

# Town of Scituate

## Emergency Management Agency

The seal of the Town of Scituate, Rhode Island, is a circular emblem. It features a central shield with a yellow upper section containing a stylized grey figure and a red lower section containing a white circle with blue wavy lines. The shield is surrounded by a blue ring with the text "TOWN OF SCITUATE, RI" at the top and "INCORPORATED FEBRUARY 20, 1754" at the bottom.

### REQUEST FOR PROPOSALS

## Radio Communication Tower - Emergency Operations Center Project

**Proposals Due:** Sealed bid proposals are due and must be received in Scituate Town Hall, Office of the Town Clerk, 195 Danielson Pike, N. Scituate, RI 02857 no later than **2:00 p.m., (Est.) on Friday, February 15th, 2019.**

# PUBLIC NOTICE

## REQUEST FOR PROPOSALS

### TOWN OF SCITUATE EMA RADIO COMMUNICATION TOWER - EMERGENCY OPERATIONS CENTER PROJECT

Scituate EMA, Scituate, Rhode Island, is seeking proposals from qualified contractors to supply, deliver, and install a radio communication tower for the Scituate Emergency Management Agency (EMA) Emergency Operations Center; located at the Scituate Police Department Building, 1301 Chopmist Hill Road in Scituate, Rhode Island. The general nature of the work includes the supply, delivery and installation of a 140 foot self-support radio communication tower and specified equipment that is capable of being expanded up to 150 feet.

Request For Proposals (RFP) documents may be obtained by visiting the Town of Scituate website at [www.scituateri.org](http://www.scituateri.org) or emailing [ema@scituateri.org](mailto:ema@scituateri.org).

Sealed bids are due and must be received in the Scituate Town Clerks Office, 195 Danielson Pike, N. Scituate, Rhode Island 02857 no later than 2:00 p.m., Eastern Time, on Friday, February 15, 2019. No bids will be accepted after the time indicated. Sealed bids will be opened and publicly read at the Town Meeting Room at 2:30 p.m., Eastern Time, on Wednesday, January 16th, 2019 or at such later time and place as may then be fixed.

It is the policy of Town of Scituate that all contractors comply with the spirit of equal opportunity employment, as well as with the letter of all applicable Federal, State and local laws, rules, and regulations governing their performance.

***This project is a Public Works project; all contracts for the Construction of Public Works are subject to the Rhode Island Prevailing Wage Act.***

It is the intent of this Office to award a contract to the lowest responsible bidder provided the bid has been submitted in accordance with the bidding requirements. This Office reserves the right to waive informalities or irregularities. The Office reserves the right to reject any or all bids.

## PROJECT DETAILS

- PROJECT TITLE:** Town of Scituate, EMA Radio Communication Tower - Emergency Operations Center Project
- RELEASE DATE:** January 25<sup>th</sup>, 2019
- BID DUE DATE:** Sealed bids are due and must be received in the Town of Scituate's Town Clerks Office, 195 Danielson Pike, N. Scituate, Rhode Island, 02857 no later than 2:00 p.m., Eastern Time, on Friday, February 15<sup>th</sup>, 2019. Outside of envelope must be clearly marked: "Scituate EMA Radio Communication Tower Project"
- BID OPENING DATE:** Sealed bids will be opened and publicly read in the Council Chambers, Scituate Town Hall no later than 2:30 p.m., Eastern Time, on Friday, February 15<sup>th</sup>, 2019 or at such later time and place as may then be fixed.
- CONTRACT AWARD:** It is anticipated a contract will be awarded, subsequent to Town Council approval at the February meeting. It is the intent of the Owner to award a contract to the lowest responsible bidder provided the bid has been submitted in accordance with the bidding requirements. The Owner reserves the right to waive informalities or irregularities. The Owner reserves the right to reject any or all bids.
- CONTACTS:** All inquiries and questions concerning this request for proposals and the subject of the request for proposals must be in writing (email, letter, or fax) and directed to:
- John Robinson  
Scituate Emergency Management Agency Director  
195 Danielson Pike  
N. Scituate, RI 02857  
Phone: 401-647-3000  
Fax: 401-647-7220  
Email: [EMA@scituateri.org](mailto:EMA@scituateri.org)
- INTERPRETATIONS:** No oral interpretations made to any bidder will be binding. Requests for interpretation or changes to the bid document must be made in writing at least three (3) days prior to the bid opening. If required, addenda will be posted on the Town of Scituate website [www.scituateri.org](http://www.scituateri.org). Addenda shall become part of the contract and all bidders shall be bound by such addenda, whether or not received by the bidders. Any addenda shall be placed on file and made available for review upon request.
- PROJECT COMPLETION:** This project must be completed by March 31, 2019..

## **SECTION 1 – PROJECT DESCRIPTION & PURPOSE**

Scituate EMA is seeking proposals from qualified contractors to supply, deliver, and install a radio communication tower and specified equipment for the Town of Scituate Emergency Management Agency (EMA) Emergency Operations Center; located at the Scituate Police Department Building, 1301 Chopmist Hill Road, N. Scituate Rhode Island 02857.

The public safety radio communication system is a vital component of Scituate's public safety efforts and supports communications with law enforcement, fire and emergency medical services throughout the Town of Scituate and therefore must be efficient, reliable and expandable.

The general nature of the work includes the supply, delivery and installation of a 140 foot self-support radio communication tower and specified equipment that is capable of being expanded up to 150 feet. This work also includes supporting structures, climbing facilities, grounding, utilities, tower security, and FCC licensing.

Bid documents may be obtained by visiting the Town of Scituate website at [www.scituateri.org](http://www.scituateri.org) or emailing [EMA@scituateri.org](mailto:EMA@scituateri.org).

General questions regarding this Request for Proposals should be directed to John Robinson, Town of Scituate Emergency Management Agency Director (401) 647-3000.

## **SECTION 2 – BACKGROUND**

The Town of Scituate is located in the southwest corner of Providence County in the State of Rhode Island, The Town covers approximately +/- 54.8 square miles. According to the 2010 U.S. Census data, the current population of the Town of Scituate is 10,329.

The Town of Scituate Police Department and EMA Operations Center functions as a primary dispatch location for Emergency Services; law enforcement, fire and emergency medical service agencies in the Town.

## **SECTION 3 – INSTRUCTION TO BIDDERS**

### **Bidder's Responsibilities Regarding Bid Document**

It is the responsibility of the Bidder to thoroughly examine and familiarize themselves with all aspects of the bid document, including deadlines and technical specifications. The Contractor, by the execution of the Contract, shall in no way be relieved of any obligation under it due to his failure to receive or examine the document or to visit the site and acquaint himself with the conditions there existing.

### **General Conditions for Proposal Submittal**

It is recognized that the formal basis of any agreement between vendor and user is a contract rather than a proposal. In submitting proposals, vendors must indicate that they are prepared to complete a contract containing all the information submitted in their proposals. This RFP and the submitted proposal will become part of the contract between the Town of Scituate and the successful bidder.

Price quotes by bidder must be firm prices and not subject to increase during the term of the contractual agreement arising between the Town of Scituate and the bidder as a result of said bid. Bidder must state the expiration date of the quoted bid.

All responses, inquiries, or correspondence related to or in reference to this request for bids, and all reports, charts, displays, schedules, exhibits, and other documentation by the bidders and the contractor will become the property of the Town of Scituate when received. All proposals submitted in response to this RFP become property of the Town of Scituate

### **Interpretations**

No oral interpretations made to any bidder will be binding. Requests for interpretation or changes to the bid document must be made in writing at least three (3) days prior to the bid opening. If required, addenda will be posted on the Town of Scituate website, [www.scituateri.org](http://www.scituateri.org). Addendums shall become part of the contract and all bidders shall be bound by such addenda, whether or not received by the bidders. Any addenda shall be placed on file and made available for review upon request.

### **References**

It is the bidder's responsibility to submit references from at least two (2) government agencies for which this, or similar radio communication system work was performed.

## **SECTION 4 – SUPPLEMENTARY INSTRUCTIONS TO BIDDERS**

### **Performance and Payment Bonds**

No Performance and Payment bonds will be required for this project.

### **Governing Laws, Rules, and Regulations**

The Contractor shall take note and comply with all applicable Federal, State and local laws, rules, and regulations governing their performance. This may include such laws, rules, and regulations including but not limited to: Licensing of Contractors for Special requirements, e.g. hazardous waste removal, requirements for special construction permits, if applicable, wage rates and employment requirements when required by law or by the Owner, local labor requirements, and non-discriminatory hiring practices. This Project is exempt from State and local sales and use taxes on sales of building materials and fixtures to construction contractors for incorporation into real estate for governmental bodies of the State of Rhode Island.

Additional laws, rules, regulations may apply if the Town of Scituate is successful in receiving any Federal or State grants for this project.

### **Indemnification**

Contractor agrees it shall defend, indemnify, and hold harmless the Town of Scituate, its officers, and its employees against any and all liability, losses, costs, damages, claims, judgments, expenses, including attorney fees, arising out of or resulting from the negligent or intentional acts or omissions of the contractor during the performance of its duties pursuant to this contract.

**Insurance Requirements**

The selected contractor will be required to carry and provide certificates of insurance as required by the Town of Scituate. The certificate of insurance policy as follows:

It is the requirement of the Town of Scituate that for work performed under contract and/or authorized by the Town and conducted on the Town of Scituate property that the contractor/supplier (Contractor) procure and maintain insurance at the expense of the Contractor and without expense to the Town, until final acceptance of the work. All insurance must be procured and maintained in a form satisfactory to the Town.

Before a purchase order is released, a contract signed, or any work commenced, contractors doing business with the Town of Scituate are required to provide proof of insurance satisfactory to the Town and documentation evidencing that the Contractor maintains insurance that meets the following requirements:

- A. General Liability Insurance of not less than \$1,000,000.00 combined single limit per occurrence for bodily injury and property damage.
- B. Personal and Advertising Injury of not less than \$1,000,000.00 per occurrence.
- C. Worker's Compensation and Employer's Liability Insurance, of not less than 500/500/500, covering all employees and subcontractors of Contractor as required by law in the State of Illinois.
- D. Automobile Liability Insurance of not less than \$1,000,000.00 is required in the event motor vehicles are used by the Contractor in the performance of the Agreement.
- E. In the event Contractor is a licensed professional and is performing professional services under an Agreement with the Town, professional liability (for example, errors and omissions) is required with a limit of liability of not less than \$1,000,000.00 per occurrence.
- F. Contractor shall furnish a certificate of insurance satisfactory to the Town as evidence that the insurance required above is being maintained.

G. The certificate of insurance must include the following provisions:

- a. The Town of Scituate must be named as an additional insured under the Contractor's General Liability insurance. This provision shall apply to all liability policies except worker's compensation and professional liability insurance policies.
- b. The Contractor shall not cancel insurance coverage. Insurance shall be kept in force during the duration of the job and for a minimum of at least 30 days thereafter.
- c. When entering into a contractual agreement with the Town the Contractor shall agree to indemnify and hold harmless the Town, its officers and employees, from and against any and all claims, losses, judgments, liabilities or claims for attorneys' fees arising out of or resulting from Contractor's performance of its duties pursuant to the contract.

H. The Contractor's insurance coverage shall be primary insurance as respects the Town, its officers, officials, employees and volunteers.

I. Any failure of the contractor to comply with the reporting provisions of the policies shall not affect the contractor's obligations provided to the Town, its officers, officials, employees, or volunteers under this agreement.

J. Contractor's obligations shall not be limited by the forgoing insurance requirements and shall survive expiration of any agreement with the Town.

K. The standards as outlined above are the minimum acceptable requirements. Certificates of insurance may be required to meet additional standards that are considered essential for protection of the Town. Depending upon the level of exposure, additional limits of liability or additional coverage's may be required for individual jobs or projects, as determined by the Town of Scituate.

All insurance coverages provided by the Contractor shall provide for a waiver of subrogation to the Owner, agents and employees.

The Contractor shall at the Contractor's own expense provide insurance coverage for materials stored off the site after written approval of the Owner at the value established in the approval, and also for portions of the Work in transit until such materials are permanently attached to the Work.

The insurance required in this section is not intended to cover machinery, tools or equipment owned or rented by the Contractor which are utilized in the performance of the work but not incorporated into the permanent improvements. The Contractor shall, at the Contractor's own expense, provide insurance coverage for owned or rented machinery, tools or equipment.

Contractor's obligations shall not be limited by the forgoing insurance requirements and shall survive expiration of any agreement with the Town.

### **Supervision and Construction Procedures**

The Owner reserves the right to retain ownership to any materials or equipment that is part of the existing facilities and infrastructure. If material is to be removed from the site, the Contractor shall detach such items and before removing from site, obtain permission from the Owner, or his designee, to do so. All items not retained by Owner shall be removed in a proper manner by the Contractor.

### **Subcontractors**

Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, within seven (7) calendar days after award of the contract and prior to execution of the contract, shall furnish in writing to the Owner the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each portion of the Work.

### **Changes in the Work**

In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their property can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials, and subcontracts. Labor and materials shall be itemized with the maximum allowable combined overhead and profit passed through to the Owner under any circumstances shall not exceed a maximum of 15 percent. In no case will a change involving over \$500.00 be approved without such itemization.

### **Definitions**

The "Contract Documents" consist of the RFP, the Contractor's Proposal and Bid Form, all addenda and other documents included in the Agreement between the Owner and the Contractor as a part of the Contract. These documents form the Contract.

The "Owner", "Town", and "Contractor" are those mentioned as such in these specifications and throughout the contract documents.

The "Work" means the obligations undertaken by the Contractor pursuant to the Contract Documents. Work includes, unless specifically accepted, the furnishing of all materials, labor, equipment, supplies, tools, transportation, superintendence, insurance, taxes, and all other services, facilities, and expenses necessary for the proper performance and completion of the installation requirements of the Contract Documents. Work also means that which is produced, constructed or built pursuant to the Contract Documents.

## **SECTION 5 - VENDOR REQUIREMENTS**

The selected contractor must provide proof that it has performed similar jobs for public agencies and is familiar with the technology being proposed.

## **SECTION – 6 GENERAL REQUIREMENTS**



## Part 1 - Safety

All contractors and subcontractors performing services for the Town are required and will comply with all Occupational Safety and Health Administration (OSHA), State Safety and Occupational Health Standards and any other applicable rules and regulations. Also, all contractors and subcontractors will be held responsible for the safety of their employees and any unsafe acts or conditions that may cause injury or damage to any persons or property within and around the work site area under this contract. Proposer shall provide all barricades and other safety equipment, as necessary.

- A. Any tower work must have at least one person on the ground at all times for safety.
- B. Contractor shall take all necessary measures to prevent damage to other areas adjacent to his work. Should damage occur, as a result of the proposer's work, the proposer is responsible for the repair and/or replacement of the damaged area. Otherwise the Town shall repair and/or replace the damaged area and charge the proposer or deduct the amount from the proposer's invoice.
- C. Contractor is responsible for the storage and security of all materials, supplies and equipment as well as of their subcontractors in a neat and orderly manner so as not to unduly interfere with the progress of work or the operation of Town business. Proposer shall not unload, move, hoist and/or store material or equipment to interfere with normal use of facilities, roads, driveways, sidewalks or building entrances, except with prior written authorization of the Town.
- D. Contractor shall perform cleanup of work area on a daily basis to remove debris from that day's work. At completion of the project, the proposer shall remove all equipment, surplus material, rubbish and debris, etc. from the premises and legally dispose of it. Proposer shall remove all rubbish and debris from Town property
- E. The Contractor shall be required to take all necessary precautions to protect building occupants and traffic flow. Proposer to coordinate work on a daily basis with the Town Engineer or his representative.

## **Part 2 – Materials and Design**

- A. Proposed tower must meet all ANSI/EIA and National Standards as well as Federal, State and Local Building requirements.
- B. Equipment and materials provided for the system installations shall be standard product of a manufacturer, regularly engaged in the manufacture of the product for a minimum of two years prior to this proposal. Discontinued models are not acceptable. The equipment shall be supported by an authorized service organization or factory employee (of the manufacturer/supplier) that is reasonably convenient to the jobsite.
- C. Contractor shall represent and warrant that the goods, materials and supplies or components offered to the Town under this proposal are new, not used or reconditioned and are not of such age or so deteriorated as to impair their usefulness or safety and that the goods, materials, supplies or components offered are current production models of the respective manufacturer.
- D. All provided material will have a warranty to be free of defects for a period of three (3) years starting on the date the project is accepted by the Town of Scituate. All workmanship must also be warranted to be free of defects for three (3) years.

## **Part 3 – Installation**

- A. Installation of the communication tower shall be in accordance with the latest manufacturer's recommendations and by professionals meeting the conditions of manufacturer's written or published instructions and warranty.
- B. Upon completion and acceptance of the installation, the communication tower shall be tested to demonstrate satisfactory functional and operating efficiency. All test deficiencies shall be corrected and retested prior to acceptance by the Town.
- C. All instruments, facilities and labor required to properly conduct the tests shall be provided by the contractor.
- D. It shall be understood and agreed upon by the proposed that the work herein described shall be completed in every detail, even though every item involved is not particularly mentioned. The contractor shall be held responsible to provide all labor and materials for the completion of work intended and described and shall not avail himself/herself of any manifestly unintentional error or omission, should such exist.

#### **Part 4 – Quality Assurance**

- A. The contractor shall maintain, throughout the project, a competent superintendent, satisfactory to the Town, with authority to act for him in all matters pertaining to the work.
- B. The contractor shall confine his operations to the areas to be improved and to the areas allotted him by the Town's representative for material and equipment storage.
- C. All workmanship, manufacturing procedures, product performance and materials shall be subject to random testing and inspection. If any findings or test studies reveal improper materials, defective components or inadequate performance, the contractor shall remove and replace the materials in question. If, after replacement, the tower does not perform in accordance with the contract requirements, the contractor must present in writing an explanation to the Town as to the reason for lack of performance as originally proposed. It must also state the proposed solution(s) to satisfy the contract requirements. If the problems are not completely rectified in 90 days, a full refund and removal procedure will be implemented and adhered to by the contractor and manufacturer.
- D. Minimum of three (3) year warranty on materials and contractor's warranty on all materials, equipment and workmanship for a period of three-years from the date of final acceptance of the complete job, against original defects of material and workmanship or excessive wear or deterioration and defects to be made good at the proposer's expense with no cost or obligation to the Town.

#### **Part 5 – Submittals**

- A. Contractor must submit manufacturer's literature, including installation instructions.

Manufacturer's manuals shall be provided and include the manufacturer's name, telephone number, model number, service manual number, parts list and brief description of all equipment and their basic operating features. The maintenance instructions shall list routine maintenance procedures, possible breakdowns and repairs and troubleshooting guide.

- B. Additional testing shall be performed by Towns personnel or outside consultant for final acceptance.

**Part 6 – Delivery, Storage, and Handling**

- A. Deliver components in manufacturer's original undamaged and unopened containers with labels intact and legible.
- B. Store and handle materials to prevent damage and deterioration. Materials damaged or defective as determined by the Town of Scituate Emergency Management Agency Director or his authorized representative shall be replaced or repaired at no additional cost to the Town.
- C. Storage of materials and equipment in conjunction with this contract is the responsibility of the proposer. Stored materials and equipment on site shall be stored in a location as directed by the Town Engineer or his authorized representative.

**Part 7 – Project Conditions**

- A. The contractor acknowledges that he has examined the site and the submission of a proposal shall be considered evidence that examination has been made. The contractor has carefully estimated the difficulties with the existing conditions as they relate to the total and entire satisfactory completion of the work. Contractors may visit the proposed site located at the Scituate Police Department Building, 1301 Chopmist Hill Rd., N. Scituate, Rhode Island 02857.
- B. All work shall be completed according to manufacturer's instructions, specifications, and standard trade practices.
- C. The contractor shall field verify all quantities, measurements, dimensions, and existing conditions. The contractor shall review the contents of the specifications and verify discrepancies (if any) prior to submitting this proposal document. There will be no change orders based on mistaken quantity, count, measurements or dimensions.
- D. Contractor shall work with the Town Engineer or his/her representative to coordinate work on the site.

## **SECTION 7 – DIRECTIONS FOR DELIVERY OF THE PROPOSAL**

Sealed bids are due and must be received in the Town of Scituate's Town Clerks Office, 195 Danielson Pike, N. Scituate, Rhode Island, 02857 no later than 2:00 p.m., Eastern Time, on Friday, February 15<sup>th</sup>, 2019.

Proposals shall be clearly identified as: "Scituate EMA Radio Communication Tower Project"

It is the responsibility of the bidder to ensure that proposals are received in the appropriate place and at the designated time. The Town of Scituate will not be responsible for late mail deliveries and no proposals will be accepted if received after the time stipulated in this RFP. All respondents are responsible for the costs incurred in responding to this RFP.

### **Bid Security**

No Performance and Payment bonds are required for this project.

Contracts for work under the Bid will oblige the Contractor and Subcontractors to adhere to and comply with all applicable State, Federal, County, City and Town governing laws and regulations. Each bidder must be prepared, if so requested by the Owner, to present evidence of his experience, qualification, and financial ability to carry out the terms of the Contract.

Notwithstanding, any delay in the preparation and execution of the formal Contract Agreement each Bidder shall be prepared, upon written notice of Bid acceptance, to commence work following receipt of official written order of the Owner to proceed, or on date stipulated in such order.

## **SECTION 8 - DISCRETION AND LIABILITY WAIVER**

The Town reserves the right to exercise discretion and apply judgment with respect to any proposals submitted.

The Town of Scituate reserves the right to reject any or all bid proposals, either in part or in its entirety, to waive technicalities or informalities, and to accept any bid deemed to be in the best interest of the Town of Scituate, the Town reserves the right to purchase from any source or sources in part or in whole any desired services and products. Where two or more vendors are considered equal, the Town reserves the right to make the award to one of the two bidders.

The Town reserves the right to request and obtain, from one or more of the bidders submitting proposals, supplementary information as may be necessary for the Town to analyze the bid proposals pursuant to the bid award criteria contained herein.

The Town reserves the right to disqualify bids, before or after opening, upon evidence of collusion with intent to defraud or other illegal practices on the part of the Bidder.

The bidder, by submitting a response to this RFP, waives all right to protest or seek any legal remedies whatsoever regarding any aspect of this RFP.

This RFP does not commit the Town to award a contract, to defray any costs incurred in the preparation of a bid proposal pursuant to this RFP, or to procure, or contract for work.

All bid proposals submitted in response to this RFP become the property of the Town and public records and, as such, may be subject to public review.

The Town reserves the right to cancel, in part or in its entirety, this RFP including, but not limited to: award procedures, submittal date, and submittal requirements. If the Town cancels or revises the RFP, all proposers will be notified by fax and/or e-mail.

## **SECTION 9 - BID AWARD CRITERIA**

In choosing a contractor to award this project several criteria will be considered. Typically, awards are made to the contractor with the low-cost responsible bid or quote. Per the Town of Scituate Purchasing Policies, the low-cost responsible bid is the bid or quote considered to provide the best long-term value for the county. In determining the low-cost responsible bid, in addition to price, the Town will also consider the following evaluation factors:

- a) The ability, capacity and skill of the bidder to provide the supplies, equipment and service required.
- b) Whether the bidder can provide the supplies, equipment and service promptly, or within the time specified, without delay or interference.
- c) The character, integrity, reputation, judgment, experience and efficiency of the bidder.
- d) The quality of performance of the bidder under previous contracts.
- e) The previous and existing compliance by the bidder with laws and ordinances relating to the contract.
- f) The sufficiency of the financial resources and ability of the bidder to perform the contract.
- g) The quality, availability and adaptability of the goods and services to be provided for the particular use required.
- h) The ability of the bidder to provide future maintenance and services if such is required by the contract.
- i) The number and scope of conditions attached to a bid.
- j) Conformity with specifications, delivery date and terms, discount terms, and warranty conditions.
- k) Total cost of item over its useful life.
- l) The bid providing the best long-term value for the county.

The Town of Scituate reserves the right to reject any or all bids, to consider alternatives, to waive technicalities or informalities, to accept any bid deemed to be in the best interest of the Town of Scituate, and to re-solicit proposals should entries not meet the requirements of this Request for Proposal. The Town reserves the right to purchase from any source or sources in part or in whole any desired services and products. Where two or more vendors are considered equal, the Town reserves the right to make award to one of the two bidders. All proposals submitted in response to this RFP become the property of the Town and public records and, as such, may be subject to public review.

The Town reserves the right to cancel, in part or in its entirety, this RFP including, but not limited to: selection procedures, submittal date, and submittal requirements. If the Town cancels or revises the RFP, all proposers will be notified by fax and/or e-mail.

## **SECTION 10 – PAYMENT SCHEDULE**

The Town of Scituate will adhere to the following payment schedule provided the Contractor has met all requirements for payment:

- 50% upon substantial delivery of equipment to the Town
- 50% upon successful installation of all equipment and acceptance by owner

Waiver of Mechanic's Lien: With each Application for Payment, the Contractor shall submit waivers of mechanic's lien from every entity who is lawfully entitled to file a mechanic's lien arising out of the Contract and related to the work covered by the payment.

## **SECTION 11 – SCOPE OF WORK**

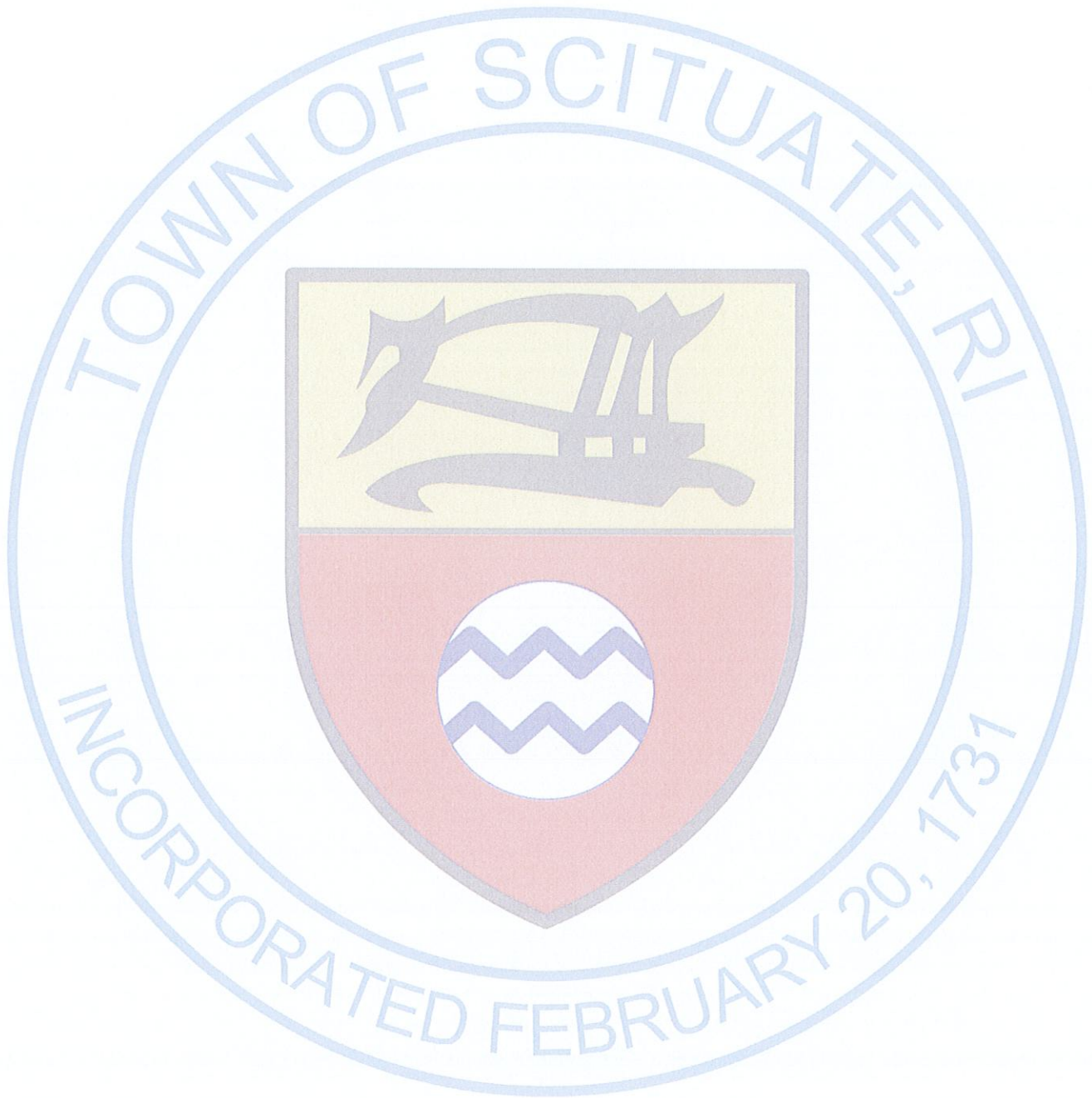
Scope of work consists of the following:

- A. **Tower** - Installation of one 140 foot Rohn (or similar products of equal strength and stability from a different manufacturer) self-support, 3-leg free standing, radio communication tower capable of being expanded up to 150 feet at a later date if needed. Tower shall meet all ANSI/EIA and National Standards. The tower is to be installed on west side of the Scituate Police Department Building, 1301 Chopmist Hill Road, N. Scituate RI 02857. Antenna load at 120 – 130 feet, shall have the capability to mount three (3) Ten (10) foot antennas two (2) 12"-18" microwave dishes mounted at 140 feet if needed. There could be more antennas mounted below 100 feet to the building height. Tower engineering is expected to be done by tower manufacture from the forthcoming report of soil sample taken at the proposed tower site for proper foundation to support tower. Engineer stamp of approval for the State of Rhode Island shall be provided to the Town. Tower shall have step bolts to the 140 foot level and have a safety cable attached for tower climbers. Lighting of the tower is not required. Concrete specs as required by supplier of tower. Antenna ice-bridge is required to protect the lines from tower to the building entrance. Please quote 20 feet for bid and can be adjusted after tower is finally located. All backfill will be compacted. Grounding and Cad-welding of tower to ten (10) 5/8 copper ground rod to make up ground ring with #2 solid ground wire. Each leg shall be cad welded with #2 solid wire to ground ring. A ground rod shall be installed on top of tower (upside down) and have #2 green insulated stranded copper cable cad-weld to rod and to the ground ring below grade. Proper cable clamps (stainless steel bands) to secure the green ground wire to the length of the tower. A 9-hole cable ladder shall run from the top to the bottom of the tower near the ice bridge. A ground bar shall be installed on tower at the bottom of the vertical run of all antenna lines and be cad welded to the ground ring. Proper antenna line kits shall be used to tie the antenna lines to ground bar. A ground bar shall be mounted just below building entrance and all antenna lines with proper line kits and tied to the ground bar and finally be tied to the ground ring. Freight, transportation, installation, insurance, water removal if needed, to be shown on different line items.
- B. **Tower Foundation**- Tower foundation engineering is expected to be done by tower manufacture from the attached report (Exhibit A) of a soil sample taken at the proposed tower site for proper foundation to support tower. Foundation to be constructed per specifications provided by tower manufacturer. Site preparation and concrete work will be completed by the successful bidder.

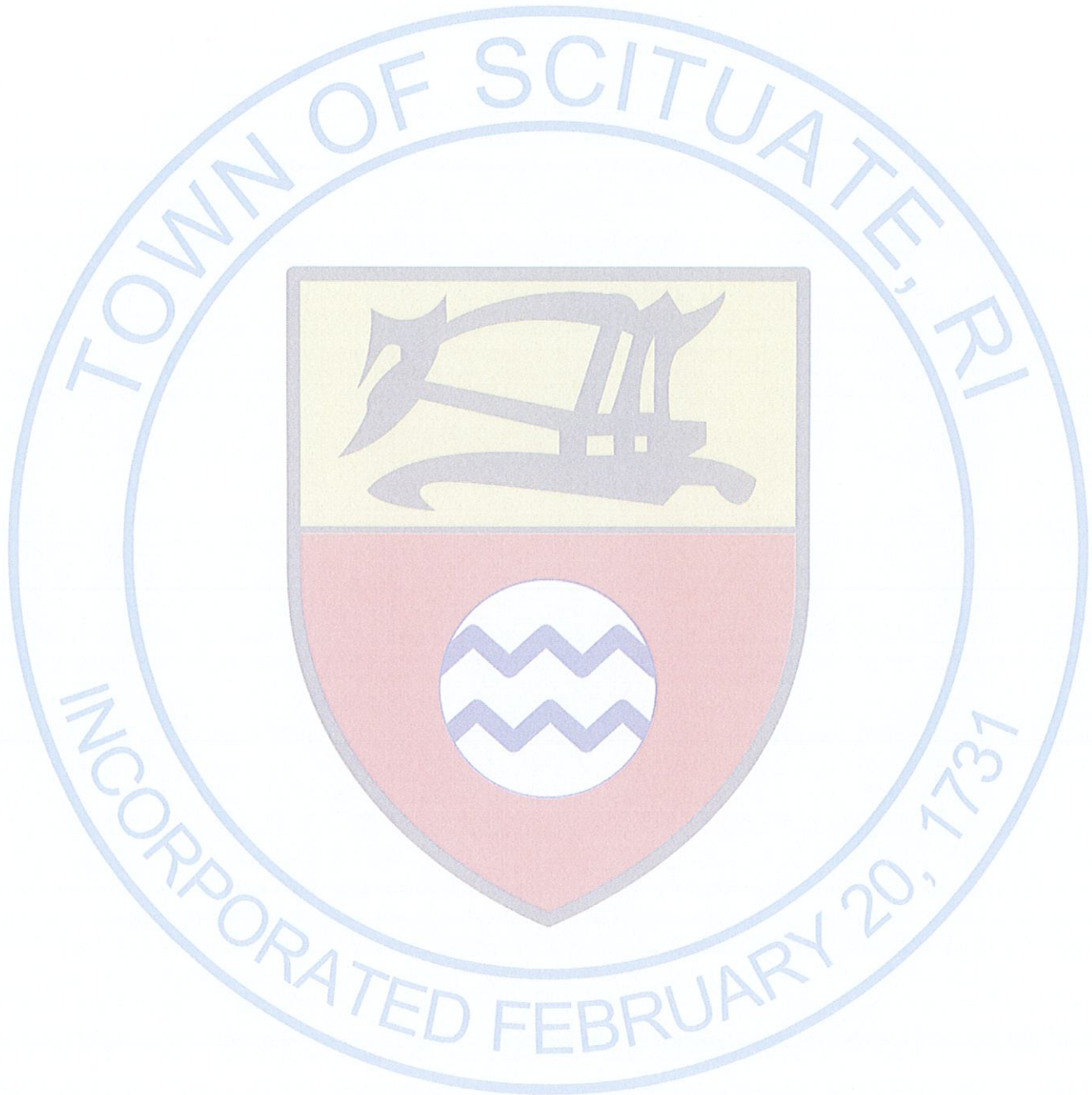
- C. **Construction Site Landscaping** - All soil at construction site of tower shall be returned to natural grass as seen before construction. Tower center will have a weed barrier and back filled with washed stone to a 9-inch depth or as required by the Towns Engineer.
- D. **FCC Licensing** - FCC licensing required, and call signs posted within dispatch, fees to be a line item in the bid proposal.
- E. **Detailed Equipment List** – A detailed equipment list shall be provided with bid proposal.
- F. **Warranty** - Warranty information to be included with bid proposal on items in the equipment list.
- G. **Construction Timeline** – Include a timeline, with your proposal, for construction, installation and operation of the new communication tower. The proposer must state a definite time for completion of the project from the time the award is made. The successful proposer shall also be required to provide the EMA Director with a monthly report on work performed.
- H. **Work to be Completed by Others** -
- a. The Town will provide a soil analysis report for the proposed site. This analysis is included with this RFP (Exhibit A).
  - b. Any zoning requirements will be handled by the Town if needed.
  - c. Towns electrician will provide 4 circuits of 20 amps each and a #6 green ground wire to the inside equipment rack from local electric service panel. An automatic generator is installed on site.
  - d. Fence if needed will be provided by Town or their sub-contractor.



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## **GENERAL REQUIREMENTS**

This section includes general requirements for the supply, delivery and installation of a 140-foot self-support radio communication tower and specified equipment that is capable of being expanded up to 150 feet. This work also includes supporting structures, climbing facilities, grounding, utilities, tower security, and FCC licensing.

### **A. QUALITY CONTROL**

Tower and tower systems must be in compliance with the following codes and standards. Utilize the latest version of the code or standard if the code date is not listed. The list is not meant to restrict the use of additional guides or standards.

1. American Concrete Institute (ACI) ACI 318-08: Building Code Requirements for Structural Concrete.
2. American National Standards Institute (ANSI) ANSI A 14.3-2008: Ladders – Fixed – Safety Requirements
3. ANSI/TIA/EIA-222-G-2005: Structural Standards for Steel Antenna Towers and Supporting Structures.
4. Motorola R56-2005: Standards and Guidelines for Communication Sites.
5. Code of Federal Regulations (CFR) CFR Title 47, Part 17: Construction, Marking, and Lighting of Antenna Structures.
6. Federal Communications Commission Office of Engineering and Technology (FCC) OET Bulletin 65, Edition 97-01: Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.
7. 29 CFR 1910.27: Fixed Ladders.
8. 29 CFR 1910.268 (h)(2): Telecommunications.
9. OSHA
10. Tower, foundations, grounding system, and associated structures and system designs shall be performed and certified by a registered Professional Engineer holding a license in the State of Rhode Island. Contractor will be required to provide three sets of construction documents including drawings, specifications, calculations, and other requested documents stamped by a Structural Engineer licensed in the State of Rhode Island.

### **B. COORDINATION**

1. Coordinate with Emergency Management Agency Director for racks, cabling, conduit, and miscellaneous equipment if necessary.
2. Provide galvanized steel, self-supporting, solid core or angle-iron tower complying with ANSI/TIA/EIA-222-G.

### C. RADIO TOWER

1. Provide and install one 140-foot Rohn (or similar products of equal strength and stability from a different manufacturer) self-support, 3-leg free standing, radio communication tower.
1. Tower Design Requirements: Following are the minimum tower design requirements. (Increase tower design requirement for tower locations with more stringent requirements):
  2. Basic wind speed without ice: 120 mph, 3 second gust wind speed.
  3. Tower design exposure category: Exposure B.
  4. Structure classification: Class III.
  5. Topographic category: Category 1.
  6. Foundation reactions for the loading combinations considered.
  7. Install grounding system to achieve grounding resistance of 10 ohms or less.
  8. Lighting: Provide tower lighting in accordance with FAA regulations and CFR 47, Part 17– “Construction, Marking, and Lighting of Antenna Structures.”
  9. Provide tower with a climbing ladder, safety cable, and anti-climb barrier in compliance with ANSI A 14.3 Include provisions to lock-out the climbing facility to prevent unauthorized use. Provide removable all stop assembly to prevent weathering and corrosion. Provide anti fall/safe climb device in accordance with 29 CFR 1910.27, “Fixed Ladders”.
  10. Construct tower in accordance with the current edition of ANSI/EIA/TIA-222-G.
  11. Install concrete foundation in accordance with local building codes and ACI 318. Set top of tower foundation 6-inches above finished grade and slope top of concrete foundation to drain water away from tower. This work must receive an engineer’s stamp of approval when completed. Make tower connections using bolts with lock washers. Do not weld components to the tower.
  12. Install external grounding system complying with Motorola R56 Standards and Guidelines for Communications Sites, National Electrical Code (NFPA 70) and National Fire Protection Association (NFPA 780). Completed work must be approved by electrical engineer.
  13. Submit all local code and tower restriction information based on the proposed project site. Restrictions may include, but are not limited to, airport height restrictions, municipality height restrictions, etc.
  14. Submittals: Provide design calculations, drawings, and specifications of tower, tower foundation, and grounding systems. Include copies of topographic site survey with control points and geotechnical reports. Include listing of testing requirements associated with tower, foundation, and grounding. Site preparation and concrete work will be completed by the successful bidder.

15. All reports will be stamped by the respective engineer(s) seal of approval. This to include a licensed Structural Engineer stamp for the tower structure and tower foundation design.

16. Product Data: Provide manufacturer product data including fabrication, assembly, and installation instructions.

#### D. CLOSEOUT SUBMITTALS

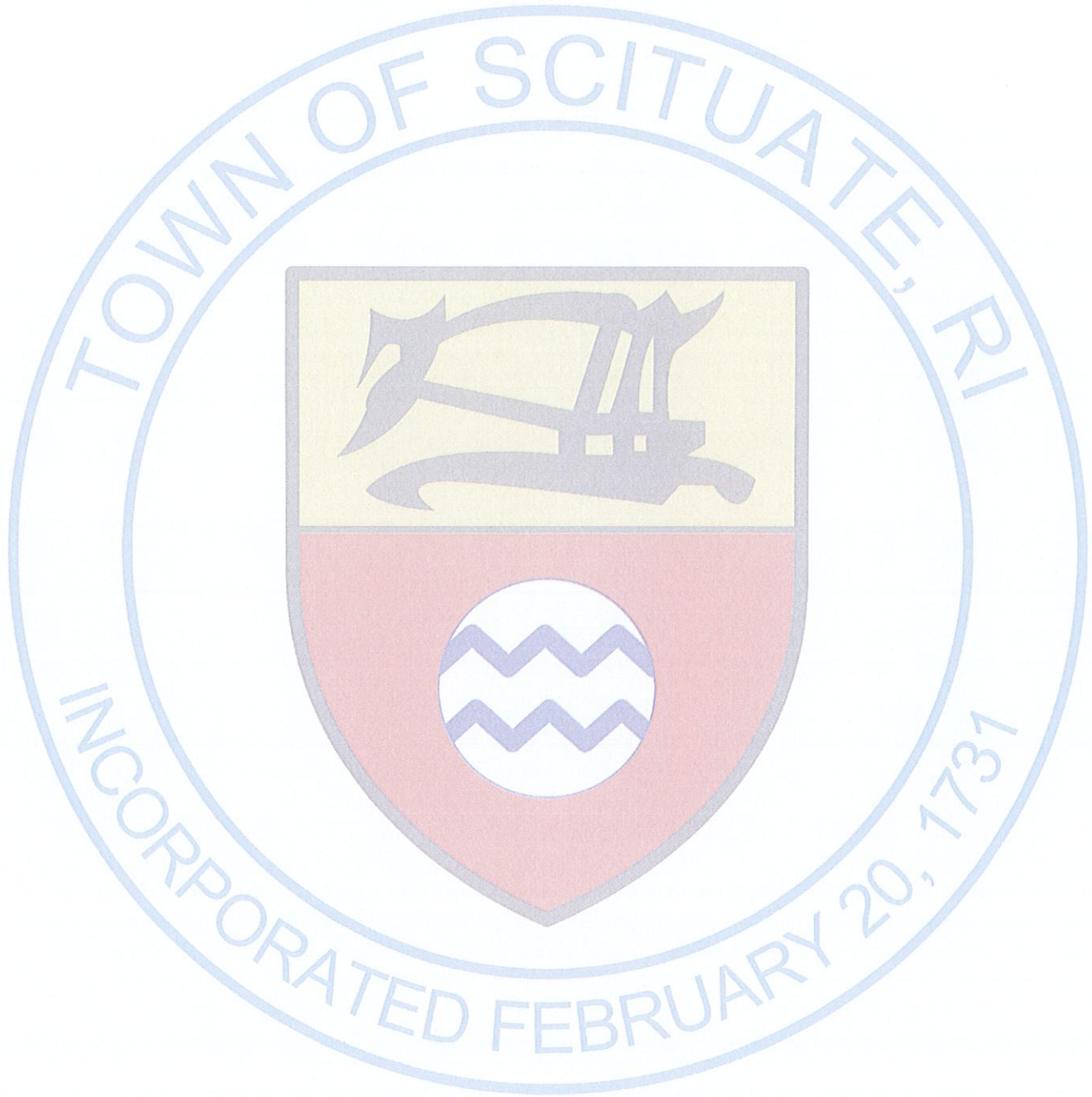
1. Submit field quality control test reports including concrete testing and grounding and surge protection system testing.
2. Operations and maintenance manuals.
3. Warranties.
4. As-built plans of the tower, foundation, and appurtenances.

#### E. PRODUCTS

coordinate the mounting heights and locations of antennas.

1. Antenna manufacturer, description and price will be listed individually in the quote.
2. RF line grounding through the polyphaser ground.
3. The contractor shall mount the antennas to the tower and provide Coax and Waveguide and all associated hardware for mounting.

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## SECTION 12 – BID INSTRUCTIONS AND BID FORM DOCUMENTS

Bids shall be made on Bid Forms furnished with this Request for Proposal.

Bids shall be signed by an authorized representative of the entity submitting the proposal – Part G of this Section. Where bidder is a corporation, bids must be signed with the legal name of the corporation followed by legal signatures of an officer authorized to bind the corporation to a contract.

Submit bid proposal per Section 7 of this RFP – Directions for Delivery of the Proposal.

Bids may not be modified after submittal. Bidders may withdraw bids at any time before Bid Opening but may not resubmit them. No bid may be withdrawn or modified after the Bid Opening except where the award of the Contract has been delayed for more than sixty (60) days.

### **BID FORMAT**

There are four (4) parts to the Bid Form document. Each part of the Bid Form document should be filled out and returned with the proposal submission.

#### **Part A**

The Bid Form

#### **PART B**

General Information, Contact Information

#### **PART C**

References

#### **Part D**

Response Overview, Response Details, Vendor Information

#### **Part E**

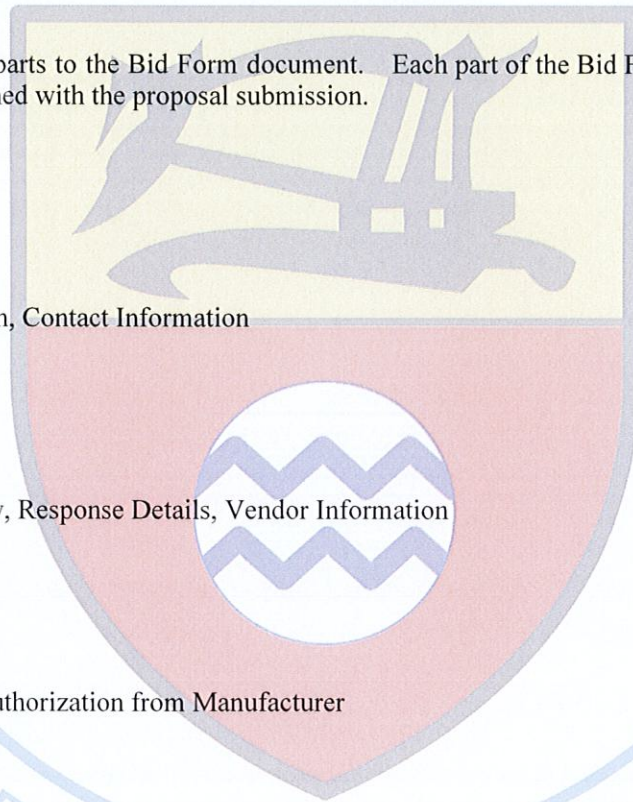
Schedule of Values

#### **Part F**

Proof of Vendor Authorization from Manufacturer

#### **PART G**

Signature Page



**BID FORM**  
**PART A**

To be submitted with Respondent's Bid Proposal

**PROJECT:** Town of Scituate, EMA Radio Communication Tower -  
Emergency Operations Center Project

**BID TO:** Town of Scituate  
Town Clerks Office  
195 Danielson Pike  
N. Scituate, Rhode Island 02857

**BID FROM:** \_\_\_\_\_  
Legal Name of Bidder

**NOTE:** Only bids on this bid document form will be accepted. Bidder shall carefully review the Instructions to Bidders and Supplementary Instructions to Bidders prior to completing this bid form.

1. The undersigned **BIDDER** proposes and agrees, if this Bid is accepted, to enter into an agreement with **OWNER** in the form included in the Contract Documents to perform and furnish all **Work** as specified or indicated in the Contract Documents for the Bid Price and within the schedule indicated in this Bid, and in accordance with the other terms and conditions of the Contract Documents. Bidder accepts all of the terms and conditions of the Request for Proposals and Instructions to Bidders. This Bid will remain subject to acceptance for 30 days after the day of Bid opening.
  
2. The Bidder has examined and carefully studied the Bidding Documents and the following Addenda, receipt of all which is hereby acknowledged:

DATE

NUMBER

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**BID FORM**  
**Part A (continued)**

3. BIDDER has visited the site and become familiar with and is satisfied as to the general, local and site conditions that may affect cost, progress, performance and furnishing of the Work.
4. BIDDER is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress, performance and furnishing of the Work.
5. BIDDER will complete the Work in accordance with the Contract Documents for the following price(s):

**BASE BID**

Each component listed below should be priced separately on the Bid Form. Total Base Bid is all listed components added together.

Radio Communication Tower (installed)	(\$ _____)
Foundation (installed)	(\$ _____)
Antennas	(\$ N/A _____)
Equipment (Power Modules, Power Rack etc)	(\$ N/A _____)
FCC Licensing	(\$ _____)
Other (Please list)	(\$ _____)
_____	
_____	
<b>TOTAL BASE BID (Not to Exceed)</b>	<b>(\$ _____)</b>

\$ \_\_\_\_\_  
(Use Words)

6. This bid is submitted on \_\_\_\_\_, 2019.

**BID FORM**  
**Part B**

**GENERAL INFORMATION**

To be submitted with Respondent's Bid Proposal

1. **Respondent Information:** Provide the following information regarding the Respondent.

Respondent Name: \_\_\_\_\_

(NOTE: Give exact legal name as it will appear on the contract, if awarded.)

Principal Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone No. \_\_\_\_\_ Fax No: \_\_\_\_\_

Website address: \_\_\_\_\_

Year established: \_\_\_\_\_

Provide the number of years in business under present name: \_\_\_\_\_

Social Security Number or Federal Employer Identification Number: \_\_\_\_\_

DUNS NUMBER: \_\_\_\_\_

Business Structure: Check the box that indicates the business structure of the Respondent.

Individual or Sole Proprietorship If checked, list Assumed Name, if any:  
\_\_\_\_\_

Partnership

Corporation

Other If checked, list business structure: \_\_\_\_\_

If checked, check one:  For-Profit  Nonprofit  
Also, check one:  Domestic  Foreign

2. **Contact Information:** List the one person who the Town may contact concerning your proposal or setting dates for meetings.

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone No. \_\_\_\_\_ Fax No: \_\_\_\_\_

Email: \_\_\_\_\_

3. Does Respondent anticipate any mergers, transfer of organization ownership, management reorganization, or departure of key personnel within the next twelve (12) months?

Yes  No

4. Is Respondent authorized and/or licensed to do business in Rhode Island?

Yes  No  If "Yes", list authorizations/licenses.

\_\_\_\_\_

5. Where is the Respondent's corporate headquarters located? \_\_\_\_\_

\_\_\_\_\_



**BID FORM**  
**Part C**

**REFERENCES**

To be submitted with Respondent's Bid Proposal

Using the format below, provide a list of client references. The contact person named should be familiar with the day-to-day management of the contract and **be willing to respond to questions** regarding the type, level, and quality of service provided.

**Reference No. 1:**

Firm/Company Name: \_\_\_\_\_

Contact

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone No. \_\_\_\_\_ Fax No: \_\_\_\_\_

Email: \_\_\_\_\_

Date and type of service(s) Provided: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Reference No. 2:**

Firm/Company Name: \_\_\_\_\_

Contact

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone No. \_\_\_\_\_ Fax No: \_\_\_\_\_

Email: \_\_\_\_\_

Date and Type of Service(s) Provided: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**BID FORM**  
**Part D**

**RESPONSE OVERVIEW, RESPONSE DETAILS, VENDOR INFORMATION**

To be submitted with Respondent's Bid Proposal

This Part (Part D) allows the bidder to use as many pages as it deems necessary to cover their bid proposal.

**Response Overview**

**Detail Response of Equipment Proposed, Including Detail Specifications**

**Manufacturer Literature of Proposed Equipment**

**Vendors Proposed Delivery and Installation Schedule**

**Supporting Data, Including Maps, Diagrams, or Other Data**

**Detail of Any and ALL Exceptions from the RFP Specifications**

**Vendor Information**

1. List of Certified Technicians proposed to work on the project and their certifications.
2. List of other Public Agency projects
3. List of sub-contractors to be hired to assist in this project
4. List of how far company technicians are from the Town of Scituate site

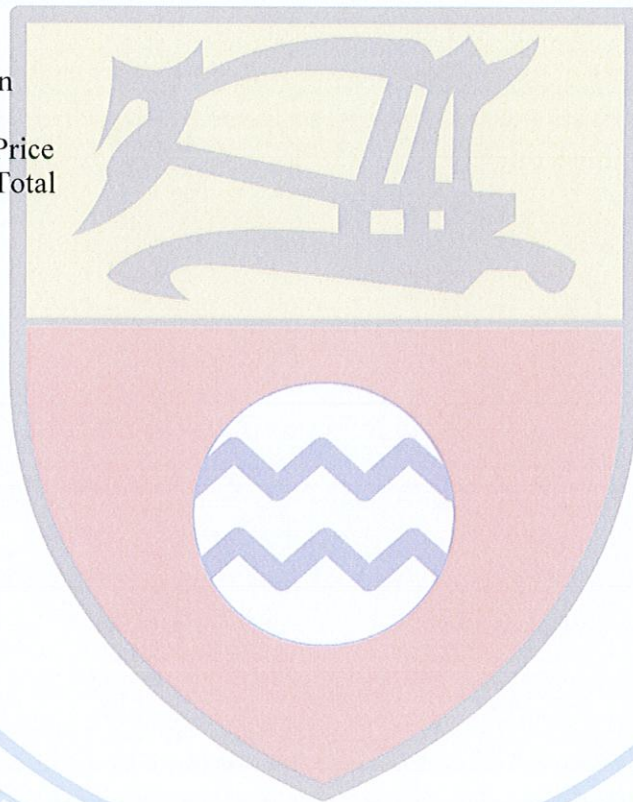
**BID FORM**  
**Part E**

**SCHEDULE OF VALUES**

To be submitted with Respondent's Bid Proposal

For each component of the base bid and each optional bid include the following information on a pricing spreadsheet.

1. Quantity
2. Unit (i.e. each, etc.)
3. Make
4. Model
5. Description
6. Unit Price
7. Extended Price
8. Page Sub Total
9. Total



**BID FORM**  
**Part F**

**PROOF OF VENDOR AUTHORIZATION FROM MANUFACTURER**

To be submitted with Respondent's Bid Proposal

Bidder shall provide proof that they have authorization from the manufacturer company as an authorized vendor for the equipment proposed.



**BID FORM**

**Part G**

**SIGNATURE PAGE**

To be submitted with Respondent's Bid Proposal

The undersigned certifies that he/she is authorized to submit this bid proposal on behalf of the entity named below:

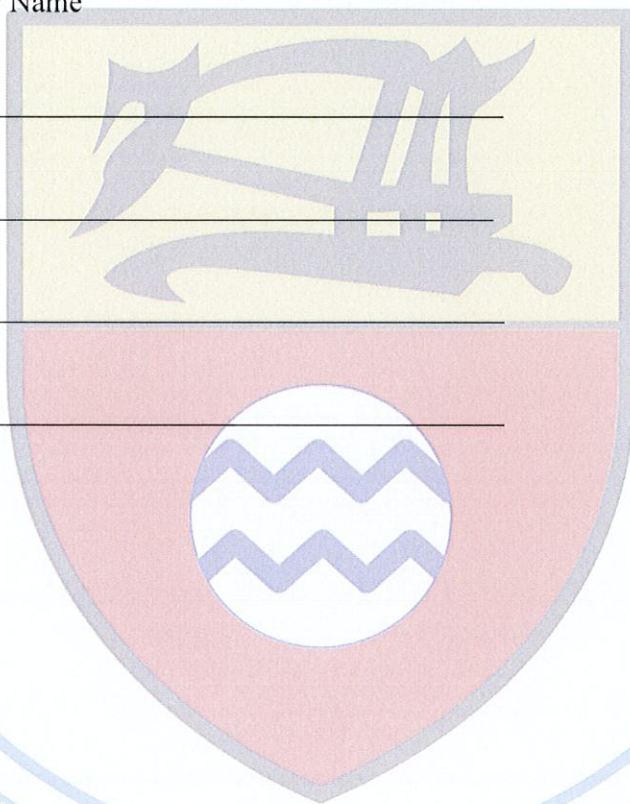
Respondent Entity Name \_\_\_\_\_

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_





# RFP Scituate EMA Radio Communication Tower - 1.1.19

SEE EXHIBIT A

Robinson

EXHIBIT A

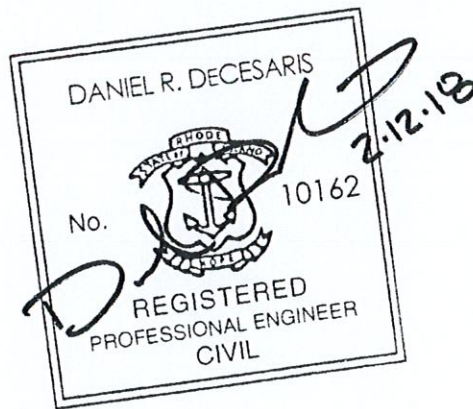
# Geotechnical Recommendations Report

## Proposed Scituate Police Station

1315 Chopmist Hill Road  
Scituate, Rhode Island  
AP 35, Lot 10

**Prepared for:**

Mr. John Mahoney  
Scituate Town Council President  
Scituate Town Hall  
195 Danielson Pike  
Scituate, RI 02857

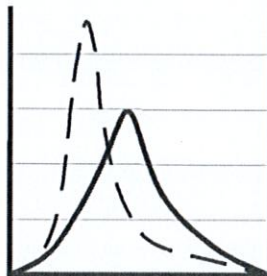


**Submission Date:**  
February 2018

**Submitted by:**

# JCE

JOE CASALI ENGINEERING, INC.  
CIVIL · SITE DEVELOPMENT · TRANSPORTATION  
DRAINAGE · WETLANDS · ISDS · TRAFFIC · FLOODPLAIN  
300 POST ROAD, WARWICK, RI 02888  
(401) 944-1300 (401) 944-1313 FAX WWW.JOECASALI.COM



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## APPENDICIES

- Appendix A: Historical Orthophotography
- Appendix B: Subsurface Exploration Logs

## **1 INTRODUCTION**

This report presents our geotechnical recommendations for the proposed construction of one-story municipal building, the Town of Scituate Police Station, located on Tax Assessor's Plat Map (AP) 35, Lot 10, in the Town of Scituate, Rhode Island. The overall scope of the project includes construction of an approximately 8,000 square-foot (footprint), one-story building with associated parking areas, stormwater management areas, on-site wastewater treatment system and landscaping improvements.

## **2 PROJECT AND SITE DESCRIPTION**

The subject property has a physical address of 1315 Chopmist Hill Road in the Town of Scituate, Rhode Island. The subject property, also identified as AP 35, Lot 10, consists of approximately 40 acres of land; see Figure 1 for general site Locus Map. The parcel is Owned by the Town of Scituate and is home to the Scituate Senior Center. Based on our review of existing data, including orthophotography obtained from the Rhode Island Geographic Information System (RIGIS), included in Appendix A, it appears that the site has been a vacant field or farm land since prior to 1939.

### **2.1 USDA Soil Classification**

According to the *Soil Survey of Rhode Island*, prepared by the US Department of Agriculture, Soil Conservation Service, the soils on the site consist of Paxton Fine Sandy Loam, 0 to 8 percent slopes very stony (PhB), Ridgebury, Leicester, and Whitman Soils, 0 to 8 percent slopes, extremely stony (Rf) and Woodbridge Fine Sandy Loam, 0 to 8 percent slopes, very stony (WoB).

## **3 SUBSURFACE EXPLORATIONS**

### **3.1 Borings**

JCE engaged Northern Drill Service, Inc. (NDS) of Northborough, Massachusetts to drill the borings for the proposed Scituate Police Station. All borings were performed on February 7, 2018 using rotary wash drilling techniques. A JCE engineer was on-site full time to coordinate and document the explorations and to collect soil samples. NDS drilled two (2) borings within the proposed building footprint (B-101 and B-102). Exploration locations are shown on Figure 2 and were located by taping from existing site features.

A JCE field engineer visually classified soil samples in the field using *ASTM D2488 Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)*.

A Rhode Island Registered Professional Engineer later checked field classifications at JCE's office. Standard Penetration Tests (SPTs) were performed at standard 5-foot intervals for all borings until the proposed termination depth or refusal was encountered, whichever was shallower. Boring logs are included in Appendix B. A summary of the exploration program performed by JCE for the site is provided in Table 1.

All soil samples collected as a result of our explorations are being stored at our office in Warwick, Rhode Island. The soil samples will be held for six (6) months after the issuance of this report. We will discard the samples after the six (6) months has elapsed unless other arrangements are made.

### **3.2 Test Pits**

JCE observed and documented the excavation of four (4) soil evaluation test pits on August 21, 2017 for use in stormwater management design, and to assess suitable areas for an OWTS system for the proposed Scituate Police Station. The test pit locations are summarized in Table 1 and are shown in plan on Figure 2. Test pit logs are included in Appendix B. The groundwater elevations observed during the test pit excavations are defined as the Seasonal High Groundwater Table (SHGWT), as determined in accordance with Rhode Island Department of Environmental Management Regulations. These SHGWT elevations are defined on the test pit logs and have been incorporated into our design recommendations.

### **3.3 Generalized Subsurface Conditions**

Subsurface conditions were generally consistent between all borings and test pits performed. The subsurface conditions are only known at the boring locations; conditions elsewhere may vary significantly. A description of the major soil layers encountered in the borings is presented below.

Topsoil – A layer of topsoil was encountered at all explorations locations. The topsoil layer averaged approximately 1-foot in thickness throughout the site.

Glacial Till – A layer of glacial till was encountered in all explorations below the topsoil. All borings were terminated in the glacial till layer. Generally, the glacial till consisted of about 55 percent fine to medium sand, 30 percent non-plastic fines and about 15 percent fine to coarse gravel. SPT N-values taken in the glacial outwash deposits layer ranged from 27 to 80 bpf, with a median value of 50 bpf, indicating a dense to very dense soil.

### **3.4 Groundwater**

Based on the presence of gleyed soils observed during the test pit excavations and during drilling of the borings, the groundwater table is estimated to be approximately 24 to 36-inches below the existing ground surface. For design purposes, we recommend using a groundwater table of 30-inches below the existing ground surface.

## **4 GEOTECHNICAL RECOMMENDATIONS**

### **4.1 Foundation Design**

Shallow spread footings bearing on undisturbed glacial till or properly placed and compacted Structural Fill are recommended to support the proposed Scituate Police Station building. Site survey is currently in progress, so a finish floor elevation has not yet been established, however we understand that the proposed bearing elevation of the footings will be at, or above, the existing groundwater table.

During construction, if saturated soils are observed at or above the proposed bearing elevation, a minimum of 6-inches of over-excavation will be required. A layer of filter fabric (Mirafi FW700 or approved equal) should be placed over the exposed subgrade and a minimum of 6-inches of Filter Stone should be placed. The Filter Stone may be placed in one uniform 6-inch-thick lift compacted with 1 to 2 passes of a vibratory drum roller or compacted with 5 to 6 passes of a vibratory plate compactor.

A net allowable bearing pressure of 5,000 pounds per square foot (psf) should be used for design of footings bearing on undisturbed glacial till. For footings less than 3-feet wide, the allowable bearing pressure should be reduced proportionately; it is recommended that continuous footings be no less than 18-inches wide. Exterior footings should extend at least 4-feet below final exterior grade for frost protection. Any interior footings should extend at least 18-inches below the bottom of the floor slab.

We estimate that total spread or strip footing settlements will be about  $\frac{3}{4}$ -inch, and differential settlements between adjacent footings will be about  $\frac{1}{4}$ -inch. Most of the settlement is expected to occur during or immediately after construction. These estimates assume that the foundation and subgrades are designed and constructed according to the recommendations in this report.

Any boulders encountered within excavations for foundations should be removed to a depth of at least 12-inches below the bottom of footings. Voids from these excavations

should be filled with compacted Structural Fill, or crushed stone if below the water table or if subgrade is wet.

#### **4.2 Floor Slab Design**

The floor slab of the proposed building may be designed as a slab-on-grade that bears on compacted Structural Fill or compacted  $\frac{3}{4}$ -inch crushed stone. All topsoil and unsuitable material should be removed and replaced with compacted Structural Fill. The floor slab should not rest directly on bedrock or boulders. Any sharp protrusions of boulders or cobbles should be excavated as needed to allow for a minimum 6-inch-thick layer compacted Structural Fill or compacted  $\frac{3}{4}$ -inch crushed stone to be placed below the slab.

We recommend that contraction joints be incorporated between the slab-on-grade and the columns and perimeter walls of the proposed building. To design slabs on soil subgrades described above, we recommend using Westergaard's modulus of subgrade reaction  $k = 100$  pounds per cubic inch (pci) where the Structural Fill or crushed stone thickness is less than or equal to 12 inches or  $k = 150$  pci where structural fill or crushed stone thickness is greater than 12 inches. These recommendations are based on design criteria provided in "Slab Thickness Design for Industrial Concrete Floors on Grade" by the Portland Cement Association.

#### **4.3 Seismic Design**

We recommend using Site Class D for seismic design of foundation elements in accordance with Section 1613 of the International Building Code (IBC 2012) (adopted as Rhode Island State Building Code, Effective July 1, 2013). Foundation elements should be designed to resist earthquake lateral forces as described in Section 1613 of IBC 2012.

According to Table 1608.1 in the Rhode Island Amendments to the IBC 2012 (SBC-1 State Building Code), the following seismic coefficients should be used for seismic design:

- $S_S = 0.173g$
- $S_1 = 0.061g$
- $S_{DS} = 0.185g$
- $S_{D1} = 0.098g$
- $PGA_M = 0.144g$

Peak ground acceleration ( $PGA_M$ ) corresponds to the PGA value corrected for site effects (as indicated in ASCE 7-10). The soils below the foundation level are not susceptible to liquefaction.

#### **4.4 Foundation Drain and Underdrain System**

Groundwater levels are generally within 24- to 36-inches of the existing ground surface. Therefore, a perimeter foundation drain is recommended. Groundwater collected by the foundation drain system will likely be able to discharge via gravity to the site's stormwater management system or towards the wetlands at the rear of the site. The perimeter foundation drain should consist of a perforated 6-inch diameter PVC pipe (placed holes down) in a 9 to 12-inch-thick layer of filter stone wrapped in a non-woven geotextile filter fabric. The foundation drainage system should have clean-outs installed at the end of each branch or at changes in direction.

If a permanent underdrain system is not designed and constructed, foundations and slabs should be waterproofed and designed to resist hydrostatic pressures as necessary.

### **5 CONSTRUCTION RECOMMENDATIONS**

#### **5.1 Earthwork**

Any fill placed within the proposed building footprint and within a 5-foot radius of the proposed building footprint should meet the gradation and compaction requirements for Structural Fill shown in Table 2. We recommend that any fill placed within 5 feet of foundation walls be compacted with a hand-operated compactor. Backfill placed outside of the area described above should meet the gradation and compaction requirements for Common Borrow shown in Table 3.

The ground immediately adjacent to the proposed building footprint and foundation should be sloped away from the building at a slope not less than 5 percent for a minimum distance of 10 feet. Impervious surfaces adjacent to the proposed building footprint and foundation may be sloped a minimum of 2 percent for a minimum distance of 10 feet. All excavations should be made in accordance with OSHA regulations.

#### **5.2 Dewatering**

Groundwater may be encountered during excavation for footings, specifically if construction commences during the wet season. Filtered sumps that discharge into onsite recharge pits should be adequate to control groundwater. Footing excavations should be sloped slightly towards the sump. Sumps should be located outside of the limits of the footings and should extend at least 2 feet below the bottom of the subgrade. Construction specifications should require the contractor to maintain a groundwater level of at least 2 feet below the bottom of the excavation.



### **5.3 Freezing Conditions**

Soils at the site are susceptible to frost. All subgrades should be free of frost before placement of concrete. If construction is performed during freezing weather, special precautions to protect the subgrade from freezing may be required. Any frozen soil should be removed and replaced with compacted Structural Fill.

### **5.4 Reuse of On-Site Soils**

Based on the results of the subsurface exploration program, the majority of excavated soils will consist of silty sand with fines content ranging from 25 to 45 percent. As a result, on-site soils are not recommended for re-use as Structural Fill, Gravel Borrow, and/or Common Borrow.

## **6 LIMITATIONS**

This report was prepared for the use of the Town of Scituate, exclusively. The recommendations presented in this report are based on project information provided to us at the time of this report. These recommendations may require modification if there are any changes in the design or location of proposed structures. We will not accept responsibility for design based on our recommendations unless we are engaged to review final plans and specifications to determine whether our recommendations have been properly implemented in the design.

The recommendations in this report are based on the data obtained from the subsurface explorations. If variations in the subsurface conditions exist, they will likely not become evident until construction. Variations in subsurface conditions may require revisions to our recommendations.

The data and recommendations presented in this report were collected and analyzed using generally accepted industry methods and practices. No other warranty, express or implied is made.

## *Tables*

**Table 1. Subsurface Exploration Data**

Proposed Scituate Police Station

1315 Chopmist Hill Rd., Scituate, Rhode Island

Exploration ID	Latitude <sup>(1)</sup> , (degrees)	Longitude <sup>(1)</sup> , (degrees)	Termination Depth (feet)
B-101	41°49'7.78"N	71°39'57.05"W	21.1
B-102	41°49'8.14"N	71°39'57.87"W	16.0
TH-1	41°49'6.45"N	71°39'56.04"W	8.0
TH-2	41°49'7.77"N	71°39'57.75"W	9.0
TH-3	41°49'7.20"N	71°39'59.03"W	8.0
TH-4	41°49'7.88"N	71°39'58.53"W	9.0

**Notes:**

1. Horizontal datum is NAD83, Geographic Coordinate System.

**Table 2. Requirements for Structural Fill**

Proposed Scituate Police Station

1315 Chopmist Hill Rd., Scituate, Rhode Island

Sieve Size	Percent Passing by Weight
3 inches	100
1/2 inch	50 - 100
No. 4	30 - 85
No. 16	15 - 65
No. 50	5 - 40
No. 200	0 - 8

**Notes:**

1. Structural fill shall consist of well-graded, natural sand and gravel free of excessive clay, silt, organic matter, and other deleterious materials.
2. Material passing the No. 200 sieve should be non-plastic.
3. Structural fill shall be compacted in loose lifts no more than 9-inches-thick. Compaction shall be to 95 percent of the maximum dry density in accordance with ASTM D1557.

**Table 3. Requirements for Common Borrow**

Proposed Scituate Police Station

1315 Chopmist Hill Rd., Scituate, Rhode Island

Sieve Size	Percent Passing by Weight
6 inches	100
3 inches	80 - 100
1 inch	60 - 100
No. 4	20 - 85
No. 200	0 - 17

**Notes:**

1. Common borrow shall be in accordance with Section M.01 of the Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction, 2004 Edition with latest addenda and shall consist of well-graded, natural sand and gravel free of excessive clay, silt, organic matter, and other deleterious materials.
2. Material passing the No. 200 sieve should be non-plastic.
3. Common Borrow shall be compacted in loose lifts no more than 12-inches-thick. Compaction shall be to 92 percent of the maximum dry density in accordance with ASTM D1557.

**Table 4. Filter Stone**

Proposed Scituate Police Station

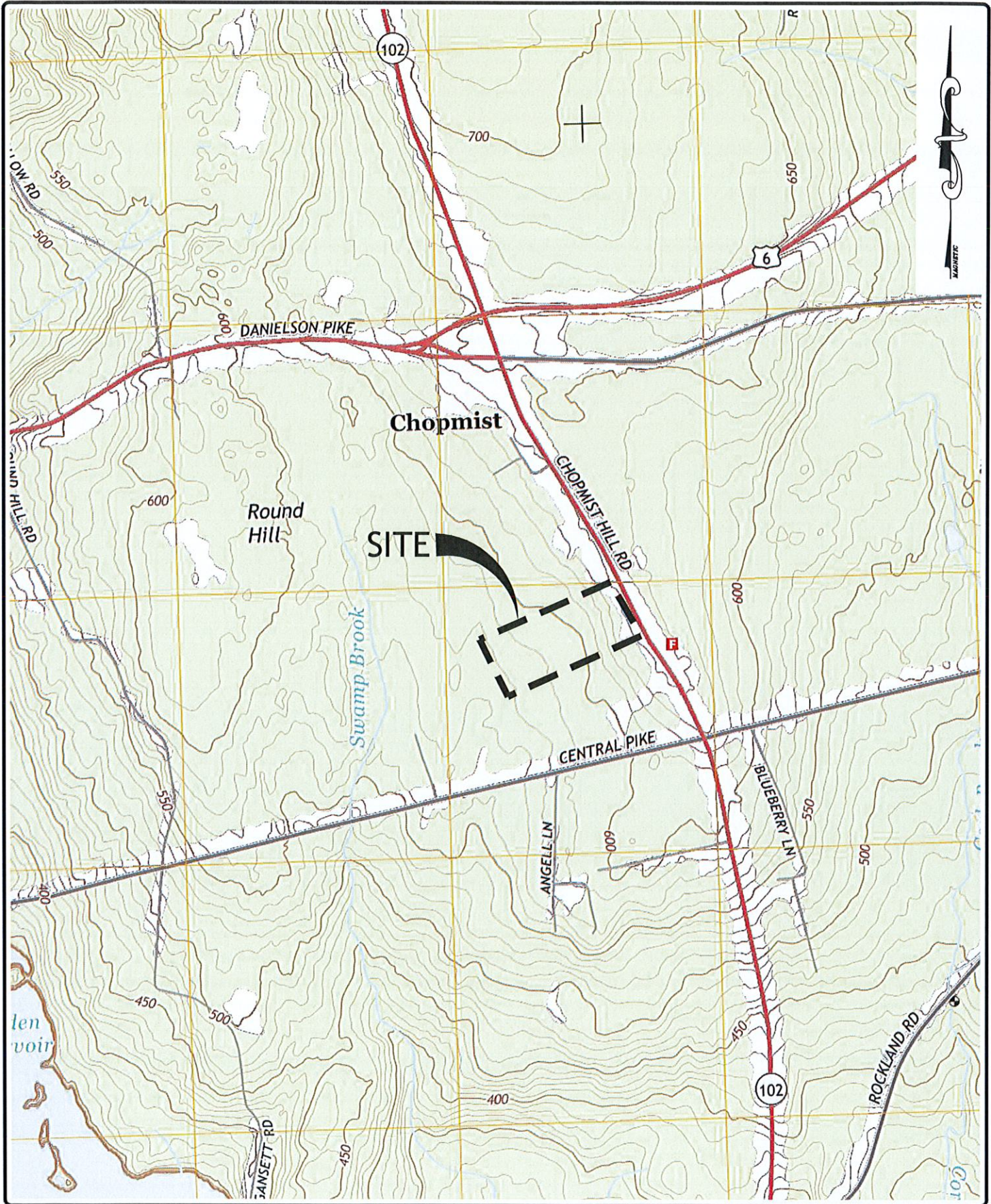
1315 Chopmist Hill Rd., Scituate, Rhode Island

Sieve Size	Percent Passing by Weight
1 inch	100
3/4 inch	70 - 85
1/2 inch	10 - 40
3/8 inch	0 - 20
No. 4	0 - 5

**Notes:**

1. Filter stone shall consist of durable, washed crushed rock or gravel and shall conform to the requirements of the State of Rhode Island Department of Transportation Standard Specifications , Section M.01.09, for Type V Filter Stone.

## *Figures*



Q:\07-109 Town of Scituate\07-109c Engineer Town Planner\07-109c Town of Scituate Engineer Files\Police Station\Concept Plans\Drawing1.dwg Feb. 09, 2018 4:32pm

REVISIONS:	
NO	DATE DESCRIPTION

DESIGNED BY:	NBH
DRAWN BY:	NBH
CHECKED BY:	DRD
DATE:	FEB 2018
PROJECT NO:	07-109c

**LOCUS  
MAP**

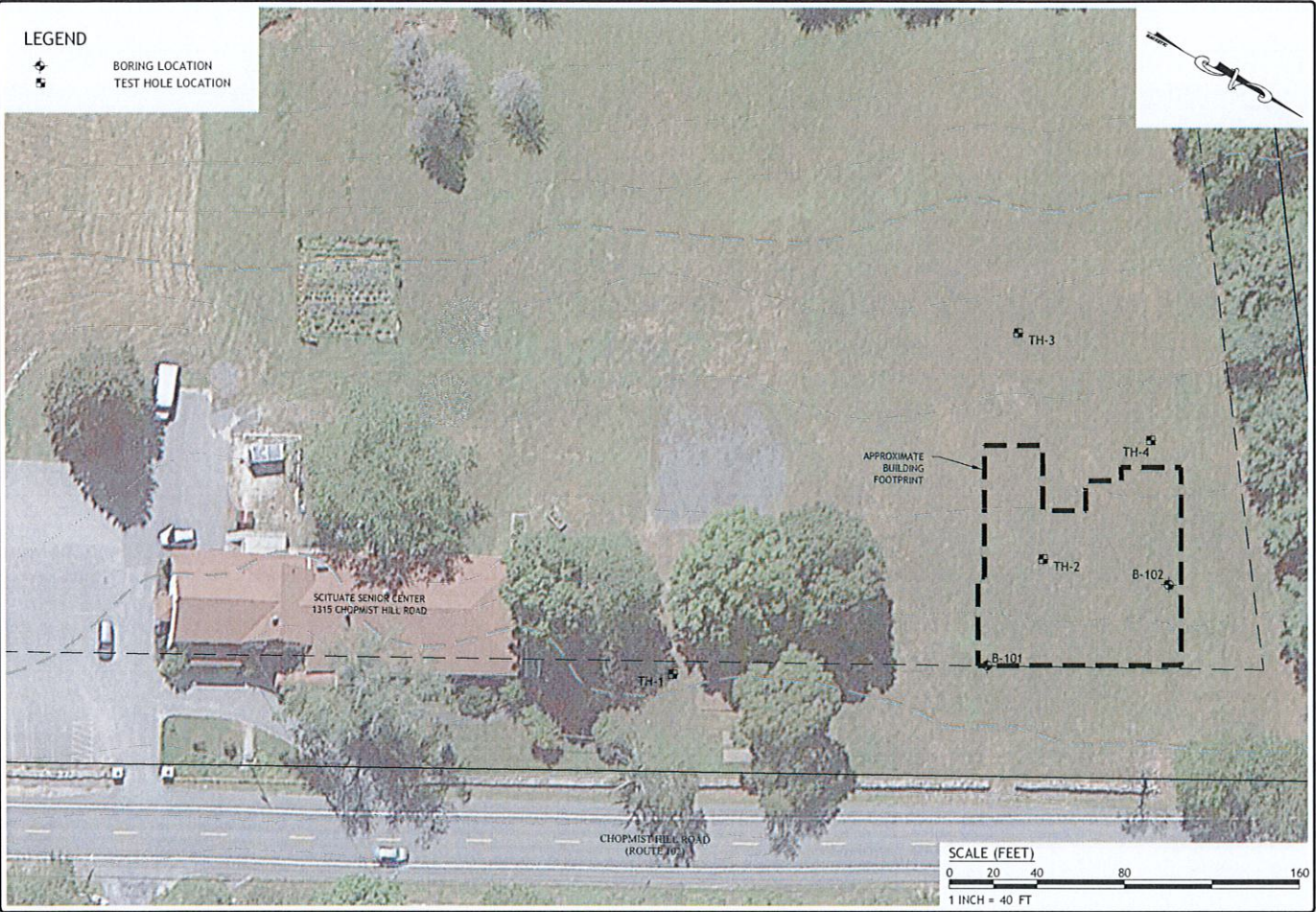
**FIGURE 1**

**PROPOSED SCITUATE POLICE STATION**  
 1315 CHOPMIST HILL ROAD  
 SCITUATE, RHODE ISLAND  
 MAP 35, LOT 10


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© 2017, 1997, Town of Scituate/2017, 1997, Computer: Tom Robinson, 8122 Town of Scituate Engineer: JCE/John S. Carlini/Consultant: James S. Carlini/Office: 4000 Route 1A, Scituate, MA 01968, USA



**LEGEND**

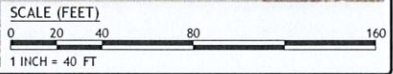
-  BORING LOCATION
-  TEST HOLE LOCATION



**PROPOSED SCITUATE POLICE STATION**  
 1315 CHOPMIST HILL ROAD  
 SCITUATE, RHODE ISLAND  
 MAP 35, LOT 10

NO.	DESCRIPTION

PRELIMINARY, NOT FOR CONSTRUCTION  
**SUBSURFACE EXPLORATION PLAN**  
**FIGURE 2**



## **Appendix A**

### Historical Orthophotography



APPROXIMATE  
SITE LOCATION

**NOTE:**  
AERIAL IMAGERY OBTAINED  
FROM RHODE ISLAND  
GEOGRAPHIC INFORMATION  
SYSTEM (RIGIS).

**1939 AERIAL PHOTOGRAPH**  
NOT TO SCALE

Q:\07-109 Town of Scituate\07-109c Engineer - Town Planner\RF\CV\Town of Scituate\Engineer Files\Police Station\Geotechnical\Historical Ortho Photos\1939\1939.dwg Feb. 06, 2018 8:44am

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**1939  
AERIAL  
PHOTOGRAPH**

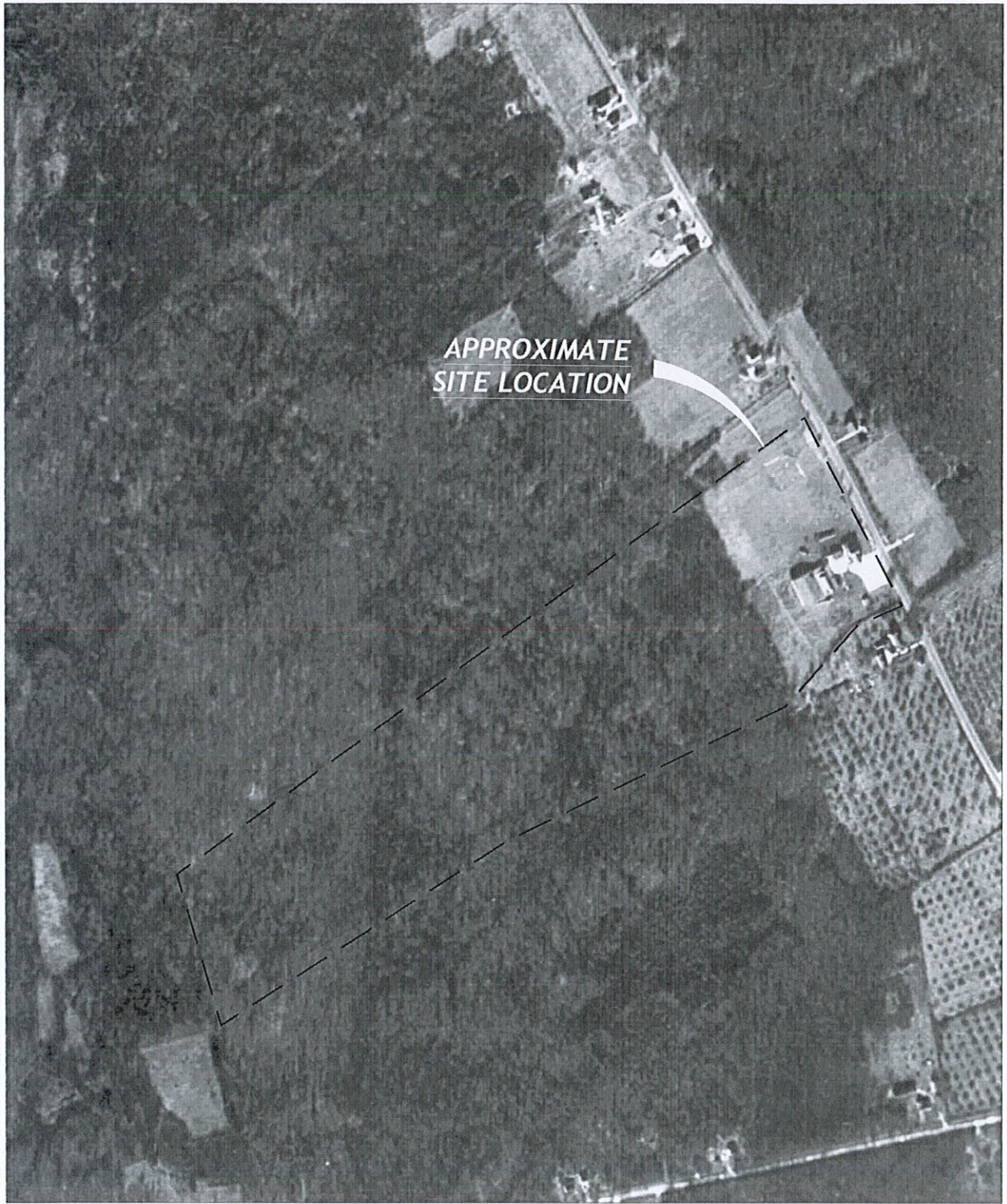
---

**SHEET  
1 OF 15**

**PROPOSED POLICE STATION**  
1315 CHOPMIST HILL ROAD  
SCITUATE, RHODE ISLAND  
AP 35 LOT 10

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**APPROXIMATE  
SITE LOCATION**

**NOTE:**  
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**1952 AERIAL PHOTOGRAPH  
NOT TO SCALE**

Q:\07-109 Town of Scituate\Engineer Files\Police Station\Geotechnical\Historical Ortho Photos\1952\_1953.dwg, Feb. 07, 2018 5:06pm

REVISIONS		
NO	DATE	DESCRIPTION

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PROJECT NO:	07-109c

**1952  
AERIAL  
PHOTOGRAPH**

**SHEET  
2 OF 15**

**PROPOSED POLICE STATION**  
1315 CHOPMIST HILL ROAD  
SCITUATE, RHODE ISLAND  
AP 35 LOT 10

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APPROXIMATE  
SITE LOCATION

**NOTE:**  
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**1962 AERIAL PHOTOGRAPH**  
NOT TO SCALE

Q:\07-109 Town of Scituate\07-109c Engineer\Town Planner\07031 Town of Scituate Engineer\Files\Police Station\Grid\Technical\Information\070311962\_01g.dwg Feb. 06, 2018 8:35am

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**1962  
AERIAL  
PHOTOGRAPH**

**SHEET  
3 OF 15**

**PROPOSED POLICE STATION**  
1315 CHOPMIST HILL ROAD  
SCITUATE, RHODE ISLAND  
AP 35 LOT 10

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**APPROXIMATE  
SITE LOCATION**

**NOTE:**  
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**1972 AERIAL PHOTOGRAPH  
NOT TO SCALE**

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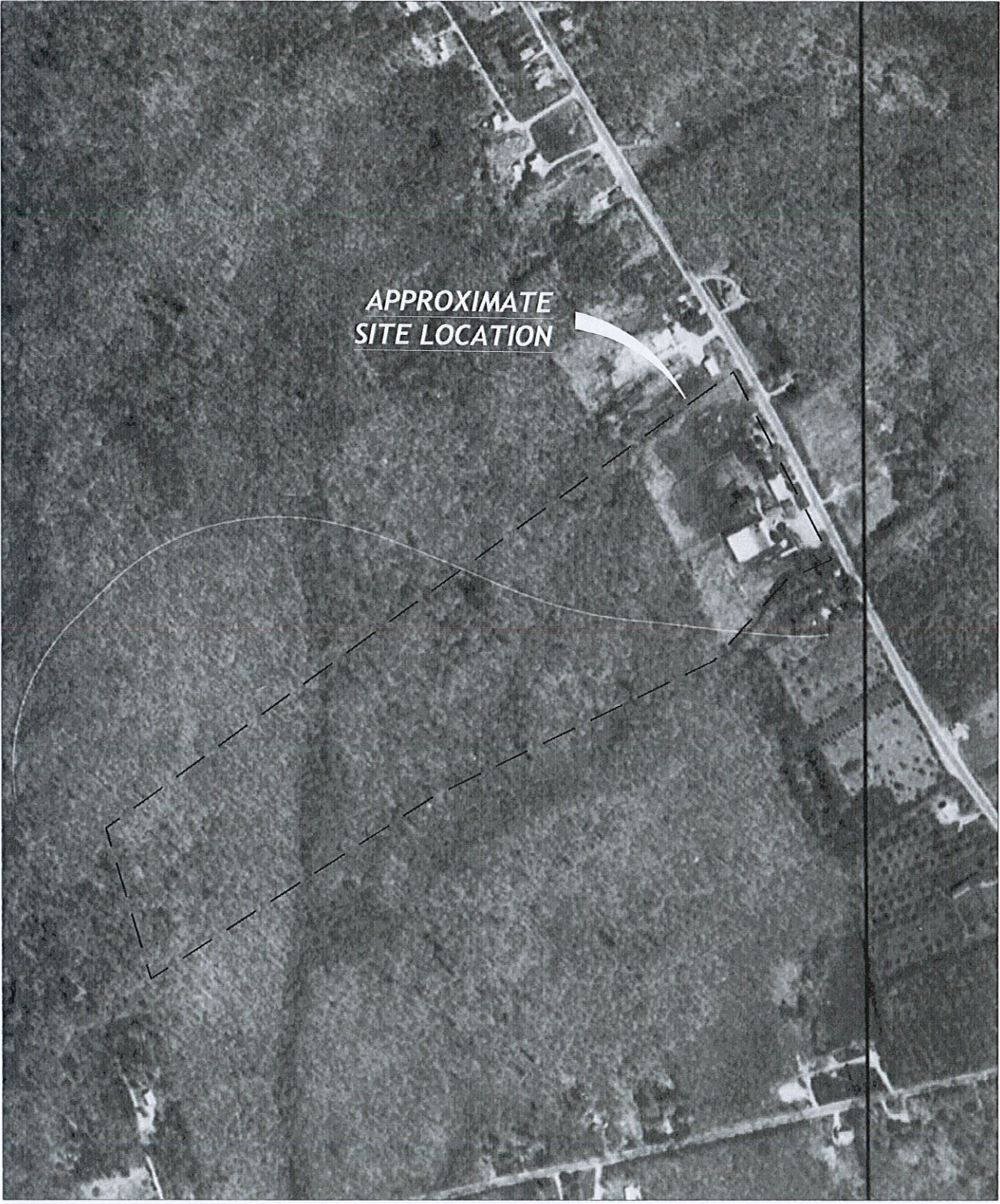
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DATE:	FEB 2018
PROJECT NO.	07-109c

**1972  
AERIAL  
PHOTOGRAPH**

**SHEET  
4 OF 15**

**PROPOSED POLICE STATION**  
1315 CHOPMIST HILL ROAD  
SCITUATE, RHODE ISLAND  
AP 35 LOT 10

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**APPROXIMATE  
SITE LOCATION**

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**1976 AERIAL PHOTOGRAPH  
NOT TO SCALE**

Q:\07-109 Town of Scituate\07-109c Engineer\Town Planner\RI\031 Town of Scituate\Engineer\Files\Police Station\Gis\Technical\Historical\Ortho\Photos\1976\1976.dwg, Feb. 02, 2018 4:46pm

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**1976  
AERIAL  
PHOTOGRAPH**

**SHEET  
5 OF 15**

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AP 35 LOT 10

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**APPROXIMATE  
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**1981 AERIAL PHOTOGRAPH  
NOT TO SCALE**

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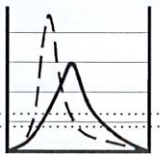
**SHEET  
6 OF 15**

**PROPOSED POLICE STATION**  
1315 CHOPMIST HILL ROAD  
SCITUATE, RHODE ISLAND  
AP 35 LOT 10

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**APPROXIMATE  
SITE LOCATION**

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**1988 AERIAL PHOTOGRAPH  
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**1988  
AERIAL  
PHOTOGRAPH**

**SHEET  
7 OF 15**

**PROPOSED POLICE STATION**  
1315 CHOPMIST HILL ROAD  
SCITUATE, RHODE ISLAND  
AP 35 LOT 10

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1992 AERIAL PHOTOGRAPH  
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**1992  
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**SHEET  
8 OF 15**

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SCITUATE, RHODE ISLAND  
AP 35 LOT 10

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**1997 AERIAL PHOTOGRAPH**  
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**1997  
AERIAL  
PHOTOGRAPH**

**SHEET  
9 OF 15**

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AP 35 LOT 10

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**2003 AERIAL PHOTOGRAPH  
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**2003  
AERIAL  
PHOTOGRAPH**

**SHEET  
10 OF 15**

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AP 35 LOT 10

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PROJECT NO.:	07-109c

**2004  
AERIAL  
PHOTOGRAPH**

**SHEET  
11 OF 15**

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1315 CHOPMIST HILL ROAD  
SCITUATE, RHODE ISLAND  
AP 35 LOT 10

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APPROXIMATE  
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NOTE:  
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2008 AERIAL PHOTOGRAPH  
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PROJECT NO.:	07-109c

**2008  
AERIAL  
PHOTOGRAPH**

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**SHEET  
12 OF 15**

**PROPOSED POLICE STATION**  
1315 CHOPMIST HILL ROAD  
SCITUATE, RHODE ISLAND  
AP 35 LOT 10

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APPROXIMATE  
SITE LOCATION

**NOTE:**  
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**2011 AERIAL PHOTOGRAPH**  
NOT TO SCALE

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**2011  
AERIAL  
PHOTOGRAPH**

**SHEET  
13 OF 15**

**PROPOSED POLICE STATION**  
1315 CHOPMIST HILL ROAD  
SCITUATE, RHODE ISLAND  
AP 35 LOT 10

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APPROXIMATE  
SITE LOCATION

NOTE:  
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**2014 AERIAL PHOTOGRAPH**  
NOT TO SCALE

Q:\07-109 Town of Scituate\07-109c Engineer-Town Planner RFQ\Town of Scituate Engineer Files\Police Station\Geotechnical\Historical Ortho Photos\2014\2014.dwg Feb. 02, 2018 5:02pm

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DATE:	FEB. 2018
PROJECT NO:	07-109c

**2014  
AERIAL  
PHOTOGRAPH**

**SHEET  
14 OF 15**

**PROPOSED POLICE STATION**  
1315 CHOPMIST HILL ROAD  
SCITUATE, RHODE ISLAND  
AP 35 LOT 10

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**APPROXIMATE  
SITE LOCATION**

**NOTE:**  
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SYSTEM (IGIS).

**2016 AERIAL PHOTOGRAPH  
NOT TO SCALE**

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**2016  
AERIAL  
PHOTOGRAPH**

**SHEET  
15 OF 15**

**PROPOSED POLICE STATION**  
1315 CHOPMIST HILL ROAD  
SCITUATE, RHODE ISLAND  
AP 35 LOT 10

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## **Appendix B**


### Subsurface Exploration Logs

<b>BORING INFORMATION</b>		<b>BORING</b>  <b>B-101</b> PAGE 1 of 1
LOCATION: See Figure 2		
GROUND SURFACE EL. (ft): NA	DATE START/END: February 7, 2018	
VERTICAL DATUM: NA	DRILLING COMPANY: Northern Drill Service, Inc.	
TOTAL DEPTH (ft): 21.0'	DRILLER NAME:	
LOGGED BY: Nicholas Hilbern	RIG TYPE: Mobile Drill B-57	

<b>DRILLING INFORMATION</b>		
HAMMER TYPE: Automatic	CASING I.D./O.D.: 4.5" OD Flush Mounted	CORE BARREL TYPE: NA
AUGER I.D./O.D.: NA	DRILL ROD O.D.: 3.25" OD	CORE BARREL I.D./O.D.: NA
DRILLING METHOD: Rotary Wash with Casing; Standard Sampling		
WATER LEVEL ELEVATIONS (ft): NM		

**ABBREVIATIONS:** Pen = Penetration Length      S = Split Spoon Sample      Qp = Pocket Penetrometer Strength      NA, NM = Not Applicable, Not Measured  
 Rec. = Recovery Length      C = Core Sample      Sv = Pocket Torvane Shear Strength      Blows per 6 in.: 140 lb. hammer falling  
 RQD = Rock Quality Designation      U = Undisturbed Sample      LL = Liquid Limit      30 inches to drive a 2-inch-O.D.  
 = Length of Sound Cores > 4 in / Pen, %      SC = Sonic Core      PI = Plasticity Index      split spoon sampler.  
 WOR = Weight of Rods      DP = Direct Push Sample      PID = Photoionization Detector  
 WOH = Weight of Hammer      HSA = Hollow-Stem Auger      I.D./O.D. = Inside Diameter/Outside Diameter

Elev. (ft)	Depth (ft)	Sample Information			Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Graphic Log	Soil and Rock Description
		Sample No.	Depth (ft)	Pen./ Rec. (in)				
0		S1	0.0 to 2.0	24"/17"	1-1-1-2		S1 (0-8"): SILTY SAND (SM); Dark brown, moist, 80% fine to medium sand, 15% non-plastic fines, 5% fine gravel, TOPSOIL. S1 (8-17"): SILTY SAND (SM); Light brown, moist, 65% fine to medium sand, 30% non-plastic fines, 5% fine gravel.	
4		S2	4.0 to 6.0	24"/16"	18-15-12-8		S2: SILTY SAND (SM); Gray, moist, 60% fine to coarse sand, 30% non-plastic fines, 10% fine to coarse gravel.	
8		S3	9.0 to 11.0	24"/15"	19-24-36-39		S3 (0-5"): WELL GRADED SAND WITH SILT (SW-SM); Dark gray, 90% fine to coarse sand, 10% non-plastic fines. S3 (5-15"): SILTY SAND WITH GRAVEL (SM); Gray, moist, 50% fine to coarse sand, 35% non-plastic fines, 15% fine to coarse gravel.	
12						Rollerbit through boulder (11 13').		
16		S4	14.0 to 16.0	24"/18"	30-30-32-36		S4: SILTY SAND WITH GRAVEL (SM); Gray, moist, 55% fine to coarse sand, 30% non-plastic fines, 15% fine to coarse gravel.	
20		S5	19.0 to 21.0	24"/20"	33-40-40-33		S5: SILTY SAND WITH GRAVEL (SM); Gray, moist, 55% fine to coarse sand, 30% non-plastic fines, 15% fine to coarse gravel.	
24							Bottom of boring at 21.0'. Backfilled with cuttings upon completion.	

PROJECT NAME: Proposed Scituate Police Station	NOTES:	<b>JCE</b> JOE CASALI ENGINEERING, INC. 
CITY/STATE: Scituate, RI		
PROJECT NUMBER: 07-109c		

**BORING INFORMATION**

LOCATION: See Figure 2

GROUND SURFACE EL. (ft): NA

DATE START/END: February 7, 2018

VERTICAL DATUM: NA

DRILLING COMPANY: Northern Drill Service, Inc.

TOTAL DEPTH (ft): 16.0'

DRILLER NAME:

LOGGED BY: Nicholas Hilbern

RIG TYPE: Mobile Drill B-57

**BORING**

**B-102**

PAGE 1 of 1

**DRILLING INFORMATION**

HAMMER TYPE: Automatic Hammer

CASING I.D./O.D.: 4.5" OD Flush Mounted

CORE BARREL TYPE: NA

AUGER I.D./O.D.: NA

DRILL ROD O.D.: 3.25" OD

CORE BARREL I.D./O.D.: NA

DRILLING METHOD: Rotary Wash with Casing; Standard Sampling

WATER LEVEL ELEVATIONS (ft): NM

**ABBREVIATIONS:**

Pen. = Penetration Length

Rec. = Recovery Length

RQD = Rock Quality Designation

= Length of Sound Cores > 4 in / Pen, %

WOR = Weight of Rods

WOH = Weight of Hammer

S = Split Spoon Sample

C = Core Sample

U = Undisturbed Sample

SC = Sonic Core

DP = Direct Push Sample

HSA = Hollow-Stem Auger

Qp = Pocket Penetrometer Strength

Sv = Pocket Torvane Shear Strength

LL = Liquid Limit

PI = Plasticity Index

PID = Photoionization Detector

I.D./O.D. = Inside Diameter/Outside Diameter

NA, NM = Not Applicable, Not Measured

Blows per 6 in.: 140 lb. hammer falling

30 inches to drive a 2-inch-O.D.

split spoon sampler.

Elev. (ft)	Depth (ft)	Sample Information			Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Graphic Log	Soil and Rock Description
		Sample No.	Depth (ft)	Pen./Rec. (in)				
0		S1	0.0 to 2.0	24"/18"	1-1-1-1		S1 (0-8"): SILTY SAND (SM); Dark brown, moist, 80% fine to medium sand, 15% non-plastic fines, 5% fine gravel, TOPSOIL. S1 (8-18"): SILTY SAND (SM); Light brown, moist, 75% fine to medium sand, 20% non-plastic fines, 5% fine gravel.	
4		S2	4.0 to 6.0	24"/17"	14-20-19-12		S2: SILTY SAND (SM); Gray, moist, 60% fine to coarse sand, 30% non-plastic fines, 10% fine to coarse gravel.	
8		S3	9.0 to 11.0	24"/16"	18-22-19-17		S3: SILTY SAND (SM); Gray, moist, 55% fine to coarse sand, 35% non-plastic fines, 10% fine to coarse gravel.	
12		S4	14.0 to 16.0	24"/18"	24-22-28-26		S4: SILTY SAND WITH GRAVEL (SW); Gray, moist, 50% fine to coarse sand, 35% non-plastic fines, 15% fine to coarse gravel.	
16							Bottom of boring at 16.0'. Backfilled with cuttings upon completion.	
20								
24								

PROJECT NAME: Proposed Scituate Police Station

NOTES:

CITY/STATE: Scituate, RI

PROJECT NUMBER: 07-109c



Test Pit Location: See Figure 2  
 Ground Surface El. / Datum: NA  
 Excavator Type: JD 410E Backhoe  
 Operator: Town of Scituate Department of Public Works

Date Start / Finish: August 21, 2017  
 Conditions: Clear, 80 deg. F  
 Excavator Reach: Approx. 12-feet  
 JCE Rep.: Daniel R. Decesaris (RI P.E. No. 10162)

**TH-1**

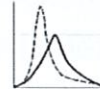
Page 1 of 1

Depth (ft)	Sample Type/No.	Layer	Remarks	Soil and Rock Description	Estimated Hydraulic Conductivity
1		TS		(0 - 10"): SILTY SAND (SM); ~70% fine to medium sand, ~25% nonplastic fines, ~5% fine gravel, dark brown, moist, TOPSOIL. ( <i>sandy loam</i> ).	HSG C (1.02 in/hr)
2		ABALATION/LODGEEMENT TILL	Excavation difficulty 'easy' above 48-inches.	(10 - 26"): SILTY SAND (SM); ~70% fine to medium sand, ~25% nonplastic fines, ~5% fine gravel, brown, moist. ( <i>sandy loam</i> ).	
3				(26 - 48"): SILTY SAND (SM); ~60% fine to medium sand, ~35% nonplastic fines, ~5% fine to coarse gravel, gleyed bluish gray, moist. ( <i>sandy loam</i> ).	
4			Cobble content increases below 48-inches.	(48 - 96"): SILTY SAND WITH GRAVEL (SM); ~50% fine to medium sand, ~35% nonplastic fines, ~15% fine to coarse gravel, bluish gray, moist. ( <i>gravelly sandy loam</i> ).	
5			Excavation difficulty 'medium' below 48-inches.		
6					
8				Bottom of test hole at 96". Backfilled with previously excavated material upon completion.	
9					
10					
11					
12					

**Notes:** Test hole left open for approximatly 1-hour; no groundwater infiltration observed after 15-minutes or after 1-hour.

SHWT: 26-inches  
 Impervious/Limiting Layer Depth: >96-inches

Project Name: Scituate Police Station  
 Project Number: 07-109c  
**JOE CASALI ENGINEERING, INC.**



Test Pit Location: See Figure 2  
 Ground Surface El. / Datum: NA  
 Excavator Type: JD 410E Backhoe  
 Operator: Town of Scituate Department of Public Works

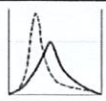
Date Start / Finish: August 21, 2017  
 Conditions: Clear, 80 deg. F  
 Excavator Reach: Approx. 12-feet  
 JCE Rep.: Daniel R. Decesaris (RI P.E. No. 10162)

**TH-2**  
 Page 1 of 1

Depth (ft)	Sample Type/No.	Layer	Remarks	Soil and Rock Description	Estimated Hydraulic Conductivity
1		TS		(0 - 9"): SILTY SAND (SM); ~70% fine to medium sand, ~25% nonplastic fines, ~5% fine to coarse gravel, dark brown, moist, TOPSOIL. ( <i>loamy sand</i> ).	HSG C (1.02 in/hr)
2		ABALATION/LODGEEMENT TILL	Excavation difficulty 'easy' above 60-inches.	(9 - 30"): SILTY SAND (SM); ~70% fine to medium sand, ~25% nonplastic fines, ~5% fine to coarse gravel, brown, moist. ( <i>loamy sand</i> ).	
3			Excavation difficulty 'hard' below 60-inches.	(30 - 60"): SILTY SAND (SM); ~55% fine to medium sand, ~35% nonplastic fines, ~10% fine gravel, gleyed bluish gray. ( <i>sandy loam</i> ).	
4				(60 - 108"): SILTY SAND WITH GRAVEL (SM); ~45% fine to medium sand, ~35% nonplastic fines, ~20% fine to coarse gravel, bluish gray. ( <i>gravelly sandy loam</i> ).	
5					
6					
7					
8					
9				Bottom of test hole at 108". Backfilled with previously excavated material upon completion.	
10					
11					
12					

Notes:

SHWT: 30-inches  
 Impervious/Limiting Layer Depth: >108-inches  
 Project Name: Scituate Police Station  
 Project Number: 07-109c  
 JOE CASALI ENGINEERING, INC.



Test Pit Location: See Figure 2  
 Ground Surface El. / Datum: NA  
 Excavator Type: JD 410E Backhoe  
 Operator: Town of Scituate Department of Public Works

Date Start / Finish: August 21, 2017  
 Conditions: Clear, 80 deg. F  
 Excavator Reach: Approx. 12-feet  
 JCE Rep.: Daniel R. Decesaris (RI P.E. No. 10162)

**TH-3**

Page 1 of 1

Depth (ft)	Sample Type/No.	Layer	Remarks	Soil and Rock Description	Estimated Hydraulic Conductivity
1		TS		(0 - 10"): SILTY SAND (SM); ~70% fine to medium sand, ~25% nonplastic fines, ~5% fine gravel, dark brown, moist, TOPSOIL. ( <i>loamy sand</i> ).	HSG C (1.02 in/hr)
2		ABALATION/LODGEEMENT TILL	Excavation difficulty 'easy' above 50-inches.	(10 - 28"): SILTY SAND (SM); ~65% fine to medium sand, ~25% nonplastic fines, ~10% fine to coarse gravel, brown, moist. ( <i>loamy sand</i> ).	
3				(28 - 50"): SILTY SAND WITH GRAVEL (SM); ~50% fine to medium sand, ~35% nonplastic fines, ~15% fine to coarse gravel, gleyed bluish gray, moist. ( <i>gravelly sandy loam</i> ).	
4			Excavation difficulty 'hard' below 50-inches.	(50 - 96"): SILTY SAND WITH GRAVEL (SM); ~45% fine to medium sand, ~35% nonplastic fines, ~20% fine to coarse gravel, bluish gray, moist. ( <i>gravelly sandy loam</i> ).	
5			Numerous cobbles/boulders below 50-inches; max size = 24".		
6					
7					
8				Bottom of test hole at 96", refusal on possible bedrock. Backfilled with previously excavated material upon completion.	
9					
10					
11					
12					

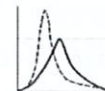
Notes:

SHWT: 28-inches  
 Impervious/Limiting Layer Depth: 96-inches

Project Name: Scituate Police Station

Project Number: 07-109c

JOE CASALI ENGINEERING, INC.



Test Pit Location: See Figure 2  
 Ground Surface El. / Datum: NA  
 Excavator Type: JD 410E Backhoe  
 Operator: Town of Scituate Department of Public Works

Date Start / Finish: August 21, 2017  
 Conditions: Clear, 80 deg. F  
 Excavator Reach: Approx. 12-feet  
 JCE Rep.: Daniel R. Decesaris (RI P.E. No. 10162)

**TH-4**

Depth (ft)	Sample Type/No.	Layer	Remarks	Soil and Rock Description	Estimated Hydraulic Conductivity
0		TS		(0 - 10"): SILTY SAND (SM); ~75% fine to medium sand, ~20% nonplastic fines, ~5% fine gravel, dark brown, moist, TOPSOIL. ( <i>loamy sand</i> ).	HSG C (1.02 in/hr)
1			(10 - 25"): SILTY SAND (SM); ~70% fine to medium sand, ~20% nonplastic fines, ~10% fine gravel, brown, moist. ( <i>loamy sand</i> ).		
2			(25-70"): SILTY SAND (SM); ~55% fine to medium sand, ~35% nonplastic fines, ~10% fine to coarse gravel, gleyed bluish gray, moist. ( <i>sandy loam</i> ).		
3		ABALATION/LODGE MENT TILL	Excavation difficulty 'easy' above 70-inches.		
4					
5					
6			Excavation difficulty 'hard' below 70-inches. Significant cobble content below 70-inches.	(70 - 108"): SILTY SAND WITH GRAVEL (SM); ~50% fine to medium sand, ~35% nonplastic fines, ~15% fine to coarse gravel, bluish gray, moist. ( <i>gravelly sandy loam</i> ).	
7			Several boulders at approximatly 86-inches; max size = 30".		
8					
9					
10				Bottom of test hole at 108". Backfilled with previously excavated material upon completion.	
11					
12					

Notes:

SHWT: 25-inches  
 Impervious/Limiting Layer Depth: >108-inches

Project Name: Scituate Police  
 Project Number: 07-109c

JOE CASALI ENGINEERING, INC.

