

CONDITIONS ASSESSMENT REPORT AND RECOMMENDATIONS



LELAND TOWNSHIP PUBLIC LIBRARY

Leland, MICHIGAN

31 MAY 2019

PREPARED FOR:
LELAND TOWNSHIP PUBLIC LIBRARY BOARD OF DIRECTORS

QEA Number: 41807060

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PROJECT OVERVIEW

Based on conversations with Library Director Mark Morton and a review of the Strategic Plan adopted by the Library Board at the end of 2017, 3 objectives were established for this report:

1. *Understand existing conditions and establish maintenance needs.*

This portion of the work is referred to as an existing conditions study. A team consisting of an architect, electrical engineer, and mechanical engineer performed an onsite review of the building. The review involved a visual inspection, but not invasive investigation into hidden conditions.

A code analysis is included in the existing conditions evaluation. The purpose of this effort is to identify code concerns that may need to be addressed or to determine the impact of expansion or renovation.

These findings help define the condition and life expectancy of the building enclosure, interior architecture, and capacity building systems, which can be used as a basis for long term capital improvement budgeting.

2. *Establish options to fulfill service needs.*

While one square-foot per capita has been a historical reference point for decades, this number does vary widely by state and region. Book collections are decreasing, the overall size of libraries are increasing to make room for new types of services, more seating, and expanded programming. Factors such as significant variation in seasonal traffic and proximity to other libraries both influence the Leland Township Public Library.

The library staff and board have a sense of the unmet seasonal and year-round demands. This intuitive knowledge, framed in the context of your community, is the most powerful indicator of need.

Another important consideration is the overall ambience and functionality of the library. Does the library offer the types of environments and services to sufficiently address community needs? The answer to this question should provide you with the confidence to lead the community in a direction; this is essential because it is sometimes difficult for users to imagine beyond what is familiar. Such an approach requires the library to create a vision and then educate the community about the benefits.

Our team met with staff and the library board to establish an approach that will best support the community – either via renovation or expansion.

3. *Define approach, schedule, and costs for implementation.*

Objective 3 will provide the guidelines for moving forward based on the outcomes of both objective 1 and objective 2. The nature and extent of this effort will be directly connected to whether or not expansion is part of the recommendation moving forward. If internal reorganization is the recommended outcome, our efforts will focus on modifications and budgetary numbers supporting this effort. The extent of this effort will establish need and approach, but will not establish final floor plans and building configurations. Included will be the extent to which existing conditions need to be addressed as identified in objective 1.

If the recommendation is for expansion our study will identify size, location and impact on internal library planning. In all likelihood an expansion will also initiate changes in electrical service, mechanical systems and roof replacement. As a part of the recommendation will be cost projections, planning diagrams and conceptual building massing to demonstrate relationship to the existing building, river and surrounding structures. These documents will be developed in a manner to support approach and costs, but additional development will be needed for fundraising efforts.

EXISTING CONDITIONS ASSESSMENT



The original one story 3,200SF Leland Township Library was built in 1975, with a 1,500SF one story addition in 1990 and interior renovations in 2008. The hip-roof structure sits on a bend of the Leland River at the end of Cedar Street between the Leelanau Community Cultural Center and Leelanau Historic Society Museum. It is connected to the museum via the shared Munnecke Room which is approximately 1,340 sf. Together these buildings form the cultural campus of Leland. The building is accessed from Cedar Street via a circular drop off with parking to the south along the Museum and road. The 1st Street right of way extends between the Cultural Center and the Library, with a private boathouse at the end.

General Conditions

The one-story Library is in good condition and is currently occupied, with all spaces in use. All of the building systems are fully functioning.

Site

There is a 40 feet setback from the neighboring boathouse and breakwall of the Leland River.

The Library, previously on a septic system, is now connected to the city sewer system.

Access to the library is by pedestrian walkway via Cedar Street. There is a circular drive for closer drop-off/ pick-up access. There are 7 parking spots (1 handicap) adjacent to the Museum and 24 parking spots on the south side of Cedar Street. Parking is not striped and therefore not delineated.



Exterior Envelope

The Library is a one-story building with 6” lap wood siding and wood trim. At the base of the building is a stone clad CMU foundation. The main entrance is through a vestibule on the south façade of the building. The original 1975 portion of the building sits on a 3’ crawl space.

Windows & Doors

The windows are a combination of wood fixed and wood casement pairs with tinted insulated glass. The exterior wood casing and sills are painted and in good condition.

The wood exterior doors are generally in good condition showing typical wear.

Perimeter Drainage

There are no existing gutters and very little overhang on the existing room. This results in a roof dripline very close to building perimeter. There has been water infiltration in to various areas of the crawl space during heavy rains. Although re-grading of the entry façade has been done, the addition of pea-gravel and drain pipe at the building base could remediate existing water issues.



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Roof

The Library has a cedar wood-shake shingle roof. The wood shingles over the library are in poor condition and need to be replaced. No gutters were observed.

Chimneys

The Library has one large stone chimney that is used for mechanical venting. This chimney was on the original library exterior wall but has since become an interior feature after the Museum addition to the library building. It is now an interior feature of the Munnecke Room.





Interior

The interior is in good condition overall, showing typical wear. The vestibule walk-off mat is in fair condition and could be replaced. The floor in front of the circulation desk between the entry vestibule and youth area shows signs of shifting under the carpet with some minor leveling issues. There are seasonal water issues near the vestibule, not observed at the time of site visit.

Finishes

The majority of the spaces feature carpet tile flooring. Carpeting exhibits typical signs of wear for its age and could be replaced. Walls are painted gypsum board and in good condition. Walls have a wood base with carpet base recessed below the wood base.



Doors

The library has wood doors throughout, all in good condition. If in project scope, doors to the Munnecke Room from the Museum entry should be replaced with half lite doors to increase visibility. Currently patrons utilizing the Museum entry are not able to see if the room is occupied without opening the door and potentially interrupting an ongoing event. This increased visibility would also prevent potential collision of the doors into people or things upon opening. The door and partition between the Munnecke Room and Museum is fire rated. If replaced, new doors would need to maintain this fire rating.



Trim

The library has extensive wood trim throughout. Interior trim around doors, windows, columns, ceiling coffers, and wall base, crown, and corners are all in good condition.

Furniture

Wood furniture, shelving, and millwork are all in good condition. There is a custom made wood table that the Library wants to better utilized as showcase and display piece. There are no known issues with the existing book drop in the vestibule.

Ceilings

The ceilings are all hard – most likely gypsum board finish and painted. There are 3 gable ceiling coffers in the library space: two over stacks and one over the staff and youth area. There is also a gable ceiling coffer in the Munnecke Room. Refer to PME Study Report for lighting.



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Accessibility

Exterior

The entry to the library appears to conform to accessibility standards. There is desire for an automatic door opening button.

Interior

The current shelving layout was done in 2008 and appears to conform to accessible route standards. There is a plan to remove some public computing stations from the existing layout. Heights of remaining stations should be verified for conformity to accessibility standards.

Code Review

The Library is Assembly A-3 occupancy and type V-B construction, un-sprinklered. It is within the allowable square footage for its occupancy and construction type. Proper egress conditions were observed within the library layout and at the entry/exit. Rated construction between the Munnecke Room and Museum was observed.

Mechanical, Electrical, Lighting, and Plumbing

See appendix for PME Assessment Report.





USE / PROGRAM SUMMARY

The Leland Library currently employs 2 full time and 1 part time staff, with 2-3 hour volunteer shifts throughout the day. During the summer there is a part time page.

Seating consists of 8 tables (1 in the youth area) and 3 soft seating (1 in youth). There are 3 areas of computing stations: two near the print station adjacent to the vestibule seating 5, and one adjacent to the youth area seating 2. There are approximately 15 single wood chairs at the ends of shelving rows and throughout other spaces in the library, presumably to provide patrons with a location of respite when browsing the stacks.

While some children's events such as storytime happen in the main library space, the majority utilize the shared Munnecke Room. These consist of youth events, Leelanau Seminars, Friends book sales, and other meetings throughout the year.

The circulation area consists of 125 SF of counter and floor space in front of the 160 SF Staff area. While the area faces the entry, due to the arrangement of the desk the majority of work happens facing away from the door which is not ideal. Reorganization of this area would help staff face patrons as they come in and reduce current confusion of check-in bins at the counter. Orientation of shelves in the adult collection somewhat hinders sightlines and does not provide enough display space, which is desired.



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Storytime is the main youth program, drawing about 40 people to the 405 SF youth area. This space comfortably accommodates 20-30 people but is too tight for larger groups. Since the Youth area is open to the main library, programs in this area can be disruptive to the rest of the library. The carpeted space is not able to accommodate other “messy” youth programs. These programs utilize the Munnecke Room. Neither space has a sink. There is also no storage adjacent to the youth area.

The Munnecke Room can accommodate close to 100 people, but can become completely booked in the summertime making scheduling events more difficult. A dedicated library program space is desired to accommodate larger groups and potentially take advantage of river access in the summertime.



There is currently little to no relationship with Teens, possibly because there is little dedicated space for them. A program room which can accommodate a project or maker space, with access to a sink, could provide space for the type of programs that would draw more Teens to the library, especially after school teens. A larger space with flexible hours would also better accommodate larger family programs.

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The current restrooms are large and comfortable but do not have outlets for needs such as nursing mothers who pump. This is disadvantage to nursing moms who come to and work at the library. Employees must place a chair in the mechanical room, the only private location available with an outlet and small janitorial sink.

There is also desire to provide more business friendly services (entrepreneurial space with printing) for home-office or remote workers. There is significant seasonal increase in numbers, and an outdoor “Wi-fi Garden” could help accommodate this seasonal flux. No quiet study rooms or separate quiet reading areas are available for those wanting a more enclosed/private space.

Today’s libraries serve not only as a source for books and reading, but more and more as a community gathering space. The Leland Library is popular with the community and has the potential to offer more activities to enhance the library user’s experience. A larger dedicated program space and designated quiet areas or study rooms would dovetail nicely in to the current library space and help facilitate these valuable library services.

Summary of major identified needs:

- Larger Youth Space
- Teen Space
- Program Room
- Quiet Study Rooms
- Quiet reading area
- Dedicated library outdoor area (Wifi Garden)



SPACE PLANNING CONCEPT

Leland Township Public Library developed a strategic plan for 2018-2020. Contributors to the plan included library staff, Library Board Members, members of the Strategic Planning Committee and community leaders and community members that attended community conversations. The strategic plan identified four priorities. All four relate to the physical building of the library as Sustainable Stewardship deals with planning for the future, Engagement and Awareness and Technology address services which are for the most part housed in the building. Finally Place directly calls for a welcoming hub for meetings, gatherings, programs and ideas.

The needs for the patrons expressed under the Place Priority included spaces for targeted activities, such as children's activities, quiet reading, and use of technology. In response, our design team looked at the physical building and focusing on how could a renovation or a renovation plus an addition support the goals in the Strategic Plan. Our team met with the library staff to understand the current operations, issues, wants and needs. We met with the library board to review what we had heard. We also toured to museum to understand those spaces.

Multiple plan studies were created to assess if renovation could address the library needs or if an addition and renovation was required. The largest driver of the space planning is the need for a program room that is dedicated to library operations. The library currently has more programs than can be accommodated in the Munnecke Room and the community is asking for more. Other needs include expanded youth area and staff area. To accommodate the desired new spaces without sacrificing collections and adult seating, it was determined that an addition would best accommodate these needs.

Site

Considering the setback and the desirable view on the Leland River side of the building, an addition to the south/roundabout side of the building is recommended. There are currently 33 parking spots intended for the Library and Museum along Cedar Street with more street parking further along Cedar and 1st Streets within walking distance to the building. 23 of these spaces are designated to the Library with a sign along the south side of Cedar Street. Required parking for the current library and Munnecke Room plus a 2,000SF addition, would be a total of 12 spaces. Therefore additional parking is not required. However, in order to provide closer access for the older service population, 5 parking spaces (4 + 1 handicap) can be added to the large island in the middle of the drop off lane.

In order to add to the south of the site, some memorial trees will need to be relocated. The entry courtyard area would be an ideal location for a new dedicated memorial garden/ memorial tree area in remembrance of those who loved the library.

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A designated area, whether through low seating wall or differentiated landscaping, should be demarcated on the Leland River side of the Library. This allows library patrons to have a dedicated outdoor space to enjoy the library site, especially in the summer.

Code

The Library has a maximum allowable area of 7,200 SF (allowable SF including a permitted increase due to the amount of street/side frontage that exists). The existing library is 4,700 SF plus the Munnecke Room which is 1,340 SF. While the existing Library building meets height and area restrictions per building code, adding 2,000SF will require separating the Munnecke Room from the Library portion of the building with fire-rated construction or providing a sprinkler system for the building. The maximum allowed addition without fire separation or adding fire suppression is 940 square feet which does not meet the expressed needs of the library. As the Munnecke Room was added to the original building, there area where rated construction would need to be added is limited and is shown on the proposed plans.

Addition and Renovation

The recommended 2,150SF addition and renovation of the existing building includes a new Program room, Quiet Reading area with fireplace, Quiet Reading/Meeting Room, Business area, Teen area, larger Youth area, and larger Staff area. Bringing the exterior façade of the building south creates a more direct connection to the frequently used Munnecke Room while maintaining restroom access to both the Library and Munnecke patrons.

Youth

The new larger 725SF Youth area is visible from the circulation desk and within easy access of the entry vestibule, especially ideal for those with strollers. While not a completely enclosed space, walls on two sides of the area and the direction of the opening should serve to minimize noise transfer to the quieter side of the library. The majority of collections can be accommodated along perimeter walls of the area, with some low shelving at the entry to delineate space. This leaves a nice open space for movable furnishings and for families to gather and youth activities to take place comfortably. The new Program Room can accommodate larger youth programs, allow for a greater variety of programs, and allow for use of youth area by other patrons when a program is happening.

Program Room

The new Program room, located in what was the Youth and part of the Staff area, is 590SF. This space can comfortably accommodate 39 people in a variety of layouts. There is a sink and countertop to

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facilitate cleanup and a variety of activities. The program room has a door that provides easy access to the restrooms and hallway storage. It is also located in close proximity to the Staff area.

This proposed room is about half the size of the current Munnecke Room which the library would still use for larger programs and to accommodate simultaneous programs.

Staff

The Staff area is 315SF and accommodates 3 desks, countertop space for working and storage. The walls behind circulation and copy area are intended to be full glass to maintain visibility to the rest of the library, especially the entrance.

Business/Computing

The Business zone is 300SF and located near the entrance with easy access to circulation desk and staff for computing assistance and transactions for copying and other business services.

Quiet Study

The 350SF Quiet Study area provides respite for those wanting a quieter space to read or to study. Full height glass walls above low shelving in front of this space helps keep noise out while maintaining visibility, light, and connectivity. This space can accommodate a table and some soft seating, as well as an electric fireplace for visual ambiance. Adjacent to this is an enclosed Study Room (160SF) to allow groups to meet for tutoring, group project work, and discussions with privacy that will not disrupt other patrons.

Teen

The 325SF Teen zone is just north of the Youth area, within easy view of the Circulation and Staff area. There is dedicated collection space and study tables for studying and other activities. The open space in this area could accommodate another table or some flexible furniture or makerspace equipment dedicated to teen activities and interests. Dedicated Teen/Tween activities in this space would help draw afterschool kids.

Collections

Collections space remains about the same with some shuffling of the existing Library layout to accommodate the previously stated program spaces. The existing Library layout is “maxed-out” with very little free space for activity and respite. The 2,000SF addition, although not adding collections space, provides much needed room for the Library to be used in other important ways by the community it serves.

Friends

A book storage closet and book sale area are included near the entry to the library and close to the connection to the Munnecke Room.

PROJECT SCHEDULE AND COST OPINION

Recommended Maintenance Items			
		Priority	Cost Opinion
Architectural			
	Munnecke Doors	immediate	\$1,000
	Wood Shingle Roof Replacement 5,200 sqft (would be included with an addition)	2-4 years	\$35,000
	Perimeter Drainage	1-2 years	\$6,000
	Carpet Replacement (would be included with an addition)	4-6 years	\$25,000
Electrical			
	Lighting Upgrade	2-4 years	\$6-\$12.00 / SF
	Repair Junction Boxes in Crawl	immediate	\$50 per location
	Replace receptacles in children's areas w/tamper resistant ones	immediate	\$50 per location
	Install restroom outlets (2)	immediate	\$500
Plumbing			
	Insulate water piping in crawl	immediate	\$1,000
Mechanical			
	Replace condenser	1-2 years	\$7,000
	Replace floor registers	1-2 years	\$1,000
	Insulate supply ducts in crawl	1-2 years	\$2,000
	Replace furnace mounted humidifiers	1-2 years	\$2,000
	Install outside air duct into return of furnaces	1-2 years	\$2,000
	Install new furnace and condensing unit for Munnecke Room and remove zone control from existing furnace (would be included with an addition)	4-6 years	\$15,000

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The cost opinion for a new addition is based on recent bids received for the work at Glen Lake Community Library and estimating for an addition to Benzie Shores Public Library. Minimal renovation is included for the Munnecke Room to provide new finishes and additional storage cabinetry.

Leland Township Public Library Cost Opinion Worksheet	New Construction 2,150 SF Addition		Renovation 6,040 SF	31-May-19
Construction	462,250		302,000	
Technology (10 \$/sf new, 8 \$/sf renovation)	21,500		48,320	
Fixtures, Furniture, Equipment (FFE) (20 \$/sf new, 12 \$/sf renovation)	43,000		72,480	
subtotal	526,750	245 \$/sf	422,800	
Owner Contingency 8%	42,140		33,824	
A/E & Interiors Professional Services 12%	113,946			
TOTAL	\$682,836		\$456,624	\$1,139,460

APPENDICES

PME Report

Existing Floor Plans

Proposed Addition Floor Plans



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Leland Township Public Library Plumbing, Mechanical and Electrical Systems Summary

Date: April 3, 2019
To: Quinn Evans Architects
Project: Leland Township Public Library
Re: Plumbing, Mechanical and Electrical Systems Summary

PROBLEM STATEMENT

On March 5, 2019, Ann Dilcher and Yao Ma of Quinn Evans Architects contacted Nealis Engineering to request that we investigate and analyze the existing plumbing, mechanical and electrical systems and services of the approximately 4,900 SF Leland Township Public Library in Leland, Michigan. The purpose of the investigation and analysis is to determine what, if anything, would require replacement, upgrades, or repair in order to comply with current construction code requirements. In addition, we were asked to make any recommendations that we identified as aspects of the existing PME systems that could use improvement in order to provide for an approximate 2,000 SF addition. Estimated costs associated with these recommendations were also requested.

This report is based on visual examination of the building components readily accessible at the time of inspection. This study does not include exploratory investigations and hidden conditions.

OBSERVATIONS / FINDINGS

On March 14, 2019, Doug Radtke and Jason VanBrocklin viewed the existing facilities and briefly met with others on site. The following are observations pertaining to the plumbing, mechanical and electrical systems and services.

Fire Protection System – The building does not have an automatic fire protection sprinkler system. There is a well with a pressure tank in the crawl space. This line and well is insufficient to provide fire protection sprinklers.

Plumbing System – The building plumbing system consists of the water well with a pressure tank in the crawl space. The water lines are routed through the crawl space and are not insulated.

There are water softeners installed on the system and appear to be working.

Hot water is provided by a recently replaced water heater.

The plumbing fixtures are serviceable and in good working condition. The water closets are tank type.

If a proposed building addition contains minimal plumbing such as a single toilet and bar sink the existing water and sanitary would be adequate to service the addition.

Mechanical HVAC System – The building HVAC system consists of two high efficiency gas-fired furnaces. The furnaces have recently been replaced and are in good shape. Ductwork is installed in the crawl space to distribute air to the individual rooms and is not insulated. The rooms have floor registers with manually operated dampers that are difficult to operate and should be replaced.

Each furnace has a corresponding outdoor condensing unit to provide air conditioning. One of the condensers is from 2010 but the other is from 1992 and should be replaced. The life expectancy of a condensing unit is 15-20 years.

One of the furnaces has zone dampers installed to assist in controlling the temperature between the newer meeting room and the north side of the Library. This has been a problem area because of the different uses of these areas and the size of the unit being marginal to handle both spaces. A new furnace for the meeting room should be considered.

There are humidifiers on the furnaces but they are inoperable.

The bathrooms have exhaust fans that are operable but there is no outside air being introduced into the space with the HVAC system. An outside air duct should be installed to the return air of each furnace.

There are two gas meters with one meter servicing the Museum and the other meter servicing the Library and Emergency Generator.

A planned addition should be provided with a separate stand-alone HVAC system.

Electrical System – The existing main electrical service consists of a 225-amp 120/240V, single phase electrical service located in the mechanical room. Consumers Energy was contacted by Mark Morton of Leland Township Public Library and a maximum demand load was requested. The electrical demand data produced a peak demand result of 20 kW on July 3, 2018. This equates to 83.3 amps, and given our 225-amp main circuit breaker, there is capacity to add to this service. The electrical service enters a 42-space panelboard (Panel #1) that contains a 225-amp main circuit breaker, as well as a 100-amp, single phase circuit breaker used to feed a 32-space sub-panel (Panel #2), and a 60-amp, single phase circuit breaker used to feed a 12-space generator panelboard (Panel #G) with an automatic transfer switch. These three (3) branch panels are used to distribute power throughout the library building and community space (Munnecke Hall). Panel #1 contains nine (9) spaces and five (5) spare circuit breakers for additional load, Panel #2 contains thirteen (13) spaces and Panel #G is completely full of circuit breakers, with none noted as spares. With the recent generator work, it is unclear if the panel schedules of Panel #1 and #2 were updated to reflect the loads removed and placed on Panel #G. If they were not updated, additional spare circuit breakers exist.

Wiring methods: Considering the construction of the building, its use group and occupant load, conductors installed conduit is the predominant means of distribution power from the panels to the loads. In the crawl space metal-clad cable and nonmetallic sheathed cable (NM-cable or romex) were also found. If the use group is considered assembly, as I think it is, then the wiring practices within the building are satisfactory (2017 NEC, section 518.4), since the library itself is non-rated construction. If these methods continue into Munnecke Hall, code violations exist and should be changed. It is assumed that the present system has passed an electrical inspection, and there is a possibility that during a minor renovation the existing system may be 'grandfathered'. However, under a major renovation or a service change, it is possible that the entire building will be required to meet today's electrical codes. A minor code violation in the crawl space was observed. It consisted of a junction box used for electrical wiring

that did not have a cover attached to it. This can be easily remedied.

Lighting:

Interior lighting fixtures: The existing lighting installed in the building is primarily of older technology, consisting of incandescent, compact fluorescent, biax-fluorescent, T5, T8 and T12 linear fluorescent lamps, although LED recessed can fixtures have replaced all of the recessed can fixtures. A variety of fixtures existed as well. Recessed cans, pendant linear fluorescent fixtures, surface linear fluorescents, ceiling mounted wall wash fixtures, wall mounted up/down sconces, undercabinet LED fixtures, and track mounted wall wash fixtures all existed to illuminate the library. The community space was illuminated using recessed fluorescent 1x4 fixtures. If changing of these fixture takes place, an energy savings can be realized.

Interior lighting controls: The existing controls for the light fixtures is by way of switches at the entrance to the rooms, with the library lighting being controlled via switches located in the office. This does not satisfy the current standards for control, and if a renovation were to occur an upgrade to the lighting controls would be necessary. New facilities are incorporating occupancy sensing, dimming and daylight harvesting systems as required by the latest ASHRAE 90.1 standard.

Emergency lighting: Emergency lighting is accomplished using emergency lighting heads (bug-eyes), and the emergency lighting heads on exit signs. There were not very many exit signs throughout the library, and leads to very little emergency lighting. The community space contained individual emergency lighting fixtures not within the exit signs. These systems were not tested at the time. *The self-contained batteries in all of the emergency, and exit fixtures should be tested and provided with routine maintenance or replacement.* Additionally, confirmation that the emergency lighting complies with the requirement of an average of 1 foot-candle along the path of egress is necessary.

Exit Signage: Exit signage is provided in a few areas and appear to be functional. As mentioned earlier in the report, the amount and location of the exit signs will have to be further reviewed.

Exterior lighting fixtures and controls: The exterior lighting and controls were reviewed and consists of LED recessed cans at the library entry, incandescent spot lights around the perimeter of the building, and a high-intensity discharge fixture illuminating the flag. The outside lights were controlled by a simple Intermatic time clock. A notable omission from the current system is the requirement for egress lighting and emergency egress lighting the rear exits. *Energy savings can be realized by changing the flag fixture to an LED, however the current system works and provides adequate illumination. As with the changing of the interior light fixtures, if a change occurs with the exterior light fixtures, we will also be required to update the control methods for the new exterior light fixtures. The time clocks could still apply, but occupancy sensors could be required to 'dim' the new fixtures when no one is nearby.*

If sufficient square footage of the building is renovated, we may be forced to incorporate exterior egress and emergency egress lighting. This means that a light fixture with emergency lighting capabilities would be required at each exit from the building. It would be our recommendation to add an LED fixture at each exit. This light fixture would then provide emergency illumination during a power outage either using a self-contained battery in the fixture or a connection to an inverter.

Receptacles:

Receptacles outlets are installed throughout the building and most are fairly convenient. Being a commercial building, there are no code requirements to have receptacles every twelve feet, however it would be recommended that in a few spots some receptacles are added. In addition, the library director has several locations where additional receptacles would be requested. It was noted that there is a children's area within the library. The National Electrical Code requires that tamper-resistant receptacles be installed in locations where children are likely to congregate. Presently, protective plug inserts are

installed in the receptacles in the children's areas and are a great solution. If a renovation were to occur, tamper-resistant receptacles would be called for in the children's areas.

Fire Alarm:

There is no existing fire alarm system in the facility. No changes or upgrades are necessary, unless the use group and occupant load are modified. In an assembly use group, the occupant load can approach 299 persons before a fire alarm system is required. 110-volt smoke alarms were observed in the a few areas of the building (entry, the high ceiling of the children's area, the community space).

Low Voltage Systems:

The existing sound, security, telephone, television, data, WI-FI, intercom, paging and other technology systems were not evaluated or analyzed for their operation and coverage.

RECOMMENDATIONS

The following are recommendations to bring the building up to current codes where possible, improve operating efficiency and improve control of the mechanical and electrical systems. The extent of these recommendations will be dependent on the final building configuration.

Fire Protection System

1. If an addition to the building requires an automatic fire protection sprinkler system, the existing well will not support providing these sprinklers. If a municipal water source is not available then a water storage tank and electric fire pump are required to provide sufficient water. This infrastructure improvement would be generally estimated at an **Installed Cost = \$50,000**. After the pump and tank are installed sprinklers would need to be installed throughout the building with at least the kitchen and renovated areas being protected. **Installed Cost = \$3.00/SF**

Plumbing System

1. Insulate the water piping in the crawl space to prevent condensation and reduce energy consumption for the hot water. **Installed Cost = \$1,000.**



Mechanical HVAC System

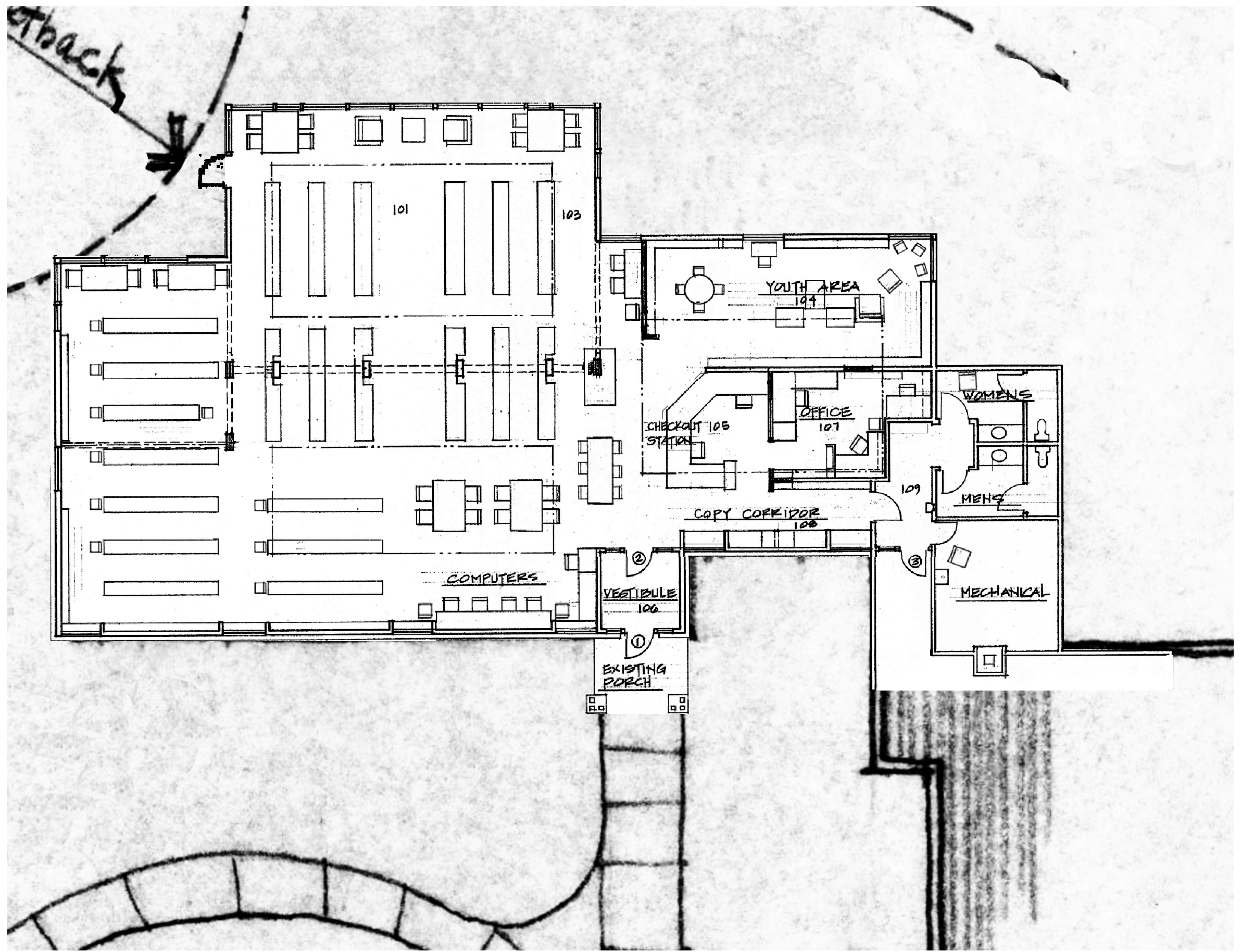
1. Replace condenser for one of the furnaces. The condensing unit should be installed further from the building or protected from ice falling from the roof eave. **Installed Cost = \$7,000.**
2. Replace floor registers with new commercial quality registers **Installed Cost = \$1,000.**
3. Insulate supply ductwork in crawl space. **Installed Cost = \$2,000**
4. Replace two furnace mounted humidifiers. **Installed Cost = \$2,000.**
5. Install outside air duct into return of furnaces. **Installed Cost = \$2,000.**
6. Install new furnace and condensing unit for existing meeting room and remove zone control on existing furnace. **Installed Cost = \$15,000.**

Electrical System

1. Repair the uncovered junction box(es) found in the crawl space. **Installed Cost = approximately \$50 per location**
2. Replace the receptacles in all of the children's areas with tamper-resistant receptacles. **Installed Cost = approximately \$50 per location**
3. Replace and upgrade all of the fluorescent, incandescent, and high intensity discharge lighting within and on the exterior of the facility to LEDs. Replacement of and the proper placement of emergency lighting should also be considered. During the installation of the new fixtures, lighting controls that provide a means of automatically shutting off the fixtures during an unoccupied period, as well as dimming and daylight harvesting in certain areas should also be considered.
Installed Cost = \$6.00 - \$12.00/SF
4. Should the addition cause the building's electrical service to require replacement, a new service of 400A-120/208V, three phase, four wire would be recommended. **Installed Cost = \$30,000**
5. Should the addition cause the building occupant load to exceed 299 persons, the installation of a whole building fire alarm system would be required. **Installed Cost = \$3.00/SF**

Submitted by:

 P.E. 
Douglas A. Radtke, P.E. and Jason A. VanBrocklin, P.E.

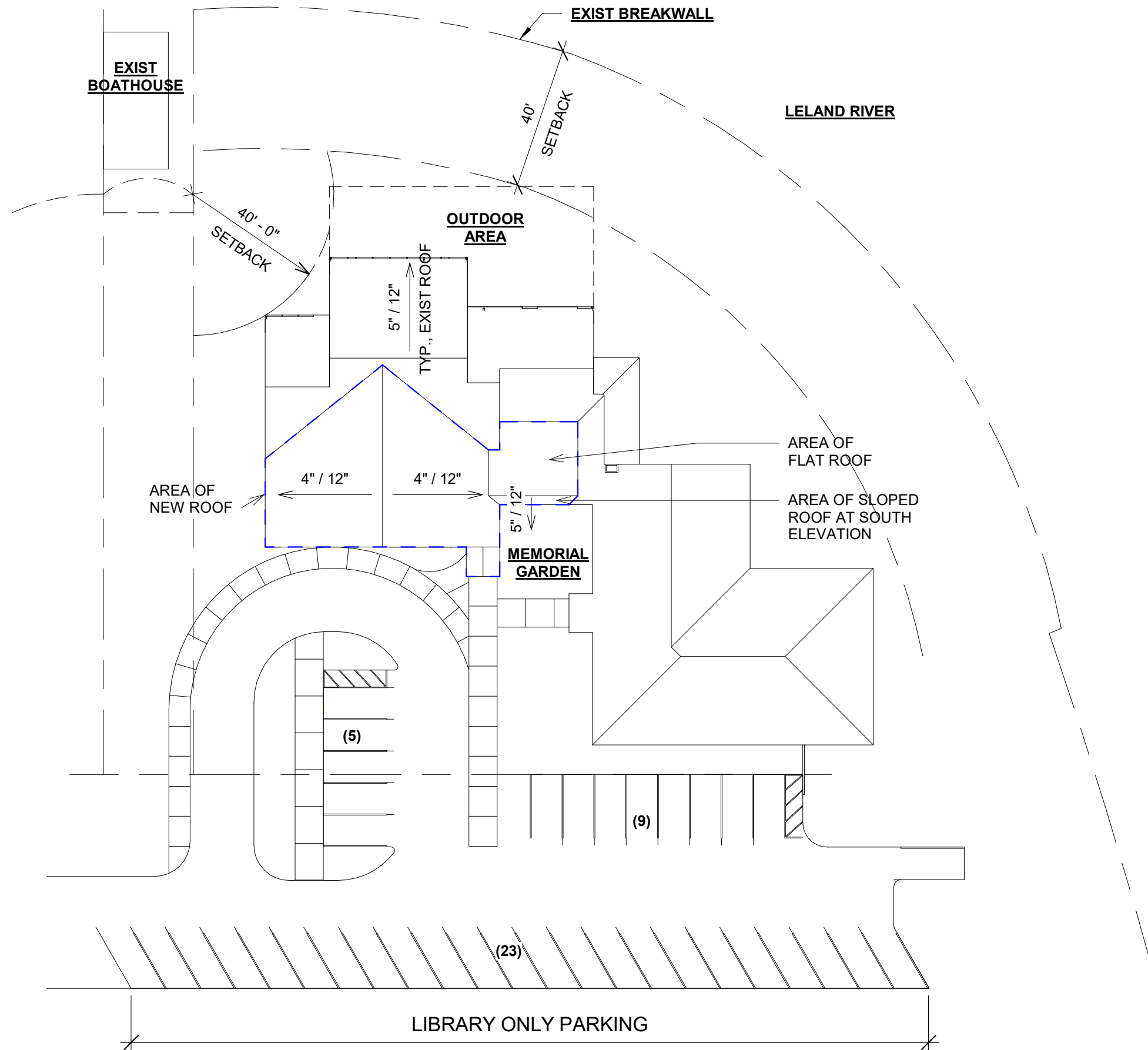


Leland Township Library

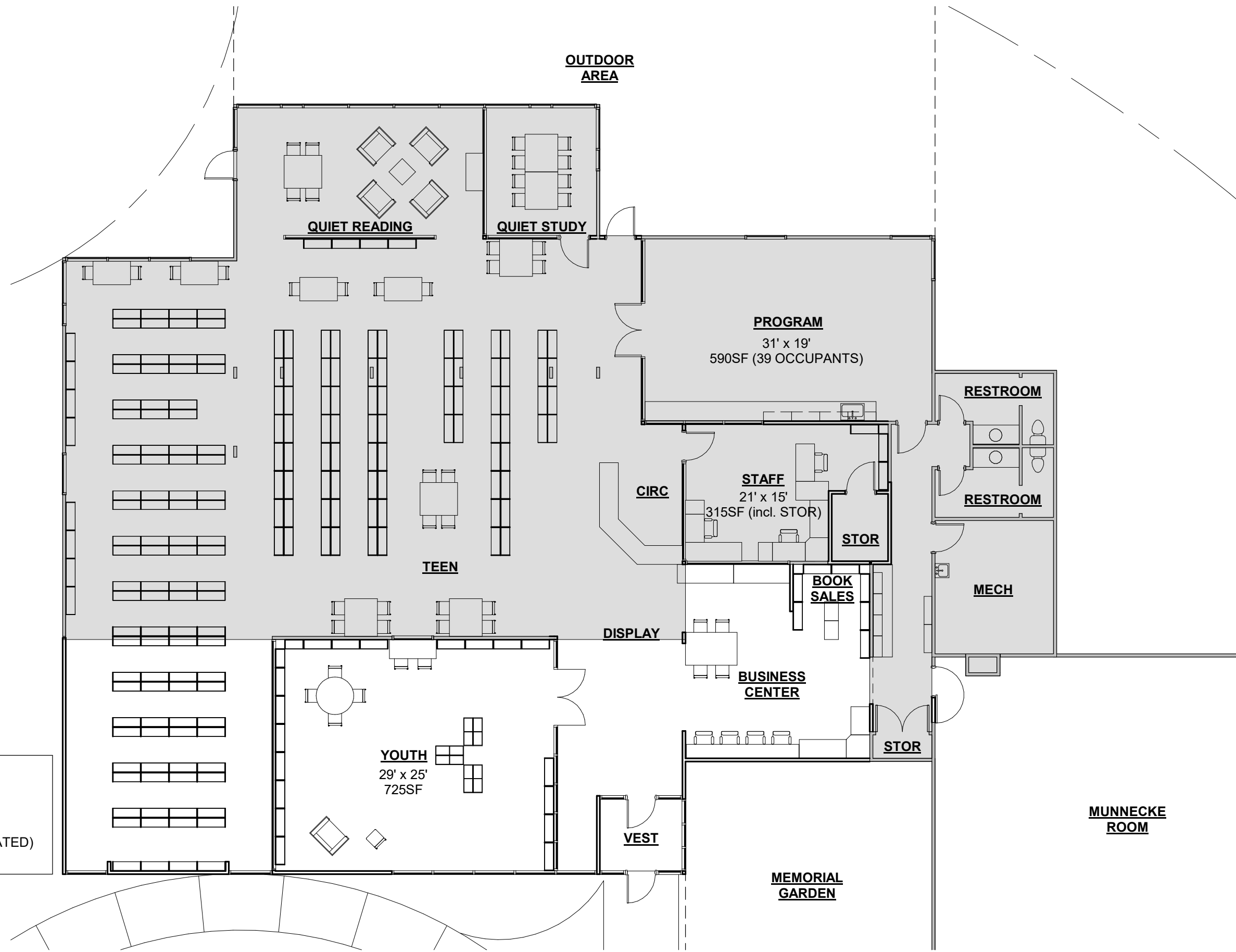
203 South Cedar St, Leland, MI
QEA #.41807060

LELAND LIBRARY EXISTING PLAN

04/26/19



TOTAL PARKING REQUIRED:	12
EXISTING REQ:	8
ADDITION REQ:	2
MUNNECKE REQ:	2



TOTAL ALLOWABLE SF: 7,200SF

EXISTING: 4,760SF

ADDITION: 2,150SF

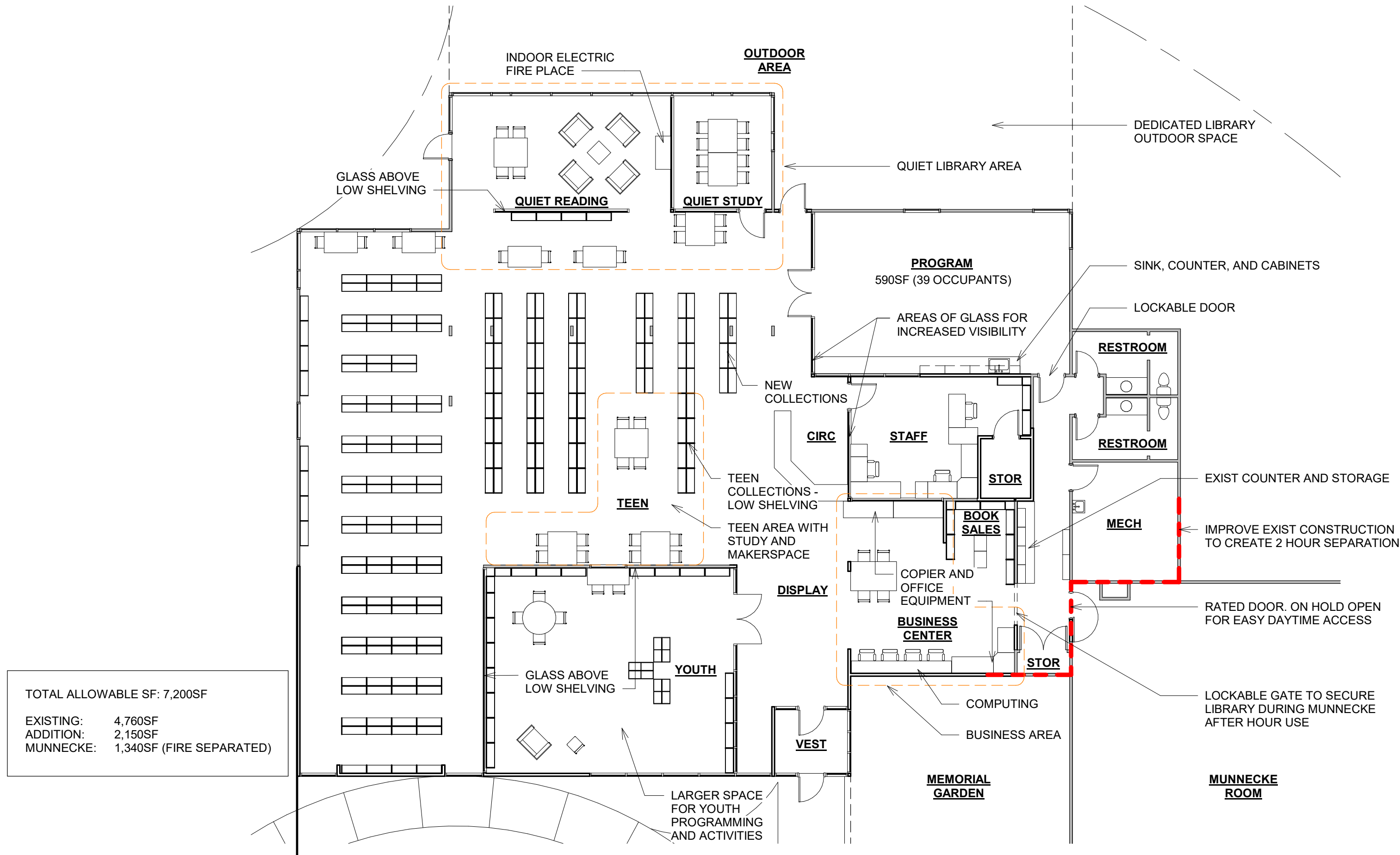
MUNNECKE: 1,340SF (FIRE SEPARATED)

Leland Township Library

203 South Cedar St, Leland, MI
 QEA #.41807060

LELAND LIBRARY PROPOSED ADDITION FLOOR PLAN

05/07/19



TOTAL ALLOWABLE SF: 7,200SF

EXISTING: 4,760SF

ADDITION: 2,150SF

MUNNECKE: 1,340SF (FIRE SEPARATED)

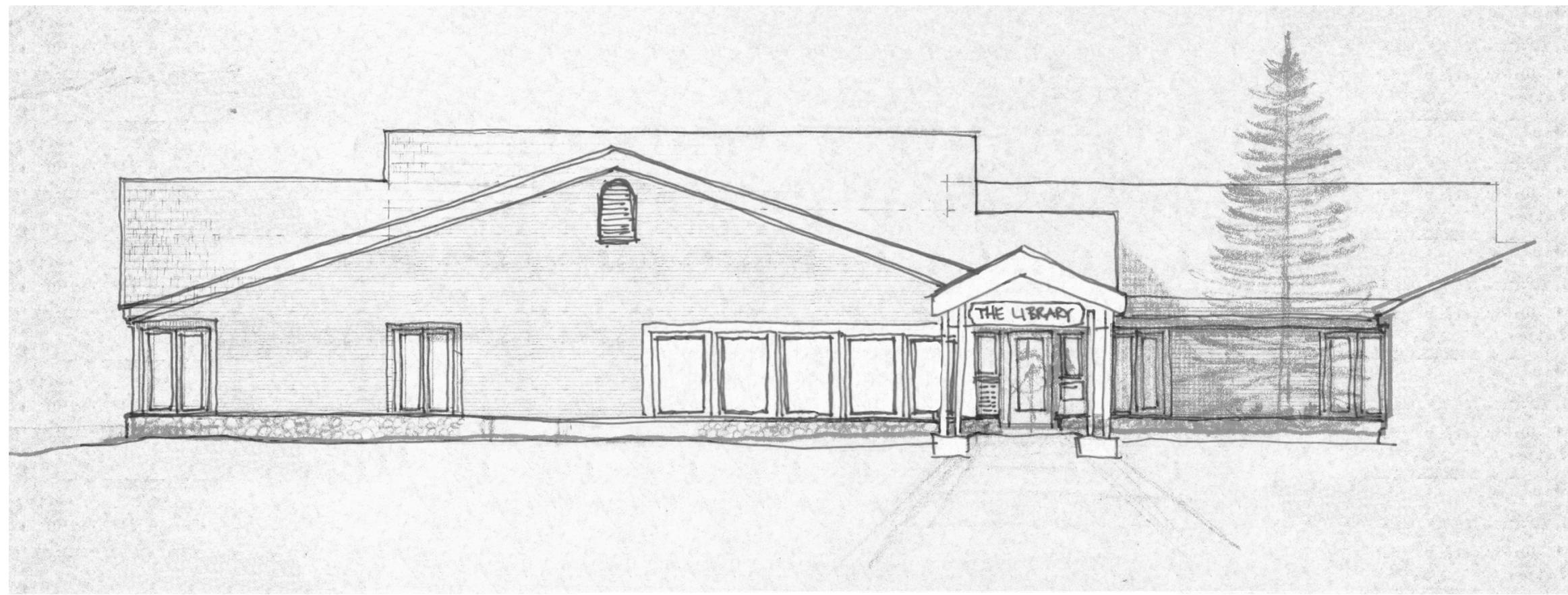
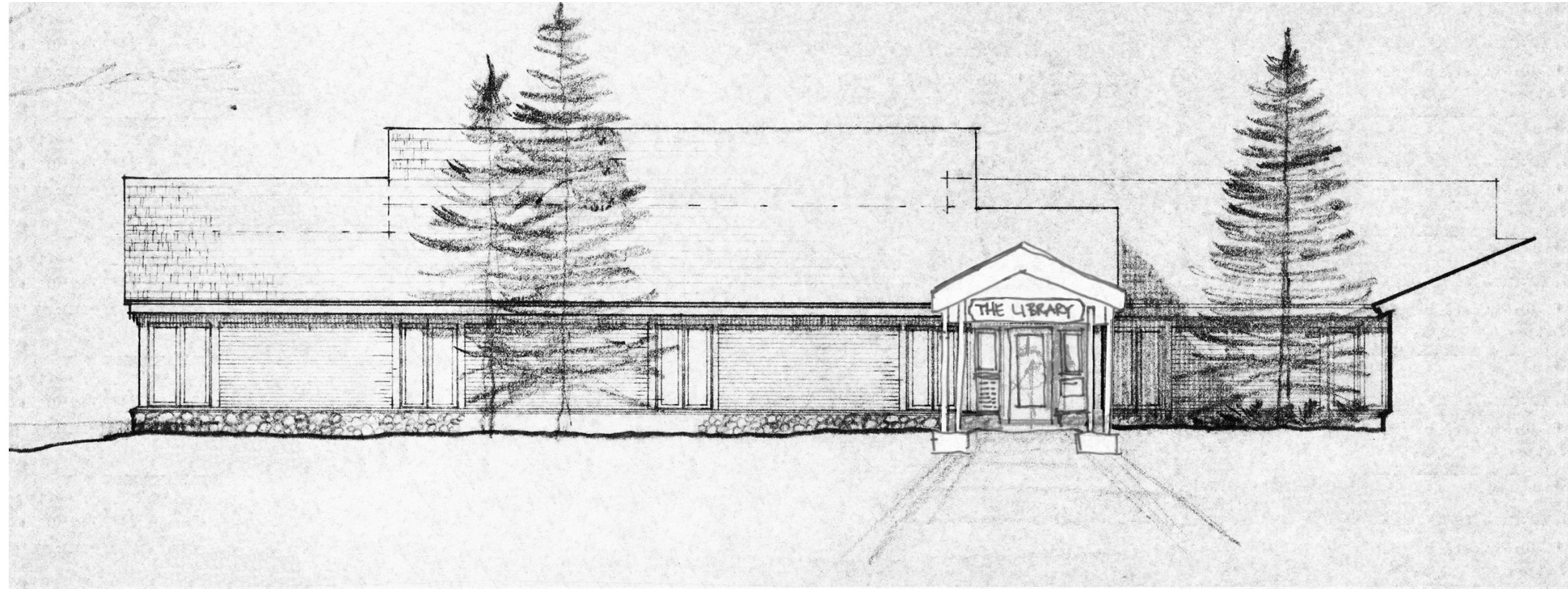
Leland Township Library

203 South Cedar St, Leland, MI
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LELAND LIBRARY PROPOSED ADDITION FLOOR PLAN NOTES

04/26/19





Leland Township Library

203 South Cedar St, Leland, MI
QEA #.41807060

EXISTING AND NEW ELEVATIONS

04/26/19



QUINN EVANS
ARCHITECTS