Feasibility Study & Conceptual Design SOCOTEC Project Number: CB213041.4

The Center at the Heights

300 Hillside Avenue Needham, Massachusetts 02494

January 23, 2023





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January 23, 2023

Mr. Barry Dulong Director of Building Maintenance Building Maintenance Division Town of Needham 500 Dedham Ave Needham, MA 02492

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Proj: Center at the Heights Senior Center

Re: Investigative Report

CBI Job No. CB213041.4

Dear Mr. Dulong:

In accordance with our contract, SOCOTEC AE CONSULTING, LLC is pleased to present the following Feasibility Study for the kitchen renovations at the Center at the Heights facility (i.e.: "CATH"), located at 300 Hillside Avenue in Needham, Massachusetts.

This Feasibility Study was commissioned in detail the layout of the existing kitchen, and to provide recommendations for updating the design in order to accommodate a high volume meal service for the Town of Needham.

This study includes a review of the existing conditions and deficiencies in the current kitchen design, and a conceptual plan depicting an alternate commercial kitchen layout and the related equipment.

This report provides the Town of Needham with a proposed project scope, work, equipment options and budget for the commercial kitchen renovation at the Center At The Heights, 300 Hillside Avenue, in Needham, MA.

If should have any questions or comments on the above, please do not hesitate to contact me.

Best regards.

SOCOTEC AE Consulting, LLC

Robert Kuhn, Project Manager Robert.Kuhn@socotec.us

SECTION ONE

Project Narrative

- 1.1: Facility Description & Existing Conditions
- 1.2: Existing Conditions Pictures
- 1.3: Existing Building Code Analysis
- 1.4: Program Requirements & Scope of Work



1.1 Facility Description and Existing Conditions

The **Center at the Heights** is located at 300 Hillside Avenue, in Needham, Massachusetts. The existing facility is a two story senior center of approximately 30,000 square feet. The existing building was permitted and built in or around January 4th, 2012. The CATH center is a steel framed building, with a cold formed metal stud substructure, insulation, sheathing and clad with a mixture of fiber cement siding / trim with a manufactured stone veneer.



Figure 1: The main entrance to the CATH center

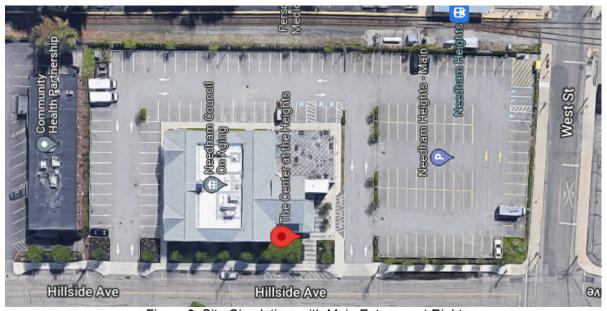


Figure 2: Site Circulation, with Main Entrance at Right



The existing full service Kitchen area is generally separated into four areas: Preparation, Cooking, Washing and Serving. The current layout appears inadequate for the current use as well as the proposed use. Additionally, the kitchen is being used in conjunction with off-site food services to prepare and serve meals to the public. This process is inefficient and adds to the per meal cost.

Within the kitchen there is an oversized center island with storage cabinets below, and a provision for interior seating at all sides. At one point, this island was to be used as a teaching space, so many could gather and watch a cooking instructor to replicate their techniques. We were advised by several of the workers that this does not currently happen in this space, and that they do not remember if it was ever used as a teaching space. Furthermore, the large island confines the path of travel greatly and makes working in this area tight and inefficient.

Mimicking the large kitchen island on the ceiling is a painted soffit, with a large pot rack and recessed accent lighting. A soffit encircles the perimeter of the Kitchen and has indirect fixtures mounted to it's face, with provide the majority of the lighting. The remainder of the ceiling is an acoustic tile set within a suspended metal grid. The space does take advantage of what little natural light it receives from a window above the Washing station.

The existing floor is a slab on grade and clad with 12x24" porcelain tile laid in a running bond pattern, which runs throughout the main Kitchen & the immediately adjacent storage areas. The surface should have a honed finish to prevent slipping, but it appears to have been worn away and has therefore extended past its lifecycle.

The cooking area is comprised of two (2) small and residential type wall ovens (assumed ventless), a four burner commercial range cooktop and an induction burner. There is a hood above the range, however workers reported that it is too high to catch any rising steam & fumes being emitted from the range.

The existing counters, upper cabinets and lower cabinets in the space are ample. However, the majority of the countertops are only 32" high which, makes working on them a challenge for some users. Only the Washing station is the standard 36" high. The existing counter tops are a mixture of materials, with stainless steel along the wet areas, and different types of granite at the Preparation, Cooking and Serving areas.

The existing floor and wall cabinet carcasses are finished with plastic laminate, and overall seem in relatively good shape for their frequency of use. The amount of wall cabinets are expansive, with the remaining wall space finished with ceramic tile along the Serving & Cooking area, and stainless steel protecting the walls at the Washing area.

All appliances in the Kitchen are high-end stainless steel, rather than commercial grade. Insufficient refrigeration space is provided by three residential style units with glass shelving, rather than heavy duty wire shelving. There is only one (1), three-door freezer located in the Dry Storage room, which is less than optimal for an existing Kitchen of this size.

In the existing Break Room (immediately adjacent to this space), there is an existing natural gas shut off. (see pictures 1 and 2), which is typically covered (assumed for protection) by a plywood box and labeled on the wall above. Physically, there are two or three green colored pieces (the "solenoids") that are hot to the touch, whether or not the gas is being used or not. This draws very little power to operate; in fact, it uses low voltage – so there needs to be more investigation into why these solenoids are heating up.



1.2 Existing Condition Pictures

No.	Photo	Description
1.		An overall picture of the existing Kitchen, showing the existing Serving area, the existing Cooking area, the partial extents of the upper / lower cabinets and countertops, and entrance to the existing Break Room. Note the expansive center island which makes the kitchen less efficient than it could be.
2.		Another overall picture of the existing kitchen, showing the existing Washing area, as well as ingress into the space from the existing Cafeteria. Note that the countertop height at the Washing area changes to accommodate the appliances.
3.	NOTICE POPULATION AND AND AND AND AND AND AND AND AND AN	A view of the Preparation area. These countertops are not the standard, comfortable working height.



View of the existing gas shut off, located at counter height in proximity to the working surface 4. An enlarged picture of the existing gas shut off. Note that the solenoid (colored green) is hot to the touch regardless of whether or not natural gas is being used or not. 5. View of the existing Break Room. This space is under utilized in the existing design. 6.



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7.	View of the existing range and exhaust hood, and two existing wall ovens.
8.	View of the front of the existing kitchen, including the existing center island (with storage below), existing serving window, partial extents of the upper / lower cabinets and existing stainless-steel countertops. These existing countertops are 2-4" lower than the standard, comfortable working height of 36".
9.	Partial rear elevation of the kitchen, showing one of the existing refrigerators, and the entrance to the existing Break Room on the left.



10.	Rear elevation of the existing kitchen, showing the existing refrigerator, cabinetry and countertops, handwashing sink, and entrance to the existing Receiving area to the right.
11.	An existing floor sink (circled in red) and drain from an existing handwashing sink on the existing rear countertop.
12.	The existing dishwash station, with an integral three compartment sink and two existing commercial dishwashers.



The existing storage area incorporates the existing three door freezer, as well as the existing dry storage. 13. The existing ceiling is comprised of acoustic ceiling panels, as well as gypsum wallboard bulkheads above the cabinets & a gypsum drop ceiling over the island. 14. Lighting is insufficient for the space, with downlights above the island, sconces on the face of the bulkhead and task lighting below the upper cabinets.



1.3: EXISTING BUILDING CODE ANALYSIS

The work shall comply with the following, applicable codes:

- Building 780 CMR Massachusetts State Building Code 9th Edition, which is an amended version of the 2015 International Building Code (IBC). 780 CMR 34.00 is deleted and replaced by the Massachusetts Existing Building Code (MEBC), which is an amended version of the 2015 International Existing Building Code (IEBC).
- 2. Energy Code The standard "non-stretch" energy provisions of the code will be based on the 2018 International Energy Conservation Code (IECC) Commercial Provisions.

2015 INTERNATIONAL BUILDING CODE

CHAPTER THREE - USE & OCCUPANCY CLASSIFICATIONS

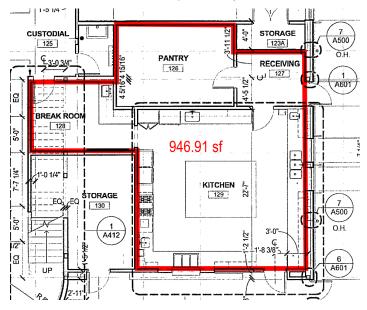
<u>Section 302.1 General:</u> Structures or portions of structures shall be classified with respect to occupancy in one or more of the groups listed in this section. Where a structure is proposed for a purpose that is not specifically provided for in this code, such structure shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard involved.

2. Business (see Section 304): Group B

<u>Section 304.1 Business Group B:</u> Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:

Food processing establishments sand commercial kitchens not associated with restaurants, cafeterias, and similar dining facilities not more than 2,500 square feet in area.

(NOTE: Approximate area of work: 947 square feet)





CHAPTER SIX – TYPES OF CONSTRUCTION

Section 602 Construction Classification:

602.3 Type III: **Type III** construction is that type of construction in which the *exterior walls are of noncombustible materials and the interior building elements are of any material permitted by this code.*

2015 INTERNATIONAL EXISTING BUILDING CODE

CHAPTER THREE - PROVISIONS FOR ALL COMPLAINCE METHODS

<u>Section 301.1.1 Prescriptive Compliance Method:</u> Repairs, alterations, additions, and changes of occupancy complying with **Chapter 4** of this code in buildings complying with the International Fire Code shall be considered in compliance with the provisions of this code.

The Prescriptive Compliance Method has been selected for use on this project. The scope of work for this project is defined as both a Repair and a Level 1 Alteration (see Chapter Four). Chapters 5 through 14 are not

<u>Section 301.1.2 Work Area Compliance Method</u> and <u>Section 301.1.3 Performance Compliance Method</u>: do not apply to this project, as the Prescriptive Compliance Method has been chosen.

CHAPTER FOUR - PRESCRIPTIVE COMPLIANCE METHOD

<u>Section 401.1 Scope:</u> The provisions of this chapter shall control the alteration, repair, addition and change of occupancy or relocation of existing buildings and structures, as referenced in section 301.1.1.

The work is limited to alteration & repair of the existing Kitchen space. No change of occupancy, relocation of the existing building / structure, or addition is being proposed as part of the work.

Section 402 Additions: No additions are being proposed as part of the work.

Section 403 Alterations:

Section 403.1: Except as provided by Section 401.2 or this section, alterations to any building or structure shall comply with the requirements of the IBC for new construction. Alterations shall be such that the existing building or structure is no less conforming to the provisions of the IBC than the existing building or structure was prior to the alteration.

It is our intent to comply with this section.

Section 403.2: Flood Hazard Areas:

The existing building is not in a flood hazard area.

Section 403.3: Existing Structural Elements Carrying Gravity Load:

There will be no alterations to the existing structural elements of the building.

Section 403.4: Existing Structural Elements Carrying Lateral Load:

There will be no alterations to the existing structural elements of the building.

Section 403.5: Bracing for Unreinforced Masonry Parapets upon Reroofing:

There will be no alterations to the exiting roof.

Section 403.6: Wall Anchorage for Unreinforced Masonry Walls in Major Alterations:

This is not a major alteration where the unreinforced masonry walls will require anchorage.

Section 403.7: Bracing for Unreinforced Masonry Parapets in Major Alterations:



This is not a major alteration where the unreinforced masonry parapet will require anchorage.

Section 403.8: Roof Diaphragms Resisting Wind Loads in High Wind Regions:

There is no work proposed at the roof level.

Section 403.9: Voluntary Seismic Improvements:

There will be no alterations to the existing structural elements of the building.

Section 403.10: Smoke Alarms:

There are no dwelling or sleeping units in the existing building.

Section 403.11: Refuge Areas:

There are no alterations proposed to the existing refuge areas.

<u>Section 404 Repairs:</u> Buildings, structures and parts thereof shall be repaired in compliance with Sections 401.2 & 404. Work on nondamaged components that is necessary for the required repair of damaged components shall be considered part of the repair and shall not be subject to the requirements for alterations in this chapter. Routine maintenance required by section 401.2, ordinary repairs exempt from permit in accordance with Section 105.2, and abatement of wear due to normal service conditions shall not e subject to the requirements of this section.

It is our intent to comply with this section.

Section 405 Fire Escapes:

There are no fire escapes proposed as part of this work.

Section 406 Glass Replacement and Replacement Windows.

There are no glass replacements proposed as part of this work.

Section 407 Change of Occupancy:

There is no change of occupancy proposed as part of this work.

Section 408 Historic Buildings:

The existing building is not listed on the National Register of Historic Places.

Section 409 Moved Structures:

Moving the existing structure is not proposed as part of this work.

Section 410 Accessibility for Existing Buildings:

The existing building's accessibility will not be affected by this work



1.4 Program Requirements and Scope of Work

The Town of Needham has expressed their need to consolidate the meal preparation to this single location, rather than to one of the hospitals, schools, and similar venues around town. Doing so would allow the town to save on costs of food preparation by have greater control of the end product, and be more serviceable to their customers by having a dedicated staff on hand.

This report details the significant alteration to the existing spaces and provide a solution that not only exceeds the current capacity and maximizes the kitchen output. The Town's goal is to provide 160 meals per day from this space:

	To go	In house	Subtotal
Breakfasts	0	30	30
Lunches	50	30	80
Dinners	50	0	50
Subtotals	100	60	160 Total Meals / day

The center marble island, while being a beautiful piece, makes the space proportionately smaller and that much less efficient. Removing this would greatly improve the capability of the space and it's staff. Also, there is an abundance of counter and cabinet space that seems to be underutilized due to its size and location; wall cabinets fill quickly yet become forgotten if the end users are incapable of reaching them. The lack of commercial refrigerators, freezers, and cooking equipment lead to downtimes due to their low capacity and sturdiness which lead to additional downtimes.

Therefore, SOCOTEC proposes an alteration of the existing Kitchen, Dry Storage area, as well as the underutilized Employee Break Room. The existing Preparation, Cooking, Washing and Serving areas will remain in place, while the equipment in those areas will be improved upon and a Staging area added. The existing residential appliances will be replaced with commercial grade convection oven, griddle, skillet and ranges in order to better handle capacity and control of the final product; this includes a food warmer. The existing refrigeration and freezers will be removed and consolidated into one large walk-in unit. With the center island removed, we now have ample space to use stainless steel tables and racks on casters, so they may be wheeled around the space and not be in the way all the time.

A thorough review of the existing ancillary cooking devices (i.e.: knives, pots and pans, utensils, etc.) will need to be performed prior to buying new units. Also, we will need to provide for the employees as well and provide microwaves, coffee makers, etc. to replace those that are being removed from the existing Breakroom.

The existing Breakroom will be maximized into a Dry Storage area, with wire racking at the perimeter. This will help with the organization of equipment and ingredients. However, this will not be the only storage options: we will endeavor to include as many wall and base cabinets as possible along the Serving and Preparation areas, with the countertops being a more comfortable height.

We have made some assumptions regarding finishes, and have taken design ques from commercial kitchen design which will help control costs. While utilitarian, we feel that a stainless steel backsplash along the Cooking area & the Washing area is a more practical and cost effective approach. Fiberglass reinforced panels will be installed at the Locker & Dry Storage areas. Along the rear wall of the Preparation area we have an opportunity to use ceramic tile to soften the area. At this time, we are not proposing decorative soffits.

It should be noted that the existing door and hardware into the space should be reviewed as well, to be sure it can handle the high capacity, and general wear and tear on the door. As far as I can tell, this door is original to the building and is used fairly frequently.

SECTION TWO

Foodservice Consultant Report

2.1 - Feasibility Study by ColburnGuyette



INTRODUCTION

The following is a report and evaluation of the existing foodservice operation at the Needham Senior Center. The foodservice operation is comprised of a Main Kitchen, Receiving Area, Storage Room, and an Employee Break Room. The intent is to evaluate the existing conditions and recommend improvements for the facility to be self-sufficient and to not rely on outside sources for daily meals which are currently prepared and brought in through Springwell's catering service, one of the local hospitals, or similar facilities. The goal is to prepare one-hundred sixty meals per day. The one-hundred-sixty meals comprise of approximately fifty hot lunches to go, fifty dinners to go, thirty in-house breakfasts, and thirty lunches.

EXISTING CONDITIONS

The existing overall project is approximately nine-hundred-twenty-eight square feet. Of that square footage, the Main Kitchen is five-hundred-thirty-three square feet, the Receiving Area is seventy-eight square feet, the Storage Room is one-hundred-eight-nine square feet, and the balance one-hundred-twenty-eight square feet is in the Employee Breakroom.

The Main Kitchen has a mix of equipment from high-end residential to commercial. It has a large central island counter that accounts for about twenty percent of the square footage and is neither ideal nor useful for the space. It impedes the flow of the kitchen, needing to walk around it for any task, and most of it is unusable due to the far reach. There is a large ceiling mounted pot rack above the island, as well.

The cooking line, in the Main Kitchen, is comprised of a high-end residential thirty-six-inch range and a drop-in induction range. All of which are beneath a sixty-inch by thirty-six-inch commercial exhaust hood. There are also two residential built-in wall ovens. The thirty-six-inch range is the only gas cooking equipment in the facility. All other cooking equipment is electrical. Other equipment includes a built-in residential refrigerator, a small built-in three-compartment sink, a prep sink, hand sinks, two commercial dishwashers, and other smallware's such as microwaves, coffee brewers, and dispensers. The Main Kitchen is not lacking in storage due to the amount of base and wall cabinets. However, they would not be adequate for the intended operation going forward. Finally, there is a large pass-through window with a sneeze guard and hot food well to serve diners in the Dining Room.

The Receiving Area has two more residential type refrigerators, a couple of employee lockers, trash holding, coat hangers, and it houses a recessed grease trap.

The Storage Room has a large commercial three-door freezer, ice machine, and 4-tier wire shelving all around.

Finally, the Break Room simply consists of tables and chairs, a counter with a sink, coffee equipment and a couple of microwaves. This room is where the electrical panels, fire suppression Ansul system and gas shut off valve are located.

DEFICIENCIES AND PROPOSED IMPROVEMENTS

As mentioned in the existing conditions, the large central counter is not proportionally correct to be considered useful or an asset to the space. It impedes workflow and takes up too much valuable square footage. A more



functional solution would be to remove the island and the pot shelving above and replace them with back-to-back stainless-steel worktables and a table mounted over shelf with an integrated utensil and pot rack. The table mounted over shelf should effectively reduce construction costs, since there will not be a need to ceiling mount the unit. The shelf will also provide some storage and a more adequate reach for the operator. The table facing the cooking line will host hot wells for holding food coming off the cooking line and undercounter refrigeration to support the cooking line. Adjacent to the tables will be two heated holding cabinets - one for holding items coming off the cooking line and the other used to requisition to-go orders.

The existing cooking equipment is not adequate for the intended operation. It is hardly used today except for cooking seldom breakfasts. For an operation that will produce one-hundred-sixty meals per day, there will need to be infrastructure changes. For one, the existing cooking equipment will need to be removed and replaced with commercial grade equipment that can handle bulk production such as a tilt skillet, also known as a braising pan, a six-burner range, a griddle, also known as a flat top, and a double stack combi oven. A combi oven, short for combination oven, is a very effective hybrid oven that has both convection and steaming capabilities. It allows the operator to use it in one of three ways, convection only, steam only, or convection and steam. This allows for the ultimate flexibility of the menu. The introduced steam, coupled with smart controls, create consistent product for a wide range of menu items in a foolproof manner. Since the only gas equipment is the existing range, it is recommended to remove the gas and replace with an electric range. This would effectively change the kitchen to be all electric. An all-electric kitchen leans towards a net-zero approach as it will reduce greenhouse emissions caused by equivalent gas equipment. There is a higher upfront cost for electric equipment, however, if reducing the facilities carbon footprint or keeping up with the latest trends is a concern.

The existing gas shutoff valve, located in the existing Employee Breakroom, was noted to have issues during the site visit. Not only was it located in a non-ideal location – right above the countertop as you walk into to the space – it was also noted to be overheating and was being protected by a makeshift plywood box that was also warm to the touch. The general recommendation would be to remove the gas valve as it is unsafe and move towards an all-electric kitchen.

With the changes in cooking equipment will come the need to update the exhaust hood and potentially the fan and ductwork, as well as the Ansul system. The hood will need to be larger to capture the heat and affluents coming from the equipment and the fire suppression tank sizes and drop locations will need to be reworked. Ventless technology could be used for the double combi oven to reduce the hood size, if need be. However, the ventless hood option comes at a premium and may not make sense depending on the cost and structural requirements.

The current refrigeration is also inadequate. All three refrigerators are residential size and will not be able to handle the demand for larger cooking volumes. The recommendation is to remove the standalone reach-in units and replace with a combination walk-in cooler and freezer box. To achieve this the existing Storage Room will need to be removed and its equipment relocated as this is the ideal location for a walk-in.

The existing Employee Break Room should ideally be converted to a dry storage room. With a high-density shelving system storage can be maximized in this space. This room can also host a small table or mobile cart with a microwave and coffee brewer for the employees to use, if management does not feel comfortable with employees reheating in the microwave or grabbing coffee from the dispensers provided for customer use. The fire suppression Ansul box and the electrical boxes will remain in this room to minimize impacts to the infrastructure.



Holding and serving equipment will also need to be incorporated. At the serving window there is currently a three well hot food unit which is appropriately sized. However, there have been some advances in technology, and it may be appropriate to replace the hot wells with a combination hot and cold food well. These wells can be independently set to be hot or cold at the individual wells allowing for maximum flexibility and changes in the menu. Undercounter heated cabinets and refrigerators will also be needed to maintain food safety temperatures for any products that will be packaged or held for later use. The ice machine will be relocated next to the serving counter as you walk into the kitchen from the dining room. This is an ideal location if needing to grab ice quickly.

The existing ware washing area will need to be reworked. The two existing undercounter dishwashers appear to be in good condition and could potentially be reused, if desired, with minimal impact to the proposed plan. However, given the production requested, larger pots and sheet pans will need to be used, meaning a new three-compartment sink that can manage larger pots/pans will be required. If there is a desire to not manually wash larger pots/pans, it is recommended to upgrade the two undercounter dish machines to one stand up ventless dish machine with the proper associated clean and soiled dish tables, as represented in the proposed layout. To conserve on space the pot sink can be incorporated into the clean dish table. With these changes, the grease trap, located in the existing Receiving Area, will likely need to be resized by the plumbing engineer.

Food Preparation, shown in the ideal location, on the proposed plan, between cold storage, dry storage, and cooking, will need to be updated to comprise of a large stainless-steel worktable with two-compartment sinks. A two-bay prep sink is typically used to separate produce from proteins. Other prep equipment will be required such as a mixer, a slicer, food processers, etc. Moreover, the existing millwork counters are under the ideal height to work on at thirty-three inches. Typically, kitchen worktables are a minimum of thirty-four to thirty-six inches high, with thirty-four inches used in areas where accessibility may be a concern but is not explicitly required in employee work areas per the ADA. The American with Disabilities Act (ADA) notes in chapter 2 section 203.9 Employee Work Areas that the accessibility requirements that need to be met for employee work areas apply to the approach, entrance, and exits of the work area, an accessible means of egress, wiring for visual/audible alarms, accessible common use circulation paths in most work areas of at least one-thousand square feet. Nevertheless, the current design is mostly accessible in the kitchen with appropriate turning radii and circulation paths. The potential exception would be worktable heights if using thirty-six-inch-high tables.

The existing Receiving area is its own confined room, and the proposed plan is to completely open it up to have direct access into the kitchen and create a large short-term landing area. It will host trash holding and recycling bins and the employee lockers, as well.

Finally, in the dining room it is proposed to update the counter for a deeper millwork counter that can be used for condiments, trash, and pick-up, largely the same way it is today. The exception being that the new counter would also host self-serve hot and cold beverages, including an ice and water dispenser. This will help cut down on the number of employees needed as customers can simply serve themselves and improve turnaround time.

ESTIMATED COSTS

The estimated foodservice budget is based on a square foot price and considers the current supply-chain issues, as well as the median dealer discount, mark-up, freight rates, and final delivery and set-in-place of the foodservice equipment and millwork. Due to the volatility of the current supply-chain market, the rapid changes in rates, and variations in dealer discounts, mark-ups, and freight rates the estimated costs shown are subject



to change. Moreover, some equipment is experiencing delayed lead times that can range anywhere from six months to a year and a project turnover timeline should take this timeframe into account. The costs reflected do not include MEP connections by trades or any other "hard" construction costs.

Given an overall square footage of approximately nine-hundred twenty-eight square feet the estimated cost will range anywhere from \$200,000 - \$255,000. This budget is for use with the order of magnitude only. Itemized budget numbers will be provided during the design development and construction document phase of the project.

Furthermore, the operation would require at least three employees working in the space at any one time. That includes a foodservice manager, will need to be ServeSafe (or equivalent) certified, a cook, and a support worker for tasks such as dishwashing, cleaning, aiding in prep, packaging, and serving.

CONCLUSION

Though the foodservice space at the Needham Senior Center seems small at only nine-hundred-twenty-eight square feet a high-level overview indicates that the space can accommodate the operations for a production kitchen that can handle one-hundred-sixty meals per day. The deficiency today being wasted space in the main kitchen, due to the center island, and the mix use of commercial and residential equipment which is not adequate for bulk production. With improvements to the overall flow, adjacencies, and equipment the end goal for a small production kitchen of approximately one-hundred-sixty meals per day can be achieved.



SECTION THREE

Feasibility Cost Estimate

3.1 – Conceptual Design Estimate by PM&C





Feasibility Estimate

Needham Senior Center Kitchen Renovations

Needham, MA

PMC LLC

20 Downer Avenue, Suite 5 Hingham MA 02043 (ph) 781-740-8007

(f) 781-740-1012

Prepared for:

Socotec AE Consulting, LLC

November 11, 2022



Needham Senior Center Kitchen Renovations Needham, MA

Feasibility Estimate

11-Nov-22

MAIN CONSTRUCTION COST SUMMARY

	Construction Start	\$/SF	Estimated Construction Cost
	Summer 2023		
KITCHEN RENO			\$665,631
HAZ MAT Removal			NIC
SUBTOTAL TRADE COSTS			\$665,631
Design and Estimating Contingency	15.0%		\$99,845
Escalation	5.3%		\$35,278
SUBTOTAL			\$800,754
General Conditions/GR's -			\$100,000
Insurances	2.0%		\$18,015
Bond	1.00%		\$8,008
Fee	10.0%		\$92,678
Building Permit			Assume by Owner
AL CONSTRUCTION COSTS			\$1,019,455



Needham Senior Center

Kitchen Renovations Needham, MA 11-Nov-22

Feasibility Estimate

This Feasibility estimate was produced from drawings prepared by Socotec AE Consulting dated October 11, 2022. Design and engineering changes occurring subsequent to the issue of these documents have not been incorporated in this estimate.

This estimate includes all direct construction costs, general contractor's overhead and profit and design contingency. Cost escalation assumes start dates indicated.

Bidding conditions are expected to be negotiated pricing to pre-qualified general contractors, and pre-qualified sub-contractors, open specifications for materials and manufacturers.

The estimate is based on prevailing wage rates for construction in this market and represents a reasonable opinion of cost. It is not a prediction of the successful bid from a contractor as bids will vary due to fluctuating market conditions, errors and omissions, proprietary specifications, lack or surplus of bidders, perception of risk, etc. Consequently the estimate is expected to fall within the range of bids from a number of competitive contractors or subcontractors, however we do not warrant that bids or negotiated prices will not vary from the final construction cost estimate.

ITEMS NOT CONSIDERED IN THIS ESTIMATE

Items not included in this estimate are:

All professional fees and insurance
Building Permit costs
Land acquisition, feasibility, and financing costs
All Furnishings, Fixtures and Equipment
Items identified in the design as Not In Contract (NIC)
Items identified in the design as by others
Owner supplied and/or installed items (e.g. draperies, furniture and equipment)
Construction or occupancy phasing or off hours' work - except as noted in the estimate



Needham Senior Center Kitchen Renovations Needham, MA

Feasibility Estimate

CONSTRUCTION COST SUMMARY IN CSI FORMAT

		Subtotal	Total
DIV. 2	EXISTING CONDITIONS		\$32,355
	024100 Selective Demolition 025000 Haz Mat Removal	\$32,355 N.I.C.	, 0 ,000
DIV. 3	CONCRETE		\$7,500
	031000 Concrete	\$7,500	
DIV. 4	MASONRY		\$0
	042000 Unit Masonry	\$o	
DIV. 5	METALS		\$2,823
J	055000 Metal Fabrications	\$2,823	, , ,
DIV. 6	WOODS, PLASTICS & COMPOSITES		\$4,705
	061000 Rough Carpentry	\$1,882	,,
	062000 Finish Carpentry	\$2,823	
DIV. 7	THERMAL & MOISTURE PROTECTION		\$941
	070001 Joint Sealants, Waterproofing & Dampproofing	\$941	
DIV. 8	DOORS & WINDOWS		\$0
	081110 Doors, Frames and Hardware	\$o	
DIV. 9	FINISHES		\$76,817
	090002 Tile	\$ 0	
	090003 Acoustical Tile	\$56,851	
	090007 Painting	\$6,084	
	090003 Resilient Flooring	\$ 0	
	096800 Carpet	\$1,000	
	092900 GWB Assemblies	\$12,882	
DIV. 10	SPECIALTIES		\$29,720
	101100 Visual Display Boards	\$ 0	
	101400 Signage	\$1,000	
	102113 Toilet Compartments	\$o	
	102600 Wall Protection	\$27,720	
	102813 Toilet Accessories	\$ 0	
	104400 Fire Protection Specialties	\$1,000	



Needham Senior Center Kitchen Renovations Needham, MA

Feasibility Estimate

CONSTRUCTION COST SUMMARY IN CSI FORMAT

	Subtotal	Total
DIV. 11 EQUIPMENT		\$254,070
114000 Food Service Equipment	\$254,070	
DIV. 12 FURNISHINGS		\$28,800
123000 Casework	\$28,800	
126000 Window Treatments	\$ 0	
DIV. 13 SPECIAL CONSTRUCTION		\$0
139000 Special Construction	\$o	
DIV. 14 CONVEYING		\$0
142000 Conveying	\$ 0	
DIV.21 FIRE PROTECTION		\$4,705
210000 Fire Protection	\$4,705	,,
DIV.22 PLUMBING		\$85,775
220000 Plumbing	\$85,775	+ - 0,7 7 0
DIV.23 HVAC		\$64,018
230000 HVAC	\$64,018	ψ04,010
DIV.26 ELECTRICAL	1 - 170 - 0	\$61,402
260000 Electrical	\$61,402	Ф 01,402
	Ψ01,402	Φ
DIV.32 EARTHWORK	#10 5555	\$12,000
320000 Earthwork	\$12,000	
SUBTOTAL DIRECT (TRADE) COST		\$665,631



SI DE		DESCRIPTION	QTY	UNIT	UNIT COST	COST	TOTAL	COST
che	n Renova	tion	I				<u> </u>	
		Renovation area						
		Kitchen	941					
		TOTAL	941	gsf				
	02	EXISTING CONDITIONS]					
	021500	DEMOLITION						
		Remove SOG for new below grade grease trap and floor drains	300	sf	15.00	4,500		
		Demo and remove ceramic tile floor finishes and bases	941	sf	6.00	5,646		
		Demo and remove ceiling (tile and gwb) Demo and remove door, frame and hardware	941	sf	3.00	2,823 NIC		
		GWB from one side of ETR framing	200	lf	36.00	7,200		
		Miscellaneous interior demolition - counters, casework and	941	gsf	2.00	1,882		
		accessories etc.	74-	0		-,		
		Remove cut and capped fixtures and fittings	941	gsf	4.00	3,764		
		Remove existing kitchen equipment		10		By owner		
		Temp partition Temp door	30	lf	108.00	3,240		
		Dust control & protection of existing to remain - allowance	1	loc ls	800.00 2,500.00	800 2,500		
		SUBTOTAL	-	13	2,500.00	2,300	32,355	
	025000	HAZARDOUS COMPONENTS ABATEMENT				P O		
		HAZ MAT removal SUBTOTAL				By Owner		
		SUBTOTAL					-	
7		ICTING CONDITIONS						d aa a
	TOTAL EXI	ISTING CONDITIONS						\$32,3
<u> </u>	TOTAL EX	ISTING CONDITIONS	_					\$32,3
	o3	CONCRETE]					\$32,38
	03	CONCRETE]					<u>\$32,3;</u>
		CONCRETE	300	sf	25.00	7.500		\$32,3 8
	03	CONCRETE	300	sf	25.00	7,500	7,500	*32,3
	03	CONCRETE CONCRETE Replace slab on grade with new-	300	sf	25.00	7,500	7,500	\$32,3£
	03	CONCRETE CONCRETE Replace slab on grade with new- SUBTOTAL	300	sf	25.00	7,500	7,500	\$32,35 \$7,50
	03	CONCRETE CONCRETE Replace slab on grade with new- SUBTOTAL	300	sf	25.00	7,500	7,500	
	03 031000 TOTAL CO	CONCRETE CONCRETE Replace slab on grade with new- SUBTOTAL NCRETE MASONRY	300	sf	25.00	7,500	7,500	
	03 031000 TOTAL CO	CONCRETE CONCRETE Replace slab on grade with new- SUBTOTAL NCRETE MASONRY UNIT MASONRY	300	sf	25.00	7,500	7,500	
	03 031000 TOTAL CO	CONCRETE CONCRETE Replace slab on grade with new- SUBTOTAL NCRETE MASONRY	300	sf	25.00	7,500	7,500	
	03 031000 TOTAL CO	CONCRETE Replace slab on grade with new- SUBTOTAL NCRETE MASONRY UNIT MASONRY SUBTOTAL	300	sf	25.00	7,500	7,500	\$7,50
	03 031000 TOTAL COI 04 042000	CONCRETE Replace slab on grade with new- SUBTOTAL NCRETE MASONRY UNIT MASONRY SUBTOTAL	300	sf	25.00	7,500	7,500	\$7, 5 0
	03 031000 TOTAL COI 04 042000	CONCRETE Replace slab on grade with new- SUBTOTAL NCRETE MASONRY UNIT MASONRY SUBTOTAL SONRY METALS]	sf	25.00	7,500	7,500	\$7,50
	03 031000 TOTAL COL 04 042000	CONCRETE Replace slab on grade with new- SUBTOTAL NCRETE MASONRY UNIT MASONRY SUBTOTAL SONRY METALS METAL FABRICATIONS]				7,500	\$7,5C
	03 031000 TOTAL COI 04 042000	CONCRETE Replace slab on grade with new- SUBTOTAL NCRETE MASONRY UNIT MASONRY SUBTOTAL SONRY METALS METAL FABRICATIONS Misc. metals allowance] 300	sf	25.00	2,823	-	\$7,5C
	03 031000 TOTAL COI 04 042000	CONCRETE Replace slab on grade with new- SUBTOTAL NCRETE MASONRY UNIT MASONRY SUBTOTAL SONRY METALS METAL FABRICATIONS]				7,500	
	03 031000 TOTAL COI 04 042000	CONCRETE Replace slab on grade with new- SUBTOTAL NCRETE MASONRY UNIT MASONRY SUBTOTAL SONRY METALS METAL FABRICATIONS Misc. metals allowance SUBTOTAL]				-	\$7,50
	03 031000 TOTAL COI 04 042000 TOTAL MA 05	CONCRETE Replace slab on grade with new- SUBTOTAL NCRETE MASONRY UNIT MASONRY SUBTOTAL SONRY METALS METAL FABRICATIONS Misc. metals allowance SUBTOTAL]				-	\$7,5C
	03 031000 TOTAL CO 04 042000 TOTAL MA 05 055000	CONCRETE Replace slab on grade with new- SUBTOTAL NCRETE MASONRY UNIT MASONRY SUBTOTAL SONRY METALS METAL FABRICATIONS Misc. metals allowance SUBTOTAL TALS WOOD & PLASTICS]				-	\$7,5C
	03 031000 TOTAL CO 04 042000 TOTAL MA 05 055000	CONCRETE Replace slab on grade with new- SUBTOTAL NCRETE MASONRY UNIT MASONRY SUBTOTAL SONRY METALS METAL FABRICATIONS Misc. metals allowance SUBTOTAL TALS WOOD & PLASTICS ROUGH CARPENTRY	941	gsf	3.00	2,823	-	\$7,5¢
	03 031000 TOTAL CO 04 042000 TOTAL MA 05 055000	CONCRETE Replace slab on grade with new- SUBTOTAL NCRETE MASONRY UNIT MASONRY SUBTOTAL SONRY METALS METAL FABRICATIONS Misc. metals allowance SUBTOTAL TALS WOOD & PLASTICS ROUGH CARPENTRY Misc. blocking allowance]				2,823	\$7,50
	03 031000 TOTAL CO 04 042000 TOTAL MA 05 055000	CONCRETE Replace slab on grade with new- SUBTOTAL NCRETE MASONRY UNIT MASONRY SUBTOTAL SONRY METALS METAL FABRICATIONS Misc. metals allowance SUBTOTAL TALS WOOD & PLASTICS ROUGH CARPENTRY	941	gsf	3.00	2,823	-	\$7,5C
	03 031000 TOTAL CO 04 042000 TOTAL MA 05 055000	CONCRETE Replace slab on grade with new- SUBTOTAL NCRETE MASONRY UNIT MASONRY SUBTOTAL SONRY METALS METAL FABRICATIONS Misc. metals allowance SUBTOTAL TALS WOOD & PLASTICS ROUGH CARPENTRY Misc. blocking allowance	941	gsf	3.00	2,823	2,823	\$7,50 \$





CSI				UNIT	EST'D	SUB	TOTAL
CODE	DESCRIPTION	QTY	UNIT	COST	COST	TOTAL	COST

Kitchen Renovation

54

55 56

57

59

61

62

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67 68

71 72

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74

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103

104

105

108

109

111

SUBTOTAL 2,823

TOTAL WOOD & PLASTICS \$4,705

THERMAL & MOISTURE PROTECTION 07

WATERPROOFING, DAMPPROOFING & CAULKING 070001

> Sealant allowance 941 1.00 941

SUBTOTAL 941

TOTAL THERMAL AND MOISTURE PROTECTION \$941

DOORS & WINDOWS 08

DOORS, FRAMES AND HARDWARE 081100

No work assumed

SUBTOTAL

TOTAL DOORS AND WINDOWS **\$0**

FINISHES 09

0900002 TILE

Ceramic wall tile backsplash 84 sf 40.00 3,360 Quarry floor tile 941 sf38.00 35,758 Quarry floor tile base 201 lf 18.00 3,618

SUBTOTAL

0900003 ACOUSTIC CEILING TILE

Acoustic ceiling tile; washable sf 15.00 14,115 941 SUBTOTAL 56,851

PAINTING AND COATING 090007 Prepare, prime and paint existing to remain walls and doors ls1,500.00 1,500

allowance

New sheetrock walls 4,584 764 sf 6.00 SUBTOTAL 6,084

RESILIENT FLOORING 096500

No work assumed

SUBTOTAL

096800 CARPET

> Allowance to patch and repair assumed carpet at dinning 1,000.00 1,000 SUBTOTAL 1,000

GYPSUM BOARD ASSEMBLIES 092900

Apply new MR GWB to existing studs 9,000 1.800 sf 5.00 Allowance to patch ETR partitions disturbed by new MEP work gsf 1,882 941 2.00 GWB ceilings and soffits allowance 1 ls 2,000.00 2,000

SUBTOTAL 12,882

TOTAL FINISHES \$76,817

10 - SPECIALTIES

VISUAL DISPLAY SURFACES 101100 No scope

SUBTOTAL



E	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
hen Reno	vation		1			1	
10140	o SIGNAGE						
	Signage and graphics allowance	1	ls	1,000.00	1,000		
	SUBTOTAL					1,000	
10911	TOILET COMPARTMENTS						
102110							
	SUBTOTAL					-	
10260	o WALL Protection						
	Stainless steel wall panel (8' high)	256	sf	50.00	12,800		
	FRP wall panel (8' high)	696	sf	20.00	13,920		
	Allowance for wall protection	1	ls	1,000.00	1,000		
	SUBTOTAL					27,720	
40090	TOH ET ACCESSOBIES						
10280							
	No work assumed						
	SUBTOTAL					-	
10440	o FIRE PROTECTION SPECIALTIES						
	Fire extinguisher cabinets	1	ls	1,000.00	1,000		
	SUBTOTAL					1,000	
TOTAL -	SPECIALTIES						\$29
11 - EQU	IPMENT						
44400	EOOD CEMIDALCE FOUND						
11400	Food service equipment budget per Colburn Guyette report dated 8-	0.41	sf	070.00	054.050		
	12-22	941	51	270.00	254,070		
	SUBTOTAL					254,070	
TOTAL -	FOLIDMENT						\$254
TOTAL -	EQUIPMENT						\$254
	EQUIPMENT						\$254
12 - FUR	NISHINGS						\$254
12 - FUR	NISHINGS 00 CASEWORK	15	lf	550.00	8.250		\$254
12 - FUR	NISHINGS OO CASEWORK Pickup, base and counter	15	lf lf	550.00 550.00	8,250 6,050		\$254
12 - FUR	NISHINGS 00 CASEWORK	15 11	lf lf lf	550.00	6,050		\$254.
12 - FUR	NISHINGS OO CASEWORK Pickup, base and counter Prep cabinet, base and counter	11	lf				\$254,
12 - FUR	OO CASEWORK Pickup, base and counter Prep cabinet, base and counter Prep upper shelf	11 11	lf lf	550.00 350.00	6,050 3,850		\$254 <u>.</u>
12 - FUR	NISHINGS OO CASEWORK Pickup, base and counter Prep cabinet, base and counter Prep upper shelf Serving cabinet, base and counter	11 11 14	lf lf lf	550.00 350.00 550.00	6,050 3,850 7,700		\$254
12 - FUR	NISHINGS OO CASEWORK Pickup, base and counter Prep cabinet, base and counter Prep upper shelf Serving cabinet, base and counter Serving upper shelf	11 11 14 5	lf lf lf lf	550.00 350.00 550.00 350.00	6,050 3,850 7,700 1,750	28,800	\$254
12 - FUR	OO CASEWORK Pickup, base and counter Prep cabinet, base and counter Prep upper shelf Serving cabinet, base and counter Serving upper shelf Misc. casework at serve window SUBTOTAL	11 11 14 5	lf lf lf lf	550.00 350.00 550.00 350.00 200.00	6,050 3,850 7,700 1,750 1,200	28,800	\$ 2 54,
12 - FUR	NISHINGS OO CASEWORK Pickup, base and counter Prep cabinet, base and counter Prep upper shelf Serving cabinet, base and counter Serving upper shelf Misc. casework at serve window	11 11 14 5	lf lf lf lf	550.00 350.00 550.00 350.00 200.00	6,050 3,850 7,700 1,750	28,800	\$254
12 - FUR 1230	OO CASEWORK Pickup, base and counter Prep cabinet, base and counter Prep upper shelf Serving cabinet, base and counter Serving upper shelf Misc. casework at serve window SUBTOTAL OO WINDOW TREATMENTS SUBTOTAL	11 11 14 5	lf lf lf lf	550.00 350.00 550.00 350.00 200.00	6,050 3,850 7,700 1,750 1,200	28,800	
12 - FUR 1230	OO CASEWORK Pickup, base and counter Prep cabinet, base and counter Prep upper shelf Serving cabinet, base and counter Serving upper shelf Misc. casework at serve window SUBTOTAL OO WINDOW TREATMENTS	11 11 14 5	lf lf lf lf	550.00 350.00 550.00 350.00 200.00	6,050 3,850 7,700 1,750 1,200	28,800	
12 - FUR 1230 1260	OO CASEWORK Pickup, base and counter Prep cabinet, base and counter Prep upper shelf Serving cabinet, base and counter Serving upper shelf Misc. casework at serve window SUBTOTAL OO WINDOW TREATMENTS SUBTOTAL	11 11 14 5	lf lf lf lf	550.00 350.00 550.00 350.00 200.00	6,050 3,850 7,700 1,750 1,200	28,800	
12 - FUR 1230 1260 TOTAL -	NISHINGS OO CASEWORK Pickup, base and counter Prep cabinet, base and counter Prep upper shelf Serving cabinet, base and counter Serving upper shelf Misc. casework at serve window SUBTOTAL OO WINDOW TREATMENTS SUBTOTAL FURNISHINGS	11 11 14 5	lf lf lf lf	550.00 350.00 550.00 350.00 200.00	6,050 3,850 7,700 1,750 1,200	28,800	
12 - FUR 1230 1260 TOTAL -	OO CASEWORK Pickup, base and counter Prep cabinet, base and counter Prep upper shelf Serving cabinet, base and counter Serving upper shelf Misc. casework at serve window SUBTOTAL OO WINDOW TREATMENTS SUBTOTAL FURNISHINGS	11 11 14 5	lf lf lf lf	550.00 350.00 550.00 350.00 200.00	6,050 3,850 7,700 1,750 1,200	28,800	\$254, \$28,
12 - FUR 1230 1260 TOTAL -	NISHINGS OO CASEWORK Pickup, base and counter Prep cabinet, base and counter Prep upper shelf Serving cabinet, base and counter Serving upper shelf Misc. casework at serve window SUBTOTAL OO WINDOW TREATMENTS SUBTOTAL FURNISHINGS E PROTECTION Remove and reinstall branch piping and sprinkler heads as required for renovated spaces	11 11 14 5 6	If If If If If If	550.00 350.00 550.00 350.00 200.00	6,050 3,850 7,700 1,750 1,200	28,800	
12 - FUR 1230 1260 TOTAL -	NISHINGS OO CASEWORK Pickup, base and counter Prep cabinet, base and counter Prep upper shelf Serving cabinet, base and counter Serving upper shelf Misc. casework at serve window SUBTOTAL OO WINDOW TREATMENTS SUBTOTAL FURNISHINGS E PROTECTION Remove and reinstall branch piping and sprinkler heads as	11 11 14 5 6	If If If If If If	550.00 350.00 550.00 350.00 200.00	6,050 3,850 7,700 1,750 1,200	28,800	





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Need	lham Senior Center
Kitcl	nen Renovations
Need	ham, MA

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	COST
Citchen Renov	vation						
22 - PLU	MRING						
22 - PLU	MBING						
2200	00 PLUMBING						
	Plumbing Fixtures Connect to new kitchen equipment	95	ea	800.00	20,000		
	Replace Gas Shutoff /Ansul System	25 1	ea	800.00	BY OWNER		
	Floor drains	4	ea	1,200.00	4,800		
	Domestic Water Piping	4	ca	1,200.00	4,000		
	Extend or repair fixture rough-in piping	25	ea	250.00	6,250		
	Pipe Insulation						
	Pipe insulation or replace, as required	25	ea	75.00	1,875		
	Sanitary Waste And Vent Pipe						
	New sanitary underground pipe	80	lf	130.00	10,400		
	Extend fixture rough-in piping at fixtures	30	ea	300.00	9,000		
	Grease tank and pump (50 gmp), recessed	1	ls	15,000.00	15,000		
	Connect to exiting sanitary system, underground	1	loc	800.00	800		
	Clean existing sanity pipe allowance	1	ls	4,500.00	4,500		
	Miscellaneous						
	Coordination & management	1	ls	10,000.00	10,000		
	Coring, sleeves & fire stopping	1	ls	1,500.00	1,500		
	Testing and sterilization	1	ls	600.00	600		
	Fees & permits	1	ls	1,050.00	1,050		
	SUBTOTAL					85,775	
23	HVAC						
23000							
	<u>Equipment</u>	1	ea	7.500.00	7,500		
	<u>Equipment</u> VRF Heat Pump	1	ea ea	7,500.00 4.500.00	7,500 4,500		
	<u>Equipment</u>	1	ea	4,500.00	4,500		
	Equipment VRF Heat Pump VRF Branch Controller		ea ea	4,500.00 2,800.00	4,500 5,600		
	Equipment VRF Heat Pump VRF Branch Controller VRF 4-Way Cassette w/ Grill	1 2	ea	4,500.00	4,500		
	Equipment VRF Heat Pump VRF Branch Controller VRF 4-Way Cassette w/ Grill Kitchen Exhaust Fan KEF-1	1 2 1	ea ea ea	4,500.00 2,800.00 6,500.00	4,500 5,600 6,500		
	Equipment VRF Heat Pump VRF Branch Controller VRF 4-Way Cassette w/ Grill Kitchen Exhaust Fan KEF-1 Kitchen Makeup Air Fan, MAU-1	1 2 1	ea ea ea	4,500.00 2,800.00 6,500.00	4,500 5,600 6,500		
	Equipment VRF Heat Pump VRF Branch Controller VRF 4-Way Cassette w/ Grill Kitchen Exhaust Fan KEF-1 Kitchen Makeup Air Fan, MAU-1 Sheet metal & Accessories	1 2 1 1	ea ea ea	4,500.00 2,800.00 6,500.00 6,500.00	4,500 5,600 6,500 6,500		
	Equipment VRF Heat Pump VRF Branch Controller VRF 4-Way Cassette w/ Grill Kitchen Exhaust Fan KEF-1 Kitchen Makeup Air Fan, MAU-1 Sheet metal & Accessories Grease Duct, Welded	1 2 1 1	ea ea ea lf	4,500.00 2,800.00 6,500.00 6,500.00	4,500 5,600 6,500 6,500		
	Equipment VRF Heat Pump VRF Branch Controller VRF 4-Way Cassette w/ Grill Kitchen Exhaust Fan KEF-1 Kitchen Makeup Air Fan, MAU-1 Sheet metal & Accessories Grease Duct, Welded Insulation, Fyre Wrap HVAC Piping Refrigerant Piping	1 2 1 1	ea ea ea lf	4,500.00 2,800.00 6,500.00 6,500.00	4,500 5,600 6,500 6,500 2,400 640		
	Equipment VRF Heat Pump VRF Branch Controller VRF 4-Way Cassette w/ Grill Kitchen Exhaust Fan KEF-1 Kitchen Makeup Air Fan, MAU-1 Sheet metal & Accessories Grease Duct, Welded Insulation, Fyre Wrap HVAC Piping Refrigerant Piping Refrigerant Piping with inline components	1 2 1 1	ea ea ea lf	4,500.00 2,800.00 6,500.00 6,500.00	4,500 5,600 6,500 6,500		
	Equipment VRF Heat Pump VRF Branch Controller VRF 4-Way Cassette w/ Grill Kitchen Exhaust Fan KEF-1 Kitchen Makeup Air Fan, MAU-1 Sheet metal & Accessories Grease Duct, Welded Insulation, Fyre Wrap HVAC Piping Refrigerant Piping Refrigerant Piping with inline components Condensate Drain Piping	1 2 1 1 80 80	ea ea ea If If	4,500.00 2,800.00 6,500.00 6,500.00 30.00 8.00	4,500 5,600 6,500 6,500 2,400 640		
	Equipment VRF Heat Pump VRF Branch Controller VRF 4-Way Cassette w/ Grill Kitchen Exhaust Fan KEF-1 Kitchen Makeup Air Fan, MAU-1 Sheet metal & Accessories Grease Duct, Welded Insulation, Fyre Wrap HVAC Piping Refrigerant Piping Refrigerant Piping with inline components Condensate Drain Piping Copper pipe type L with fittings & hangers	1 2 1 1 80 80	ea ea ea ea lf lf	4,500.00 2,800.00 6,500.00 6,500.00 30.00 8.00	4,500 5,600 6,500 6,500 2,400 640		
	Equipment VRF Heat Pump VRF Branch Controller VRF 4-Way Cassette w/ Grill Kitchen Exhaust Fan KEF-1 Kitchen Makeup Air Fan, MAU-1 Sheet metal & Accessories Grease Duct, Welded Insulation, Fyre Wrap HVAC Piping Refrigerant Piping Refrigerant Piping with inline components Condensate Drain Piping Copper pipe type L with fittings & hangers Piping Insulation	1 2 1 1 80 80 80	ea ea ea lf lf ea ea	4,500.00 2,800.00 6,500.00 6,500.00 30.00 8.00 35.00	4,500 5,600 6,500 6,500 2,400 640 8,400		
	Equipment VRF Heat Pump VRF Branch Controller VRF 4-Way Cassette w/ Grill Kitchen Exhaust Fan KEF-1 Kitchen Makeup Air Fan, MAU-1 Sheet metal & Accessories Grease Duct, Welded Insulation, Fyre Wrap HVAC Piping Refrigerant Piping Refrigerant Piping with inline components Condensate Drain Piping Copper pipe type L with fittings & hangers Piping Insulation Piping insulation, Refrigerant	1 2 1 1 80 80	ea ea ea If If	4,500.00 2,800.00 6,500.00 6,500.00 30.00 8.00	4,500 5,600 6,500 6,500 2,400 640		
	Equipment VRF Heat Pump VRF Branch Controller VRF 4-Way Cassette w/ Grill Kitchen Exhaust Fan KEF-1 Kitchen Makeup Air Fan, MAU-1 Sheet metal & Accessories Grease Duct, Welded Insulation, Fyre Wrap HVAC Piping Refrigerant Piping Refrigerant Piping with inline components Condensate Drain Piping Copper pipe type L with fittings & hangers Piping Insulation Piping insulation, Refrigerant Temperature Controls (DDC)	1 2 1 1 80 80 80	ea ea ea lf lf ea ea	4,500.00 2,800.00 6,500.00 6,500.00 30.00 8.00 35.00 700.00	4,500 5,600 6,500 6,500 2,400 640 8,400 1,400		
	Equipment VRF Heat Pump VRF Branch Controller VRF 4-Way Cassette w/ Grill Kitchen Exhaust Fan KEF-1 Kitchen Makeup Air Fan, MAU-1 Sheet metal & Accessories Grease Duct, Welded Insulation, Fyre Wrap HVAC Piping Refrigerant Piping Refrigerant Piping with inline components Condensate Drain Piping Copper pipe type L with fittings & hangers Piping Insulation Piping insulation, Refrigerant Temperature Controls (DDC) Provide and connect new VRF controls to BMS	1 2 1 1 80 80 80	ea ea ea lf lf ea ea	4,500.00 2,800.00 6,500.00 6,500.00 30.00 8.00 35.00	4,500 5,600 6,500 6,500 2,400 640 8,400		
	Equipment VRF Heat Pump VRF Branch Controller VRF 4-Way Cassette w/ Grill Kitchen Exhaust Fan KEF-1 Kitchen Makeup Air Fan, MAU-1 Sheet metal & Accessories Grease Duct, Welded Insulation, Fyre Wrap HVAC Piping Refrigerant Piping Refrigerant Piping with inline components Condensate Drain Piping Copper pipe type L with fittings & hangers Piping Insulation Piping insulation, Refrigerant Temperature Controls (DDC) Provide and connect new VRF controls to BMS Balancing	1 2 1 1 80 80 240 2 240	ea ea ea lf lf ea ea lf	4,500.00 2,800.00 6,500.00 6,500.00 30.00 8.00 700.00 13.00 4.50	4,500 5,600 6,500 6,500 2,400 640 8,400 1,400 3,120 4,235		
	Equipment VRF Heat Pump VRF Branch Controller VRF 4-Way Cassette w/ Grill Kitchen Exhaust Fan KEF-1 Kitchen Makeup Air Fan, MAU-1 Sheet metal & Accessories Grease Duct, Welded Insulation, Fyre Wrap HVAC Piping Refrigerant Piping Refrigerant Piping Refrigerant Piping with inline components Condensate Drain Piping Copper pipe type L with fittings & hangers Piping Insulation Piping insulation, Refrigerant Temperature Controls (DDC) Provide and connect new VRF controls to BMS Balancing System testing & balancing	1 2 1 1 80 80 80	ea ea ea lf lf ea ea	4,500.00 2,800.00 6,500.00 6,500.00 30.00 8.00 35.00 700.00	4,500 5,600 6,500 6,500 2,400 640 8,400 1,400		
	Equipment VRF Heat Pump VRF Branch Controller VRF 4-Way Cassette w/ Grill Kitchen Exhaust Fan KEF-1 Kitchen Makeup Air Fan, MAU-1 Sheet metal & Accessories Grease Duct, Welded Insulation, Fyre Wrap HVAC Piping Refrigerant Piping Refrigerant Piping with inline components Condensate Drain Piping Copper pipe type L with fittings & hangers Piping Insulation Piping insulation, Refrigerant Temperature Controls (DDC) Provide and connect new VRF controls to BMS Balancing	1 2 1 1 80 80 240 2 240	ea ea ea lf lf ea ea lf	4,500.00 2,800.00 6,500.00 6,500.00 30.00 8.00 700.00 13.00 4.50	4,500 5,600 6,500 6,500 2,400 640 8,400 1,400 3,120 4,235		
	Equipment VRF Heat Pump VRF Branch Controller VRF 4-Way Cassette w/ Grill Kitchen Exhaust Fan KEF-1 Kitchen Makeup Air Fan, MAU-1 Sheet metal & Accessories Grease Duct, Welded Insulation, Fyre Wrap HVAC Piping Refrigerant Piping Refrigerant Piping with inline components Condensate Drain Piping Copper pipe type L with fittings & hangers Piping Insulation Piping insulation, Refrigerant Temperature Controls (DDC) Provide and connect new VRF controls to BMS Balancing System testing & balancing Miscellaneous	1 2 1 1 80 80 80 240 2 240 941	ea ea ea lf lf ea ea sf	4,500.00 2,800.00 6,500.00 6,500.00 30.00 8.00 700.00 13.00 4.50 3.00	4,500 5,600 6,500 6,500 2,400 640 8,400 1,400 4,235 2,823		
	Equipment VRF Heat Pump VRF Branch Controller VRF 4-Way Cassette w/ Grill Kitchen Exhaust Fan KEF-1 Kitchen Makeup Air Fan, MAU-1 Sheet metal & Accessories Grease Duct, Welded Insulation, Fyre Wrap HVAC Piping Refrigerant Piping Refrigerant Piping Refrigerant Piping with inline components Condensate Drain Piping Copper pipe type L with fittings & hangers Piping Insulation Piping insulation, Refrigerant Temperature Controls (DDC) Provide and connect new VRF controls to BMS Balancing System testing & balancing Miscellaneous Coordination & management	1 2 1 1 80 80 240 2 240 941 941	ea ea ea lf lf ea lf sf sf	4,500.00 2,800.00 6,500.00 6,500.00 30.00 8.00 700.00 13.00 4.50 3.00 8,000.00	4,500 5,600 6,500 6,500 2,400 640 8,400 1,400 3,120 4,235 2,823 8,000		
	Equipment VRF Heat Pump VRF Branch Controller VRF 4-Way Cassette w/ Grill Kitchen Exhaust Fan KEF-1 Kitchen Makeup Air Fan, MAU-1 Sheet metal & Accessories Grease Duct, Welded Insulation, Fyre Wrap HVAC Piping Refrigerant Piping Refrigerant Piping with inline components Condensate Drain Piping Copper pipe type L with fittings & hangers Piping Insulation Piping insulation, Refrigerant Temperature Controls (DDC) Provide and connect new VRF controls to BMS Balancing System testing & balancing Miscellaneous Coordination & management Coring, sleeves & fire stopping	1 2 1 1 80 80 80 240 2 240 941 941	ea ea ea lf lf sf sf ls ls	4,500.00 2,800.00 6,500.00 6,500.00 30.00 8.00 700.00 13.00 4.50 3.00 8,000.00 1,000.00	4,500 5,600 6,500 6,500 2,400 640 8,400 1,400 4,235 2,823 8,000 1,000		





CSI				UNIT	EST'D	SUB	TOTAL
CODE	DESCRIPTION	QTY	UNIT	COST	COST	TOTAL	COST

TOTAL TO	ntion						
TOTAL, H	VAC						
26	ELECTRICAL	7					
20	ELECTRICAL						
	Power:						
	Modify and make connections at existing gear and distribution	1	ls	5,000.00	5,000		
	Equipment Wiring:						
	MAU feed and connections	1	ea	4,500.00	4,500		
	VRF/Heat pump feed and connections	1	ea	4,500.00	4,500		
	VRF/Cassette feed and connections	2	ea	1,200.00	2,400		
	DDC feed and connections	1	ea	500.00	500		
	Kitchen equipment Wiring:						
	Exhaust fan feed and connection	1	ea	1,500.00	1,500		
	Combi oven (Gas)	1	ea	1,000.00	1,000		
	Dishwasher feed and connection	2	ea	2,500.00	5,000		
	20A feed and connections	7	ea	1,000.00	7,000		
	** 1.*						
	Lighting:		c				
	New Kitchen lighting, installation and circuitry	941	sf	12.00	11,292		
	Lighting controls	941	sf	2.00	1,882		
	Branch devices and circuitry not depicted	941	sf	8.00	7,528		
	Fire Alarm:						
	Allow for modifications to existing FACP and testing	1	ls	2,500.00	2.500		
	Devices, modules and cabling	1	ls	2,500.00	2,500 2,500		
	Devices, modules and casing	•	15	2,300.00	2,500		
	Telecommunications (assumes ETR)			ET	R		
	Security system (assumes ETR)			ET			
	Miscellaneous:						
	Demo and make safe	1	ls	3,500.00	3,500		
	Fees and permits	1	ls	800.00	800		
	SUBTOTAL					61,402	
TOTAL EL	ECTRICAL						
as EADTH	THE OPE						
32 - EART	HWORK						
00000	o EARTHWORK						
32000			la.	4 000 00	4.000		
	Allowance to remove and reinstall soils for new grease trap	1	ls	4,000.00	4,000		
	Allowance for E&B at new sanitary	60	lf	50.00	3,000		
	Allowance for misc. disposal, dewatering, bedding and fill materials	1	ls	5,000.00	5,000		
	SUBTOTAL					12,000	

SECTION FOUR

Engineering Feasibility Report

4.1 – MEP Feasibility report by BLW Engineers, Inc.





Needham Senior Center 300 Hillside Avenue Needham, MA

MEP Feasibility Study



Prepared For:

SOCTEC AE Consulting, LLC 250 Dorchester Avenue Boston, MA 02127

October 11, 2022





FIRE PROTECTION

Summary

The following is a report of the existing Fire Protection systems serving the CATH center kitchen based on 09.15.2022 site visit. The objective to determine feasibility of a kitchen renovation and upgrade.

Fire Protection Existing Conditions

Existing sprinkler grid in the kitchen.

Fire Protection Recommendations

Sprinkler heads & branch piping will be relocated as required for any modifications made to the walls and ceilings to ensure complete sprinkler head coverage for 100% of the renovated space.

End of Fire Protection Section

PLUMBING

Summary

The following is a report of the existing Plumbing systems serving the CATH center kitchen based on 09.15.2022 site visit. The objective to determine feasibility of a kitchen renovation and upgrade.

Plumbing Existing Conditions

Cold water service in basement. A central hot water heater system in basement supplies hot water to the entire building. Cold & Hot water distribution in the kitchen to the existing fixtures. Existing fixtures include three-compartment sink, prep sink, and hand sinks, & two commercial dishwashers. A grease interceptor installed in floor of kitchen. Sanitary connection to main below the floor. Vent piping from all fixtures above the ceiling. An ansul system and gas shut off valve to one range.

Plumbing Recommendations

Preliminary plumbing information for the proposed kitchen is estimated to have 1 ¼" cold water feeding the kitchen space. Hot water requirement of 90 gallons per hour recovery. The space will require a 3" vent connection, a 4" sanitary connection to the sanitary in the building, and a 50-gpm grease interceptor for all grease waste fixtures (3 bay sinks, dish machines, prep sinks, floor drains).

End of Plumbing Section



MECHANICAL

Summary

The following is a report of the existing HVAC systems serving the CATH center kitchen based on 06.08.2022 site visit. The objective to determine feasibility of a kitchen renovation and upgrade

Mechanical Existing Conditions

The existing HVAC system serving the kitchen consists of the following components:

- Make up Air Unit
- Exhaust Fan
- Fan Coil Unit

The make-up air unit and the exhaust fan are located on the roof. The Fan coil unit is located in the plenum space above the acoustical ceiling tiles. There is one thermostat located in the kitchen. The FCU provides heating or cooling to the zone to satisfy the thermostat. The MAU and the fan serve the kitchen exhaust hood.

See below for the performance data of the existing units obtained from the original 01/04/2012 drawings.

Existing FCU	
Total Cooling Capacity (MBH)	20.3
Heating Capacity (MBH)	15
Manufacturer	Mitsubishi
Model	PEFY-P24NMAU-E

Existing Gas Fired Make Up Air Unit				
Total CFM	1200			
Outside Air CFM	1200			
MBH In/Out	150/120			
Manufacturer:	Greenheck			
Model:	IGX-109-H12			



Existing Kitchen Hood Exhaust Fan				
CFM	1200			
НР	3/4			
SP	1			
Manufacturer:	Greenheck			
Model:	CUB-141-7			

Mechanical Recommendations

Kitchen space shall be provided with heating and cooling by a variable refrigerant volume fan coil units interconnected to heat recovery type variable refrigerant volume heat pump. Each fan coil unit shall be a ceiling-mounted type unit. Each heat pump unit shall be interconnected to the several system fan coil units through an insulated refrigerant piping system and be able to provide simultaneous heating and cooling. A condensate drain piping system will also be required to transport condensate from each unit to storm drain or to the outdoors.

Fan coil units shall be controlled by a wall mounted programmable thermostat.

New kitchen grease hood shall be provided with welded steel grease ductwork, grease duct wrap and roof mounted exhaust fan. Make-up air shall be provided though hood PSP, insulated supply ductwork and roof mounted outdoor air ductwork. The make-up air shall be heated from 0-60 degrees F.

Cooking hood shown on Proposed Foodservice Layout, Appendix A is approximately 12 feet in length. At 300 cfm/lf of hood approximately 3600 cfm of grease exhaust (KE) is required.

End of Mechanical Section

ELECTRICAL

Summary

The following is a report of the existing Electrical systems serving the CATH center kitchen based on 06.08.2022 site visit. The objective to determine feasibility of a kitchen renovation and upgrade.

Electrical Existing Conditions

Electrical Distribution

The existing building's service is 800 Amp, 120/208 Volt, 3-phase, 4-wire. The service equipment consists of a 800 Amp main distribution switchboard containing internal breakers distributing power to lighting and power panels. The main panel also serves the normal side of a 400Amp automatic transfer switch. The emergency side is fed from a stand-by



exterior generator. The load side of the transfer switch feeds a stand-by panel SBP. There is a 150Amp/3-pole circuit breaker in SBP which serves the existing kitchen panel.

The kitchen is equipped with an existing 150Amp, 120/208V, 3-phse, 4-wire 42 pole panel. The panel has minimal spare physical capacity.

Condition: The general condition of the electrical equipment was observed to be in good condition.

Electrical distribution equipment and components are expected to have a useful life of 30 years. Switchboards, Panelboards, transformers, generators, and wiring systems are typically serviceable for 10 to 20 years beyond this time if properly maintained and not subjected to repeated overloading or short-circuiting conditions.

Capacity: The existing 800Amp service at 208V/3-phase equates to 288kW. From the bills provided the max demand is 85.6kW. This equates to approximately 237Amps or 30% of the overall service capacity.

Fire Alarm System

The facility is equipped with an addressable fire alarm system. The system is a Gamewell FCI E3 Series. The system appeared to be installed in accordance with NFPA 72 National Fire Alarm Code, Fire Protection and Life Safety Systems, ADA and Town of Needham Code and Bylaws for Life Safety and Fire Alarm



Existing Kitchen Panel



Stand-By Panel and ATS





Existing Fire Alarm Control Panel

Electrical Recommendations

Electrical Distribution

Preliminary electrical information for the proposed kitchen equipment is estimated to be an additional 65kW of connected load. The proposed renovation/addition will also require additional mechanical and plumbing (refer to mechanical and plumbing sections of report). The estimated load for this equipment is 75kW. These estimated loads equate to a connected load of 140 kW or 389 Amps at 208V/3-phase. Applying a demand factor of 65% for the Kitchen equipment (allowable demand per NEC) brings the estimated load to 117 kW (325Amps). Adding the proposed demand to the existing demand of 85.6 kW equates to a total building demand load of 202.6 kW or 563 Amps at 208V/3-phase. This would indicate that the existing electrical service is capable of serving the proposed estimated kitchen loads.

The kitchen shall be provided with estimated 400Amp, 208Volt, 3-phase service fed from the existing switchboard. Kitchen shall be provided with dedicated panelboards located within the space. The panels will service all mechanical, plumbing and kitchen equipment. The equipment under the hood shall be connected to shunt trip circuit breakers which will be shut down during the activation of the hood fire suppression system. The remainder of the kitchen equipment shall be connected to the kitchen panels. All 120V, 15A and 20A receptacles shall be Ground Fault Protected.

Fire Alarm

The existing fire alarm system shall be expanded utilizing addressable terminal cabinets and remote power supplies in the kitchen as required to provide code compliant coverage. Fire alarm devices shall include pull stations at exits, interconnection with the hood suppression system and audio/visual device for notification. Provide audio/visual notification device coverage throughout the facility that meets the requirements of NFPA and ADA. Utilize strobe only devices in public bathrooms and other small rooms where ample audible notification is present.



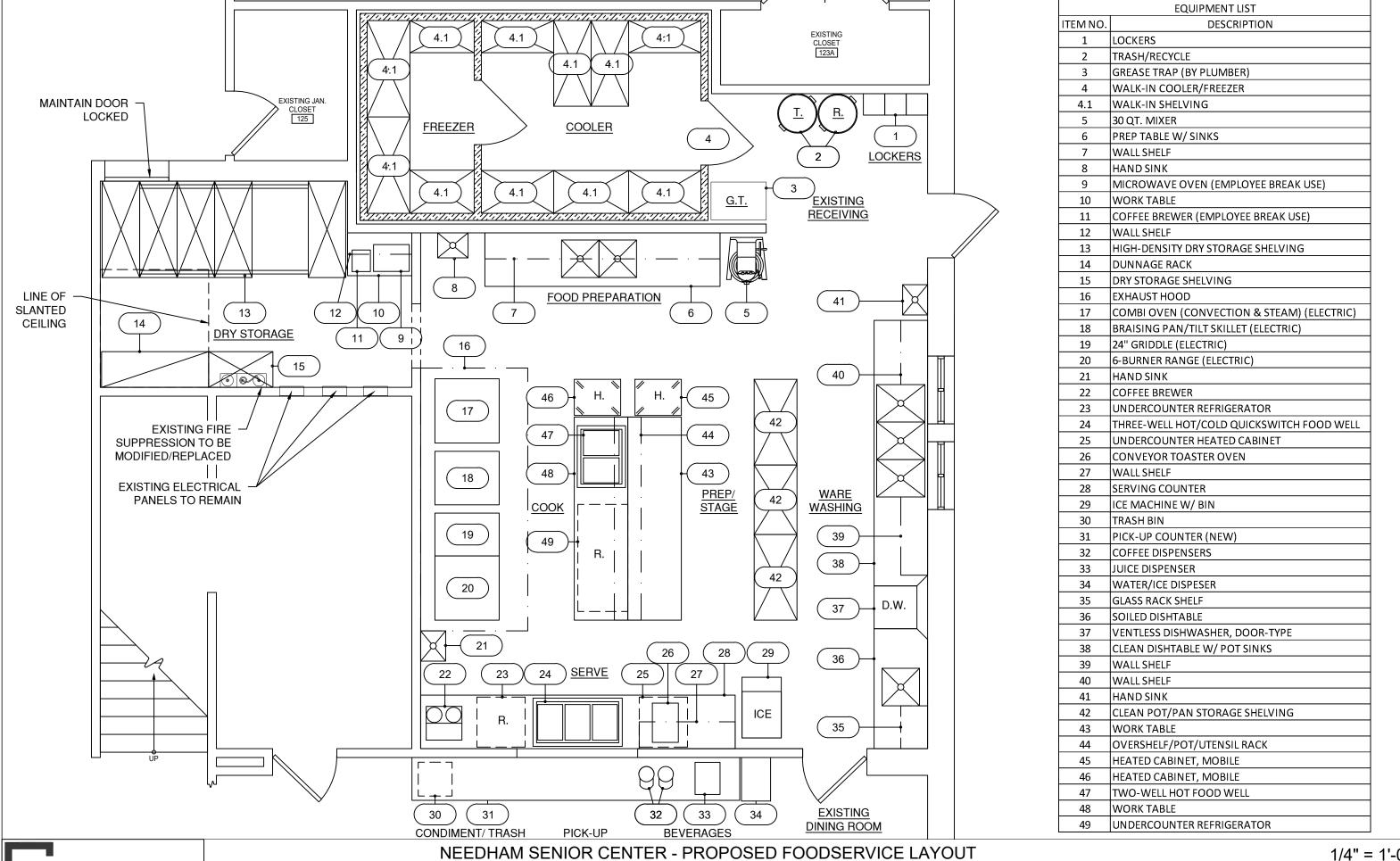
End of Electrical Section

APPENDIX A

Proposed Foodservice Layout

by ColburnGuyette





ColburnGuyette

foodservice design