[Insert date Study is completed]

[Insert date of any revisions prior to certification, if applicable]

Study for Certification of

Deferred Maintenance Project

[Use this Template for Deferred Maintenance Projects with a

Dollar Value of $300,000 To $5 Million ($10 Million for UMass system)]

Title [insert Name of Project]

Facility [insert Name of Building or Site]

Location [insert address and town/city]

State Project #, Phase: [insert number issued by DCAMM]

CAMIS ‘J’ #:

Agency Project #:

Prepared For:

[Insert name of User Agency]

[Insert address of User Agency]

The Commonwealth of Massachusetts

Division of Capital Asset Management and Maintenance (DCAMM)

One Ashburton Place, 15th floor

Boston, MA 02108



Prepared By:

[Insert name of design firm]

[Insert address of design firm] Template 01/29

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Acknowledgements

The following individuals and firms contributed to the report:

Requesting Agency:

DCAMM:

House Doctor:

Sub-consultants:

Cost Estimator:

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*[After you complete your document, update the page numbers in the Table of Contents automatically by* ***right-clicking*** *anywhere in the Table of Contents and choosing* ***Update Field****.]*

# Section 1 – Study Summary

*[Write a clear and succinct summary that addresses the following:]*

### The Need

*[Briefly summarize what problem prompted the preparation of the study, i.e., boiler at end of useful life, elevator in need of modernization, leaking roof, windows in need of replacement, deteriorated paving, etc*

*[Name of requesting agency]* has engaged *[name of design firm]* for the preparation of this Study to *[describe the tasks to be performed by the house doctor, i.e., review options for replacement of rooftop units, identify building deficiencies related to life safety, etc.]*

### The Findings

*[Summarize major deficiencies identified through the existing conditions investigation, i.e. the elevator has exceeded its useful life, has had repeated mechanical failures and does not meet accessibility or elevator code requirements; fire alarm system has been cited by state inspector and failed inspection resulted in short term certificate of occupancy. Indicate whether more than one possible solution has been considered and analyzed.*

### The Recommendation

[Briefly summarize the proposed solution or action needed to address the issues described above. For example, for a roof replacement:

* *Does the entire roof require replacement or only part of it?*
* *Are solar panels or HVAC equipment installed on the roof? What is the age/condition of the equipment, and should it be replaced at the same time (or in sequence) with the deteriorated roof?*
* *What is the load capacity of the roof’s underlying structure? Will the additional insulation required by code for a new roof impact the building’s snow load capacity?*
* *If the building has parapets, do they require masonry (or some other type) of repair?]*

*[Briefly summarize the proposed schedule for implementation, including reference to any construction phasing or sequencing that must coincide with the academic year, fiscal year, non-winter months, or other schedule constraints. Provide the Estimated Construction Cost (ECC) and Total Project Cost (TPC). Indicate other funding sources that will be applied to this project, if applicable.]*

* *I acknowledge that the information provided by the House Doctor in this Study has been reviewed and approved by the User Agency for accuracy including investigation of existing conditions, applicability of building code and accessibility regulations, estimated construction cost, and schedule for design and construction.*

Signature of Agency Point of Contact: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Phone Number: **Click or tap here to enter text.** E-mail Address: **Click or tap here to enter text.**

# Section 2 – Existing Conditions Investigation

*[Name of design firm]*, in collaboration with *[name of sub-consultant(s), if applicable]* investigated the existing conditions of the *[name of facility]* located at *[location of facility]*. The team performed an investigation of the problem and existing conditions during *[month and year]* including *[list all tasks included in the existing conditions investigation, i.e., observing, testing, measuring, and photographing the existing conditions.]. [Name of design firm],* serving as the primary consultant to the *[name of User Agency]*, has compiled and analyzed the results of this investigation to determine possible options and a recommendation for remediation.

Basic Building Data [for site projects, complete just the last two lines]

|  |  |
| --- | --- |
| Year of original construction | Click or tap here to enter text. |
| Year(s) of recent renovations | Click or tap here to enter text. |
| Building occupancy type | Click or tap here to enter text. |
| Building square footage | Click or tap here to enter text. |
| Building use/occupancy | Click or tap here to enter text. |
| Current CAMIS Value | Click or tap here to enter text. |
| CAMIS ‘J’ Number | Click or tap here to enter text. |
| CAMIS Site Code and/or Building Number | Click or tap here to enter text. |

### Investigation Findings

*[At a minimum, include the following information:]*

* *Describe observations of existing conditions and identify known deficiencies and code violations.*
* *Identify any conditions that must be further investigated requiring additional services and funding (i.e. test pits, flow tests, existence of hazardous materials, etc.)*
* *Photographs of existing conditions taken during site visits. Caption each photo with issue that it illustrates and its location.*
* *Site plan with utility locations, if applicable; construction drawings of buildings, systems, and relevant details, etc.*
* *Cutsheets of equipment, fixtures, and other devices, if applicable, to illustrate options for remediation*
* *Scope of prior studies addressing this same issue or same area of the facility, if applicable.*
* *Summary of expenses related to maintenance and repair of the building element, systems or equipment being addressed in this Study, if applicable.*
* *Consequences of possible failure on occupants and services provided.*

*[NOTE: Even if a Study is limited in scope, be sure that related systems or equipment are considered in the investigation so that the scope of the recommendation is comprehensive. For example, repaving parking lots may require investigating storm drains, storm water capacity and regulations, the presence and condition of underground utilities that may need updating before repaving, and accessibility regulations regarding parking and grading. Review CAMIS and Facility Condition Assessments, if available, for associated work that may have been previously identified for Deferred Maintenance funding and should be considered for possible inclusion in this project.*

**Section 3 – Code and Regulations Summary**

The following is a **summary** of the essential requirements of the code review conducted for this project, describing the evaluation of the existing building in accordance with 780 CMR 34.00 (2015 International Existing Building Code with amendments) and the code compliance approach associated with the proposed work:

**Introduction and Project Description**

*[Describe the anticipated project scope and list major code information that must be identified.]*

**Applicable Codes**

*[Check appropriate boxes to indicate which codes and regulations are applicable to the project as well as the associated model code basis, including Building, Fire Prevention, Plumbing, Electrical, Mechanical, Elevator, Hazardous Materials, Energy, and Accessibility. Note that information on existing conditions already may be provided in CAMIS.]*



|  |  |  |
| --- | --- | --- |
| Building Code 780 CMR 34.00 (2015) | Applicable | Not Applicable |
| Fire Protection | Applicable | Not Applicable |
| Plumbing | Applicable | Not Applicable |
| Electrical | Applicable | Not Applicable |
| Mechanical | Applicable | Not Applicable |
| Elevator | Applicable | Not Applicable |
| Hazardous Materials | Applicable | Not Applicable |
| Energy | Applicable | Not Applicable |
| Accessibility | Applicable | Not Applicable |
| Historic Preservation | Applicable | Not Applicable |
| Executive Order 594 | Applicable | Not Applicable |
| Wetlands Protection 310 CMR 10.00 | Applicable | Not Applicable |

**Code Analysis**



*[Identify who conducted the code analysis. If a detailed code analysis report is prepared by a sub-consultant, enter the name of the firm and the date of the report as part of the overview below. Attach the full report to this study under “Section 7 – Appendices”.*

*For each applicable code checked above, provide a description of the work that will be required as part of this project to meet that code’s requirements.]*

Wetlands Protection 310 CMR 10.00

*[Provide a description of potential impacts of the proposed work on protected resource areas. Specify proposed cost and schedule implications.]*

MA Building Code 780 CMR Chapter 34 (2015 International Existing Building Code with amendments)

*Investigate and evaluate in sufficient detail to ascertain the effects of the proposed work for the space or building component under consideration on at least these systems:*

* *structural*
* *means of egress*
* *fire protection*
* *energy conservation*
* *lighting*
* *hazardous materials*
* *accessibility, and*
* *ventilation*

*and, where necessary, the entire building or structure and its foundation if impacted by the proposed work. The results of the investigation and evaluation, along with any proposed compliance alternatives, shall be submitted to the building official in written report form.*

*Describe the classification of work and define alteration level required in addition to the scope of work.]*

Fire Protection 780 CMR Chapter 9 (2015 International Existing Building Code with amendments; NFPA 72, 2017 Edition)

*[Provide an overview of the existing fire protection system and determine improvements required for sprinkler system (including M.G.L. c. 148, § 26G), standpipes, and/or fire alarm and detection within and beyond the work area.]*

Plumbing 248 CMR

*[Provide an overview of the existing plumbing system as it pertains to the scope of work. For work involving fire suppression systems, review requirements for standpipes, and/or fire alarm and detection within and beyond the work area, as applicable. For work in areas with plumbing fixtures, review requirements for upgrades, if any. If toilet room upgrades involving toilet fixtures are required for MAAB compliance, review fixture count requirements.]*

Electrical 527 CMR 12.00

*[Provide an overview of the existing electrical system and determine improvements required to eliminate hazards and to bring installations into compliance.]*

Mechanical 780 CMR Chapter 28 (2015 International Existing Building Code with amendments)

*[Provide an overview of the existing mechanical system and determine improvements required to altered existing systems.]*

Elevator 524 CMR

*[Provide an overview of the existing elevator equipment and components and identify improvements/upgrades required by the Elevator Board and the Architectural Access Board, including cab dimensions, upgrades to control panel, door operation and emergency notification.]*

Hazardous Materials 310 CMR 30.000

*[Provide a description of investigations undertaken to determine if any hazardous materials (including, but not be limited to asbestos-containing materials, polychlorinated biphenyls (PCBs), mercury, lead paint, refrigerants, containerized wastes and raw products storage) exist in the proposed work area. Specify how each will be addressed in the project scope, cost and schedule.]*

Energy 780 CMR Chapter 13 (2015 International Existing Building Code with amendments)

*[Provide an overview of the alterations to building components affecting the energy conservation performance of the building and determine improvements required to altered existing systems.]*

Accessibility 521 CMR, 2010 ADA Standards, 28 CFR Part 35.151

*[To understand DCAMM’s requirements for accessibility compliance with Title II of the Americans with Disabilities Act, the Architectural Access Board Regulations, and 2010 ADA Accessibility Standards refer to the detailed guidance in the Instructions for Submitting a Deferred Maintenance Study. These Instructions provide a step-by-step guide to determine accessibility compliance that must be addressed below**. Also check with DCAMM's* [Statewide Accessibility Initiative](https://www.mass.gov/dcamm-statewide-accessibility-initiative) *to determine if a current Accessibility Audit exists for your facility and can be used here to provide up-to-date information on a building’s accessibility.]*

*NOTE: The* [DCAMM Scoping Form for MAAB Compliance](https://www.mass.gov/doc/dcamm-scoping-form-for-maab-compliance) *must be completed for ALL Deferred Maintenance projects, regardless of size and scope, to determine what, if any, accessibility improvements will be required by state code. Attach the completed form to the Study as Appendix A.*

*Use the text below and fill in the blanks to describe accurate accessibility scope for this project.*

**Architectural Access Board (AAB) and ADA Title II Summary**

*[Building name]* is owned by the Commonwealth of Massachusetts and is required to meet the accessibility requirements of both the Architectural Access Board (AAB), Section 3.00 of 521CMR, 2006 Edition; Title II of the Americans with Disabilities Act (ADA), 28 CFR Part 35 as amended; and the 2010 ADA Standards for Accessible Design. When the state and federal regulations differ, the regulation that provides the greater level of accessibility must be followed.

The ADA is a civil rights law, not a building code. Title II requires more accessibility than the AAB when a project includes alterations to a program space, sometimes including an accessible path of travel (including access to toilets) from site arrival to the program space.

The Rules and Regulations of the Architectural Access Board 521CMR are enforced by local and state building inspectors, but interpretations are made, and variances granted, only by the Architectural Access Board.

**Accessibility Scope of Work according to AAB**

This project has the following scope of accessibility work that must be included in the cost estimate: *[select* *and use the paragraph below – A, B or C - that matches the* ***Scoping Result*** *on page 4 of the* ***MAAB Scoping Form****. Eliminate the paragraphs that are not selected]*

1. The estimated construction cost for this project (plus work performed over the last three years) is greater than $100,000 but less than $500,000 and all the work being performed is limited to “exempt” categories listed on page 2 of the MAAB Scoping Form (Appendix A). No additional accessibility work is required to be included in this project. However, any element that has accessibility requirements and is touched by this project must be made compliant. *[If elements, such as paved walkways that are dug up for utility replacements, are impacted by the project scope of work, identify the scope of that accessibility work here] [If it is anticipated that no elements are required to be made compliant, include the following statement.]*

The project scope does NOT include specific elements that are required to be compliant with MAAB or the ADA.

1. The estimated construction cost for this project (plus work performed over the last three years) exceeds $100,000 and is less than 30% of this year’s CAMIS value, as documented in the MAAB Scoping Form. The building must have at least one fully accessible entrance, one fully accessible single user toilet room or fully accessible multi-user toilet rooms for men and women, and an accessible hi-lo drinking fountain or one high and one low. If public telephones exist, one must be fully accessible.

*[Select one of the two statements below]*

1. All four of these elements are in full compliance at the time of this Study as documented by *[select one]* access audit data from the Statewide Accessibility Initiative OR data gathered on the DCAMM Accessibility Checklist. The documentation is in Appendix A.

*OR*

1. Some of these elements are not in full compliance with the MAAB or the ADA Standards. The following work must be included in this project:

* To achieve one unrestricted/unlocked accessible building entrance, the following work must be completed at the entrance at *[location]: [itemize the scope of work]*
* To achieve one accessible single-user toilet OR one Men and one Women accessible, multi-user toilet room, the following work must be completed at *[Rm #, floor #]: [itemize the scope of work]*
* Drinking fountains exist. To achieve accessible high and low drinking fountains, complete the following work on [floor # and location]: *[itemize scope of work]*
* A public telephone exists. To achieve an accessible public telephone: *[identify location and itemize scope of work]*

Any element that has accessibility requirements and is touched by this project also must be made compliant. *[*If elements, such as paved walkways that are dug up for utility replacements, are impacted by the project scope of work, identify the scope of that accessibility work here]

*[If it is anticipated that no elements are required to be made compliant, include the following statement.]* The project scope does NOT include specific elements that are required to be compliant with MAAB or the ADA.

1. The estimated construction cost for this project (plus work performed over the last three years) exceeds 30% of the [current year] CAMIS value of the building or may exceed 30% when the permit is pulled in *[month and year]* or when construction has been completed and change orders are included in the total construction cost. The entire building must be brought into full compliance with the MAAB regulations. An Access Audit has been conducted by the Statewide Accessibility Initiative. Th scope and cost of bringing the building into full compliance with the MAAB is *[insert the cost that can be attributed to accessibility alone and would not be covered by the general scope of work].*

**MAAB Variances** *[**provide any information related to a current or proposed variance here. See Instructions for Submitting a Deferred Maintenance Study for additional information. If applicable, add the following text]*

An active variance currently exists for this building and may need to be addressed as part of the scope of this project. A copy is in Appendix A.

The Agency and House Doctor propose that a variance be sought for the following compliance issues: *[list elements and give reasoning to be used in variance application]*

**Accessibility Scope of work according to ADA Title II Compliance**

*[Select the applicable paragraph – 1 or 2 - below and delete the other. Reading* [*28 CFR Section 35.151 (a) to (c)*](https://www.ada.gov/regs2010/2010ADAStandards/2010ADAStandards.pdf) *is highly recommended for full understanding of responsibilities under Title II of the ADA.*

1. The project scope does NOT include alterations to any primary function areas in the building so does not trigger accessibility upgrades greater than those required by the MAAB analysis above.

*OR*

1. The project scope includes alterations to one or more primary function areas in the building. These areas are *[list]* and the accessible route from each area to the nearest accessible parking space/transit stop will require the following accessibility barriers to be addressed: *[List barriers and describe how each will be made accessible]*

The anticipated cost of making the program area and the related route accessible is *[fill in the total estimated cost]* and is included in the cost estimate. This cost does not exceed 20% of the Estimated Construction Cost; therefore, the scope must be addressed as part of this project.

# Section 4 – Options and Proposed Solution

### Analysis of Potential Solutions

*[Using the information from the Existing Conditions Investigation and the Code Summary, describe possible options for addressing the problem that prompted the preparation of the Study, if more than one option has been considered. For projects with cost constraints, this discussion should include tradeoffs such as repair vs. replacement. For each potential solution and purposes of comparison, be sure to include:*

* *A name for each option – A, B, C or descriptor;*
* *A description of the option and its advantages and disadvantages; include key stakeholder concerns, if applicable; include any unknowns that affect the selection of the preferred solution;*
* *Plans and/or diagrammatic materials that illustrate the scope of each option and its impacts*
* *A conceptual cost estimate;*
* *Estimated time to complete the design and construction phases including any unique considerations related to the option.]*

### Preferred Solution and Scope of Work

*[This narrative must include:*

* ***An evaluation of the climate & sustainability (carbon, energy, water, resilience, etc.) impacts of the preferred/proposed solution and any alternatives not recommended if applicable.****(See study template instructions page 15 &16)*
* *A detailed description of preferred solution. Identify any recommended “add alternates”, if applicable.*
* *Site plans, floor plans, or any other drawings to define, describe and support preferred solution, if applicable. In accordance with M.G.L. c. 7C, § 59, the proposed solution must be presented at a level of detail for schematic design. Attach supplementing documents, such as drawings, cutsheets, specifications, calculations, worksheets, etc. to this study under Section 7 - Appendices.*
* *A detailed description of which existing conditions will be addressed by the preferred solution and which will not be addressed.*
* *A summary of code requirements that are triggered and identified in Section 3. Describe any potential impact they may have on cost or schedule.*
* *Estimated Construction Cost and Total Project Cost with a reference to the detailed cost estimate in Section 5 – Cost Estimate. Be sure to include unique costs such as police details, testing, and certifications.*
* *Estimated schedule for design and construction by months required to complete the project and any factors that may impact a start date. Indicate construction phasing or sequencing, if applicable. This summary should be a start-to-finish timeline, which appears in more detail in Section 6 – Proposed Schedule.*
* *Indicate how long the information in the study will remain accurate and any factors that will necessitate updating.]*

# Section 5 – Cost Estimate Summary

**Study Costs**

1. Total Consultant Study Fees: $\_\_\_\_\_\_\_\_
2. Total Consultant Reimbursable not included in study fee: $\_\_\_\_\_\_\_\_

**Total study cost** **$\_\_\_\_\_\_\_\_**

**Design and Construction Cost Estimate (prepared by:** *[enter name of cost estimator]*

*[If a detailed cost estimate is prepared by a consultant, enter the name of the firm and the date of the estimate report and attach it as an Appendix.]*

**Identify cost estimator’s assumptions and exclusions**

**A. Estimated Construction Cost (ECC) based on this Study** $\_\_\_\_\_\_\_\_

1. ECC date (*mo/yr*):
2. Projected construction midpoint (*mo/yr*):
3. Months elapsed from ECC date to construction midpoint:
4. Cost escalation rate (*3% per year x ECC*): $\_\_\_\_\_\_\_\_
5. Escalated Estimated Construction Cost (*ECC x Escalation Rate*): $\_\_\_\_\_\_\_\_

**B. Change Order Contingency (*10% of Escalated ECC*)**$\_\_\_\_\_\_\_\_

**C. Final Designer’s Fee**

1. Fee Rate (*%*) per Inspector General’s guideline:
2. Designer’s Fee (*Escalated ECC x Fee Rate*) $\_\_\_\_\_\_\_\_

**D. Other Designer Related Expenses not included in design fee** $\_\_\_\_\_\_\_\_

*(e.g. permitting fees, testing, etc.)*

**E. Advertising and Printing** *(0.1% of Escalated ECC)* $\_\_\_\_\_\_\_\_

**F. Construction Administration/Resident Engineer:**

1. Period of time (*weeks*):
2. Rate *($/week)*: $\_\_\_\_\_\_\_\_
3. Reimbursable expenses: $\_\_\_\_\_\_\_\_
4. Resident Engineer costs: $\_\_\_\_\_\_\_\_

**G. Furnishings and/or Equipment** $\_\_\_\_\_\_\_\_

**TOTAL PROJECT COST (TPC) $\_\_\_\_\_\_\_\_**

# Section 6 – Proposed Schedule

Once the Study document is certified, the project is funded, and funds have been encumbered, the schedule proposed below is anticipated to provide reasonable timeframes for project completion:

**Design and Construction Documents**

*[Describe how many weeks the production for the design and construction documents for the project would take. Provide specific timeframes for Schematic Design, Design Development, and Construction Documents, if applicable. Explain if variances with the Plumbing Board, Elevator Board, Architectural Access Board, etc. must be sought during the design phase and provide the anticipated timeframe.]*

**Bidding and Awarding**

*[Describe how many weeks bidding and awarding for the project would take.]*

**Construction Duration**

*[If a detailed construction schedule is prepared by a consultant, enter the name of the firm and the date of the schedule report and attach it to this study under Section 7 - Appendices.]*

### Scheduling Considerations

*[Describe how many weeks construction would take. Address the following considerations:*

* *Would construction be completed in a single phase or multiple phases?*
* *Due to phasing and/or sequencing, would construction need to coincide with the academic year, fiscal year, non-winter months, or other schedule constraints?*
* *Would construction need to be performed in a fully occupied building? If so, is it critical that the building experiences no shutdowns? Is swing space needed and available?*
* *Would long-lead items such as the rooftop mechanical units and elevators need to be approved and purchased immediately following award of the contract?*
* *If routes need within and/or adjacent to the facility need to be out of commission during construction, including accessible routes for people with disabilities, are alternative routes planned accordingly?]*

With the assumption that this study will be finished, reviewed, and approved by DCAMM in a timely manner, usually two weeks, the contract for the projected is expected to be awarded by *[enter month and year].*

# Section 7 – Appendices

# **Appendix A: Accessibility Scoping**

### [**DCAMM Scoping Form for MAAB Compliance**](https://www.mass.gov/doc/dcamm-scoping-form-for-maab-compliance)

### **DCAMM Accessibility Checklist *[if applicable]***

### **MAAB Variance** ***[if applicable]***

*[Ensure that the forms are completed and dated]*

# Appendix B: DCAMM Outline Specification for the Scope of Work

# Appendix C: Full Cost Estimate

### Appendix D: Code Reports and Testing Reports ***[if applicable]***

Appendix X: *[Title]*

*Additional Appendices: [As applicable, include the following documents and/or detailed reports prepared by sub-consultants:*

* *Cutsheets and other equipment information;*
* *Manufacturers’ quotes;*
* *Incident reports and maintenance reports]*