

# MUNICIPAL CODE CONSULTING, LLC

BUILDING | FIRE | HEALTH | ACCESS

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March 18, 2019

Town of Scituate  
Police Station Building Committee  
c/o Paul Leveillee  
195 Danielson Pike  
P.O. Box 328  
North Scituate, RI

*Sent electronically*

## **RE: Site evaluation and plan review of the ongoing new police station in Scituate, RI**

Dear Mr. Leveillee:

Thank you for the opportunity to assist the Town of Scituate in evaluating the current stage of construction, and performing a plan review of the documentation provided by the Town of Scituate (“Town”) to Municipal Code Consulting LLC (“MCC”). In order to develop this report, MCC utilized the documentation listed below, as well as had our team perform multiple site visits to the location on Chopmist Hill Road in North Scituate. Site visits were performed by Felix Zemel, CBO and Stephen Greenleaf, CBO, RA on March 12, 2019 and by Michael Brogan on March 7 and 8, and by Gordon Preiss, PE on March 8, 2019.

This report concludes with a recommendation to the Scituate Police Station Building Committee that they obtain the services of an Owner’s Project Manager to serve as the owner’s agent throughout the remainder of the construction project. To the naked eye, the project appears to be 50-60% complete, but following the site visits, it is MCC’s opinion that the project is no more than 35-40% complete, as much of the work that was already performed needs to be either: removed and replaced, retrofitted, or undergo further evaluation by a Registered Design Professional.

## **DOCUMENTS REVIEWED**

In order to prepare for the site visits, the MCC team performed a plan review of the documentation submitted. This documentation included:

1. The 224-page “Building Permit File” that was emailed by Gloria Taylor as part of the bid package;
2. Geotechnical Report from Joe Casali Engineering, Inc. dated February 12, 2018;
3. Construction Reports from Joe Casali Engineering, Inc. dated July 2, 2018; August 1, 2018; August 2, 2018; August 3, 2018; and August 7, 2018;
4. Architectural drawings by Richard Cardarelli, AIA dated May 5, 2018 and revised June 28, 2018 (6 sheets);
5. Electrical plan set by Mcclanaghan Associates, Inc (sealed by Robert W. McClanaghan, PE) dated August 15, 2018 and no revision date (5 sheets);
6. Plumbing sheet P-1 by Richard Cardarelli, AIA dated June 10, 2018 and revised on June 11, 2018 (1 sheet); and
7. Civil plan set by Joe Casali Engineering Inc dated April 2018 (12 sheets)

## **PLAN REVIEW FINDINGS**

Following the review of the documentation submitted above, MCC has determined that the available documentation is lacking sufficient detail and/or missing entire building systems. Below is a list of the deficiencies observed in the submitted documentation, sorted by trade.

### Architectural

1. The architect did not list the following basic code items required for the basis of design:
  - a. Use & occupancy classification(s);
  - b. Type of construction;
  - c. Building area;
  - d. Mixed occupancy approach;
  - e. Occupant loads, by area; and
  - f. Egress pathways and components.
2. No COMcheck has been submitted to determine compliance with the energy efficiency requirements;
3. The architectural plans are lacking sufficient details. This includes details of: the cells, foundation section, footing details, slab-on-grade detail, and roof framing details for the conventionally-framed portion of the roof structure;
4. Rooms are not labelled on the floor plan;
5. According to the Architect, the IT room is missing from the plans;
6. No accessibility details have been provided on the architectural drawings;
7. Determination of the use & occupancy classification of the detention area. If this is designed to house five (5) or more prisoners total, then it is considered an Institutional occupancy, and must comply with a variety of special requirements; including, but not limited to provision of fire sprinklers, creation of at least two (2) smoke compartments, potential fire separation between occupancies (depends on mixed occupancy approach taken); and
8. The drawings are not sealed by Mr. Cardarelli.

### Structural

1. No structural design plans were submitted outside of the roof truss calculations and the basic header schedule on Sheet A-8, and some wall connection details;
2. The code-mandated design parameters in SBC-1 Table 1608.1;
3. Roof trusses were designed based upon a Risk Classification of 2. Where the structure is considered essential infrastructure, this structure must be designated Risk Classification Group 4. As a result, the basis of wind design was incorrect for the structure;
4. No wall bracing was addressed in any of the drawings; and
5. Details were not provided for any of the interior bearing walls.

### Mechanical

1. No plans were submitted for the mechanical systems. According to reports from the Town, the mechanical portion of this project was design-build. Although the mechanical permit has been already issued, plans are recommended to show the following, at a minimum:
  - a. Duct design;
  - b. Heating and cooling load calculations;
  - c. Fresh air intake requirements (especially serving those areas with no windows);
  - d. Damper types and locations; and
  - e. Heating design for the Sallyport.

### Electrical

1. The generation needs a remote annunciator next to the FACP in the vestibule;
2. Panelboard MDP-1 needs to be updated for the air handling units, since only four (4) breakers were provided, and it appears that there are eight (8) AHUs;
3. Due to the fact that all AHU's are less than 2000 CFM (largest is 1600 CFM), the fire alarm designer may wish to reconsider the note "provide fan shutdown typical of four units" including smoke detectors.
4. Since the FA system communicates with the dispatcher in the station, a master box should not be required.

### Plumbing / Fuel Gas

1. Pipe sizes are not shown on the plumbing plans. Some of the underground piping has to be 4", and is required to leave the building as 4".
2. No notes have been provided relative to the vent piping design.
3. Pitches have not been noted on the vent piping.
4. Fuel gas pipe sizing was not noted on any plans.

### **SITE VISIT FINDINGS**

Following the three site visits performed by MCC staff, we have the following items to note that should be either further evaluated and/or corrected:

#### Architectural

1. Use and occupancy classifications must be established for this site. The holding cells (3) appear to have space for two (2) prisoners inside each. This would place the space into the Institutional occupancy group.
  - a. If the cells remain as-is, then the cell area will be required to have automatic sprinkler protection (SBC-1 Section 408.11).
  - b. No smoke compartments have been constructed. No less than two smoke compartments are required in Use Group I-3 (SBC-1 Section 408.6).
2. Due to the lack of a mixed occupancy approach, we were unable to determine whether occupancies were properly separated (or if they even need it).
3. The cells appear to exceed the maximum aggregate opening of 120 square inches (SBC-1 Section 408.8.3).
4. The openings in the cell doors are greater than 36" above the floor (SBC-1 Section 408.8.3).
5. Updated architectural drawings were requested from Richard Cardarelli, but have not been received by MCC as of the date of this report.
6. The awning at the entrance to the police station is too low. It does not meet the minimum ceiling height requirements of the code of 7'-6" (SBC-1 Section 1208.2).
7. Residential windows were observed throughout the site. Need specifications for these windows to ensure that they meet all of the design loads required by Chapter 16 of SBC-1.
8. The plans call for four holding cells. The current construction appears to only have three holding cells, and the fourth was made much smaller and appears to be more of a closet. Please coordinate the site conditions with the architectural drawings.

#### Structural

1. Multiple interior bearing walls were observed, carrying significant loads. No anchor bolts, or other connecting means, was observed as to how these walls were connected to the footings that were specified in the plans.

2. Multiple cracks were observed throughout the slab-on-grade. Per a report from Odeh Engineering, they suspect that this is due to lack of properly-installed control joints. In their report, they reference the presence of metal grid inside the slab. According to the Architect, he spoke with the concrete firm that placed the slab, who told him that no mesh was installed. Recommend performing a couple of core samples to determine the composition of the slab.
3. No truss layout was provided for this project. As a result, we are unable to verify correct truss placement.
4. Apparently, recycled lumber was used on many headers. Please have these evaluated for structural soundness by a registered design professional, or replace.
5. The details on the design plans call for triple plates, but only double plates were observed.
6. Unable to verify nailing pattern for the Zip wall sheathing system to ensure compliance with wall bracing needs.

### Mechanical / Fuel Gas

1. Ductwork was insulated to R-6, not the R-8 minimum required by code.
2. Ductwork was not sealed for leakage with mastic or mastic tape.
3. Bath fans appear to be inadequately-sized. Please either provide calculations or replace with properly-sized units.
4. No air filters provided on the mechanical systems.
5. Improper walkways were provided to service equipment.
6. Some of the flue pipes will need to be insulated due to their span inside the unconditioned space.
7. How will the evidence area be cooled?
8. How is the design complying with the fresh outside air requirements in Table 403 of the *International Mechanical Code*.
9. NOTE: apparently, the station will be serviced by an underground propane tank. Due to a variety of factors, the town may wish to consider this being an above-ground unit instead of below-ground.
10. Pans are missing under the AHUs.
11. Propane piping is sized correctly from the main (1-1/4") but just before the tee, it is reduced to the entire building to 1". This must be re-piped.
12. Fire dampers in the ceiling ductwork must be caulked to the sleeve / diffuser boot.
13. Please provide sheet metal thickness in the damper areas to ensure that it can comply with fire-resistance-rating of the damper.

### Plumbing

1. Attic vent piping is not pitched, generally.
2. The vent through the roof has not been installed.

### Electrical

1. No comments, other than those noted in the plan review.

## **CONCLUSION**

Based upon the information that is missing in the plan review, and observations during the site visits, it is the opinion of MCC that this project is no more than 35-40% complete. Significant amounts of information are missing regarding each of the systems, and the town must decide how many prisoners will be held on site. Structurally, there will be significant amounts of retrofit potentially required, and additional sampling of the slab is recommended in order to come up with a proper O&M plan and to select appropriate floor finishes.

It is the recommendation of MCC that the town take the following next steps prior to commencing construction:

1. Perform the core testing recommended;
2. Obtain a full set of mechanical plans;
3. Develop a final set of architectural drawings;
4. Speak with the framing contractor as to how the interior bearing walls were framed and connected to the foundation;
5. Address all of the items found in the plan review and site visit descriptions above;
6. The Town should either contract with a qualified General Contractor or shall appoint the Police Station Building Committee as their General Contractor; and
7. The Town should contract with a professional firm for Owner's Project Management services to perform periodic inspections of the site for conformance with the plans and specifications. Said firm should also serve as the Town's agent to ensure that the project is running on time, and on-budget and to provide the Town with recommendations relative to any potential change order that come up.

Please feel free to reach out to me with any additional questions and/or concerns. I can be reached at 978-790-0495 or by email at [fzemel@planreviewers.com](mailto:fzemel@planreviewers.com).

Respectfully submitted,

MUNICIPAL CODE CONSULTING, LLC



Felix I. Zemel, CBO  
*Managing Principal*

CC: File