MRI	115 Vmph
1,700-year MRI	124 Vmph
3,000-year MRI	129 Vmph
10,000-year MRI	140 Vmph
100,000-year MRI	160 Vmph
1,000,000-year MRI	185 Vmph

Data Source: ASCE/SEI 7-22, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Mon Jan 12 2026



Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-22 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years). Values for 10-year MRI, 25-year MRI, 50-year MRI and 100-year MRI are Service Level wind speeds, all other wind speeds are Ultimate wind speeds.

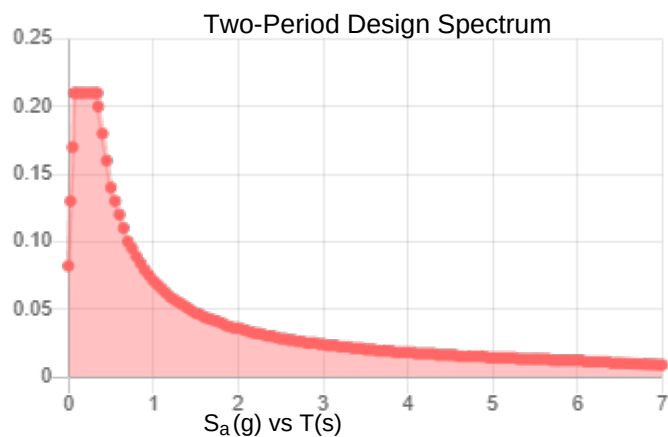
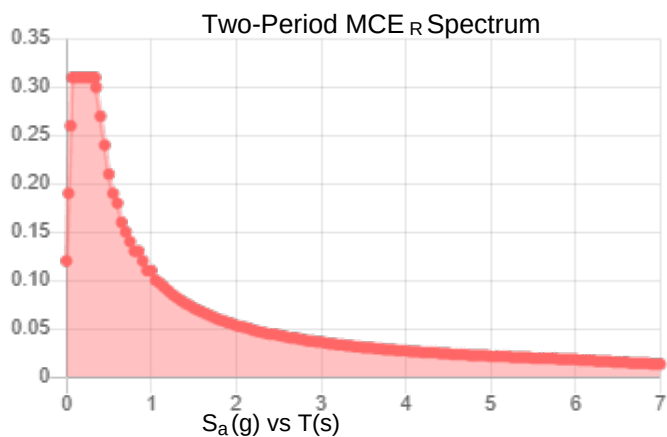
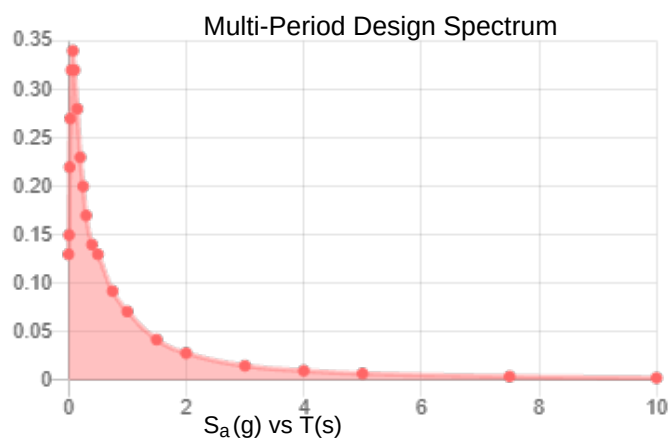
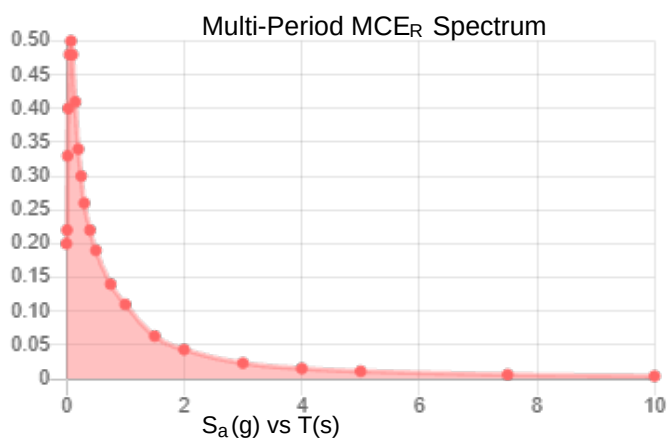
Site is not in a hurricane-prone region as defined in ASCE/SEI 7-22 Section 26.2.

Site Soil Class: Default

Results:

PGA _M :	0.18	T _L :	6
S _{MS} :	0.31	S _S :	0.28
S _{M1} :	0.11	S ₁ :	0.051
S _{DS} :	0.21	V _{S30} :	260
S _{D1} :	0.071		

Seismic Design Category: B



MCE_R Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Design Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Data Accessed: Mon Jan 12 2026

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-22 and ASCE/SEI 7-22 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-22 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness: 1.00 in.
 Concurrent Temperature: 15 F
 3-s Gust Speed 46 mph

Data Source: Standard ASCE/SEI 7-22, Figs. 10-2 through 10-8

Date Accessed: Mon Jan 12 2026

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain for 250, 500, 1,000, and 1,400-year mean recurrence intervals along with concurrent 3-s gust speeds and concurrent air temperatures. The shading indicates special icing regions, with elevations above 2,100 ft (640 m) in the east, 6,000 ft (1829 m) in the west, and 1,600 ft (488 m) in Alaska, with sparse weather station data for determining design ice loads. In these regions, as well as in regions with complex terrain causing unusual icing conditions and regions where snow or in-cloud icing results in larger loads, the mapped values should be adjusted based on a combination of local historical records and experience, reanalysis data, and numerical weather prediction systems.

Snow

Results:

Ground Snow Load, p_g : 47 lb/ft²
 20-year MRI Value: 17.87 lb/ft²
 Winter Wind Parameter: 0.55
 Mapped Elevation: 18.9 ft

Data Source: ASCE/SEI 7-22, Figures 7.6-1 and 7.6-2 A-D

Date Accessed: Mon Jan 12 2026

Values provided are ground snow loads. In areas designated "case study required," extreme local variations in ground snow loads preclude mapping at this scale. Site-specific case studies are required to establish ground snow loads at elevations not covered.

Snow load values are mapped to a 0.5 mile resolution. This resolution can create a mismatch between the mapped elevation and the site-specific elevation in topographically complex areas. Engineers should consult the local authority having jurisdiction in locations where the reported 'elevation' and 'mapped elevation' differ significantly from each other.

Ground Snow Loads for IRC only, $p_{g(asd)}$: 32.9 lb/ft²

Rain

Results:

15-minute Precipitation Intensity: 5.48 in./h

60-minute Precipitation Intensity: 2.83 in./h

Data Source:

NOAA National Weather Service, Precipitation
Frequency Data Server, Atlas 14([https://
www.nws.noaa.gov/oh/hdsc/](https://www.nws.noaa.gov/oh/hdsc/))

Date Accessed:

Mon Jan 12 2026

Flood

Results:

Flood Zone Categorization:

AE

Base Flood Elevation:

NAVD88

Data Source:

FEMA National Flood Hazard Layer - Effective Flood Hazard Layer for US, where modernized (<https://msc.fema.gov/portal/search>)
Mon Jan 12 2026

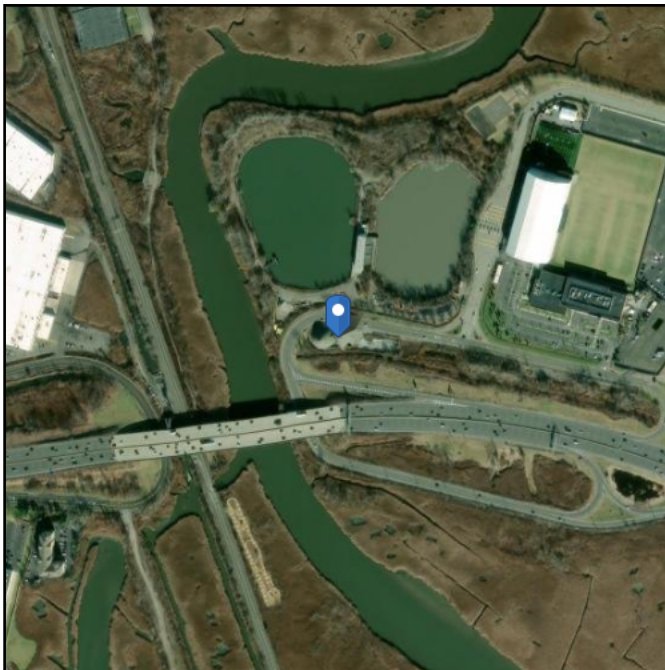
Date Accessed:

FIRM Panel:

If available, download FIRM panel [here](#)

Insurance Study Note:

Download FEMA Flood Insurance Study for this area [here](#)



Tornado

Results:

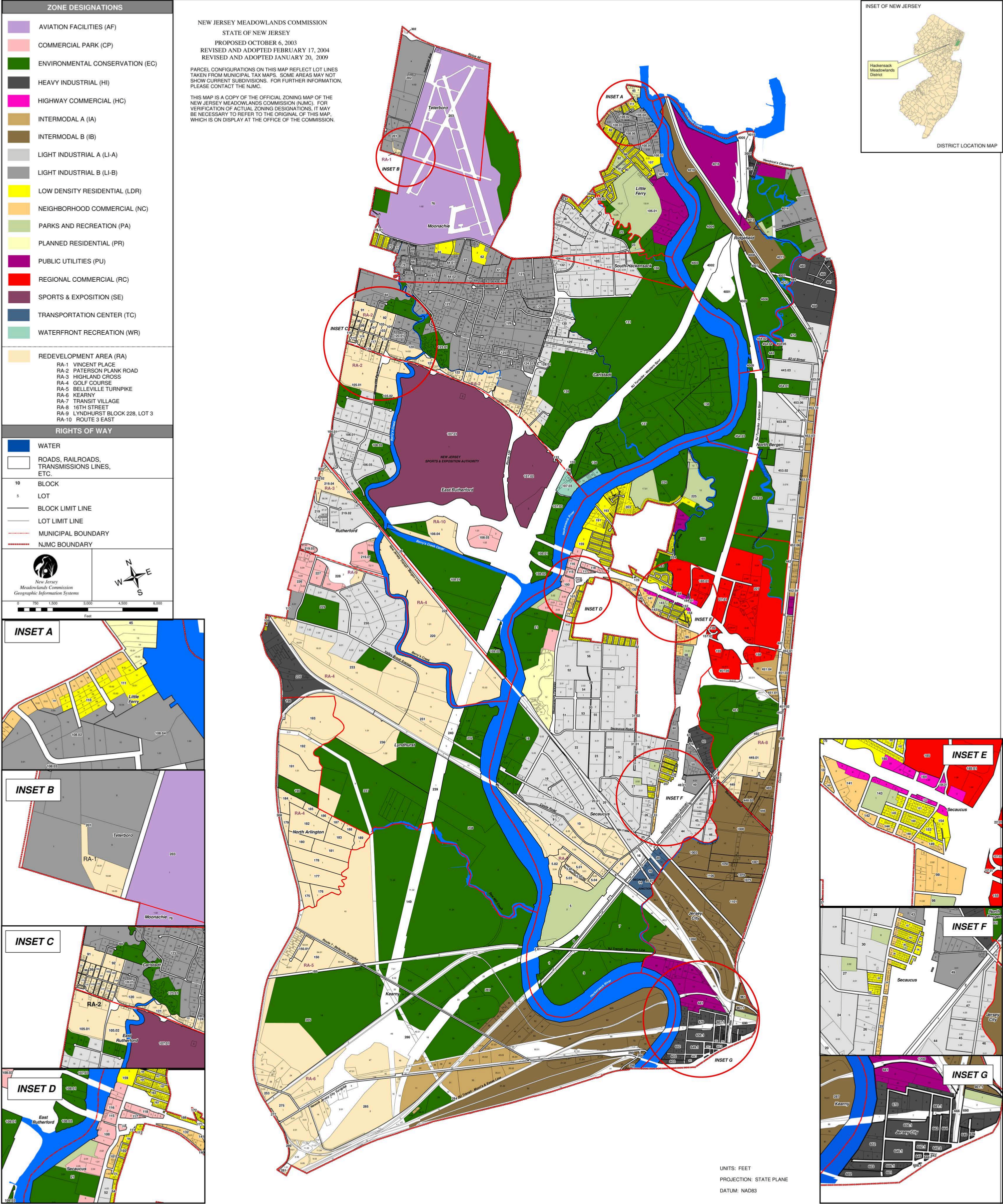
Not Applicable to Risk Category 2

The ASCE Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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Hackensack Meadowlands District Official Zoning Map



NEW JERSEY MEADOWLANDS COMMISSION
1 DEKORTE PARK PLAZA LYNDHURST, NJ 07071 PHONE: 201-460-1700 FAX: 201-372-0161
www.meadowlands.state.nj.us

EXHIBIT 'C'