WOODLAND LIBRARY
MASTER PLAN

SEPTEMBER 2017

Noll & Tam Architects

01 Executive Summary

Built in 1903, the Woodland Library is the oldest operating Carnegie in California. The Library has undergone three additions: in 1915, 1929, and in 1985. Today, the needs of the staff and community have far outpaced the capacity of the current facility to meet those needs. In 2016, the Library issued an Request for Proposals (RFP) for a Facility Master Plan in order to identify and plan for the needs of a changing community.

To this end, Noll & Tam Architects was engaged to develop a Facility Master Plan for the Main Library, with the historic library structure as a consistent element. Noll & Tam assessed the conditions of the library, investigated the existing documentation, met with staff and stakeholders, and engaged the community to confirm the needs and goals of future library work. Through this process, the team identified possible best-fit schemes for remodeling and expanding the library.

This Facility Master Plan has five main components. First is this executive summary. Second is an assessment of the state of the existing structure. Based on walkthroughs and document research by Noll & Tam and a team of consulting engineers, the structure appears to be in good condition with no obvious physical deficiencies. The assessment included the structural, mechanical, and electrical systems as well as the exterior, interior and roof. The team also assessed any accessibility and code updates needed.

The third section contains a Community Needs Assessment prepared by Jennifer Sweeney, MSLS, PhD. This includes a Community Survey Report, which collected information on public perceptions of various aspects of library use, including facilities and space needs, importance of current services and programming, desired new services and programming, and awareness of information resources. Additionally, Sweeney provided Library Space Recommendations based on community needs, growth projections, and current public library guidelines.

Section four presents two conceptual layouts for the Woodland Library. These options were developed to deal with the spatial and functional deficiencies of the current plan and to expand capacity to meet future growth needs.

Scheme A fills in the interior courtyard with library services, adding a net of about 6,000 sf of space, bringing the total library square footage to 30,000 sf. The warren of rooms in the Carnegie portion would be opened up, allowing for improved sightlines on the second floor from the service desks.

Scheme B proposes both filling in the courtyard and expanding the north wall of the building into the parking area. This would add another 8,000 sf, bringing the total to 38,000 sf. This number is more in line with Sweeney's needs study, which projects that a library that is 38,000-40,000 sf would serve the community of Woodland for the next 20 years.

In addition, a number of Short Term Projects were identified to address structural and functional deficiencies and to provide cost-effective options for improving the library. The highest priority projects ("Must Do") include further seismic investigation, mechanical work and ADA restroom upgrades. Further projects ("Should Do") include freshening of reading room spaces, the entry area, and the literacy/staff space on the ground floor.

Finally, the fifth section of the report analyzes the costs for these two major remodel options. The cost estimates were prepared by TBD Consultants, project and construction cost management consultants. As a tertiary appendix, TBD's Cost Model analysis is presented for reference.

CONTENTS

Woodland Public Library

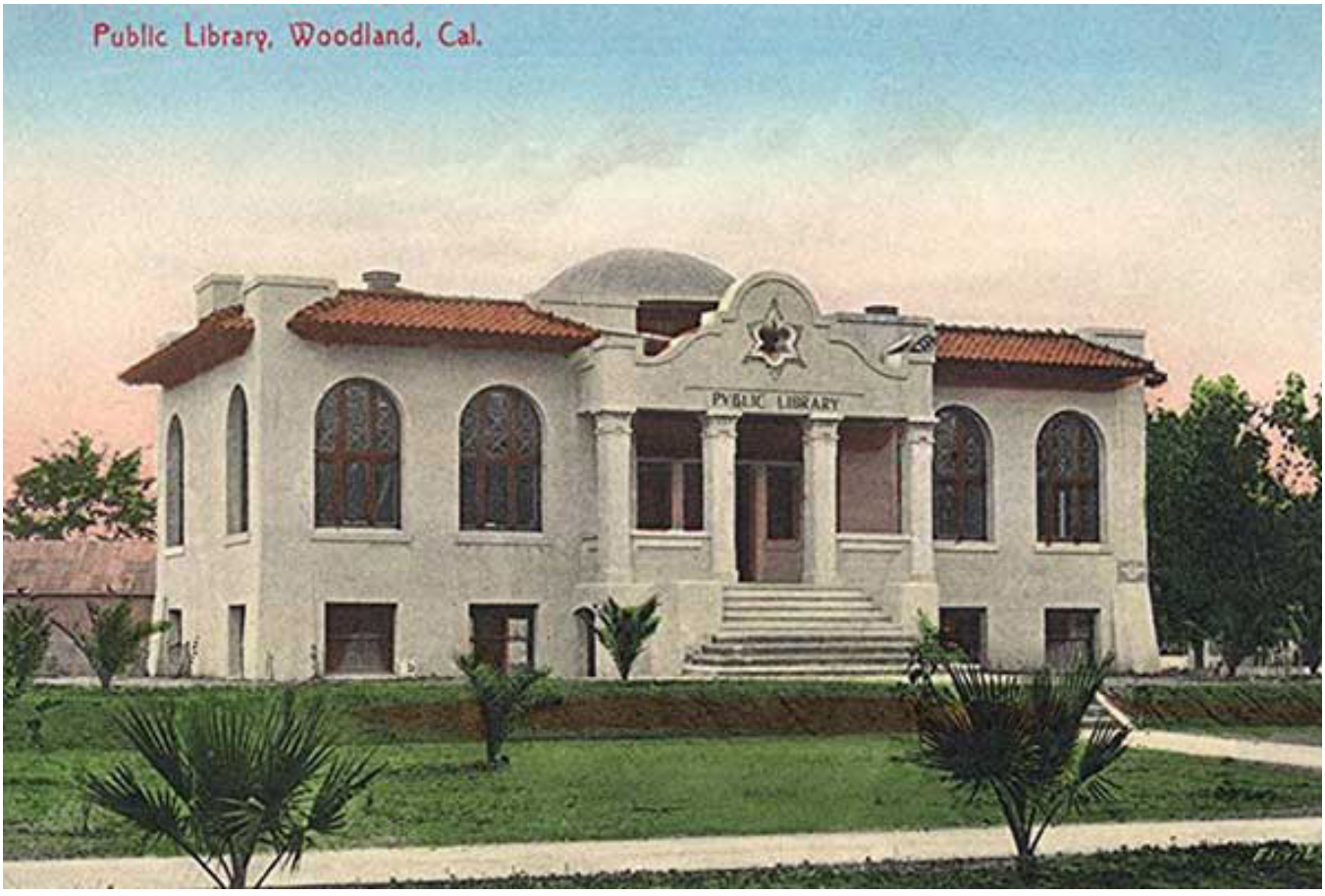
02 Existing Building Evaluation

Site Context:

The Woodland Public Library is located one block north of Main Street and one block south of a major residential district that begins at North Street. The block between the library and Main Street contains the main administrative offices for the City of Woodland including the City Manager's office, departments of planning, engineering, fire, water, and the chamber of commerce. To the east of the library are several government buildings that house the administrative offices for Yolo County. The Library shares its block with a large public parking lot.

History:

The original portion of the library was built in 1903 with funds from the Carnegie Foundation. It was constructed of unreinforced masonry with wood framed walls and roof. Two additions were built in 1915 and 1929 bringing the original L-shaped facility to about 12,000 sf. This portion, known as the "Carnegie", served as the community library until the 1980's, when a second L-shaped portion was constructed, creating a courtyard with open walkways and stairs. At that time, additional renovation work and seismic strengthening was undertaken in the Carnegie wing.



Building Overview:

Area: 23,650 Gross Square Feet (GSF)
Stories: Two full floors and a small mezzanine
Construction Type: III-B Sprinklered

Systems:

Foundations:

Carnegie: Concrete slab on grade with shallow continuous and isolated spread footings.

1985 Addition: Concrete slab on grade with spread footings and grade beams.

Vertical Structure:

Carnegie: Brick bearing walls supporting a wood framed main level, with wood posts. The 1985 work included seismic strengthening measures, such as rod anchors and tube steel braces (see Appendix A2).

1985 Addition: Reinforced concrete masonry unit (CMU) bearing walls with tube steel columns.

Floor and Roof Structure:

Carnegie: Main level and mezzanine structure are made of steel wide flange beams and wood joists. The Roof structure is wood trusses.

1985 Addition: Main level floor structure is concrete on metal deck over open web joists. The roof structure is wood joists.

Stairs:

The two large exterior stairs at the southeast corner are made of concrete with a terrazzo finish.

The main stair between the lower level and main level is made of tube steel construction with wood treads and risers. This stair is located in a tower element in the courtyard and is currently closed to the public (available for exit only).

There are three smaller concrete stairs that exit from the lower level to adjacent grade. These are cracked and showing signs of weathering and age. There are three concrete stairs and ramps between the different levels in the courtyard.

The stair between the lower level and the mezzanine level is wood construction.

Elevator:

The elevator occupies a tower in the courtyard and connects the lower level and the main level. There is no elevator access to the mezzanine so it is closed to the public and is underutilized.

Exterior Finishes:

The exterior floors (at the main level walkways) are red quarry tile, concrete, and stamped concrete.

The walls are stucco over metal lath.

Exterior Doors and Glazing:

Carnegie: Single pane wood frame windows.

1985 Addition: Door types include solid core wood, hollow metal, steel, and glass. Door frames are hollow metal. Store front and windows are double paned with aluminum frames.

Roofing and Waterproofing:

Roofing types include Spanish style ceramic tile mansard roofing, metal roofing at the stair and elevator towers, and composite roofing. The roofing on the addition appears to be about 10 years old, toward the middle of its expected life cycle.

Interior Partitions:

Carnegie: Wood framed with gypsum board.

1985 Addition: Metal stud with gypsum board

Interior Doors and Glazing:

Carnegie: This glazing was added during the 1985 work.

1985 Addition: Door types include solid core wood, hollow metal, steel, and glass. Door frames are hollow metal. Store front and windows are double paned with aluminum frames.

Interior Finishes:

The floor finishes include carpet, ceramic tile, red quarry tile, and vinyl tile in staff areas.

The wall finish is painted gypsum board.

The ceiling finishes include gypsum board, acoustic ceiling tile, and tongue and groove wood boards with exposed wood framing.

The railings in the original library are wood with tightly spaced vertical pickets. The railings in the 1985 addition are steel pipe with a 4" x 4" welded wire mesh.

Heating, Ventilating, and Air Conditioning:

Heating is provided by furnaces located in the lower level of the Carnegie portion and on the second floor of the addition. Roof mounted AC units provide cooling throughout both structures. All HVAC equipment and the Energy Management System were replaced in the mid-2000's and are in good condition. However, there is a lack of code-required ventilation air. See Appendix A3 for a complete discussion.

Plumbing:

The plumbing and piping systems appear to be original to the building, with some upgrades occurring in the 1980's. Fixtures should be replaced to meet current codes. See Appendix A3.

Fire Protection Systems:

Both the Carnegie and the 1985 Addition have fire sprinklers which appear to be in good condition. The fire alarm system has been upgraded and appears in good condition. However, new work will be required if facility is expanded. See Appendix A4.

Electrical Power, Lighting, and Communications:

The main switchboard is located away from the library on the northeast portion of the site. The equipment appears adequately sized and in good condition. Branch distribution, feeding both wings, the rooftop HVAC and the elevator, are at capacity and new branch panels may be required for expansion. See Appendix A4.

The interior lighting consists of fluorescents with T8 and compact fluorescent lamps. Light levels appear low and new LED lighting would be beneficial. Lighting controls are mostly manual and will not meet current energy codes (California Title 24). See Appendix A4.

The main distribution room for telecommunications (MDF) occurs in the basement of the Carnegie portion. Fiber is provided to an IDF room in the addition. Most of the cabling is Cat 5/5e. Current IT standards would suggest significant upgrades to the main and intermediate distribution systems and Cat 6/6A cabling. See Appendix A4.

Architectural Issues:

Accessibility:

There are four different levels in the building.

The Main Level of the Carnegie portion is at 73.55 ft above sea level. The 1985 Addition matched this height to allow continuous access between the two wings. However, the Lower Level of the Carnegie is set at 64.57, only 9 ft below the Main Level. When the 1985 Addition was built, the new Lower Level was depressed four feet, at 60.57 ft, to provide for more usable head height. This space is currently occupied by the Leake Room and the new maker space. Within the Carnegie, the Mezzanine Level is set at 81.09 ft, just 7 ½ ft above the Main Level. These multiple levels present way-finding, programmatic and accessibility challenges for the functioning of the library.

The accessible entrance is on the north side through a small gate next to the trash enclosure. A ramp brings the visitors up from the parking lot level to the elevator lobby on the lower level. Most spaces on the Lower Level are connected by ramps, however, some areas are only accessible by passing through staff areas. The Main Level does not have any level changes.

A detailed study is required to confirm that the accessible features meet the current code requirements, including restrooms, ramps, and accessible paths to all areas of the building.

Entry:

The original Carnegie Library had an entry facing 1st Street, with a grand stair and landscaped path from the sidewalk. When the first expansion took place in 1915, a second entry , of equal prominence and design quality was added facing Court Street.

The 1980's remodel closed off this second entry and added, almost as an afterthought, a back way from the parking area to the north of the facility. Today, both the original Carnegie entry and the parking entry are open to the public with library visits split evenly between the two.

Despite their equal usage, the north parking entry is inferior; rather than make a civic statement denoting the importance of the library as a community benefit, this entry appears as service access. It is narrow, dark and uninviting. It appears that the designers of the 1980's remodel did not anticipate the heavy use that this entry has received as there few visual cues to establish this as access to the entire library facility.

Wayfinding:

Wayfinding within the library is confusing and difficult.

The north entry leads to a covered walkway that skirts a loading area, restrooms, and the courtyard. Proceeding straight ahead, the user finds the elevator vestibule but is confronted with a pair of glass doors that lead into the staff areas. Despite the signage, confused users have been known to enter the staff area expecting the main library reading room. The staff has taken to locking these doors to prevent visitors from wandering into the back-of-house sorting and work areas.

Users who find the elevator ascend to the main level of the library and are greeted by a circulation desk. This service point is usually staffed. Even here there are wayfinding issues. The courtyard, which is exterior space, prevents a clear view from the main desk to all of the public reading areas of the library. Users seeking children's or adult collections must be directed around the perimeter of the courtyard to their destination.

While the courtyard itself is an amenity, it is rarely used and is experienced mostly as a nuisance

Daylight:

The west and north walls of the library were built as part of the 1980's addition. The property boundary lines are close to these wall and due to fire codes prevailing at that time were not allowed to have windows.

The designers created two inset light wells to bring in daylight and to provide exiting from the lower level. However, with little daylight and substandard lighting, these spaces appear dark and gloomy.

03 Community Survey and Library Space Recommendations

Community Survey:

Jennifer Sweeney, MSLS, PhD provided a community survey and library space recommendations, both of which were used by Noll & Tam Architects to develop two schemes for the library remodel.

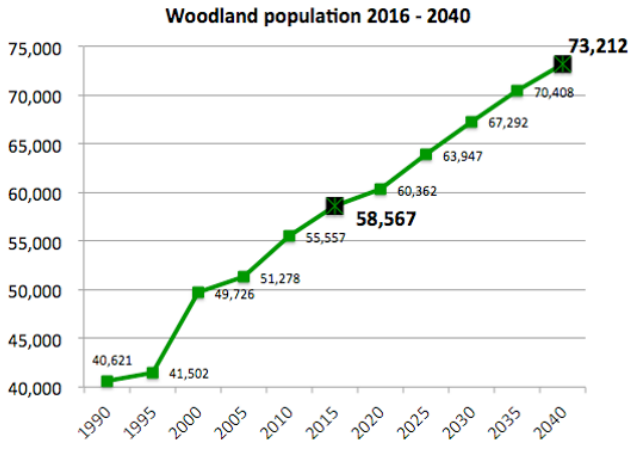
The community survey collected two hundred and sixty three responses between March 27 to April 13, 2017 from a wide range of stakeholders. Questions focused on public perceptions of library usage, facility and space needs, current services and programming, new services and programming, and information resources. The survey consisted of 30 closed and open questions in the following areas: use of the library building; importance of services, programs, and resources; interest in potential new services.

Respondents indicated a strong preference for information, programs, and services for both adults and children, noting strong use of the library's printed collections and highly popular children's storytime and other programs. Respondents felt that the most important library services were promoting literacy, providing access to information and content, and supporting lifelong learning. Most important programs were the children's programs, cultural events, and adult programs in general.

Survey respondents shared a strong sense of the library as community center and gathering place, now and in the future. Concern was expressed for safety, especially regarding the close proximity of homeless persons on library grounds and in the building. In summary, patrons would like to see a future library that supports community building and engagement, education, fiscal sustainability, and preserves history. Pragmatic recommendations included better hours, up-to-date facility, more programming for children, teens, and adults, and safety.

Space Recommendations:

As the City of Woodland is expected to reach 73,000 inhabitants by the year 2040, what sort of library will the community need? Jennifer Sweeney provided library space recommendations based on the Wisconsin Public Library guidelines and the Connecticut Library Space Planning Guide. These documents provide both benchmarks for comparing Woodland's level of service to similar communities, but also suggest metrics for calculating reasonable program targets (see Space Recommendations, p. 14). Woodland is currently below the recommendations of library space in almost every metric. In addition to a general increase in area, Sweeney recommends an increase in physical seating, number of staff, public use computers, and meeting space. Additionally, Woodland would be well served by construction a branch library to serve the south and/or east areas of the city, and the projected new housing units there. This branch library would need to encompass about 19,000 sf.



Based on 0.7% to 1.2% annual growth projection for Yolo County.

Sources: California County-level Economic Forecast 2016 – 2050; US Census; City of Woodland General Plan Update 2035.

SPACE RECOMMENDATIONS TABULATION:

	CURRENT (2017)	2040
WOODLAND POPULATION	57,000	73,000
		+ 28%
01 COLLECTIONS	6,650 SF	10,500 SF
ADULT, CHILDREN, TEENS	*100,000 vol, 1.8 vol per capita [1]*	*128,000 vol, 1.8 vol per capita [1]*
	15 vol / sf [2]	*12 vol / sf [2]*
02 READER SEATS	3,500 SF	5,500 SF
ADULT, CHILDREN, TEENS, COMPUTERS	*117 seats [3]*	*183 seats [3]*
	2 seats per 1000 [4]	*2.5 seats per 1000 [4]*
03 STAFF	1,800 SF	3,750 SF
WORKSTATIONS	*14.4 FTE [5]*	*30 FTE [5]*
	0.25 FTE per 1000 [6]	*0.4 FTE per 1000 [6]*
04 MEETING / PROGRAM	6,050 SF	8,750 SF
LEAKE CENTER, MEETING ROOMS,		*+ 42%*
MAKER SPACE, LITERACY, FRIENDS		
TOTAL PROGRAM	18,000 SF	28,500 SF
TOTAL BUILDING	24,000 SF	38,000 SF
	0.42 sf per capita	*0.52 sf per capita*

WOODLAND LIBRARY CONCEPTUAL PROGRAM, NOTES

1. Benchmarks	2.8 vols per capita 3.6 vols per capita 3.9 vols per capita	Yolo County Wisconsin Public Library Standards, 2010 Connecticut Library Space Planning Guide, 2014
2. Metrics	10 - 20 vols / sf	Multiple Sources
3. Benchmarks	2.5 seats per 1000 3.0 seats per 1000	Yolo County Wisconsin Public Library Standards, 2010
4. Metrics	30 sf / seat	Multiple Sources
5. Benchmarks	0.5 FTE per 1000	Wisconsin Public Library Standards, 2010
6. Metrics	125 sf / FTE	Multiple Sources
7. Benchmarks	0.75 - 1.00 sf per capita	Yolo County

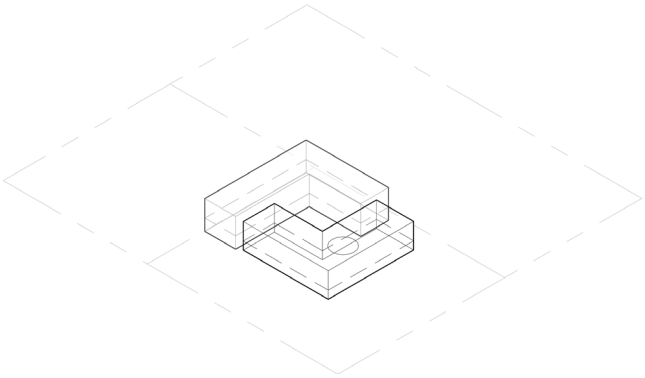
04 Conceptual Design

Scheme Drivers

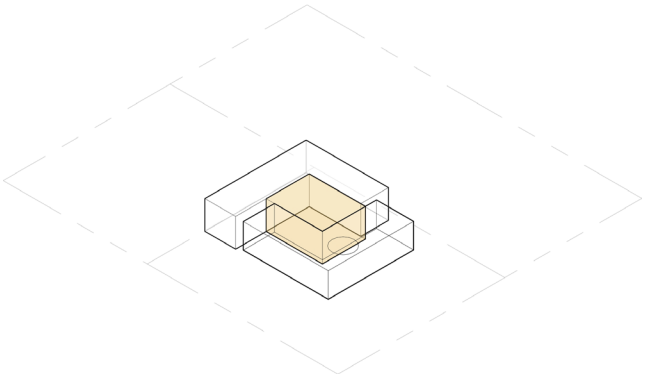
The existing library has about 24,000 sf of space, but if the community grows as projected, the facility will need more than 38,000 sf to meet the needs of the year 2040. The design team studied the capacity of the site to hold an increased program while maintaining the character of the historic library structure (see diagram 1).

One way to add more space is to fill in the courtyard to maximize the area available within the existing footprint of the structure (see diagram 2) . The existing courtyard space provides daylight to the interior of the second floor reading rooms, and serves as circulation for the lower level functions - the maker space, the Leake Center and the Literacy Center. By covering the courtyard with a roof this area can be used for additional library programming - reading areas, cafe, gathering and circulation. The second level infill can include large openings to allow light below, and the roof can be constructed with glazing or skylights to retain the open feeling that the courtyard now has. Filling in the courtyard space in this fashion can add between 3,000 and 4,000 sf of usable area.

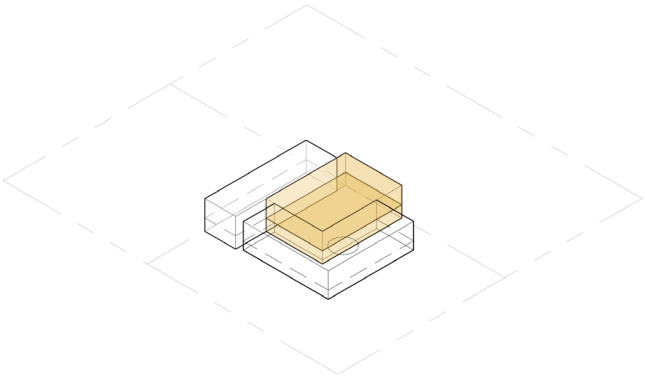
In order to add more, and to clarify the entry sequence, Scheme A removes the north wing of the 1980's addition and rebuilds it out to the property line (see diagram 3). This approach will bring the total project area to 30,000 sf.



1. Existing Library, ~24,000 sf



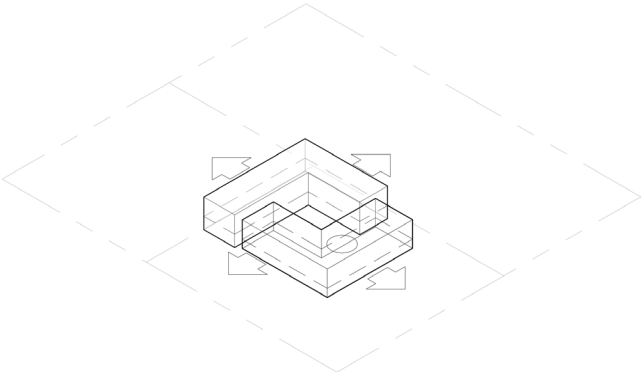
2. Courtyard infill



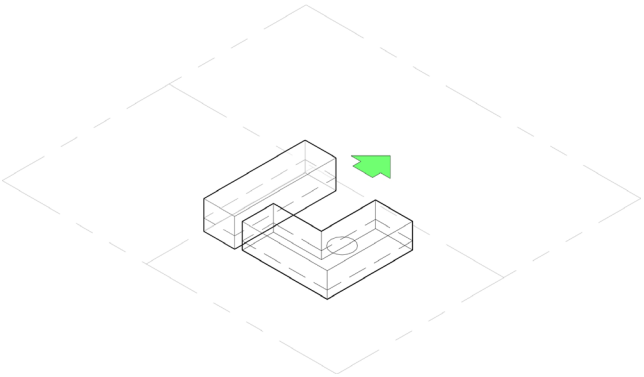
3. **Scheme A:** 20,000 sf + 10,000 sf = 30,000 sf

Another way to add space to the existing library is to expand outward from the currently occupied footprint (see diagram 4). The existing library is located at the northwest corner of its site, with ample setbacks from Court Street and 1st Street. These two yards, however, are important to the historic character of the structure. Building in either of these directions would hide the Carnegie elevations or alter them beyond recognition. To the west and north, the library sits directly adjacent to the property line. As discussed in Section 02, this boundary set constraints on window locations and daylight when the addition was built in the 1980's. However, further research has shown that the adjacent property is also publicly owned, and a property line adjustment would allow expansion in either direction. To the west, the property is used for an historic rose garden, with heirloom specimens and an active community group. At best, this boundary line should remain as a constraint on expansion, but the western wall of the library may be pierced by new windows to allow more light.

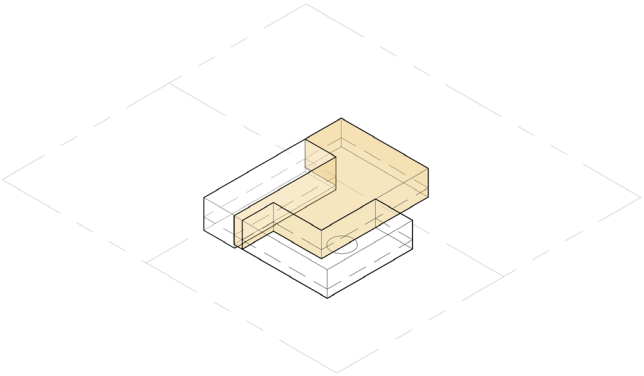
To the north, there is a 5' setback from the property line. Scheme A below, looks at maximizing the potential growth of the facility within these constraints, filling in the courtyard and adding new construction up to the property line. This approach, while allowing a reconfiguration of the internal functioning of the library, only adds 6,000 sf to the program, falling short of the overall growth projection for 2040. Scheme B solves this problem by pushing the north addition our over the property line, into the existing parking lot to add another 8,000 sf and bring the total area to 38,000 sf (see diagrams 5 and 6).



4. Potential expansion of the library site.



5. The only feasible expansion is to the north.



6. **Scheme B:** 20,000 sf + 18,000 sf = 38,000 sf

EXISTING: SITE PLAN

Scheme A: Remodel Within Existing Property Lines

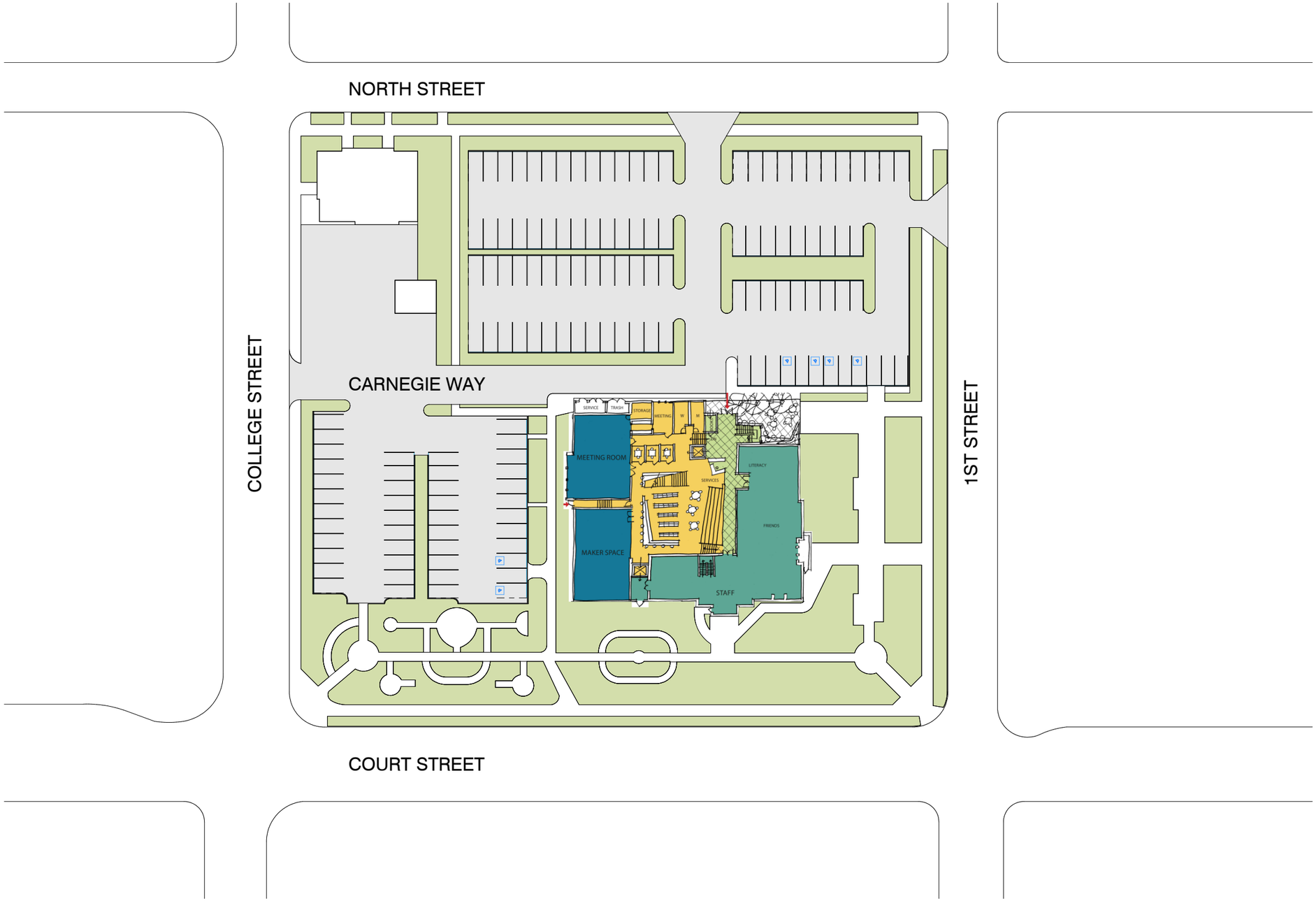
The first proposed scheme would fill in the courtyard, remodel the Carnegie library within the existing footprint and make some adjustments to the addition. The western leg of the addition houses the new maker space (remodeled in 2017) and the Leake Center conference space, both of which are relatively functional. The north bar, however, is less coherent, with small conference rooms used for storage and an undersized bank of restrooms on the ground level. This wing faces onto the parking area and by rebuilding it there is the potential to reconstruct the entry sequence for the library, providing a new image to complement the existing Carnegie entry.

The new entry would be in approximately the same place as today, but would have more generous dimensions and include a service point. Immediately beyond the desk, the courtyard space would become an indoor area containing stacks for browsing collections, as well as providing circulation to meeting and group study rooms. The lower level of the library would contain the new maker space, a large meeting room, a smaller private meeting room, and areas for the staff, the Friends, and the literacy program. The second floor would expand the children's area on the west side, add a teen area to the north, and a large adult programming space. By centrally locating the service desk, staff will have centralized sightlines into the stacks and the adult areas. The small rooms of the lower level of the Carnegie would be opened up, allowing for better circulation, and more effective use of staff and Friend's spaces.

Area Summary Chart

	Remodel		Proposed New Construction	Totals
	Carnegie	1985 Addition		
First Floor	5,500 sf	4,000 sf	5,500 sf	15,000 sf
Second Floor	5,500 sf	4,000 sf	5,500 sf	15,000 sf
Totals	11,000 sf	8,000 sf	11,000 sf	30,000 sf

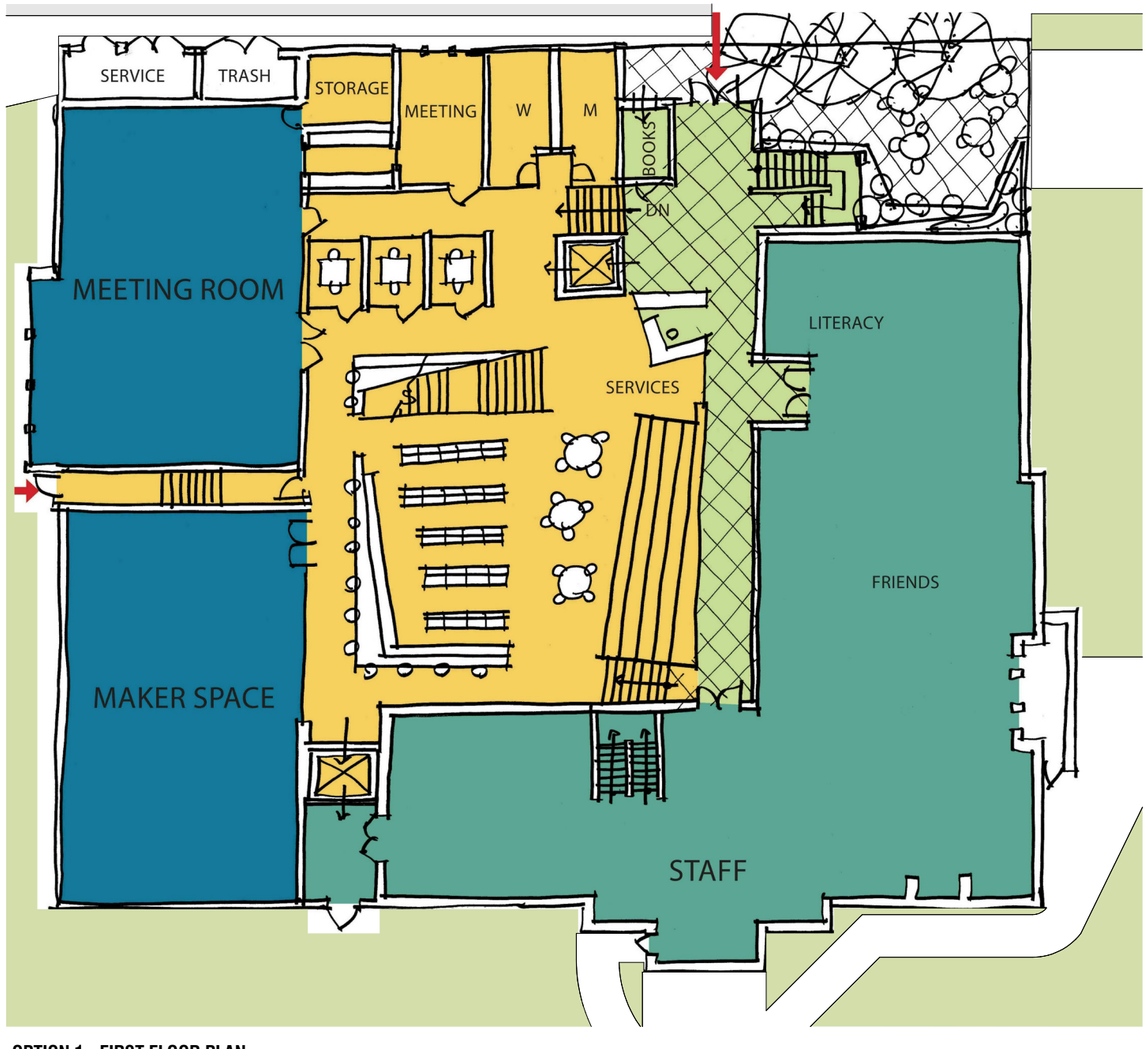
SCHEME A: SITE PLAN



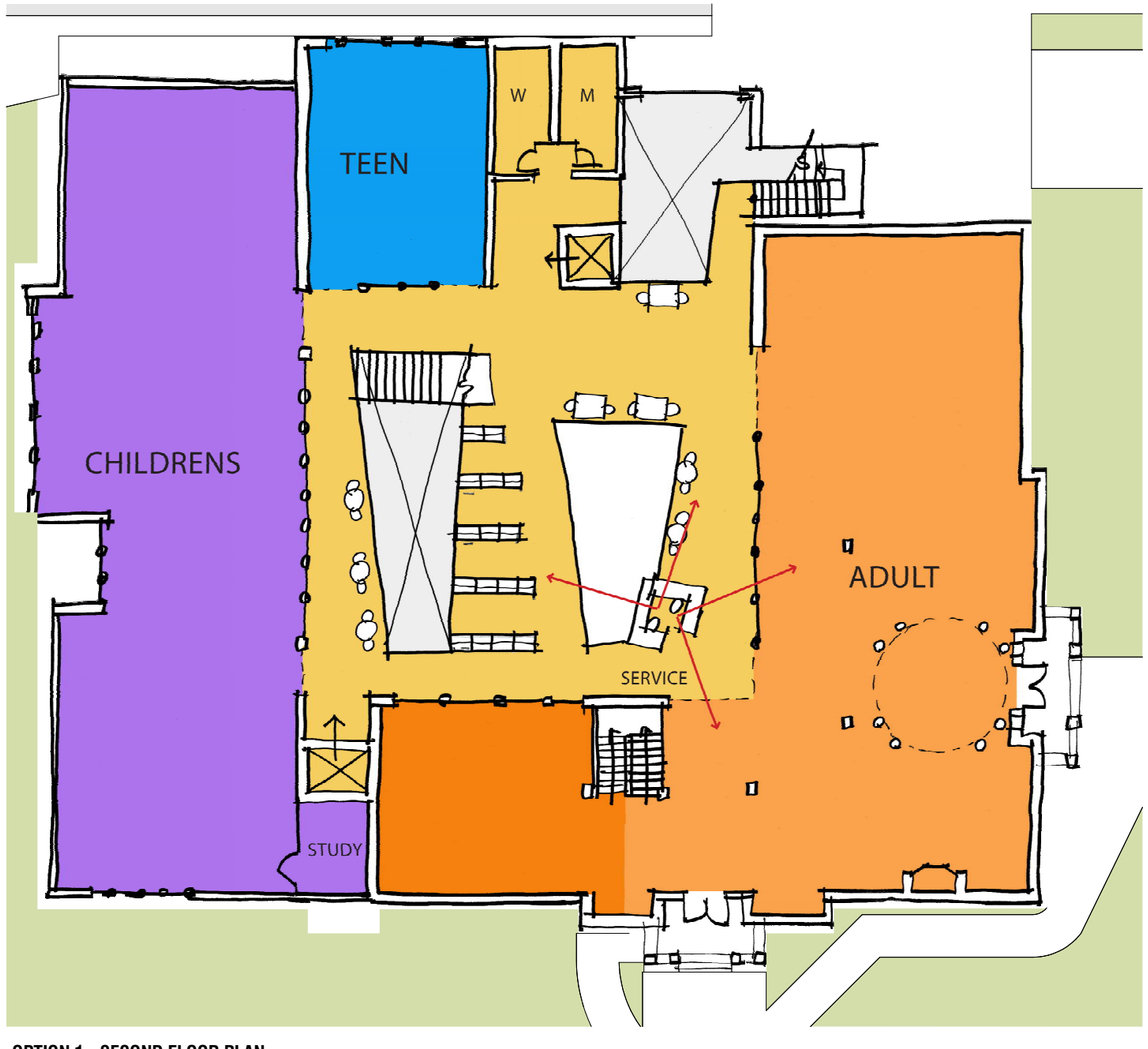
1 / D 21 **SITE PLAN - OPT 1**

1/32" = 1'-0"

SCHEME A: FLOOR PLAN



1 D 22 **OPTION 1 - FIRST FLOOR PLAN**
3/32" = 1'-0"



2 D 22 **OPTION 1 - SECOND FLOOR PLAN**
3/32" = 1'-0"

Scheme B: Remodel With Expanded Footprint

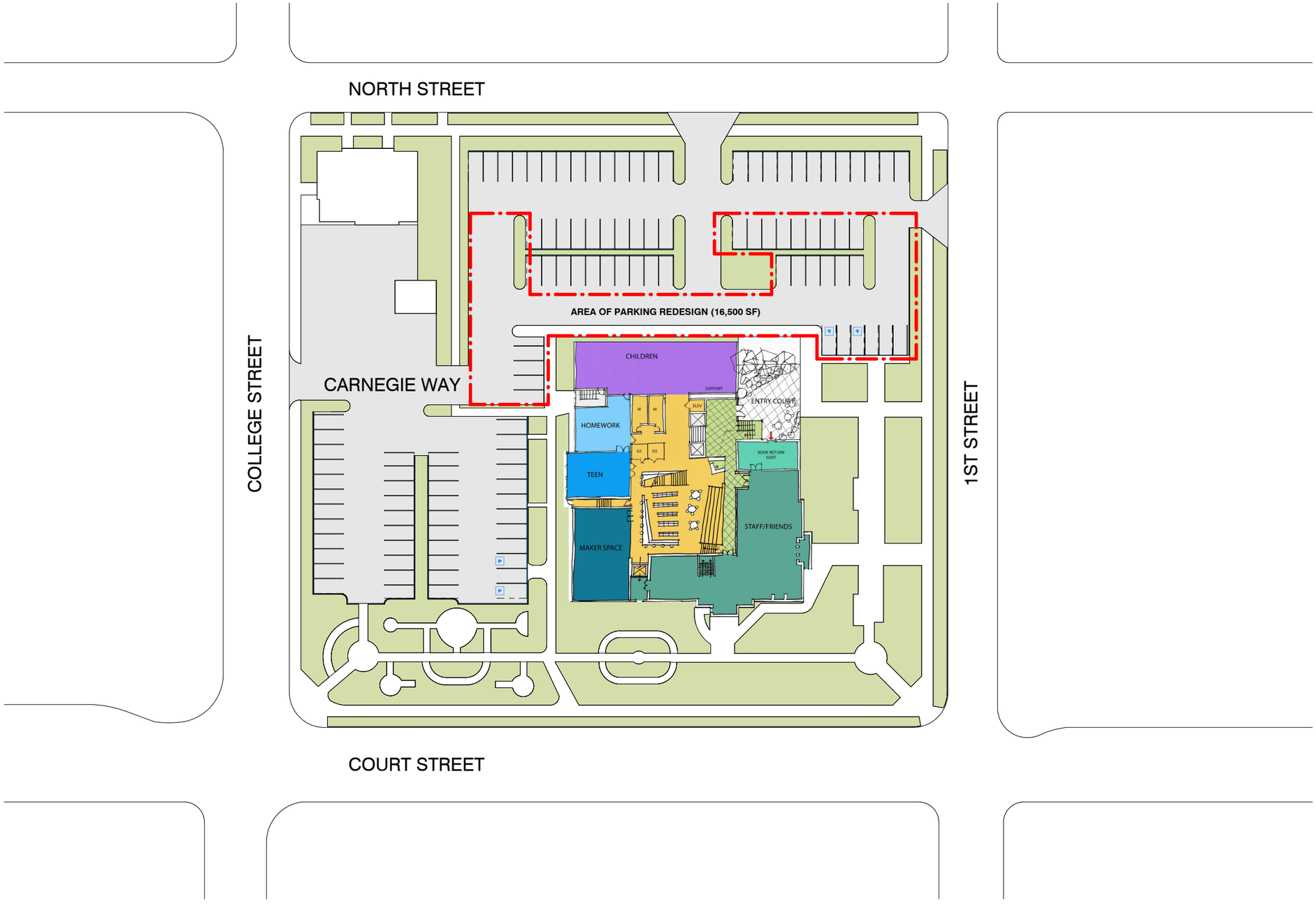
The second proposed scheme contains the main elements of Scheme A but extends across the property line to take up some of the parking area. This allows for more program area (38,000 sf), and will provide more civic presence to the newest portion of the addition.

The lower level of the library would still retain the new maker space, and the space for the staff and Friends. However, there would be a teen area and a homework area on the west side, and the children's area would be in the northern expansion. The entry court would be retained, allowing for an outdoor space with tables and chairs. On the upper level, the majority of the perimeter of the library would be taken up by adult spaces, with a meeting room in the expansion, and the literacy program. As in Scheme A,the small rooms of the Carnegie would be opened up, allowing for better circulation, and more effective use of staff and Friend's spaces.

Area Summary Chart

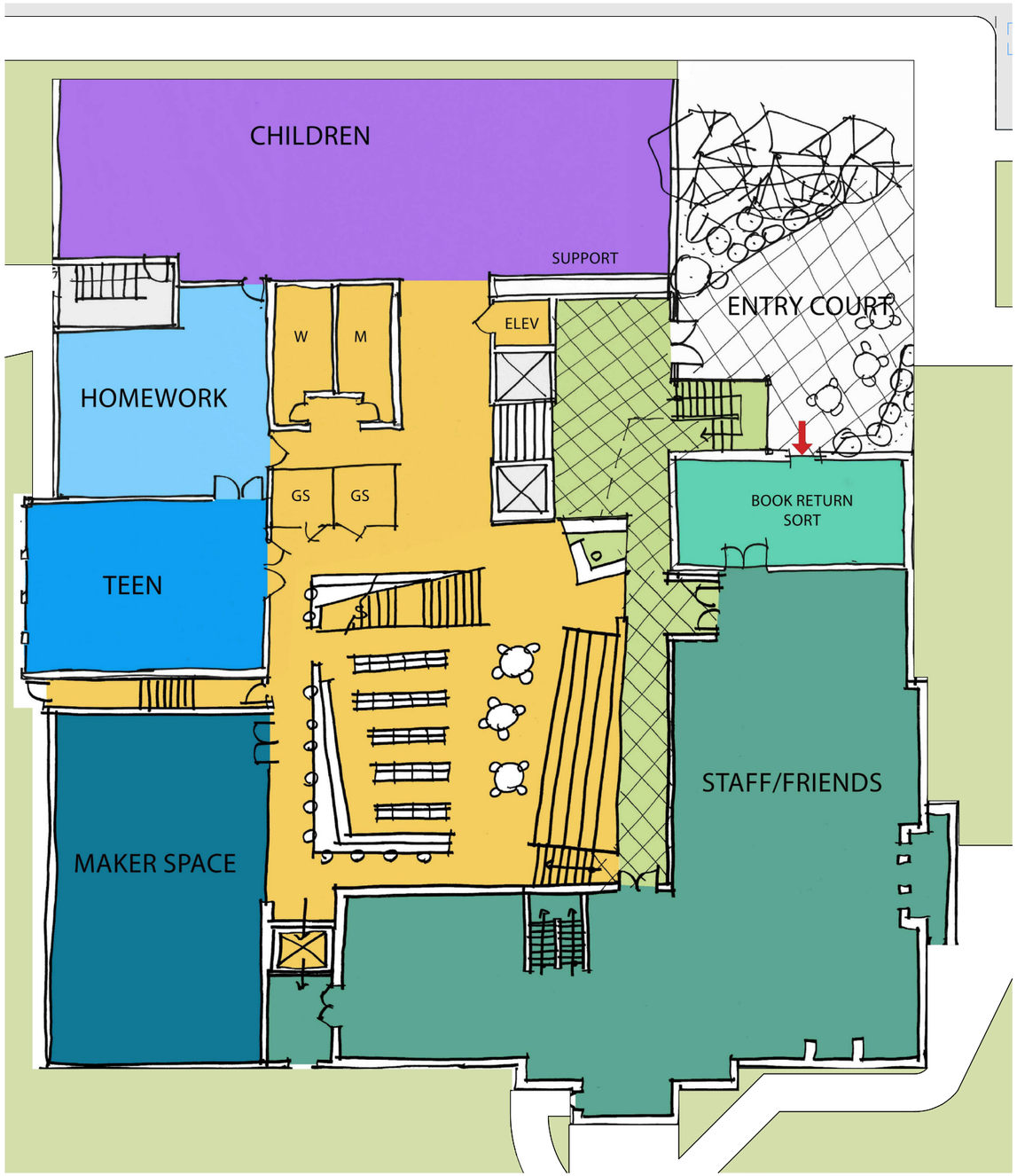
	Remodel		Proposed New Construction	Totals
	Carnegie	1985 Addition		
First Floor	5,500 sf	4,000 sf	9,500 sf	19,000 sf
Second Floor	5,500 sf	4,000 sf	9,500 sf	19,000 sf
Totals	11,000 sf	8,000 sf	19,000 sf	38,000 sf

SCHEME B: SITE PLAN

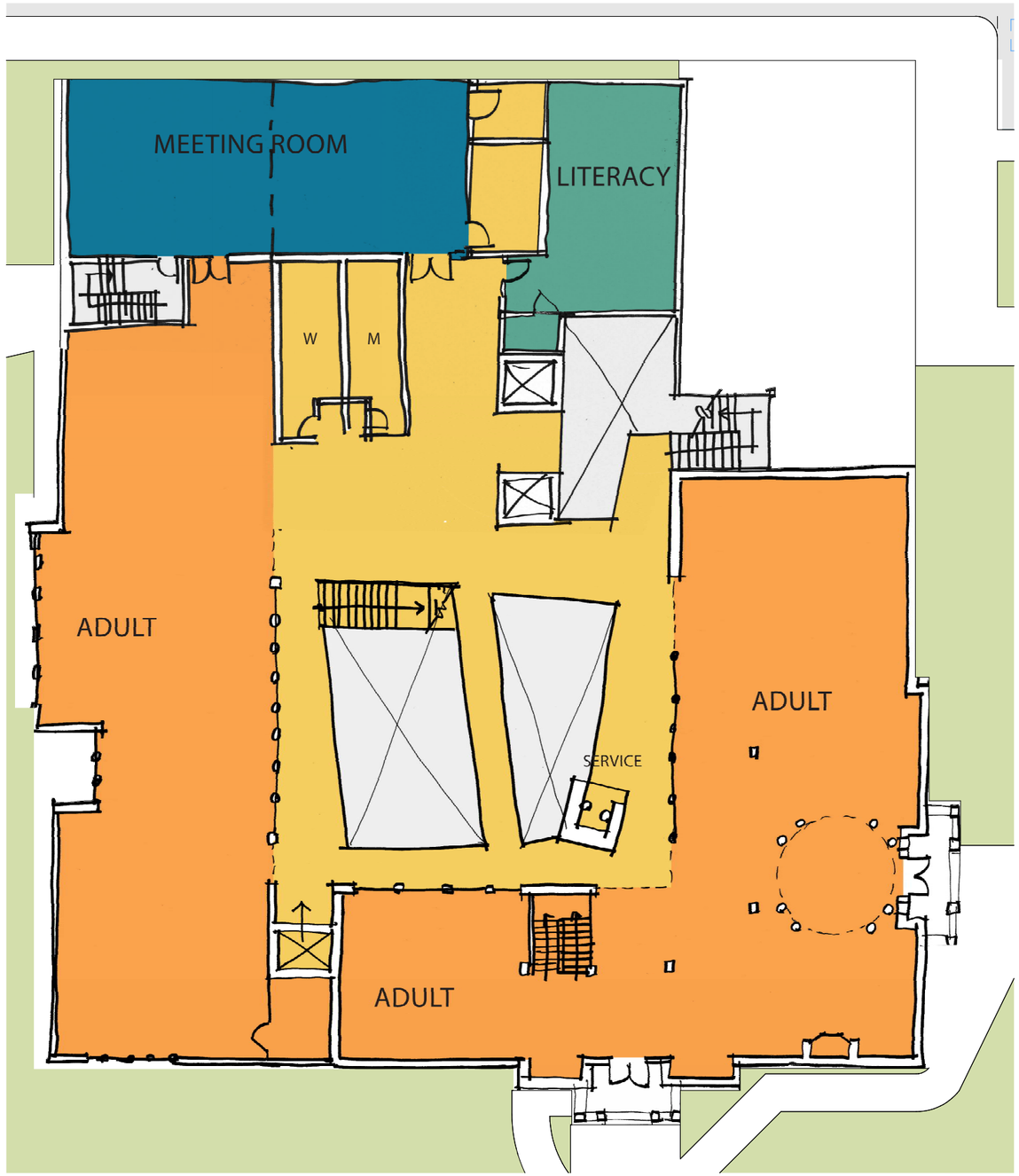


1 / D 23 **SITE PLAN - OPT 2**
1/32" = 1'-0"

SCHEME B: FLOOR PLAN



1 D 24 **OPTION 2 - FIRST FLOOR PLAN**
3/32" = 1'-0"



2 D 24 **OPTION 2 - SECOND FLOOR PLAN**
3/32" = 1'-0"

Short-Term Solutions

Recognizing that the full schemes will represent a considerable investment of time and resources, the design team developed a number of short-term proposals for the library to consider. Each of these proposals answer immediate needs of the library without precluding one of the more holistic schemes. The projects have been prioritized into "Must Do" projects which address systemic or code deficiencies. Further projects are identified in the "Should Do" list in order of priority.

Must Do

1. Structural Evaluation

The structural report by Buehler & Buehler (see Appendix A2) shows that the Carnegie portion of the library does not meet the minimum Basic Performance Objective for Existing Buildings (BPOE) using the Tier 1 evaluation technique. Further analysis is needed to identify the threat to life safety and codify any remediation or upgrades. The Buehler & Buehler report suggests further modeling, Tier 2/3 evaluation and material testing to develop specific recommendations.

Summary:

- Perform Tier 2/3 Evaluation
- Material Testing and Analysis
- Additional Site Surveying

2. Mechanical Ventilation Upgrade

The mechanical report by Capital Engineering (see Appendix A1) surveyed the existing mechanical plant and provided recommendations. The report revealed that, while the equipment is in the middle of its expected service life, there is no provision for code-required ventilation air. The units could be modified to provide this ventilation, or they could be replaced with new equipment.

Summary:

- Upgrade / Replace Existing Mechanical

3. Restroom Upgrades

The restrooms in the Carnegie portion have numerous issues, including leaking plumbing and lack of ADA clearances. It is recommended to update these rooms with new finishes, fixtures and lighting.

Summary:

- New fixtures and partitions
- New paint and lighting
- New tile

Should Do

3. Carnegie Reading Room

The second floor of the Carnegie contains the best preserved historic elements in the library. However, the overall space of the reading room has become divided and incoherent with poor lighting and dated finishes. Several projects are possible in this space. Historic photos show the rotunda originally had clerestory glazing around the perimeter.

At some point the windows were removed and replaced by solid wall panels. Restoring glazing at these locations would provide improve the experience of the rotunda and provide a marked increase in daylight.

Other improvements in this area might involve new finishes (carpet, paint) with a brighter color palette with improved lighting. The service desk could be updated with a re-arranged self-check system to open up the space to light and air.

If it is determined that the public access computers will not be needed in the future, the dedicated room just off the rotunda could be removed and the space re-purposed as part of the main reading room. With abundant daylight and a prime location next to the entry, this could house the browsing collection, seating or even the Teen area.

Summary:

- Recreate rotunda clerestory windows
- Update lighting
- New paint and carpet
- Re-plan / replace service desk and self-check
- Remove computer room and re-purpose area

5. Adult Reading Room

This area appears crowded and dark. If reductions in the collection size are possible, shelving can be lowered and some units eliminated. New seating areas can be developed with updated tables and chairs. The glass block barrier wall should be removed and new carpeting extended from the reading room into the circulation areas (currently quarry tile).

Summary:

- Reduce height and quantity of shelving
- Remove glass block walls
- New paint and carpet
- New furniture

6. Children's' Reading Room

Like the Adult Reading Room, this area could benefit from a reduction in shelving height and quantity, as well as an increase in display units. With a property line adjustment, new windows can be added to bring in more daylight (see pages 11 and 18 for discussion). New carpet tile and a lively color palette will enhance this space for kids' activities.

Summary:

- Reduce height and quantity of shelving
- New paint and carpet
- New furniture
- Update lighting
- Add new exterior windows (note: required property line adjustment)

7. Friends of the Library / Literacy Area

Currently, the Friends' storage shelving extends throughout several rooms, including a back of house corridor, the mechanical space and a storage room. One recommendation is to consolidate the Friends collection and retail function into a smaller space, possibly the conference room adjacent to the Leake Center (currently used as storage). Another option is for the Friends to rent a storage container, located in the adjacent parking lot, as a temporary solution until the full remodel can happen.

This work will allow a significant expansion of the Literacy Program and for new staff areas as well.

Summary:

- Relocate Friends of the Library collection
- Re-plan space for Literacy Program, Staff Lounge and Storage

8. Entry and Way-finding

The entry from the parking lot is hidden between a trash enclosure and the main mass of the addition. The signage is only readable from close up. The gated opening for the trash bins has a greater presence the entry to the library.

Without major architectural alteration, this entry can be emphasized by adding material and color changes to the adjacent wall surfaces, perhaps with graphics and over-scaled signage. Also effective would be a lighted marquee or awning.

Landscape alterations can serve to emphasize the library entry. Changing the curb line, removing a parking space, and adding landscape elements like paving, planting and site furnishings could create a "landing" zone directly in front of the entry.

The pathway connecting the entry to the library elevator is problematic. This route can be defined through additional lighting, perhaps festival-style lighting from suspended above or LED strip lighting embedded into the paving. Improved lighting in this area would also increase the feeling of safety.

Summary:

- Mark entry with graphics, awning
- Improve landscape at entry
- Provide way-finding through lighting upgrade

05 Cost Analysis Summary

To help set a budget for this project, Noll & Tam tasked TBD Consultants with developing cost models for the two preferred schemes. The first option will result in 30,000 sf of space, and the second with 38,000 sf of space. Costs for LEED certification, photo-voltaic systems or Net Zero Energy construction were not included.

TBD Consultants developed a separate estimate for each scheme, tracking both building and site development costs (see full report in Appendix C). A detailed itemization of the major building components using the Uniformat II system is presented with their costs. In addition to these direct costs, the estimates add further construction costs that a contractor will carry, including jobsite management, insurance, bonding and fees. A further line item adds a design contingency, representing items that are not defined at this early stage in the project planning. Also important in the estimate, is escalation which represents the increase in construction costs over time. While no one can know for certain what will happen to the building industry over the next three years, prudent cost estimators add an extra amount to cover rising costs. For this estimate, TBD planned an 18 month construction period starting in June 2019 and extending to August 2020, with an escalation of 15.69% over June 2017 costs. Based on current building trends, delaying the project for another year will add another 3.5% to the cost of the project.

The table below lists total project costs with building costs, representing a contractors' price to construct the facility, added to owner's costs. These "soft costs" include furniture, fixtures and equipment – desks, tables, computers and other movable items that are commonly procured by the owner independently of the builder. Soft costs can include testing and inspections, building permits, and moving costs. Also included are fees for the design team, project management staff, and other consultants such as geotechnical engineers, surveyors, hazardous materials removal firms, CEQA experts. The cost analysis presented below includes a minimal 30% increase to cover these soft costs. Many owners will carry an additional contingency of 10% on top of these other items to cover unforeseen situations such as underground hazards.

SCHEME A : RENOVATION OPTION 1

	AREA	$ / SF	COST
BUILDING COSTS (per TBD estimate)	30,000 sf	$709.27	$21,278,000
SOFT COSTS (Design Fees, FF&E, Project Management)		30 %	$6,383,000
TOTAL PROJECT COSTS			**$27,661,400**

SCHEME B : RENOVATION OPTION 2

	AREA	$ / SF	COST
BUILDING COSTS (per TBD estimate)	38,000 sf	$706.45	$26,845,000
SOFT COSTS (Design Fees, FF&E, Project Management)		30 %	$8,053,500
TOTAL PROJECT COSTS			**$34,898,500**

APPENDIX

A Existing Building Evaluation

A1 Selected As Built Drawings

A2 Seismic Evaluation Report - Buehler & Buehler

A3 Mechanical and Plumbing Assessment Report - Capital Engineering

A4 Electrical/Lighting/Signal Systems Conditions Assessment - O'Mahony & Myer

B Community Needs Assessment

C Cost Analysis

A. Existing Building Evaluation

A1. Selected As Built Drawings

Carnegie Way

N.89°42'16" W. 190.02'

NEW CONC. WALK

TYP.

NEW TILE WALK AT ENTRY

NEW CONC. WALK

217.05' 190.02'

NOTE

SEE SECOND FLR. ADDITION FOR CONT. OF PLANTER

CONC. PLANTER WALL

SEE LANDSCAPE PLANS FOR PLANTING TO BE INSTALLED UNDER A.I.A. 503 BULKHEAD PLAN

NEW ADDITION - PHASE 1

NEW ADDITION MAIN LEVEL FIN. FLR. EL. = 79.55

NEW ADDITION LOWER LEVEL FLR. EL. = 64.57

UTILITY BUILDING

NEW CONC. WALK

SEE LANDSCAPE PLANS

NEW TRANSFORMER ENCLOSURE

NEW CONC. WALK

MATCH EXIST

EXISTING CONC. WALK & STEPS TO REMAIN

SEE LOWER LEVEL FLOOR PLAN FOR CONST. OF UTILITY BLDG.

UP

DEMOLITION AREAS SEE EXIST./ DEMO PLANS

EXISTING TREES TO REMAIN. TYP.

CONC. PLANTER WALL

EDGE OF CANOPY ABOVE

SEE LANDSCAPE PLANS FOR PLANTING TO BE INSTALLED IN THIS AREA

NEW COURTYARD

SEE SHT A7 FOR ARCHITECTURAL & SHEET L-1 FOR LANDSCAPING OF COURT AREAS

EFFECT 6'-0" HIGH CYCLONE FENCE (TEMPORARY) TO BE IN PLACE DURING CONSTRUCTION OF NEW BLDG. ADDITION.

ELEVATOR TOWER TO BE INCLUDED IN "PHASE 1" CONSTRUCTION

UP

UP

EXISTING CONC. STEPS TO BE RE-FAIRED - SEE NOTE SHT. A-3.

DN

EXIST. MEZZANINE FIN. FLR. EL. = 81.09

EXIST. MAIN LEVEL FIN. FLR. EL. = 79.55

EXIST. LOWER LEVEL FIN. FLR. EL. = 64.57

EXISTING LIBRARY
PHASE 2

NOTE:
FOR EXACT LOCATION OF NEW CONSTRUCTION SEE DIMENSIONS & NOTES ON LOWER LEVEL FLOOR PLAN

DN

EXISTING STEPS & WALK TO REMAIN

UP

UP

NOTE:
- FOR EXIST. SITE CONDITIONS & ELEMENTS SEE SHEET C-2
- FOR EXIST. SITE CONDITIONS & ELEMENTS TO BE REMOVED SEE SHEET C-1

N. 00° 24' 25" E.

N. 89° 42' 16" W.

217.05'

N. 00° 24' 25" E.

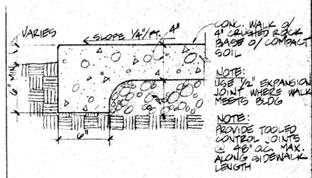
NORTH

SITE PLAN

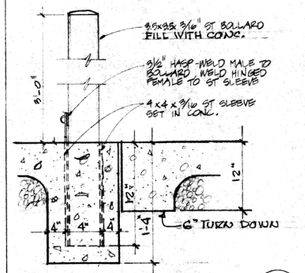
1" = 10'-0"

Court Street

First Street



CONC. WALK 1/2"=1'-0" 1/—



STEEL BOLLARD 1/2"=1'-0" 2/—

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WALL LEGEND

- Existing wall to be removed.
- Existing wall to remain.
- New 12" C.M.U. wall.
- New 8" C.M.U. wall.
- New stud wall with insulation.
- New stud wall without insulation.

HANDICAP NOTES

PRIMARY ENTRANCE TO REMODELED AREA

2-3301 General
(m) - Primary entrances assessable to handicap.

2-3303 Doors
(c) Type of lock or latch:
- Exit doors shall be openable from the inside without the use of key or any special knowledge or effort.
- Manually operated edge or surface-mounted prohibited.

(e) Exit doors min 3'-0"x6'-8", openable 90 degrees.
(i) Thresholds: 1/2" max.
(l) Hardware:
- Exit doors approved by SFM 33.2 & SFM 33.1.
- Max. effort to operate doors shall not exceed 8.5 lbs. for exterior doors, 5 lbs. for interior doors.

(m) Construction: Bottom 10" of all doors except automatic and sliding to have kick plates.

2-3306 Ramps
(a) Slope of Path of Travel; Max. 1/12
(b) Landings: Top & bottom of each ramp
(c) Width: 48" MIN.
(d) Dimensions: 60"x 60"
(e) Handrails: Each side of ramp, 30" min. to 34" max. above ramp surface and extend 12" beyond ramp & return.
(f) Curb and Wheel Guards: 2" min height
(g) Surface: Slip resistant

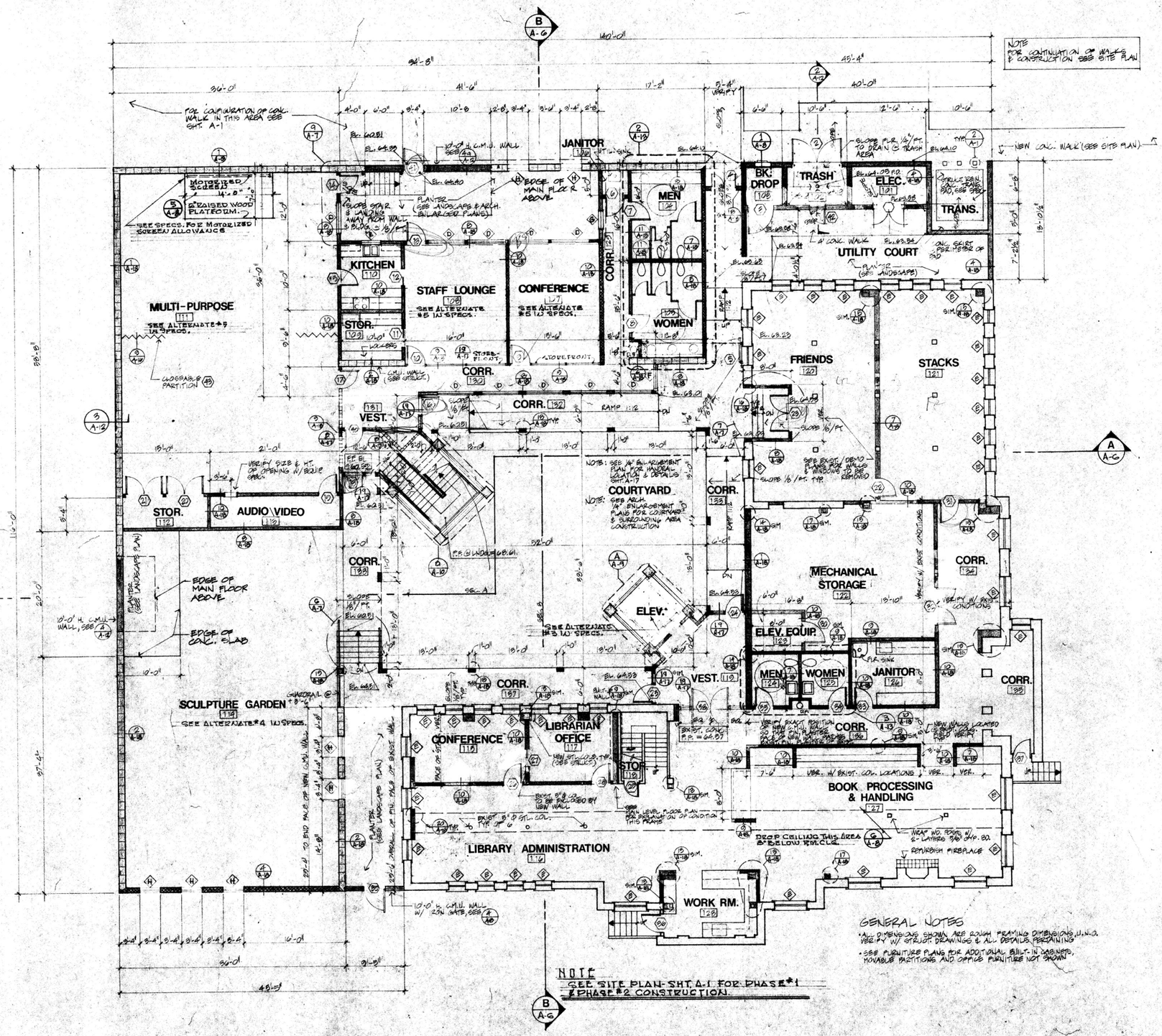
2-3323 Walks and Sidewalks
- 48" width MIN.
- Slope less than 6% medium salted finish.
- Slope greater than 6% slip resistant.
- Cross slope max. 1/4" per foot.

2-3324 Hazards
- 6" curb at changes in elevation greater than 4".
- Overhang obstructions min. 80" above walk surface.

2-1721 Protruding Objects
- Objects projecting into walks, halls, corridors, passage ways or isles shall protrude 4" max.

2-1720 Signs and Identification
(g) Building Entrance: Shall be identified with international sign of accessibility.
(n) Lobby: Post information in lobby concerning location of handicap facilities.

2-1711 Sanitary Facilities
3(a) Separate Facilities: Provide separate handicap facilities for each sex.
(d) Passageways, Doorways, Clear Area, Symbols:
- Passageways to sanitary facilities shall have a clear opening 32"min.
- 60" in direction of door swing in its closed position of 44" where door swings away.
- Door leading to mens room to provide 1/4" thick equalateral triangle with 12" edges and virtex pointing up and womens room a circle 1/4" thick with 12" diameter.
- Symbols to be centered on door @ 60" hgt.



GENERAL NOTES

- ALL DIMENSIONS SHOWN ARE GIVEN FRAMING DIMENSIONS U.N.O. VERIFY W/ STRUCT. DRAWINGS & ALL DETAILS PERTAINING
- SEE FURNITURE PLANS FOR ADDITIONAL BUILT-IN CABINETS, MOVABLE PARTITIONS AND OFFICE FURNITURE NOT SHOWN

LOWER LEVEL FLOOR PLAN

1/8"=1'-0"

NORTH

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(HANDICAP NOTES CONT.)

(e) Multiple Accommodation Toilet:
- A clear space measured 27" A.F.F. to inscribe a 60" diameter circle or a 56"x63". Doors other than handicap door may not incroach into more than 12".
- W.C. 28" from fixtures or 32" from wall & 48" in front. If W.C. is in compartment 60" is required.
- Grab bars shall not project more than 3" into space.
- Doors to W.C. shall have automatic closing device & a min. 32" wide at end and 34" on side. A clear & unobstructed access not less than 44" & 48" in front of W.C.

(f) Single Accommodation Toilet:
Shall accommodate a wheel chair 30"x48" and permit door to close. W.C. to be 28" from fixtures or 32" from wall.

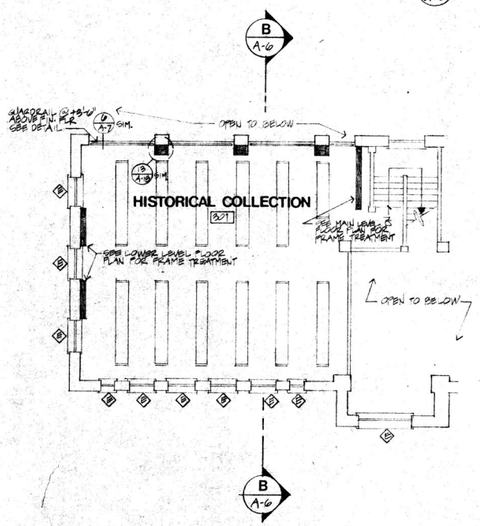
(h) Grab Bars:
- At each side or side and back. Side bar 42" mounted 24" up front of W.C.. Back & SIDE bar mounted 33" above finished floor. Bars diameter 1¼" to 1½" round max. with 1½" clear space surrounding each bar.
- Bending stress 250 16f, shear stress 250 16f.
- No rotation.
- Free of abrasive surfaces including surrounding surfaces.

(i) Toilet and Fixture Accessories:
- Provide 30"x48" in front of lav.
- Mount mirrors, sanitary napkin, waste receptacles and other similar dispensing and disposal fixtures 40" above finished floor to bottom of fixture.
- Wall mounted toilet tissue dispensers to be within 12" of front edge to W.C.
- Provide 30"x48" in front of urinal.

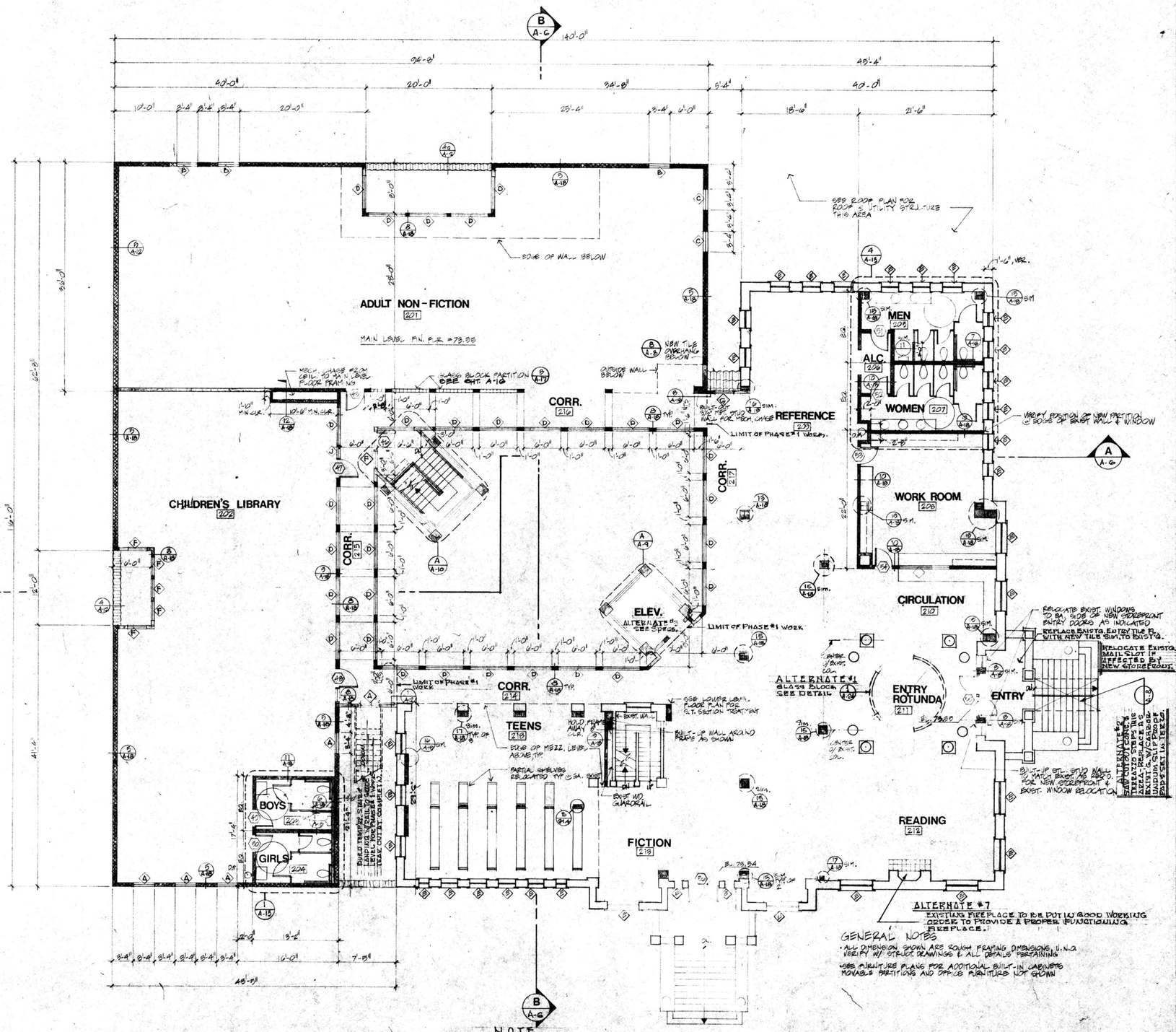
5-P1502 Water Closet Height:
W.C. height shall be min. 17" and max. 19" measured to top of toilet seat. Flush control max. 3lbf, oscillating handle or low volting button.

5-P1503 Urinals:
Elongated rim max. 17" above finished floor.

5-P1504 Lavatory Height:
- At least 29" above finished floor with knee space under front up 30"w x 8" d. Toe clearance shall be 30"w x 9" d x 17"h.
- Hot water and drain pipes shall be insulated or covered with non abrasive materials.
- Faucet controls and operating mechanisms shall be operable with one hand 5lbf max. and non tight grasping, pinching or twisting of wrist. Self closing acceptable with min. of 10 second water flow. Lever operated push type and electronically controlled are acceptable.



MEZZANINE FLOOR PLAN



MAIN LEVEL FLOOR PLAN

NOTE
SEE SITE PLAN - SHT. A-1 FOR PHASE #1 & PHASE #2 CONSTRUCTION

1/8"=1'-0"

NORTH

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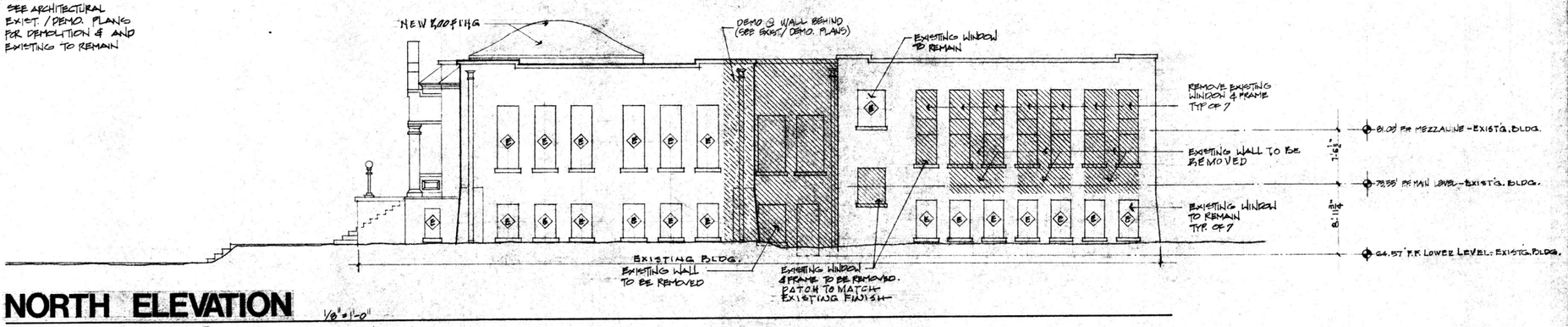
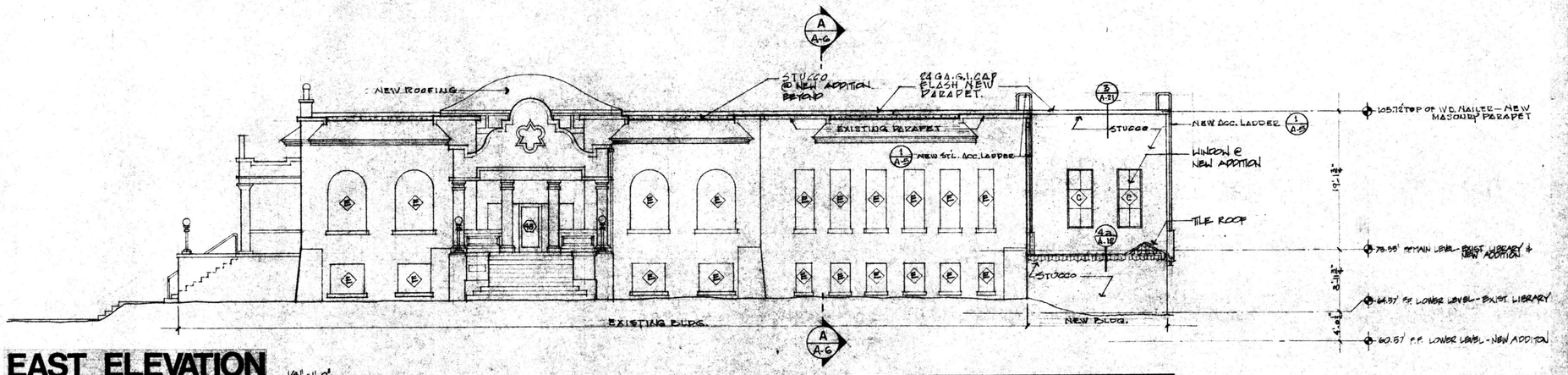
NOTE
SEE ARCHITECTURAL EXIST. / DEMO. PLANS FOR DEMOLITION & AND EXISTING TO REMAIN



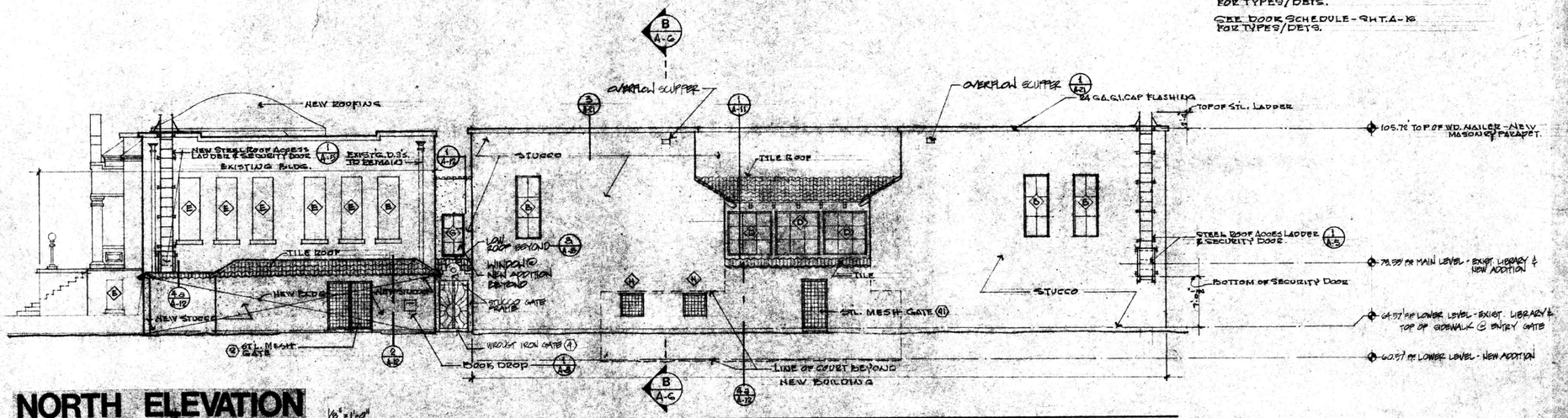
NORTH ELEVATION
EXIST. / DEMO.
1/8"=1'-0"



EAST ELEVATION
1/8"=1'-0"

NOTE
SEE WINDOW SCHEDULE - SHT. A-17 FOR TYPES/DETS.

SEE DOOR SCHEDULE - SHT. A-16 FOR TYPES/DETS.



NORTH ELEVATION
1/8"=1'-0"

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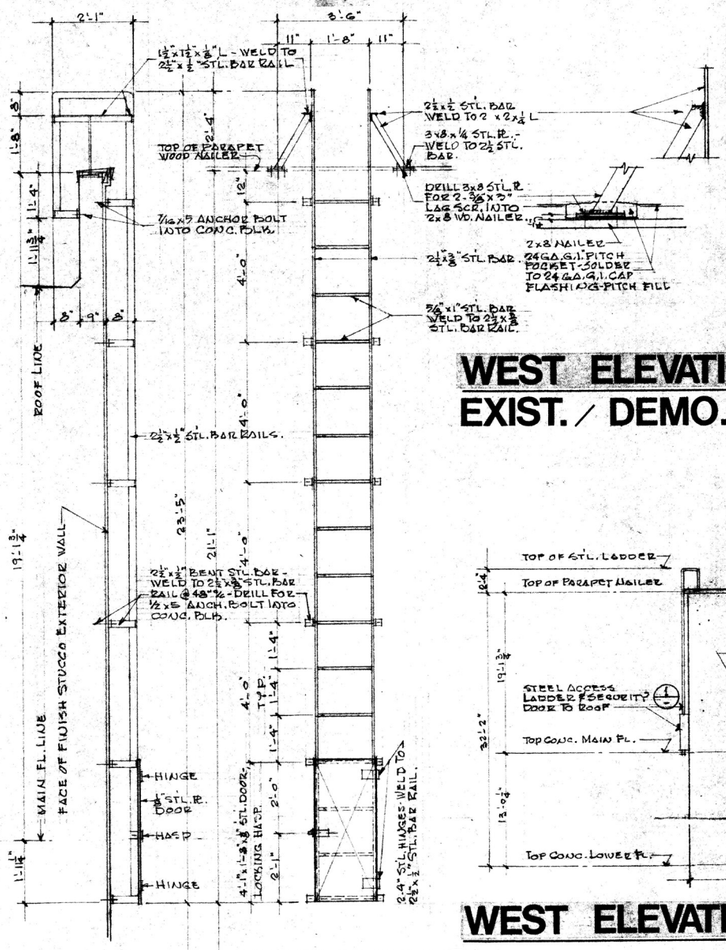
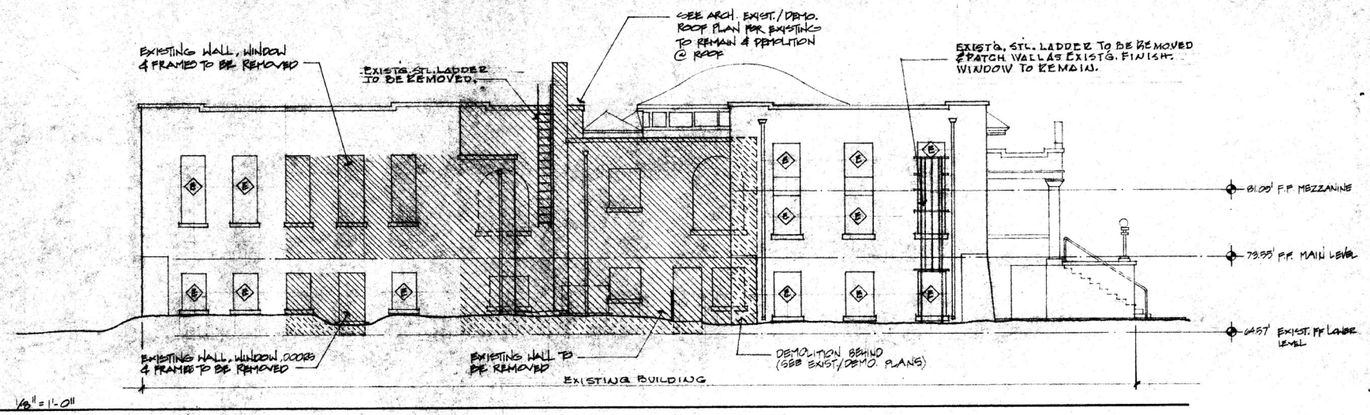
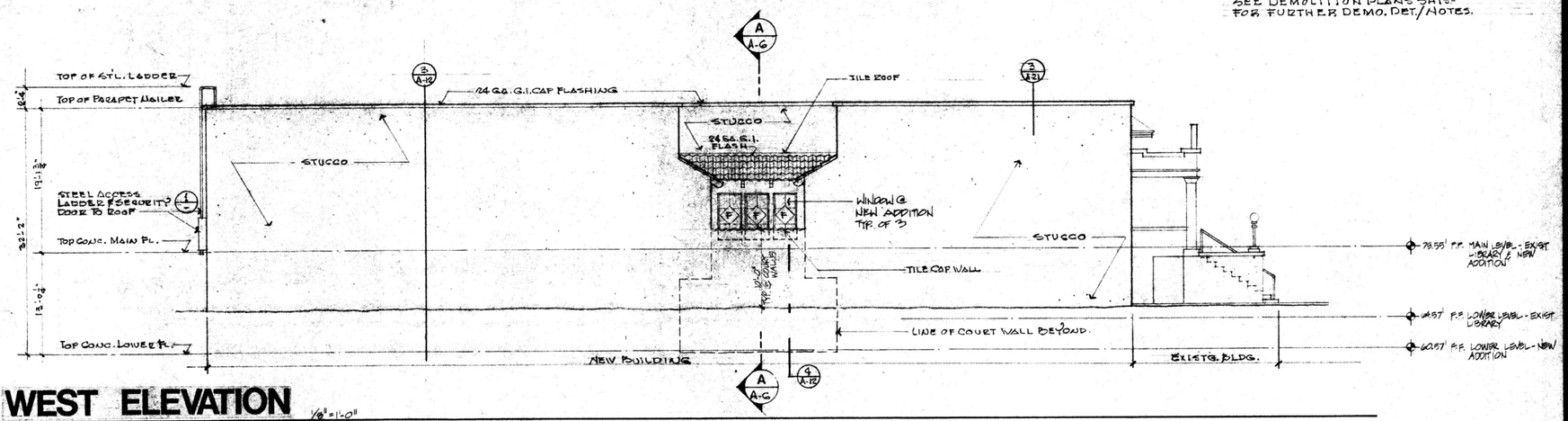


WEST ELEVATION
EXIST. / DEMO.

1/8" = 1'-0"



NOTE
SEE DEMOLITION PLANS SHTS- FOR FURTHER DEMO. DET./NOTES.



WEST ELEVATION

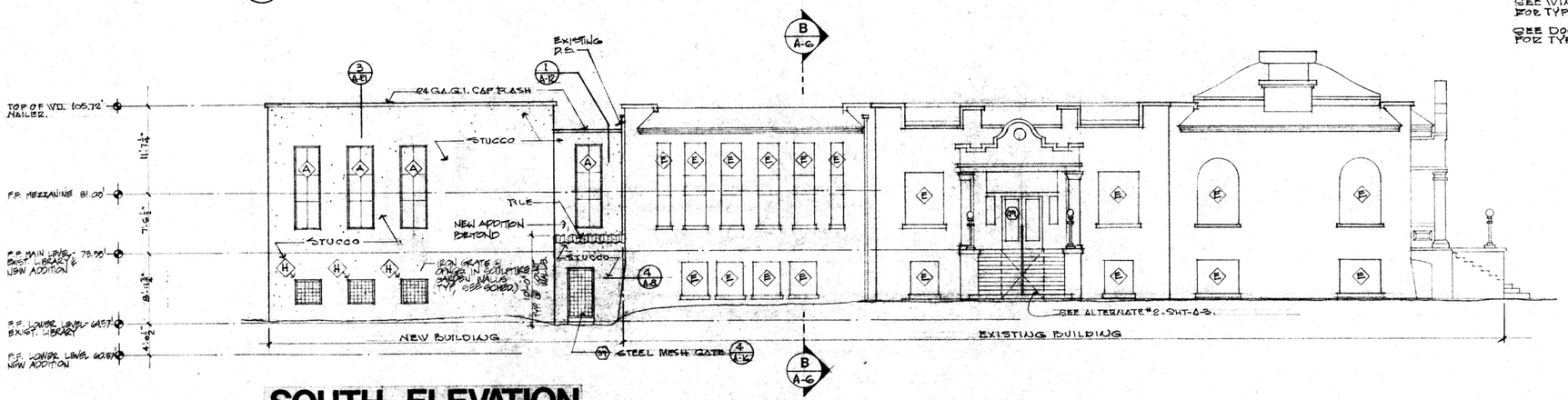
1/8" = 1'-0"

ROOF ACCESS LADDER (1)

SCALE 1/2" = 1'-0"

NOTE
SEE WINDOW SCHEDULE - SHT. A-17 FOR TYPES/DETS.

SEE DOOR SCHEDULE - SHT. A-16 FOR TYPES/DETS.



SOUTH ELEVATION

1/8" = 1'-0"

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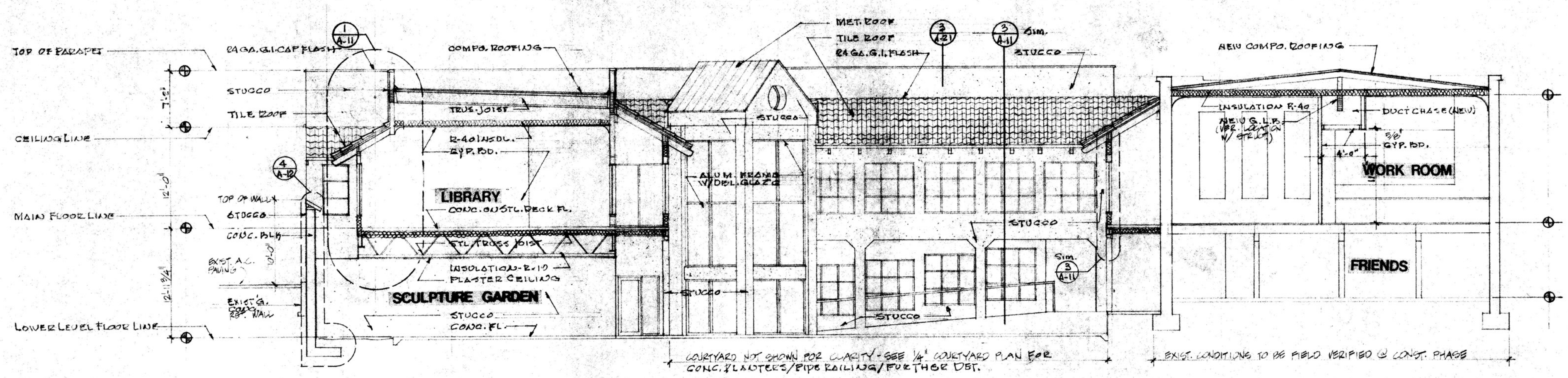
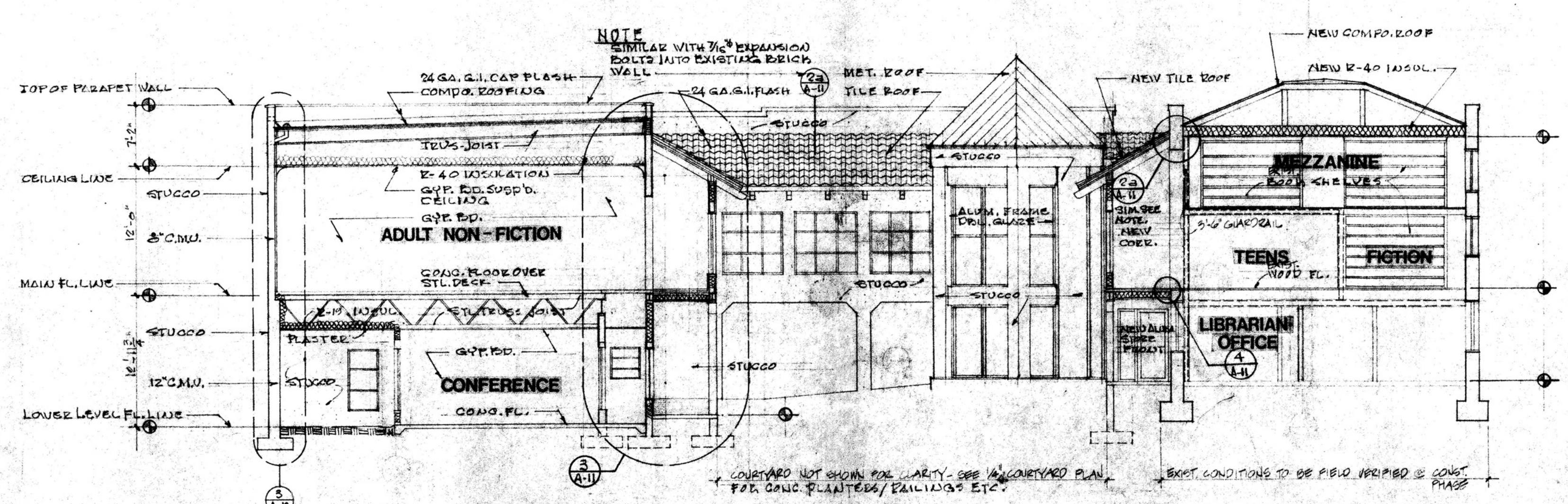


SECTION A

1/8" = 1'-0"



SECTION B

1/8" = 1'-0"

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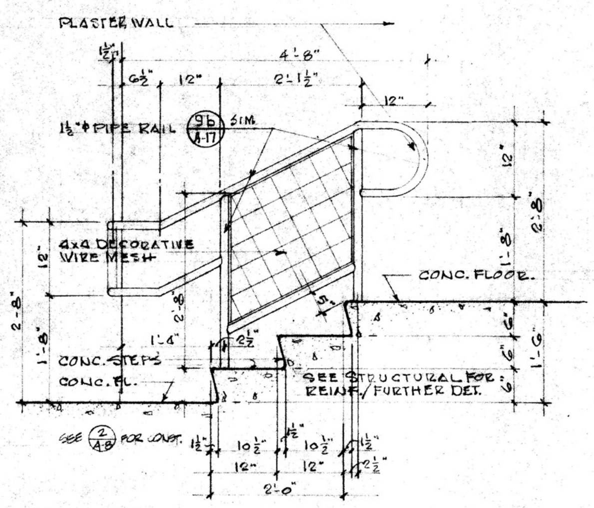
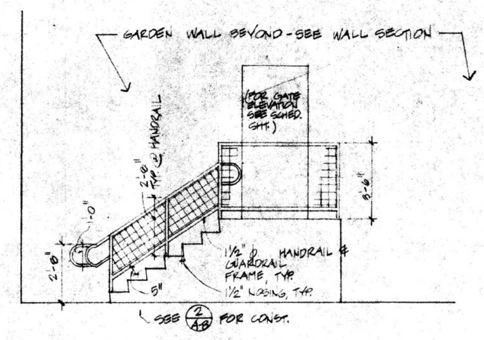
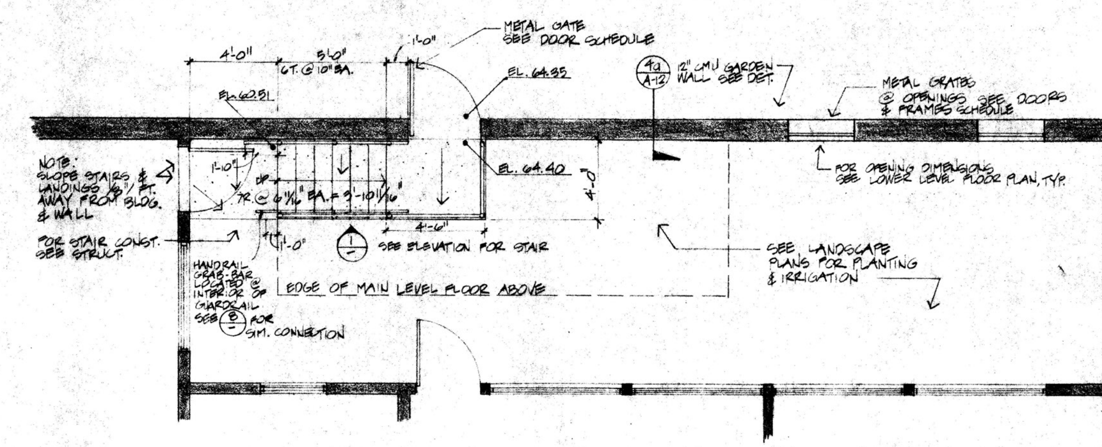
A-6

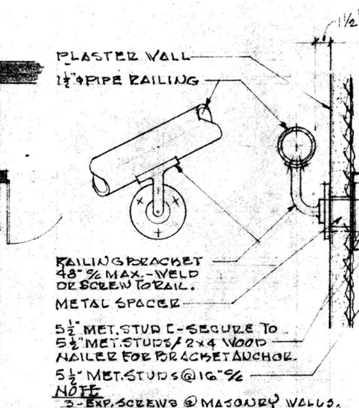


STAIR SECTION 7
3/4"=1'-0"



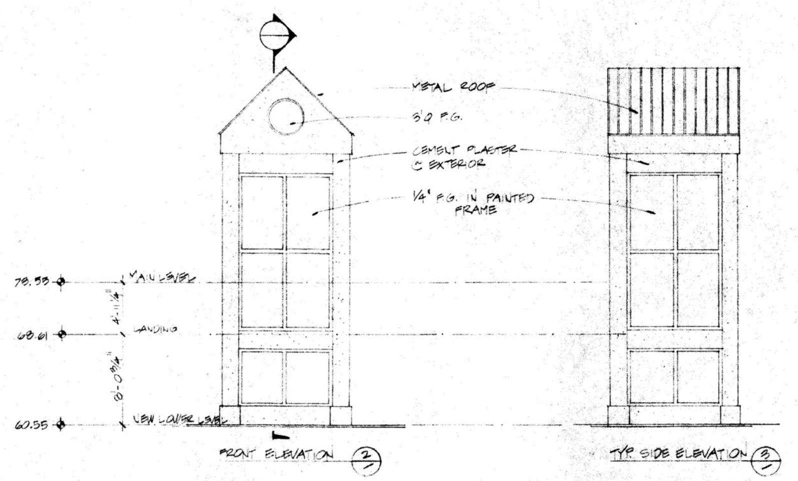
STAIR ELEVATION 1
1/4"=1'-0"



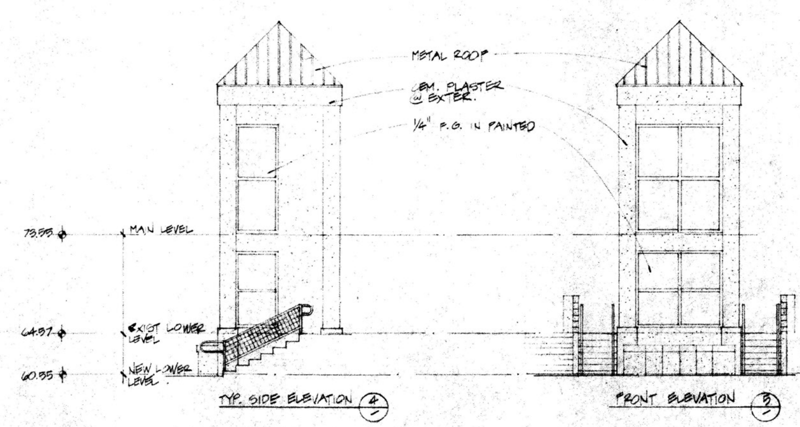


PIPE RAIL WALL BRACKET DETAIL 8
3"=1'-0"

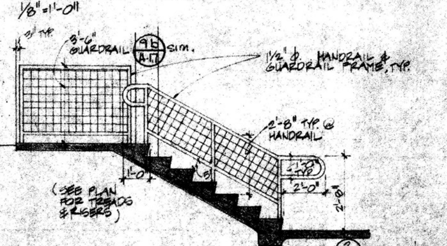
COURTYARD PLAN · NORTH 9
1/4"=1'-0"



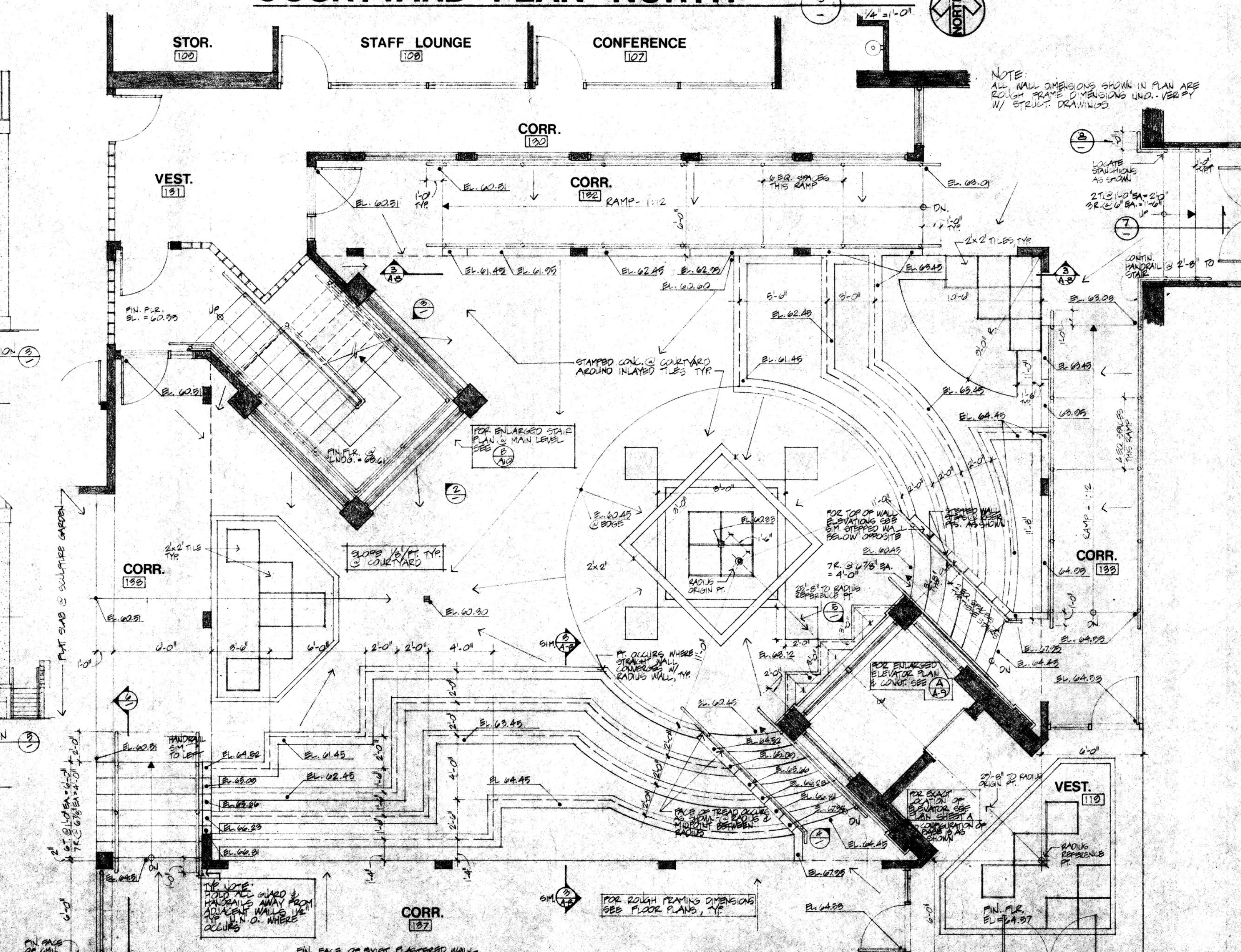
STAIR TOWER
1/8"=1'-0"



ELEVATOR TOWER
1/8"=1'-0"



STAIR SECTION
1/4"=1'-0"



COURTYARD PLAN · CENTRAL
1/4"=1'-0"

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A-7

A. Existing Building Evaluation

A2. Seismic Evaluation Report - Buehler & Buehler

WOODLAND PUBLIC LIBRARY

250 FIRST STREET
WOODLAND, CA 95695

SEISMIC EVALUATION REPORT

B&B Project No. 2017-0086.00

March 15, 2017

EXECUTIVE SUMMARY

Buehler & Buehler Structural Engineers, Inc. (B&B) conducted a seismic evaluation of the Woodland Public Library. It is our understanding that the original structure was constructed around 1903 and additions occurred in 1915, 1929, and 1985. The original two-story L-shaped structure was approximately 11,300 square feet and was constructed of unreinforced masonry bearing walls with wood framed floors and roofs. The 1985 construction documents that were available for review show approximately 18,100 square feet was added to the building including a two-story L-shaped addition, enclosed walkways, an elevator, and a mezzanine area in the original building. Renovation and retrofit was also done to the original building at the time of the 1985 additions. The resulting structure is a donut shaped building with a central corridor.

The building was evaluated using the American Society of Civil Engineers (ASCE) 41-13: *Seismic Evaluation and Retrofit of Existing Building*. An initial Tier 1 evaluation with a Basic Performance Objective for Existing Buildings (BPOE) of Life Safety was conducted to provide a general structural assessment of the buildings expected seismic performance. A site visit was conducted on February 15, 2017 where existing conditions were observed including the structural configuration and overall state of the structural material.

The Tier 1 evaluation revealed a number of potential deficiencies in the building's seismic systems which indicate that the building does not meet the BPOE of Life Safety. Further investigation and structural upgrades would be required to meet this performance objective.

SCOPE

The purpose of this evaluation is to provide a general structural assessment of the building's expected seismic performance.

The scope of our work for this evaluation is as follows:

- Visit the site to observe the existing condition of the structure.
- Document any unusual and/or potentially hazardous structural conditions, including deterioration of structural. Note that destructive investigation is beyond the scope of this report.
- Obtain and review all available existing drawings and reports for the building.
- Complete an ASCE 41-13 Tier 1 analysis and checklists for the structure. Note that non-structural investigation is beyond the scope of this report.
- Prepare a summary letter noting our findings, ASCE 41-13 checklists and supporting calculations, and summarizing potential deficiencies.

Note that the intent of this study is to provide an initial seismic evaluation of the existing building, and not verify compliance with all structural provisions of the latest building code.

PERFORMANCE OBJECTIVES AND CRITERIA

The Basic Performance Objective for Existing buildings noted in ASCE 41-13 corresponds to: "*the regulatory policy traditionally applied to existing buildings in many seismically active areas of the United States. The BPOE accepts a lower level of safety and a higher risk of collapse than would that provided by similar standards for new buildings. Buildings meeting the BPOE are expected to experience little damage from relatively frequent, moderate earthquakes but significantly more damage and potential economic loss from the most severe and infrequent earthquakes that could affect them. The level of damage and potential economic loss experienced by buildings rehabilitated to the BPOE likely will be greater than that expected in similar, properly designed and constructed new buildings*."

More specifically, the criteria for BPOE includes evaluating the building for the Life Safety Performance Level for a seismic event with a return period of 225 years (20%/50 years), and for the Collapse Prevention Performance Level for a seismic event with a return period of 975 years (5%/50 years). The Life Safety Performance Level is defined as: "*the post-earthquake damage state in which a structure has damaged components but retains a margin against the onset of partial or total collapse."* The Collapse Prevention level is defined as: "*the post-earthquake damage state in which a structure has damaged components and continues to support gravity loads but retains no margin against collapse."*

For purposes of this Tier 1 evaluation, the Life Safety Performance was utilized.

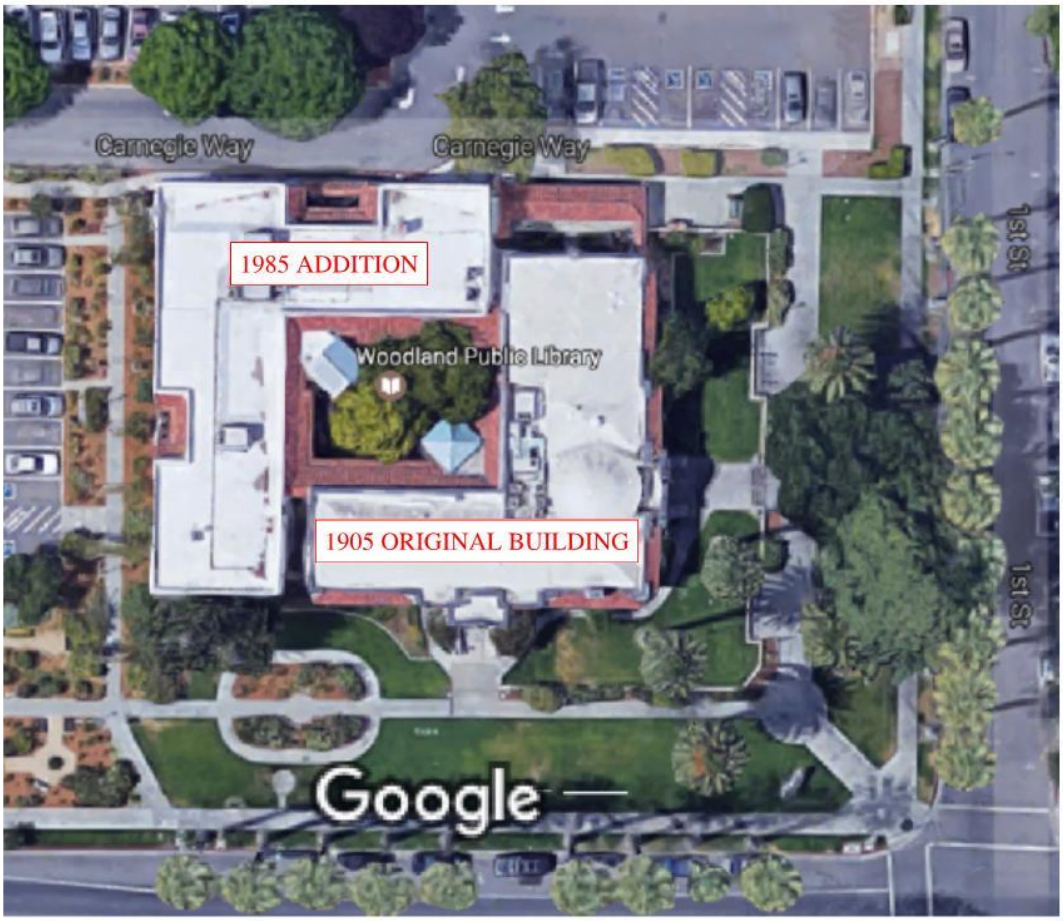


FIGURE 1 – Satellite View of Site

BUILDING DESCRIPTION

It is our understanding that the original building was constructed around 1905. The two-story L-shaped building consisted of approximately 11,300 square feet. It is constructed of unreinforced masonry (URM) bearing walls supporting a wood framed main level and roof structure. The roof is framed with wood trusses supported mainly at the URM perimeter walls and the floor with solid sawn wood joist and beams supported at the URM perimeter walls and interior wood posts. Shallow continuous and isolated spread footings form the original structure's foundation.

The 1985 retrofit of the original structure included the removal of some of the URM bearing walls and reframing/re-support of the wood floor and roof framing. Apparent seismic upgrades include out-of-plane rod anchors spaced at approximately four feet to anchor the existing URM walls into the floor and roof framing, selective steel HSS out-of-plane wall bracing at URM wall piers, and added steel moment frame and braced frame elements.

The 1985 addition included the construction of a two-story L-shaped building consisting of approximately 15,200 square feet, as well as adding a two-story corridor and elevator, a one-story utility court and a mezzanine to the original building. Overall the addition added approximately 18,100 square feet bringing the overall library structure to approximately 29,400 square feet.

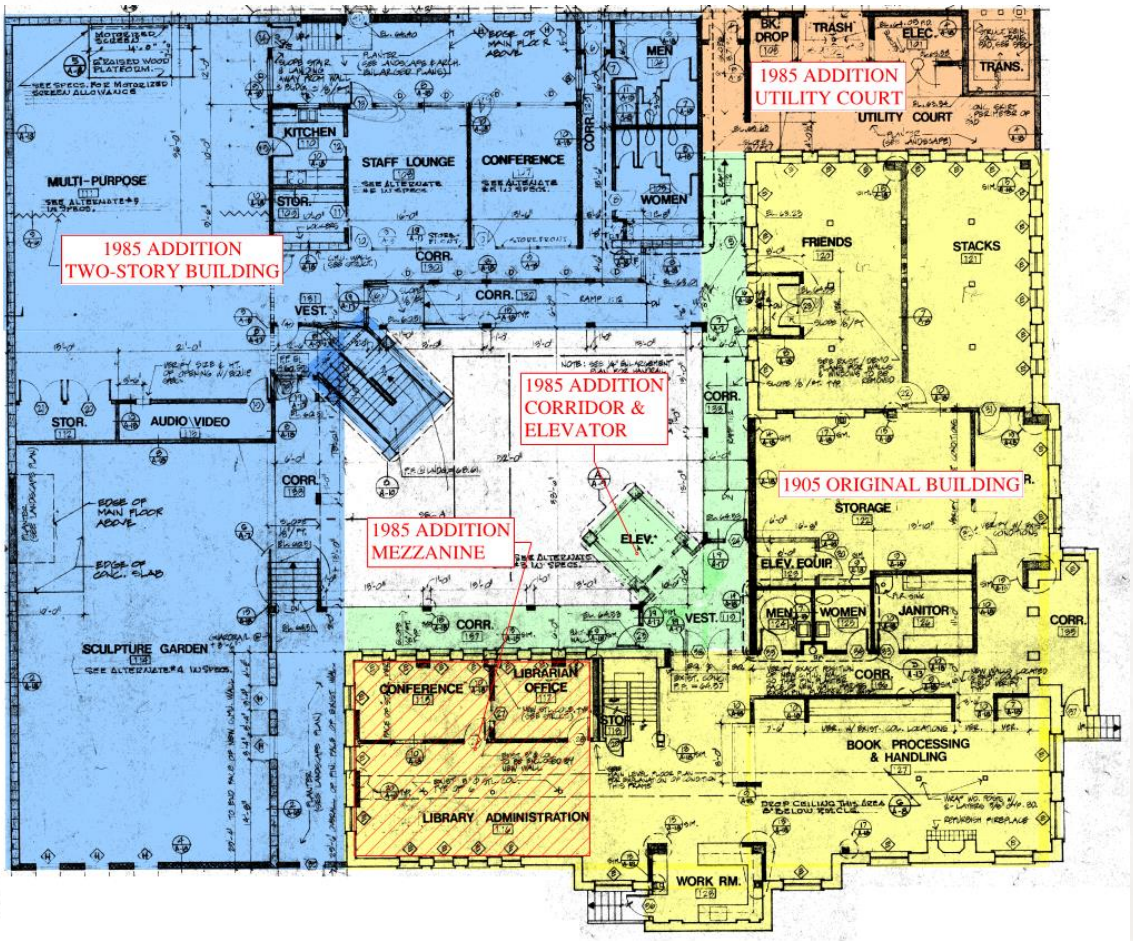


FIGURE 2 – Overall Building Plan

The 1985 two-story addition is constructed of reinforced concrete masonry unit (CMU) bearing walls supporting a steel-framed floor and wood-framed roof structure. The roof is framed with wood I-joists supported by the CMU perimeter walls and GLB girders supported by steel columns and/or wood posts. The floor is framed with steel open web joists supported by the perimeter CMU perimeter walls and a series of structural steel girders and columns. The roof has a plywood diaphragm that is blocked in only a portion of the structure and the floor has a concrete over metal deck diaphragm. Shallow continuous and isolated spread footings form the original structure's foundation. The lower level is partially below grade with concrete retaining walls constructed to just above grade which also support the CMU walls above grade.

The 1985 two-story walkway addition to the existing building is constructed of steel with a concrete over metal deck at the main level and a wood framed roof structure. The one-story utility court addition is constructed of CMU bearing walls and a stacked 3x wood frame roof. A two-story steel HSS tube frame structure supports the elevator addition. All foundations are shallow continuous and spread footings.

The original building has a composition roof while the addition has a combination of roofing types including a built up roof at the flat roof area, tile roofs at the sloped walkway roofs, and metal roofing at the added stair and elevator towers. The exterior walls are finished with stucco.

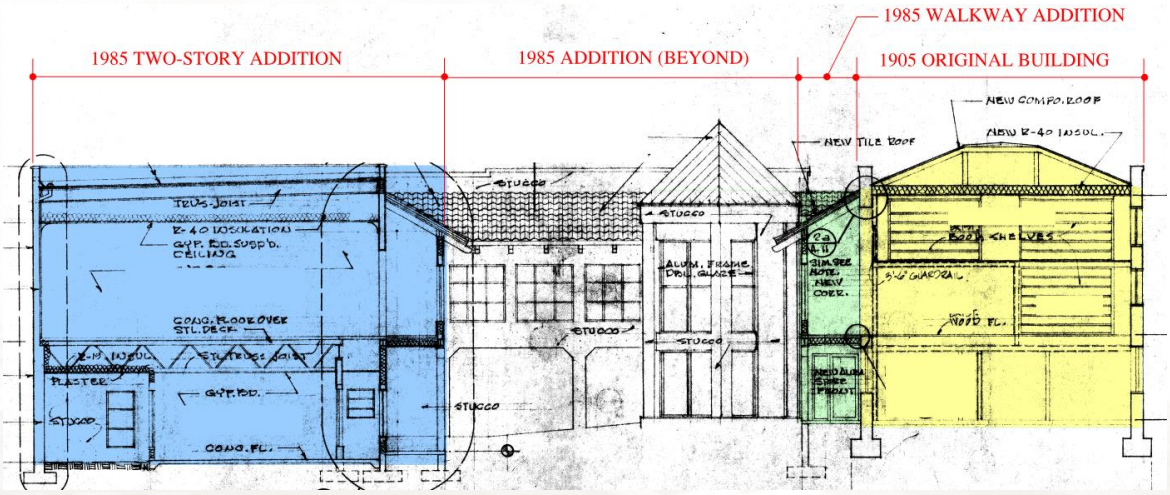


FIGURE 3 – Building Section

MATERIALS EXAMINED

The drawings for the original structure and the 1915 and 1929 renovations that were alluded to were not available. Information about the structure for the purposes of this assessment was taken from examination of the following documents:

- "Woodland Library" – Renovation and Addition drawings, dated September, 1985. Roger S. Scoll Group Architects and Marr-Shaffer & Associates Consulting Structural Engineers.

SITE SURVEY

A site survey was performed on February 15, 2017 in order to observe the visible portions of the existing construction and assess the general condition of the building. Overall the current configuration of the structure matches the 1985 drawings examined. The building appears well maintained and in generally good condition.

The majority of the structural elements of the building are covered with architectural finishes and not accessible for view.

There were no visible indications of foundation settlement issues or signs of distress in the visible portions of the lateral-force-resisting system.

Photographs taken during the site survey are included in Appendix A for reference.

In our opinion, the site survey was adequate to verify general conformance of the building to as-built drawings which enables us to make assumptions aligned with this level of evaluation. More detailed confirmation of existing conditions and material properties, including destructive testing, will be required for more accurate and any detailed future structural evaluations.

METHODOLOGY

The ASCE 41-13 procedure consists of a three tired evaluation process. Tier 1 is a Screening procedure that utilizes complaint/non-compliant checklists to screen for possible deficiencies. ASCE 41-13 checklists and quick check calculations are completed to determine possible structural deficiencies in the Tier 1 screening phase. Tier 2 is a Deficiency-Based Evaluation procedure where-by deficiencies flagged in the Tier 1 screening are analyzed further to determine the validity of the deficiency notation. Tier 3 is a Systematic Evaluation where deficient components are checked for compliance through an even more refined analysis. The scope of this evaluation only includes completion of the Tier 1 checklists and calculations supporting the required checks.

As discussed previously, the established BPOE for this building is Life Safety Performance Level for structural elements.

Based on ASCE 41-13, the original building is classified as “Building Type URM: Unreinforced Masonry Bearing Walls with Flexible Diaphragms” and the 1985 addition is classified as a hybrid of “Building Type RM1: Reinforced Masonry Bearing Walls with Flexible Diaphragms” and “Building Type RM2: Reinforced Masonry Bearing Walls with Stiff Diaphragms.” Per ASCE41-13, Table 3-2, the following checklists were completed:

- Life Safety Basic Configuration Checklist (16.1.2LS)
- Life Safety Structural Checklist for Building Types RM1and RM2 (16.15LS)
- Life Safety Structural Checklist for Building Types URM and URMA (16.16LS)

Refer to Appendix B for the ASCE 41-13 Tier 1 methodology and Appendix C for the applicable Tier 1 checklists, and Appendix D for the supporting calculations.

SOIL CONDITIONS

The subject building is located on a flat site. The Site Class describes the soil profile beneath the structure, with a hard rock soil profile being Class A and a weak clay or peat soil profile being Class F. For the purpose of determining the seismic hazard caused by ground shaking, we classified the soil as Site Class D as this is the default at sites where soft clay soils characteristic of Class E are not present and a geotechnical report is not available to determine if a classification of A, B, or C can be used as allowed by ASCE 41-13, Section 2.4.1.6.2.

SITE SEISMICITY

Based upon the site seismic acceleration parameters for a 2% in 50 year event (from the USGS Ground Motion Calculator, $S_S = 0.365$, $S_1 = 0.148$), it has been determined that the subject building is located in an area of "high" seismicity as defined by ASCE 41-13, Table 2-5.

ASCE 41-13 EVALUATION RESULTS

The Tier 1 screening phase identified the structural items below as "non-compliant", requiring further investigation of each specific item. The specific checklists for the Tier 1 evaluation are attached in Appendix C and Appendix D for the supporting calculations.

Tier 1 Life Safety Basic Configuration Checklist - Non-Compliant Items:

- **Load Path** – The structure does not contain a complete, well defined lateral load path. The interaction between the original building and the addition and the elements tying the structures together do not appear to be developed. Collector elements to the added steel frames in the original building appear incomplete/inadequate.
- **Geometry** – There were URM wall removed in the original building that cause this item to be non-compliant.

Tier 1 Life Safety Basic Configuration Checklist - Unknown Items:

- **Torsion** – Due to the complexity of the combined structure and various systems this is hard to determine without more complex and detailed analysis that is beyond the scope of this report.
- **Liquefaction** – No existing geotechnical information is available.
- **Surface Fault Rupture** – No existing geotechnical information is available.

Tier 1 Life Safety Structural Checklist (RM1 & RM2) - Non-Compliant Items:

- **Wall Anchorage** – Wall anchorage is present but is not fully compliant especially with regards to development into the diaphragm.
- **Cross Ties at Flexible Diaphragm** – Not compliant at roof diaphragm where joists run parallel with exterior walls.

Tier 1 Life Safety Structural Checklist (URM) - Non-Compliant Items:

- **Wall Anchorage** – The wall anchors that were added during the 1985 renovations do not have sufficient capacity to fully restrain the wall to the wood diaphragms.
- **Transfer to Shear Walls** – The diaphragm is inadequate to transfer loads to the shear walls.

- **Shear wall Proportions** – The height-to-thickness ratio of the URM at the upper level exceed the allowable proportions. Some HSS bracing has been added at selective locations but appears incomplete to meet this criteria.
- **Cross Ties at Flexible Diaphragms** – There are not continuous cross ties between diaphragm chords.
- **Stiffness of Wall Anchors to Wood Elements** – Wall anchors that were added in 1985 rely on a 3/8" bent plate for anchorage. Plate is prone to bending which would allow for deflection of the wall anchorage.
- **Beam, Girder, and Truss Secondary Supports** – Beams, girders, and trusses that are supported vertically by URM walls do not have independent secondary columns support of vertical loads.

Tier 1 Life Safety Nonstructural Checklist – Non-Compliant Items:

- **Not in Scope of this Assessment.**

RECOMMENDATIONS

A full analysis of a structural retrofit for the non-compliant items noted above is beyond the scope of this report. The following section of recommendations has been developed in order to assist the architect (Noll and Tam) and owner with the development of alternatives related to the anticipated renovation and possible expansion of the Woodland Library. These recommendations are based on the findings of the limited evaluation conducted in accordance with the scope of this report.

Based on these investigations, we have identified many existing structural components as a non-compliant with the established Life Safety Performance Objective and as such, further additional investigation and/or upgrade is warranted. It is important to emphasize that the identification of non-compliant items is common for building of this vintage as building codes have continually evolved and become more stringent over time based on the lessons of past seismic events. It is also important to note that any seismic upgrades would be considered voluntary unless becoming triggered by an alteration, addition, or change of occupancy. We also expect that some of these non-compliant items could be found to be compliant where additional more detailed evaluations are conducted. A summary of our recommendations are as follows:

ASCE 41-13 Tier 2 and Tier 3 Evaluation and limited material testing:
The existing lateral-force-resisting system for the library includes a complex mix of unreinforced masonry (URM), reinforced masonry, and steel braced and moment frames which have been combined into one overall structure. As a result, the anticipated lateral performance of this overall building's is difficult to accurately predict with simplified assessment techniques. Based on our understanding of the options currently being considered, we recommend additional structural studies, field investigations, and some limited material testing be conducted in order to gain a better understanding of the anticipated performance for the lateral-force-resisting system. Where triggered by an alteration, addition, or change of occupancy, this evaluation and the subsequent retrofit design would be required by current building codes. Where future work is minimal and a detailed assessment and upgrades are not triggered, we believe that this study would still facilitate the identification of those elements that could readily be strengthened in conjunction with any new work. Our recommended scope of additional work would be as follows:

1. The development of a three-dimensional mathematical model which would accurately predict the anticipated seismic performance including the relative distribution of seismic forces between each of the structural elements (URM, CMU, steel braced frames, and steel moment frames) and building displacements.
2. The completion of a Tier 2 and possibly Tier 3 structural evaluation as prescribed within ASCE 41-13.
3. Limited material testing to determine the strength and the condition of the existing unreinforced masonry walls and well as isolated material tests for existing concrete, CMU, and steel elements.
4. Additional site visits to identify isolated areas for testing and to visually observe the existing structural system including a sample of those areas which were previously strengthened. This may require the removal of some ceiling tiles and possibly the removal of small portions of the existing hard ceilings.

Geotechnical and Geologic Hazards Report:
The potential short and long term performance of the subject property can be greatly influenced geologic hazards such as liquefaction, surface fault rupturing and slope failures. B&B was unable to assess the potential for these site potential threats and as such, B&B recommends that both a geotechnical and geologic report be commissioned. This report would eventually be needed where any new design or retrofit work is done.

CONCLUSIONS

This study represents the findings of an ASCE 41-13 Tier 1 evaluation. Tier 1 is intended to identify buildings as either not needing rehabilitation, i.e. "compliant" with the standard, or identify deficiencies that would require a more detailed Tier 2 or ultimately Tier 3 analysis to either justify compliance or outline remedial requirements.

The ASCE 41-13 Tier 1 evaluation, that the building in its current configuration *would not meet* the requirements of the Basic Performance Objective for Existing Buildings. Further analysis and most likely seismic retrofit would need to be completed before the performance objective could be met.

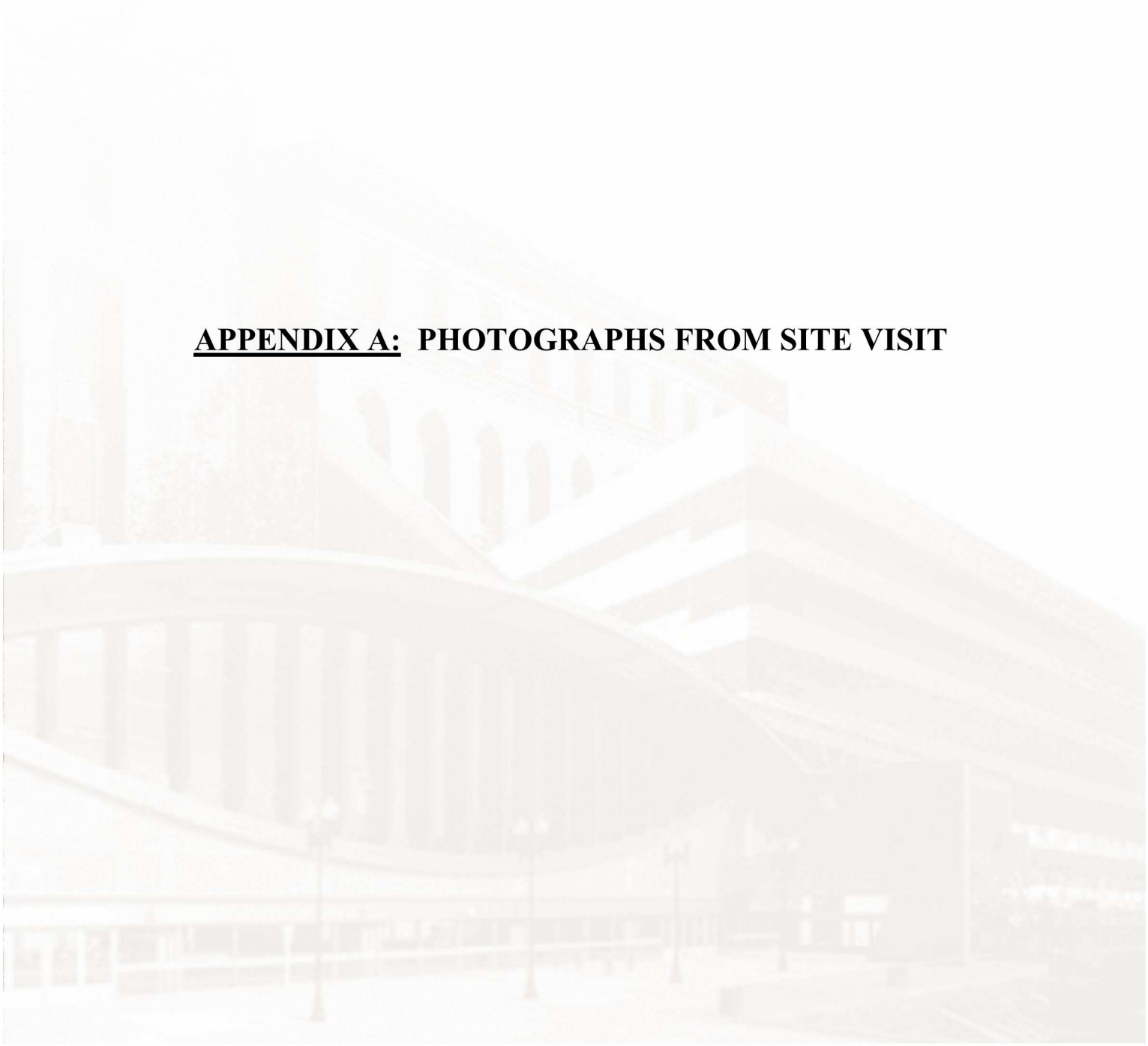
LIMITATIONS

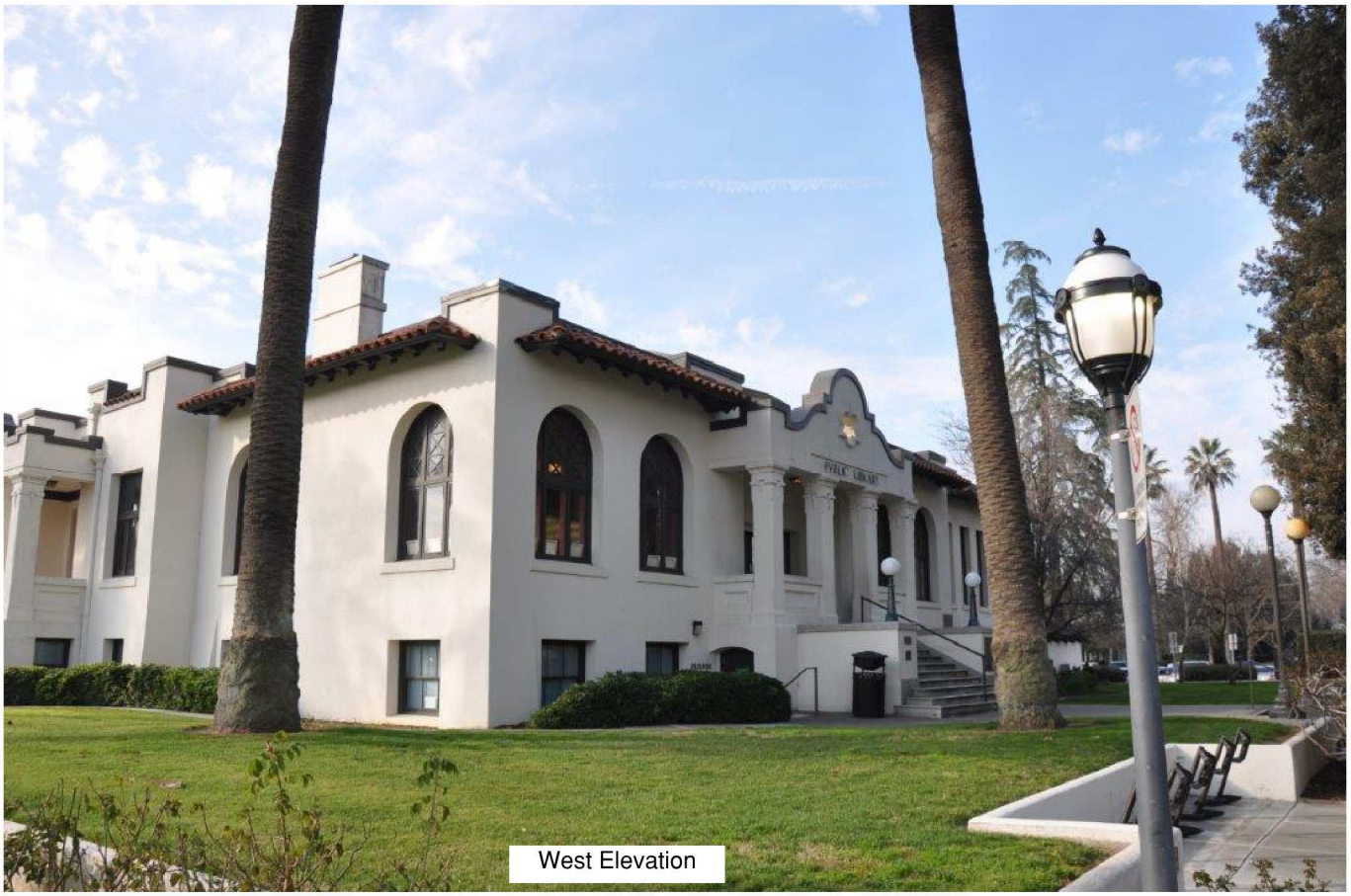
The services performed by Buehler & Buehler Structural Engineers, Inc. for this project have been provided at a level that, as a minimum, is consistent with the general level of skill and care ordinarily provided by structural engineers practicing in this region. Work is necessarily done under the constraints of time and budget. Conclusions and information presented in this report are dependent on and limited by information provided by others. No warranty is expressed or implied.

Prepared By:

Colin Blaney, S.E.
Principal
BUEHLER & BUEHLER.
Structural Engineers, Inc.

APPENDIX A: PHOTOGRAPHS FROM SITE VISIT

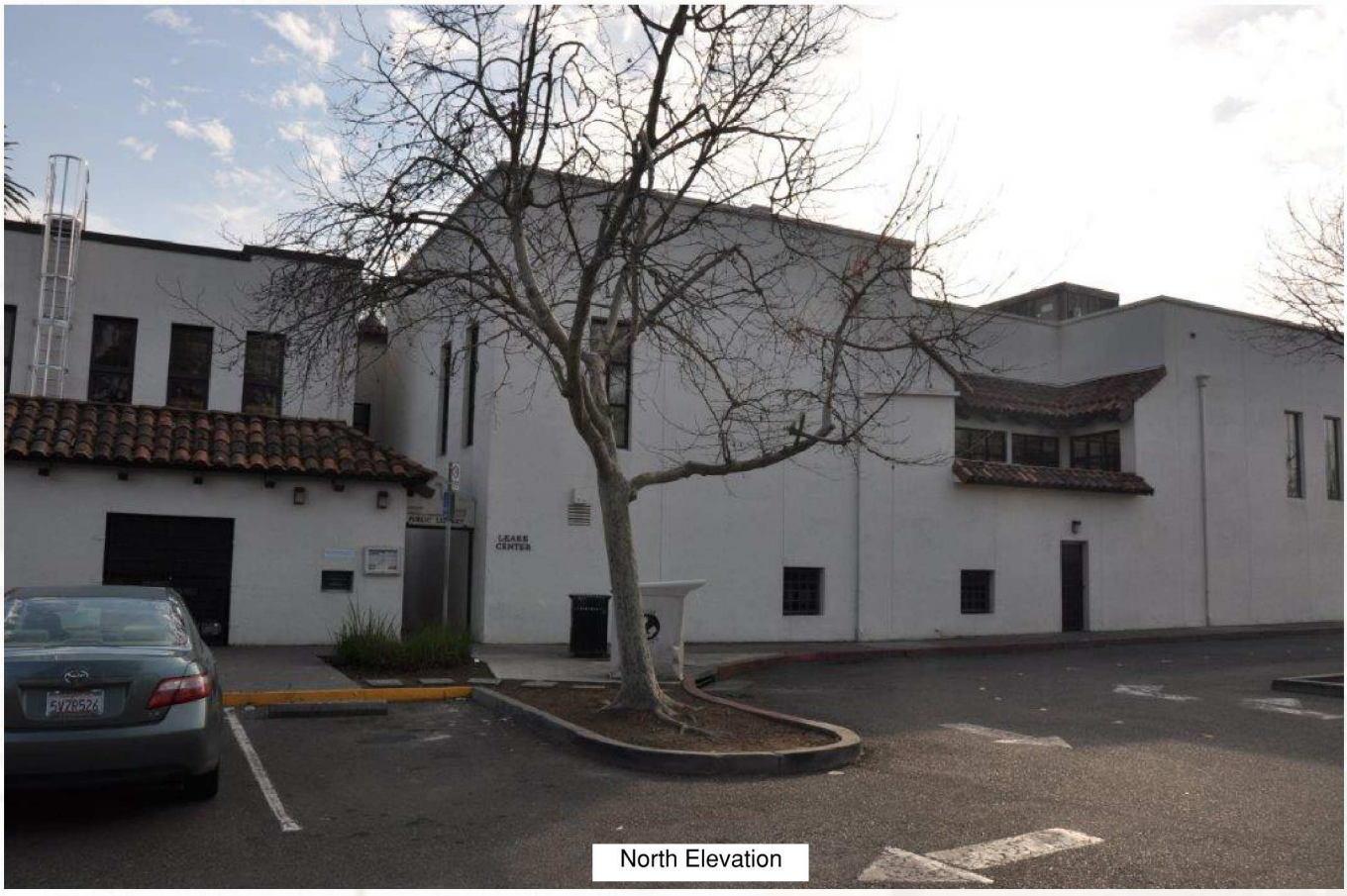




West Elevation

South Elevation

East Elevation

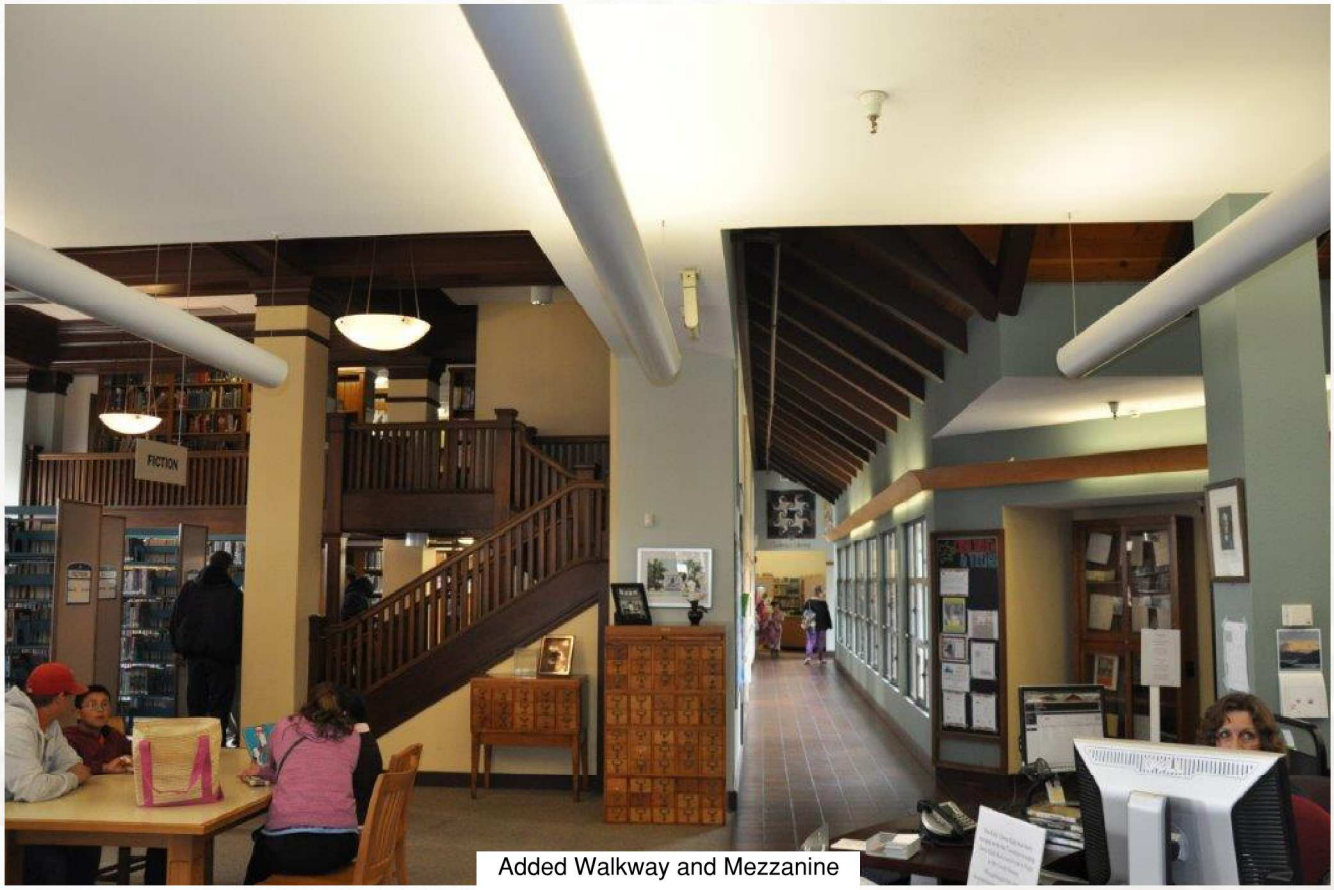


North Elevation

Courtyard

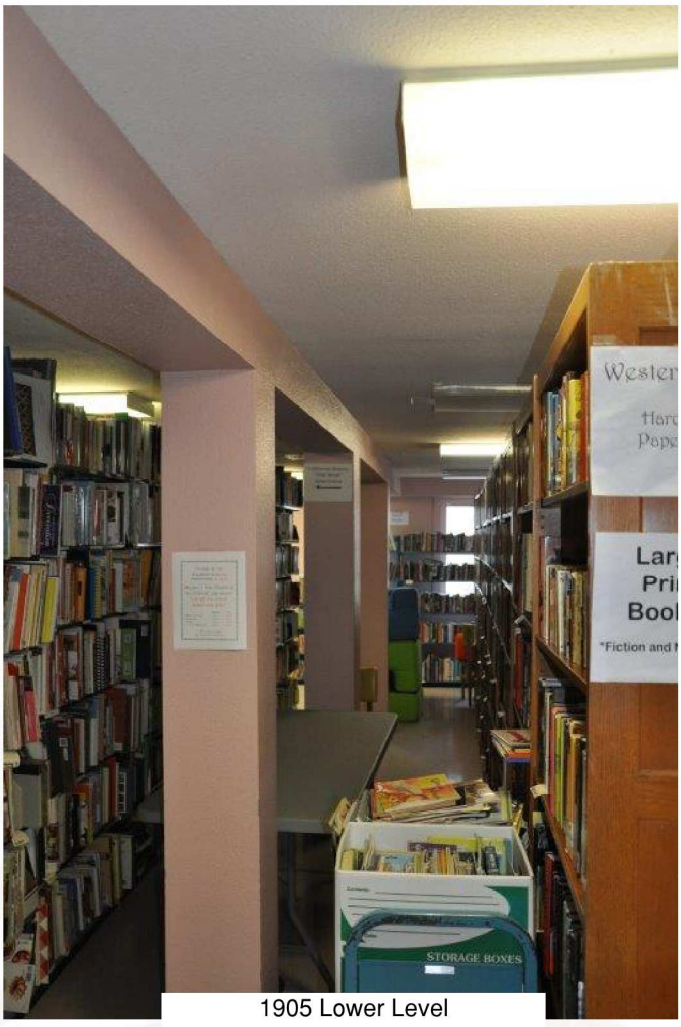
Back Entry Gate

Main Entry



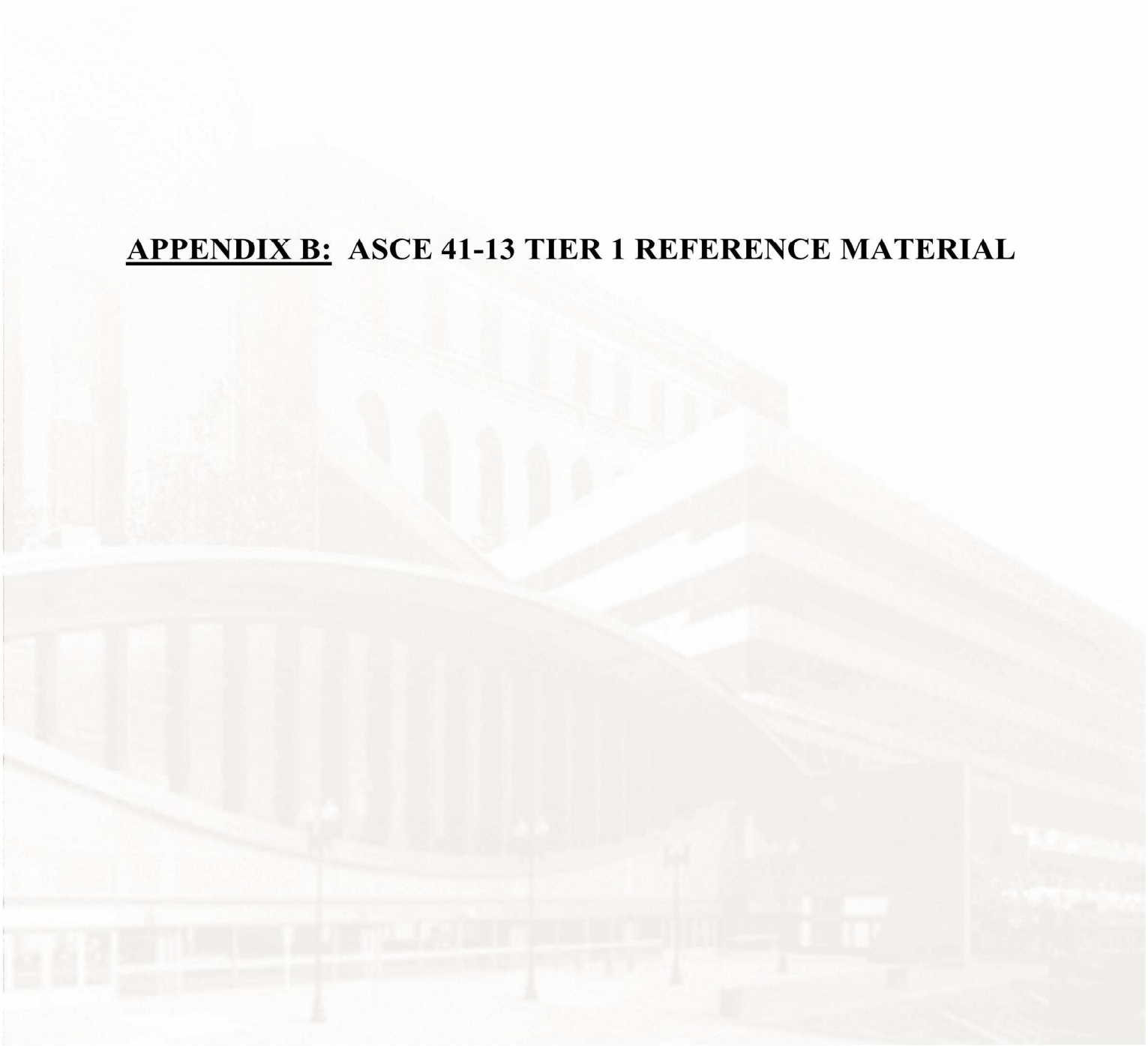
Added Walkway and Mezzanine

1905 URM Wall at Added Walkway



1905 Lower Level

APPENDIX B: ASCE 41-13 TIER 1 REFERENCE MATERIAL



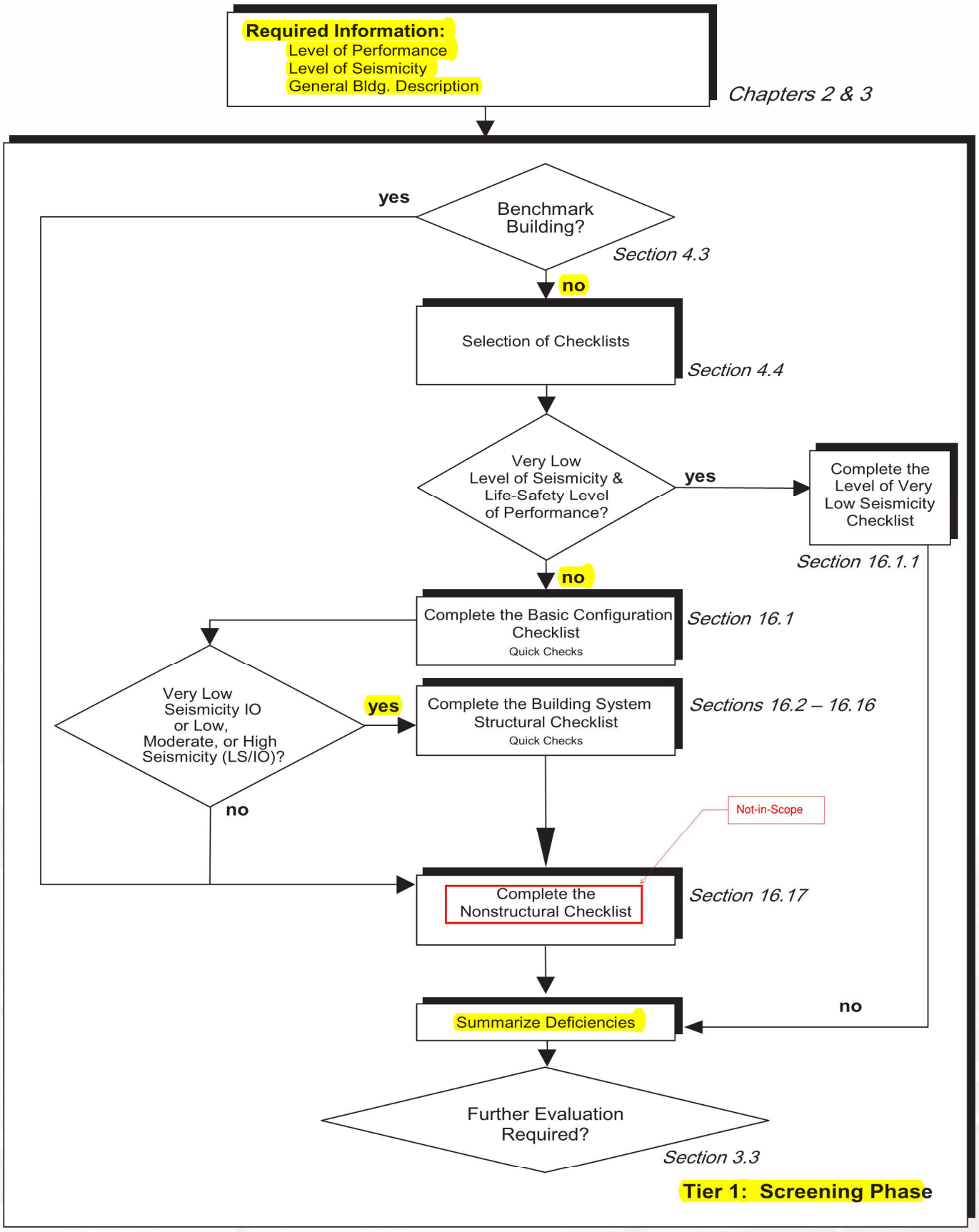


FIG. 4-1. Tier 1 Evaluation Process

Table 4-7. Checklists Required for a Tier 1 Screening

Level of Seismicity[b]	Level of Building Performance[c]	Required Checklists[a]: Very Low Seismicity Checklist (Sec 16.1.1)	Basic Configuration Checklist (Sec. 16.1.2)	Life Safety Checklist (Sec. 16.2LS through 16.15LS)	Immediate Occupancy Checklist (Sec. 16.2IO through 16.15IO)	Life Safety Nonstructural Checklist (Sec. 16.17)	Position Retention Nonstructural Checklist (Sec. 16.17)
Very low	LS	X					
Very low	IO		X		X		X
Low	LS		X	X		X	
Low	IO		X		X		X
Moderate	LS		X	X		X	
Moderate	IO		X		X		X
High	LS		X	X		X	
High	IO		X		X	Not in Scope	X

[a]An X designates the checklist that must be completed for a Tier 1 screening as a function of the level of seismicity and level of performance.
[b]Defined in Section 2.5.
[c]LS = Life Safety Performance Level, and IO = Immediate Occupancy Performance Level (defined in Section 2.3.3).

Table 4-6. Benchmark Buildings

Building Type[a,b]	Building Seismic Design Provisions				Seismic Evaluation or Retrofit Provisions		
	NBC[LS] SBC[LS]	UBC[LS]	IBC[LS]	NEHRP[LS]	FEMA 178[LS]	FEMA 310 (1998e)/ ASCE 31[LS,IO]	FEMA 356 (2000)/ ASCE 41[LSc,IOd]
Wood frame, wood shear panels (Types W1 & W2)	1993	1976	2000	1985	[e]	1998	2000
Wood frame, wood shear panels (Type W1a)	[e]	1997	2000	1997	[e]	1998	2000
Steel moment-resisting frame (Types S1 & S1a)	[e]	1994[f]	2000	1997	[e]	1998	2000
Steel concentrically braced frame (Types S2 & S2a)	[e]	1997	2000	[e]	[e]	1998	2000
Steel eccentrically braced frame (Types S2 & S2a)	[e]	1988[f]	2000	1997	[e]	[e]	2000
Buckling-restrained braced frame (Types S2 & S2a)	[e]	[e]	2006	[e]	[e]	[e]	2000
Light metal frame (Type S3)	[e]	[e]	2000	[e]	1992	1998	2000
Steel frame w/ concrete shear walls (Type S4)	1993	1994?	2000	1985	[e]	1998	2000
Steel frame with URM infill (Types S5 & S5a)	[e]	[e]	2000	[e]	[e]	1998	2000
Steel plate shear wall (Type S6)	[e]	[e]	2006	[e]	[e]	[e]	2000
Reinforced concrete moment-resisting frame (Type C1)[g]	1993	1994	2000	1997	[e]	1998	2000
Reinforced concrete shear walls (Types C2 & C2a)	1993	1994	2000	1985	[e]	1998	2000
Concrete frame with URM infill (Types C3 & C3a)	[e]	[e]	2000	[e]	[e]	1998	2000
Tilt-up concrete (Types PC1 & PC1a)	[e]	1997	2000	[e]	[e]	1998	2000
Precast concrete frame (Types PC2 & PC2a)	[e]	[e]	2000	[e]	1992	1998	2000
Reinforced masonry (Type RM1)	[e]	1997	2000	[e]	[e]	1998	2000
Reinforced masonry (Type RM2)	1993	1994?	2000	1985	[e]	1998	2000
Unreinforced masonry (Type URM)[h]	[e]	1991[i]	2000	[e]	1992	1998	2000
Unreinforced masonry (Type URMa)	[e]	[e]	2000	[e]	[e]	1998	2000
Seismic isolation or passive dissipation	[e]	1991	2000	[e]	[e]	[e]	2000

Original URM buildings construction cira. 1903-1927.
New addition and seismic strengthening approximately 1985.
No portion or system meets benchmark status

[a]Building type refers to one of the common building types defined in Table 3-1.
[b]Buildings on hillside sites shall not be considered Benchmark Buildings.
[c]LS: S-3 Structural Performance Level for the BSE-1.
[d]IO: S-1 Structural Performance Level for the BSE-1.
[e]No benchmark year; buildings shall be evaluated using this standard.
[f]Steel moment-resisting frames and eccentrically braced frames with links adjacent to columns shall comply with the 1994 UBC Emergency Provisions, published September/October 1994, or subsequent requirements.
[g]Flat slab concrete moment frames shall not be considered Benchmark Buildings.
[h]URM buildings evaluated or retrofitted and shown to be acceptable using Special Procedure (the ABK Methodology, 1984) may be considered benchmark buildings subject to the limitation of Section 15.2.
[i]Refers to the GSREB or its predecessor, the Uniform Code of Building Conservation (UCBC), or its successor, IEBC Appendix Chapter A1.
[LS]Only buildings designed and constructed or evaluated in accordance with these documents and being evaluated to the Life Safety Performance Level may be considered Benchmark Buildings.
[IO]Buildings designed and constructed or evaluated in accordance with these documents and being evaluated to the Immediate Occupancy Performance Level may be considered Benchmark Buildings.

Table 3-2. Limitations on the Use of the Tier 1 and Tier 2 Procedures

Common Building Type[a]	Number of Stories[b] beyond which the Tier 3 Systematic Procedures Are Required							
	Level of Seismicity							
	Very Low		Low		Moderate		High	
	S-3	S-1	S-3	S-1	S-3	S-1	S-3	S-1
Wood Frames								
Light (W1)	NL	NL	NL	4	4	4	4	4
Multi-story, multi-unit residential (W1a)	NL	NL	NL	6	6	6	6	4
Commercial and industrial (W2)	NL	NL	NL	6	6	6	6	4
Steel Moment Frames								
Rigid diaphragm (S1)	NL	NL	NL	12	12	8	8	6
Flexible diaphragm (S1a)	NL	NL	NL	12	12	8	8	6
Steel Braced Frames								
Rigid diaphragm (S2)	NL	NL	NL	8	8	8	8	6
Flexible diaphragm (S2a)	NL	NL	NL	8	8	8	8	6
Steel Light Frames (S3)	NL	1	1	1	1	1	1	1
Dual Systems with Backup Steel Moment Frames (S4)	NL	NL	NL	12	12	8	8	6
Steel Frames with Infill Masonry Shear Walls								
Rigid diaphragm (S5)	NL	NL	NL	12	12	8	8	4
Flexible diaphragm (S5a)	NL	NL	NL	12	12	8	8	4
Steel Plate Shear Wall (S6)	NP[c]	NP[c]	NP[c]	NP[c]	NP[c]	NP[c]	NP[c]	NP[c]
Concrete Moment Frames (C1)	NL	NL	NL	12	12	8	8	6
Concrete Shear Walls								
Rigid diaphragm (C2)	NL	NL	NL	12	12	8	8	6
Flexible diaphragm (C2a)	NL	NL	NL	12	12	8	8	6
Concrete Frame with Infill Masonry Shear Walls								
Rigid diaphragm (C3)	NL	NL	NL	12	12	8	8	4
Flexible diaphragm (C3a)	NL	NL	NL	12	12	8	8	4
Precast or Tilt-Up Concrete Shear Walls								
Flexible diaphragm (PC1)	NL	NL	3	2	2	2	2	2
Rigid diaphragm (PC1a)	NL	NL	3	2	2	2	2	2
Precast Concrete Frames								
With shear walls (PC2)	NL	NL	NL	6	6	NP	4	NP
Without shear walls (PC2a)	NL	NL	NL	6	6	NP	4	NP
Reinforced Masonry Bearing Walls								
Flexible diaphragm (RM1)	NL	NL	NL	8	8	8	8	6
Rigid diaphragm (RM2)	NL	NL	NL	8	8	8	8	6
Unreinforced Masonry Bearing Walls								
Flexible diaphragm (URM)	NL	NL	6	4	6	NP	4	NP
Rigid diaphragm (URMa)	NL	NL	6	4	6	NP	4	NP
Seismic Isolation or Passive Dissipation	NP[c]	NP[c]	NP[c]	NP[c]	NP[c]	NP[c]	NP[c]	NP[c]

NOTE: The Tier 3 systematic procedures are required for buildings with more than the number of stories listed herein.
[a]Common building types are defined in Section 3.2.1.
[b]Number of stories shall be considered as the number of stories above lowest adjacent grade.
NL = No Limit (No limit on the number of stories).
NP = Not Permitted (Tier 3 systematic procedures are required).
[c]No deficiency-based procedures exist for these building types. If they do not meet the Benchmark Building requirements, Tier 3 systematic procedures are required

Use of URM bearing walls and shear walls is limited to 4 stories

Table 2-1. Basic Performance Objective for Existing Buildings (BPOE)

	Tier 1[a]	Tier 2[a]	Tier 3	
Risk Category	BSE-1E	BSE-1E	BSE-1E	BSE-2E
I & II	Life Safety Structural Performance Life Safety Nonstructural Performance (3-C)	Life Safety Structural Performance Life Safety Nonstructural Performance (3-C)	Life Safety Structural Performance Life Safety Nonstructural Performance (3-C)	Collapse Prevention Structural Performance Nonstructural Performance Not Considered (5-D)
III	See footnote *b* for Structural Performance Position Retention Nonstructural Performance (2-B)	Damage Control Structural Performance Position Retention Nonstructural Performance (2-B)	Damage Control Structural Performance Position Retention Nonstructural Performance (2-B)	Limited Safety Structural Performance Nonstructural Performance Not Considered (4-D)
IV	Immediate Occupancy Structural Performance Position Retention Nonstructural Performance (1-B)	Immediate Occupancy Structural Performance Position Retention Nonstructural Performance (1-B)	Immediate Occupancy Structural Performance Position Retention Nonstructural Performance (1-B)	Life Safety Structural Performance Nonstructural Performance Not Considered (3-D)

[a]For Tier 1 and 2 assessments, seismic performance for the BSE-2E is not explicitly evaluated.
[b]For Risk Category III, the Tier 1 screening checklists shall be based on the Life Safety Performance Level (S-3), except that checklist statements using the Quick Check procedures of Section 4.5.3 shall be based on MS-factors and other limits that are an average of the values for Life Safety and Immediate Occupancy.

Table C2-1. Probabililty of Exceedance and Mean Return Period

Probability of Exceedance	Mean Return Period (years)
50%/30 years	43
50%/50 years	72
20%/50 years	225
10%/50 years	475
5%/50 years	975
2%/50 years	2,475

Table C2-2. Performance Objectives

	Target Building Performance Levels			
Seismic Hazard Level	Operational Performance Level (1-A)	Immediate Occupancy Performance Level (1-B)	Life Safety Performance Level (3-C)	Collapse Prevention Performance Level (5-D)
50%/50 years	a	b	c	d
BSE-1E (20%/50 years)	e	f	g	h
BSE-2E (5%/50 years)	i	j	k	l
BSE-2N (ASCE 7 MCE_R)	m	n	o	p

NOTES: Each cell in the above matrix represents a discrete Performance Objective.
The Performance Objectives in the matrix above can be used to represent the three specific Performance Objectives for a standard building that would be considered Risk Category I & II defined in Sections 2.2.1, 2.2.2, and 2.2.3, as follows:

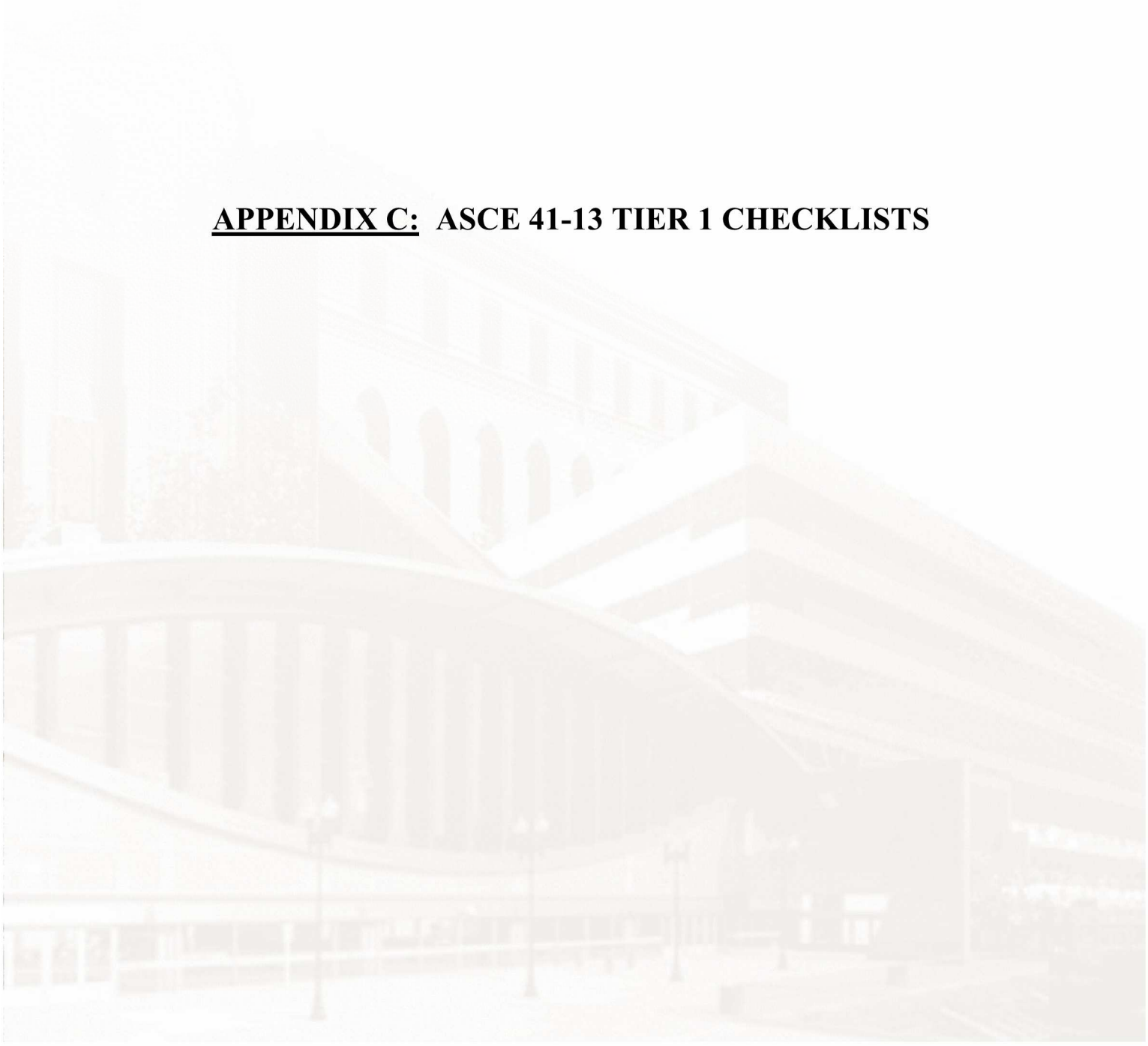
Basic Performance Objective for Existing Buildings (BPOE)	g and l
Enhanced Objectives	g and i, j, m, n, o, or p l and e or f g and l and a, or b k, m, n, or o alone
Limited Objectives	g alone l alone c, d, e, or f

TABLE 1604.5
RISK CATEGORY OF BUILDINGS AND OTHER STRUCTURES

RISK CATEGORY	NATURE OF OCCUPANCY
I	Buildings and other structures that represent a low hazard to human life in the event of failure, including but not limited to: • Agricultural facilities. • Certain temporary facilities. • Minor storage facilities.
II	Buildings and other structures except those listed in Risk Categories I, III and IV.
III	Buildings and other structures that represent a substantial hazard to human life in the event of failure, including but not limited to: • Buildings and other structures whose primary occupancy is public assembly with an occupant load greater than 300. • Buildings and other structures containing Group E occupancies with an occupant load greater than 250. • Buildings and other structures containing educational occupancies for students above the 12th grade with an occupant load greater than 500. • Group I-2 occupancies with an occupant load of 50 or more resident care recipients but not having surgery or emergency treatment facilities. • Group I-3 occupancies. • Any other occupancy with an occupant load greater than 5,000.[a] • Power-generating stations, water treatment facilities for potable water, wastewater treatment facilities and other public utility facilities not included in Risk Category IV. • Buildings and other structures not included in Risk Category IV containing quantities of toxic or explosive materials that: Exceed maximum allowable quantities per control area as given in Table 307.1(1) or 307.1(2) or per outdoor control area in accordance with the *California Fire Code*; and Are sufficient to pose a threat to the public if released.[b]

Typical Library

APPENDIX C: ASCE 41-13 TIER 1 CHECKLISTS



Project: Woodland Library Location: Woodland , California

Completed by: Colin Blaney Date: March 10th, 2017

16.1.2LS LIFE SAFETY BASIC CONFIGURATION CHECKLIST

Low Seismicity

Building System

General

C (NC) N/A U LOAD PATH: The structure shall contain a complete, well defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation. (Commentary: Sec. A.2.1.1. Tier 2: Sec. 5.4.1.1) Horizontal continuity is limited

(C) NC N/A U ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 4% of the height of the shorter building. This statement shall not apply for the following building types: W1, W1a, and W2. (Commentary: Sec. A.2.1.2. Tier 2: Sec. 5.4.1.2)

(C) NC N/A U MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure. (Commentary: Sec. A.2.1.3. Tier 2: Sec. 5.4.1.3)

Building Configuration

(C) NC N/A U WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction is not less than 80% of the strength in the adjacent story above. (Commentary: Sec. A2.2.2. Tier 2: Sec. 5.4.2.1)

(C) NC N/A U SOFT STORY: The stiffness of the seismic-force-resisting system in any story is not less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffness of the three stories above. (Commentary: Sec. A.2.2.3. Tier 2: Sec. 5.4.2.2)

(C) NC N/A U VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation. (Commentary: Sec. A.2.2.4. Tier 2: Sec. 5.4.2.3)

C (NC) N/A U GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines. (Commentary: Sec. A.2.2.5. Tier 2: Sec. 5.4.2.4)

(C) NC N/A U MASS: There is no change in effective mass more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered. (Commentary: Sec. A.2.2.6. Tier 2: Sec. 5.4.2.5)

C NC N/A (U) TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension. (Commentary: Sec. A.2.2.7. Tier 2: Sec. 5.4.2.6)

Moderate Seismicity: Complete the Following Items in Addition to the Items for Low Seismicity.

Geologic Site Hazards

C NC N/A (U) LIQUEFACTION: Liquefaction-susceptible, saturated, loose granular soils that could jeopardize the building's seismic performance shall not exist in the foundation soils at depths within 50 ft under the building. (Commentary: Sec. A.6.1.1. Tier 2: 5.4.3.1)

(C) NC N/A U SLOPE FAILURE: The building site is sufficiently remote from potential earthquake-induced slope failures or rockfalls to be unaffected by such failures or is capable of accommodating any predicted movements without failure. (Commentary: Sec. A.6.1.2. Tier 2: 5.4.3.1) Based upon site visit

C NC N/A (U) SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated. (Commentary: Sec. A.6.1.3. Tier 2: 5.4.3.1)

High Seismicity: Complete the Following Items in Addition to the Items for Low and Moderate Seismicity.

Foundation Configuration

(C) NC N/A U OVERTURNING: The ratio of the least horizontal dimension of the seismic-force-resisting system at the foundation level to the building height (base/height) is greater than $0.6S_a$. (Commentary: Sec. A.6.2.1. Tier 2: Sec. 5.4.3.3)

(C) NC N/A U TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C. (Commentary: Sec. A.6.2.2. Tier 2: Sec. 5.4.3.4)

Project: Woodland Library Location: Woodland , California

Completed by: Colin Blaney Date: March 10th, 2017

16.16LS LIFE SAFETY STRUCTURAL CHECKLIST FOR BUILDING TYPES URM: UNREINFORCED MASONRY BEARING WALLS WITH FLEXIBLE DIAPHRAGMS AND URMA: UNREINFORCED MASONRY BEARING WALLS WITH STIFF DIAPHRAGMS

Low and Moderate Seismicity

Seismic-Force-Resisting System

(C) NC N/A U REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2. (Commentary: Sec. A.3.2.1.1. Tier 2: Sec. 5.5.1.1)

(C) NC N/A U SHEAR STRESS CHECK: The shear stress in the unreinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than 30 lb/in.^{2} for clay units and 70 lb/in.^{2} for concrete units. (Commentary: Sec. A.3.2.5.1. Tier 2: Sec. 5.5.3.1.1)

Connections

C (NC) N/A U WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections shall have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.5.3.7. (Commentary: Sec. A.5.1.1. Tier 2: Sec. 5.7.1.1) Supplemental anchors have been provided but do not have sufficient capacity

(C) NC N/A U WOOD LEDGERS: The connection between the wall panels and the diaphragm does not induce cross-grain bending or tension in the wood ledgers. (Commentary: Sec. A.5.1.2. Tier 2: Sec. 5.7.1.3)

C (NC) N/A U TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of seismic forces to the shear walls. (Commentary: Sec. A.5.2.1. Tier 2: Sec. 5.7.2) Connections have been introduced and/or strengthened but are not sufficient

(C) NC N/A U GIRDER–COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support. (Commentary: Sec. A.5.4.1. Tier 2: Sec. 5.7.4.1)

High Seismicity: Complete the Following Items in Addition to the Items for Low and Moderate Seismicity.

Seismic-Force-Resisting System

C (NC) N/A U PROPORTIONS: The height-to-thickness ratio of the shear walls at each story is less than the following (Commentary: Sec. A.3.2.5.2. Tier 2: Sec. 5.5.3.1.2):

Top story of multi-story building	9
First story of multi-story building	15
All other conditions	13

Proportions exceeded at the upper level but wall bracing as been added in some locations

C NC (N/A) U MASONRY LAYUP: Filled collar joints of multi-wythe masonry walls have negligible voids. (Commentary: Sec. A.3.2.5.3. Tier 2: Sec. 5.5.3.4.1)

Diaphragms (Stiff or Flexible)

(C) NC N/A U OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 25% of the wall length. (Commentary: Sec. A.4.1.4. Tier 2: Sec. 5.6.1.3)

(C) NC N/A U OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 8 ft long. (Commentary: Sec. A.4.1.6. Tier 2: Sec. 5.6.1.3)

Flexible Diaphragms

C (NC) N/A U CROSS TIES: There are continuous cross ties between diaphragm chords. (Commentary: Sec. A.4.1.2. Tier 2: Sec. 5.6.1.2)

C NC (N/A) U STRAIGHT SHEATHING: All straight sheathed diaphragms have aspect ratios less than 2-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2) NC but Plywood added

(C) NC N/A U SPANS: All wood diaphragms with spans greater than 24 ft consist of wood structural panels or diagonal sheathing. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2) Yes by plans but could only be verified at one location at the roof.

C NC (N/A) U DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 40 ft and aspect ratios less than or equal to 4-to-1. (Commentary: Sec. A.4.2.3. Tier 2: Sec. 5.6.2)

C NC (N/A) U OTHER DIAPHRAGMS: The diaphragm does not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)

Connections

C (NC) N/A U STIFFNESS OF WALL ANCHORS: Anchors of concrete or masonry walls to wood structural elements are installed taut and are stiff enough to limit the relative movement between the wall and the diaphragm to no greater than 1/8 in. before engagement of the anchors. (Commentary: Sec. A.5.1.4. Tier 2: Sec. 5.7.1.2)

C (NC) N/A U BEAM, GIRDER, AND TRUSS SUPPORTS: Beams, girders, and trusses supported by unreinforced masonry walls or pilasters have independent secondary columns for support of vertical loads. (Commentary: Sec. A.5.4.5. Tier 2: Sec. 5.7.4.4)

3/8" bent plate connections have been provided but they have stiffness due to eccentricity

Project: Woodland Library Location: Woodland , California

Completed by: Colin Blaney Date: March 10th, 2017

16.16LS LIFE SAFETY STRUCTURAL CHECKLIST FOR BUILDING TYPES URM: UNREINFORCED MASONRY BEARING WALLS WITH FLEXIBLE DIAPHRAGMS AND URMA: UNREINFORCED MASONRY BEARING WALLS WITH STIFF DIAPHRAGMS

Low and Moderate Seismicity

Seismic-Force-Resisting System

(C) NC N/A U REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2. (Commentary: Sec. A.3.2.1.1. Tier 2: Sec. 5.5.1.1)

(C) NC N/A U SHEAR STRESS CHECK: The shear stress in the unreinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.5.3.3, is less than 30 lb/in.^{2} for clay units and 70 lb/in.^{2} for concrete units. (Commentary: Sec. A.3.2.5.1. Tier 2: Sec. 5.5.3.1.1)

Connections

C (NC) N/A U WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections shall have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.5.3.7. (Commentary: Sec. A.5.1.1. Tier 2: Sec. 5.7.1.1) Supplemental anchors have been provided but do not have sufficient capacity

(C) NC N/A U WOOD LEDGERS: The connection between the wall panels and the diaphragm does not induce cross-grain bending or tension in the wood ledgers. (Commentary: Sec. A.5.1.2. Tier 2: Sec. 5.7.1.3)

C (NC) N/A U TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of seismic forces to the shear walls. (Commentary: Sec. A.5.2.1. Tier 2: Sec. 5.7.2) Connections have been introduced and/or strengthened but are not sufficient

(C) NC N/A U GIRDER–COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support. (Commentary: Sec. A.5.4.1. Tier 2: Sec. 5.7.4.1)

High Seismicity: Complete the Following Items in Addition to the Items for Low and Moderate Seismicity.

Seismic-Force-Resisting System

C (NC) N/A U PROPORTIONS: The height-to-thickness ratio of the shear walls at each story is less than the following (Commentary: Sec. A.3.2.5.2. Tier 2: Sec. 5.5.3.1.2):

Top story of multi-story building	9
First story of multi-story building	15
All other conditions	13

Proportions exceeded at the upper level but wall bracing as been added in some locations

C NC (N/A) U MASONRY LAYUP: Filled collar joints of multi-wythe masonry walls have negligible voids. (Commentary: Sec. A.3.2.5.3. Tier 2: Sec. 5.5.3.4.1)

Diaphragms (Stiff or Flexible)

(C) NC N/A U OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 25% of the wall length. (Commentary: Sec. A.4.1.4. Tier 2: Sec. 5.6.1.3)

(C) NC N/A U OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 8 ft long. (Commentary: Sec. A.4.1.6. Tier 2: Sec. 5.6.1.3)

Flexible Diaphragms

C (NC) N/A U CROSS TIES: There are continuous cross ties between diaphragm chords. (Commentary: Sec. A.4.1.2. Tier 2: Sec. 5.6.1.2)

C NC (N/A) U STRAIGHT SHEATHING: All straight sheathed diaphragms have aspect ratios less than 2-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2) NC but Plywood added

(C) NC N/A U SPANS: All wood diaphragms with spans greater than 24 ft consist of wood structural panels or diagonal sheathing. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2) Yes by plans but could only be verified at one location at the roof.

C NC (N/A) U DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 40 ft and aspect ratios less than or equal to 4-to-1. (Commentary: Sec. A.4.2.3. Tier 2: Sec. 5.6.2)

C NC (N/A) U OTHER DIAPHRAGMS: The diaphragm does not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5)

Connections

C (NC) N/A U STIFFNESS OF WALL ANCHORS: Anchors of concrete or masonry walls to wood structural elements are installed taut and are stiff enough to limit the relative movement between the wall and the diaphragm to no greater than 1/8 in. before engagement of the anchors. (Commentary: Sec. A.5.1.4. Tier 2: Sec. 5.7.1.2)

C (NC) N/A U BEAM, GIRDER, AND TRUSS SUPPORTS: Beams, girders, and trusses supported by unreinforced masonry walls or pilasters have independent secondary columns for support of vertical loads. (Commentary: Sec. A.5.4.5. Tier 2: Sec. 5.7.4.4)

3/8" bent plate connections have been provided but they have stiffness due to eccentricity

APPENDIX D: ASCE 41-13 TIER 1 CHECKLIST SUPPORTING STRUCTURAL CALCULATIONS

B&B Project No. 2017-0086.00
March 15, 2017

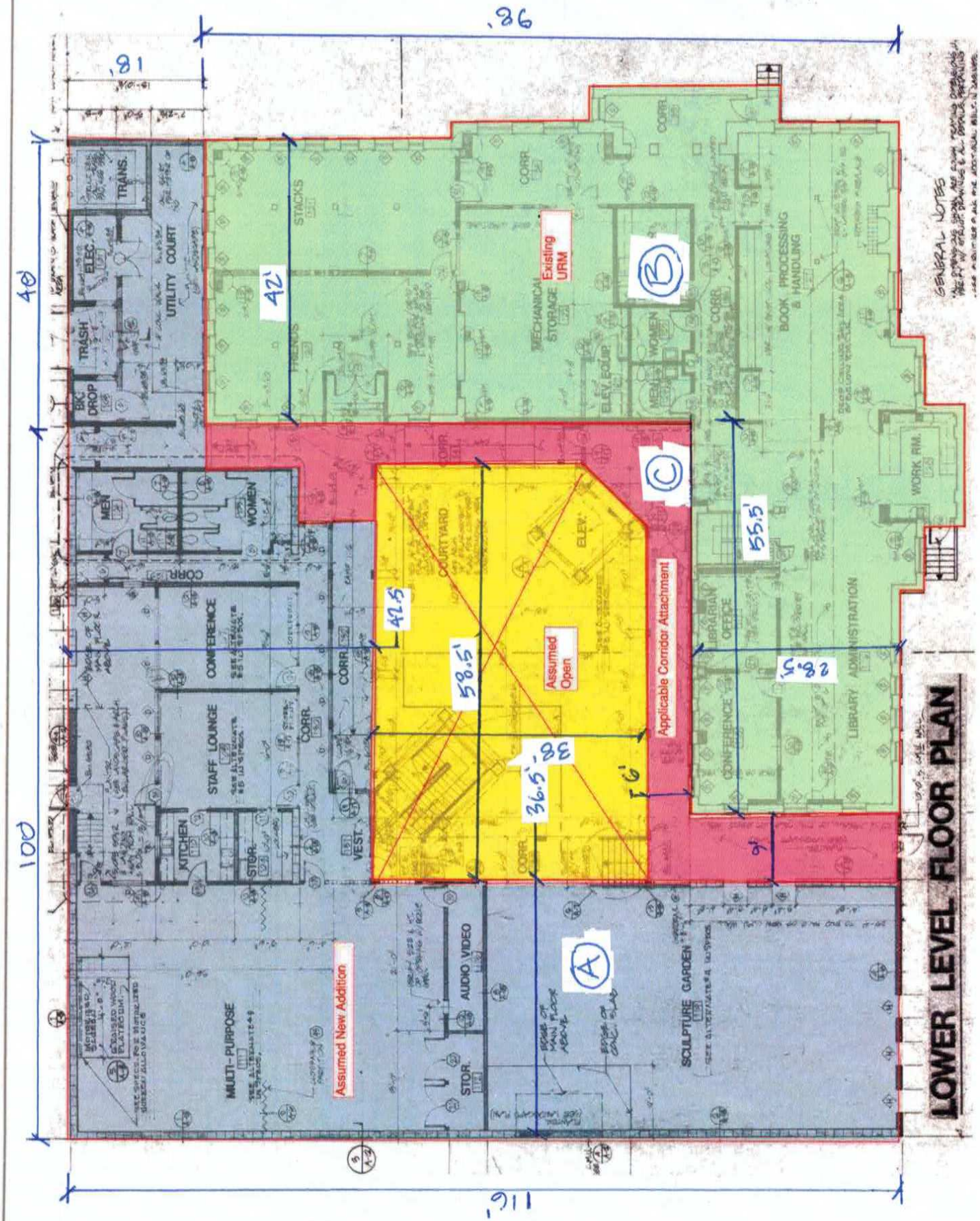
Structural Calculations

Woodland Library

March 15th, 2017

BUEHLER & BUEHLER
STRUCTURAL ENGINEERS, INC.

JOB Woodland Library
JOB NO. _____ DATE 2/27/17
CLIENT _____ BY _____ SHEEET NO. P.1



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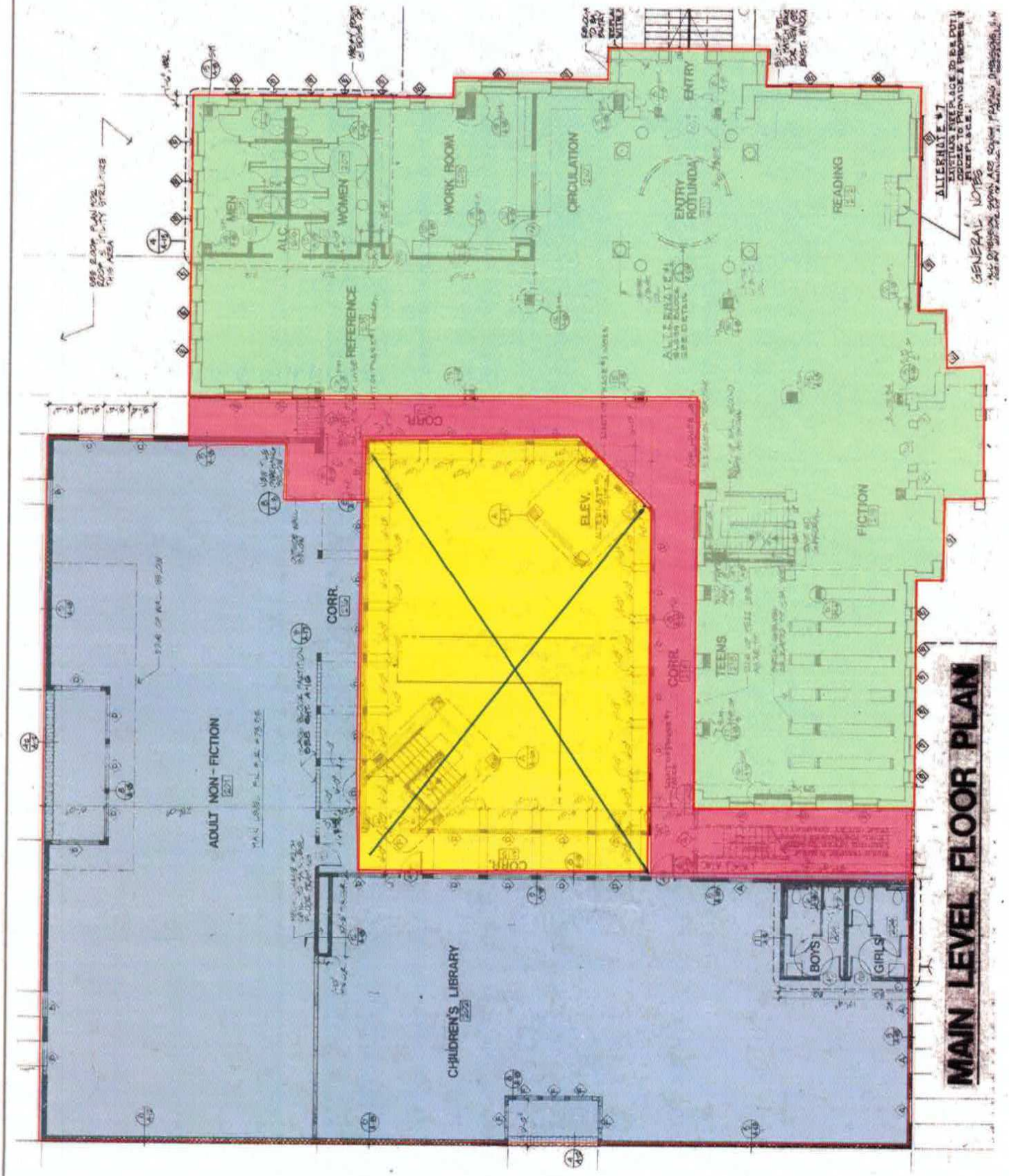


MAIN LEVEL FLOOR PLAN

BUEHLER & BUEHLER
STRUCTURAL ENGINEERS, INC.

JOB Woodland Library Tier 1 Anaysis
JOB NO. 2/27/2017
CLIENT N&T BY CPB

GRAVITY / SEISMIC FLAT WEIGHT TAKEOFF (PSF)

Existing High Roof

CBC Live Load Category: 26. Roof: ordinary [Table 1607.1]
Slope: 3.00:12

Material	Deck	Joists	Girders	Columns	Seismic
Roofing (Asphalt Shingles- max 2 layers)	4.0	4.0	4.0	4.0	4.0
1x lumber sheathing	2.3	2.3	2.3	2.3	2.3
1/2" plywood sheathing	2.0	2.0	2.0	2.0	2.0
Wood Trusses	4.0	4.0	4.0	4.0	4.0
Insulation	2.0	2.0	2.0	2.0	2.0
M.E.P.	1.5	1.5	1.5	1.5	1.5
Ceiling (1/2") gyp		2.5	2.5	2.5	2.5
Sprinklers	1.5	1.5	1.5	1.5	1.5
Columns				1.0	1.0
Misc.	2.0	2.0	2.0	2.0	2.0
Dead Load	19.3	21.8	21.8	22.8	22.8
Dead Load - Horiz Projection	19.9	22.5	22.5	23.5	23.5

Existing 2nd Floor (URM Buildings)

CBC Live Load Category: [Table 1607.1]
Slope: 0.00:12

Material	Deck	Joists	Girders	Columns	Seismic
Floor finish* (assumes carpet and pad)	1.8	1.8	1.8	1.8	1.8
1x lumber sheathing	2.3	2.3	2.3	2.3	2.3
1/2" plywood sheathing	2.0	2.0	2.0	2.0	2.0
Insulation	0.5	0.5	0.5	0.5	0.5
M.E.P.	2.0	2.0	2.0	2.0	2.0
1/2" Gyp. wall board		2.5	2.5	2.5	2.5
Sprinklers	1.5	1.5	1.5	1.5	1.5
Joists (2x12 @ 16")		3.2	3.2	3.2	3.2
Girders (4x12@ 8')			2.0	2.0	2.0
Columns				1.5	1.5
Misc.	0.0	0.7	0.7	0.7	0.7
Dead Load	10.1	16.5	18.5	20.0	20.0
Dead Load - Horiz Projection	10.1	16.5	18.5	20.0	20.0
Add 10 psf Partition Loads					30.0 psf

* Assume 1985 addition has similar floor and roof weights

BUEHLER & BUEHLER STRUCTURAL ENGINEERS, INC.

JOB Woodland Library Tier 1 Anaysis

JOB NO. 2/27/2017

CLIENT N&T BY CPB

GRAVITY / SEISMIC FLAT WEIGHT TAKEOFF (PSF)

Existing 2nd Floor (1985 Addition)

CBC Live Load Category: [Table 1607.1]

Slope: 0.00:12

Material	Deck	Joists	Girders	Columns	Seismic
Floor finish* (assumes carpet and pad)	1.8	1.8	1.8	1.8	1.8
2 1/2" normal Weight Concrete	42.0	42.0	42.0	42.0	42.0
18 gage deck	2.0	2.0	2.0	2.0	2.0
Insulation	0.5	0.5	0.5	0.5	0.5
M.E.P.	2.0	2.0	2.0	2.0	2.0
1/2" Gyp. wall board		2.5	2.5	2.5	2.5
Sprinklers	1.5	1.5	1.5	1.5	1.5
Steel Joists		7.0	7.0	7.0	7.0
Girders			5.0	5.0	5.0
Columns				2.5	2.5
Misc.	0.0	0.7	0.7	0.7	0.7
Dead Load	49.8	60.0	65.0	67.5	67.5
Dead Load - Horiz Projection	49.8	60.0	65.0	67.5	67.5
Add 10 psf Partition Loads					77.5 psf

* Assume 1985 addition has similar floor and roof weights

BUEHLER & BUEHLER STRUCTURAL ENGINEERS, INC.

JOB Woodland Library Tier 1 Anaysis

JOB NO. 2/27/2017

CLIENT N&T BY CPB

GRAVITY / SEISMIC FLAT WEIGHT TAKEOFF (PSF)

EXTERIOR - Brick (@ URM

Material	Weight
Stucco (7/8" thick one side)	10.0
Existing 17" Brick	180.0
Interior furring	1.5
Insulation	0.5
Gypsum Plaster (1 side)	8.0
Misc.	2.0
TOTAL	202.0

INTERIOR -Light

Material	Weight
1/2" gyp. wall board (2 sides)	5.0
2x4 @ 16"oc	1.5
Insulation	0.0
MEP	1.0
Misc.	1.5
TOTAL	9.0

EXTERIOR - 12" CMU walls

Material	Weight
Stucco (7/8" thick one side)	10.0
Existing 12" CMU	130.0
Interior furring	1.5
Insulation	0.5
Gypsum Plaster (1 side)	8.0
Misc.	2.0
TOTAL	152.0

INTERIOR - Heavy

Material	Weight
Gypsum Plaster (2 sides)	16.0
2x4 @ 16"oc	1.5
Insulation	0.0
MEP	1.0
Misc.	1.5
TOTAL	20.0

USGS Design Maps Detailed Report

Woodland Library
BSE-1E- For Evaluation

ASCE 41-13 Retrofit Standard, BSE-1E (38.67915°N, 121.77306°W)

Site Class D – "Stiff Soil"

Section 2.4.1 – General Procedure for Hazard Due to Ground Shaking

20%/50-year maximum direction spectral response acceleration for 0.2s and 1.0s periods, respectively:

From Section 2.4.1.4	$S_{S,20/50}$ = 0.365 g
From Section 2.4.1.4	$S_{1,20/50}$ = 0.148 g

Section 2.4.1.6 – Adjustment for Site Class

The authority having jurisdiction (not the USGS), site-specific geotechnical data, and/or the default has classified the site as Site Class D, based on the site soil properties in accordance with Section 2.4.1.6.1.

SITE CLASS	SOIL PROFILE NAME	Soil shear wave velocity, $\overline{v}_s$, (ft/s)	Standard penetration resistance, $\overline{N}$	Soil undrained shear strength, $\overline{s}_u$, (psf)
A	Hard rock	$\overline{v}_s > 5{,}000$	N/A	N/A
B	Rock	$2{,}500 < \overline{v}_s \leq 5{,}000$	N/A	N/A
C	Very dense soil and soft rock	$1{,}200 < \overline{v}_s \leq 2{,}500$	$\overline{N} > 50$	>2,000 psf
D	Stiff soil profile	$600 \leq \overline{v}_s < 1{,}200$	$15 \leq \overline{N} \leq 50$	1,000 to 2,000 psf
E	Stiff soil profile	$\overline{v}_s < 600$	$\overline{N} < 15$	<1,000 psf
E	—	Any profile with more than 10 ft of soil having the characteristics: 1. Plasticity index $PI > 20$, 2. Moisture content $w \geq 40\%$, and 3. Undrained shear strength $\overline{s}_u < 500$ psf		
F	—	Any profile containing soils having one or more of the following characteristics: 1. Soils vulnerable to potential failure or collapse under seismic loading such as liquefiable soils, quick and highly sensitive clays, collapsible weakly cemented soils. 2. Peats and/or highly organic clays ($H > 10$ feet of peat and/or highly organic clay where H = thickness of soil) 3. Very high plasticity clays ($H > 25$ feet with plasticity index $PI > 75$) 4. Very thick soft/medium stiff clays ($H > 120$ feet)		

For SI: 1ft/s = 0.3048 m/s 1lb/ft² = 0.0479 kN/m²

G.5

Table 2–3. Values of F_a as a Function of Site Class and Mapped Short-Period Spectral Response Acceleration S_s

Site Class	Mapped Spectral Acceleration at Short-Period S_s				
	$S_S \leq 0.25$	$S_S = 0.50$	$S_S = 0.75$	$S_S = 1.00$	$S_S \geq 1.25$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2.5	1.7	1.2	0.9	0.9
F	Site-specific geotechnical and dynamic site response analyses shall be performed				

Note: Use straight-line interpolation for intermediate values of S_S

For Site Class = D and S_S = 0.365 g, F_a = 1.508

Table 2–4. Values of F_v as a Function of Site Class and Mapped Spectral Response Acceleration at 1 s Period S_1

Site Class	Mapped Spectral Acceleration at 1 s Period S_1				
	$S_1 \leq 0.10$	$S_1 = 0.20$	$S_1 = 0.30$	$S_1 = 0.40$	$S_1 \geq 0.50$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.7	1.6	1.5	1.4	1.3
D	2.4	2.0	1.8	1.6	1.5
E	3.5	3.2	2.8	2.4	2.4
F	Site-specific geotechnical and dynamic site response analyses shall be performed				

Note: Use straight-line interpolation for intermediate values of S_1

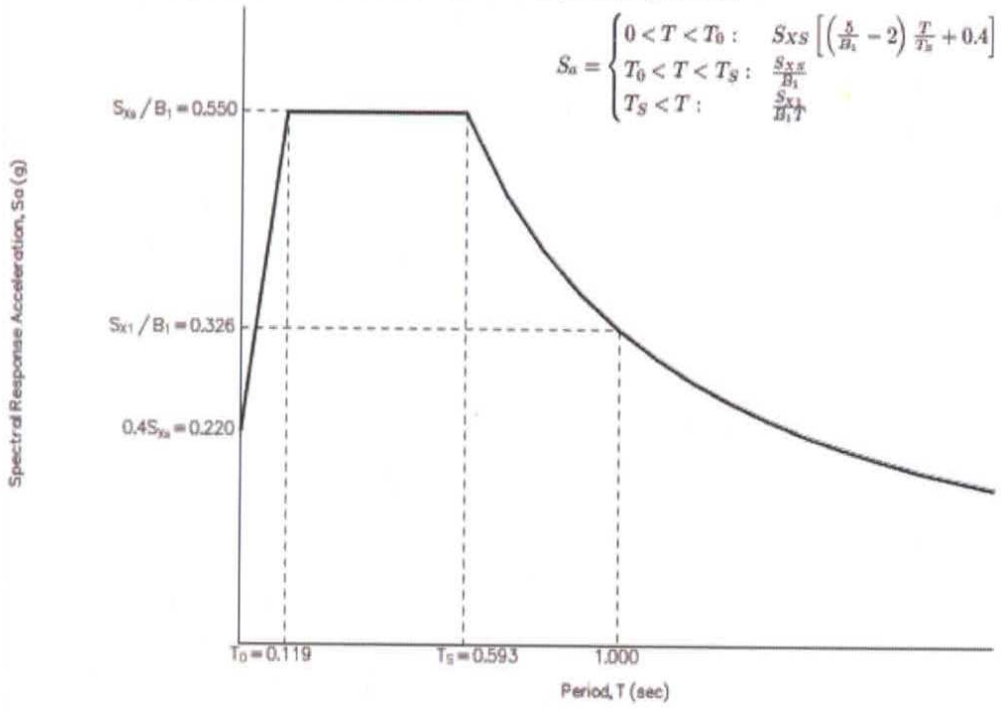
For Site Class = D and S_1 = 0.148 g, F_v = 2.209

G.6

Provided as a reference for Equation (2-4):	$F_aS_{S,20/50}$ = 1.508 x 0.365 g = 0.550 g
Provided as a reference for Equation (2-5):	$F_vS_{1,20/50}$ = 2.209 x 0.148 g = 0.326 g
Provided as a reference for Equation (2-4):	$S_{XS,BSE-1N}$ = ⅔ x $S_{XS,BSE-2N}$ = ⅔ x $F_aS_{S,BSE-2N}$ = 0.700 g
Provided as a reference for Equation (2-5):	$S_{X1,BSE-1N}$ = ⅔ x $S_{X1,BSE-2N}$ = ⅔ x $F_vS_{1,BSE-2N}$ = 0.403 g
Equation (2–4):	$S_{XS,BSE-1E}$ = MIN[$F_aS_{S,20/50}$, $S_{XS,BSE-1N}$] = MIN[0.550g, 0.700g] = 0.550g
Equation (2–5):	$S_{X1,BSE-1E}$ = MIN[$F_vS_{S,20/50}$, $S_{X1,BSE-1N}$] = MIN[0.326g, 0.403g] = 0.326g

Section 2.4.1.7.1 — General Horizontal Response Spectrum

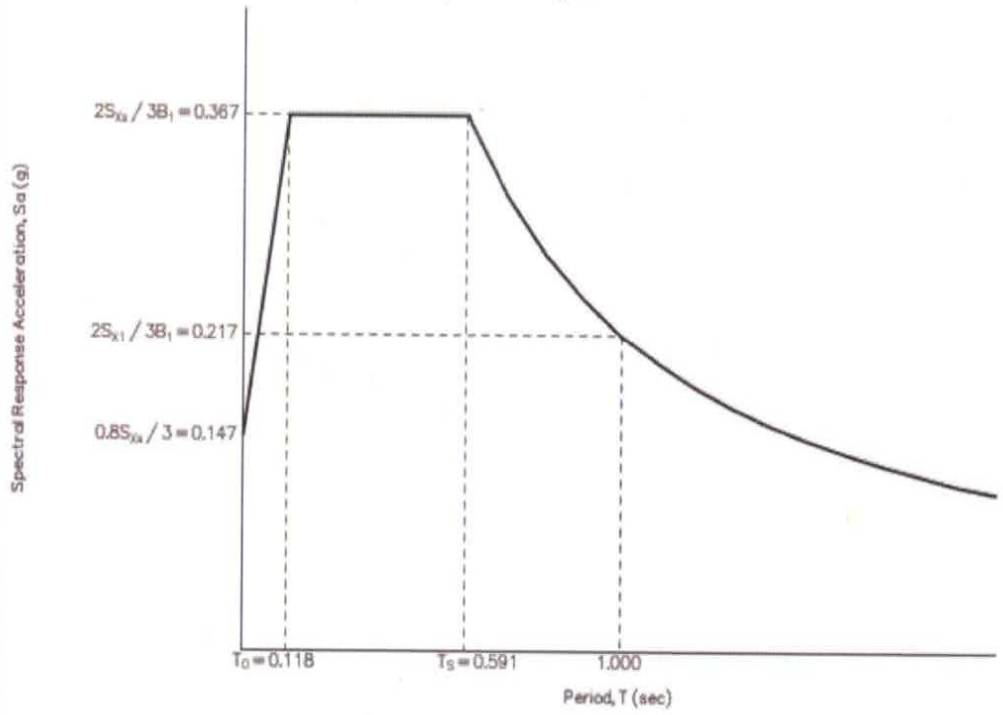
Figure 2-1. General Horizontal Response Spectrum



G.7

Section 2.4.1.7.2 — General Vertical Response Spectrum

The General Vertical Response Spectrum is determined by multiplying the General Horizontal Response Spectrum by ⅔.



TIER 1 ANALYSIS

$V = CS_a W = 1.2(.93)W = \boxed{1.11g}$ (4-1)

$S_a = \frac{SX_1}{T} = \frac{.326}{.35} = .93$

$T = C_t h_n^{\beta} = (.02)(45)^{.75} = .35$ SEC.

$C_t = .02$
$h_n \simeq 45'$
$\beta = .75$

$C = 1.2$ (ASSUME URM_2 - VARIES)

HOWEVER $S_a \leq SX_S$ OR $.55g$

THEREFORE $\boxed{V = 1.2(.55)(W) = .66W}$

DEAD LOAD CALCULATIONS

FIRST ELEVATED SLAB – (TRIBUTARY)

2ND FLOOR LOADS

AREA (A)

$[36.5(116) + 63.5(42.5) + 48(18)] \cdot .0775 \text{ KSF} = 604^{K}$

AREA (B)

$[42'(98') + 28.5(55.5)] \cdot .030 \text{ KSF} = 170^{K}$

AREA (C)

$[29'(9') + (64'(6') + (61)(6)] \cdot .0775 \text{ KSF} = 78.4^{K}$

852^{K}

EXTERIOR WALL WEIGHTS:

AREA (A)

$[116' + 36.5' + 36.5' + 63.5 + 24' + 14.5' + 8'](29'/2)(.152) = 658^{K}$

AREA (B)

$[98 + 98 + 55' + 42' + 97](29'/2)(.202) = 1142^{K}$

1800^{K}

DEAD LOADS (SEISMIC) - CONT

ROOF LOADS

TOTAL AREA:

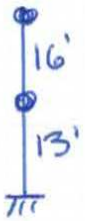
$[148'(116') - 58.5'(38') - 48(18)].0235 = \boxed{331^K}$

WALL LOADS.

TRIB TO 2ND FL: $29'/_2 = 14.5'$

TRIB TO ROOF: $13'/_2 = 6.5'$

RATIO: $6.5/_{14.5'}(1800^K) = \boxed{806^K}$



LL ROOF (TRIB) = 1137^K

LL 2ND (TRIB) = 2652^K

3789^K

$V = .66(3789^K) = \underline{2500^K}$

$F_R = \frac{1137(29)}{1137(29)+2652(13)}(2500^K) = \underline{1222^K}$

$F_{2ND} = \frac{2652(13)}{2652(13)+1137(29)}(2500^K) = \underline{1277^K}$

$\Sigma\ 2500^K$ ✓

CHECK SHEAR STRESS IN (E) URM PORTION (LOWER LEVEL)

DISTRIBUTE TOTAL BASE SHEAR BY AREA. - SLIGHTLY UNCONSERVATIVE AS WALL WEIGHTS ARE HIGHER BUT BASE SHEAR IS CONSERVATIVE AS WALL OPENINGS NEGLECTED.

- AREA (B) = 42'(98') + 55'(28.5') = 5683 ft².

AREA TOTAL = 14,085 ft²

$V_{BLDG\ B} = (5685/14{,}085)(2500) = \underline{1009^{K}}$

(EQN 4-9)

$$V_{JAVE} = \frac{1}{M_S}\left(\frac{V_J}{A_W}\right)$$

$V_{JAVE\ LL} = \frac{1}{1.5}\left(\frac{1009}{29{,}682}\right) = .0227\ ksi$

$= \underline{22.7\ psi}$

$V_J = 1009^{K}$

$A_W = 145.5(12)(17) = 29{,}682\ in^2$

$M_S = 1.5$

V_{ALL} 30 psi (A.3.2.5.1) OK

SEE LA.5 FOR ADDITIONAL INFORMATION.

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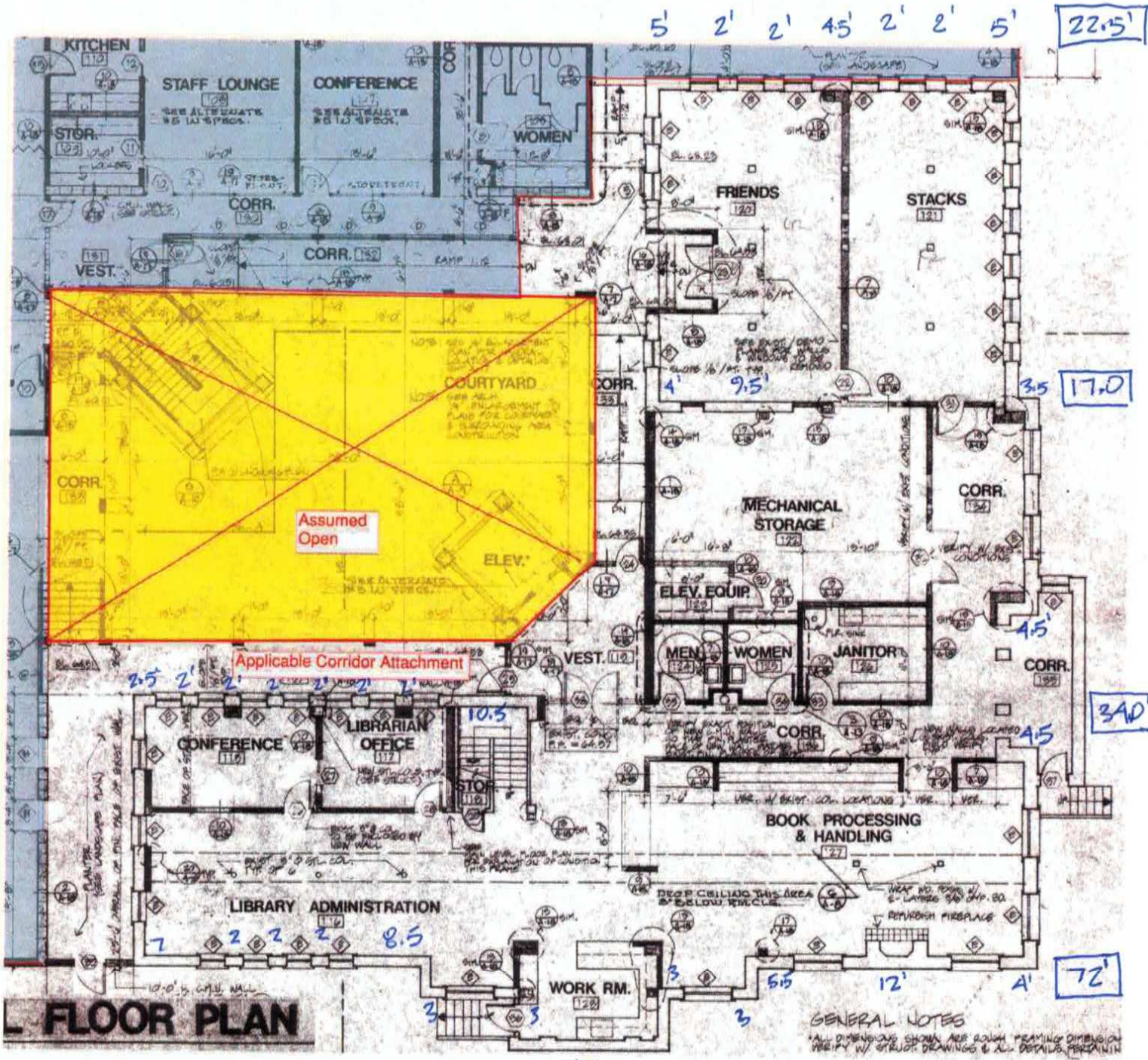
STRUCTURAL ENGINEERS, INC.

JOB Woodland Library

JOB NO. _____ DATE _____

CLIENT _____ BY _____ SHEEET NO. LA.5

Lower Level Check



FLOOR PLAN

17

→ X DIRECTION FOR BLDG (B)

LENGTH TOTAL = 145.5'

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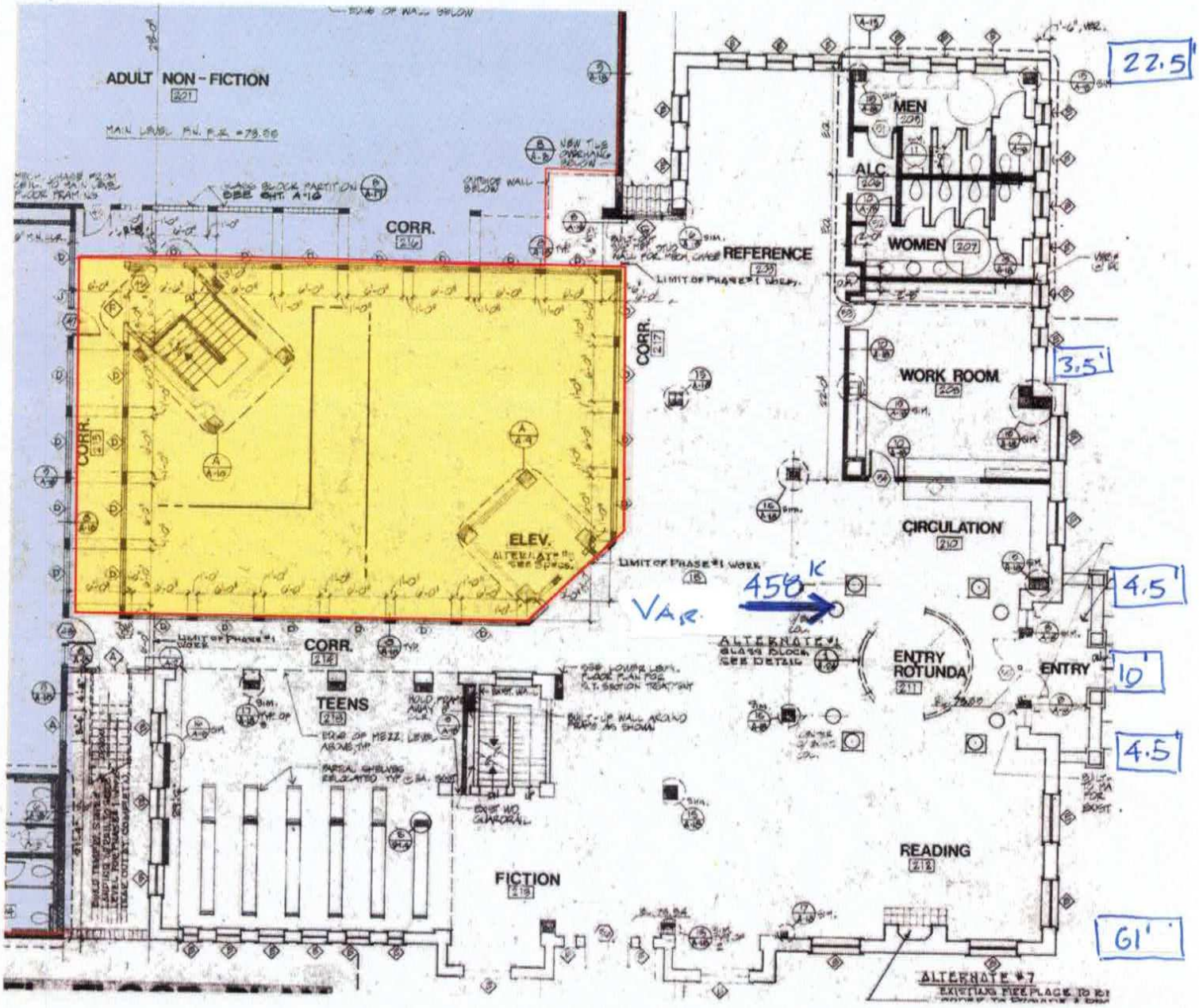
JOB WOODLAND LIBRARY

JOB NO. _____ DATE _____

CLIENT _____ BY _____ SHEET NO. LA.6

UPPER-LEVEL CHECK



X-DIRECTION →

$V_{AR} = (5685/14{,}085)(1137)^{K} = 458^{K}$

TOTAL LENGTH = 106'

(t = 12" THICK)

$A_W = 106'(12"/1')(12") = 15{,}264\ in^2$

$V_{JAVE_{UL}} = \frac{1}{1.5}\left(\frac{458}{15{,}264}\right) = 20.1\ psi$ OK < 30.0 psi OK

BUILDING CONFIGURATION CHECKS (USE PORTION (B))

SEE P.1.

WEAK STORY

1) SUM SHEAR STRENGTHS:

$$\frac{Aw(2ND)}{Aw(FIRST)} = \frac{15,264}{29,682} = .51 < .8 \text{ N.G.}$$

SOFT-STORY

1) BASED ON 1 ABOVE, INFER THAT A SOFT-STORY EXISTS.

VERTICAL IRREGULARITY

1) OK OR COMPLIANT BY INSPECTION

GEOMETRY

1) WALLS DISCONTINUOUS AT AREA (A) ABOVE LOWER LEVEL N.C.

EFFECTIVE MASS

1) BASED UPON MASS DISTRIBUTION (LA.3)

WEF: 1137
WEMO: 2652

%EF = 1137/2652 = .42 ∴ N.C.

TORSION:

1) UNKNOWN (NEED MATHEMATICAL MODEL).

FOUNDATION CONFIGURATION

$.6S_a = .6(.55) = .33$

LEAST $b/h = 116/29 = 4.0 > .33$ OK

$h \approx 29'$
$b = 116'$

FOR WING OF (E) BUILDING ; $45/29' = 1.55$ OK.

RM CHECKLIST 16.15LS

(E) CMU WALLS (FULLY GROUTED)

8" WALLS #5 @ 24" O.C E.W

$$\rho_v = \rho_h \cdot \frac{31(12/24)}{12(7.625)} = .0017 > .0007 \text{ OK}$$

$$\rho_v + \rho_v = .0034 > .002 \text{ OK}$$

12" WALLS #5 @ 24" O.C. EF. VERT
#5 @ 24" O.C HORIZ:

$$\rho_v = \frac{.31(2)(12/24)}{12(11.625)} = .0022 > .0007 \text{ OK}$$

$$\rho_{ht} = .0022/2 = .0011 > .0007 \text{ OK}$$

$$\rho_v + \rho_{ht} = .0022 + .0011 = .0033 > .002 \text{ OK.}$$

FLEXIBLE DIAPHRAGM CHECK (E) 3/4" ø ANCHORS @ 4'-0" O.C

$T_c = 4 S_{XS} \, WP \, A_P$ (4.13)

4 = 1.2

S_{XS} = .550

A_P R = 39 ft²

A_P 2ND = 56 ft² — SEE D.2

WP = 17/12 (130)(.9) = 165 PSF
(BIT CONSERVATIVE)

$T_{c\,R}$ = 1.2(.550)(165)(39) = 4.25 K / ANCHOR

$T_{c\,FL}$ = 1.2(.550)(165)(56) = 6.1 K / ANCHOR.

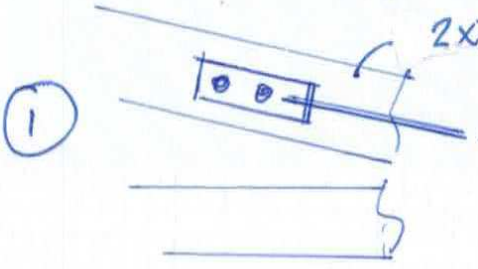
ROOF CONNECTION

3/4" ø THREADED ROD.

DETAIL COULD NOT BE VERIFIED.

T_{ALL} = .44(36)(.9) = 14 K OK

CHECK 2-5/8" ø ANCHOR IN SHEAR (SINGLE)



$V_{BOLT\ 5/8"} \approx 2(590)(3.0) = 3.5^K$ CONVERSION TO ULT 1.1.6

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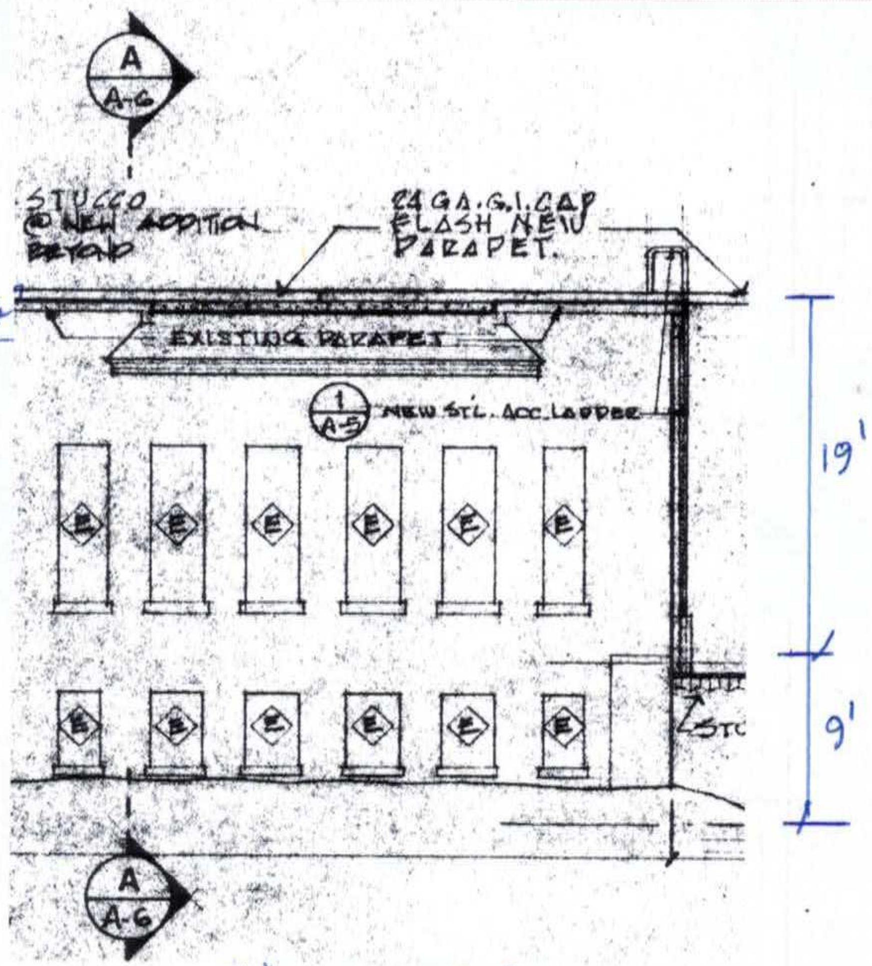
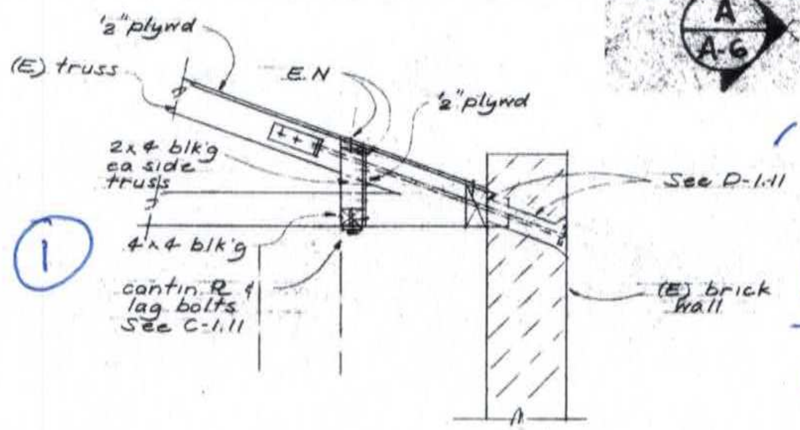
JOB: WOODLAND LIBRARY
JOB NO.: DATE:
CLIENT: BY: UM SHEET NO.: D.2

$A_{P_R} = (4)\,19/2 = 9.5(4) = \underline{39\ ft^2}$

$A_{P_{2ND}} = 4'\left[(19/2) + 9/2\right] = \underline{56\ ft^2}$

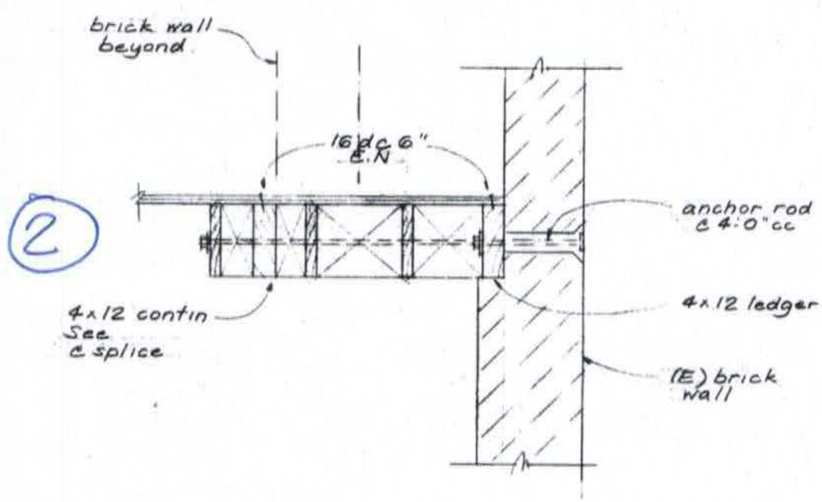




3/4" ø THREADED ROD @ 4'-0" O.C.

① CONTINUED.

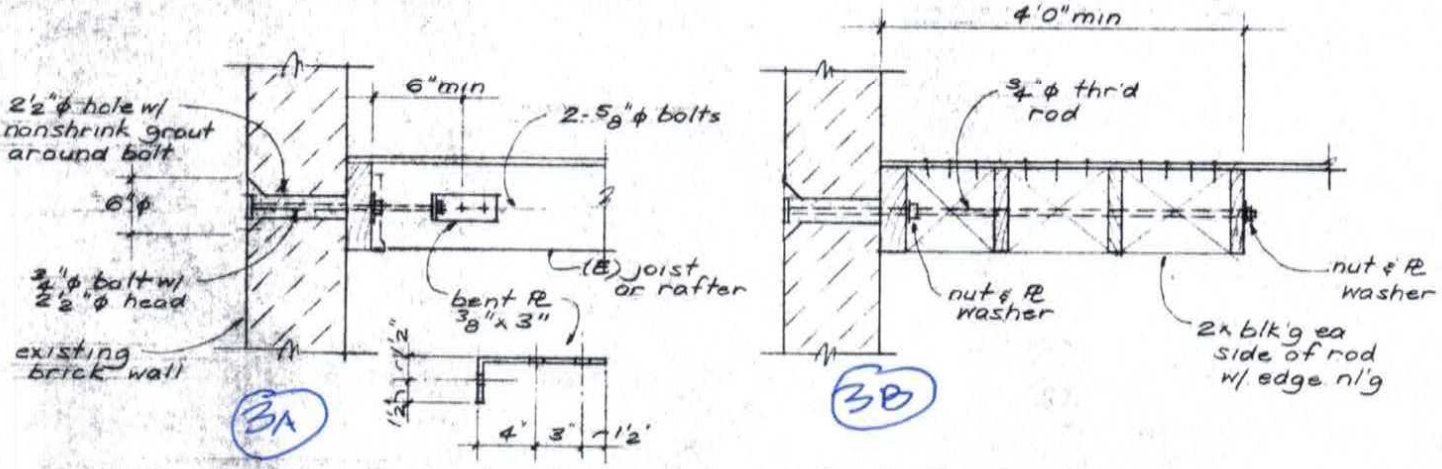
NOTE: DETAIL IS ONE-SIDED AND ECCENTRIC.



E-1.13

FLOOR ANCHORAGE

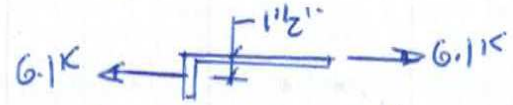
$TC_F = 6.1^K$ / ANCHOR.



Joists Perpendicular to Wall — Joists Parallel to Wall

Typical Wall Anchors

- ¾"ϕ ROD OK.
- 2-⅝"ϕ BOLTS. $T_C = 2(590)(3.0) = 3.5^K < 6.1^K$ N.G.
- CHECK ⅜"x3" PLATE:



$M_u = 6.1(1.5) = 9.15^{in-K}$ $S_x = bh^2/6 = 3(.375)^2/6 = .0703 in^3$

$\phi M_N = 36(.0703)(.9) = 2.27^{in-K}$ N.G.

- CHECK NAILING ON (3B)
  EDGE NAILING TO 4'-0". (2-ROWS BLOCKING).

* ASSUME 8d @ 4" O.C.
  ASSUME V/NAIL: 63# ALLOWABLE OR 3(63) = 189#/NAIL W/LT
  @ 4'0" Ø NAIL: CAPACITY = 13(189#/NAIL) = $2.5^K < 6.1^K$ N.G.

A. Existing Building Evaluation

A1. Mechanical and Plumbing Assessment Report - Capital Engineering

WOODLAND LIBRARY FACILITY MASTER PLAN

250 1st STREET
WOODLAND, CALIFORNIA

MECHANICAL AND PLUMBING ASSESSMENT REPORT

PREPARED BY

CAPITAL ENGINEERING CONSULTANTS, INC.
11020 SUN CENTER DRIVE, SUITE 100
RANCHO CORDOVA, CA 95670
June1st, 2017

EXECUTIVE SUMMARY

Background and Purpose of Assessment Report

This report documents the findings of field survey work performed on February 15, 2017 to determine the condition of the existing HVAC and Plumbing systems at the Main Library in Woodland, CA. This report comments on the life expectancy of the existing systems, any observed code or safety deficiencies, and makes recommendations for improvements for the proposed remodel or building re-structuring. The Main Structure was built in 1903 and major additions were built in 1915 and 1985.

Summary of Existing Conditions and Recommended Improvements

HVAC: The mechanical heating and cooling system for this building consist of several unitary systems including roof mounted AC-Units, Heat Pumps, and various split system furnaces / condensers. In addition, there is a roof mounted Multi-Zone Unit – "CME" Multi-Zone Unit Air Handler.

Below is a list of systems, age of the system and areas served:

1. Ground Floor, Lower Level, Historic Library Area (1903) - Gas Fired Furnaces, Heat Pumps and Condensing Units. (**Installed 2004**)
2. Ground Floor, Addition Area (1985) - CME Multi-Zone Roof Mounted. (**Installed 2004)**
3. Second Floor Children's Learning Area - Lennox Roof Mounted AC-Unit. (**Installed 2004)**
4. Second Floor Adult Non-Fiction Area - CME Multi-Zone Roof Mounted. (**Installed 2006)**
5. Second Floor Teens/Reading/Technology Areas - Lennox Roof Mounted AC-Unit. (**Installed 2004)**
6. Second Floor Stacks Area - Gas Fired Furnace and Condensing Units. (**Installed 2004**)
7. Energy Management Control System. New Direct Digital Control Systems have been installed. The Manufacturer is "Johnson Controls" and is a Standard for the City of Woodland. **(Installed 2004)**

Overall the Major Mechanical System Components are in good condition. We would recommend replacement of the following components:

1. The recently installed "Johnson Control System" is in excellent condition however, programming has been problematic and should be re-commissioned. This system is current and can be used for any future expansions.
2. Most the existing Mechanical Systems are in good operating condition however; they have no provisions for code required ventilation air. This equipment is approx. 14 years old and is approaching the end of its useful life. We estimate the "life" for these systems to be approximately. 18-25 years. Any expansion or renovation of spaces served by this equipment should be replaced with new equipment and provisions for code required outside air should be incorporated. Note: adding ventilation air to these systems will require the units to become larger to handle the additional outside air. New equipment would incorporate full airside economizers.
3. Replace all exhaust fans in Toilet Rooms, Storage Rooms, and Work Rooms.
4. We would highly recommend duct cleaning for any existing ducting that would be re-used.

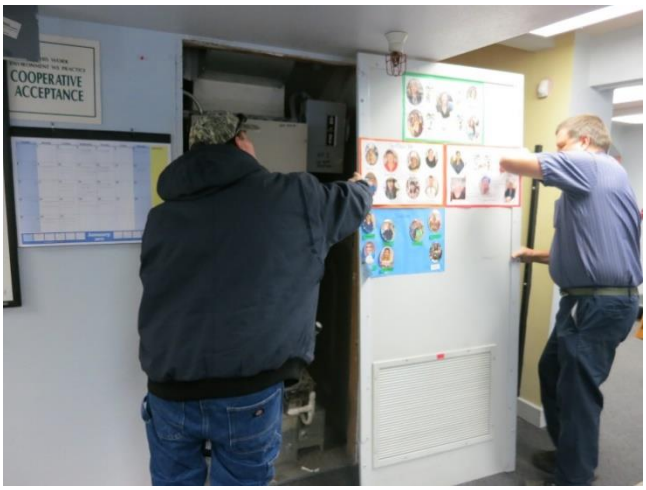
HVAC Problem Areas: Temperature and Zoning issues were noted at the following areas:

1. Basement Work Area: It was noted that this space can become stuffy and uncomfortable during certain times of the year. It was observed that the Administration areas, book processing space and lower level teen spaces are served by split system furnaces and condensing units. These areas have no fresh air ventilation ducts. The windows are operable. However, the windows are painted and not able to be opened.

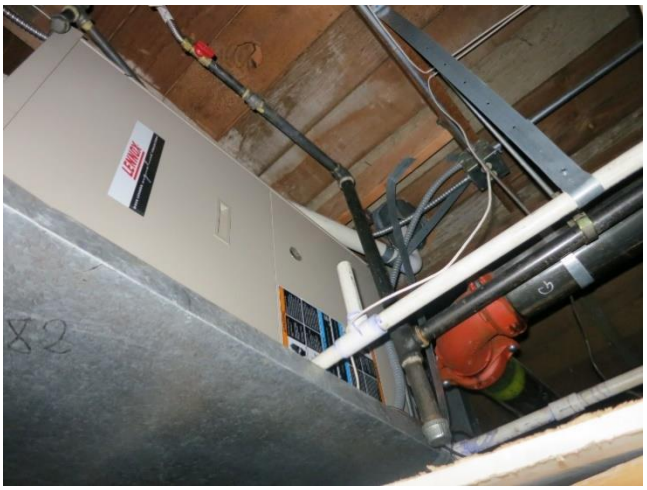
2. Teen Area and Stacks Area: It was mentioned during the site walk that this space has an excessive amount of mechanical "air" noise. This could also be heard at the main Entry Rotunda. The equipment for these areas are in the spaces they serve which contributes to the noise.

1. New "Johnson Controls" NAC Temperature Control Panel – Located in Basement Storage Room.

2. Ground Floor Lower Level Furnace/Cooling Coil – New condition however, no provisions for code required OSA.



3. Ground Floor Lower Level Heat Pump – New condition however, no provisions for code required OSA



4. Ground Floor "Stacks Area" Heat Pumps – New condition however, no provisions for code required minimum outside air (ventilation air).

5. Second Level "Circulation and Teens Area" AC-Units – New condition, Minimum Outside Air.

6. Second Level "Stacks and Mezzanine" Condensing Units – New Condition.

7. Second Level and Lower Level MP Room /Staff Lounge Area Multi-Zone – New Condition. Full Economizer.

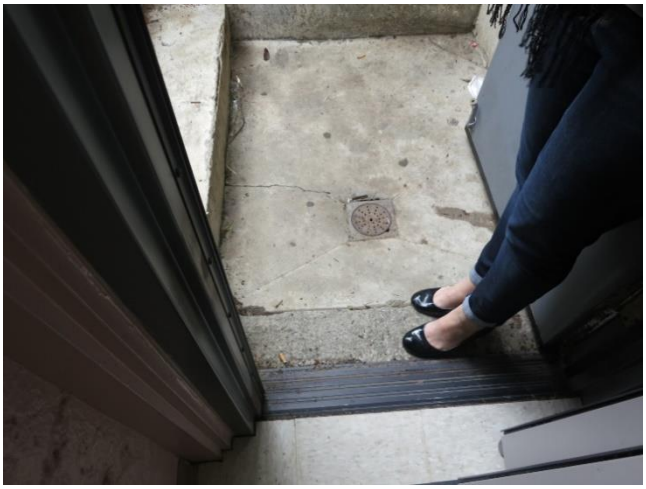
8. Second Level and Lower Level MP Room/Staff Lounge Area Multi-Zone – New Condition (Interior View).

9. Second Level Non-Fiction Area AC-Unit – New Condition, however, no outside air ventilation provisions have been provided.

10. Existing Fire Sprinkler Riser – good condition.

PLUMBING: The Plumbing and Piping Systems appear to be original to the building with various plumbing fixture replaced as required by ADA. All plumbing fixtures should be scheduled to be replaced with future modernization projects to provide clean and sanitary conditions for use by the Staff and Public and to meet ADA current code requirements.

1. Plumbing Fixture are original to the building and are in poor condition.
2. Several leaks have occurred within the "Friends and Literacy Spaces" due to poor floor seals at water closets located above in the core bathroom areas.
3. Core Restrooms were missing some fixtures or need replacement. Not ADA compliant with current standards.
4. Maintenance Staff noted lift station needed replacement and new controls.
5. Main Gas Service is located at entry way and should have protective enclosure installed for vandalisms protection.
6. Lower level area drain at exit of Administration Offices is problematic and backs up causing flooding into interior entry.
7. Roof Drain in Mechanical Sump (above Main Circulation Area) is problematic and clogs easy. See Photos.
8. Gas Piping on Roof is corroded and in poor condition. Additionally, not secured to roof and is only on lightweight blocking with sheet metal conduit straps. No Seismic expansion loops found. No Flexible connectors found on equipment.



11. Existing Area Drain at Administration Exit – Back up and overflow into entry.

12. Core Restroom –1980 era plumbing fixtures.Note rust on Access Panel.

13. Core Restroom – Original Fixtures not ADA complaint.

14. Mechanical Well Roof Drain – Drain is problematic in that debris easily collects and ponding occurs in well and will affect life span of roofing.

15. Gas Piping – Rusting and not properly supported.

A. Existing Building Evaluation

A4. Electrical/Lighting/ Signal Systems Conditions Assessment - O'Mahony & Myer

Noll & Tam Architects
729 Heinz Ave., #7
Berkeley, CA 94710

Attn: Ned Reifenstein

Re: Woodland Public Library
Electrical / Lighting / Signal Systems Conditions Assessment

Dear Ned,

O'Mahony & Myer visited the Woodland Public Library site on February 28th, 2017 to review the existing conditions of the electrical, lighting, and signal systems. The purpose of our review was to evaluate the condition of the various systems and to comment on their ability to support future use and building renovation or expansion. Below is a summary of the existing conditions and our recommendations:

Power Service:

The Library facility is fed with a pad mount PG&E transformer (#T-5934) to a 1200 Amp, 120/208 Volt, 3 Phase, 4 Wire, indoor rated Main Switchboard within an electrical closet that serves power distribution to the buildings.

The Electrical Service Transformer is fed from an underground utility primary service lateral that derives from a utility pole riser across 1st Street.

The Utility Meter is located remote from the Service Entrance equipment, at an exterior box located at the exterior wall, opposite the Service Entrance equipment. This utility meter box was locked with a Utility Co key at the time of the assessment and was not able to be observed.

The Main Switchboard (or Service Entrance Equipment) is as manufactured by I-T-E and is located within an adequately sized (for this gear only) electrical room/closet slightly remote from the Main Library building at the North/East portion of the site. I-T-E is no longer in manufacturing, but to our knowledge I-T-E is now serviced by Siemens. The equipment is in good condition and can be retained for future modernizations or future expansions, depending on size. However, Branch Panel Distribution within the facility is approaching maximum; refer to Power Distribution and Branch Circuit Systems for additional information.

If the facility is expanded, connection/expansion from this equipment may prove difficult. The equipment feeds the facility Branch Panels via underground raceway from

its location which is separate from each Wing of the building. This Electrical Service was added during a Library Expansion in 1985 and back feeds the original Library Wing and the 1985 Expansion Wing from this location.

The electrical system has been recently tested by an independent testing company and provided with new arc-flash hazard labels through-out all protective devices within the facility. All equipment clearances are adequately labeled and maintained. The overall condition of the electrical distribution system appears to show a good history of consistent maintenance and best practices.

Power Distribution and Branch Circuit Systems:

The Main Switchboard feeds to (4) Branch Panelboards and (1) Distribution Panel as outlined below.

1. 200A, 120/208V Surface Branch Panels A and B (at Original Library Basement Electric Rm).
2. 200A, 120/208V Flush Branch Panels C and D (at West Expansion).
3. 600A, 120/208V Pad Mount Distribution Panel (at Library Roof for HVAC).
4. 100A, Elevator

All building distribution and branch panels are in good condition but are limited in available circuit breaker space. Additional branch panels may be required for building expansion. A 'Maker Lab' space is currently in construction at the West Expansion, which may take up the remaining power distribution to this area.

Various surface mounted electrical raceways and wiring have been added over the years to support modifications in certain areas. The Administration, Library Computer Lab, Conference Room and Literary Services areas appear in need of power and telecom improvements to suit current technology needs.

The interior branch wiring systems were not examined or tested as part of our review, but based on the age and condition of the visible electrical systems in the building, these can be considered to be in reasonable condition.

No specific visible electrical circuit deficiencies, installation deficiencies, or electrical code violations were noted during our review.

There was no dedicated or portable emergency power system observed present for the Library.

Interior Lighting Systems:

Interior lighting consists primarily of fluorescent sources with T8 and compact fluorescent lamps. The lighting is generally in good condition and has been maintained well, but the light levels for Library occupancy appeared low in numerous areas.

The main public Library space receives a fair amount of daylight, but the space could benefit greatly from new LED lighting systems and day lighting controls to provide efficient light levels throughout. Light levels within the book stack areas appeared low and could also benefit from an improved LED system and layout. Spaces such as, Conference, Administration, Multi-Purpose, etc. appeared due for improved lighting systems as well.

It was observed within the public Library space that a few new pendant, bowl type luminaires have recently been installed to replace the fluorescent sources. These new fixtures each contain (8) screw base socket type lamp holders, presently installed with LED bulbs, but the screw base socket holders are not suggested under current energy standards.

Exterior Lighting Systems:

The exterior parking lots appeared to be lit with LED sources. The exterior sidewalks are ornamented with 9' high post top decorative lamp sources. The night lighting levels were not observed during our visit, but should be calculated and confirmed for any renovation or expansion to ensure a safe environment for patrons and Staff.

Building façade lighting was generally located at exterior entrance/exit doors, and along breezeways. These sconces could be due for improved LED sources and style.

Lighting Controls:

Interior lighting controls are mostly manual and do not meet current California Title 24 Energy Code requirements. The larger public Library space is similarly controlled with a line voltage manual switch bank. The space could benefit from day lighting controls to balance out the efficiency of the lighting.

Other building lighting controls are generally just local single level wall switches in each room, with no automatic controls.

Exterior lighting is controlled by a mechanical timeclock with photocell.

Any new renovation or expansion should include an automatic lighting control system with daylight sensors, dimming capability, occupancy motion sensors, and updated master common area controls.

Emergency Lighting / Exit Signs:

Emergency lighting does not appear to be up to current code for 1 foot candle average in the paths of egress. Many areas have normally off, stand-alone, wall pack, battery fixtures. Other areas have integral battery ballasts in fluorescent fixtures. Overall coverage of fixtures appears to be lacking.

Exit signs appear to be located as required by code but lack in manufacturer and type consistency.

Telecommunications Systems:

The telecom system includes a Main Distribution Frame (MDF) located in the Basement of the Original Library building. Telephone service and the main data system servers are located at this location on a plywood backboard and a wall mounted open-style data equipment rack. The IT system consists primarily of older Category 5 and 5e rated cabling systems. Category 6 and 6A are current industry standards for this type of facility. There is wireless coverage and hard-wired ports throughout the facility, but not in the quantity and coverage that would be considered adequate.

There is incoming fiber service from the telephone / broadband company to the Original Library Basement MDF and one customer distributed 6-strand, 62.5/125um (OM1), multi-mode fiber to an Intermediate Distribution Frames (IDF) at the West Expansion. The current industry standard for this facility, depending on IT bandwidth requirements and cabling distance, is OM3 or OM4 rated multi-mode fiber optic cabling.

The location of the MDF in the Original Library Basement space is not ideal and most likely it experiences a higher than normal humidity due to its co-location with mechanical equipment. It is not a good location for this type of equipment and relocation to a dedicated and climate controlled IT Room is recommended. The location of the IDF in the West Expansion is a bit cramped and it could benefit from a more suitable working clearance within the same room.

Any building renovation or expansion should include appropriate budget to relocate or enclose the MDF and IDF equipment, add new modern Ethernet cabling/patching systems (Category 6A recommended) with improved Wi-Fi distribution throughout, and add new modern Fiber cabling/patching systems (OM3/OM4 recommended).

Clock and PA Systems:

The facility does not have a central clock or PA system. All wall clocks are battery operated and must be reset manually on a one-for-one basis. If budget allows, new wireless synchronized clocks could be installed to avoid multiple adjustments. Clocks would still be battery operated, but would not require any local adjustment.

The staff currently utilizes the VOIP phone system as their only paging means. Additional capability and coverage for the PA system should be included in public or administrative areas, and any new expansion of the facility.

Fire Alarm System:

The facility fire alarm system is a Silent Knight 5208 zoned system which was installed as a retrofit to an older Simplex 4001 system. The retrofit equipment is in good condition, is currently monitored and appears to suit the current needs of the facility. But any future renovations would require improvements to audible and visual device coverage, elevator interface and addressable device expansion. The new system should provide adequate code required coverage and future capacity for any facility or HVAC changes.

Any building renovation or expansion would make use of the new fire alarm system capacity and match the new devices to that system for compatibility. New devices in renovated or expanded areas would include notification devices, pull stations at exits, sprinkler water flow and tamper switches, smoke detectors where required by code, and interface with any new or improved elevator systems.

Security System:

The facility is protected with a security system by Sonitrol. It is comprised of, door contacts, glass break and motion detectors. Two keypads control each wing. This system appears to suit the current facility needs and should be expanded or improved as necessary for any renovations or expansions.

The facility could benefit from IP based Security Cameras at a few locations when expansions or renovations occur.

If you have any questions or comments on any of the above items, please do not hesitate to call.

Sincerely,

Pieter Colenbrander, P.E.
O'MAHONY & MYER

B. Community Needs Assessment

Woodland Public Library
Community Survey 2017 Report

April 27, 2017

CONTENTS

Woodland Public Library
Community Survey 2017 Report

April 27, 2017

Executive Summary

As part of its long range planning process, the Woodland Public Library Community Survey 2017 collected information on public perceptions of various aspects of library use, including facilities and space needs, importance of current services and programming, desired new services and programming, and awareness of information resources. Two hundred and sixty-three usable responses were received from a wide range of library stakeholders, including Woodland Public Library staff, advisory board, Friends of the Library, volunteers, city residents, city staff, educators, business owners, nonprofits, and other community groups. Library users as well as nonusers responded to the English and Spanish language surveys which were open from March 27 to April 13, 2017.

Respondents indicated a strong preference for information, programs, and services for both adults and children, noting strong use of the library's printed collections and highly popular children's storytime and other programs. Respondents felt that the most important library services were promoting literacy, providing access to information and content, and supporting lifelong learning. Most important programs were the children's programs, cultural events, and adult programs in general. Numerous suggestions and ideas were also collected, including requests for more materials and programs in general as well as for children and adults, book clubs, more open hours, and enlarged and improved facilities and technology.

Survey respondents shared a strong sense of the need for the library to act as community center and gathering place, and felt that was very important for the future. Concern was expressed for safety, especially regarding the close proximity of homeless persons on library grounds and in the building. In summary, Woodland library patrons would like to see a future library that supports community building and engagement, education, is fiscally sustainable, preserves history, has better hours, has a larger and more up-to-date facility, has more programming for children, teens, and adults, is more safe and secure, and has excellent technology.

Fifty-four respondents indicated they were not library users, stating they had not used the library within the past 12 months or at all. Very few of these individuals provided reasons why they did not use the library: five said they did not use the library because they got everything they needed elsewhere; for some others the library hours or location are not convenient, or they are new to the area. One respondent noted that the library was in need of remodeling and more staff to provide better service. The homeless population around the area was also a barrier to use.

Survey Method

The Woodland Public Library Community Survey 2017 was developed as part of the library's Facilities Master Planning Initiative to collect information from community members about use and perception of library facilities, resources, services, programming. The survey specifically addressed topics that had not been touched on in other recent library or city surveys, in the facilities master planning community forums conducted in spring of 2017, or in other data gathered as part of the planning process.

The survey consisted of 30 closed and open questions in the following areas:

- use of the library building
- importance of services, programs, and resources
- interest in potential new services.

Demographic questions captured information on respondent age, education, family characteristics, occupation, location, and income. The survey was available in English and Spanish. Invitations were delivered electronically via email with a link to a Survey Monkey instrument, on the library and City websites and Facebook pages, and in printed form in the library. Fifty-three print responses and 210 online responses were received.

Sample

A snowball sample was developed, initially seeded with library contacts including Library staff, Library Commission members, Library Friends and volunteers, teachers, city staff from community services and law enforcement, local business owners, and residents. Attendees were asked to share the survey link with colleagues, personal friends, and other community members through their organizations and personal networks using word of mouth, email listservs, or other avenues. The survey was also posted on the Library's website and Facebook pages. Many respondents (38.2%) heard about the survey via the link posted on the Woodland Public Library website, Facebook, or other social media page, with 10% from a flier in the library15.8% from a request from a friend or colleague, and 34% from an email request from the library or somewhere else. Two hundred fifty-five responses were received in English and eight in Spanish.

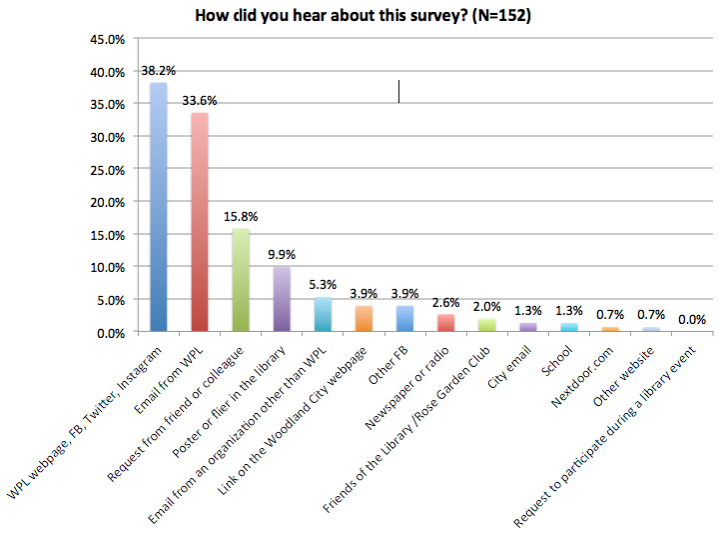


Figure 1

Social media and other Internet sites provided a high level of visibility for the survey, as shown in Table 1:

Table 1. Survey distribution via social media outlets

Social media site	Responses
Library website, Facebook, Twitter	58
Email from WPL	51
Email (other)	8
Facebook page (not specified)	6
City website	6
Nextdoor.com	1
Total	130

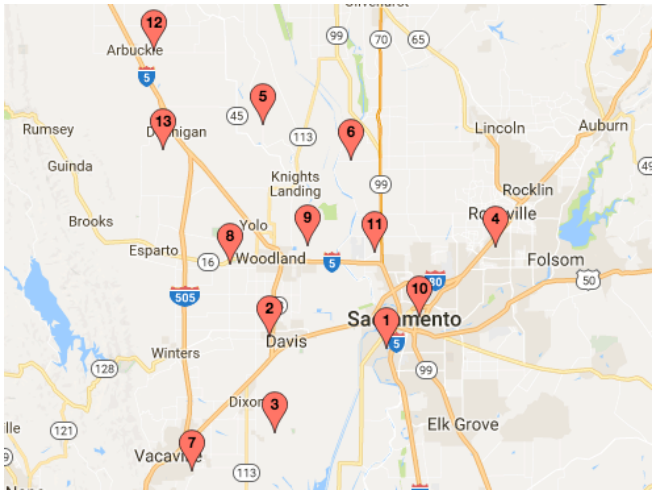
Findings

Respondent characteristics

Location

Survey respondents were located primarily in Woodland, in zip codes 95695 (99 responses, or 61.9%), and 95776 (45 responses, 28.1%). The remaining 10% were scattered among 13 other zip codes in the Yolo County region (1 to 4 responses each), most in/near Yolo County (see map in Figure 2).

Figure 2. Respondents by location



Age

Although the overall city demographic for Woodland includes just about the same number of adults over age 65 (10.8%) as the California average (11%), survey respondents in this age group were oversampled, with 18.4% of respondents stating that they were over 65. The 35-44 year old age group was also oversampled at 24.4% (versus 13.2% Woodland census population). Other age groups were also slightly

over- or undersampled as follows in Table 2, most within an acceptable margin of error (3-5%) (5-14 years old were not targeted for this survey). A comparison of the data both with and without the 35-44 and over 65 age groups indicated that the oversampling bias had no notable effect on the results for two key survey questions (importance of library services and programming).

Table 2. Survey sampling by age

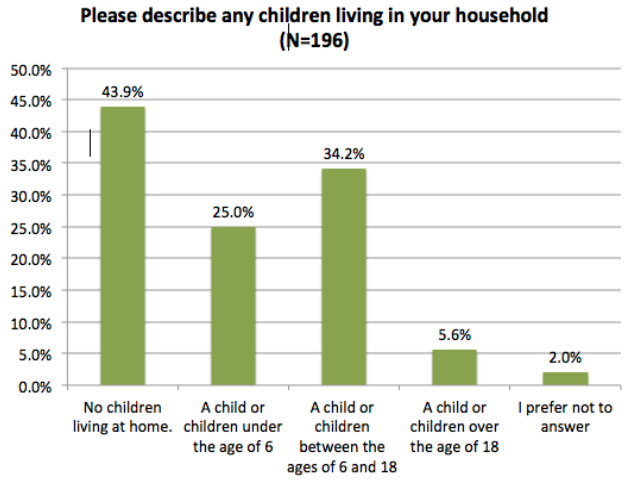
Age	Survey Sample	Woodland*
5-9 years	0.0%	7.3%
10-14	0.0%	7.4%
15-19	3.3%	7.7%
20-24	2.2%	7.2%
25-34	17.2%	14.3%
35-44	24.4%	13.2%
45-54	17.2%	13.7%
55-59	6.7%	5.8%
60-64	8.9%	4.7%
65-74	15.6%	5.5%
75-84	2.8%	3.4%
85+	0.0%	1.9%

* Source: US Census, Profile of General Population & Housing Characteristics 2010

Family characteristics

Two-thirds of households in Woodland have children: one third with children between the ages of 6 and 18 (34.2%), and 25% with a child under the age of 6. Just over five percent had a child over the age of 18 living at home (5.6%). Less than half of the respondents (43.9%) indicated they had no children living at home (see Figure 3).

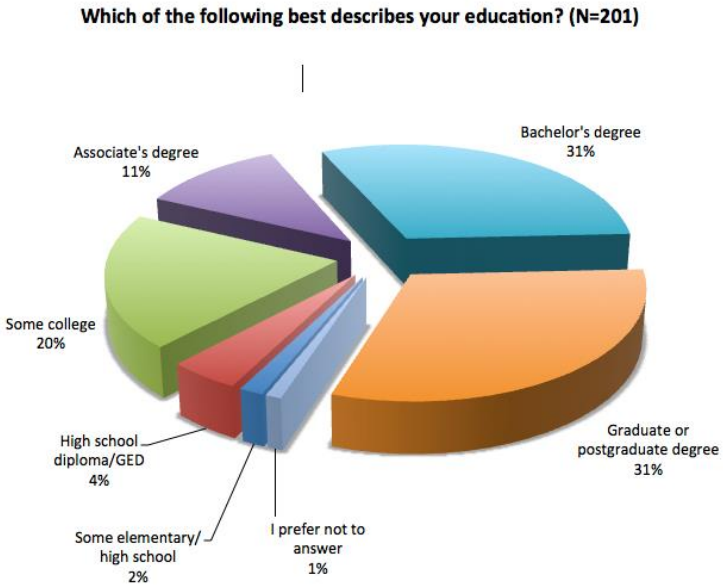
Figure 3.



Education

Respondents were highly educated, similar to the City of Woodland overall, with about a third (31%) of respondents indicating they held a graduate or postgraduate degree, and the same number holding a bachelor's degree. This is much higher than California overall (31% total bachelors degree or higher). The remaining 11% hold associate degrees, 20% with some other college experience, and 4% high school diploma only (Figure 4).

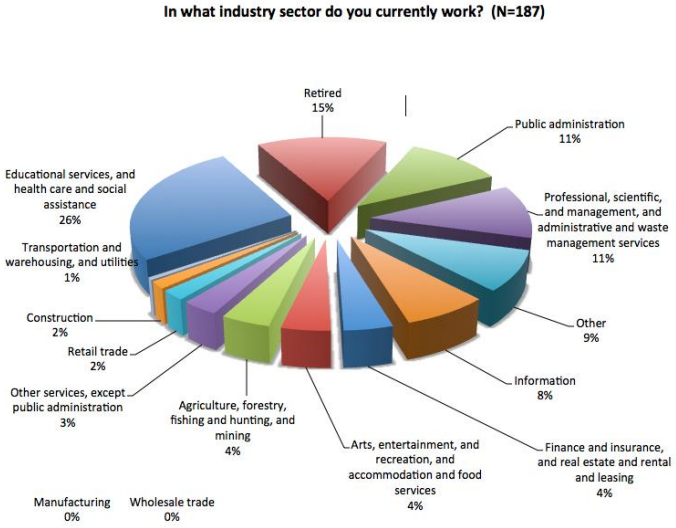
Figure 4.



Occupation

Occupational sectors of survey takers were not similar to US Census data breakdown for Woodland overall, with more professional, information-related, educational, and healthcare occupations, and fewer retail, construction, and wholesale occupations represented in the survey (Figure 5).

Figure 5



Language

English was the primary language spoken at home for the vast majority of survey takers (93%). Other languages included Spanish (5.5%). English language speakers were over-represented in the sample, and Spanish, Asian Pacific, and others under-represented (American Community Survey 2015, Woodland: English 58.5%, Spanish 34.1%, Asian/Pacific Island 4.4%, Other 3.0%).

Income

Median income of respondents was in the $50,000 to less than $100,000 range, but appears to be a little higher than the US Census figure for median income reported for Woodland (Woodland: $55,893, American Community Survey 2015).

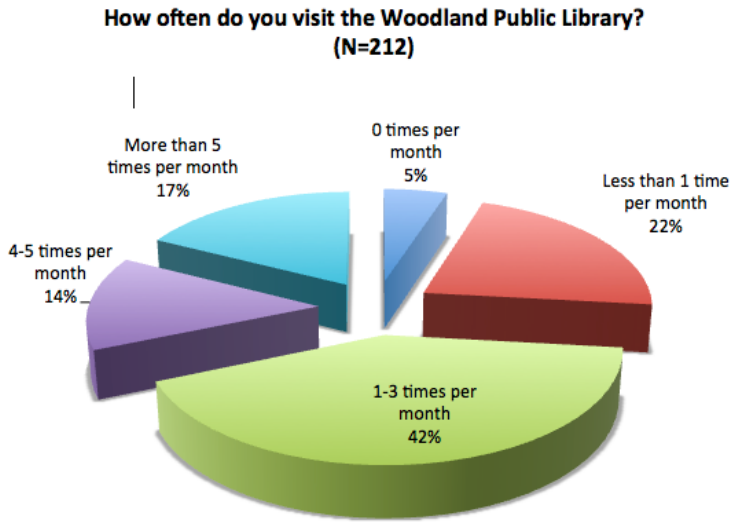
Table 2. Income range of survey respondents

Income	Response Percent	Woodland (Census)
Less than $50,000	18.2%	43.4%
$50,000 to less than $100,000	31.3%	32.2%
$100,000 to less than $200,000	29.3%	21.2%
$200,000 or more	5.0%	3.2%
Prefer not to answer	16.2%	NA

Library use

The vast majority of survey takers (78.4%) reported being regular library users, with 43% of library users saying they visit the library one to three times per month in the past year, and three quarters of respondents stating they use the library between once per month and more than five times per month (Figure 6). Twenty-one percent of respondents reported no library use in the past year.

Figure 6



Seventy-three survey respondents (41.3%) said they used libraries other than or in addition to the Woodland Public Library. Other libraries mentioned most frequently included:

Library	# users
Yolo County (total, all branches)	36
Davis	25
Sacramento County	5
Knights Landing	3
Winters	3
Esparto	1

Activities while visiting the library

Almost two thirds of respondents check out adult reading level books or other materials (62.8%) and about half check out children's books and materials or read or browse (50.2% to 45.9%). About one third attend programs. One in five does homework, seeks help from library staff, or uses library databases. Using the library's wireless network and computers was noted by one-fifth of the respondents. Figures 7-9 illustrate these activities by type (reading, technology, and teaching/learning).

Figure 7

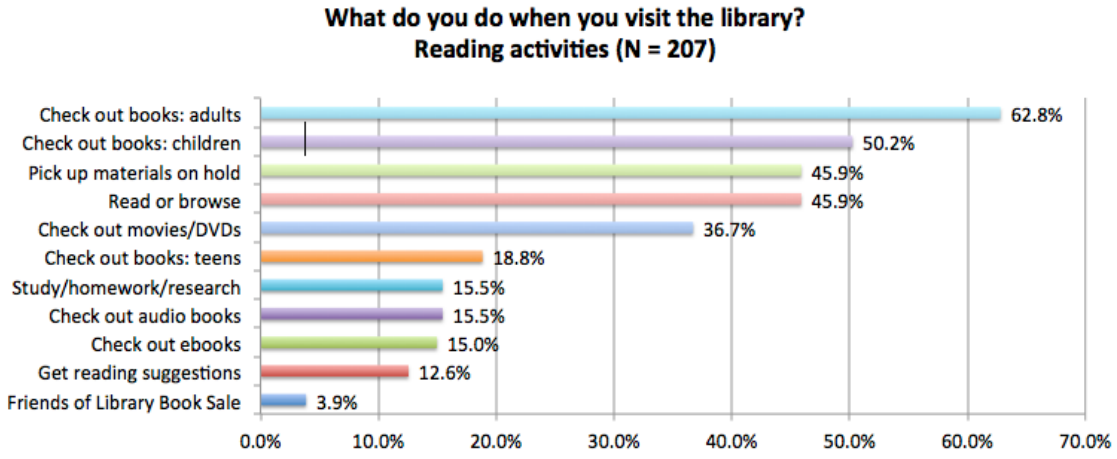


Figure 8

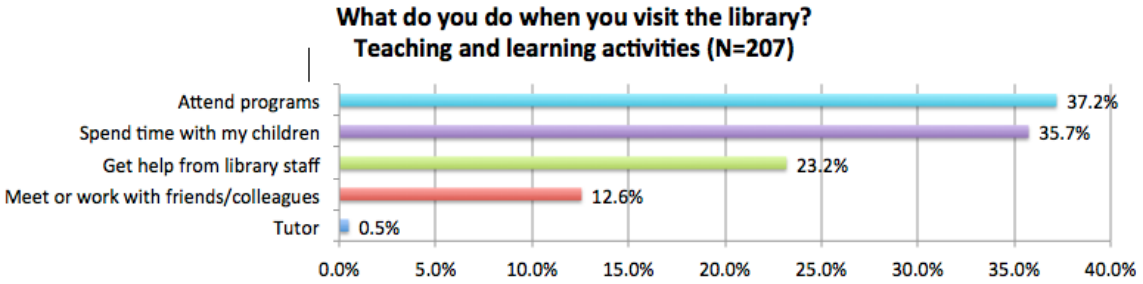
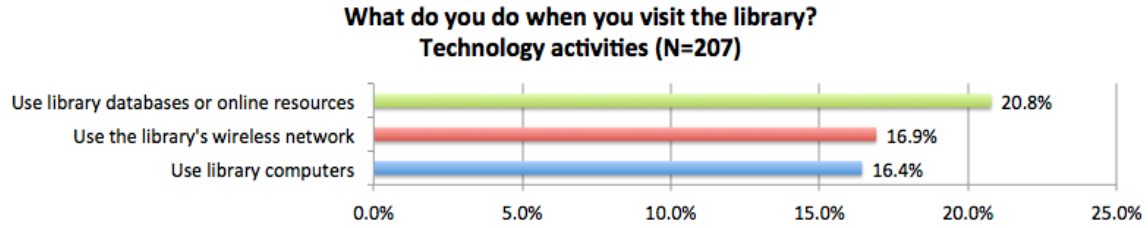


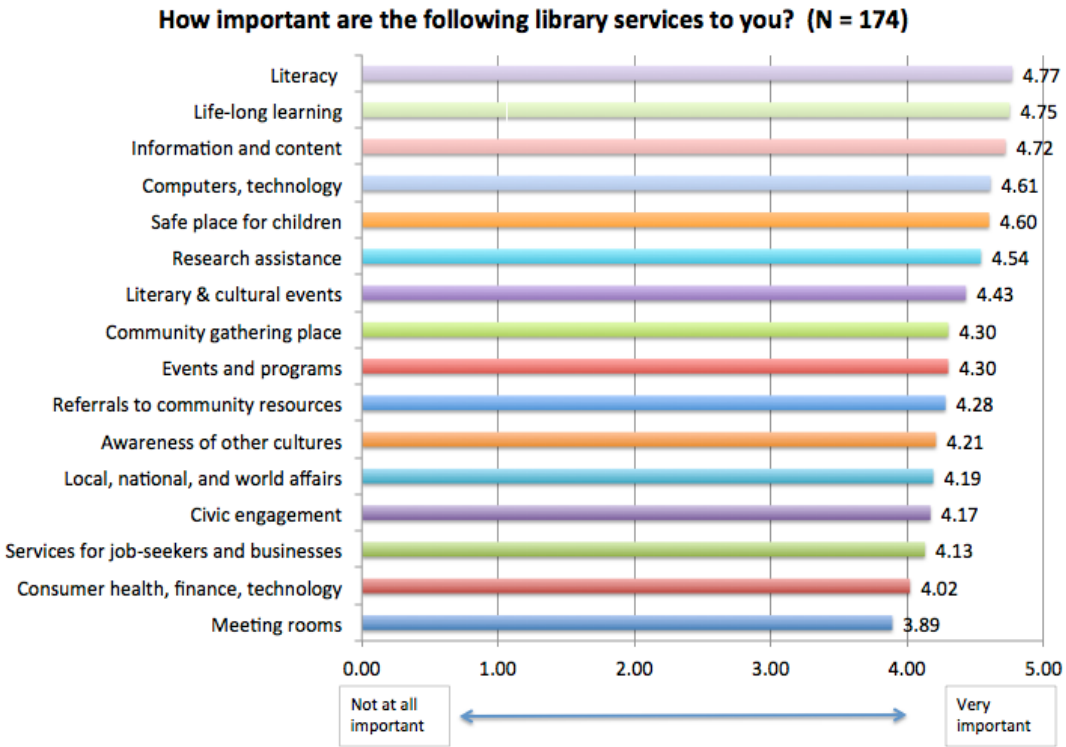
Figure 9



Importance of services, programs and resources

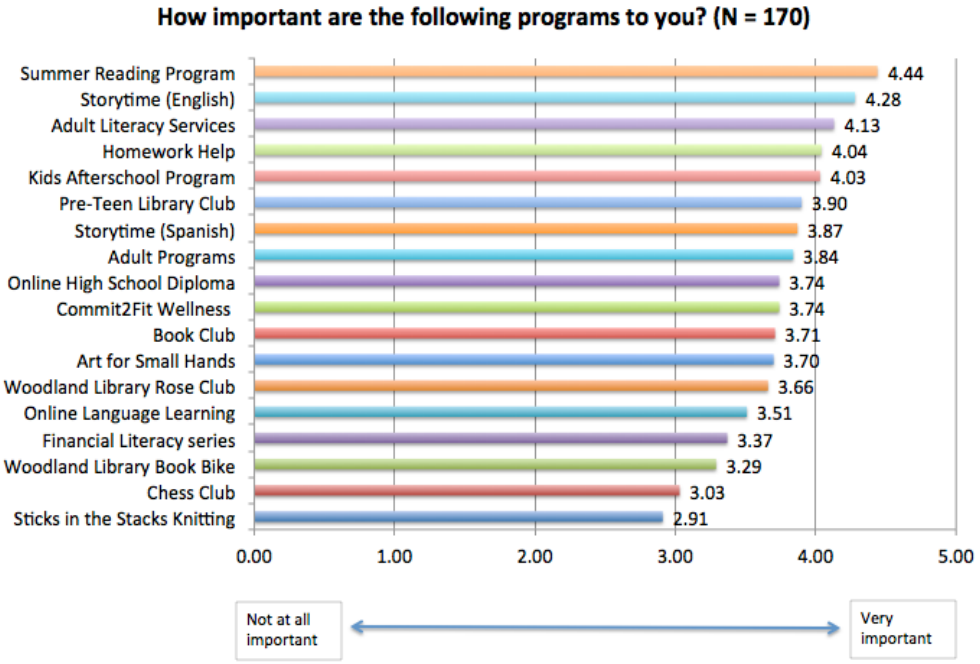
Respondents were asked to rate the importance of a number of library services and programs on a scale of 0 = Not at all important to 5 = Very important. Respondents indicated strong interest in several library service areas, notably in promoting literacy and life-long learning: 93% rated these items as Very important or Somewhat important. Ninety percent of respondents felt the same about providing basic access to information and content in any format. Providing research assistance and a safe place for children after school were also rated Very or Somewhat important by 86%. Detailed responses are shown in Figure 10.

Figure 10



Summer reading, storytime, adult literacy, and homework help were considered the most important programs for the Woodland Public Library (Figure 11)

Figure 11



Thirty-five individuals in the survey sample expressed a range of additional ideas concerning the services, programs, or resources they wished the library offered that are not currently offered. In general these responses fell into several themes, including:

- more materials and programs in general as well as for children, families and teens
- more open hours
- increased access to information and content in all formats
- increased access to learning opportunities
- enlarged and improved facilities

Full responses to this question are provided in Appendix A.

Focusing investment

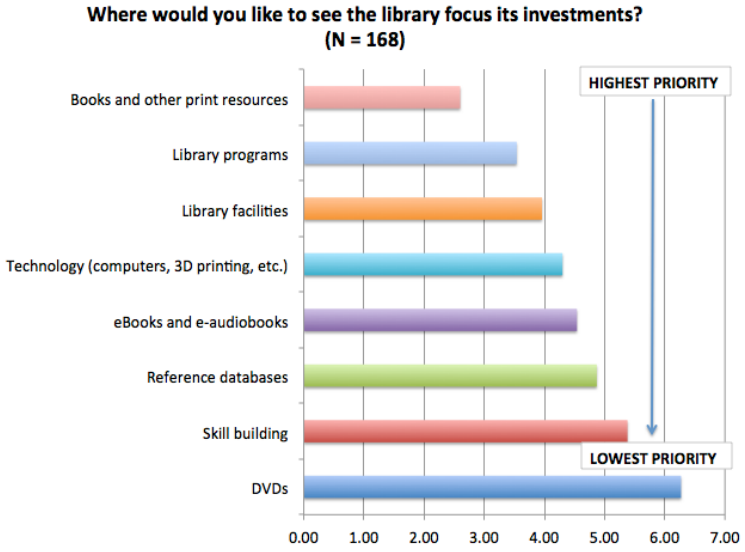
In terms of apportioning resources to meet these desired needs, respondents rated access to books and other printed content most highly, with library programming and improved facilities rated the next highest. Ranking of resource investment preferences is shown in Figure 12. Twenty-five respondents commented on what they felt the library should prioritize, including:

- upgrading the facility
- work with children to use and verify online information

- provide more educational programs and opportunities for civil discourse
- work with the City to create a safer environment; provide alternative places for homeless to go during the day

Full text of these comments are provided in the Appendix.

Figure 12



Library website usability

When asked if they felt they could easily find what they needed on the library's website, 55% of respondents agreed that they felt they could find what they needed on the website. Eleven percent disagreed, and the remaining 29% had no opinion or did not use the website.

Fifty-three respondents commented on the quality of the website, with positive and negative comments split equally. Examples of comments include:

Positive

- *I use it quite often before coming to the library to see if a book is on the shelf. It's also a great way to keep track of the books my girls have checked out as well.*
- *I love the library's website! It is easily navigated and organized. I also like the new interface - very colorful and informative.*
- *Improving steadily*

Negative

- *Mostly acceptable, except for pointing me to ebooks that can't be checked out since the WPL library card doesn't give access to them.*

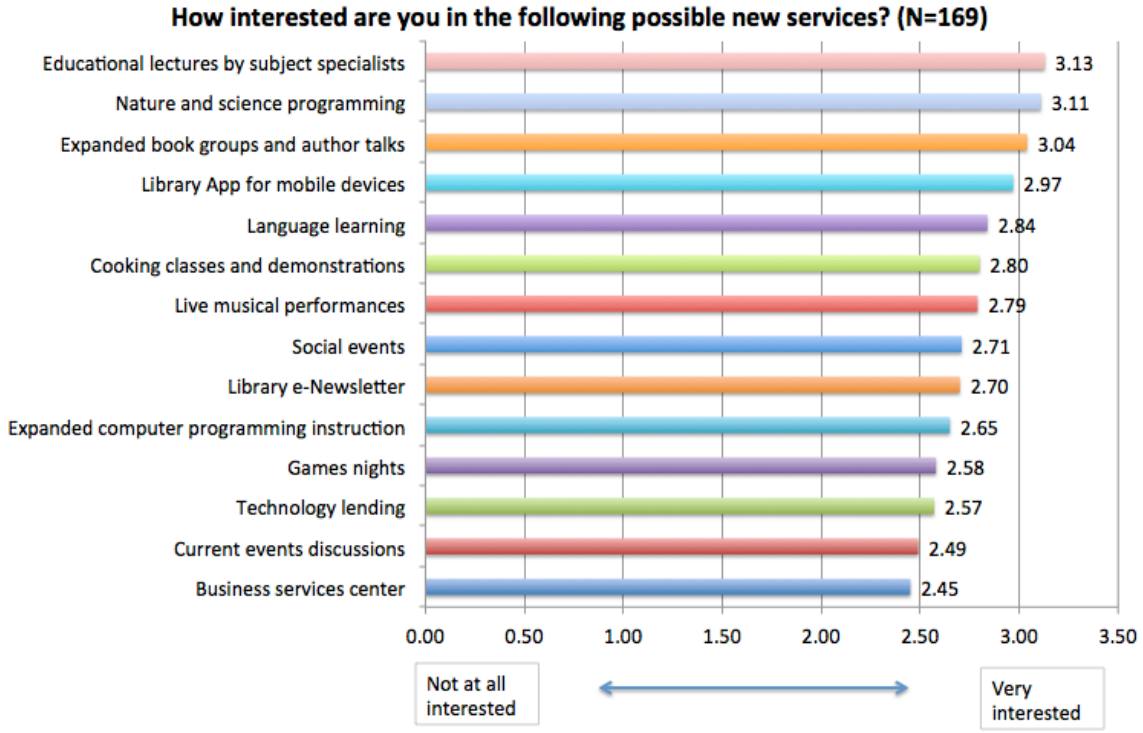
- *It's very complicated to use. It's frustrating that there isn't a direct link to the library from the internet, you have to go through city services. It is not very user-friendly and the interface is not great. Honestly, I try to avoid the website at all costs!*
- *Could have better searching of. Catalog. More information about programs, services. Site looks very dated.*
- *The libraries website needs a complete overhaul*

Complete comments can be found in the Appendix.

Interest in potential new library services

Respondents were presented with a lengthy list of potential library services and programs, and were asked to rate their level of interest in each from 1 (not at all interested) to 5 (very interested). While interest was generally high for virtually all choices, the most highly rated items were educational lectures, nature/science programming, expanded book clubs and author talks, a library app for mobile devices, live musical performances, and cooking classes/demonstrations (Figure 13). Respondents also noted the desire to improve safety, and not take away funding from access to books and information content. Complete comments are provided in the Appendix.

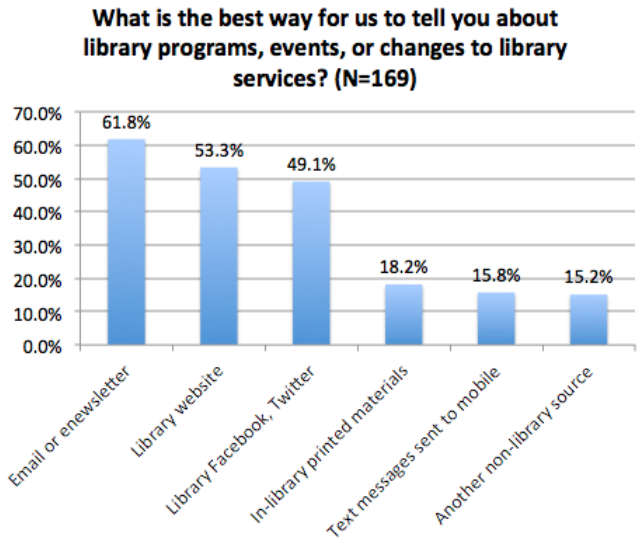
Figure 13



Communication

A majority of survey respondents (61.8%) stated they preferred email or enewsletter as their preferred mechanism for hearing about library news and events. Slightly more than half (53.3%) stated that they would rather access the library website to receive this information. Almost half (49.1%) preferred the Facebook page or some other social media (Figure 14). Comments from respondents also mentioned the printed newspaper and fliers to the schools.

Figure 14



Factors influencing library use

Forty-six individuals responded to the question: "*What, if anything, would encourage you to use the library more often?"* with a diverse range of remarks concerning the need for expanded hours, access to more resources and content, more programming of all kinds, solution to the homeless issue, better communication of library events, and improved facilities. A sampling of these comments is provided here. For further details, please see the full text of respondent comments in Appendix A.

- *More reading/study space*
- *The homeless who hang around the outside of the library have made my teenage daughters uncomfortable going there without me. Nothing has ever happened, but when I was a kid, I rode my bike to the library almost every Saturday. My teens are afraid to do that. They also worry that their bikes will get stolen, even if locked.*
- *It would be helpful if the library were open late one evening a week. 7 pm is early for working people who commute. There have been a few times that I've had books on hold reshelved because I couldn't get over there before closing during the week and wasn't available on the weekend to pick them up.*
- *Children's reading programs and hands on activities, especially science.*

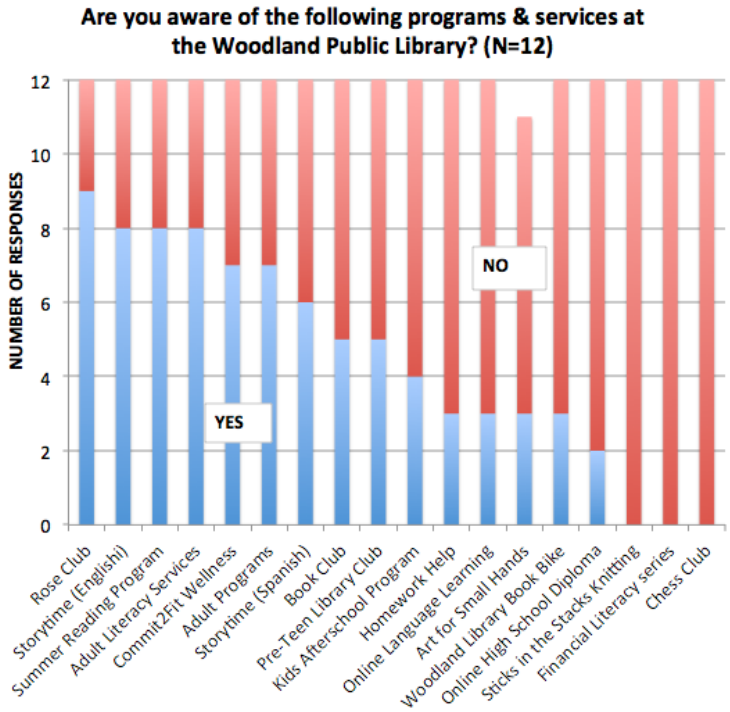
Infrequent and non-users

A sizeable number of respondents (n = 54 out of a total of 263, or 21.6%) indicated that they had not used the library within the past 12 months, or at all. These individuals were directed to a shorter set of questions on reasons why they do not use the library, services and programs they felt were important, awareness of current library service offerings, and factors that would encourage future library use. Approximately 13 individuals answered these questions.

Most of the infrequent users stated that they did not use the library because they fulfilled their information needs elsewhere. One stated that the hours were not convenient, and another cited the presence of the homeless as a barrier. A remodeled facility and more staff to provide better service were also noted.

Although members of this group are not frequent library users, their perception of the importance of library programs in the community emphasized literacy, safety for children, and access to computers and technology for those who do not otherwise have access-- much like the perceptions of library users. Low awareness of many library services for this group mirrored the overall survey sample, as did preferred programming options (programs, literary and cultural events, consumer health / finance / technology training). Awareness of resources and services of nonusers is shown in Figure 15.

Figure 15



Library of the future

Ninety-three respondents commented on the kind of library they wanted in the future. Woodland library patrons would like to see a future library that supports community building and engagement, education, is fiscally sustainable, preserves history, has better hours, has a larger and more up to date facility, has more programming for children, teens, and adults, is more safe and secure, and has excellent technology. Many respondents indicated that they felt the library was "on the right track". Some example comments follow here; the full text of respondent comments is provided in the Appendix.

- *Woodland Public Library -- more than bookshelves-- the heart of community life long learning bringing people of all ages and cultures together in historic Woodland to celebrate our heritage and our future!*

- *Adaptable and thriving - a meeting/discussion place for community info events*

- *One that continues to be relevant to the needs of the community. I don't know what to expect in the future but computers and computer literacy seems to be an important need. Fundamentally literacy of any kind will always be relevant it seems. The library seems to be a bridge or link between those that don't have skills and giving those without skills the opportunity to gain them. The library seems to be able to do this in a non-threating environment.*

- *One that continues to educate, instruct, and encourage its users to understand our diverse and complex world. One, especially, that continues to help move society toward greater equality.*

- *I'd like to retain the historical element of our library's structure and yet find ways to modernize the interior furnishings.*

- *I would like to see an expanded primary facility or a branch site with an emphasis on literacy for all ages and languages as well as research assistance and a variety of databases. It should be a hub for literacy in the community.*

- *Expansion of facilities, larger computer access area, small group meeting spaces*

- *Forward looking, involved in current events, lots of programs, not just a place for books & magazines (well, you already are MORE than just a place for books & magazines).*

- *Focused on children and literacy*

- *Making it feel more safe and comfortable by not having homeless hang out around the the library outside*

- *Access to technology for those who can't afford it. Also, need to have a staff there to help folks learn to use it.*

APPENDIX A: OPEN-ENDED COMMENTS

Opportunities for respondents to comment were provided throughout the survey. Some of the following verbatim comments were noted in the text of the report, and are provided here in full.

Q4. What do you do when you visit the library building? (Other)

Children's

- We love the kid area
- My daughter loves the toy kitchen and play food
- Pick up my kids
- Story time
- We attend kids' programs, play in the kids' area, and check out books mostly.

Book sale

- Check Friends of the Library book sales
- I frequently purchase used books and magazines, either on shelves or at bi-weekly Friends of the Library sales.
- Buy used books
- buy used books from the friends of the library
- Friends of the Library book sale.
- I work with the Friends of the Library, so I spend some time in there doing that.
- browse the Friend's selection in the NW bookcase.
- look at Friends' books that are for sale

Programs

- Rent facilities.
- Attend events in community rooms, visit after the farmers market.
- Programs in the Leake Center Room
- Craft Saturdays

Information

- look at library's magazines
- Read newspapers
- Read print editions of Daily Democrat and magazines such as Discover

Other

- Use the restroom when at the farmers market.

Rose Club

- Help in Rose garden and go to Rose club meetings
- Woodland Library Rose Club activities
- I'm generally in the garden of the Library but often spend time at the Library after I've worked in the garden.

Tutoring

- meet for tutoring services

Volunteer

- Volunteer w/friends
- Volunteer

- I do volunteer work there
- I volunteered for a brief stint. Wish I could have done more!

Q5. How important are the following library services? (Something else:)

- The library should be a community gathering space, but not for people who are loud. I would love to see the librarians encourage people to use their 'indoor voices' when in the library. It's wonderful to see so many children in the library, but they and their parents should learn that the library is not a playground. I see it as the librarian's responsibility to gently teach library manners to parents and children (perhaps during story time, in the form of a game or something like that?).
- Outreach to local schools to encourage acquisition of library card, books and library events...support literacy!
- Avoidance of political propaganda
- Just make sure what you provide as far as national and world affairs is not biased.
- Libraries are and should be considered a thing of the past. Most information can be found online and books can be rented/downloaded to electronic devices.
- These all seem pretty important to me. We're lucky to have Library and staff willing to do these listed items. I do my own research online but I think it's really important to the community that the Library is a safe place for those that don't have a personal computer of their own..
- The library board needs to focus on finding a way to insulate the library budget from severe fluctuations due to economic factors such as occurred during the recent recession. The library has to become such an important part of the community that severely limiting budget and services during a economic fluctuation is too difficult for city politicians to impose on the community. This is what happened during the last crisis and was mostly averted by action from the library Board, the Friends, and the community.

Q6. How important are the following library programs to you? (Something else:)

- What do you mean by "adult programs"? What is meant by "book club" ? Is this a book club for adults? Financial literacy is important, but Woodland Adult Ed and/or the Community Center could also teach this.
- Would like to see more kids art programs in the afternoons.
- We do not currently use the after school or homework help programs, but I think they are a fantastic resource and I hope to see them in the future as my kids grow.
- I'm hoping the Maker Space becomes a 'Very Important' :~)
- Some of these just don't personally apply to me (e.g. I'm not a knitter and I don't have a pre-teen) and that is the only reason they are lower in my priorities
- Would like to have book club offered at times working adults could attend.
- I don't know about some of these things. While I don't participate with the knitting group, book club, summer reading program, or art for small hands, they seem like great activities and someday I might like to join the knitting group, the book club and the summer reading program.
- I have checked everything as very important even though I don't use many of these activities - but I feel they are all a critical part of a good community library!

Q8. Where should the library focus its investments? (Something else:)

Children's services

- Going to public schools to meet with parents of school age students to present how they can access library services or ask parents what the library staff can do to provide access to services
- Outreach at elementary schools
- Programs teaching school children to utilize and verify online information in research.

- Be nice to have little nice toddler toys i.e. A kitchen or something for more pretend play.

Facilities

- Improve the infrastructure of the facilities.
- I don't know what you mean by "skill building", so it's rated as a 7. Library facilities could use some updating - fresh carpet comes to mind, and additional comfy seating. The library does not need to invest in DVDs.
- Building upkeep - new carpet upstairs. If the building isn't maintained, then eventually it won't matter if the best programs are offered, because there won't be a place to offer them from. Plus it's such a beautiful old building. We should treasure it.
- Library (building) facilities must be enlarged and improved.
- It would be nice if the Library had more meeting rooms. Currently there are only two that I know of: (1) the small conference room in the Leake Center and the larger (2) Leake Room, also in the Leake Center.
- Makerspace

Information/collections

- Don't buy just politically correct, social change-theme books
- Focus investments on protecting archival collection.
- Have more books available for sale; there is an entire shelf or two in the Friends of the Library just sitting there!

Languages

- Language development (reading, writing) and STEM programs.
- Spanish books

Literacy & programming

- Help folks that older and can read English nor spanish. Visual maybe.
- Literacy which I would hate to see it cut !
- Would like to see more programs for families.
- More education programs/materials on:
  - Tolerance (see tolerance curriculum produced by Southern Poverty Law Center https://www.splcenter.org/teaching-tolerance)
  - Community conversations that encourage civil discourse/ inclusion (see Living Room Conversations http://www.livingroomconversations.org)
  - Informative programs / talks / resources on ACEs and how they impact individuals, families, and our community (http://www.acesconnection.com and https://acestoohigh.com
  - Mindfulness meditation classes / drop-in group (I'd happily provide such a service for free)
  - Anything and everything that will help people connect!!
- Partnering with the Woodland farmers market to offer education focused on food.
- Cultural events
- Teen programs and opportunities for them

Public relations

- The biggest investment the library needs to make is to increase its profile and client base in the community. Make the library as big a part of client's lives as possible.

Safety

- We need to provide a safe library for people to go to. Money should be spent, not by the library but by our community resources, to provide places for homeless to go during the day so that they do not sit on the steps of the library smoking and blocking the entrance with their bikes. I have been harassed by homeless people when trying to take my children to pick out books.

- Security. I feel the library is not safe anymore so i quit going. i think that there needs to be full time security on site so that i am not bothered by the homeless for money, cigarettes whatever
- Securing bathroom w/better secured & locking systems.

Staffing
- Hiring or bringing in more staff.

Other
- This question does not explain what the potential answers mean. For instance, different people will differ in what "Library programs" and "Library facilities" and "Technology" might mean. Does Technology mean just making computers available to the public, or is there more to it? Most people understand what "Printed books", "eBooks" and "Reference databases".
- Libraries are and should be considered a thing of the past. Most information can be found online and books can be rented/downloaded to electronic devices. The library is used primarily by transients as a hangout. There are other resources available for these people.

Q9. What service, program, or resource do you wish the library offered that it currently does not offer?

Access
- the ability to check our ebooks without having to go to a Sacramento Library to get approved. Why can't we do this here in our library?
- Visual for elderly who do not know how to read or write. Visual form(flash cards, sign language) to access daily task, work, life, etc.
- Printed materials delivery and pickup for seniors who no longer drive or are at an assisted living facility.

Information & collections
- Video games
- I think it would be wonderful for the Woodland Toy Library to be part of the public library. It's a great resource for families. Moving it to the library facility would make it more accessible to families that would benefit from it.
- More "Western" books and more and better language learning resources.
- More genealogy online databases
- Online only

Facilities
- I would like a copy machine!!
- A permenant extension of library resources in East Woodland. Using a public school to give lower socioeconomic and minority groups access to books
- Library (building) facilities must be enlarged and improved.
- Makerspace

Hours
- I would mainly like to see the library open for more hours. We would come by much more often but it seems like it's closed every time I want to go. (I was spoiled with a great system in Ohio open 9 to 9 every day. :)) In general I would like to see many more books as well.
- Open on Sundays
- Extend after school programs for 5 days a week and hours to 5:30. Work with schools to provide shuttle as well.
- I would love to see the library open more hours on the weekends.

Programming

- Things for kids all ages with disabilitys
- Math/science/engineering programs and activities for the kids. ie: similar to MESA programs... building egg drop, straw towers, etc. math projects
- Someone to teach sign language to adults
- Free purified water
- See comments above
- None. We can hardly afford the library as it is.
- film screenings for documentaries focused on health environment and social issues
- art and paintings and photograph exhibits
- Culture exploration, college prep
- Crochet club, mystery book club, author speaking, other lectures.
- Host authors of children's books or local authors. Guest storytellers. Puppet theater
- Writers critique group
- Seminars on how high school is different from college
- I like the author events provided by the FOL. I would love more of those types of events. Or perhaps staff book picks could be featured. It seems there was a time when books were displayed and featured monthly.
- voter education - how democracy affects daily lives
- ESL, Citizenship,
- Resources for families w/special needs children e.g. special story time. Resources for people desiring US citizenship e.g. guides, practice materials, classes. Workforce prep. info. such as guides on test taking (SAT, CBEST, etc.)
- More security of DVD protection from being snagged. More day to day life topics instructed by no cost professionals.

Teen services

- I think more outreach to the junior high group would be nice, but not sure what that would look like. I also think it might be interesting for the library and the high schools to partner and do some programs related to career exploration for 9th-12th graders (including apprenticeship options, Americorps info, etc.). A lot of high schoolers fall through the cracks and end up, unnecessarily, in dead-end jobs.
- More teen resources

Volunteers

- More after-hours volunteer opportunities (I.e. volunteer opportunities outside the standard 9-5 workday)

Q11. Please comment on the quality of the library's website.

Positive

- I'm not especially techie but it is adequate for my needs. I love the self-checkout option in the library!
- I use it at home to put books & CDs, etc. on hold. I find it mostly easy to use.
- Good
- Very good. More announcements of programs in Spanish and other languages.
- Good job
- Good
- I love it.
- very nice website
- I use it quite often before coming to the library to see if a book is on the shelf. It's also a great way to keep track of the books my girls have checked out as well.

- The website is easy to navigate, attractive and includes a great deal of information.
- It is good
- Very easy to navigate and visually appealing.
- It works
- Very helpful and user friendly
- adequate
- Improving steadily
- I love the library's website! It is easily navigated and organized. I also like the new interface - very colorful and informative.
- Ok
- AMAZING!! I like how I can easily check into my account. It's very helpful and informative. LOVE IT!!!
- Attractive and user friendly
- I think it works well and is easy to use. Seems pretty functional.
- Many useful resources
- It's great for ordering books
- it has gotten much easier to use. Thank you!
- Very useful for locating books and requesting them. Very useful for locating eBooks and other materials.

Negative

- Most times can navigate site readily -- a few times a bit of extra effort required
- I find the search program to be cumbersome but I have learned how to use it over time. It's very word and case specific, doesn't suggest or allow for close matches (only exact). I think it may be intimidating to people who are lower literacy.
- Would like it upgraded to make it easier to find things.
- It's okay; some parts of the website need to be updated
- It can be a little hard to navigate, but I am able to find what I need.
- Mostly acceptable, except for pointing me to ebooks that can't be checked out since the WPL library card doesn't give access to them.
- So, so
- I do wish there was an easier way to log reading for the summer program or if it could connect to goodreads
- Very good. Functional but could use an update.
- I don't have much personal experience trying to use the website but did not find it intuitive when I tried (I'm not super good with technology though)
- Especially when looking for ebooks, it feels like I get switched from one web site to another & some are not mean for Woodland residents.
- The website is okay. I use it often and so I have figured out how to navigate it but I don't think it's super user friendly. It is difficult for those unfamiliar with the site to know how to link to overdrive to find Ebooks. It's confusing because ebooks come up in the regular catalog searches but woodland library members don't have access to them (they say they are only for sac library users). Having to link to a separate site with a separate search is tricky.
- It's very complicated to use. It's frustrating that there isn't a direct link to the library from the internet, you have to go through city services. It is not very user-friendly and the interface is not great. Honestly, I try to avoid the website at all costs!
- Love that it's available and use it all the time. Website could b easier 2 navigate.
- Could have better searching of. Catalog. More information about programs, services. Site looks very dated.
- The libraries website needs a complete overhaul
- The website is great for finding materials but I still have trouble navigating between all the,pages.

- Where to find a new library card and purchasing it online
- It's okay, but could be more user friendly
- Hard to find the catalog, should be a big button on the front page.
- The mobile version is not at all user friendly and the navigation could be improved. Some of the resources promoted in the sliders are not accessible any other way.
- The search tool is not very user friendly, especially when searching for uncommon books and authors. The tools and filters for creating a search need to be more visible, easier to use, and they need to work better.
- Website is awful, I have trouble finding out what eBooks are available, particularly Woodland vs. Sacramento eBooks & navigation is a mess
- It's an average outdated system. The system is still on Windows 7. ....Average homes are normally on WIN 10.

Neutral

- I use the Sac Library catalog mostly--little else.
- I don't consult it.
- Sorry, I have not used it enough to comment.
- Very seldom use it
- I'll have to check it out.
- No particular feeling about the website.
- I haven't needed to access it but a very few times, so I don't feel I can honestly judge the website.

Q12. How interested are you in the following POSSIBLE NEW services? (something else:)

Facilities

- Did I mention the Maker Space? ;~)
- Makerspace
- The meeting room needs to be available to more community groups.

Hours

- Being open on Sundays

Information access

- Whatever happens please keep in mind that the MAIN goal of a library (in my view) is to provide books, ebooks, research and a safe place for people to go to read, study and learn. Providing new books every month is important. Funds should not be taken away from those goals.
- I personally don't need technology lending services, but some people might. However, since this survey is being done primarily online, you may not actually be able to reach the people who might be in need.

Programs

- Art programs.
- Illustration and writing classes for adults and children.
- Language classes for kids. Music instruction for kids (like Music Together circle programs.)
- Gardening group
- Book groups for kids,
- genealogy - would like to see more resources such as guides, online resources, lectures by experts, etc.
- Games & social events should stick w/clubs. Invite the Sac Science Van or Sac Zoo Van to do a presentation outside on the front lawn.
- Children need help reading, they are behind in this area

Library policy

- I am concerned about behaviors that I have witnessed both outside and inside of our library by adults, especially male adults. I appreciate that our library welcomes all individuals and provides shelter from inclement weather and opportunities to read, learn, etc. but I would urge greater oversight and seeking solutions to obvious and unwanted behaviors exhibited by adults on the premises that negatively affect the library experience for both staff and patrons.

Technology

- Library App is a great idea
- Lending out laptops etc is a great concept, however costly. Especially if people abuse and ruin them. Then the cost of replacing takes away from ornery much needed programs.

Q13. What, if anything, would make you use the Woodland Public Library more?

Access

- The ability to check out ebooks without having to go to a Sacramento Library first.
- Better access to electronic material.... audio books (audible.com??) & kindle.
- Honestly, if I lived closer. My son and I love the library but we're on the other side of town.

Information resources

- more ebooks
- More new printed books.
- More materials
- When I am looking for very specific books on education and education and culture, I generally can't find them in Woodland. I often end up going to one of the Sacramento Public Libraries.

Facilities

- Meeting space for larger groups is a real issue. There are very few free places to meet in Woodland which can accommodate more than 10 people.
- Enlarged and improved building and facilities.
- I wish it was quieter. Libraries used to be the one public space that was quiet, but now it's often like walking into a Starbucks. I have no interest in spending time in a noisy library. Even most of the librarians talk in their regular 'street' voices.
- Makerspace
- More reading/study space
- If more rooms would be used
- Maybe a toy kitchen area for young kids to play with.
- Remodel of library. Too dark. Smiling faces from staff. Too serious. More staff to provide better service. Library trying to do too much without enough staff, therefore, staff gets stressed and aren't able to provide good service.

Hours

- having more free time
- I go to the library several times a week already . Having Sunday hours would be the thing that would make me go more often :)
- A full-time job!
- If open to public Friday morning.
- It would be helpful if the library were open late one evening a week. 7 pm is early for working people who commute. There have been a few times that I've had books on hold reshelved

because I couldn't get over there before closing during the week and wasn't available on the weekend to pick them up.
- More hours, more books, more kid programs
- Longer, consistent hours.
- Easy to memorize hours.
- Longer hours because I work in Sacramento and have limited time to come to the library during the current hours.
- Being open on Sundays especially if there were kids programs.
- Expanded morning hours
- More time open in evenings and Sunday hours
- More opening hours.

Communication
- Email update with events at library
- Better dissemination of information about library services. It's not very good now at all.

Programs
- Computer programming instruction such as website design, html, css, etc.
- Student learning centers.
- More ways to help me get my kids interested in reading
- Children and parent preschoolers program
- More presense during Stroll Through History
- Adult programming in evening and/or weekends.
- Children's reading programs and hands on activities, especially science.
- We use the library somewhat often. My eldest is getting a bit big for weekend story time. Music instruction for kids would be fun. He doesn't get that at school. We did Music Together for a time in Davis, but it was expensive to continue.
- Classes and groups that focus on how to use modern technology to improve everyday life - instruction in using one's smartphones and computers, integrating technology into smart homes, security classes for phones and computers. How to add solar power to homes and the best way to do it.

Safety
- The homeless who hang around the outside of the library have made my teenage daughters uncomfortable going there without me. Nothing has ever happened, but when I was a kid, I rode my bike to the library almost every Saturday. My teens are afraid to do that. They also worry that their bikes will get stolen, even if locked.
- Moving the homeless from the front of the library. We use it significantly less in the last year after being threatened when walking in with my children. I am actually scared at times when trying to take my children to pick out books! This shouldn't be!
- Get rid of drug dealers out front.
- Less homeless people and body odor smell
- Removal of the homeless loitering inside and outside the library. It doesnt always feel like a safe place to be. Love the library staff!
- Less transients living in the library during open hours.
- If I felt safer, meaning having all the homeless people loitering inside & outside of the library being told to move along. Sad that the bathroom lost its mirror & soap because of the homeless problem. Saw a man grab a woman in the elevator out of anger & 5 homeless people sleeping throughout the adult section.
- smell when you walk in is very nauseating-as well as the transient population that stays in the library through out the day, extended hours in the evenings for people that work til 5 or 6

- If there weren't so many questionable people hanging out in front all the time.
- Make it a safer environment.
- Safer environment
- Sorry to say this, get rid of the trouble-making homeless people. There are some good, but there is always a sour apple that ruins it for everybody else! If the finances are available, add a copy machine on the main floor of the library!
- Less Homeless people using the library as a loitering place!

Other
- I use it almost every day, so not much could increase that.
- If I had more time. I truly love the Library and the staff. All these above items would make the Library just that more awesome.

Q18. What kind of library do you want for Woodland in the future?

Supports community
- Woodland Public Library -- more than bookshelves-- the heart of community life long learning bringing people of all ages and cultures together in historic Woodland to celebrate our heritage and our future!
- Community based with access highly available!
- A place for the community to gather to obtain and share information/opinions/points of view
- Community center
- A library active in the community.
- A social one. I <3 the library!
- One where the community meets and works on different programs.
- The library needs to remain the hub of library functions, but as the library evolves it needs to outreach into the community (schools, parks, etc.) to encompass the newer areas. This will help reach those who cannot easily get to the 1st street location.
- Community-centered with wide range of resources, services, and programs for all ages/demographics.
- A place where everyone and anyone is welcomed
- One that engages the community. One that helps children be familiar with and enjoy books as well as electronic devices. One that offers services such as computer/printer/classes to those who don't have access to these tools.
- Adaptable and thriving - a meeting/discussion place for community info events
- Area for the community to gather.
- Open community library.
- One that continues to be relevant to the needs of the community. I don't know what to expect in the future but computers and computer literacy seems to be an important need. Fundamentally literacy of any kind will always be relevant it seems. The library seems to be a bridge or link between those that don't have skills and giving those without skills the opportunity to gain them. The library seems to be able to do this in a non-threating environment. So anyway that the library can continue to provide skills to the community will always be needed. I liked the idea about language labs. Woodland is a heavily hispanic city, I would think spanish/english language labs would be ideal. While I'm thinking of that, Pioneer High had it's graduation given in both english and spanish but also pashto and hindi. It would be good to expand to whatever groups are relevant in Woodland. If we're to conquor our predjudices, perhaps we should have more information available about being muslim.
- Having a solid presence out in the community and engaging all groups of people further strengthens the bond between the library and the entire community.

Fiscally independent

- One that is independent of economic fluctuations that create severe budget and service restrictions.

Supports education

- An actively used resource for education and a provider of scholastic events for adults and children
- Center for learning, social exchange, multi-media
- One that continues to educate, instruct, and encourage its users to understand our diverse and complex world. One, especially, that continues to help move society toward greater equality.
- A safe one that focuses on education, reading and accessibility to reading materials.
- One that helps/promotes learning/skill building for all age children.
- Community learning hub.
- A place were college students can work on the weekends because of the college is closed on Saturdays and Sundays.A place where kids can go to learn and have fun.
- More learning workshops for kids and adults.
- Clean & quiet place to study. It seems like there are no librarians to help those to keep the volume down. Kids run around out of control.

Preserve history

- I love the history of our library. I hope we keep our roots and continue to grow with new technology. Woodland has done a good job of balancing both so far. I hope that continues.
- The charm of the historical building kept in tack and re open the top area.
- I'd like to retain the historical element of our library's structure and yet find ways to modernize the interior furnishings.
- I hope the library will always have its distinctive historic charm. I would love to see growth in all things technological. Mainly, more electronic resources available. I hope To see even more activities and programs for children, especially ones that promote reading. I would love to see events centered around certain popular books like Harry Potter or The land of Stories- times where kids in the community can connect over their shared love of story and characters.

Better hours

- Seems to be going well, but longer hours, e.g., Sunday and other nights to 9:30.
- Flexible hours for people who may use for it studying /researching.
- A well-staffed library with expanded hours so all the wonderful programs present and future can be offered to all.
- Open more hours, more computers and services related to computers.

Access to information

- A place I can find books, meet friends, and learn about issues that will keep me safe, and active in my community.
- That all Woodland children have easy access to reading materials
- I want Woodland Public Library to be the library that primarily focuses on expanding the amount and variety of (paper) books. I would hate to see this warm, home-feeling library lose itself to new technology (like ebooks, ereaders,etc.) and more superficial things.
- I would love to see a library open for people with all kinds of schedules, with a large selection of books and plenty of comfortable space to sit and read.
- One that focuses on books and academic resources (journal access, database access, technology access).
- I greatly appreciate the high quality of books being purchased for adult readers!
- The best information resource available.
- one with programs and resources that will serve the diverse needs of our community.

- Libraries are at a real crossroads. With the move to electronic media, I don't see people with books like I used to. I do worry that people will cease to read books in any form. Even I spend a huge amount of time reading and responding to email and don't read as much for pleasure as I've done in years past. Usually, when I read, I'm reading a "how to" book, or reading to research a particular area. and the Teen section of the library needs more books, as my kids have read most of them!
- Updated/New material. A section for teens/young adults other than the little loft/teen club. A part of the library dedicated to teens/young adults.
- A library that is aware of the most pressing issues within our local and our larger community. A library that is aware of and uses current science-based research to address these issues. A library that endeavors to provide current science-based materials, resources, and education to educate, inform, and address these issues.

Improved facility

- similar, perhaps linked with cafe
- Bigger
- I would like to see an expanded primary facility or a branch site with an emphasis on literacy for all ages and languages as well as research assistance and a variety of databases. It should be a hub for literacy in the community.
- Enlarged (expanded) and improved library building, facilities, collections and programming.
- Expansion of facilities, larger computer access area, small group meeting spaces
- A big library, with inspiring architecture, family programs (story time, language classes), and more opportunities to volunteer at the library outside of the regular work day.
- I'd like to see more study/work space.
- More modern and possibly expand in size
- An even bigger one, open longer!
- All in around state of art updated facility. More security, and less stealing of items. More enforcement on the troublemakers who shouldn't be in here in the first place. 24-hour turn around time to fix maintenance issues especially in the men's restroom next to the computer room!
- A larger facility with an expansion of the Children's library. Easy access into the library but keeping with it's original, historical design. A center that encourages innovation, lifelong learning and civic and cultural interaction and engagement.
- The children's play area is pretty good, good selection of toys, but expanding with a play structure or something similar would be nice. (See one here: http://lakewoodpubliclibrary.org/sites/default/files/styles/slide/public/LPL_youth_slider2.jpg?itok=ZKpYKlzJ) I used to visit the Lakewood Public Library (http://lakewoodpubliclibrary.org/) and they had some features I'd like to see here. (Play area pictured above, longer hours, rotating selection of themed collections like graphic novels)
- I absolutely love the direction our library is headed. Adding technology, promoting reading for kids and adults, and becoming a resource for just about anything we could need...all packaged in a beautiful, well-kept historical building staffed by wonderful people.
- A place filled with resources which provides a comfortable environment for the community. More events for children.

Programs

- Forward looking, involved in current events, lots of programs, not just a place for books & magazines (well, you already are MORE than just a place for books & magazines).
- Focused on children and literacy
- Children and teen programs are great and should continue. Would like to see more computer and cell phone app classes.

- I love kids activities
- More fun kid friendly events
- continued emphasis on children and families. support for kids afterschool. continued opportunities for teen volunteers. continued commitment to literacy program. I would hope the library will stay current with technology and continue to expand hours and keep improving the facility for people with disabilities through Universal Design.
- I would love to see the library offer more programs for children.
- One that is inviting to all families in Woodland. With bilingual English/Spanish services.
- I don't thin 3-D programming and robotics is practical. Too technical.
- A library that is quieter than the current one! Also a library that has more comfortable seating, that invites people to linger (but not with people of questionable mental stability....). I think a library that encourages community engagement would be nice, but I'm not sure how to get Woodlanders out and about (unless there is free food involved!!).
- I want to park next to where I enter the library, and I want that entrance to look nice and feel safe. I want to keep, restore, and showcase the Carnegie aspects.
- more holiday themed events/activities for families
- Personal
- a good balance between printed books and technology. it has to be relivent to bring folks in to use the resources and the right balance of diversity would help that, is see all walks of live when I am in there and I like that.
- I feel our library is headed in the right direction with programming and technology.

Secure and safe

- The only downside to the library is all the homeless around the front door. It's great for them to be able to use the library but in front have felt uncomfortable with how forward etc, perhaps a none loitering rule out front or someone to monitor who can step in and assist. Haven't had problems once inside
- I would like to see more security inside and outside.
- Making it feel more safe and comfortable by not having homeless hang out around the the library outside
- kid friendly with less homeless people hanging around outside and inside the library.
- One where you feel safe enough to send your teenager alone to. There's an element in and around the library that not there to educate themselves.
- A safe place of learning for my children with restriction on internet content based on age
- A clean one that is safe when you walk in.
- Safe place for kids after-school without parents, we are headed in right direction
- I believe the library is on the right track...providing a safe, productive, informative space for everyone is necessary.
- Safe, clean environment with bigger space for story time and kids' activities.
- One where I feel comfortable leaving my teen daughter and not having her hassled outside by drunk or high individuals loitering around the building.
- Safe, clean and friendly.

Technology

- A library that has the newest in technology and reference books with updated information. I went in about a year or two ago and found the same books I read when I was a child (I spent my Saturdays and after school at the library doing homework); I'm now 72 years old. So, updated research material would be great.
- Larger online databases, to reference books from the comfort of my home.

- Access to technology for those who can't afford it. Also, need to have a staff there to help folks learn to use it.
- Traditional with tech mix
- State of the art
- Continue to keep up with the times (technology, sustainable living, gardens)
- More information on line to keep up with the goals of the Shields Library at UC Davis
- Modern technology, engaging, more available current books.
- Pleasant technologically state of the art
- One that moves towards technological advancement.
- Access, up to date,
- Up to date
- clean, family orientated, technology keeping up for patrons as well as app for mobile device that allows you to check out/hold books, a selections of current material purchased
- I hope the library will always provide technological resources to those who would not otherwise have access, literacy and language learning support, job skill support, etc.

Other

- I think the library is doing an excellent job serving our community. Libraries are essential community assets -- keep up the good work.
- I'm sure there could be room for improvement. I think the Library is doing AWESOME right now.
- Vibrant
- I love our library. Keep doing what you are doing.

WOODLAND PUBLIC LIBRARY FACILITIES MASTER PLANNING

Library Space Recommendations
J. Sweeney

April 11, 2017

Library Size

Based on the Wisconsin Public Library guidelines and the Connecticut Library Space Planning Guide (Wisconsin Public Library Standards, 2010; Library Space Panning Guide, 2014), I came up with the following projection of the size of the library that meets the needs of their expected population in 2040 and associated collection size, staffing, and other factors and trends outlined below.

Note that Woodland is far below recommendations in almost every metric at the current time. I have projected most of these calculations for 2040 based on maintaining their current (low) level of service, with a couple of exceptions (staffing and computer terminals). More on this below.

MAIN LIBRARY SPACE REQUIREMENTS (2040)

	SQ FT	% of TOTAL	
1. Collection space	12,838	39.3%	
2. Reader seating space	4,336	13.3%	
2a. Public internet space	920	2.8%	
3. Staff work space	3,750	11.5%	
4. Meeting room/programming space	3,050	9.3%	
Subtotal	21,844	67.0%	
5. Special use space	2,000	6.1%	Computer lab, teen space, maker space, coffee shop, break room, Friends
6. Nonassignable space	8,782	26.9%	
Subtotal	10,782	33.0%	
Grand total	32,626	100.0%	

Projected Needs for Library Space by Service Area

Dalhgren identifies six broad types of library space: collection space, reader seating space, staff work space, meeting space, special use space, and nonassignable space (Dalhgren, 2009). Library space goals can be projected to meet future needs based on the following metrics and assumptions for library services, based on a municipal population of 50,000 to 99,000 (Wisconsin Public Library Standards, 2010). I don't have the current breakdown of how much space is allocated in given service areas so I can't provide a comparison on increases or decreases needed. If you can provide the current figures I will calculate those.

Current and projected service population

- 57,000 (2015)
- 73,000 (2040) (28% increase)

Collection inventory

- Total print materials: 85,242 items (2015) is 1.82 items per capita, far below recommended 3.6 items per capita (277,200 items recommended for 2040). At Woodland's current rate of 1.82 and assuming collection growth keeps pace with population growth in terms of items per capita, an overall physical collection size of 129,000 items could be expected in 2040.
- A/V (physical items): 18,536 expected in 2040. However, it is possible that delivery of physical A/V materials will shift to digital delivery over time, reducing the estimate of physical space needed for A/V. In addition, this is also dependent on the community's ability to make use of bandwidth needed to access streaming technologies (Woodland is not there yet so the estimate is based on continuing use of physical A/V).
- Periodical titles (print): Current subscriptions (96) is far below recommended rate of 5.4 per 1,000 population. Based on the current (low) rate, 2040 periodical titles would number about 125.
- Digital resources (ebooks & databases; online A/V): 5257 ebooks; 9 databases; 2082 AV. Not applicable for space planning.
- Equipment that circulates: 51

  In terms of physical collection growth in adult, childrens, and young adult sections, overall growth of 28% could be expected in each of these given an annual increase of 1.2% to .7% from 2016 to 2040, which approximates the population growth expected for Woodland. We have projected for slightly more growth in adult materials to account for the expected increase in growth rate in that demographic. It should be noted that Woodland's collection growth trends have been unstable in recent years because of ongoing collection management

decisions. The unsettled nature of the publishing market also contributes to uncertainty. For this reason, collection growth trends for Woodland Public Library do not appear to provide an accurate determination for future collection size.

Space to house collection

- Shelf space for Adult/YA/Childrens/AV: The Wisconsin guidelines suggest a minimum of 10 volumes per square foot on average (assumes full-height shelving 84-90 inches tall with a three-foot aisle, and top and bottom shelves empty).
- Periodicals: Guidelines provide for one square foot of floor space per current issue to be displayed. I don't know how many years of back issues they retain so I did not calculate storage of back issues.
- AV: Calculated the same as books.

PHYSICAL INVENTORY PROJECTIONS

Based on annual growth of 1.2 to .7 % (similar to population projections)

	2015 # items	2040 # items	% increase	Sq ft 2040
Adult Books	45,467	59,180	0.30	5,918
Adult Periodicals	96	125	0.30	125*
Adult A/V	10,851	14,124	0.30	1,412
Gov docs	966	1,111	0.15	111
Childrens Books	33114	42,302	0.28	4,230
Childrens A/V	3,454	4,412	0.28	441
YA Books	5,685	7,262	0.28	726
Total AV	14,305	18,536		
Total Books	85,232	109,855		
Total Physical Collection	99,633	128,516	0.29	12,838

*current issue display only

Number of seats to serve population

Woodland currently offers 113 seats for its 57,000 service population (2015), which is about a third lower than guidelines (3 seats per 1,000 population). At Woodland's current seating at 1.98 seats per 1,000 population, 145 seats will be needed in 2040.

Given that different seating arrangements require different amounts of space (lounge versus table versus carrel, etc.), using an average of 30 square feet per seat, 4,336 square feet of space will be needed for seating in 2040.

Number of staff to serve population

Current staffing FTE of 14.4 is less than half the recommendation for basic service level for Woodland's population (34.2 FTE recommended). At Woodland's current FTE rate per 1,000 population the library would plan for 21.9 FTE in 2040. However, the recommended FTE for basic service would be 43.8 FTE for a population of 73,000. It is suggested that planning accommodate a more reasonable staffing level of 30 FTE in 2040.

Number of staff workstations/floor space required

Different levels of space allocation will be needed for different kinds of staff work. For general planning purposes, using an average space allocation of 125 square feet for 30 FTE would equal 3,750 square feet of workspace for staff.

Public use Internet computers

Wisconsin guidelines suggest .64 computer stations for every 1,000 population for the minimum service level. Woodland currently offers 18 computers, about half of the recommendation. Given that fast Internet connectivity is offered in the library, and the amount of computer use is expected to continue to decline gradually as patrons use their own devices more frequently, a more conservative guideline of .28 could be used here for the number of public access internet terminals needed to serve the population in 2040 = 20 terminals.

Guidelines suggest a moderate space allowance of 45 square feet per computer station. For 24 terminals in 2040, 900 square feet will be needed.

Type and capacity of meeting rooms & special use areas

Demand for public meeting space is expected to increase to accommodate more civic engagement, partnerships, and programming. In addition to programming and storytime space, and conference room space for library administration, additional special space allocations for unique features, services, and collections will need to accommodate increased demand for space in these areas:

Meeting rooms:
Storytime
General program space
Study/meeting rooms for use by community members, local business, nonprofits, educators, etc.

Potential special use areas:
Computer training lab
Teen/young adults reading, gaming/computer use
Spaces for inventing & creating
Audio/visual design studio
Coffee shop
Staff break room
Supply room

Potential New Branch Size

Assuming a branch library would be intended to serve the residents of the 7,000 new housing units expected by 2035 in the south and/or east portions of the city, Woodland Public Library should plan for a branch library to serve 14,000 (new housing residents) plus existing residents (guessing: 10,000) for a total population of 24,000 (City of Woodland General Plan, 2016).

Using similar criteria from the Wisconsin guidelines (for service population rather than municipalities, however, more appropriate for branch needs), the library would need to encompass about 19,000 square feet, with the characteristics listed below. As noted earlier, current Woodland Library space is in most cases well below the guidelines suggested here.

BRANCH LIBRARY CHARACTERISTICS

	WISC*	BASED ON:
1. Collection size	79200	overall collection = 3.3 vols per capita
Print vols	69600	2.9 per capita
Periodicals	175.2	7.3 per thousand pop
Audio	3840	.16 per capita
Video	5040	.21 per capita
2. Public Computers	14.4	.6 per 1000 pop
3. Staff	12	.5 per 1000 pop
4. Seating	108	4.5 per 1000 pop

*Service area guidelines

Space is provided in the following categories:

BRANCH LIBRARY SPACE REQUIREMENTS

	SQ FT	% of TOTAL	
1. Collection space	7920	41.7%	
2. Reader seating space	3240	17.1%	30 sq ft per seat
2a. Public internet space	648	3.4%	
3. Staff work space	1500	7.9%	
4. Meeting room/programming space	800	4.2%	conference room + storytime + 1 group study
Subtotal	14108	74.3%	
5. Special use space	1200	6.3%	teen area+ Friends
6. Nonassignable space	3750	19.7%	
Subtotal	4950	26.1%	
Grand total	19058	100.3%	

References

Dahlgren, A. C. (2009). Public Library Space Needs: A Planning Outline. Madison, WI: Wisconsin Department of Public Instruction. Retrieved April 8, 2017 from https://dpi.wi.gov/pld/boards-directors/space-needs

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Wisconsin Department of Public Instruction (2010). Wisconsin Public LIbrary Standards. Retrieved April 8, 2017 from https://dpi.wi.gov/sites/default/files/imce/pld/pdf/standards.pdf

City of Woodland (2016). General Plan Update 2035. Retrieved Feb. 14, 2017 from http://web.cityofwoodland.org/gov/depts/cd/divisions/planning/generalplan/2035/documents.asp

C. COST ANALYSIS

Woodland Library

Space Needs Study
Woodland, California

Based on review & analysis of:

Program Design Package

Report Prepared for:

Noll & Tam Architects

June 30, 2017

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BASIS OF ESTIMATE

REFERENCE DOCUMENTATION

This Construction Cost Estimate was produced from the following documentation. Design and engineering changes occurring subsequent to the issue of these documents have not been incorporated in this estimate.

Document	Date
WPL Costing Set	5/23/2017
Seismic, Pest, & Electrical Condition Reports	
Existing Building Plan Sets	
Existing Conditions Photographs	

PROJECT DESCRIPTION

The scope of work comprises two new options for the library, one at 30,000 GSF and one at 38,000 GSF.

BASIS FOR PRICING

This estimate reflects the fair construction value for this project and should not be construed as a prediction of low bid. Prices are based on local prevailing wage construction costs at the time the estimate was prepared. Pricing assumes a procurement process with competitive bidding for all sub-trades of the construction work, which is to mean a minimum of 3 bids for all subcontractors and materials/equipment suppliers. If fewer bids are solicited or received, prices can be expected to be higher. Conversely in the current competitive market should a larger number of sub-bids be received (i.e. 6 and above) pricing can expected to be lower than the current estimate.

Subcontractor's markups have been included in each line item unit price. Markups cover the cost of field overhead, home office overhead and subcontractor's profit. Subcontractor's markups typically range from 15% to 25% of the unit price depending on market conditions.

General Contractor's/Construction Manager's Site Requirement costs are calculated on a percentage basis. General Contractor's/Construction Manager's Jobsite Management costs are also calculated on a percentage basis.

Site Requirements	*4.0%*
Jobsite Management	*12.0%*
Phasing	*0.0%*

General Contractor's/Construction Manager's overhead and fees are based on a percentage of the total direct costs plus general conditions, and covers the contractor's bond, insurance, site office overheads and profit.

Insurance & Bonding	*2.5%*
General Contractor Bonding	
Sub-Contractor Bonding	
OSIP	
Fee (G.C. Profit)	*3.5%*

Additional conditions of construction

- The general contract will be by CM/GC method or competitively bid with qualified general and main subcontractors
- The entire scope of work for each scheme will be bid as one project
- There will not be small business set-aside and equal opportunity employment requirements
- The contractor will be required to pay prevailing wages

Unless identified otherwise, the cost of such items as overtime, shift premiums and construction phasing are not included in the line item unit price.

This cost estimate is based on standard industry practice, professional experience and knowledge of the local construction market costs. TBD Consultants have no control over the material and labor costs, contractors methods of establishing prices or the market and bidding conditions at the time of bid. Therefore TBD Consultants do not guarantee that the bids received will not vary from this cost estimate.

CONTINGENCY

Design Contingency	*20.0%*

BASIS OF ESTIMATE

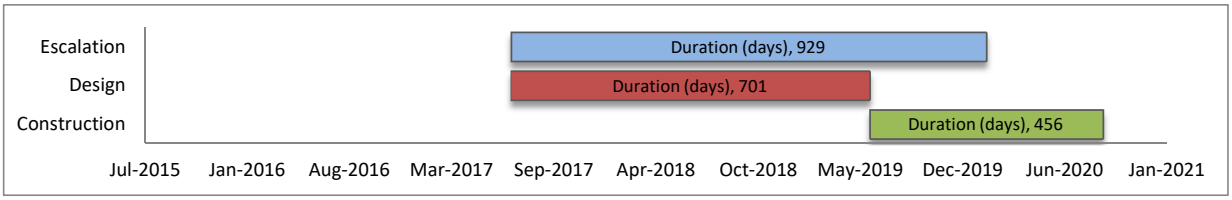
The Design Contingency is carried to cover scope that lacks definition and scope that is *anticipated* to be added to the Design. As the Design becomes more complete the Design Contingency will reduce.

Construction Contingency *0.0%* *Carried else where in owners budget*

The Construction Contingency has not been carried to cover the unforeseen during construction execution and Risks that do not currently have mitigation plans. (As Risks are mitigated, Construction Contingency can be reduce, but should not be eliminated.)

An owners contingency has not been included in this construction cost estimate, but it is advised that the owner carry additional contingency to cover scope change, bidding conditions, claims and delays.

CONSTRUCTION SCHEDULE



Construction Start Date	Jun-2019	Construction End Date	Aug-2020
Mid-date of Construction		Construction Duration	15 months
Escalation Period	36 months	Escalation End Date	Construction Mid-Point

ESCALATION

Escalation is excluded

Escalation: *15.69%* *Compounded Rate*

Year 1	*6.00%*
Year 2	*6.00%*
Year 3	*5.50%*
Year 4	*5.00%*
Year 5	*4.00%*
Beyond 5 Years	*3.50%*

This calculation does not account for adverse bidding conditions and a separate Bid Contingency should be carried if there are limited qualified bidders or if a market research study indicates.

EXCLUSIONS

Preconstruction services
Surge & moving costs
New plumbing infrastructure in the Carnegie
Elevator smoke curtains
Premium foundation systems (drilled piers, micropiles, etc.)
AESS
Fireproofing steel
Emergency power
AV and security equipment
Telecommunications equipment
Photovoltaic and other alternative power generation systems
Artwork / Public art
FSC-certified manufactured lumber (Glulams, TJI's, etc.)
Jockey pump and fire pump
Utility connection fees and charges
Pre-action fire sprinklers
Raised access flooring
Level 5 finish
Furniture, fixtures and equipment (FF&E) except stacks & appliances
Land acquisition, feasibility studies, financing costs and all other owner costs
Site surveys, existing condition reports and soils investigation costs
Hazardous materials investigations; abatement costs provided as allowance
Permits
Owner's contingency
Design Fees
Costs for LEED certification

OVERALL SUMMARY

LIBRARY OPTIONS	SF AREA	$/SF	CONSTRUCTION COST $	COMMENTS
Option 1 Renovation	30,000	$709.27	21,278,000	Start Date June 2019
Option 2 Renovation	38,000	$706.45	26,845,000	

KEY CRITERIA

AREA TABULATION

Floor	REMODEL	1985 ADDN	PERIMETER	HEIGHT	COMMENTS
Option 1 Renovation					
First Floor	15,500	8,300	563		
Second Floor	14,500	8,050	627	24.00	Average combined height
Subtotal	**30,000 SF**				
Option 1 Renovation - GSF Not Incl. 50% Covered Area		**30,000 SF**			

Approximate Control Quantities

Gross Wall Area	**16,500**	**SF**		0.550
Retaining Wall Area	**0**	**SF**		0.000
Finished Wall Area	**16,500**	**SF**		0.550
Glazing Area	**3,300**	**SF**	20.00%	0.110
Roof Area	**16,300**	**SF**		0.543
Interior Partition Length	**1,200**	**LF**		0.040

OPTION 1 RENOVATION - UNIFORMAT II SUMMARY **GSF :** 30,000

	SECTION	%	TOTAL	$ / SF	COMMENTS
	10 FOUNDATIONS	4.0%	495,750	$16.53	
	20 BASEMENT CONSTRUCTION				
A	**SUBSTRUCTURE**	**4.0%**	**495,750**	**$16.53**	
	10 SUPERSTRUCTURE	12.7%	1,586,400	$52.88	
	20 EXTERIOR ENCLOSURE	9.1%	1,129,250	$37.64	
	30 ROOFING	3.8%	478,600	$15.95	
B	**SHELL**	**25.6%**	**3,194,250**	**$106.48**	
	10 INTERIOR CONSTRUCTION	7.4%	924,512	$30.82	
	20 STAIRS	1.7%	210,000	$7.00	
	30 INTERIOR FINISHES	15.5%	1,932,800	$64.43	
C	**INTERIORS**	**24.6%**	**3,067,312**	**$102.24**	
	10 CONVEYING	2.6%	325,000	$10.83	
	20 PLUMBING	2.1%	257,818	$8.59	
	30 HVAC	13.3%	1,658,250	$55.28	
	40 FIRE PROTECTION	1.4%	176,130	$5.87	
	50 ELECTRICAL	15.3%	1,903,000	$63.43	
D	**SERVICES**	**34.7%**	**4,320,198**	**$144.01**	
	10 EQUIPMENT	0.6%	73,500	$2.45	
	20 FURNISHINGS	3.6%	444,350	$14.81	
E	**EQUIPMENT + FURNISHINGS**	**4.2%**	**517,850**	**$17.26**	
	10 SPECIAL CONSTRUCTION				
	20 SELECTIVE BUILDING DEMOLITION	4.1%	505,380	$16.85	
F	**SPECIAL CONSTRUCTION + DEMOLITION**	**4.1%**	**505,380**	**$16.85**	
	10 SITE PREPARATION	0.4%	51,625	$1.72	
	20 SITE IMPROVEMENTS	1.9%	235,250	$7.84	
	30 SITE MECHANICAL UTILITIES	0.3%	42,500	$1.42	
	40 SITE ELECTRICAL UTILITIES	0.3%	35,000	$1.17	
	50 OTHER SITE CONSTRUCTION				
G	**BUILDING SITEWORK**	**2.9%**	**364,375**	**$12.15**	
DIRECT COSTS			**12,465,115**	**$415.50**	
	SITE REQUIREMENTS	4.0%	498,605	$16.62	
	JOBSITE MANAGEMENT	12.0%	1,495,814	$49.86	
	PHASING OR SHIFT PREMIUM				NIC
	ESTIMATE SUB-TOTAL		**14,459,533**	**$481.98**	
	INSURANCE + BONDING	2.5%	361,488	$12.05	
	FEE	3.5%	506,084	$16.87	
	ESTIMATE SUB-TOTAL		**15,327,105**	**$510.90**	
	DESIGN CONTINGENCY	20.0%	3,065,421	$102.18	
	CONSTRUCTION CONTINGENCY				Carried by Owner
	ESTIMATE SUB-TOTAL		**18,392,526**	**$613.08**	
	ESCALATION	15.7%	2,885,458	$96.18	Start Date June 2019
ESTIMATE TOTAL			**21,277,985**	**$709.27**	total add-ons 70.7%

OPTION 1 RENOVATION - ESTIMATE DETAIL **GSF :** 30,000

REF	MF	DESCRIPTION		UoM	UNIT RATE	TOTAL	COMMENTS
1							
2		**Foundations**					
3							
4		Standard Foundations, including excavation					
5		New footings for new footprint area, assume 24" deep doweled to existing at ends	6,200	SF	12.00	74,400	
6							
7		Allow foundation scope for seismic upgrade to Carnegie historic portion	11,100	SF	4.00	44,400	1903,1915, 1929 portions
8							
9		Special Foundations					Excluded
10							
11		Concrete slab					
12		Patch existing slab	5,550	SF	5.00	27,750	
13		New slab	6,200	SF	16.00	99,200	
14							
15		Miscellaneous					
16		Elevator pit	2	EA	25,000.00	50,000	
17		Topping slab					NIC
18		Allowance for underpinning where new structure interfaces with existing	1	LS	200,000.00	200,000	
19							
20							
21		**FOUNDATIONS**				**495,750**	**$16.53 / SF**
22							
23		**Basement Construction**					
24							
25							
26		**BASEMENT CONSTRUCTION**					**$0 / SF**
27							
28		**Superstructure**					
29							
30		Seismic upgrade to existing Carnegie	11,100	SF	60.00	666,000	
31							
32		New structure at infill addition	10,890	SF	60.00	653,400	
33							
34		Premium allowance for interface of new addition to Carnegie & 1989 Addition (doweling, seismic joints, etc.)	170	LF	600.00	102,000	
35							
36							
37		Miscellaneous metals & rough carpentry	30,000	SF	5.00	150,000	
38							
39		Equipment pads & curbs	1	LS	15,000.00	15,000	
40							
41							
42		**SUPERSTRUCTURE**				**1,586,400**	**$52.88 / SF**
43							
44		**Exterior Enclosure**					
45							
46		Exterior Walls					
47							
48		Rehabilitate exposed exterior façade of Carnegie	6,250	SF	25.00	156,250	
49		Clean & repaint entire façade of Addition to remain	5,000	SF	5.00	25,000	
50		New cladding system to New Addition	3,000	SF	120.00	360,000	
51							
52		Windows & Glazing					
53							
54		Rehabilitate historic windows to Carnegie	1	LS	100,000.00	100,000	
55		New glazing at New Addition	1,000	SF	150.00	150,000	
56							
57		Interior face of Exterior Wall					
58		Furring & gypsumboard or rehabilitative treatment to existing brick at Carnegie	7,000	SF	15.00	105,000	

OPTION 1 RENOVATION - ESTIMATE DETAIL **GSF :** 30,000

REF	MF	DESCRIPTION		UoM	UNIT RATE	TOTAL	COMMENTS
59							
60		Soffits					
61		New & existing	1	LS	25,000.00	25,000	
62							
63		Exterior Doors					
64		New entries	2	EA	25,000.00	50,000	
65							
66		Canopies					
67		Allow at New Addition	100	SF	250.00	25,000	
68							
69		Mechanical screen	1	LS	100,000.00	100,000	
70		Allowance for exterior detailing	16,500	SF	2.00	33,000	
71							
72							
73		**EXTERIOR ENCLOSURE**				**1,129,250**	**$37.64 / SF**
74							
75		**Roofing**					
76							
77		Roof Coverings					
78		Membrane at clay tile, Carnegie	6,000	SF	15.00	90,000	
79		Remove & re-install existing tiles with additional wires, including tile replacements as required	6,000	SF	15.00	90,000	
80		TPO or equal at flat roofs (all existing roofing replaced)	10,300	SF	12.00	123,600	
81							
82		Skylight	500	SF	250.00	125,000	
83		Roof hatch & ladder	1	EA	5,000.00	5,000	
84		Flashings & sheetmetal	30,000	SF	1.00	30,000	
85		Caulking & sealants	30,000	SF	0.50	15,000	
86							
87							
88		**ROOFING**				**478,600**	**$15.95 / SF**
89							
90		**Interior Construction**					
91							
92		Partitions					
93		New partitions in Carnegie, New Addition, & Second Floor West Wing, based on interior partition ratio to GSF	12,450	SF	20.00	249,004	
94							
95		Allowance for new gypsumboard at walls that interface between new and existing buildings	300	LF	100.00	30,000	
96		Allowance for fire ratings, additional shaft walls & acoustic separation	30,000	SF	2.00	60,000	
97							
98		Operable partition, allow	1	LS	80,000.00	80,000	
99		Misc. blocking, backing, rough carpentry	30,000	SF	1.50	45,000	
100							
101		Interior Doors					
102		Allow one leaf per 25 LF of partition	42	EA	2,000.00	83,008	
103		Premium for historic doors in Carnegie	20	EA	1,500.00	30,000	
104		Allowance for special door hardware	1	LS	50,000.00	50,000	
105							
106		Interior Glazing					
107		Allowance for window walls & sidelights	1,200	LF	100.00	120,000	
108		Balustrades & rails	150	LF	500.00	75,000	
109							
110		Fittings					
111		Signage	30,000	SF	1.50	45,000	
112		Lockers	1	LS	3,000.00	3,000	NIC
113		Toilet accessories	12	EA	1,000.00	12,000	

OPTION 1 RENOVATION - ESTIMATE DETAIL **GSF :** 30,000

REF	MF	DESCRIPTION		UoM	UNIT RATE	TOTAL	COMMENTS
114							
115		Shower & accessories	2	EA	1,000.00	2,000	
116		Fire extinguishers	1	LS	3,000.00	3,000	
117		Miscellaneous specialties: corner guards, markerboards, etc.	30,000	SF	1.25	37,500	
118							
119							
120		**INTERIOR CONSTRUCTION**				**924,512**	**$30.82 / SF**
121							
122		**Stairs**					
123							
124		Stair Construction					
125		New stairs	2	FLT	25,000.00	50,000	
126		Premium for enhancement at feature stair	1	FLT	90,000.00	90,000	
127		Short stair flights	2	FLT	25,000.00	50,000	
128							
129		New handrails and finishes at existing stairs	2	FLT	10,000.00	20,000	
130							
131							
132		**STAIRS**				**210,000**	**$7 / SF**
133							
134		**Interior Finishes**					
135							
136		Wall Finishes					
137		*Paint & gypsumboard included with new partitions*					
138		Wall finishes in Carnegie	11,100	SF	20.00	222,000	
139		Wall finishes in New Addition	10,890	SF	20.00	217,800	
140		Wall finishes in Second Floor West Wing	3,950	SF	20.00	79,000	
141							
142		Floor Finishes					
143		Floor finishes in Carnegie	11,100	SF	20.00	222,000	
144		Floor finishes in New Addition	10,890	SF	20.00	217,800	
145		Floor finishes in Second Floor West Wing	3,950	SF	15.00	59,250	
146							
147		Ceiling Finishes					
148		Ceiling finishes in Carnegie	11,100	SF	30.00	333,000	
149		Ceiling finishes in Addition	10,890	SF	35.00	381,150	
150		Ceiling finishes in Second Floor West Wing	3,950	SF	20.00	79,000	
151							
152		Insulate between floors & at ceiling, batts	21,990	SF	2.00	43,980	
153		Allow for soffits & bulkheads	25,940	SF	3.00	77,820	
154							
155							
156		**INTERIOR FINISHES**				**1,932,800**	**$64.43 / SF**
157							
158		**Conveying**					
159							
160		Elevators & Lifts					
161		Elevator, 2-stop	2	EA	150,000.00	300,000	
162							
163		Other Conveying Systems					
164		Allow wheelchair lift	1	EA	25,000.00	25,000	
165							
166							
167		**CONVEYING**				**325,000**	**$10.83 / SF**
168							
169		**Plumbing**					
170							
171		Sanitary Waste	24	FX			
172		Water closets	12	EA	1,800.00	21,600	
173		Urinals	3	EA	1,700.00	5,100	
174		Lavatories	5	EA	1,600.00	8,000	
175		Drinking fountain	2	EA	4,500.00	9,000	
176		Shower	2	EA	3,500.00	7,000	
177							

OPTION 1 RENOVATION - ESTIMATE DETAIL **GSF :** 30,000

REF	MF	DESCRIPTION		UoM	UNIT RATE	TOTAL	COMMENTS
178		Sanitary waste, vent and service pipework					
179		Hose bibbs	8	EA	1,500.00	12,000	
180		Floor drains	10	EA	2,650.00	26,500	
181		Rough-in and final connect sanitary waste, vent and service systems to accommodate new fixtures and layout	24	EA	3,800.00	91,200	
182							
183		Plumbing equipment					
184		Domestic hot water equipment and circulation	1	LS	10,000.00	10,000	
185							
186		Rain Water Drainage					
187		New Addition & portions of Carnegie	21,990	SF	2.00	43,980	
188							
189		Other Plumbing Systems					
190		Misc. plumbing requirements includes site supervision, documentation, seismic bracing, firestopping, general conditions, general requirements, testing	1	LS	23,438.00	23,438	
191							
192							
193		**PLUMBING**				**257,818**	**$8.59 / SF**
194							
195		**HVAC**					
196							
197		Heat and Chill Generating Systems	30,000	SF	10.00	300,000	
198		Electric hydronic boilers					
199							
200		Distribution Systems	30,000	SF	32.00	960,000	
201							
202		Controls & Instrumentation	30,000	SF	6.00	180,000	
203							
204		Testing & Balancing	30,000	SF	2.00	60,000	
205							
206		Unit ventilation and exhaust fans					
207		Toilet & shower exhaust	30,000	SF	0.25	7,500	
208							
209		Other HVAC Systems & Equipment					
210		Miscellaneous HVAC requirements, general conditions, documentation, seismic, testing	1	LS	150,750.00	150,750	
211							
212							
213		**HVAC**				**1,658,250**	**$55.28 / SF**
214							
215		**Fire Protection**					
216							
217		Sprinklers					
218		Automatic wet sprinklers throughout	21,990	SF	7.00	153,930	
219		Premium for routing in historic spaces	11,100	SF	2.00	22,200	
220							
221							
222		**FIRE PROTECTION**				**176,130**	**$5.87 / SF**
223							
224		**Electrical**					
225							
226		Trade demolition, safe off	1	LS	35,000.00	35,000	
227							
228		Electrical Service & Distribution	30,000	SF	8.00	240,000	
229							
230		Machine and equipment power	30,000	SF	1.50	45,000	
231							
232		Lighting and Controls	30,000	SF	28.00	840,000	
233							
234		User convenience power	30,000	SF	6.00	180,000	

OPTION 1 RENOVATION - ESTIMATE DETAIL **GSF :** 30,000

REF	MF	DESCRIPTION		UoM	UNIT RATE	TOTAL	COMMENTS
235							
236		Communications & Security	30,000	SF	9.00	270,000	
237							
238		Other Electrical Systems					
239		Fire alarm system	30,000	SF	4.00	120,000	
240							
241		Miscellaneous electrical requirements					
242		Site supervision, documentation, seismic bracing, firestopping, general conditions, general requirements, testing	1	LS	173,000.00	173,000	
243							
244							
245		**ELECTRICAL**				**1,903,000**	**$63.43 / SF**
246							
247		**Equipment**					
248							
249		Appliances	1	LS	7,500.00	7,500	
250		Book theft	2	EA	20,000.00	40,000	
251		Book depositories	2	EA	3,000.00	6,000	
252		Gas fireplace	1	EA	20,000.00	20,000	
253							
254		Other Equipment					
255		AV, security, telecom equipment					Separate budget
256							
257							
258		**EQUIPMENT**				**73,500**	**$2.45 / SF**
259							
260		**Furnishings**					
261							
262		Fixed Furnishings					
263		Counters & cabinets	30,000	SF	3.00	90,000	
264		Reception desk	1	EA	12,000.00	12,000	
265		Allow bath vanities	8	EA	1,000.00	8,000	
266							
267		Exterior window blinds	3,300	SF	12.00	39,600	
268		Allow for 25% blackout and/or motorized	825	SF	30.00	24,750	
269							
270		Library shelving, allow	30,000	SF	9.00	270,000	
271							
272		Moveable Furnishings					
273		*Separate budget*					
274							
275							
276		**FURNISHINGS**				**444,350**	**$14.81 / SF**
277							
278		**Selective Building Demolition**					
279							
280		Building Elements Demolition					
281		Demolish & remove:					
282		Interior finishes to Carnegie, first & second floors	11,100	SF	10.00	111,000	
283		Carnegie mezzanine	982	SF	12.00	11,784	
284		Interior finishes to 1985 Addition first floor	6,600	SF	10.00	66,000	
285		Interior finishes to 1985 Addition second floor	3,950	SF	10.00	39,500	
286		Interior finishes to central portion of Addition	10,300	SF	10.00	103,000	
287		Foundations & exterior walls of 1985 Addn	10,300	SF	4.00	41,200	
288		Roofing, entire	15,000	SF	3.00	45,000	
289		Protect existing features	1	LS	20,000.00	20,000	
290							
291		Hazardous Components Abatement					
292		Allowance (assume most performed in 1985)	22,632	SF	3.00	67,896	
293							
294							
295		**SELECTIVE BUILDING DEMOLITION**				**505,380**	**$16.85 / SF**
296							

OPTION 1 RENOVATION - ESTIMATE DETAIL **GSF :** 30,000

REF	MF	DESCRIPTION		UoM	UNIT RATE	TOTAL	COMMENTS
297		**Site Preparation**					
298		*Site Area*	*25,000*	*SF*			
299							
300		Protect existing features	1	LS	10,000.00	10,000	
301		Construction fencing	600	LF	10.00	6,000	
302		SWPPP	1	LS	15,000.00	15,000	
303							
304		Site Clearing					
305		Site clearance, including rough & fine grading, compaction	8,250	SF	2.50	20,625	
306							
307							
308		**SITE PREPARATION**				**51,625**	**$1.72 / SF**
309							
310		**Site Improvements**					
311							
312		Vehicular Paving and Curbs					
313		New overlay and striping to limited area of existing parking	500	SF	5.00	2,500	
314		Curbing					Existing
315							
316		Pedestrian Paving					
317		New pedestrian paving and to tie into existing	1,110	SF	25.00	27,750	
318		Allow modifications to existing pathways	1,500	SF	10.00	15,000	
319							
320		Landscaping & Irrigation					
321		Allowance for new landscaping and irrigation	5,000	SF	20.00	100,000	
322							
323		Site Structures					
324		Allow for trellis, seatwalls, etc.	1	LS	25,000.00	25,000	
325		Allow for utility enclosure	1	LS	50,000.00	50,000	
326							
327		Site Furnishings					
328		Allowance for recycling receptacles, bollards, etc.	1	LS	10,000.00	10,000	
329							
330		Site Signage					
331		Signage (assume most existing)	1	LS	5,000.00	5,000	
332							
333							
334		**SITE IMPROVEMENTS**				**235,250**	**$7.84 / SF**
335							
336		**Site Mechanical Utilities**					
337							
338		Water Supply					
339		Domestic - connect to existing service at 5' from building perimeter	1	LS	5,000.00	5,000	
340		Fire - 6" diameter pipe	100	LF	85.00	8,500	Allow new connection
341		Double check valve assembly	1	LS	6,500.00	6,500	
342		FDC/PIV	1	LS	2,500.00	2,500	
343							
344		Sanitary Sewer					
345		Connect to existing service 5' from building perimeter	1	LS	5,000.00	5,000	
346							
347		Storm Sewer					
348		Allowance to connect new perimeter drain to dry well or existing infrastructure	1	LS	10,000.00	10,000	

OPTION 1 RENOVATION - ESTIMATE DETAIL **GSF :** 30,000

REF	MF	DESCRIPTION		UoM	UNIT RATE	TOTAL	COMMENTS
349							
350		Natural gas				*NIC*	
351		Connect to existing service 5' from building perimeter	1	LS	5,000.00	5,000	
352							
353							
354		**SITE MECHANICAL UTILITIES**				**42,500**	**$1.42 / SF**
355							
356		**Site Electrical Utilities**					
357							
358		Electrical Distribution					
359		Transformer pad	1	LS	5,000.00	5,000	
360		Connect to existing service 5' from building perimeter	1	LS	5,000.00	5,000	
361							
362		Site Lighting					
363		Building-mounted lighting	1	LS	20,000.00	20,000	
364							
365		Site Communications & Security					
366		Connect to existing service 5' from building perimeter	1	LS	5,000.00	5,000	
367							
368							
369		**SITE ELECTRICAL UTILITIES**				**35,000**	**$1.17 / SF**

KEY CRITERIA

AREA TABULATION

Floor	ENCLOSED	COVERED	PERIMETER	HEIGHT	COMMENTS
Option 2 Renovation					
First Floor	20,000		624		
				24.00	Average combined height
Second Floor	18,000		704		
Subtotal	**38,000 SF**				
Option 2 Renovation - GSF Not Incl. 50% Covered Area		**38,000 SF**			

Gross Wall Area	**18,200**	**SF**		0.479
Retaining Wall Area	**0**	**SF**		0.000
Finished Wall Area	**18,200**	**SF**		0.479
Glazing Area	**3,640**	**SF**	20.00%	0.096
Roof Area	**18,900**	**SF**		0.497
Interior Partition Length	**1,425**	**LF**		0.038

SCHEME B1 SITEWORK - UNIFORMAT II SUMMARY" **GSF :** 38,000

	SECTION	%	TOTAL	$ / SF	COMMENTS
	10 FOUNDATIONS	3.8%	590,950	$15.55	
	20 BASEMENT CONSTRUCTION				
A	**SUBSTRUCTURE**	**3.8%**	**590,950**	**$15.55**	
	10 SUPERSTRUCTURE	12.4%	1,955,280	$51.45	
	20 EXTERIOR ENCLOSURE	10.0%	1,577,650	$41.52	
	30 ROOFING	3.3%	521,800	$13.73	
B	**SHELL**	**25.8%**	**4,054,730**	**$106.70**	
	10 INTERIOR CONSTRUCTION	6.6%	1,044,948	$27.50	
	20 STAIRS	1.5%	235,000	$6.18	
	30 INTERIOR FINISHES	16.4%	2,572,800	$67.71	
C	**INTERIORS**	**24.5%**	**3,852,748**	**$101.39**	
	10 CONVEYING	2.1%	325,000	$8.55	
	20 PLUMBING	1.8%	275,418	$7.25	
	30 HVAC	13.4%	2,100,450	$55.28	
	40 FIRE PROTECTION	1.5%	232,130	$6.11	
	50 ELECTRICAL	15.3%	2,400,200	$63.16	
D	**SERVICES**	**33.9%**	**5,333,198**	**$140.35**	
	10 EQUIPMENT	0.5%	73,500	$1.93	
	20 FURNISHINGS	3.5%	546,980	$14.39	
E	**EQUIPMENT + FURNISHINGS**	**3.9%**	**620,480**	**$16.33**	
	10 SPECIAL CONSTRUCTION				
	20 SELECTIVE BUILDING DEMOLITION	3.2%	505,380	$13.30	
F	**SPECIAL CONSTRUCTION + DEMOLITION**	**3.2%**	**505,380**	**$13.30**	
	10 SITE PREPARATION	0.7%	116,200	$3.06	
	20 SITE IMPROVEMENTS	3.7%	575,000	$15.13	
	30 SITE MECHANICAL UTILITIES	0.3%	42,500	$1.12	
	40 SITE ELECTRICAL UTILITIES	0.2%	35,000	$0.92	
G	**BUILDING SITEWORK**	**4.9%**	**768,700**	**$20.23**	
DIRECT COSTS			**15,726,186**	**$413.85**	
	SITE REQUIREMENTS	4.0%	629,047	$16.55	
	JOBSITE MANAGEMENT	12.0%	1,887,142	$49.66	
	PHASING OR SHIFT PREMIUM				NIC
	ESTIMATE SUB-TOTAL		**18,242,376**	**$480.06**	
	INSURANCE + BONDING	2.5%	456,059	$12.00	
	FEE	3.5%	638,483	$16.80	
	ESTIMATE SUB-TOTAL		**19,336,918**	**$508.87**	
	DESIGN CONTINGENCY	20.0%	3,867,384	$101.77	
	CONSTRUCTION CONTINGENCY				Carried by Owner
	ESTIMATE SUB-TOTAL		**23,204,302**	**$610.64**	
	ESCALATION	15.7%	3,640,339	$95.80	Start Date June 2019
ESTIMATE TOTAL			**26,844,641**	**$706.44**	total add-ons 70.7%

SCHEME B1 SITEWORK - UNIFORMAT II SUMMARY" **GSF :** 38,000

REF	MF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
1							
2		**Foundations**					
3							
4		Standard Foundations, including excavation					
5		New footings for new footprint area, assume 24" deep doweled to existing at ends	9,600	SF	12.00	115,200	
6							
7		Allow foundation scope for seismic upgrade to Carnegie historic portion	11,100	SF	4.00	44,400	1903,1915, 1929 portions
8							
9		Special Foundations					Excluded
10							
11		Concrete slab					
12		Patch existing slab	5,550	SF	5.00	27,750	
13		New slab	9,600	SF	16.00	153,600	
14							
15		Miscellaneous					
16		Elevator pit	2	EA	25,000.00	50,000	
17		Topping slab					NIC
18		Allowance for underpinning where new structure interfaces with existing	1	LS	200,000.00	200,000	
19							
20		**FOUNDATIONS**				**590,950**	**$15.55 / SF**
21							
22		**Basement Construction**					
23							
24							
25		**BASEMENT CONSTRUCTION**					**$0 / SF**
26							
27		**Superstructure**					
28							
29		Seismic upgrade to existing Carnegie	11,100	SF	60.00	666,000	
30							
31		New structure at infill addition	18,890	SF	52.00	982,280	
32							
33		Premium allowance for interface of new addition to Carnegie & 1989 Addition (doweling, seismic joints, etc.)	170	LF	600.00	102,000	
34							
35							
36		Miscellaneous metals & rough carpentry	38,000	SF	5.00	190,000	
37							
38		Equipment pads & curbs	1	LS	15,000.00	15,000	
39							
40							
41		**SUPERSTRUCTURE**				**1,955,280**	**$51.45 / SF**
42							
43		**Exterior Enclosure**					
44							
45		Exterior Walls					
46							
47		Rehabilitate exposed exterior façade of Carnegie	6,250	SF	25.00	156,250	
48		Clean & repaint entire façade of Addition to remain	5,000	SF	5.00	25,000	
49		New cladding system to New Addition	5,500	SF	120.00	660,000	
50							
51		Windows & Glazing					
52							
53		Rehabilitate historic windows to Carnegie	1	LS	100,000.00	100,000	
54		New glazing at New Addition	1,900	SF	150.00	285,000	
55							
56		Interior face of Exterior Wall					
57		Furring & gypsumboard or rehabilitative treatment to existing brick at Carnegie	7,000	SF	15.00	105,000	

SCHEME B1 SITEWORK - UNIFORMAT II SUMMARY" **GSF :** 38,000

REF	MF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
58							
59		Soffits					
60		New & existing	1	LS	25,000.00	25,000	
61							
62		Exterior Doors					
63		New entries	2	EA	25,000.00	50,000	
64		Stair entry west elevation	1	EA	10,000.00	10,000	
65							
66		Canopies					
67		Allow at New Addition	100	SF	250.00	25,000	
68							
69		Mechanical screen	1	LS	100,000.00	100,000	
70		Allowance for exterior detailing	18,200	SF	2.00	36,400	
71							
72							
73		**EXTERIOR ENCLOSURE**				**1,577,650**	**$41.52 / SF**
74							
75		**Roofing**					
76							
77		Roof Coverings					
78		Membrane at clay tile, Carnegie	6,000	SF	15.00	90,000	
79		Remove & re-install existing tiles with additional wires, including tile replacements as required	6,000	SF	15.00	90,000	
80		TPO or equal at flat roofs (all existing roofing replaced)	12,900	SF	12.00	154,800	
81							
82		Skylight	500	SF	250.00	125,000	
83		Roof hatch & ladder	1	EA	5,000.00	5,000	
84		Flashings & sheetmetal	38,000	SF	1.00	38,000	
85		Caulking & sealants	38,000	SF	0.50	19,000	
86							
87							
88		**ROOFING**				**521,800**	**$13.73 / SF**
89							
90		**Interior Construction**					
91							
92		Partitions					
93		New partitions in Carnegie, New Addition, & Second Floor West Wing, based on interior partition ratio to GSF	15,272	SF	20.00	305,440	
94							
95		Allowance for new gypsumboard at walls that interface between new and existing buildings	340	LF	100.00	34,000	
96		Allowance for fire ratings, additional shaft walls & acoustic separation	38,000	SF	2.00	76,000	
97							
98		Operable partition, allow	1	LS	80,000.00	80,000	
99		Misc. blocking, backing, rough carpentry	38,000	SF	1.50	57,000	
100							
101		Interior Doors					
102		Allow one leaf per 25 LF of partition	42	EA	2,000.00	83,008	
103		Premium for historic doors in Carnegie	20	EA	1,500.00	30,000	
104		Allowance for special door hardware	1	LS	60,000.00	60,000	
105							
106		Interior Glazing					
107		Allowance for window walls & sidelights	1,200	LF	100.00	120,000	
108		Balustrades & rails	150	LF	500.00	75,000	
109							
110		Fittings					
111		Signage	38,000	SF	1.50	57,000	
112		Lockers	1	LS	3,000.00	3,000	
113		Toilet accessories	12	EA	1,000.00	12,000	

SCHEME B1 SITEWORK - UNIFORMAT II SUMMARY" **GSF :** 38,000

REF	MF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
114							
115		Shower & accessories	2	EA	1,000.00	2,000	
116		Fire extinguishers	1	LS	3,000.00	3,000	
117		Miscellaneous specialties: corner guards, markerboards, etc.	38,000	SF	1.25	47,500	
118							
119							
120		**INTERIOR CONSTRUCTION**				**1,044,948**	**$27.5 / SF**
121							
122		**Stairs**					
123							
124		Stair Construction					
125		New stairs	3	FLT	25,000.00	75,000	
126		Premium for enhancement at feature stair	1	FLT	90,000.00	90,000	
127		Short stair flights	2	FLT	25,000.00	50,000	
128							
129		New handrails and finishes at existing stairs	2	FLT	10,000.00	20,000	
130							
131							
132		**STAIRS**				**235,000**	**$6.18 / SF**
133							
134		**Interior Finishes**					
135							
136		Wall Finishes					
137		*Paint & gypsumboard included with new partitions*					
138		Wall finishes in Carnegie	11,100	SF	20.00	222,000	
139		Wall finishes in New Addition	18,890	SF	20.00	377,800	
140		Wall finishes in Second Floor West Wing	3,950	SF	20.00	79,000	
141							
142		Floor Finishes					
143		Floor finishes in Carnegie	11,100	SF	20.00	222,000	
144		Floor finishes in New Addition	18,890	SF	20.00	377,800	
145		Floor finishes in Second Floor West Wing	3,950	SF	15.00	59,250	
146							
147		Ceiling Finishes					
148		Ceiling finishes in Carnegie	11,100	SF	30.00	333,000	
149		Ceiling finishes in Addition	18,890	SF	35.00	661,150	
150		Ceiling finishes in Second Floor West Wing	3,950	SF	20.00	79,000	
151							
152		Insulate between floors & at ceiling, batts	29,990	SF	2.00	59,980	
153		Allow for soffits & bulkheads	33,940	SF	3.00	101,820	
154							
155							
156		**INTERIOR FINISHES**				**2,572,800**	**$67.71 / SF**
157							
158		**Conveying**					
159							
160		Elevators & Lifts					
161		Elevator, 2-stop	2	EA	150,000.00	300,000	
162							
163		Other Conveying Systems					
164		Allow wheelchair lift	1	EA	25,000.00	25,000	
165							
166							
167		**CONVEYING**				**325,000**	**$8.55 / SF**
168							
169		**Plumbing**					
170							
171		Sanitary Waste	24	FX			
172		Water closets	12	EA	1,800.00	21,600	
173		Urinals	3	EA	1,700.00	5,100	
174		Lavatories	5	EA	1,600.00	8,000	
175		Drinking fountain	2	EA	4,500.00	9,000	
176		Shower	2	EA	3,500.00	7,000	
177							

SCHEME B1 SITEWORK - UNIFORMAT II SUMMARY" **GSF :** 38,000

REF	MF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
178		Sanitary waste, vent and service pipework					
179		Hose bibbs	8	EA	1,500.00	12,000	
180		Floor drains	10	EA	2,650.00	26,500	
181		Rough-in and final connect sanitary waste, vent and service systems to accommodate new fixtures and layout	24	EA	3,800.00	91,200	
182							
183		Plumbing equipment					
184		Domestic hot water equipment and circulation	1	LS	10,000.00	10,000	
185							
186		Rain Water Drainage					
187		New Addition & portions of Carnegie	29,990	SF	2.00	59,980	
188							
189		Other Plumbing Systems					
190		Misc. plumbing requirements includes site supervision, documentation, seismic bracing, firestopping, general conditions, general requirements, testing	1	LS	25,038.00	25,038	
191							
192							
193		**PLUMBING**				**275,418**	**$7.25 / SF**
194							
195		**HVAC**					
196							
197		Heat and Chill Generating Systems	38,000	SF	10.00	380,000	
198		Electric hydronic boilers					
199							
200		Distribution Systems	38,000	SF	32.00	1,216,000	
201							
202		Controls & Instrumentation	38,000	SF	6.00	228,000	
203							
204		Testing & Balancing	38,000	SF	2.00	76,000	
205							
206		Unit ventilation and exhaust fans					
207		Toilet & shower exhaust	38,000	SF	0.25	9,500	
208							
209		Other HVAC Systems & Equipment					
210		Miscellaneous HVAC requirements, general conditions, documentation, seismic, testing	1	LS	190,950.00	190,950	
211							
212							
213		**HVAC**				**2,100,450**	**$55.28 / SF**
214							
215		**Fire Protection**					
216							
		Sprinklers					
		Automatic wet sprinklers throughout	29,990	SF	7.00	209,930	
217		Premium for routing in historic spaces	11,100	SF	2.00	22,200	
218							
219							
220		**FIRE PROTECTION**				**232,130**	**$6.11 / SF**
221							
222		**Electrical**					
223							
224		Trade demolition, safe off	1	LS	35,000.00	35,000	
225							
226		Electrical Service & Distribution	38,000	SF	8.00	304,000	
227							
228		Machine and equipment power	38,000	SF	1.50	57,000	
229							
230		Lighting and Controls	38,000	SF	28.00	1,064,000	
231							
232		User convenience power	38,000	SF	6.00	228,000	

SCHEME B1 SITEWORK - UNIFORMAT II SUMMARY" **GSF :** 38,000

REF	MF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
233							
234		Communications & Security	38,000	SF	9.00	342,000	
235							
236		Other Electrical Systems					
237		Fire alarm system	38,000	SF	4.00	152,000	
238							
239		Miscellaneous electrical requirements					
240		Site supervision, documentation, seismic bracing, firestopping, general conditions, general requirements, testing	1	LS	218,200.00	218,200	
241							
242							
243		**ELECTRICAL**				**2,400,200**	**$63.16 / SF**
244							
245		**Equipment**					
246							
247		Appliances	1	LS	7,500.00	7,500	
248		Book theft	2	EA	20,000.00	40,000	
249		Book depositories	2	EA	3,000.00	6,000	
250		Gas fireplace	1	EA	20,000.00	20,000	
251							
252		Other Equipment					
253		AV, security, telecom equipment					Separate budget
254							
255							
256		**EQUIPMENT**				**73,500**	**$1.93 / SF**
257							
258		**Furnishings**					
259							
260		Fixed Furnishings					
261		Counters & cabinets	38,000	SF	3.00	114,000	
262		Reception desk	1	EA	12,000.00	12,000	
263		Allow bath vanities	8	EA	1,000.00	8,000	
264							
265		Exterior window blinds	3,640	SF	12.00	43,680	
266		Allow for 25% blackout and/or motorized	910	SF	30.00	27,300	
267							
268		Library shelving, allow	38,000	SF	9.00	342,000	
269							
270		Moveable Furnishings					
271		*Separate budget*					
272							
273							
274		**FURNISHINGS**				**546,980**	**$14.39 / SF**
275							
276		**Selective Building Demolition**					
277							
278		Building Elements Demolition					
279		Demolish & remove:					
280		Interior finishes to Carnegie, first & second floors	11,100	SF	10.00	111,000	
281		Carnegie mezzanine	982	SF	12.00	11,784	
282		Interior finishes to 1985 Addition first floor	6,600	SF	10.00	66,000	
283		Interior finishes to 1985 Addition second floor	3,950	SF	10.00	39,500	
284		Interior finishes to central portion of Addition	10,300	SF	10.00	103,000	
285		Foundations & exterior walls of 1985 Addn	10,300	SF	4.00	41,200	
286		Roofing, entire	15,000	SF	3.00	45,000	
287		Protect existing features	1	LS	20,000.00	20,000	
288							
289		Hazardous Components Abatement					
290		Allowance (assume most performed in 1985)	22,632	SF	3.00	67,896	
291							
292							
293		**SELECTIVE BUILDING DEMOLITION**				**505,380**	**$13.3 / SF**
294							

SCHEME B1 SITEWORK - UNIFORMAT II SUMMARY" **GSF :** 38,000

REF	MF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
295		**Site Preparation**					
296		Site area	*44,000*	*SF*			
297							
298		Site clearing and grading					
299		Protect existing features	1	LS	10,000.00	10,000	
300		Construction fencing	800	LF	15.00	12,000	
301		SWPPP	44,000	SF	0.50	22,000	
302		Tree removal	1	LS	10,000.00	10,000	Allowance
303							
304		Site Clearing					
305		Remove existing asphalt & portions of parking islands	13,400	SF	3.00	40,200	
306							
307		Rough & fine grading	44,000	SF	0.50	22,000	
308							
309		Hazardous materials abatement					NIC
310							
311							
312		**SITE PREPARATION**				**116,200**	**$3.06 / SF**
313							
314		**Site Improvements**					
315							
316		Vehicular Paving and Curbs					
317		New asphalt and striping to area of existing parking	13,400	SF	15.00	201,000	
318		Curbing	800	LF	35.00	28,000	
319							
320		Pedestrian Paving					
321		New pedestrian paving and to tie into existing	2,200	SF	25.00	55,000	
322		Allow modifications to existing pathways	2,500	SF	10.00	25,000	
323							
324		Landscaping & Irrigation					
325		Allowance for new landscaping and irrigation	8,800	SF	20.00	176,000	
326							
327		Site Structures					
328		Allow for trellis, seatwalls, etc.	1	LS	25,000.00	25,000	
329		Allow for utility enclosure	1	LS	50,000.00	50,000	
330							
331		Site Furnishings					
332		Allowance for recycling receptacles, bollards, etc.	1	LS	10,000.00	10,000	
333							
334		Site Signage					
335		Signage (assume most existing)	1	LS	5,000.00	5,000	
336							
337							
338		**SITE IMPROVEMENTS**				**575,000**	**$15.13 / SF**
339							
340		**Site Mechanical Utilities**					
341							
342		Water Supply					
343		Domestic - connect to existing service at 5' from building perimeter	1	LS	5,000.00	5,000	
344		Fire - 6" diameter pipe	100	LF	85.00	8,500	Allow for new connection
345		Double check valve assembly	1	LS	6,500.00	6,500	
346		FDC/PIV	1	LS	2,500.00	2,500	
347							
348		Sanitary Sewer					
349		Connect to existing service 5' from building perimeter	1	LS	5,000.00	5,000	
350							
351		Storm Sewer					
352		Allowance to connect new perimeter drain to dry well or existing infrastructure	1	LS	10,000.00	10,000	

SCHEME B1 SITEWORK - UNIFORMAT II SUMMARY" **GSF :** 38,000

REF	MF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
353							
354		Natural gas				*NIC*	
355		Connect to existing service 5' from building perimeter	1	LS	5,000.00	5,000	
356							
357							
358		**SITE MECHANICAL UTILITIES**				**42,500**	**$1.12 / SF**
359							
360		**Site Electrical Utilities**					
361							
362		Electrical Distribution					
363		Transformer pad	1	LS	5,000.00	5,000	
364		Connect to existing service 5' from building perimeter	1	LS	5,000.00	5,000	
365							
366		Site Lighting					
367		Building-mounted lighting	1	LS	20,000.00	20,000	
368							
369		Site Communications & Security					
370		Connect to existing service 5' from building perimeter	1	LS	5,000.00	5,000	
371							
372		**SITE ELECTRICAL UTILITIES**				**35,000**	**$0.92 / SF**

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