Photos from The Washtenaw County Road Commission in the Mid-1920's

415 West Washington Historic Structure Assessment

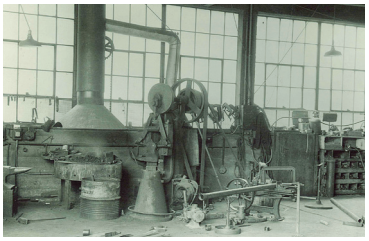
415 West Washington, Ann Arbor, MI 48103

Final Report August 29, 2013

RUETER ASSOCIATES
ARCHITECTS

515 Fifth Street Ann Arbor, Michigan 48103 (734) 769-0070 admin@rueterarchitects.com

TABLE OF CONTENTS



Forge and Machine Shop: West High Bay

Overview and Summary Of Study

History of the Site and Architectural Significance

In January of 1925 construction was well underway on a new steel-framed high bay space, behind an earlier one-story 12 bay concrete "private garage" fronting Washington Street. This new structure with its large clear roof spans and expanses of steel sash would be one of the first of such large modern industrial structures to be built along the already industrialized Allen Creek. As this space was taking shape, work started on a second story office and drafting room addition over the one story private garage. This work was intended for the new Washtenaw County Road Commission offices and maintenance yards. The Commission had purchased the garage site in the early 1920's along with a two story concrete machine shop, a brick coopers shop and two wood frame storage buildings at the west side of the property.

The most visually significant structure is the two story building fronting Washington Street. Its facade is divided into multiple bays defined by concrete columns approximately ten feet on center. The columns extend up into the brick parapet and are capped with sloped copings. At each end of the facade is a decorative parapet with the Washtenaw County block "W" insignia. All of these elements are strong Art Deco features only occasionally used on industrial buildings of the era. Looking beyond its condition, the facade is a very interesting and attractive composition. The concrete frame is strongly expressed as it contrasts with the brick parapet and dark industrial sash. The off-center overhead door with the fading painted "Road Commission" sign still partially visible is the facade's defining feature. This abandoned portal aligning with a large garage door in the south facade was originally a "drive through" which now could create a strong pedestrian link between Washington Street and the inner courtyard.

From 1928 to 1929 a new concrete frame high bay garage and partial second floor was added along the west property line. The entire exterior concrete frame is almost completely filled with either steel window sash or overhead doors. Along parts of the west facade, 70% of the walls are glass. There are very few such industrial structures left in Ann Arbor. While darkened now by its boarded up windows, a glimpse of what these spaces could be is illustrated by the old Kelsey Hayes factory, now the Taubman College Liberty Research Annex at 305 West Liberty Street.

The final two structures, a brick garage along the south of the property and the open steel shed were the last additions. These buildings were constructed under the Federal Civilian Works Administration's single winter only welfare program of 1933-34. The program's emphasis was upon winter employment for manual laborers.

The building's phasing, construction techniques and dating were based upon hand-dated historic photographs and original meeting minutes of the Washtenaw County Road Commission. We thank the Commission for their help in finding and reproducing these photographs and in providing meeting minutes dating back to 1924.

Condition Assessment, Recommendations and Costs

From the grey cementitious coating sprayed over the original warm tan colored frame, boarded up windows, broken glazing, rusting exposed reinforcing steel and the slightly undulating facade along Washington Street, an impression is given that the buildings are in dire condition and are only fit for demolition. The structural assessment has shown however, that while in serious need of repair, all of the buildings are basically sound and can be stabilized and rehabilitated for new uses. Three of the buildings are in serious need of facade repair, two have roofs that must be immediately replaced, and all buildings have steel sash windows which need repair, repainting and re-glazing.

As the complex developed over time, five different buildings systems were used. Since there are differences in construction types, age and condition, the most comprehensive approach was to analyze each

building type and make separate recommendations for rehabilitation, proposed uses and cost estimates. Because of the complexity of summarizing each building's stabilization and rehabilitation costs, the estimates are not included in this overview but are attached at the end of this document.

Project Team

Rueter Associates Architects (RAA),
Marc Rueter: Team Leader
Jim Scrivens: Project Architect
Teresa Beagle: Technical and Administrative

Grace Shackman
Historical Consultant

Structural Design Incorporated (SDI), Structural Consultants
Andy Greco, PE

Systems Solutions Consultant
Diptarka Gangulee PE ,Electrical Consultant

Systems Solutions Consultant
Michael Masic PE, Mechanical Consultant

Phoenix Construction Inc.
Construction Cost Estimating
Mark Hiser

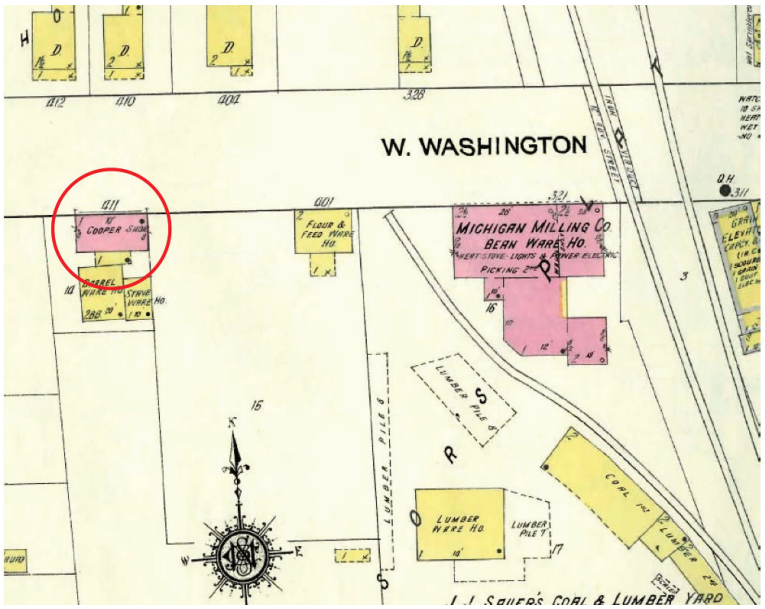
Scope of Work

RFP #833

Issued By:
City of Ann Arbor
Procurement Unit
301 East Huron Street
Ann Arbor, Michigan 48107

Excerpt from RFP #833:
The City of Ann Arbor is seeking a qualified firm to conduct a historic structure assessment (HSA) to fully document the physical condition of the historic resource(s) at a City□owned property at 415 West Washington Street. The assessment will provide a comprehensive understanding of the current condition and needs of the resource(s). Results of such investigation will be utilized by the City as it considers reuse of the property. The City of Ann Arbor is a member of the Washtenaw County Brownfield Redevelopment Authority and is a core community.

In February of 2013 Rueter Associates Architects was awarded the contract.



1916 Sanborn Map

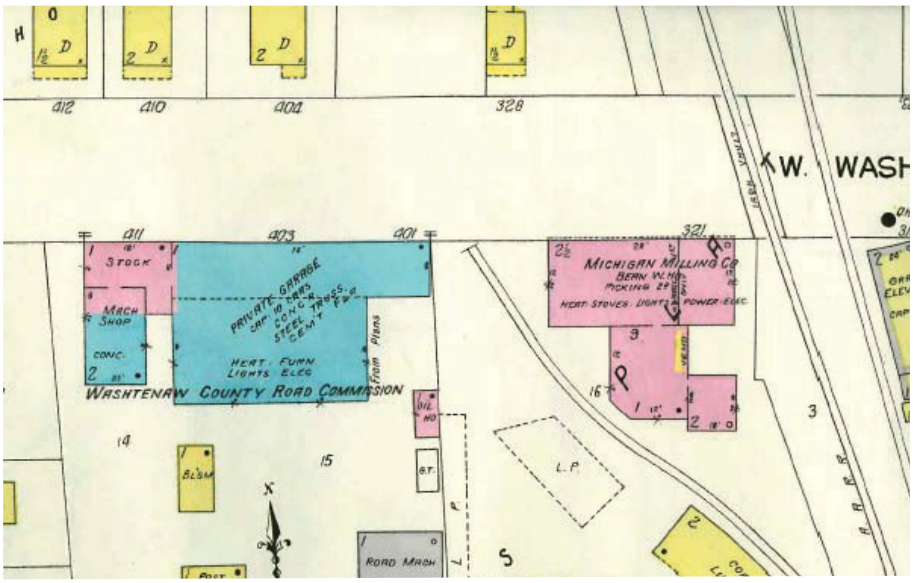
History and Architectural Significance

The Sanborn map at left depicts the 415 Washington Street site as it existed in 1916. Most of the industrial buildings shown on this map date to before 1888. The Ann Arbor railroad flanks the eastern side of the site and was built at grade until City Council on March 31,1902 authorized the railroad to elevate the bed and construct "iron viaducts" over all streets from Liberty to Felch. (The Liberty and Ann Street viaducts were not constructed.)

The large pink colored building on the map's right was the Ann Arbor Electric Light Co Works which later housed the Ann Arbor Steam laundry before becoming the Michigan Milling Company Bean Warehouse as shown on the 1916 Sanborn map. (Also see the photograph of this building in the historic photo section). This structure was torn down shortly after this photograph was taken to construct a railroad coal-drop trestle for hopper cars delivering coal, salt, fuel and road sand for the road commission. The drop was constructed in 1934 under the Federal Civil Works Administration (CWA) single winter only welfare program of 1933-34. The terminus guard of this demolished trestle still exists as the large concrete pier with a steel bent bolted to the front-side of the pier. Parts of the Bean warehouse's brick foundations are still visible along the Ann Arbor Railroad right of way just south of the railroad bridge abutments.

On the western side of the site was the Allmendinger and Schneider one-story brick cooper shop and small barrel storage buildings. The 1888 Sanborn map shows that much of the site was covered with open air lumber storage for the cooper shop and later for the Ann Arbor Organ Company.

Allen's Creek was mostly an open creek flowing through the site in 1908 but was fully enclosed by 1916. The 10 foot wide top of the concrete box culvert is still visible on much of the site as



1925 Sanborn Map

October 1924 photo showing laborers digging footings for the new steel framed high bay space behind the earlier 12 bay "private garage."

it follows the alignment of the original creek and disappears under the Ann Arbor Railroad bed near the south-east part of the site. The County purchased this site in the early 1920's which in addition to the buildings shown on the 1916 Sanborn map had a two story concrete machine shop on the east side of the property and a long 12 bay one-story concrete private garage for 10 cars. (See 1925 Sanborn map on previous page.) The photo above shows the concrete two-story shop on the left and the 12 bay private garage stretching along Washington Street. The original brick coopers shed is partially visible and is marked by the tall brick and steel flue. This building's address, 415 West Washington, became the address for Washtenaw Good Roads, the precursor of the Washtenaw County Road Commission. Visible in the front of the 12 bay garage are four laborers digging 4' x 4' footings for the new high bay space which will be built over the winter of 1924-1925.

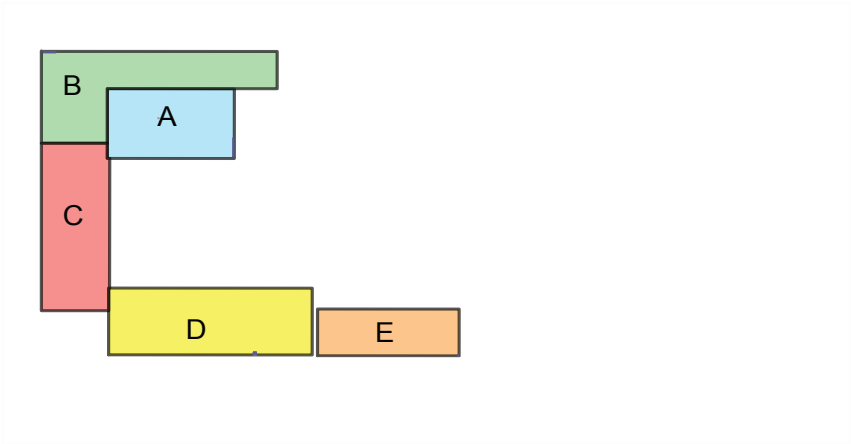
Photo showing construction of the steel framed high bay space January 10,1925.

In January of 1925 construction was well underway on the new steel-framed high bay space, behind the earlier concrete one-story 12 bay garage. This new structure with its large clear roof spans and expanses of steel sash would be one of the first of such large modern industrial structures to be built along the already industrialized Allen Creek. A few similar steel framed structures would follow such as the King-Seeley factory, now a part of the Liberty Lofts Condominiums. Other

steel framed buildings located along the Ann Arbor Railroad from Stadium to Hill streets are owned by the University of Michigan. They are sometimes difficult to identify due to their later renovations and re-claddings.

Phase 1: High Bay.

The drawing below shows the chronology and present configuration of structures built on the site since 1925.



A Phase 1 High bay space (1924-1925)
B Phase 2 Concrete frame addition (1925-1926)
C Phase 3 Second concrete frame addition (1928-1929)
D Phase 4 Brick bearing wall addition (1933-1934)
E Phase 5 Steel frame and concrete block shed (1934)

After the high bay framing was in place, major portions of the old concrete garage and concrete machine shop and all remaining structures except for a couple of wood framed buildings were demolished. A new two-story concrete frame "L" shaped building (colored green) with offices on the top floor was constructed along the north and west sides of the high bay space as it was being finished.

Phase 2: Washington Street Concrete Frame Structure.

The most recognized part of the building complex is the two story reinforced concrete frame building along Washington Street facing the new "Y". This structure is an interesting early example of a reinforced

Photo at right shows the completed high bay space sometime about 1940. The canopy over the door has been removed.

The 1928 two story addition is visible at the far left. It projects about 18" forward from the earlier two story structure visible just above the lower high bay space.

Completed high bay garage shown in the early 1940s.

concrete frame structure. Perhaps the only structure remaining of this type in Ann Arbor is the Liberty Lofts condominium building which was built somewhat later by the Kelsey Hayes auto parts company. This building is more industrial and has very few decorative details.

The 415 West Washington parapet is brick and the infill spandrel panels are concrete except for a small band of brick below the upper floor windows now painted to match the concrete frame. The coping on

North facade facing Washington street in 2013 (photo is a distortion corrected panorama).

the brick parapet is concrete. It is now partially covered with rusting galvanized steel copings. Large expanses of steel framed glazing fill the remaining space. (The City has covered the glazed steel sash with plywood security panels painted to simulate steel sash.) The lower floor windows have been covered with wire mesh for many years.

West facade: Art deco parapet with the block "W."

The facade is divided into multiple bays with concrete columns approximately 10 feet on center. The original one-story garage had 12 bays. The 1925 remodeling replaced two of those bays with one large central overhead door. The second floor was being built at this time along with the two story west (right) four bays. The construction joints can be seen here and cracks are evident at this location.

The columns extend up into the brick parapet and are capped with sloped copings. At each end of the facade is a decorative parapet with the Washtenaw County block "W" insignia. All of these elements

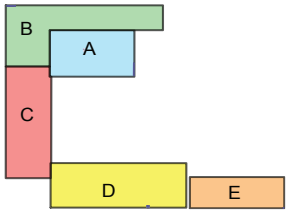
are strong Art Deco features only occasionally used on industrial buildings of the era. Looking past its condition, the facade has a very interesting composition. The concrete frame is strongly expressed as it contrasts with the brick parapet and dark industrial sash. The off-center overhead door with the painted "Road Commission" sign still partially visible is the main defining feature. This door aligns with the door in the south facade to create a "drive through".
The floors are reinforced concrete slabs supported in some areas by wide flange steel beams and in other areas by reinforced concrete beams. The roof is a reinforced concrete slab clear spanning the entire second floor.

Photo with 1925 building (on left) and 1928 addition (on right). Stucco covers the earlier building, while the later addition was left uncovered.

Parts of the frame and spandrel panels were originally parged with a rough cementitious stucco and the spandrel panels were coated with a smooth contrasting stucco. The later 1928 addition was not clad with any stucco and the original board-formed concrete frame is still visible.

At a later unknown date, the two-story office part of the building was sprayed, except for a portion of the west facade with a grey-colored hard cementitious coating probably intended to water-proof the concrete and prevent the reinforcing steel from further corroding and spalling off large parts of the frame. The effort was not successful and the steel imbedded in the concrete continued to corrode. This coating gives the building a rather cold grey look quite different than the warm buff look of the original structure shown in the photograph above right

Phase 3: Second Concrete Frame Addition.



This reinforced concrete frame was a 1928 addition to the two-story building fronting on Washington Street. It extended southward for one two-story bay and then dropped down to a lower high bay repair shop. In the southern-most end was a forge and overhead chain-hoist rail stretching along the whole repair shop length. Most of the rail still remains. This later addition has a different floor and roof structural system. The steel-framed high bay roof has a modern steel deck whose replacement date has not been documented. The deck is supported by older Warren trusses similar to those on the Phase 1 high bay space.

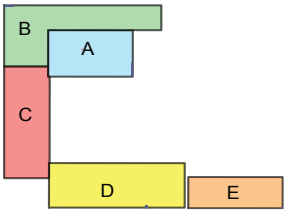
2012 photo of the 1928 addition showing the steel sash covered with OSB board for security.

Steel pan formed roof deck. The floor system is similar.

The second floor and roof systems have reinforced concrete steel pan formed floors and roof decks. This was an innovative concrete forming system for the time. It reduced the amount of concrete needed and consequently reduced weights, allowing longer spans.

The entire exterior frame is almost completely filled with either steel window sash or overhead doors. Only on the west and south sides are the lower frames partially filled below the windows with concrete spandrel panels. The concrete frame is not parged with stucco but is painted grey The ratio of glass and door to solid wall is almost 70%, which is very high for historic standards and even very high for today's standards. The overhead doors are modern sectional doors which have replaced the original wood panel doors. Only one of the original doors remains. It is located at the center of the central phase 1 high bay space. This is a wood framed sectional door with deteriorating hardboard panels.

Phase 4: Brick Bearing Wall CWA Building.



One of the last additions is the 1933-34 brick bearing wall structure. This building was constructed under the CWA's single winter only welfare program of 1933-34. The program was proposed by Franklin D. Roosevelt on November 8, 1933 and ended on March 31, 1934. Its emphasis was upon winter employment for manual laborers. The rules set out a 30 hour work week with skilled workers in the northern zone to be paid $1.20 an hour and laborers $.50 per hour. It is not known if those were the wages paid in Washtenaw County

1933-34 Federal Civil Works Administration (CWA) funded building (2013 composite panorama).

The building has modern heavy rolled W 27" x 10" x 84# steel beams which clear span the garage. Fourteen inch deep bar joists span between the beams. The roof deck is concrete cast over a proprietary ribbed expanded metal lath system. The walls are 8" thick brick bearing walls with projecting wall pilasters located at the beam bearing points. The pilasters are a contrasting yellowish "rug faced" brick capped with sloped cast stone copings. The top approximately four feet of the walls are constructed with a darker harder faced brick of newer firing. The reason is obviously not decorative but rather one of economy, brick availability or the need for speed in acquiring brick due to the compressed construction schedule required by the CWA. It is more likely that brick from the

Buff "rug faced" brick on pilasters.

Rear of CWA brick garage

old “Bean Warehouse” on the site was reused on the lower two-thirds of the walls and that new brick was used to finish it off. Removing, cleaning and stacking brick would be jobs done by the low skilled CWA workers.

Winter construction for masonry even today is fraught with problems and extra costs. It would be interesting to know the construction techniques used on this building in the winter of 1933-34.

The walls are in reasonably good condition, however, some brick faces have spalled off quite badly in certain courses on the south sides and locations near the ground. The brick on the rear south wall which was out of sight is extremely crudely laid, perhaps by the unskilled laborers practicing. The walls are capped with a cast concrete coping which has been covered with roofing materials in an attempt to waterproof the parapets. This may have been done to prevent water from entering the walls and further deteriorating the brick.

The windows are steel sash like the rest of the complex and most of the overhead doors have been replaced with modern steel or aluminum sectional overhead doors.

Rear of CWA brick garage. The reclaimed brick masonry on the wall to the right is very poorly laid. The bond courses are recessed and do not match the plane of the face layers. Joints vary greatly in width and are not struck. Note the contrast on the left where the pilaster is of new harder brick with flush struck joints and even coursing.

2012 photo of the 1934 CWA Welfare steel shed addition.

Phase 5: Steel Frame and Concrete Block Shed 1934

The last phase was built shortly after or concurrently with the 1933-34 Phase 3 masonry building. Like this building, it was also constructed under the Federal CWA Welfare program. It is a steel frame structure with three sides enclosed with 8" concrete block walls. The rear block wall is 8" concrete masonry and acts as lateral bracing for the steel truss frames.

The structure is a partially bolted and partially welded braced frame with a corrugated galvanized metal roof on steel purlins. Within, there is a steel frame mezzanine level storage floor on steel "H" section purlins which span between the steel truss frames. This story was mainly used for storage and is designed for fairly heavy floor loads. A centrally located single wood stairway serves the second floor.

Below this story is additional

storage. The second floor is a surprisingly interesting and potentially attractive space for numerous activities besides storage if substantial egress improvements were made. The structure is sound and could support assembly floor loading if the wood floor planking was replaced.

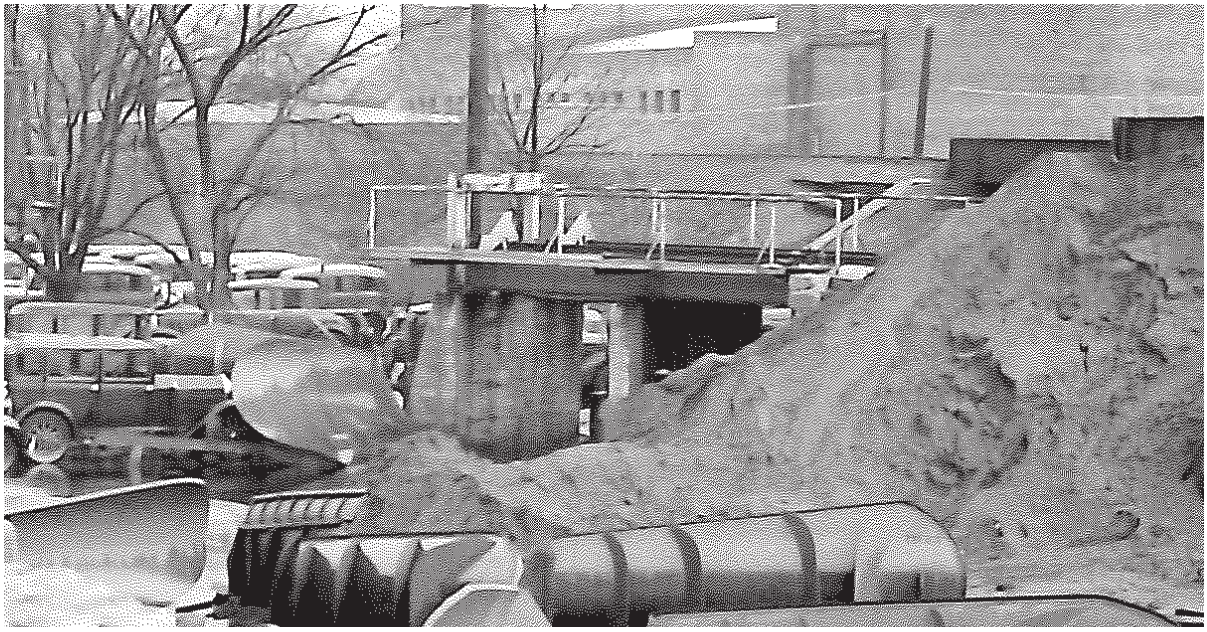
Interior second floor 2013 photo of the 1934 CWA Welfare steel shed addition.

2012 photo of the 1934 CWA coal dump trestle bumper.

Phase 6: Coal Dump and Railroad Trestle.

The last phase of the CWA work, completed in 1934 and perhaps concurrently with the steel shed, is the “coal dump” and trestle. A two-story brick bean warehouse building was torn down to construct a railroad coal-drop trestle for hopper cars delivering, salt, fuel and road sand for the road commission. The drop was also constructed under the 1933 Federal Civil Works Administration (CWA).

While the railroad trestle leading to the “coal dump” was torn down a number of years ago, the only part remaining is the rail bumper. It is the large concrete pier with a steel bent and signal mast bolted to the front-side of the pier. The guard was installed to keep hopper cars from rolling off the dead end. The rail-spur abutments off the main railroad line can be seen at the southern end of the site. (See the site plan on the architectural sheets that follow). No high resolution photos of this trestle have been found, however parts of it are visible in the photo below. Most of the roadbed was on an engineered grade rather than on piers.



This early 1940’s photo shows the coal drop in the distance to the left of the sand pile

Historic Photo Documentation of Structures.

Numerous photographs of the site dating from October 10, 1925 until the early 1940's have been made available for this study from the archives of the Washtenaw County Road Commission. We thank Roy Townsend, Carrie Ryan and (earlier) Val Cooper from the Commission for giving us access and scanning the photos.

We also were able to read the original Washtenaw County Road Commission minutes from 1926 to 1933 and photograph portions of the documents detailing progress on the new yard buildings. No Minutes have been found predating the 1926 documents. Since the yard was purchased by the Commission prior to this, it is not presently known what existed on the site when the Commission purchased it. We were not able to document whether the existing concrete machine shop and 10 car "private garage" as described on the 1925 Sanborn maps were privately constructed or were constructed by the Road Commission. The Minutes often refer to the "old garage" and no building or funding accounts refer to an earlier construction project. It is believed that the two concrete buildings were not constructed by the Commission but were perhaps built by the previous land owner.

The site when first purchased was much smaller than it is at present. In 1925 the Commission purchased land from the Michigan Milling Company on the east where the brick bean storage facilities were located and later from the J.J. Sauer Coal and Lumber Company for land to the southeast. The first purchase gave the Road Commission access to a rail spur which made deliveries of coal, tar, gasoline, fuel, oil, sand and salt much easier.

June 1940 panorama photo showing the entire yard with the 1934 CWA Welfare additions on the left, the 1928 machine shop in the center and two-story office and garage building on the right. Early 1920's era dump trucks are "retired" along the Ann Arbor Railroad grade where the spur to the trestle dump is located. Little has changed from the date of this photo to the present time. The large fuel oil tank next to the brick boiler flue and the 15,000 gallon gasoline tank with its adjacent brick pump house has been removed.

October 28, 1924 photo showing the existing 12 bay “old garage” building at the top of the picture with the two story concrete machine shop on the left. Four laborers are shown in front of the garage digging footings for the new high bay garage.

January 10, 1925 photo of the new Warren trusses on the garage going up in front of the old 12 bay garage. The existing concrete machine shop is visible on the left. As the new garage was being erected, most of the old garage with the exception of the one story wall fronting Washington Street was demolished and a new second story was added.

1925-26 photo of the newly completed garage and second floor office space before the 1928 addition was added to the west side (left).

January 10, 1925 photo of the concrete machine shop built between 1916 and 1925. Portions of the lower floor appear to have been incorporated into the 1928 addition. The southern lower wall and parts of the east lower wall are still visible within the building today. The ad hoc column spacing and complex structural systems in this part of the building were the result of needing to build around these existing structures. These structures were later demolished and a new concrete two-story building was threaded through the remaining open space.

The pre-1892 brick building in the upper center with the large steel flue was the original brick cooper shop. It was demolished last since it housed the boiler for the entire complex. When the new boiler room and flue were built at the east end of the garage, the cooper building was demolished.

1928 photo of site showing the existing machine shop and second story office with temporary structural clay-tile infill which will be removed when new addition is built. Portions of the first floor “old concrete machine shop” appear to have been incorporated into the new 1928 addition. The small gap between the two buildings just to the left of the tree trunk is probably the remains of the earlier cooper shop. Excavation for the new addition will start soon as the steam shovel visible to the right of the tree trunk has just arrived on site.

1928 photo of a Bucyrus Erie steam-shovel excavating a portion of the hill behind to make way for the 1928 new office and machine shop addition. The huge extent of this excavation can be seen by standing at the north end of the existing car wash property at 318 West Liberty and looking down at the 1934 CWA storage building. Approximately sixteen to eighteen feet of earth was removed from the south end of the Road Commission Property.

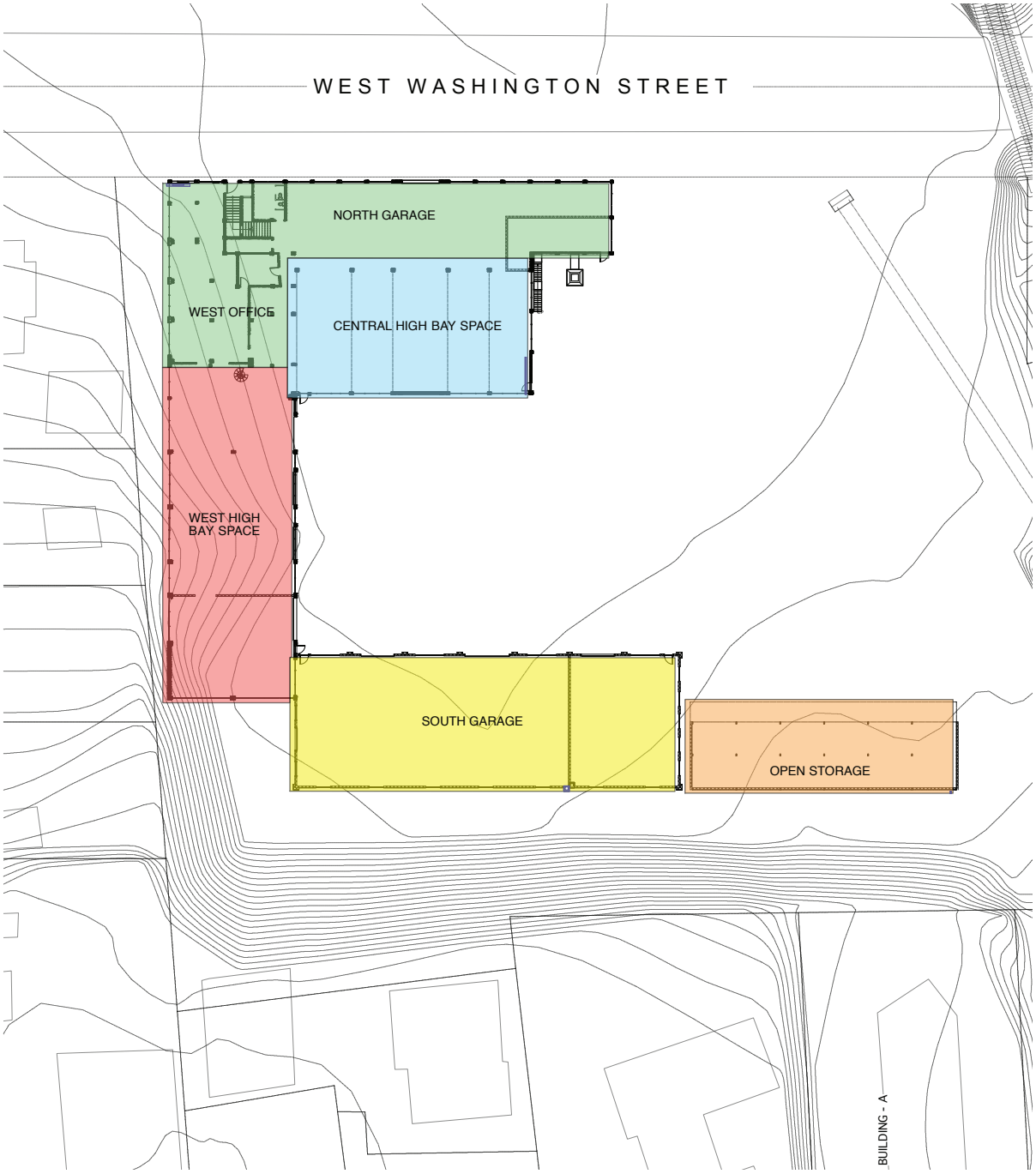
Undated late 1920's photo of yard with the bean warehouse in the background purchased from Michigan Milling. This building, which was used to store trucks and road tar, was torn down prior to 1934 when the rail trestle was built by the CWA. It is probable that the brick in this building was used to build the CWA garage shown in the photo below.

June 4, 1940 photo of the 1934 CWA Welfare Garage with five new GMC snowplow and utility trucks. The brick used for the lower 2/3 of the walls is reclaimed. It is possibly from the two-story bean warehouse on the site which had been recently demolished. The upper third is new brick. The "rug-brick" cream colored pilasters are also new brick.

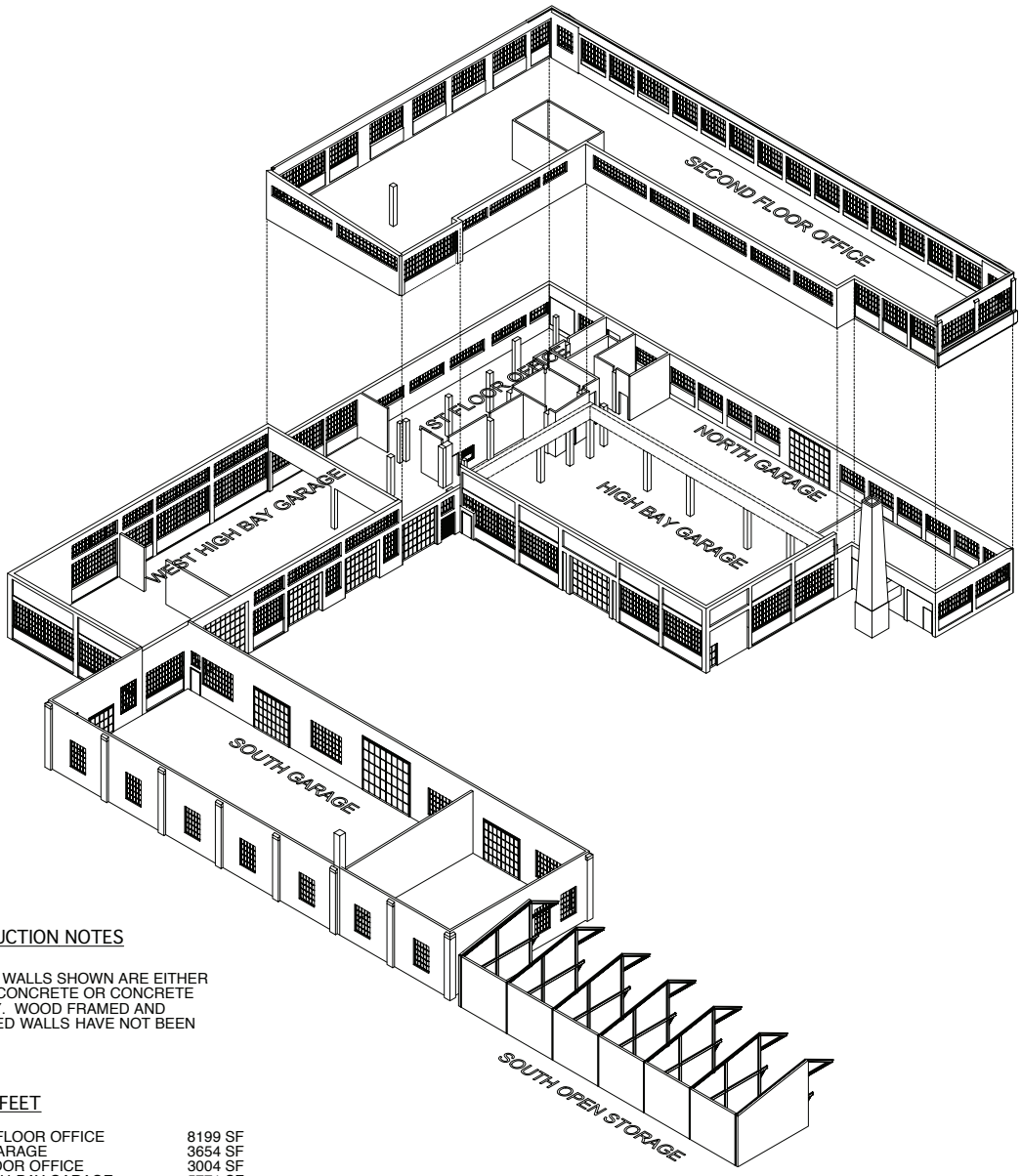
Undated 1940's photo of the 1925 high bay garage and older GMC snowplow and utility trucks.

Architectural Documentation of Structures

On the following pages are drawings from the architectural documentation portion of the study. These drawings may or not be to scale in this document. For scaleable high resolution drawings visit the City Website.



Site Plan



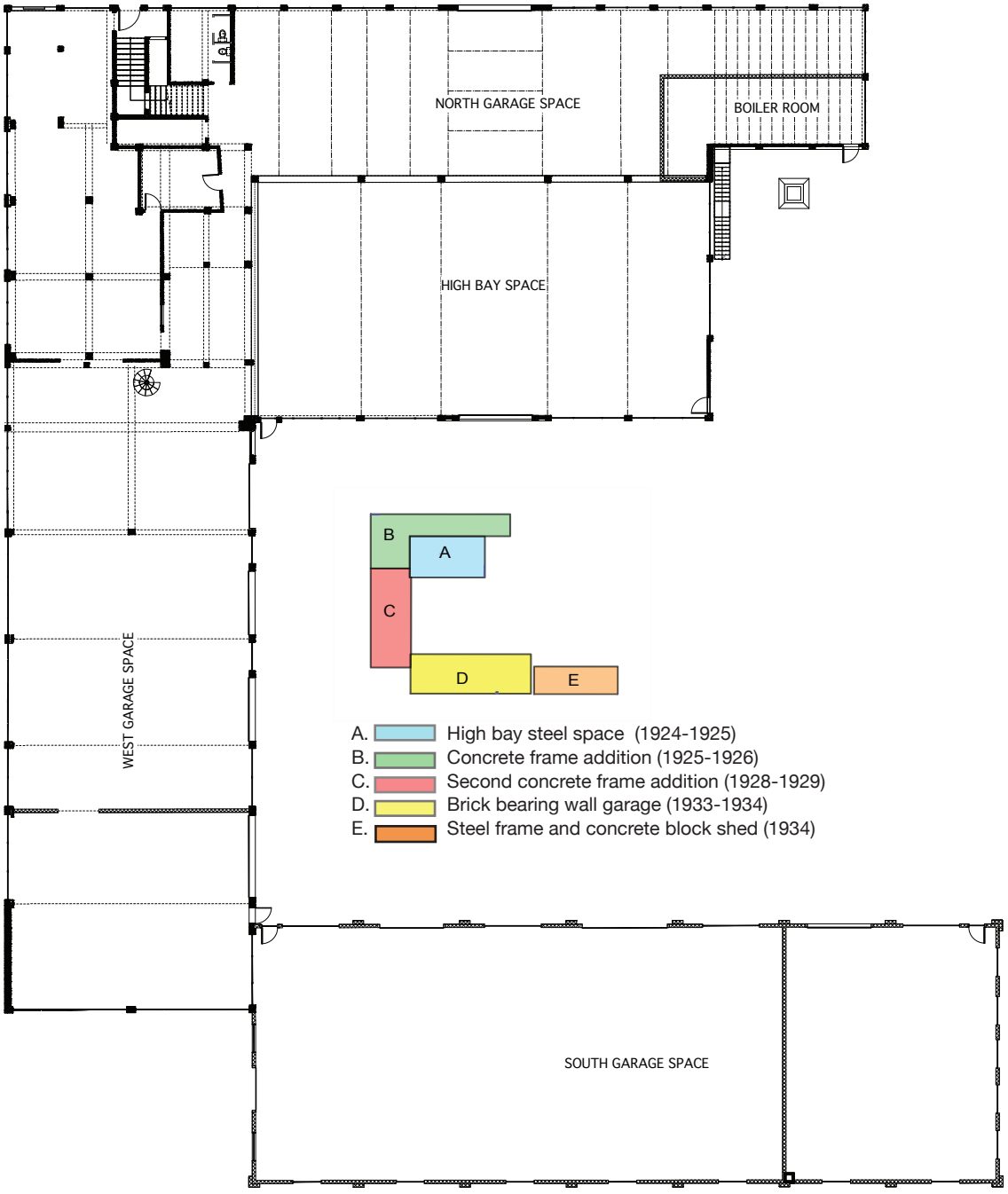
CONSTRUCTION NOTES

INTERIOR WALLS SHOWN ARE EITHER FORMED CONCRETE OR CONCRETE MASONRY. WOOD FRAMED AND PLASTERED WALLS HAVE NOT BEEN SHOWN.

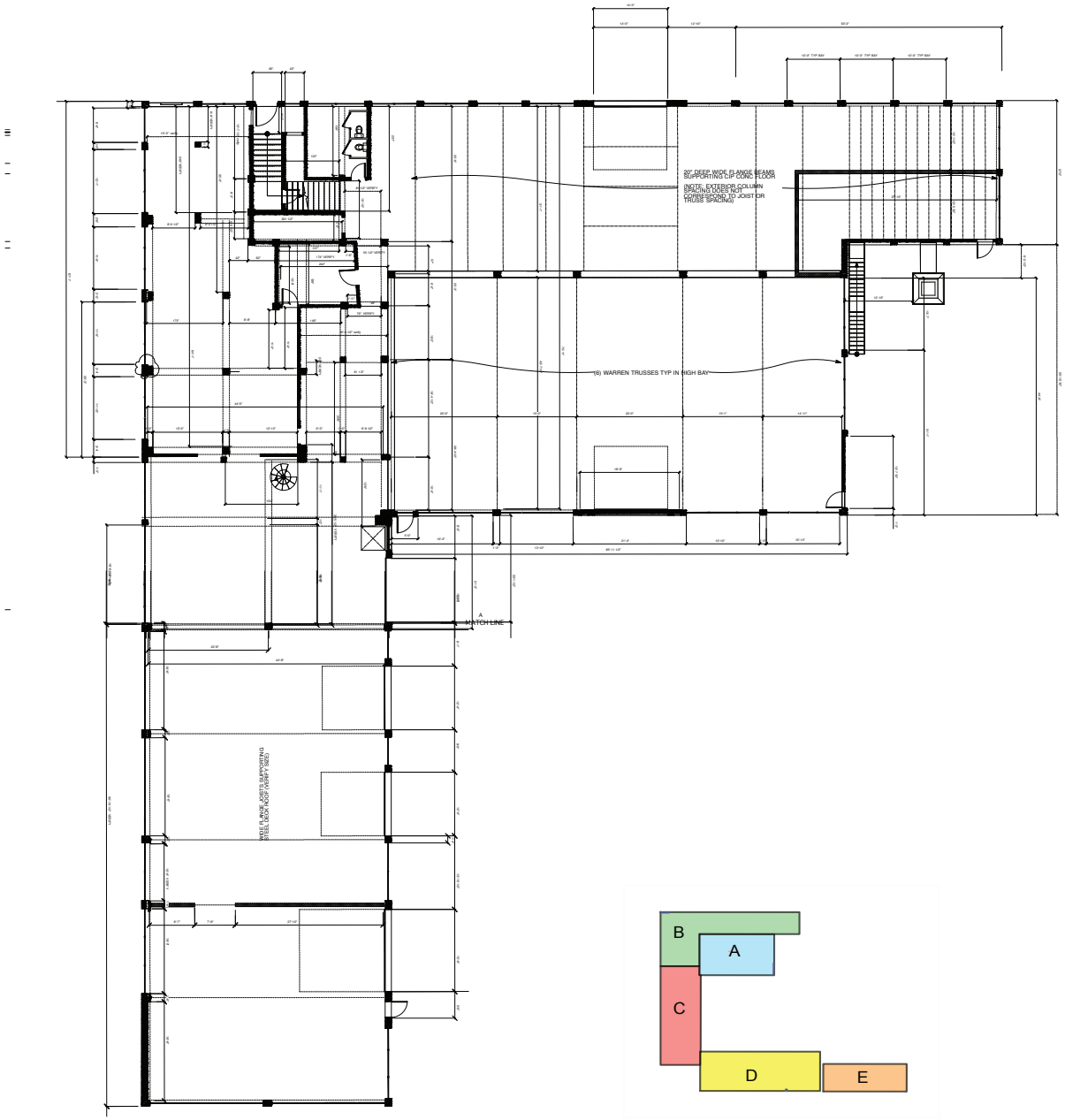
SQUARE FEET

SECOND FLOOR OFFICE	8199 SF
NORTH GARAGE	3654 SF
FIRST FLOOR OFFICE	3004 SF
WEST HIGH BAY GARAGE	5771 SF
HIGH BAY GARAGE	4020 SF
SOUTH GARAGE	6838 SF
TOTAL ENCLOSED SF	31,486 SF
SOUTH OPEN STORAGE:	
1ST LEVEL	3290 SF
2ND LEVEL	2334 SF
TOTAL OPEN COVERED:	5624 SF

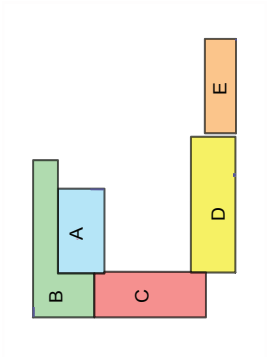
Isometric Drawing With Square Feet

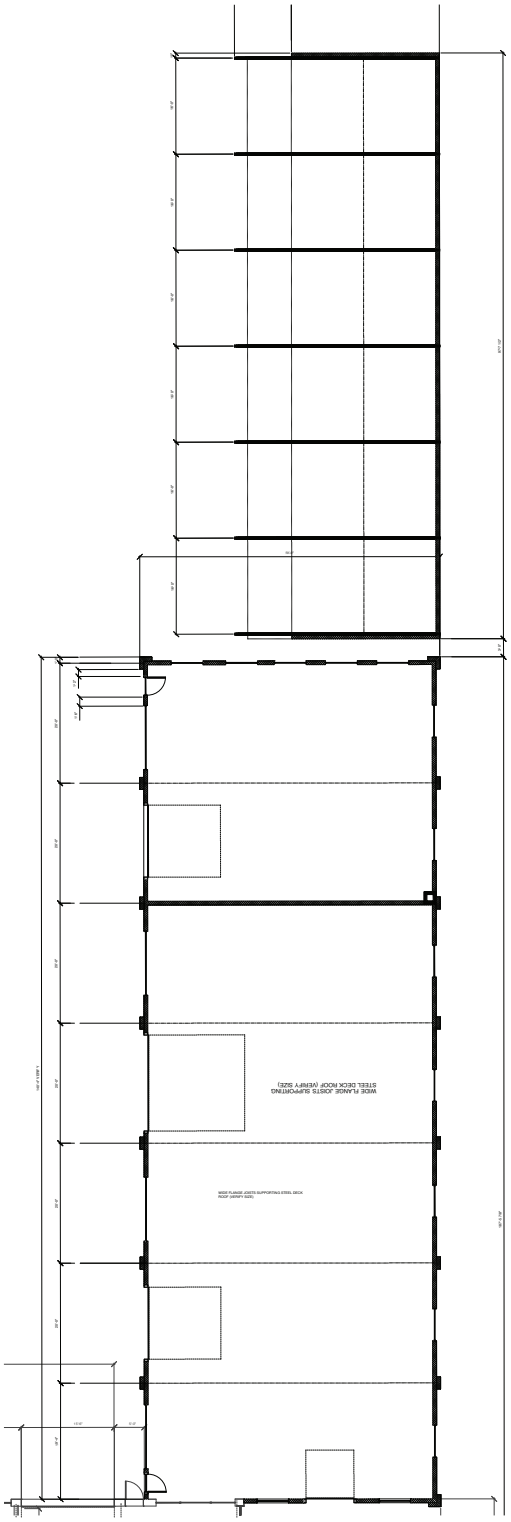


First Floor Layout Plan

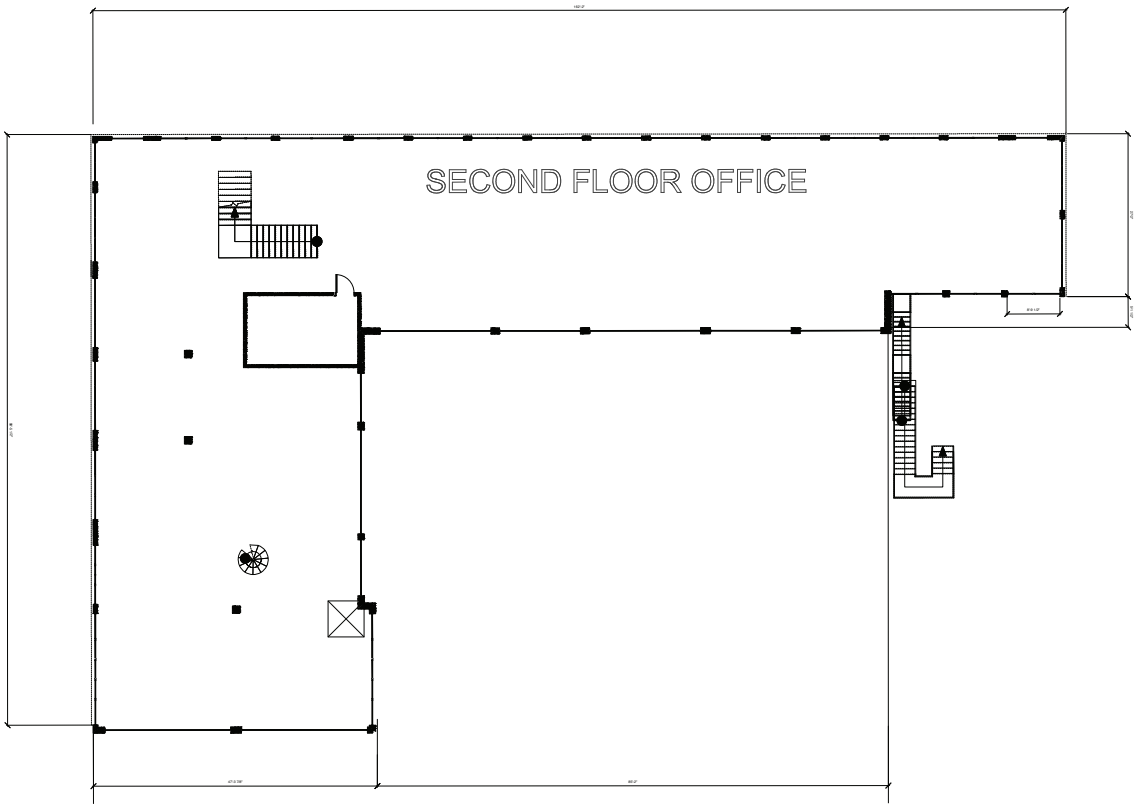


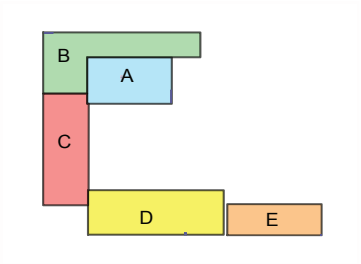
Buildings A, B, and C As Built First Floor Plan



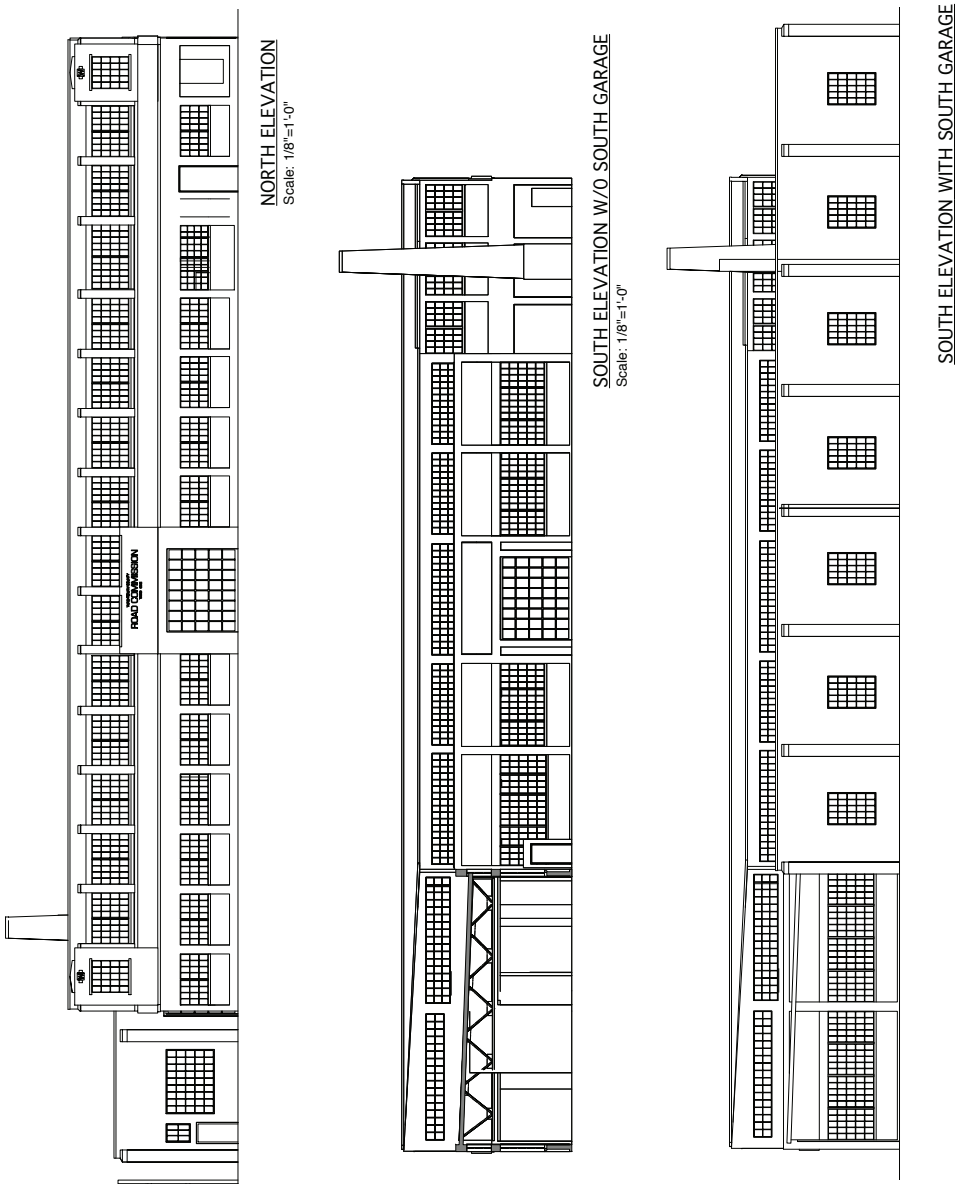


Buildings D and E As Built First Floor Plan (Rotated 90 deg CCW

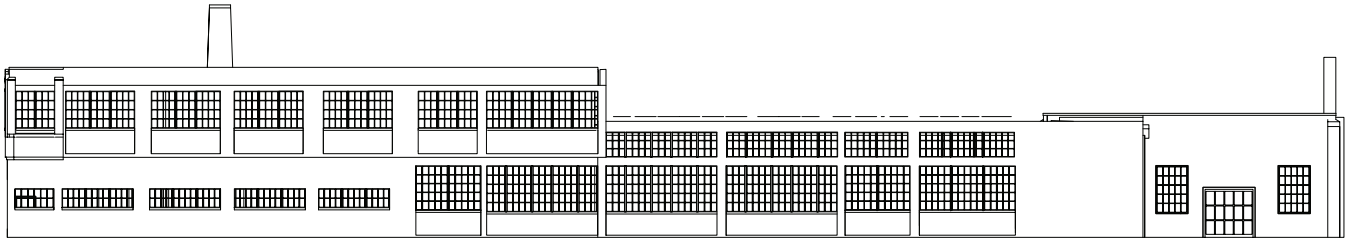




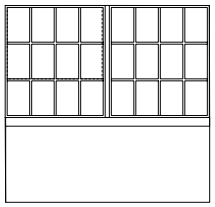
Buildings A, and B, Second Floor as Built Plan


NORTH ELEVATION
Scale: 1/8"=1'-0"
SOUTH ELEVATION W/O SOUTH GARAGE
Scale: 1/8"=1'-0"
SOUTH ELEVATION WITH SOUTH GARAGE

Elevations



WEST ELEVATION
Scale: 1/8"=1'-0"



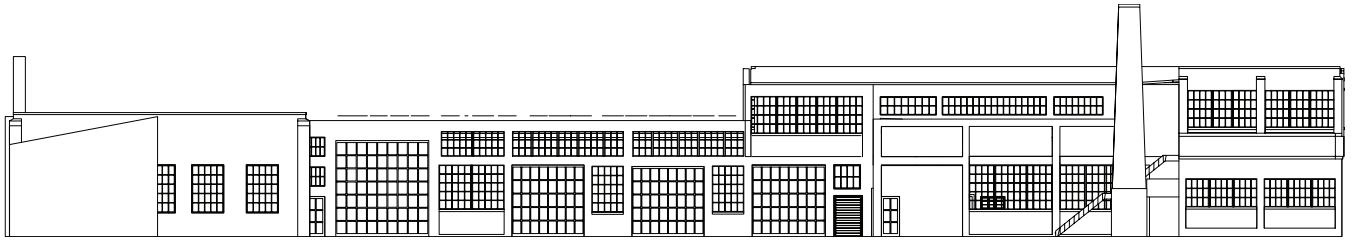
TYPICAL GLASS SIZE IS 12" X 18".

WINDOW UNITS ARE TYPICALLY 3, 4, OR 5 LITES WIDE. UNITS ARE MULLED TOGETHER TO ACCOMMODATE VARIOUS BAY WIDTHS.

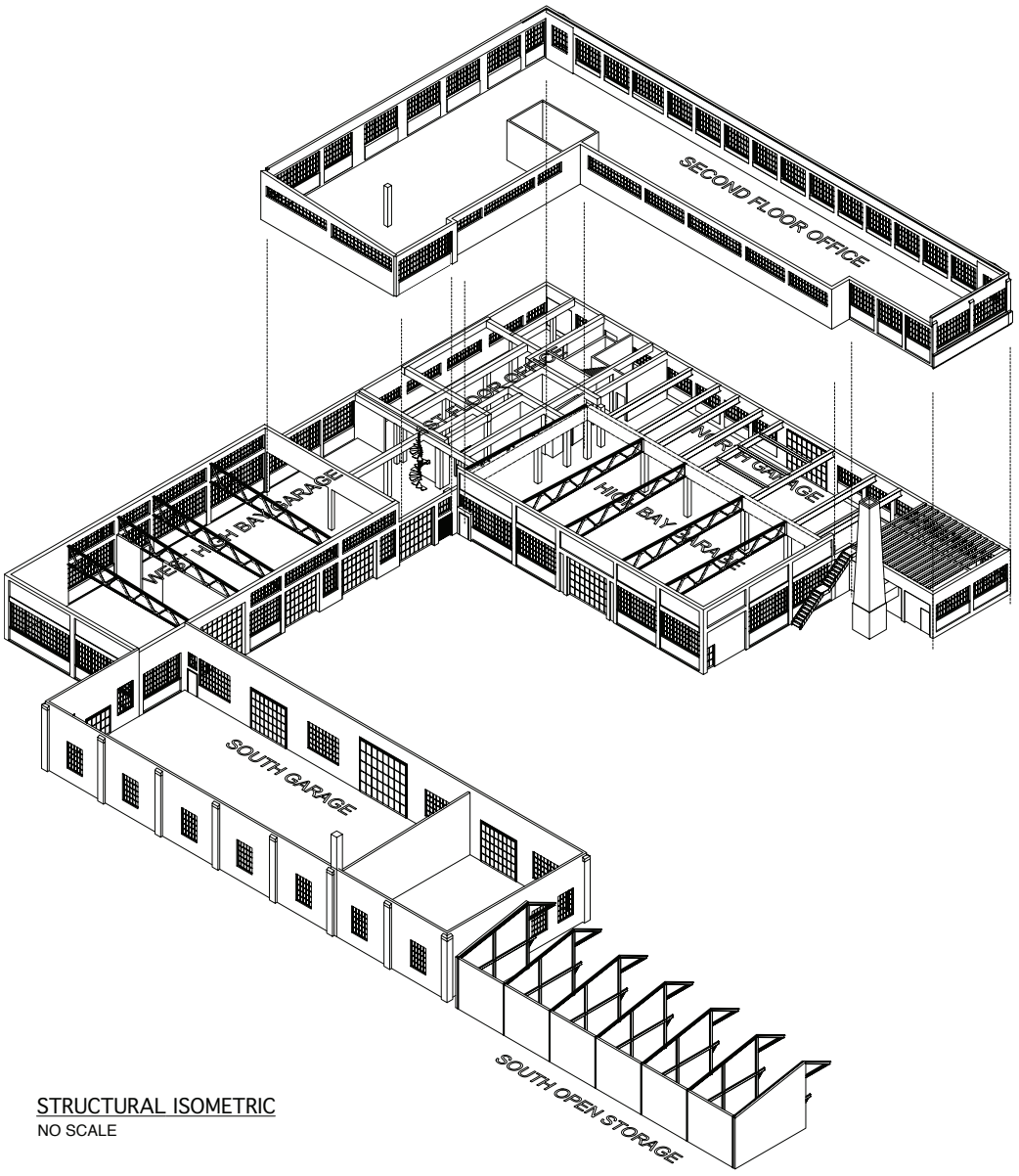
MOST GLAZED PANELS HAVE 6 OR 9 LITE PIVOT OPERATING UNITS.

TYP STEEL SASH ELEVATION
Scale: 1/2"=1'-0"

NORTH ELEVATION OF SOUTH GARAGE
Scale: 1/8"=1'-0"



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



STRUCTURAL ISOMETRIC
NO SCALE

Isometric Structural Plan

Part 2:
Potential Use Assessment: Assembly and Business Uses

Based on our findings we were instructed to provide a rehabilitation plan for certain types of community or business uses without considering a residential use. The Washtenaw County Road Commission Building is one of only a few early concrete frame structural buildings located in the City of Ann Arbor. Because the facility was built out of concrete as an industrial use, it can be adapted to many different community and business uses. There are however some shortcomings with the building. Most community and business uses have greater demands for egress, accessibility (ADA) and basic mechanical and electrical systems. The new uses will require certain elements to be corrected in order to accommodate any new uses.

Most of the uses proposed in the past and those now considered by non profit groups fall under the 2009 Michigan Building Code's Chapter 3 "Use and Assembly Classifications" of either Assembly Groups A1, A2, and A3 or Business (Group B). The Building Code lists some of the different types of community and business uses as follows: A1 uses include motion picture theaters, concert halls, television studios with audiences and theatres. A2 uses include banquet halls, night clubs, restaurants, and taverns. A3 includes uses such as art galleries, arcades, community halls, dance halls, exhibition halls, gymnasiums, swimming pools, lecture halls, libraries, museums, and transportation terminals.

Group B, business uses, include health care facilities, animal hospitals, banks, civic administration, outpatient clinics, educational above the 12th grade, laboratories and professional offices such as medical, dental, architectural and legal. It is evident that many potential community uses are included in the listings above.

At least one or more of the structures at the complex could be classified as Group S-2 (Low-hazard storage) or Group U (Utility and miscellaneous) and used for temporary facilities or for storage. These structures could have minimal HVAC and electrical systems and require very few modifications to their interiors. Such uses could be: a covered and minimally heated artisans market, winter farmer's market, temporary holiday artisans market, collectors, antique and makers fairs, swap meets, craft shows, artistic performances, temporary exhibitions, re-enactments, maker workshops, specialty shows and exhibitions. Other uses might be more construction related such as space for welders, metal workers, sculptors, and boat builders. Further uses could be related to the "Y" next door or provide additional program space for the Y such as covered day care activities, contra dancing, group exercise classes or child watch-adventure zones.

A benefit of all of the uses listed in the above paragraph is that they would not be as adversely impacted from flood hazards that may affect the site. (See a further discussion of the flood hazard issues later in this report under Site Features). Also, construction costs for finishes and mechanical equipment could be substantially lower than for business or assembly uses.

Any business or assembly use needs flexible spaces and an ability to accommodate changing technology as well as to provide an environment that is safe, comfortable, and delightful. This particular building type can accommodate a number of spaces and provide the flexibility to satisfy the needs of many different tenants and visitors. For example, uses could include open community spaces, conference rooms, dining and catering, childcare centers and physical fitness workout rooms. There is also the ability to accommodate public lobby and circulation areas, restrooms, mechanical equipment and (IT) rooms. All new assembly and business uses will require substantial modifications to the building. The key areas to be tackled at 415 West Washington are the exterior envelope repair, entrances, mechanical systems, energy performance, and interior finishes. This will not just preserve the building, but provide a flexible modern facility.

Because this facility was used as an open garage with some office space, it provides a unique opportunity for any new use since there is very little on the interior that will be impacted by new construction. Extensive use of industrial sash brings in huge amounts of light that can be wonderful for many uses, but difficult to control for other uses. A good example of what parts of this building complex could be like is the old Kelsey-Hayes high bay space now occupied by the Taubman College Liberty Research Annex at 503 West Liberty Street. Here, construction workshops and frequent gallery exhibitions benefit from high natural light levels.

Suggested uses for the high bay spaces in addition to those mentioned above, include performance spaces, theatres, fabrication studios for the visual and performing arts and permanent artisans and farmer's markets. Uses mentioned before which were suitable for Buildings D and E could also be accommodated here. They include space for welders, metal workers, sculptors and ceramic studios. Permanent uses related to the "Y" next door could provide additional program space such as day care activities, contra dancing, group exercise classes, and child watch-adventure zones.

Part: 3. Condition Assessment: Site Features

Items not evaluated

The RFP did not request that most site features be identified and assessed. Specifically not a part of this study are site utilities, site drainage, storm water, automobile parking and circulation, retaining walls, land features, adjacent structures and their impact, zoning, and long range planning.

There are a few items however that were either considered as a part of the historic record or are immediately adjacent to the building and affect the structure, or are important in evaluating the use and renovation of the building. They are the trestle coal drop, adjacent paving and walks, and the potential for flooding.

Adjacent Paving and Walks

Building "B" of the site complex abuts Washington Street. Although there is a vehicular access door on this facade, there is no curb cut to allow vehicles into the building. When this phase of the complex was built it is likely that curbs and gutters were not installed and that access was via a graveled road and apron. We have not established when the street was regraded and curbs and gutters installed. The passage door threshold at the west end of the building, which is about four inches high, is approximately eight inches above the sidewalk. This makes the landing approximately 12 inches above the walk. The interior stair access and landing area is ramped up about eight inches. This was probably done to raise the door above the exterior grade at the time the structure was built. Washington Street increases in elevation as is continues westward. When the street was improved, the re-grade could have lowered it about eight inches resulting in a "perched" door opening. This has created a stair geometry problem for barrier free access and code compliance which should be remedied by either raising the sidewalk or creating an additional step outside the door. This door could be used to meet half of the egress access requirements. The coiling overhead door opening farther to the east could be used to create a new barrier free access off Washington Street.

The vehicular circulation area around the building is a gravel surface. It is about the same elevation as the interior floor levels. This gives good barrier free access to all portions of the building but has created drainage problems. These problems have been made gradually worse as additional fill and surfacing material has been added to the parking lots over the years.

Potential for Flooding

The Complex lies within the Allen Creek floodplain and just outside the floodway. By examining the

FEMA flood profile thru the creek it is possible to estimate the level of water that might be expected in a storm with a 1 percent chance of occurring (100 year flood). The creek is contained at this point within a concrete vault approximately seven feet high inside. The flat top of the vault (approximately ten feet wide) is visible as it dog-legs thru the site and disappears beneath the Ann Arbor Railroad grade. Using the FEMA flood profile and superimposing it upon the site drawings, it is possible to make estimates of what flood levels might be in each of the five buildings. Buildings A and B could have five to six feet of water while buildings D and E could have seven to eight feet of water. Additional hydrological study in the immediate area would be necessary to establish more precise potential flood elevations within the buildings and to create FEMA Elevation Certificates necessary for determining the cost of flood insurance. (See Attachments for Base Flood Elevation calculations and Elevation Certificates).

There has been some history of water entering the building from time to time. These findings have been verbally confirmed by the City Storm Water and Flood Plain Program Coordinator.

Given the low strength of the enclosing walls and their supporting structure along with the numerous grade level openings, it is not practical to flood proof the structure. Even if most openings were raised or eliminated, the structure would be difficult to strengthen enough to resist the resulting hydrostatic pressures from four or more feet of water. It is not feasible or possible to raise the floor elevations one foot above the 100 year floodplain even in the high bay spaces since the bottom of the trusses is approximately 12 feet above the floor. It is however feasible to raise the floor elevations by about twelve to eighteen inches which could reduce the probabilities of minor stormwater events affecting the first floors and could also help lower flood insurance costs.

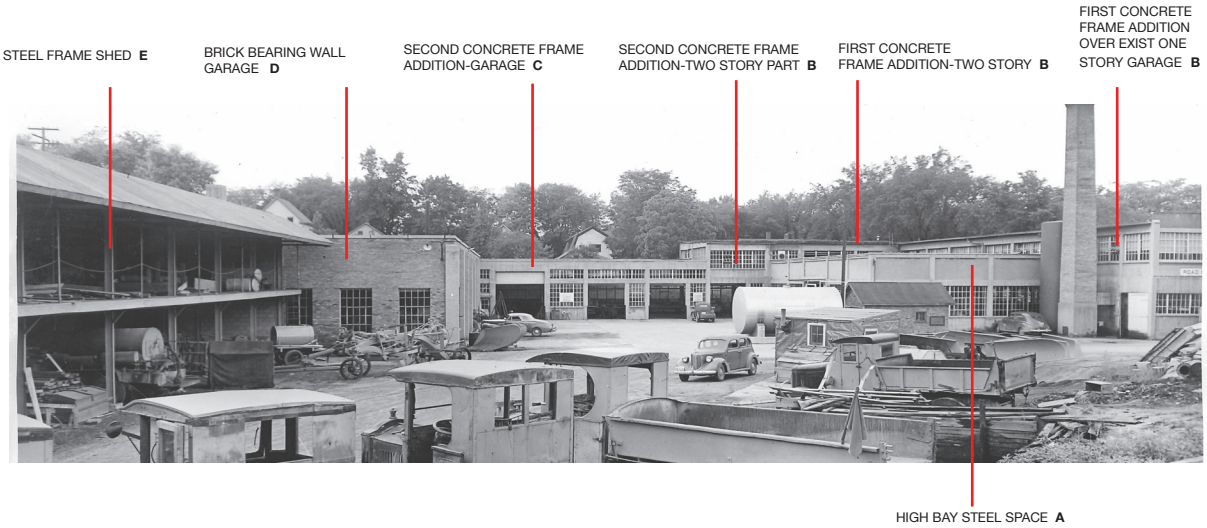
The historic status of these structures exempts them from the mandatory requirements of flood-proofing or raising occupied floors one foot above the base flood elevation when renovation costs exceed 50% of the value of the building .

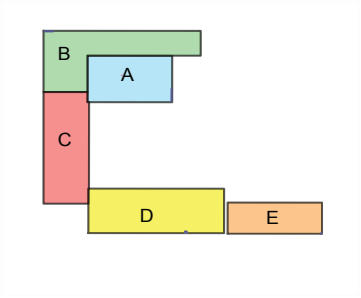
Flood insurance is required by federally insured or issued mortgages or if federal funds are used for building renovation. This insurance is likely to be quite expensive given the recent changes to the FEMA National Flood Insurance Program. Structure coverage is available for up to $500,000 per building. As an example, in our report, buildings A and B were classified as a single structure for building code evaluation purposes. If the recommendations in our report were carried out for this combined renovated structure, including raising the floor levels 18 inches, mounting all mechanical and main electrical equipment on the upper levels or rooftops, our commercial insurance agent quoted a cost of $10,034 per year with a $5000 deductible, based upon submitted elevation data and building construction data. (See attachments for quote). This is only an example of what costs might be. Costs could vary significantly when an actual user submits base flood elevations, proposed uses per floor and specific building construction data.

3. Condition Assessment: Structures, A Summary of the Approach

Because of the complexity of the site created by the many additions over time and their different structural systems, it is useful to divide the site into five separate buildings or areas for analysis. Each building component within the separate areas will then be identified and described, its condition evaluated, good, fair or poor, and recommendations will be made for each component. Cost estimates will be summarized in a separate spread sheet at the end of this report.

Below is a key plan that represents the different building areas and the dates they were constructed. Adjacent to the key plan are listed the five different areas of investigation.



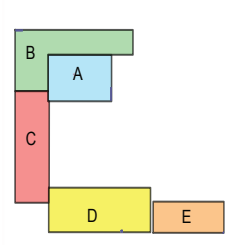


A. High bay steel space (1924-1925)
B. Concrete frame addition (1925-1926)
C. Second concrete frame addition (1928-1929)
D. Brick bearing wall garage (1933-1934)
E. Steel frame and concrete block shed (1934)

The investigation was conducted by on site research and the use of historic photographs of the original construction. Washtenaw County Road Commission records dating from 1924 were also used. No destructive investigations such as coring or drilling were done. Some building components such as below-grade foundations or parts concealed by finishes were difficult to evaluate. Each section or area of the complex was separately evaluated according to City RFP #833. Those areas of investigation are summarized below. All the buildings in the complex can be seen in the above panorama photograph from the mid 1940's.

3. Condition Assessment: Individual Structures

Area A: High Bay Space



Foundations

Description
This space was the first new structure to be built after the existing one story “private garage” was constructed. Historic photographs show foundations being excavated by a labor crew of four to five people. (See the History section of this report). The footings appear to be approximately five feet by five feet and are about 40” deep. These foundation sizes are adequate for a structure of this size depending on the soil bearing capacity below the footings.

No soil borings were made to make this evaluation, however, borings were made in a few locations around the building by a contractor retained to determine the extent of soil contamination. The soils were described in those borings. A soil bearing capacity of approximately 1500 lbs / sq foot could be assumed on undisturbed soils. Some fill and organic soils were found in the borings. It cannot be determined if the bottom of the footings were below the fill or organic soils. There is little or no obvious differential settlement which would indicate inadequate soils.

Evaluations
It is not possible to evaluate the conditions of the footings, their reinforcement or their adequacy without further testing or analysis.

Recommendations
No recommendations for further action are made at this time.

Structural System

Description
The high bay steel framed space is a good example of early Warren trusses built of riveted steel angles and web connectors of plate steel. The trusses are six feet deep at the southern end and four feet deep at the northern end. This creates a roof deck sloping 24” toward the north end of the bay. The roof stormwater is picked up by drains at the inner roof edge just south of the second floor wall. The bottoms of the trusses are approximately twelve feet above the concrete floor. The trusses appear to be unpainted bare steel.

The concrete roof deck is supported by twelve inch deep steel wide flange sections approximately eight feet eight inches on center located at the truss panel points. A board-formed reinforced concrete deck six to eight inches thick was cast over the steel purlins. The ceiling height in this structure varies from 16 to 18 feet due to the sloping top chords of the trusses. Newly placed steel reinforcing bars for the concrete roof deck can be observed in the historic photos. Mid-1920’s concrete placement techniques can also be seen in these photos.

The roof trusses are supported by steel lattice columns encased in concrete for corrosion and fire protection. Concrete was cast around each column using wood board forming. The original concrete encasement was left uncoated. At an unknown later date a grey paint or waterproofing coating was applied either for esthetics or as an attempt to reduce the corrosion in the steel. The cement encasement on the columns were later painted grey or coated with a grey waterproofing material.

The exposed Warren truss design dates back to 1848 when they were patented. They are historically significant and create a strong visual element within the large open interior. The lattice columns, while historically significant from an engineering standpoint, were never in this case intended to be left exposed either on the interior or exterior.

Condition Evaluation
The Warren trusses are in very good condition, There is little rust on the interior. The only areas where rust can be observed is where the easternmost truss is imbedded in the outside concrete spandrel wall. The bottom chord of this truss is now exposed by spalled concrete and is continuing to rust.

The concrete roof deck which is in fair condition has numerous areas where the roof has leaked, particularly where the roof deck slopes into the second story office space. On a field visit, some recent leaking near the eastern most interior column was observed. The leaks are evident from lime deposits on the underside of the deck. Little or no concrete spalling of the underside of the deck was observed however. This would indicate that water has not leaked for extended periods into the concrete because there are no indications that pack rust has formed on the reinforcing bars.
.
The lattice columns on the exterior are in poor condition. Some on the interior, but mostly on the exterior, are showing significant corrosion related concrete spalling. The three center columns are in the worst condition. The lattice members on the third column from the west are seriously damaged. On the top one third of this column, the concrete coating has spalled off exposing the steel. Most of the riveted connections have separated due to the formation of pack rust accumulating between the lattice members and the columns. Many of the lattice members have completely rusted through reducing the structural integrity of those columns. Earlier repairs using expanded metal lath fixed over the columns with mortar coatings applied were not successful. The columns on the east facade are in better condition. All have some visible portions that have deteriorated. Roof leaks on the interior on at least two columns near the east end of the bay have resulted in rusting, causing the concrete encasement to separate from the lattice columns.

Recommendations
No stabilization is required for the Warren trusses. For a long life and for esthetic reasons the trusses should be cleaned and painted.

The concrete roof deck requires no immediate work. For esthetic and habitability reasons however, the surface should be cleaned of soot and grime. Although never painted, after cleaning, consideration should be given to painting it. This would improve, for certain uses, the habitability of the space.

On the lattice columns, the cementitious coatings and concrete should be removed to areas where they are soundly bonded to the steel. Loose rust should be removed from the connections and the loose steel connections shall be welded. Where the steel has been reduced in cross section sufficiently to impair its structural integrity, the steel shall be replaced with similar steel. The loose pack rust on the remaining steel shall be removed as much as is practicable and all the exposed steel shall be coated with a corrosion inhibiting agent. The concrete encasement shall be repaired with material matching the texture and color of the original.

Envelope-Exterior Walls

Description
There are no interior wall or ceiling finishes within the garage space The structural system is visible and exposed in all areas. (See Structure above for a description of the structure and recommendations). There are no floor finishes in the garage area. The rough unfinished concrete floor slabs are visible. Running along the north end of the space is a structural column line. Along this column line runs a filled in trench drain. At the west end, the slab is approximately six inches below the adjacent slab.

Condition Evaluation
The slabs are sloping, broken, cracked and in generally poor condition.

Recommendations
If use other than a garage or storage space is anticipated, the slabs must be leveled by removal, filling and recasting. Since the earth beneath major portions of this slab is contaminated (see Tetra Tech Hazardous Materials Report), replacement or recapping must use techniques to mitigate this problem.

Envelope-Roofing and Waterproofing

Description
The roof slopes toward the north (building front). The roof is sufficiently sloped to prevent ponding of water. The water is drained toward the north where it is picked up with four roof sumps adjacent to the wall and drained in two directions toward both the west end and east ends of the building. The west drain exits the building over the passage door on the south facade and presumably into a building and site storm drain. This drain termination location is not the original location. Most likely it was into a storm drain below or adjacent to the floor trench drain. The other drain descends into the floor at the east end of the building and presumably into a site storm drain and into Allen Creek.

Based upon the second floor roof above, the roof has probably been recovered at least three times with all the original layers left intact. The topmost (latest) roof is a roll applied modified bitumen roof which is applied over asphalt bonded multi layer fiberglass reinforced building felts. This lower layer is in turn applied over another built up asphalt roof, possibly the original asphalt built up roof.

The parapet copings are the original clay tile laid on top of the concrete spandrel panels. On the south wall, asphalt roof flashing compound has been used to waterproof the tiles where they contact the topmost asphalt membrane.

Condition Evaluation
There are some leaks, observed from below, staining the concrete deck. Some of the leaks are still occurring, particularly at the intersection of the roof and the two story south wall. The roofing material is in poor condition. The roof has expanded and wrinkled over the entire area, causing it to debond in places from the substrate below. The flashing up the side walls onto the second floor of the office story suffers from poor workmanship and lack of proper flashing details and methods.

Recommendations
The low slope asphalt roof is not a character defining feature and has reached the end of its service life. Replacement is necessary. The clay tile copings could be considered a character defining feature but were not used on any later parts of the building. Reroofing will require their removal. Reinstallation of the old tiles would not be practical due to their condition and the low height of the south parapet. It is recommended that new metal copings be installed over repaired concrete copings and painted to match the original concrete copings. The roof parapets are high enough to accommodate roof deck insulation. For energy conservation, consideration should be given to insulating the top of the roof deck.

Windows and Doors

Description

The high bay section of the complex, as well as all the other enclosed buildings, uses rolled steel sash frame windows with single pane untempered glazing for natural daylight. A window is comprised of sash units having multiple panes. Sash units range from two panes to five panes high and three panes to five panes wide. In the five pane wide units there are pivoting horizontal ventilation sash which was standard for industrial buildings of the time as the lack of screening was not a problem. A window is comprised of one or more sash units with a steel “T” mullion between each frame that is embedded into the concrete

headers and sills. Some bays are one sash unit wide and others are two and three units wide. Each window unit is installed the full width of a bay. All glass panes are 12" x 18" by 3/16" thick and clear glass.

The east facade of the high bay space is divided into three bays. The middle window bay has three sash units. The two outer units are three panes wide by five panes high and the center is five panes wide by five panes high. All units appear to have one pivot sash per frame. The north bay has had the frame removed and replaced with eight inch concrete block. The south bay is filled with a poured concrete wall which appears to be original. The window frame on the south has been modified to accommodate an exhaust fan for the garage space.

The south side of the high bay space has five bays total. The center bay contains a large overhead door and the two bays on either side are rolled steel sash units. The window on the west is larger than the other three units which are all the same size. The west bay window unit is broken into five sash units having two three-pane units on either side of a five-pane center unit. All are five panes high with the center frame unit having one centered pivot sash. The other units are broken into five sash units. The outer units are four panes wide by five panes high and the center unit is five panes wide by five panes high. Much like the other windows, all date from the period of significance.

Condition Evaluation
The condition of the window frames is fair. The condition of the glazing is poor. All the rolled steel sash units on the high bay area are covered with plywood installed to protect the panes of glass that remain unbroken. About 50 percent of the windowpanes in the high bay area appear to be broken due to vandalism. All frame assemblies are intact with some surface rust. The broken windows have loose window glazing compound. Tetra Tech's hazardous material survey indicates no sign of asbestos in the window glazing compound. All sash latches are intact, however most are difficult to operate due to corrosion. We were not able to test whether the sash could be opened as they were boarded over. All window openings are in fair condition except for one frame which was heavily modified to accommodate an exhaust fan on the east façade. It is in poor condition due to the missing piece of the window frame.

Recommendations
We recommend preserving the windows for their distinct historic character and because they are major defining features of the entire building complex. The steel sash windows allow in a great amount of natural daylight into the space. This feature was common to industrial buildings of the era before artificial lighting was sufficiently developed.

The Secretary of the Interior's Standards for the Treatment of Historic Properties has published a Preservation Brief #13, which addresses the restoration of steel sash windows. The Brief proposes three types of treatment based upon the condition of the window. The approach is: first routine maintenance, second, repair in place and third; remove and repair off-site. The key factor to consider when proposing a repair is the outcome expected for the performance of the windows. Performance means weatherization, natural ventilation, energy conservation, and the condition of the existing units. Because the majority of the units are in fair condition and do not contain hazardous glazing compounds, we believe the units can be restored on site and in place. However it is important to be aware of the risk factors when dealing with steel units. Most of the units have been coated with lead paint as stated in the report by Tetra-Tech. The guidelines for removing the lead paint along with the increased window performance may warrant removal from the building for restoration in order to increase window longevity and thermal performance.

Whether to remove and restore or to restore on site will be based on economic issues and contractor best practices. Whichever method is selected we propose the following items be repaired: First remove all existing glazing and strip all paint both inside and out. Repair all missing steel frames resulting from

modified openings, and clean, lubricate or replace hinges and other hardware. Apply corrosion resistant primer and epoxy paint to all steel frames. Install new Low-E glazing and high shading coefficient glazing where solar conditions warrant. Install new glazing compound and weather seal around all active windows. This will produce a window with a high level of performance for this type of structure. In combination with caulking and weather stripping, these treatments can produce energy ratings rivaling those achieved by new single glazed units.

Description
The high bay area of the complex has a single overhead wood framed sectional door with hardboard panels and a row of glazing on the third section from the bottom. This door is most likely to be from the period of significance.

There are two 3'x 6'-8" x 1 ¾" hollow core metal passage doors set in steel frames embedded in the concrete wall. The first is a door at the southeast corner and the other is on the southwest inside corner. none of the egress doors are original to the facility.

Condition Evaluation
The hollow core metal doors in steel frames are in poor condition. All jambs and bottom edges of the doors are rusting. They are badly warped and do not close correctly. The door and its concrete frame at the southwest inside corner was added at a later date as it does not show up in historic photos. The concrete is also badly deteriorating around this opening. The hardware and weather stripping are also missing from this door. The door currently must be locked with a padlock. The door at the southeast outside corner has some additional surface rust and is in fair condition. The hardware is not operating correctly and the door is sticking in the opening.

The sectional overhead door on the south is a six panel wood door with four Masonite panels in each section. The 12 foot by 12 foot door has an overhead coiling rod and track with an electric operator and switch mounted on the wall. This appeared to be the main door into the high bay space for servicing trucks and machinery. The bottom three sections are in poor condition. The door does operate. This door appears to be original to the high bay area, however it's been modified over the years for maintenance reasons. The sill at the opening is not tight and daylight is coming through the perimeter of the opening, all weather stripping is missing.

Recommendations
Since all the hollow core steel doors are not original in the high bay area and hold no architectural significance, they should be replaced with updated steel doors along with new hardware and weather stripping. The sectional overhead door, even though it is the original door is too badly deteriorated to restore and is of inferior quality. We recommend replacement with a comparable higher quality wood door and modern hardware and controls. However depending on the use of the high bay space, this opening could be filled in with a modern glazing system, which would still preserve the character of the opening.

Interior Finishes

Description
There are no interior wall or ceiling finishes within the garage space. The structural system is visible and exposed in all areas (See Structure above for a description of the structure and recommendations). There are no floor finishes in the garage area. The rough unfinished concrete floor slabs are visible. Running along the north end of the space is a structural column line. Along this column line runs a filled in trench drain. At the west end, the slab is approximately six inches below the adjacent slab.

Condition Evaluation
The slab is in poor condition due to sloping and subsurface contamination.

Recommendations
A new slab should be poured. Measures should be taken to mitigate sub-slab contamination and soil gases from migrating into the structure.

Mechanical Systems

Description
There is only a minimal heating system. There are four ceiling mounted Reznor B gas-fired, gravity-vented unit heaters. They are not original to the building.

Condition Evaluation
The condition and effectiveness of the heaters is not known. Anecdotal evidence from a long tem city employee who worked in the building suggests that “everyone was always cold. These heaters are only minimally suitable for storage or garage type facilities.

Recommendations
The mechanical system is only minimally suitable for temporary human habitation. If this structure is to be occupied for assembly or businesses uses, a new HVAC system must be installed. See the Mechanical Recommendations at the end of this analysis for further recommendations.

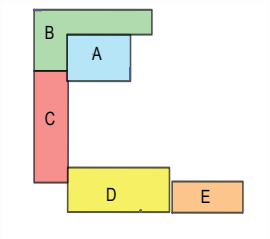
Electrical Systems

Description
The lighting system consists of ceiling mounted high pressure sodium luminaires.

Condition Evaluation
The service is inadequate for anything but present storage or garage uses. See the Electrical Recommendations at the end of the analysis for further information.

Recommendation
See the Electrical Recommendations at the end of the analysis for further information

Area B: Concrete Frame and Second Floor Addition



Foundation:

Description
The foundations for this space were built for a one story “private garage” depicted on the 1925 Sanborn map and not shown on the 1916 Sanborn map. It could not be determined if this structure was constructed by the Washtenaw County Road Commission or was constructed by a private party prior to the Commission acquiring the property. The Sanborn map describes it as a “private garage” and certain parapet details shown on the historic photos indicate that this garage was not built as a first phase of a later two story building. It is clear from the historic photos that most of the north facade was retained as well as the east facade and two bays in the south facade at the east end.

A second floor was added in 1924-25. The foundations were most likely not specifically designed for a two story structure, however they still may be adequate. No soil borings were made to make this evaluation, however borings were made in a few locations in the general area by a previous contractor to determine the extent of soil contamination. The soils were described in those borings. Their composition suggests that a soil bearing capacity of approximately 1500 pounds per square foot could be assumed on undisturbed soils. Some fill and organic soils were found in the borings. It is not known how wide the footings are or how deep they are. The footings are concrete and are most likely trench poured rather than board formed on a footing.

Condition Evaluation
It is not possible to evaluate the conditions of the footings, their reinforcement or their adequacy without further testing or analysis. However, along the long length of the building there appears to be some differential settlement in a section approximately ten bays from the east end.

Recommendations
It is recommended that the differential settlement be measured and the amounts recorded. Subsequent measurements should be made yearly and compared to the original measurements to determine if the differential settlements are increasing. If the settlement is increasing in amounts which could damage the structure or finishes, further foundation investigations should be completed.

Structure

Description
The lower walls of this space were built as a one story “private garage” described in the “Foundation” section earlier. The north facade, the east facade and two bays of the south facade were retained from the earlier garage building. The structure consists of a concrete frame with cast concrete spandrel panels filling the spaces below the first floor windows. Above the first floor windows is a formed continuous concrete beam approximately 30 inches high. Both this beam and the concrete frame are covered by a rough textured troweled on stucco originally having a light buff color. This still can be seen on the west facade. There is some debate as to whether this was the original finish. Most evidence points to the case for it being an original esthetic finish for the more public Washington Street facade. At a later date a cementitious grey colored coating was spray applied to the street facade filling in crevices and voids in the original stucco and creating a gloppy appearing surface texture.

To construct the new second floor which was added in about 1924-1925, most of the earlier first floor “private garage” structure was demolished. On the south facade, the southernmost 10 bays were demolished. The roof was also demolished and new structural steel wide flange beams twenty inches deep were set to bear on the old garage’s one story walls and on the recently erected high bay steel. These beams clear span the lower garage space. A concrete deck was formed on this steel for the new

second floor office space. The ceiling in this area is 13' 6". At the east end of the space eight inch wide flange beams spaced only twenty four inches apart clear span the space. These beams are over the boiler room and were originally intended to clear span the space. At an uncertain date an eight inch concrete block wall was added to separate the boiler room from the rest of the garage space. This wall has probably been acting as a semi load bearing wall since it was installed. It may be reducing the live load deflection amount that could result if the wall were not present. If a clear spanned space were desired, a structural analysis could determine how much deflection would occur and whether it would exceed the allowable if the wall were to be removed.

Above the old partially demolished twelve bay "private garage" building, a new second floor was constructed for the Road Commission's office and drafting spaces. The offices were on the south side and the drafting rooms were on the well daylighted north side. The roof of this story is a concrete deck on reinforced concrete beams which in turn are supported on reinforced concrete columns. This entire second floor appears to have been constructed as one unit over 162 feet long. About two-thirds of the second floor was constructed over the "private garage" with the western one-third constructed as an entirely new two story building. There is a 30 inch deep continuous beam slightly overhanging the structure below to conceal the joint between the old and new structures. The concrete frame and beams were coated with a buff colored smooth sand finish stucco. Along with the first floor, this stucco was later sprayed with grey waterproofing material.

At the north end of the original one story "private garage" and where the old cooper shop and the concrete two story shop are depicted on the 1925 Sanborn map, is the new two story structure described above. The coopers shop was torn down but parts of the old concrete machine shop appear to have been incorporated into the new structure. Threading the new structure around these buildings and using portions of them for structural purposes probably accounts for the "forest of columns" and discontinuous column lines and grids in this section. Part of the area is occupied by a large concrete storage vault. Above this vault on the second floor is a corresponding "fireproof vault" used for document storage.

The floors and roof in this part of the structure are supported on reinforced concrete beams bearing on columns which are approximately fifteen inches by fifteen inches. Many of the first story walls are concrete such as those enclosing the stair hall, the stairway and the men's restroom. It is not possible at this time to determine which of these walls may have been designed as load bearing walls. Further structural analysis is necessary to determine if some walls could be removed.

Condition Evaluation

Most of the north facade concrete frame is in fair condition. Some concrete has spalled off and the reinforcing steel is exposed to weathering. Two columns, number ten and number eleven (from the east end), are severely cracked. This may have been caused or accelerated by the differential settlement described above in the foundation section. It should also be noted that no control joints separate the two different facades built a just a few years apart. This facade is 162 feet long. It is not unusual to expect cracking in concrete structural frames of this length and the discontinuities in foundations that this facade has.

Recommendations

(See Foundations in this section for structural monitoring). The two cracked columns should be further investigated to determine the integrity and extent of the reinforcing steel. Partial demolition of the encasing concrete will be necessary to determine the structural integrity of the cracked columns. Complete replacement of these columns may be necessary if they cannot be repaired.

In areas where the reinforcing steel is exposed the cementitious coatings and concrete should be removed to where the concrete is soundly bonded to the steel. Where the steel has been reduced in cross section sufficiently to impair its structural integrity, the steel should be replaced with similar material. The

pack rust on the remaining steel should be removed as much as is practicable and all the exposed steel should be coated with a corrosion inhibiting agent. The concrete encasement should be repaired with material matching the original concrete.

Tests should be made to determine how difficult and expensive it would be to remove the stucco finishes on the frame and parts of the spandrel panels to expose the concrete structure. After repairing the concrete frame, it would be difficult if not impossible to match the original stucco texture and color with new patches. Even if the texture and color could be matched, the aesthetic effect would not be acceptable. Since this facade establishes the character for the entire complex it is important that it be attractive. Restoration of the original finishes may not be appropriate esthetically or from a durability standpoint.

Envelope-Exterior Walls

Description
Most of the wall area is defined by the structural system and the window glazing. What few exterior wall areas that exist are comprised of spandrel panels below the windows, the concrete window sills and the parapets.

The spandrel panels are board formed concrete and are covered with a sand finish stucco. On the north and east facades this stucco has been sprayed with an unattractive cementitious grey colored waterproofing probably in an attempt to waterproof the concrete and keep the reinforcing bars from corroding. Just below the second floor window sills is a thin three course band of brick veneer over the concrete spandrels that is also sprayed with the grey waterproofing.

The window sills are cast concrete approximately five inches thick at the nose and seven to eight inches high at the window frame. The sills were integrally cast along with the spandrel panels. The sills overhang the brick walls approximately two inches on the upper level and three inches on the lower level.

The parapets are two wythes of brick topped with a continuous four inch high cast concrete coping flush with the walls below. The copings were cast in sections. All of these components are original to the building. A galvanized metal coping covers the parapet. The concrete frame is discussed in the “Structure” section of this building.

Condition Evaluation
The brick parapet is in fair condition. Just below the metal coping the mortar joints are eroding from water entry and the parapet is leaning slightly inward which is often the case with brick parapets due to differing moisture conditions on the exposed front and waterproofed back side of parapet.

The window sills on the second floor are in fair condition. Of the 25 upper sills, only a couple need to be repaired. The sills on the lower level are in poor condition with the steel reinforcing bars corroding, expanding and splitting apart the concrete sills. About a third of these 20 sills should be replaced and another third need to be repaired and patched.

Recommendations
The window sills may need to be completely removed and replaced with new cast concrete as repairs are not likely to last very long.

The surface coating on the spandrel panels should be removed where delamination is occurring and new materials have been applied.

Envelope-Roofing and Waterproofing

Description
The roof is sufficiently sloped to prevent ponding of water. The water is drained toward the east where it was originally picked up by galvanized steel gutters and drained onto the roof below.

The roof has been recovered at least three times with all the original layers left intact. The topmost (latest) roof is a roll applied modified bitumen roof. This roof is applied over asphalt bonded multi -ayer fiberglass reinforced building felts. This layer is in turn applied over another built up asphalt roof, most likely the original roof.

The parapets are capped with the original galvanized steel copings on part of the north and east walls. On the remainder of the parapets the roofing extends up and over the copings and is cemented to the top of the copings with asphalt flashing compound.

There is no HVAC equipment on the roof. The only pieces of equipment are poorly mounted old television antennas, some plumbing vents and a large guyed radio tower. The guys are bolted through the concrete roof deck in three places.

Condition Evaluation
The roof is in a poor or even dangerous condition. Over the entire area, the roof has expanded and wrinkled causing it to debond in places from the substrate below. Along most of the south eave the roof gutters have been lost over time. This has caused the edge of the roofing materials to debond from the old roof below at areas of high wind uplift. A sizeable portion of the roof (approximately 100 square feet), has been uplifted by the wind and peeled back from the edge of the roof. A high wind storm in the right direction could blow off a sizeable portion of the heavy multi-layer asphalt roofing onto Washington Street below.

The heavily rusted galvanized steel copings are in poor condition. They are rusted and are not water tight at the seams. The lack of gutters at the roof edge has caused the concrete eaves to deteriorate.

Recommendations
The low slope asphalt roof is not a character defining feature. Immediate replacement is necessary. The galvanized copings should also be replaced along with the new roofing system. It is recommended that the new metal copings be installed over repaired concrete copings and painted to match the original concrete copings. The roof parapets are high enough to accommodate roof deck insulation. For energy conservation, consideration should be given to insulating the top of the roof deck.

All roof-top equipment should be removed, including the radio tower which is not from the period of significance.

Windows and Doors

Description

This area was built shortly after the high bay space and contains all the same window characteristics as the high bay space. There is a second floor office space on top of the original “private garage” with a two story addition on the west side of the high bay area. The windows in this area match the windows in the high bay area and are all rolled steel sash windows.

The West Washington Street first floor level has window units that are two sash units wide. The sash

units are four panes wide and three panes high. All openings have wire mesh over the exterior openings. On the east facade of the lower level are two bays which contain two three-frame units. The two outer units are three panes wide by three panes high and the center window in the boiler room is four panes wide by three panes high.

The second floor east façade matches the layout on the lower level with one exception; the units are one glazing pane taller. At each bay there is one pivot window. The second floor windows are horizontal pivot windows and most of the pivot sashes are four panes wide by two panes tall. All the second floor windows on the West Washington Street facade match the bay widths below. The units at both upper corners are five panes wide and four panes tall with an operable sash in the center. There are a total of 16 glazed openings across the upper addition. The two windows over the coiling door are one pane shorter.

On the rear (south façade) of the upper office area, the windows are shorter due to the fact that the high bay garage roof extends above the second floor. All glazed openings are three panes tall. On this section of windows, exterior aluminum awnings were added at a later date. They are not from the period of significance and are falling off the wall probably from heavy snow loads and inadequate anchoring. The shorter windows continue around the west side second floor wing to the edge of the high bay space below. At the end of the roof the last window was modified to accommodate a large round metal exhaust duct for the spray booth ventilation. Further to the east on the back second floor, the windows drop down to the standard sill height matching the Washington Street elevation. The window that is directly next to the high bay area has been heavily modified for the use of a second floor egress stair. A portion of the concrete sill and wall has been removed to accommodate a steel door with a wood frame window assembly, which replaced the original steel frame window.

The east end of the second floor matches the bay openings below but is four panes high with a vented unit in each section. At the opposite end of the building the glazing at the lower level is much shorter because the workshop on the first floor was originally built with lower window heads. This has reduced the overall window glazing. The first floor units on this side are only 36” tall and there are a total of five bays that match this window size. The second floor steel sash windows on the west side match the height on the Washington Street façade.

Condition Evaluation
All the rolled steel sash units on the second floor addition are boarded over with plywood installed to protect the remaining glass panes. Again about 50 percent of the window panes in this area appear to be broken due to vandalism. All frame assemblies are intact with some surface rust. We were not able to test whether the sash could operate as they were boarded over. All window openings are in fair condition except for the two frames which were heavily modified to accommodate the egress door and the spray hood duct-work. All windows have a few layers of paint which could prevent them from operating correctly. Several of the sash were missing hold-open arm hardware.

Recommendations
We recommend preserving the windows due to their character defining historic character. The steel sash windows allowed a great amount of natural daylight into the office and drafting room spaces on the top floor and north light into the garage space below. (See the recommendations in the high bay space section of the report as to acceptable approach to repairing the windows.)

Doors

Description
The second floor of the concrete frame addition has two exterior doors. The first type is a hollow core metal door set in a wood frame which is set into the concrete wall. This door is not from the period of

significance. It was installed at a later date to provide safer egress from the second floor. The other is a wood access door on the east elevation above the high bay roof. This door is used for roof access and is probably an original door.

The first floor section of the facility has two styles of overhead doors. The first is a metal coiling overhead door on the north elevation. The second is a sectional metal door on the north facade.

There are three passage doors. All are 3'x 6'-8" x 1¾" hollow core metal doors located on the south side of the high bay area. The first door accesses the existing boiler space and the other two doors enter directly to the high bay area, one door at the southeast corner and the other on the southwest inside corner. All of the egress doors are not original to the facility and they could be retained or removed depending on the new space layout.

Condition Evaluation
The second floor hollow core door at the east end of the second floor has a broken window, some surface rust and worn out hardware. This door leads to an exposed metal stair that is also rusted and not original to the building. The wood roof access door appears to be original to the addition, however the door is poorly constructed, has some wood rot and has no weather protection. This door also allows considerable air to leak into the building.

Recommendations
We recommend omitting both doors. The hollow core door was a retrofit at some later date. The building code requires an egress stair to be protected from ice and snow. A new second floor egress stair should be constructed. The roof access door should be replaced with a new more efficient door that is weather tight. If additional daylight is needed in this area, the rolled steel window system could be extended and a roof access hatch could be installed elsewhere in the facility.

Interior Finishes

Description
There are no interior finishes in the garage space. The structural system is visible and exposed in all areas (See Structure above for a description of the structure and recommendations). There are few finishes on the first floor of the structure along the west wing of the space. The men's restroom and the vault area are enclosed with structural concrete walls and have no surface finishes. Offices along the west wing have finishes such as 1/4" wood paneling and some gypsum board not from the period of significance. Floor finishes in the first floor west offices contain some asbestos (see hazardous materials report by Tetra Tech).

Second floor finishes in the old office and drafting room spaces are from the period of significance. The western half of the space has original doors and door frames, transom windows and the old vault door. Also visible are the original plaster ceilings. In the eastern half of the office space, most of the original partitions have been replaced with a newer modular office system. Many areas have modern dropped ceilings. These ceilings cover an original dropped plaster ceiling. The flat ceiling is dropped just below the sloping structural concrete deck. There is an interesting built-in filing and storage system in the old administrative area (west wing). The walls defining the men's and women's restrooms are 4" structural clay tile with plaster finishes from the period of significance.

Condition Evaluation
The interior construction is in fair condition.

Recommendations
The remaining wall, floor and ceiling finishes, with the exception of the original dropped plaster ceiling fin-

ishes and the “fireproof vault”, do not substantially contribute to the historic significance of the structure nor are they character defining elements. They could all be removed and replaced with new functional partitions and finishes.

Mechanical Systems

Description
This area contains the central heating system for the main offices on the second floor and west office wing as well as some garage space. A boiler room is located in the southeast corner of this structure. The existing structure HVAC consists of a perimeter heating system with minimal air supply and exhaust. A large brick flue is constructed next to this building dating from the period of significance. A replacement boiler, at the end of its service life, is located in this space.

Condition Evaluation
The condition and effectiveness of the boilers and radiators is not known. They have however, reached the end of their service life and contain hazardous materials.

Recommendations
The mechanical system needs to be replaced and a new HVAC system installed.

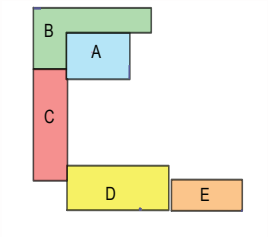
Electrical Systems

Description effectiveness
One of the electrical services is located in the southeast corner of this structure. (See the Electrical Recommendations at the end of the analysis for further information).

Condition Evaluation
The service is inadequate for anything but present storage uses. (See the Electrical recommendations at the end of the analysis for further information.)

Recommendation
There are no character defining elements nor electrical equipment of historic value which should be retained and reused. (See the Electrical recommendations at the end of the analysis for further information.)

Area C: Concrete Frame and Partial Second Floor Addition



Foundation

Description
The foundations in this area were founded on soils that were below the excavated natural grade (see historic photographs of the excavation). No recent soil borings have been done in this area. The soils

will have a building code presumptive bearing capacity of a minimum 1500 lbs./sq. ft. No fill materials or organic soils should be expected underlying these foundations. The structure supported by the foundation is a reinforced concrete frame with columns on the outside walls. There are interior columns for the two story portion and some load bearing and non load bearing infill walls. The configuration of the foundations is not known. The roof loads on the high bay space are carried to columns on the exterior walls. Most of these columns are approximately 18'-0" on center. It might be assumed that the foundations on this part of the structure are similar to those on the steel framed building (Area A). No historic photos or Meeting Minutes by the Road Commission have been found regarding these foundations.

Condition Evaluation
It is not possible to evaluate the condition of the footings, their reinforcement, their configuration or their adequacy without further testing, analysis or excavation. No differential settlement has been visually observed. No cracking of infill walls or of the concrete frame has been observed which could indicate inadequate foundations.

Recommendations
No recommendations for further action are made at this time

Structure

Description
This section of the building complex is a concrete frame built in about 1928 a couple of years after the first concrete frame structure. On the west facade, the frame is braced and infilled with cast concrete spandrel panels at the ground level and at the second floor level. On the east facade the frame is braced only at the ground level with a 50 inch high concrete infill panel combined with a moment frame above. The 30 foot most northerly part of this area is a continuation of the earlier two story high concrete frame. The southerly portion is a 19' 4" high machinery repair garage.

The two story portion of this structure is similar to that described in Area B however, a new more innovative floor and roof decking system was used. In this section the floor and roof decks were formed using steel pans or "vaults" as described in the 1928 Road Commission Minutes. The pans are approximately 12 inches deep, and about 24" wide. The concrete deck above is about six inches thick. This creates an overall depth of the roof and floor systems of about 18 inches. The type and amount of reinforcing is not known.

The high bay garage space is similar in its structure as that of Area A. Warren trusses, perhaps identical to those used in the Area A garage space, span the width of the garage. The same truss design and length may explain why this space makes an unusual 12" jog to the east where Area C meets Area B. If the same trusses were used, the building would need to be widened to accommodate their extra length.

The steel roof deck is supported by twelve inch deep steel wide flange purlins approximately 8'-8" on center located at the truss panel points. The purlins support a corrugated steel deck. The roof deck is a modern type B wide-rib steel deck. This roof deck is not the original deck but one installed over the truss purlins at a much later date as this type of deck was not available in the 1920's. It is not known what the original roof decking was or why it was replaced.

The Warren trusses are supported at the east facade by steel embedded within the concrete frame. On the west facade the trusses are riveted to 6" channels extending from floor to roof and bolted to the concrete frame.

Condition Evaluation
The Warren trusses and steel purlins are in very good condition. There is little rust that can be observed. The steel channels to which the trusses are bolted are in good condition. The steel roof deck is in very good condition. The concrete frame is in fair condition. Some of the concrete has spalled off exposing steel reinforcing both in the columns and in the spandrel panels. The condition is worse on the east facade.

Recommendations
No stabilization is required for the Warren trusses or roof deck. In areas where the reinforcing steel is exposed by spalling, the cementitious coatings and concrete should be removed to areas where the concrete is soundly bonded to the steel. Where the steel has been reduced in cross section sufficiently to impair its structural integrity, the steel should be replaced with similar material. The loose pack rust on the remaining steel should be removed as much as is practicable and all the exposed steel coated with a corrosion inhibiting agent. The concrete encasement should be repaired with material matching the texture and color of the original.

Envelope-Exterior Walls

Description
The walls enclosing the structure comprise the structural system for the entire space and are fully described and evaluated in the “Structure” section above.

Condition Evaluation
See “Structure” section above.

Recommendations
See “Structure” section above.

Envelope-Roofing and Waterproofing

Description
The roof is sufficiently sloped to prevent ponding of water. The water is drained toward the east where it is picked up with roof sumps adjacent to the wall and drained into a building and site storm drain. There is a considerable accumulation of organic debris along the eastern parapet where the roof sumps are located and along the western parapet. Trees are in contact with the roof parapets and copings.

The roof could very well be the original EPDM (synthetic rubber) roof that has been repaired over time after the first roofing system was removed. This portion of the complex has a later steel roofing deck described in the “Structure” section of this space.

There is no HVAC equipment on the roof. The only equipment is a gas furnace flue that serves a ceiling mounted furnace in the adjacent building and a turbine ventilator.

The parapets are capped with the original galvanized steel copings on the west and south walls. The east parapet coping is cast in place concrete with the roof membrane extending up the parapet and halfway onto the top of the concrete copings.

Condition Evaluation
The roof is in fair condition with a few leaks. Some of the leaks are occurring at the eastern wall where debris has accumulated around the roof sumps. The partially blocked roof drains are ponding water

along the parapet wall which can exacerbate small leaks**.** The heavily rusted galvanized steel copings are in poor condition. The integrally cast concrete coping on the eastern wall is spalling and in poor condition.

Recommendations
The EPDM roof is not a character defining feature and is probably nearing the end of its service life. Temporary repairs could extend its life for a few years; however, replacement will be required relatively soon. Replacement is recommended. The galvanized copings should be replaced along with a new roofing system. It is recommended that the new copings be painted to match the original copings. The top of the concrete coping is not a major character defining feature. It is recommended that a metal coping be installed over this coping but be painted to match the color of the concrete.

The roof parapets are high enough to accommodate roof deck insulation. For energy conservation, consideration should be given to insulating the top of the roof deck.

Windows and Doors

Windows:

Description
This part of the complex was the last concrete frame to be added. It is similar in height to the high bay space and is mainly used as a garage. This garage was the most brightly illuminated part of the complex with the highest ratio of glass to wall. Almost 70 percent of the interior walls are comprised of glass sash. The windows match all the other windows in the facility, a rolled steel metal window system. All the lower windows are five panes high. Above these windows is a second band of glazing two panes tall on the east, south and west facades and above two of the garage doors. If restored this glazing could provide a very high level of natural daylight to the space reducing the need for artificial light during the daytime.

Condition Evaluation
The rolled steel sash units in this area are in good condition and have less rust. The pivot windows are not painted shut. However, there are still a number of broken panes on each glazing unit and they are not weather sealed. Some units have been modified to accommodate exhaust fans for ventilation.

Recommendations
We recommend preserving the windows and repairing them in place. Since most of the windows are in good condition we believe the units can be restored in place. It is important to be aware however the lead paint issues when dealing with steel units as stated in the report by Tetra-Tech. The guidelines for removing lead paint along with increased window performance may warrant removal from the building for increased window performance. Windows should be repaired as outlined in the “Area A: High Bay Space”.

Doors:

Description
There are two types of exterior doors: standard egress doors and large overhead garage doors. The sectional overhead doors are not from the period of significance. They are all located on the east façade. There are three metal insulated doors with overhead tracks and operators at the north end. At the south end is a non-insulated overhead door with an operator. To the far north end there is a small metal coiling overhead door for access to a hoist elevator.

On the south end of the east façade is a single door that appears to be original to the addition. This door has an outside metal frame with a bottom panel and a four light window on the top. It is 36" x 80" and set in a metal frame. There is one interior door that appears to be original to this addition. It divided the garage space into two separate areas and served as a fire door for the shop area at the south end. This door is a sliding fire door hung on a wall mounted track with a fixed panel to allow a rolling hoist track to pass through the opening. The face of the door is covered with small interlocking metal panels. This type of door assembly is typical from the period of significance.

Condition Evaluation
The doors are in fair condition. All the doors appear to operate, however they have been heavily abused. All the sectional overhead doors have lights built into the third section. All the glazing is broken. There is some rust and a few dents on the lowest panel. The weather stripping is worn out.

The single egress door is in poor condition and has deteriorated beyond the point of restoration. There is substantial rusting, warpage and worn out hardware. The weather seals are lost.

Recommendations
We believe all the overhead garage doors could continue to be used with general maintenance and repairs if historic restoration is not anticipated. The non-insulated sectional door to the south end of the east façade is in the worst condition and could possibly be replaced. The egress door at the south end should be replaced with a similar hollow core metal door and new hardware. Retaining the doors however is dependent on the type of proposed use. Since these doors are not original they could be replaced with solid panels or a new glazing system to fit the use. The interior fire door is not a character defining feature and is not necessary for fire protection (see "Building Code Analysis).

Interior Finishes

Description
There are no interior finishes. The structural system is visible and exposed in all areas (see Structure above for a description of the structure and recommendations).

Condition Evaluation
No evaluations are made.

Recommendations
No recommendations are made.

Mechanical Systems

Description
There is a minimal heating system with two ceiling mounted Reznor B gas-fired, gravity-vented unit heaters not original to the building.

Condition Evaluation
The condition of the heaters is not known. Their effectiveness would only be suitable for storage or garage use.

Recommendations
The mechanical system is only minimally suitable for temporary human habitation. If this structure were to be occupied for assembly or businesses uses, a new HVAC system must be installed.

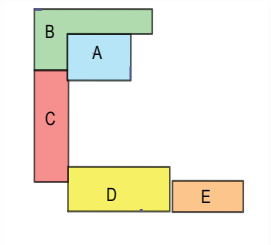
Electrical Systems

Description
The lighting system consists of ceiling mounted high pressure sodium fixtures.

Condition Evaluation
The service is inadequate for anything but storage or garage use.

Recommendation
There is no equipment nor are there fixtures that date from the period of significance. All equipment can be replaced as proposed uses require. (See the Electrical Recommendations at the end of the analysis for further information.)

Area D: Brick Bearing Wall Garage:



Foundation:

Description
The foundations in this area were founded on soils that were below the excavated natural grade (see historic photographs of the excavation). No recent soil borings have been done in this area. Nearby soil bearings suggest an approximate allowable bearing capacity of 1500 lbs./sq. ft. No fill materials or organic soils should be expected underlying these foundations.

The brick bearing walls are reinforced by pilasters where steel beams span the entire width of the building. The pilasters are approximately 20'-0" on center. The beams span 50'-0". The loads at the pilasters would be less than 20,000 pounds. Spread-footings under these pilasters or a reinforced concrete trench footing would normally be required to support the concentrated loads at these points. The footing configuration has not been investigated.

Foundation: Condition Evaluation
It is not possible to evaluate the conditions of the footings, their reinforcement or their adequacy without further testing or analysis. No differential settlement has been visually observed. No cracking of walls which could indicate inadequate foundations has been observed.

Foundation: Recommendations
No recommendations for further action are made at this time.

Structure

Description
This section of the building complex is a brick bearing wall structure. The building's roof is supported by heavy rolled steel beams 27" x 10" approximately 20 ft on center clear spanning the garage. Bar joists 14 in deep approximately four feet four inches on center span between the beams. The joists support a concrete roof deck cast over a proprietary ribbed expanded metal lath system.

The walls are eight inch thick brick bearing walls with projecting wall pilasters located at the beam bearing points. The brick walls appear to be built with a soft reclaimed brick possibly from the old bean warehouse building which was torn down at this time. The top four feet are constructed with a harder newer brick. The bricks in this elevation were very poorly laid with most of the bond courses recessed on the outside but flush on the inside. The bond bricks were not long enough to reach through the wall and be flush on both the inside and outside. When the bricks are recessed on the exterior it creates a ledge for rain water to accumulate and enter the wall. The front or north wall was not constructed with through bond coursing.

The pilasters on the north are a contrasting yellowish "rug faced" brick capped with sloped cast stone copings. The top approximately four feet of the walls are constructed with a darker harder faced brick of newer firing. There is a brick bearing wall located approximately 40 ft from the east facade. This wall supports the bar joists instead of the heavy wide flange beams at the remaining bays. In this northerly 40 foot wide bay there is a storage mezzanine supported by three 12" to 16" wide flange beams spanning the 40 ft wide bay.

Condition Evaluation
The deep wide flange beams, bar joists and decking are in good condition. There is very little rust that can be observed. Most of the brick wall surfaces are in good condition. A few brick faces are spalling off near the ground particularly on the back or south elevation.

Recommendations
No stabilization is required for the beams or roof deck.

Envelope-Exterior Walls

Description
The exterior walls are the structural bearing walls as described above. The walls bear on an exposed concrete foundation with a 45 degree sloping wash at its top. The bearing walls are extended with parapets approximately 20" to 24" high. The parapets are topped with a five inch high cast concrete coping overhanging the walls below approximately two and one half inches. The copings were continuously cast with reinforcing steel visible in some areas. All of these components are original to the building. This coping however has been mostly covered by a much later asphalt membrane of very poor workmanship in an attempt to waterproof the parapets.

There are three central large overhead door openings in the north facade. All openings are reinforced by six inch steel channel jambs bonded into the masonry wythes.

The window sills are cast concrete approximately four inches thick at the nose and seven to eight inches high at the window. The sills are not cast in place but in sections and installed with the masonry walls. The sills overhang the brick walls approximately two inches.

Condition Evaluation
See Structure above for an evaluation of the bearing wall's condition. The parapets are in good condition. The cast concrete copings however are in poor condition, particularly the copings on the south wall. Here, some of the concrete is spalling off, revealing the reinforcing steel. In some sections the copings are missing entirely.

The window sills are in fair condition and surfaces are sound with little or no spalling. The exception is the small sill below the transom window over the passage door at the extreme west end of the structure which is in poor condition and has been dislocated by freeze-thaw action. The sills have been dislocated in a few locations.

The overhead door jamb at the right of the central tall overhead door has been damaged and displaced most likely by a truck bed striking the steel jamb, bending it and cracking the masonry bonded to it. There is some rusting of the steel jambs at the lower ends where they are near the ground.

Recommendations
See "Structure" above for recommendations on bearing walls. No recommendations are made for the parapet walls.

The copings however need immediate attention. Most of the copings on the south wall are not repairable and should be replaced. It is not known in what condition the copings are where they are covered with a membrane. If the membrane were removed it would not be possible to keep the copings from leaking water into the tops of the parapet walls. There are two options. One is to remove the copings, replace them with pressure treated wood and install metal copings. The second more costly option is to remove the copings, waterproof the top of the brick parapet wall with a through wall membrane and recast the concrete copings to match the historic materials.

The concrete window sills should be realigned in the few places where they have been dislocated and the joints between the sills filled with sealant.

The damaged masonry at the central overhead door should be repaired and the steel jamb replaced if it cannot be straightened. The rust on the steel jambs should be wire brushed, treated with a rust inhibiting primer and painted.

Envelope-Roofing and Waterproofing

Description
The roof slopes gently toward the south (back of the building). The roof is not sufficiently sloped to prevent minor ponding of water. The water drains toward the south (rear) parapet where it is picked up with roof sumps adjacent to the parapets and drained toward the east end of the building. Here the drain disappears into the floor, presumably into a building and site storm drain. No relief scuppers have been installed to prevent over-accumulation of roof water. This roof could very well be the original built-up asphalt roof that has been recovered and repaired over time. Access could not be gained to the roof to observe it close up. The same waterproofing extends up the interior sides of the parapets to just below the cast concrete copings. The copings as described above were later covered with an asphalt membrane to prevent leaking.

There is no HVAC equipment on the roof nor are there any roof penetrations except for the roof sumps.

Condition Evaluation
There are no obvious leaks nor apparent evidence of large previous leaks in the concrete deck. There is no evidence of substantial amounts of water entering the parapets and causing their deterioration.

Visual observation from telephoto photos shows no obvious defects. There is some accumulation of debris around the roof drains.

Recommendations
The roof is not a character defining feature and is nearing the end of its service life. Replacement will be required relatively soon along with the parapet waterproofing. The copings should be replaced as described above in "Envelope-Exterior Walls". Debris should be removed from around the roof sumps. If roof sumps are plugged up by debris, the high parapets could contain a sufficient amount of water to possibly collapse the roof. Relief scuppers should be cut into the rear (south wall) per code to prevent this possibility. Heavy vegetation should be cut back from the rear of the building to help keep the roof cleaner.

If this building is adapted for uses other than storage, the roof parapets are high enough to accommodate roof deck insulation. For energy conservation, consideration should be given to insulating the top of the roof deck if this building is used for human occupancy.

Windows and Doors

Windows:

Description
The brick garage has smaller punched openings with rolled steel sash windows. The panes are the same size as in the rest of the complex. Each sash unit is five panes tall by five panes wide. The four openings on the front (north facade) are made up of two units mulled together. The units on the rear and east elevations are single window units. All units have a single vented pivot tilt sash with hardware. The pivot units could not be tested as they are covered with wire mesh on the outside.

There is one window opening at the northwest corner of the brick garage which is shared by the concrete addition. This unit is also made up of rolled steel sash. It has four unit sashes mulled together and is five panes tall. The two center units have a tilt sash unit which is operable.

Condition Evaluation
The rolled steel sash windows in the brick garage appear to be in good condition with some surface rust. The glazing is in poor condition with a number of broken panes of glass. Some units have been modified to allow for vents or exhaust fans. At some point in time wire mesh was installed to protect the glazing from vandalism.

Recommendations
We recommend preserving the windows and trying to repair them in place. Since most of the windows are in good condition we believe the units can be restored in place. (See the section "Area A: High Bay Space", to see what measures should be done to restore the units.)

Doors:

Description
There are three types of exterior doors that are used: standard egress doors, overhead garage doors and a sliding door at the southeast corner. The three sectional overhead doors on the north facade are not from the period of significance. The center overhead door, the largest door in the facility is a hollow core metal door. The door to the west is a metal hollow core door with three lights installed in the third section. The door on the east is a solid wood framed Masonite door. All doors have power operators.

There is an additional vehicular door on the west elevation leading to the rear yard of the building. This door appears to be an original wood panel door and is similar to the wood door on the center south façade of the high bay space. It has four horizontal sections, the top section had glazing at one time. This door is mounted on a vertical track secured to the west wall.

The door at the southeast corner is the only sliding exterior door in the facility and looks to be from the period of significance. This door may have been re-purposed from another building. The door was installed in a retrofitted window opening made up of two frames. One of the frames had its lower section removed to combine the door with the window opening. The door slides in front of the window on the inside of the building via a metal jamb installed in the plane of the wall.

The two man doors are standard sizes. The door to the east is a metal hollow core door in a wood frame with steel jambs in the wall opening. The door to the west is a wood panel door with two narrow vertical panels with a center rail and a single light at the top. The door is set in a wood frame and the sill is concrete with a metal threshold.

Condition Evaluation
The doors are in fair to poor condition. All the doors appear to operate however they have been heavily abused. All the sectional overhead doors have some abuse, particularly the east door. There is a rusted area, dents on the lowest panel and worn out weather stripping. A vehicle has hit the center overhead door, however it still operates. The wood panel sectional door at the rear has deteriorated and all the lights in the top panel are broken. The hardware and weather seals are worn out.

There are two single man doors. Both are in poor condition and have deteriorated beyond the point of restoration. The doors are substantially warped, the hardware is worn out and the weather seals are missing. The frames on both openings were heavy abused.

Recommendations
We believe two of the sectional garage doors on the north facade could continue being used with some general maintenance and repairs. The two metal sectional doors need new glass lights, adjustments to the tracks and new weather stripping. The Masonite door on the east end is at the end of its service life and should be updated to a new steel sectional door. The wood panel sectional door leading to the rear yard needs to be replaced with an updated sectional door. Keeping the vehicular doors however is dependent upon a proposed use. Since these doors are not original they could be replaced with solid panels or a new glazing system appropriate to the use. The sliding door in the modified window opening in the rear (south facade), should be removed and the opening restored to its original configuration.

The passage doors on the north side should be replaced with new hollow core metal doors with a single light and new hardware. The sliding door needs general hardware maintenance and new weather stripping applied to the opening. The door and the metal jamb should be painted.

Interior Finishes

Description
There are no interior finishes. The structural system is visible and exposed in all areas (See Structure above for a description of the structure and recommendations.)

Condition Evaluation
No evaluations are made.

Recommendations
No recommendations are made.

Mechanical Systems

Description
There is only a minimal heating system. The ceiling mounted Reznor B gas-fired, gravity-vented unit heaters are not original to the building. A brick flue is constructed next to the bearing wall between the two parts of the building. A flue opening is visible for either a boiler or gas fired furnace that has been removed.

Condition Evaluation
The condition and effectiveness of the heaters is not known. Anecdotal evidence from a long tem city employee who worked in the building suggests that “everyone was always cold”.

Recommendations
The mechanical system is only minimally suitable for occasional human habitation. If this structure were to be occupied for assembly or business uses a new HVAC system must be installed.

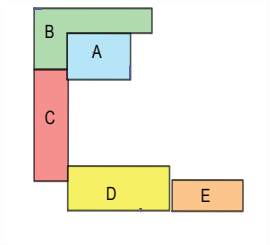
Electrical Systems

Description
One of the electrical services is located in the southwest corner of this structure. See the Electrical Recommendations at the end of the analysis for further information.

Condition Evaluation
The service is inadequate for anything but present storage uses. See the Electrical Recommendations at the end of the analysis for further information.

Recommendation
See the Electrical Recommendations at the end of the analysis for further information.

Area E: Steel Framed Storage Structure



Foundation:

Description
The foundations in this area were founded on soils that were below the excavated natural grade (see historic photographs of the excavation). No recent soil borings have been done in this area. The soils will have a building code presumptive bearing capacity of a minimum 1500 lbs /sq. ft. No fill materials or organic soils should be expected underlying these foundations.

The structure is founded on isolated steel columns supporting the roof as well as a storage mezzanine. The columns are 16 feet on center east and west and 12 feet on center north and south. It is not known what the size or configuration of the foundations are.

Foundation: Condition Evaluation
It is not possible to evaluate the conditions of the footings, their reinforcement or their adequacy without further testing or analysis. No differential settlement has been visually observed. No cracking or distortion of walls has been observed which could indicate inadequate foundations.

Foundation: Recommendations
No recommendations for further action are made at this time.

Structure

Description
The last phase was built shortly after or concurrently with the 1933-34 phase three “Masonry Bearing Wall Building”. It is a steel frame structure. Three sides are enclosed with 8” concrete block walls. The rear block wall is 8” concrete masonry and acts as lateral bracing for the steel frames and as a bearing wall for the steel mezzanine purlins.

The structure is a partially bolted and partially welded braced frame with a corrugated galvanized metal roof on steel purlins. Within, there is a steel frame mezzanine level storage floor on steel “H” sections. Purlins approximately 24“ on center span between the steel beams. This story was mainly used for storage and is designed for fairly heavy floor loads. The frames are 8”x 4” steel wide flange sections, the steel beams are 12” sections and the purlins are 8” sections. Two inch thick planks span over the purlins in the mezzanine. These planks are not tongue and grooved, are very rough and create an uneven walking surface suitable only for long term storage and not human foot traffic.

Below this mezzanine story is additional storage. Attached to the far west end is a modern open sided pole barn structure used until recently for additional storage. This wood structure has not been dated and was not built during the period of significance. It will not be evaluated.

Condition Evaluation
The light beams, columns and decking are in fair condition, There is some surface rust that is an esthetic concern but it has not impaired the structural integrity of the members.

Recommendations
No stabilization is required for the beams, columns or other structural members. The steel should be cleaned and painted. If human occupancy uses for the mezzanine are proposed, the floor would need to be replaced. The existing planks could be re-sawn, planed, edge matched and relaid.

Envelope-Exterior Walls

Description
This is an open structure. The three enclosing walls are 8" concrete masonry. They have no applied damp-proofing or paint. No below grade damp-proofing was observed. It is unknown if there is any ladder or vertical reinforcing.

Condition Evaluation
The south wall is in fair condition. Water running off the building's roof, which has a very small overhang with no gutter, has repeatedly soaked the ground and lower four to five feet of the south wall. This wall is showing some signs of freeze thaw and water damage near the ground. The other two walls are in good condition.

Recommendations
Site drainage should be improved along the south wall to prevent the accumulation of water which can damage foundations and lower walls. Vegetation should be removed to allow the walls and ground to more quickly air dry. There is no evidence that gutters were ever installed. After the measures above are carried out, the wall should be monitored to see if deterioration is progressing before additional waterproofing measures are undertaken.

Envelope-Roofing and Waterproofing

Description
The roof is composed of corrugated galvanized steel roofing which dates from the construction of the building. The roofing is laid in three overlapping sections on the south slope and one section on the north slope.

Condition Evaluation
There is considerable rust on the exterior of the roof and some rust on the interior. Its condition could be described as fair.

Recommendations
The life of the roof could be extended considerably if the surface, both inside and outside, was cleaned and painted with a corrosion inhibiting proprietary steel roof paint.

Windows and Doors

Description
There are no doors or windows on the exterior of the original structure. There is a small yard office on the mezzanine at the east end of the structure which has steel window sash and a wooden door. It cannot be determined if it was a part of the original construction.

Condition Evaluation
The condition of the windows and door is fair.

Recommendations
No recommendations are made.

Interior Finishes

Description
There are no interior finishes except for the small yard office mentioned above and the floor in the mezzanine. (See Structure above for a description of the floor and recommendations.)

Condition Evaluation
No evaluations are made.

Recommendations
No recommendations are made.

Mechanical Systems

Description
There are no mechanical systems.

Condition Evaluation
No recommendations are made.

Picture E1: Existing electrical service at corner of buildings A & B

Recommendations
No recommendations are made.

Electrical Systems

Description
There are few electrical components. The electrical consists of exterior mounted non-historic security lighting and some interior conduit serving a lighting and weatherproof convenience outlet.

Picture E2: Existing electrical service at building D

Picture E3: Existing lighting

Condition Evaluation

Picture E3: Existing lighting

The lighting system is outdated from an energy conservation and safety standpoint.

Recommendations
No recommendations are made at this time.

General Mechanical and Electrical Assessments

EXISTING ELECTRICAL CONDITIONS:

ELECTRICAL NARRATIVE:

Code Compliance:

1. 2008 National Electrical Code
2. 2000 NFPA 101
3. 2002 NFPA 90A
4. ASHRAE 90.1-2007
5. DOE Compliance

DEMOLITION WORK:

The existing building is fed from two separate services. Existing electrical services are not adequately sized for new building demand. Demolish existing service. Existing lighting doesn't comply with today's codes. Existing lighting consists of HID lighting fixtures and T12 linear fluorescent lams. Demolish existing lighting.
PROPOSED ELECTRICAL CHANGES:

POWER:
Provide new DTE electrical service rated 2,000A, 120/208V, 3-phase, 4W. Run secondary conductors underground from a new DTE pad mounted transformer to the main electrical room. New pad mounted DTE transformer shall be located at corner between Building A and Building B. New electrical room shall be provided. If necessary tenant sub-metering shall be provided pending final building design.

No emergency generator is anticipated at this moment. A fire suppression feasibility study shall be done to determine if Fire Pump is required.

LIGHTING:

Lighting controls with sensors and lighting control panels will be used in whole facility to conform to ASHRAE 90.1-2007 Energy Code. Provide individual lighting control at all entrance/exit doors to darken conference rooms for video presentations.

A high quality energy efficient lighting system that utilizes both natural and electric sources as well as lighting controls that provide a comfortable yet visually interesting environment for the occupants of a space would be specified. Recently developed energy efficient lighting equipment such as compact fluorescent lamps and "soft-start" electronic ballasts can be used to help cut lighting operational costs 30% to 60% while enhancing lighting quality, reducing environmental impacts, and promoting health and work productivity. Indirect lighting fixtures will be used (with T8 and/or T5 lamps) throughout the new

building.

Exterior lighting shall be provided to suit new architectural building layout.

All emergency lighting shall be provided with emergency battery backup.

MISCELLANEOUS SYSTEMS:

New communication and data service would be coordinated with ATT/SBC to provide enough capacity for reliable service.

Provide new FA panel and visual /horn-type fire alarm devices in all areas as required by code.

Budgetary cost estimate electrical only: $500,000- $700,000 based on final building use.

Picture M1: Existing boiler to be demolished

Picture M2: Existing piping to be demolished

Picture M3: Existing radiators to be demolished

MECHANICAL

MECHANICAL NARRATIVE:

Code Compliance:

1. 2009 Michigan Mechanical Code
2. 2009 Michigan Plumbing Code with BFD Standards
3. 2000 NFPA 101
4. 2002 NFPA 90A
5. 2002 NFPA 13
6. ASHRAE 90.1-2007

EXISTING MECHANICAL

The existing building HVAC mostly consists of a perimeter heat system with minimal air supply and exhaust. All existing HVAC ductwork, equipment, piping and boiler should be removed. All sanitary, storm and domestic water pipes should be removed.

All utility leads including water, sanitary and gas should remain for future use if adequately sized and their condition is good.

NEW HVAC

The existing buildings are in five (5) parts as identified in the architectural plans. Each building's air system should be an independent system providing flexibility and ease of operation. The proposed report is based on the use of the building as:
Assembly Group A-3, which would be galleries, community halls, exhibition halls, museums, gyms and libraries.
Business Group B, Which would be civic, clinics, educational above 12th grade, professional offices, print shops, etc.

Based on this information we are proposing to use independent roof top units as most cost effective system. We recommend that a geothermal heat pump system with a central vertical geo field be installed to achieve the highest efficiency. The systems are described in detail below.

SYSTEM 1 Rooftop Units:

It is prudent to state that depending on the use of the building as either A-3 or B, it has a substantial impact on quantity of outside air required for ventilation. A-3 demands a quite high ventilation load that impacts the primary size of equipment. As an educated guess the total capacity of rooftop units with gas heat and DX cooling for Group B use will be approximately 20% less than Group A-3.

The following table is based on block load calculations:

BUILDING	ROOFTOP UNIT SIZE
A	15 TON Gallery
B	60 TON Community/Exhibition
C	30 TON Libraries/Museum, may require additional humidity control
D	40 TON Gymnasium

Additional requirements include sound attenuators, humidity control with humidifier and dehumidification through refrigeration. Most of the ductwork should be spiral round with low return grilles. The ductwork and diffusers type should be finalized based on architectural layout and ceiling types.

SYSTEM 2 Geothermal Heat Pump:

The property has adequate land to provide space for a vertical geothermal field. The existing parking lot may need to be replaced along with the soil providing a perfect opportunity to install the geothermal field. A central boiler plant and cooling tower along with a geothermal system should be installed. The geothermal system should be designed for 70 to 80 percent of the total capacity required for all the buildings since most of the HVAC system operates at around that percentage of total capacity most of the time of the year. A cooling tower and boiler should be installed as a hybrid system for those days with peak heating and cooling loads. This allows the system to operate at relatively higher efficiency by minimizing part load condition operation at different times of the year.

Each tenant space should be provided with multiple heat pumps. The condenser water may be metered for charges to operate the condenser water loop system including, pumps, boilers, cooling tower, initial investment and life cycle cost of all equipment, piping, insulation, controls, etc.

If the building is used as Group A-3, heat recovery units within outdoor air ventilation system equipped with variable frequency drive fan motors and CO2 monitoring systems should be installed.

PLUMBING

The water main size for domestic use is estimated to be a 4" service. A main backflow preventor should be installed with individual meters for each tenant. The water usage may vary substantially based on the nature of the tenant and it could be problematic to prorate the water bill based on square footage of tenant space. Each tenant should be provided with a domestic water heater based on their needs. Pex tubes may be installed for branch piping with CPVC for mains.

A detailed study is necessary to determine if the storm and sewer line are separated or or if they are combined.

If a fire supression system is to be installed, based on experience in different projects in Ann Arbor, the requirement of booster pump is not anticipated.

SPRINKLER SYSTEM BUDGET ESTIMATE:

Sprinkler System:	180,000	DOES NOT INCLUDE TAP FEE

ITEM	ESTIMATED COST (US $)	COMMENTS
HVAC		
System 1 (rooftop)	600,000	Includes DDC Controls
Systems 2(geothermal)	1,100,000	
Plumbing	350,000	Includes Locker/Shower In Gym

Part 4: Code and Accessibility

The Michigan Building Code will affect certain historic elements of 415 West Washington. Those elements are second floor egress, entrance accessibility, restroom accessibility and fire separations. The building complex is within the Old West Side Historic District. As such it falls under Chapter 34 of the Building Code "Existing Buildings and Structures". Section 3409, Historic Buildings, makes the provisions of the Code not mandatory if the Building Official rules such building elements do not constitute a distinct life safety hazard.

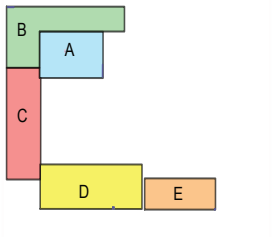
Section 3904.2 of the code makes compliance with flood hazard provisions not mandatory for historic buildings and allows the Building Official to waive or reduce the requirements if life safety will not be compromised. Despite these provisions, it is prudent to point out where the structures will not meet present building codes so that life-safety issues can be evaluated and weighed against historic building elements.

We have evaluated the facility based as requested in RFP 833 for either a community or business use. These uses and their code related definitions are described in Section 2 "Potential Uses." The building complex is comprised of at least two different construction types as defined by the building code. These are Type II A and Type II B. We will evaluate the building construction as Type II B. As the two different construction types share defined fire areas, the lowest rated classification must be applied to all parts of the complex unless the areas are separated. Type II B buildings have construction elements that are noncombustible and have no fire protection rating. Because of the high costs for water improvement tap fees and sprinkler system installation, we have evaluated the building as not being provided with an automatic sprinkler system. This will require a fire wall separating the building into two areas.

The allowable area per floor for this type of construction with no sprinkler system is outlined below for the worst case scenario which is Use Group A1, an assembly use for large groups with fixed seating. The building area permitted under this classification would be 8,500 square feet per floor with two stories above grade allowed. We are allowed to increase the floor area by using excess building frontage area modifications. The modified allowable building area is 12,580 square feet with the frontage increases.

The current total square footage is as follows:

A.	High bay garage	4020: s.f.
B 1st.	First floor office-west:	3004 s.f.
B 1st	First floor garage	3654 sf
B 2nd	Second floor office:	8199 s.f.
C.	West high bay garage:	5771 s.f.
D.	South garage	6838 s.f.
Total		31,486 s.f.



Because the facility spaces are all interconnected and a sprinkler system is not proposed, it will be necessary to separate the facility into specific fire areas to satisfy the maximum allowable building areas. After a careful examination of the building's structure and spaces, the best location for such a building separation is between the lower floor west office area and the west high bay space. (Area B and Area C

in the diagram above). If all the spaces in the structures defined by the spaces A and B in the diagram are combined, the total area will be 10,678 square feet which is below the maximum 12,580 allowed.

The second concrete addition that was added to this part of the building was designed with a complete separation of the building structure through to the exterior façade and to the underside of the roof deck. This location provides an ideal fire-wall break between building areas. The fire separation required would be a two-hour wall assembly on both sides of the existing break in the building. At this location, the construction would be simple and fairly inexpensive. The remaining spaces may need an additional separation between the west garage and the south garage, depending on proposed future uses. Protected openings (doors), are allowed between such fire areas.
Assembly and Business uses have differing code requirements. Assembly uses anticipate a greater number of persons and people more likely to be unfamiliar with their surroundings than business uses. One area where the building is deficient for all uses is with egress mainly from the second floor. This is evidenced by the exterior egress stair that was added to the building after its period of significance. The stair does not meet current egress standards and would require protection from the elements. This stair could be eliminated, and a new interior or enclosed exterior stair could be constructed at the east end of the facility. The existing concrete egress stair at the north west corner of Building B could be fire separated from the adjacent uses and become a code compliant means of egress. For different uses, building exit travel distances must be verified to determine if an additional second floor means of egress is needed.

There is no elevator to the second floor. New uses would require barrier free access to the second floor. There is a circular stair at the southwest end of the second floor that was used as egress. However this circular stair does not meet any egress standards. It can however be retained as a supplementary stair. If the second floor interior space is subdivided, it is likely that an additional new interior stair at the southwest end will be required. The second floor building's exit travel distances must be measured to determine whether the current egress distances will work. All the doors have little architectural significance, so updating them should not be an issue. However the location of the exits should be maintained with some sensitivity to the exterior building features. On the first level some attention needs to be given to correcting the current entrances and exit doors so that they will meet ADA guidelines.

The current entrances and exit doors do not meet ADA guidelines. All the doors have little historic significance so they may be updated. New exit locations should show some sensitivity to historic exterior building features. There are additional accessibility issues inside the facility that will need to be corrected. They are the entrances as mentioned above, along with the restrooms, some sloping floors/ramps, interior curbs, interior catch basins and gutters, and some minor threshold heights.

There is one final area of the facility that could have an impact on the historic character and affect the natural light of 415 West Washington. The area in question is the west façade glazing which is in close proximity to the property line. Although there is no site survey, the building appears to be set back about three feet at the south end to about twenty feet at Washington Street.

The building code requires a fire separation adjacent to neighboring properties. Based on both assembly and business uses, the exterior wall is required to have a one-hour rating within thirty feet of the property line. The fourteen-inch concrete exterior wall meets this requirement, however the extensive glazing in the west façade does not meet the code requirement limiting percentages of glazing along properly lines. Historically rolled steel sash windows were extensively used in industrial buildings partly because of their limited fire-resistant qualities. If this were a new facility the current building code would not permit so much glazing this close to the property without protective measures. Some or all of the glazing could be upgraded to meet present fire codes, or the glazing could be protected with fire sprinkler systems. The glazing could be treated as a special exception in the Existing Structures Code and the Building Official may allow for deviation from the strict interpretation of the code.

Part: 5. Preservation Plan

RFP 833 required the following evaluation of all the items examined in the Work Plan Above. A portion of the RFP is excerpted below:

"The Preservation Plan should take the recommended treatments described in task 3 Structure Condition Assessment and prioritize the work into a logical order. This order should rank the most urgent work, such as deterioration, structural weakness, and/or life safety issues, over less urgent repairs.
Recommended Treatments for elements, features, or spaces should be prioritized and identified utilizing the following terms: Critical Deficiency, Serious Deficiency, and Minor Deficiency. Criteria/ guidelines for each are as follows:

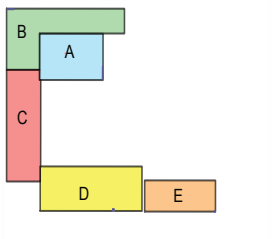
CRITICAL DEFICIENCY: One or more of the following indicate a critical deficiency:
1. Advanced deterioration has resulted in failure of the building element, feature, or space, or will result in its failure if not corrected within two years.
2. Accelerated deterioration of adjacent or related building materials has occurred as a result of the feature or element's deficiency.
3. The feature or element poses a threat to the health and/or safety of the user.
4. The feature or element fails to meet a code/compliance requirement.

SERIOUS DEFICIENCY: One or more of the following:
1. Deterioration, if not corrected within two to five years, will result in failure of the feature or element.
2. Deterioration of a feature or element, if not corrected within two to five years, may pose a threat to the health and/or safety of the user.
3. Deterioration of adjacent or related building materials and/or systems will occur as a result of the deficiency of the feature or element.

MINOR DEFICIENCY: One or more of the following:
1. Standard preventive maintenance practices and building conservation methods have not been followed.
2. A reduced life expectancy of affected or related building materials and/or systems will result.
3. A condition exists with long term impact beyond five years.

NOTE: The section below references only the most representative deficiencies. See Part 3: Condition Assessment, for detailed descriptions.

North High Bay Garage A



Envelope: Roofing and Copings - Critical deficiency
Roof sumps are blocked, membrane has signs of failure in certain areas exposing building to water damage.

Mechanical Systems - Critical deficiency
Heating is not operating and has not been maintained. Roof drains, pipes and floor sumps need to be inspected and cleaned.

Site Features - Critical deficiency
Grade on south facade has been altered to slope towards building in some areas.

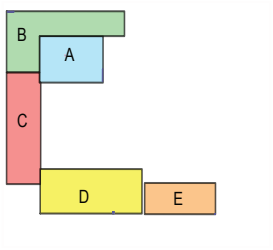
Envelope: Walls – Serious deficiency
Serious spalling and cracking of stucco and concrete frame with exposed reinforcement showing.

Windows and Doors - Serious deficiency
Glazing is broken and frames have been dismantled and continue to rust. Doors are damaged and deteriorating.

Electrical - Serious deficiency
Electrical is half operational and has not been maintained. Fixtures need replacement.

Foundation – Minor deficiency
Minor spalling near the ground plane needs correcting.

North Garage and Offices B



Site Features - Minor deficiency
Grade on west site slopes towards building.

Foundation – Minor deficiency
Minor spalling near the ground plane needs correcting. Previous settlement should be monitored to determine if any new settlement is occurring.

Structural System – Serious deficiency
Reinforcing steel exposed and rusting. Two columns are cracked.

Envelope: Walls – Serious deficiency
Serious spalling and cracking of stucco and concrete frame with exposed reinforcement showing.

Envelope: Roofing, Gutters and Copings - Critical deficiency
Gutters have fallen off, overhang is spalling. Downspouts are pouring water down façade and roof membrane is peeled back by high winds exposing building to water damage.

Windows - Serious deficiency
Glazing is broken and frames have been dismantled and continue to rust.

Doors - Minor deficiency

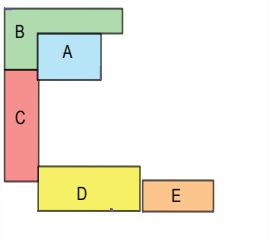
Door lacks maintenance.

Plumbing - Minor deficiency
All plumbing is not operational and needs maintenance, water is turned off in building.

Mechanical - Minor deficiency
Heating is not operational and has not been maintained.

Electrical - Minor deficiency
Electrical is half operational and has not been maintained. Fixtures need new high efficiency lamps.

West High Bay Garage C



Mechanical - Critical deficiency
Heating is not operational and has not been maintained.

Site Features - Serious deficiency
Grade around facility has been altered allowing water to flow towards building. Trees on west edge of property are growing into the building.

Façade – Serious deficiency
Serious spalling and cracking of stucco and concrete frame on east side**.** The west side condition is acceptable.

Roofing and Copings – Serious deficiency
Roof sumps are partially blocked, roof has heavy tree debris and membrane has signs of failure in certain areas exposing building to water damage.

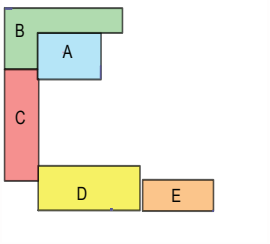
Windows - Serious deficiency
Glazing is broken, frames have been dismantled and windows continue to rust.

Doors - Serious deficiency
Doors are damaged and deteriorating. Overhead doors need maintenance.

Plumbing - Minor deficiency
Roof drains and floor sumps need to be inspected and cleaned.

Electrical - Serious deficiency
Electrical is half operational and has not been maintained. Fixtures need new efficient lamp replacement.

South Garage D



Site Features- Serious deficiency
Silt has washed down the hillside. Grades on south side slope into the building. In some areas water is directed towards building.

Envelope Walls – Serious deficiency
Serious cracking of brick at overhead doors due to vehicle damage. South side needs minor brick repair.

Envelope Roofing Gutters and Copings - Serious deficiency
Roof has improper drainage and is at the end of its service life. Copings are deteriorated.

Windows - Serious deficiency
Glazing is broken and frames have been dismantled and continue to rust.

Doors - Serious deficiency
Doors are damaged and deteriorating. Overhead doors need maintenance.

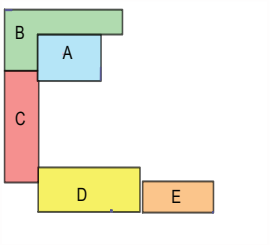
Foundation – Minor deficiency
Some spalling of brick near grade.

Plumbing - Minor deficiency
Roof drains and floor sumps need to be inspected and cleaned.

Mechanical - Minor deficiency
Heating is non-operational and has not been maintained.

Electrical - Minor deficiency
Electrical is half operational and has not been maintained. Fixtures need replacement.

Steel frame shed E



Site Features - Serious deficiency
Grade on south side of facility allows silt to wash down hillside and in some areas the water is directed towards the building.

Envelope Walls – Minor deficiency
Some minor repairs to cracking on concrete block walls.

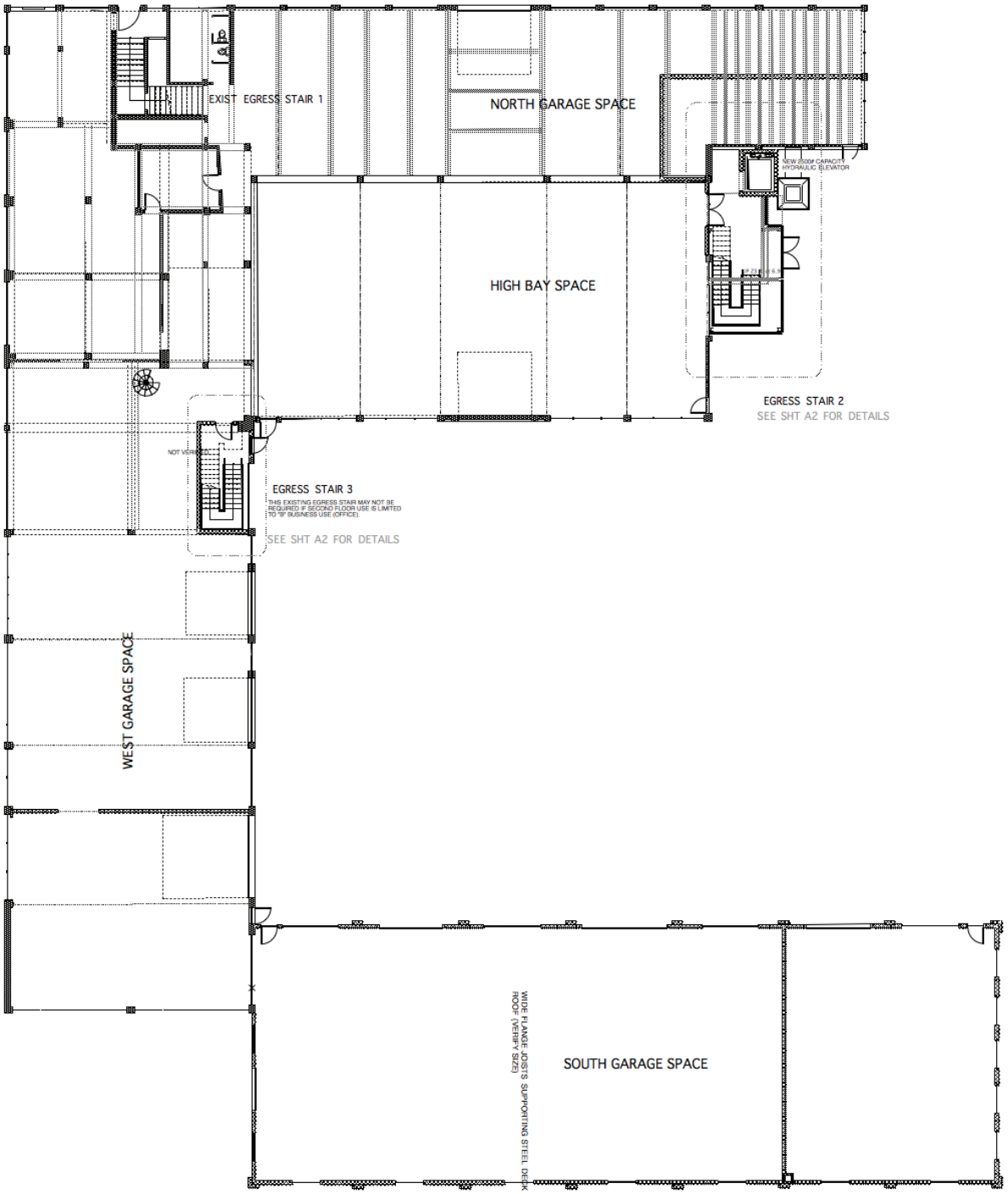
Envelope Roofing and Gutters - Minor deficiency
Metal roofing should be re-coated with exterior metal roof paint to prevent rusting, frame needs to be cleaned of surface rust and repainted.

Part 6: Proposed Additions and Alterations

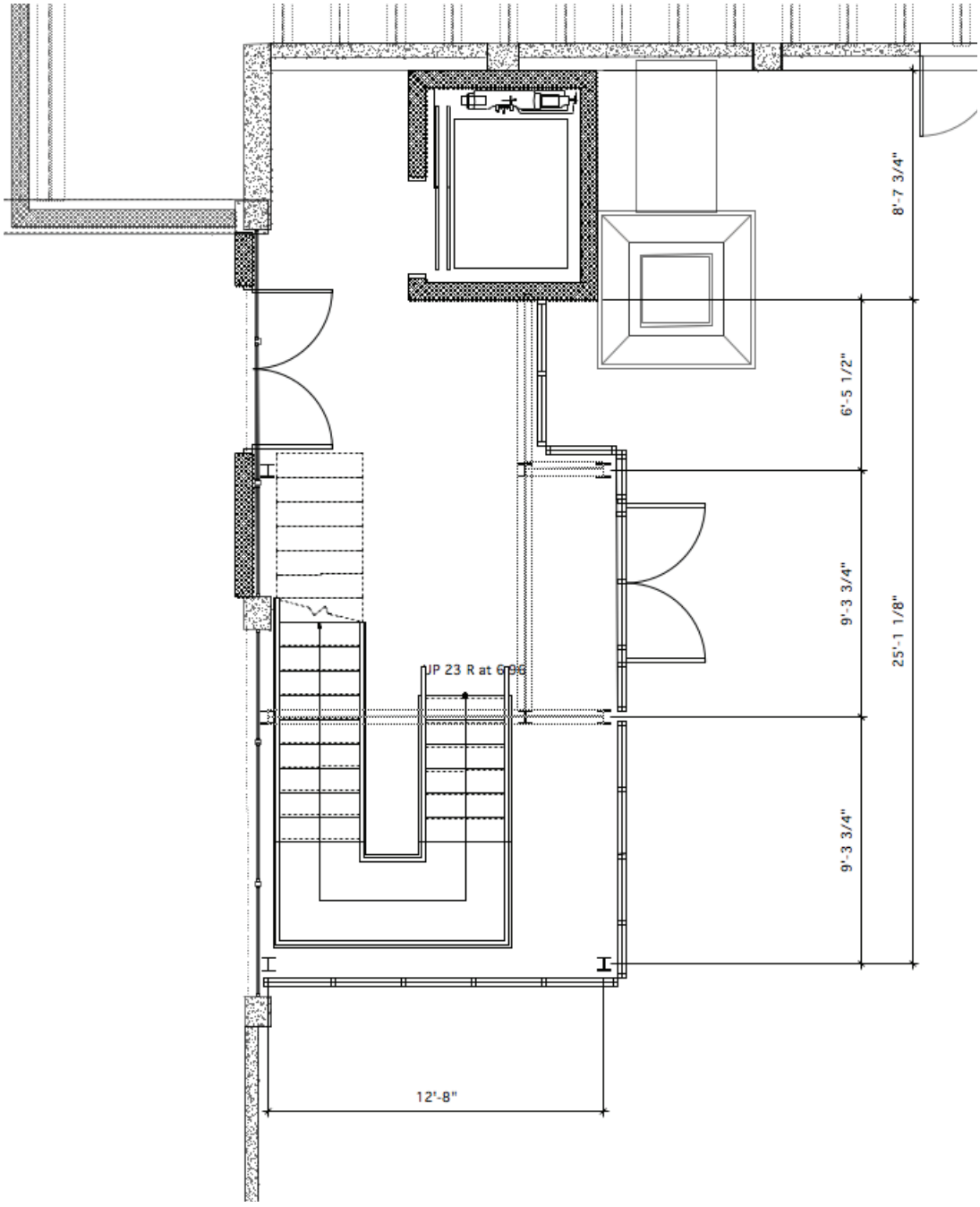
The following schematic drawings illustrate one potential solution for adding an elevator, egress stairway and main entrance lobby for the complex. Any such improvements would require approval by the Historic District Commission. The drawings also show how a new second floor egress stair could be added to the West High Bay space**.**

Other alterations that would require review include approval for new Low E and high shading coefficient glazing, window replacement if different from original, replacement of existing overhead doors with new doors or permanent alternate glazing, roof top HVAC units, new stucco replacement finishes, new roof and parapet copings.

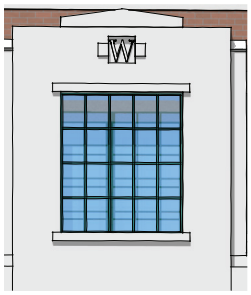
ABOVE:
VIEW OF STRUCTURES FROM NORTHEAST



First Floor Plan



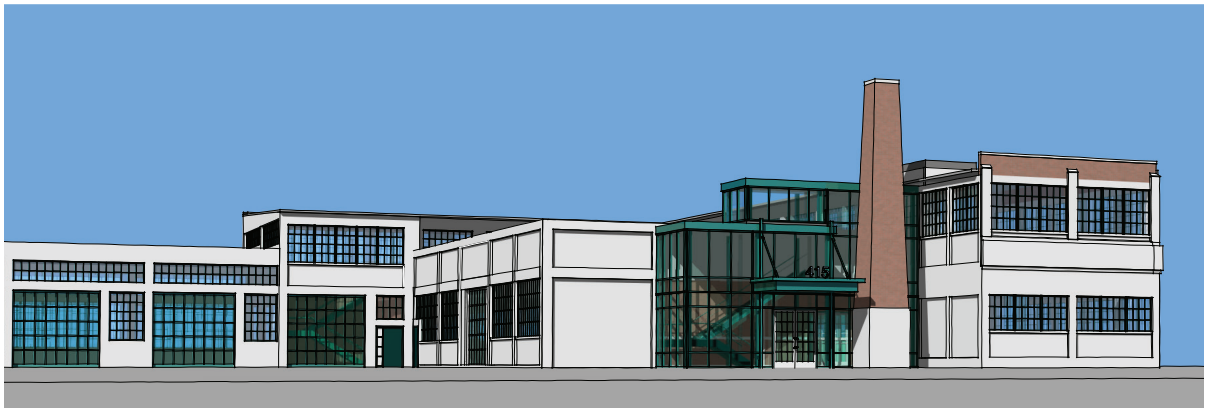
Enlarged First Floor Plan of Egress Stair 2

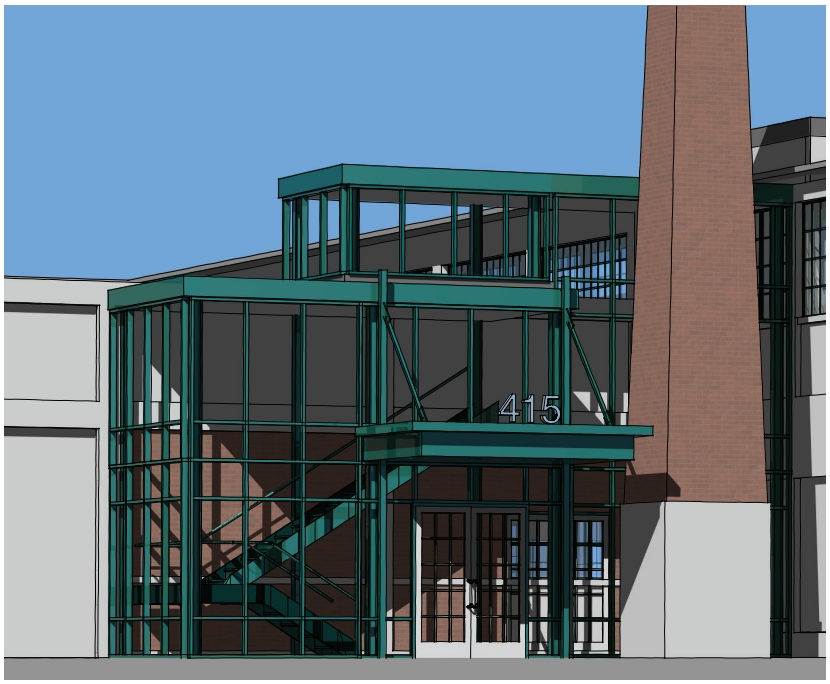


ABOVE:
1925 WASHITENAW COUNTY ROAD COMMISSION LOGO

RIGHT:
VIEW OF PROPOSED EGRESS STAIR IN WEST GARAGE

BOTTOM:
VIEW FROM NORTHEAST OF COMPLEX SHOWING NEW GLAZED STAIR ENCLOSURE AND ENTRY





Part 7: Cost Estimates

As the complex has been analyzed by building type, the cost estimates are presented in the same manner. There are two sets of cost estimates. The first set of estimates (stabilization) prevents parts of the structures in good condition from further deterioration and makes repairs to deteriorated exterior building elements.

The second set of estimates (rehabilitation) is not only for complete building envelopment restoration but for the installation of building equipment and systems to accommodate different business or assembly uses. Those elements include a new entry enclosure to accommodate an elevator and egress stair, an additional western egress stair, new plumbing and barrier free restrooms, a complete HVAC system, life safety systems, interior fit out, a new electrical service, lighting, communication systems and site improvements.

Not all of the structures need to be stabilized or rehabilitated at once. The structures could be rehabilitated over time. The two southern-most buildings are in relatively good condition and could be simply stabilized and used as is without the more extensive and costlier approach of rehabilitation.

PHOENIX

Final Report August 29, 2013

STABILIZATION PROJECT COST ESTIMATES

Project budget, based on stabilizing the building, are presented here.

Preservation Plan
Costs as of August 2013

415 West Washington
PROJECT DESCRIPTION:
Proposed stabilization of existing facility of 31,486 square feet and associated site development.

1	BUILDING COSTS			
	Renovated Construction: 31,486 sq. ft. at 65.12 per sq.ft.			
	A. High Bay Garage		$	302,581.03
	B. North Garage and Offices		$	851,499.16
	C. West High Bay		$	315,071.71
	D. South Garage		$	432,649.83
	E. Steel Frame Shed		$	148,460.21
	SUBTOTAL:		$	2,050,261.93
	Per square foot cost	$ 65.12		
2	SITE COSTS			
	Stormwater quality control, erosion control and utilities south hill			
	SUBTOTAL:		$	115,000.00
3	CONSTRUCTION CONTINGENCY			
	5% of items 1 and 2			
	SUBTOTAL		$	108,263.10
4	ARCHITECTURE AND ENGINEERING FEES			
	7.5% of items #1 and #2			
	SUBTOTAL:		$	162,394.64
5	FURNISHINGS			
	31,486 sq. ft. (gross) at $10.00 per sq. ft.			
	SUBTOTAL:		$	-
6	INTERIOR DESIGN FEES			
	12% of item #5		$	-
	SUBTOTAL:		$	-

7	OTHER DIRECT COSTS		
	Site survey (if needed for erosion control)	$	5,500.00
	Soil borings (done)	$	-
	Environmental report (done)	$	-
	Building permit and inspections	$	16,494.10
	Builders' risk insurance	$	21,652.62
	Testing services allowance	$	6,000.00
	Material and performance bond	$	16,239.46
	Moving costs	$	-
	Printing	$	4,500.00
	Architect's direct costs	$	2,500.00
	SUBTOTAL:	$	72,886.18
8	TECHNOLOGY AND EQUIPMENT		
	Technology consultant fee	$	-
	Computer wiring	$	-
	Computer printers, scanner, etc.	$	-
	Telephone system	$	-
	Building security system	$	-
	Note: The cost of technology may vary substantially from this estimate due to the equipment options available and the Owner's decisions as to which services it may offer.		
	SUBTOTAL:	$	-
9	OWNERS CONTINGENCY		
	5% of items 4, 6, and 7		
	SUBTOTAL:	$	11,764.04
	PROJECT COST SUBTOTAL:	**$**	**2,520,569.89**
10	INFLATION	$	126,028.49
	5% based on a bid date approximately one year from now		
	TOTAL:	**$**	**2,646,598.39**

OTHER COSTS NOT ESTIMATED
Bond or financing costs
General office equipment
Computers
City administrative costs
Other professional fees such as lawyers, bond consultants
Adjustment for inflation beyond one year

PHOENIX

Final Report August 29, 2013

Stabilization Costs by Building

A. High Bay Garage

Project Name: 415 West Washington
Job No:

Total area	SF:		4,020
Cost per	SF:	$	75.27

		Budget	Cost/Ft	Remarks
General Conditions		$ 24,120.00	6.00	
Demolition		$ 28,140.00	7.00	
Metal Fabrication - Misc.		$ 2,010.00	0.50	
Building Concrete - repair		$ 16,039.80	3.99	
Stucco Repair		$ 45,500.00	7.00	
Masonry		$ 2,412.00	0.60	
Doors		$ 1,447.20	0.36	
Rolled Steel Windows		$ 24,120.00	6.00	
Caulking/Sealants		$ 2,854.20	0.71	
Roofing		$ 58,008.60	14.43	
Gutters		$ 6,432.00	1.60	
Hardware		$ 2,010.00	0.50	
Metal Doors & Frames		$ 4,261.20	1.06	
Overhead Door		$ 5,748.60	1.43	
Glass & Glazing		$ 25,326.00	6.30	
Painting		$ 14,914.20	3.71	
MEP		$ 22,110.00	5.50	MEP Make Safe
Sub-Total		**$ 285,453.80**		
Profit - Percentage	4.5%	$ 12,845.42		
Overhead - Percentage	1.5%	$ 4,281.81		
TOTAL		**$ 302,581.03**		

PHOENIX

Final Report August 29, 2013

Stabilization Costs by Building

B. North Garage and Offices

Project Name: 415 West Washington
Job No:

First Floor area	SF:		6658
Second Floor area	SF:		8199
Total area	SF:		14,857
Cost per	SF:	$	57.31

		Budget	Cost/Ft	Remarks
General Conditions	$	89,142.00	6.00	
Demolition	$	81,713.50	5.50	roofing, stucco, includes shoring and bracing, rigging, scaffolding and separation/protection of the adjacent city sidewalks.
Metal Fabrication - Misc.	$	7,428.50	0.50	
Building Concrete - repair	$	59,279.43	3.99	
Stucco Repair	$	45,500.00	7.00	
Masonry	$	8,914.20	0.60	
Doors	$	5,348.52	0.36	
Rolled Steel Windows	$	89,142.00	6.00	
Caulking/Sealants	$	10,548.47	0.71	
Roofing	$	118,311.57	14.43	
Gutters	$	13,118.40	1.60	
Hardware	$	7,428.50	0.50	
Metal Doors & Frames	$	15,748.42	1.06	
Overhead Door	$	21,245.51	1.43	
Glass & Glazing	$	93,599.10	6.30	
Painting	$	55,119.47	3.71	
MEP	$	81,713.50	5.50	Make MEP safe
Sub-Total	**$**	**803,301.09**		
Profit - Percentage	4.5% $	36,148.55		
Overhead - Percentage	1.5% $	12,049.52		
TOTAL	**$**	**851,499.16**		

PHOENIX

Final Report August 29, 2013

Stabilization Costs by Building

C. West High Bay

Project Name: 415 West Washington

Job No:

Total area	SF:		5,771
Cost per	SF:	$	54.60

		Budget	Cost/Ft	Remarks
General Conditions		$ 34,626.00	6.00	
Demolition		$ 40,397.00	7.00	
Metal Fabrication - Misc.		$ 2,885.50	0.50	
Building Concrete - repair		$ 23,026.29	3.99	
Stucco Repair		$ 24,500.00	7.00	
Masonry		$ 3,462.60	0.60	
Doors		$ 2,077.56	0.36	
Rolled Steel Windows		$ 34,626.00	6.00	
Caulking/Sealants		$ 4,097.41	0.71	
Roofing		$ 11,542.00	2.00	
Gutters		$ 9,233.60	1.60	
Hardware		$ 2,885.50	0.50	
Metal Doors & Frames		$ 6,117.26	1.06	
Overhead Door		$ 8,252.53	1.43	
Glass & Glazing		$ 36,357.30	6.30	
Painting		$ 21,410.41	3.71	
MEP		$ 31,740.50	5.50	MEP Make Safe
Sub-Total		**$ 297,237.46**		
Profit - Percentage	4.5%	$ 13,375.69		
Overhead - Percentage	1.5%	$ 4,458.56		
TOTAL		**$ 315,071.71**		

PHOENIX

Final Report August 29, 2013

Stabilization Costs by Building

D. South Garage - Brick

Project Name: 415 West Washington
Job No:

Total area	SF:		6,838		
Cost per	SF:	$	63.27		
			Budget	Cost/Ft	Remarks
General Conditions		$	41,028.00	6.00	
Demolition		$	47,866.00	7.00	
Metal Fabrication - Misc.		$	3,419.00	0.50	
Building Concrete - repair		$	27,283.62	3.99	
Stucco Repair		$	-	0.00	
Masonry		$	4,102.80	0.60	
Doors		$	2,461.68	0.36	
Rolled Steel Windows		$	41,028.00	6.00	
Caulking/Sealants		$	4,854.98	0.71	
Roofing		$	98,672.34	14.43	
Gutters		$	10,940.80	1.60	
Hardware		$	3,419.00	0.50	
Metal Doors & Frames		$	7,248.28	1.06	
Overhead Door		$	9,778.34	1.43	
Glass & Glazing		$	43,079.40	6.30	
Painting		$	25,368.98	3.71	
MEP		$	37,609.00	5.50	MEP Make Safe
Sub-Total		**$**	**408,160.22**		
Profit - Percentage	4.5%	$	18,367.21		
Overhead - Percentage	1.5%	$	6,122.40		
TOTAL		**$**	**432,649.83**		

PHOENIX

Final Report August 29, 2013

Stabilization Costs by Building

E. Steel Frame Shed

Project Name: 415 West Washington
Job No:

Total area	SF:		4,020	
Cost per	SF:	$	36.93	

			Budget	Cost/Ft	
General Conditions		$	24,120.00	6.00	
Demolition		$	14,070.00	3.50	
Metal Fabrication - Misc.		$	2,010.00	0.50	
Masonry		$	2,412.00	0.60	
Roofing - Sheet Metal		$	58,008.60	14.43	
Gutters		$	6,432.00	1.60	
Painting		$	14,914.20	3.71	
MEP		$	18,090.00	4.50	Assuming code will require some lighting
Sub-Total		**$**	**140,056.80**		
Profit - Percentage	4.5%	$	6,302.56		
Overhead - Percentage	1.5%	$	2,100.85		
TOTAL		**$**	**148,460.21**		

PHOENIX

Final Report August 29, 2013

REHABILITATION PROJECT COST ESTIMATES

Project budget, based on two different uses for the building, are presented here, community and business.

Preservation Plan

Costs as of August 2013

415 West Washington

PROJECT DESCRIPTION:

Proposed rehabilitation of existing facility of 31,486 square feet and associated site development.

1	BUILDING COSTS			
	Renovated Construction: 31,486 sq. ft. at $141.06 per sq.ft.			
	A. High Bay Garage		$	603,955.56
	B. North Garage and Offices		$	2,252,830.07
	C. West High Bay		$	742,445.79
	D. South Garage		$	679,765.68
	E. Steel Frame Shed		$	162,384.79
	SUBTOTAL:		$	4,441,381.90
	Per square foot cost	$ 141.06		
2	SITE COSTS			
	Automobile parking, landscaping, stormwater quality control, and utilities			
	SUBTOTAL:		$	450,000.00
3	CONSTRUCTION CONTINGENCY			
	5% of items 1 and 2			
	SUBTOTAL		$	244,569.10
4	ARCHITECTURE AND ENGINEERING FEES			
	7.5% of items #1 and #2			
	SUBTOTAL:		$	366,853.64
5	FURNISHINGS			
	31,486 sq. ft. (gross) at $5.00 per sq. ft.			
	SUBTOTAL:		$	157,430.00
6	INTERIOR DESIGN FEES			
	12% of item #5		$	18,891.60
	SUBTOTAL:		$	176,321.60

7	OTHER DIRECT COSTS		
	Site survey	$	5,500.00
	Soil borings (done)	$	-
	Environmental report (done)	$	-
	Site plan review	$	6,455.00
	Engineering review (1.25% of site costs)	$	-
	Building permit and inspections	$	33,402.86
	Capital charges: water 2" meter & sanitary sewer	$	13,705.00
	Capital charges: 4" Fire	$	46,949.00
	Builders' risk insurance	$	48,913.82
	Testing services allowance	$	10,000.00
	Material and performance bond	$	36,685.36
	Moving costs	$	-
	Printing	$	5,500.00
	Architect's direct costs	$	5,000.00
	SUBTOTAL:	$	212,111.05
8	TECHNOLOGY AND EQUIPMENT		
	Technology consultant fee	$	-
	Computer wiring	$	-
	Computer printers, scanner, etc.	$	-
	Telephone system	$	-
	Building security system	$	15,000.00
	Note: The cost of technology may vary substantially from this estimate due to the equipment options available and the Owner's decisions as to which services it may offer.		
	SUBTOTAL:	$	15,000.00
9	OWNERS CONTINGENCY		
	5% of items 4, 6, and 7		
	SUBTOTAL:	$	29,892.81
	PROJECT COST SUBTOTAL:	**$**	**6,093,560.10**
10	INFLATION	$	304,678.01
	5% based on a bid date approximately one year from now		
	TOTAL:	**$**	**6,398,238.11**

OTHER COSTS NOT ESTIMATED
Bond or financing costs
General office equipment
Computers
City administrative costs
Other professional fees such as lawyers, bond consultants
Adjustment for inflation beyond one year
Fire suppression system - if needed

PHOENIX

Final Report August 29, 2013

Rehabilitation Costs by Building

A. High Bay Garage

Project Name: 415 West Washington

Job No:

Total area	SF:		4,020
Cost per	SF:	$	150.24

		Budget	Cost/Ft	Remarks
General Conditions	$	30,150.00	7.50	
Demolition	$	28,140.00	7.00	
Metal Fabrication Misc.	$	2,010.00	0.50	
Landscaping	$	-	0.00	
Building Concrete - repair	$	22,110.00	5.50	
Site Concrete	$	5,226.00	1.30	
Concrete Flatwork	$	22,793.40	5.67	
Interior Floor Patch	$	3,819.00	0.95	
Stucco Repair	$	45,500.00	7.00	
Masonry	$	2,412.00	0.60	
Carpentry- exterior walls	$	24,000.00	12.00	
Doors	$	1,447.20	0.36	
Rolled Steel Windows	$	24,120.00	6.00	See Glazing
Millwork	$	-	0.00	
Lumber	$	-	0.00	
Insulation	$	5,200.00	2.60	
Caulking/Sealants	$	2,854.20	0.71	
Roofing	$	58,008.60	14.43	
Gutters	$	6,432.00	1.60	
Hardware	$	2,010.00	0.50	
Metal Doors & Frames	$	4,261.20	1.06	
Overhead Door/s	$	5,748.60	1.43	
Glass & Glazing	$	33,366.00	8.30	See rolled steel sashes
Gypsum	$	42,460.00	21.23	
Drywall Ceilings	$	-	0.00	
Acoustical Ceiling	$	-	0.00	
Bathroom Accessories	$	4,500.00	0.00	
Signage Interior	$	1,206.00	0.30	
Resilient	$	-	0.00	
Seal Concrete Floor	$	6,432.00	1.60	
Painting	$	15,879.00	3.95	
HVAC	$	44,179.80	10.99	
Plumbing	$	51,697.20	12.86	
Electrical	$	73,807.20	18.36	
Sub-Total	**$**	**569,769.40**		
Profit - Percentage	4.5%	$ 25,639.62		
Overhead - Percentage	1.5%	$ 8,546.54		
TOTAL	**$**	**603,955.56**		

PHOENIX

Final Report August 29, 2013

Rehabilitation Costs by Building

B. North Garage and Offices

Project Name: 415 West Washington

Job No:

First Floor area	SF:	6,658
Second Floor area	SF:	8,199
Total area	SF:	14,857
Cost per	SF:	$ 151.63

		Budget	Cost/Ft	Remarks
General Conditions	$	107,713.25	7.25	
Demolition	$	103,999.00	7.00	
Metal Fabrication - stairs	$	29,714.00	2.00	
Landscaping	$	-	0.00	
Building Concrete - repair	$	59,279.43	3.99	
Site Concrete	$	19,314.10	1.30	
Concrete Flatwork	$	37,750.86	5.67	
Interior Floor Patch	$	7,789.05	0.95	
Stucco Repair	$	45,500.00	7.00	
Masonry	$	81,713.50	5.50	Elevator shaft and firewall separation
Carpentry- exterior walls	$	98,388.00	12.00	
Doors	$	5,348.52	0.36	
Rolled Steel Windows	$	89,142.00	6.00	See Glazing
Millwork	$	-	0.00	
Lumber	$	-	0.00	
Insulation	$	38,628.20	2.60	
Caulking/Sealants	$	10,548.47	0.71	
Roofing	$	118,311.57	14.43	
Gutters	$	13,118.40	1.60	
Hardware	$	7,428.50	0.50	
Metal Doors & Frames	$	15,748.42	1.06	
Overhead Door/s	$	21,245.51	1.43	
Glass & Glazing	$	93,599.10	6.30	See rolled steel sashes
Gypsum	$	174,064.77	21.23	
Drywall Ceilings	$	-	0.00	
Acoustical Ceiling	$	-	0.00	
Bathroom Accessories	$	4,500.00	0.00	
Signage Interior	$	4,457.10	0.30	
Elevator	$	74,285.00	5.00	
Resilient	$	-	0.00	
Seal Concrete Floor	$	23,771.20	1.60	
Painting	$	55,119.47	3.71	
HVAC	$	163,278.43	10.99	
Plumbing	$	191,061.02	12.86	
Electrical	$	272,774.52	18.36	
New Entrance - stairs	$	157,720.00		New Glazed Atrium Entrance Area
Sub-Total	**$**	**2,125,311.39**		
Profit - Percentage	4.5% $	95,639.01		
Overhead - Percentage	1.5% $	31,879.67		
TOTAL	**$**	**2,252,830.07**		

PHOENIX

Final Report August 29, 2013

Rehabilitation Costs by Building

C. West High Bay Garage

Project Name: 415 West Washington

Job No:

Total area	SF:		5,771
Cost per	SF:	$	128.65

			Budget	Cost/Ft	Remarks
General Conditions		$	40,397.00	7.00	
Demolition		$	40,397.00	7.00	
Metal Fabrication Misc.		$	2,885.50	0.50	
Landscaping		$	-	0.00	
Building Concrete - repair		$	23,026.29	3.99	
Site Concrete		$	7,502.30	1.30	
Concrete Flatwork		$	32,721.57	5.67	
Interior Floor Patch		$	5,482.45	0.95	
Stucco Repair		$	45,500.00	7.00	
Masonry		$	3,462.60	0.60	
Carpentry- exterior walls		$	34,626.00	12.00	
Doors		$	2,077.56	0.36	
Rolled Steel Windows		$	34,626.00	6.00	See Glazing
Millwork		$	-	0.00	
Lumber		$	-	0.00	
Insulation		$	7,502.30	2.60	
Caulking/Sealants		$	4,097.41	0.71	
Roofing		$	11,542.00	2.00	
Gutters		$	9,233.60	1.60	
Hardware		$	2,885.50	0.50	
Metal Doors & Frames		$	6,117.26	1.06	
Overhead Door/s		$	8,252.53	1.43	
Glass & Glazing		$	36,357.30	6.30	See rolled steel sashes
Gypsum		$	61,259.17	21.23	
Drywall Ceilings		$	-	0.00	
Acoustical Ceiling		$	-	0.00	
Bathroom Accessories		$	4,500.00	0.00	
Signage Interior		$	1,731.30	0.30	
Resilient		$	-	0.00	
Seal Concrete Floor		$	9,233.60	1.60	
Painting		$	21,410.41	3.71	
HVAC		$	63,423.29	10.99	
Plumbing		$	74,215.06	12.86	
Electrical		$	105,955.56	18.36	
Sub-Total		**$**	**700,420.56**		
Profit - Percentage	4.5%	$	31,518.92		
Overhead - Percentage	1.5%	$	10,506.31		
TOTAL		**$**	**742,445.79**		

PHOENIX

Final Report August 29, 2013

Rehabilitation Costs by Building

D. South Garage - Brick

Project Name: 415 West Washington

Job No:

Total area	SF:		6,838
Cost per	SF:	$	99.41

		Budget	Cost/Ft	Remarks
General Conditions	$	47,866.00	7.00	
Demolition	$	47,866.00	7.00	
Metal Fabrication Misc.	$	3,419.00	0.50	
Landscaping	$	-	0.00	
Building Concrete - repair	$	37,609.00	5.50	
Site Concrete	$	8,889.40	1.30	
Concrete Flatwork	$	38,771.46	5.67	
Interior Floor Patch	$	6,496.10	0.95	
Stucco repair	$	-	0.00	
Masonry	$	4,102.80	0.60	
Carpentry - walls	$	3,500.00	7.00	
Doors	$	2,461.68	0.36	
Rolled Steel Windows	$	41,028.00	6.00	See Glazing
Millwork	$	-	0.00	
Lumber	$	-	0.00	
Insulation	$	-	0.00	
Caulking/Sealants	$	4,854.98	0.71	
Roofing	$	98,672.34	14.43	
Gutters	$	10,940.80	1.60	
Hardware	$	3,419.00	0.50	
Metal Doors & Frames	$	7,248.28	1.06	
Overhead Door/s	$	9,778.34	1.43	
Glass & Glazing	$	43,079.40	6.30	See rolled steel sashes
Gypsum	$	10,615.00	21.23	
Drywall Ceilings	$	-	0.00	
Acoustical Ceiling	$	-	0.00	
Bathroom Accessories	$	3,500.00	0.00	
Signage Interior	$	2,051.40	0.30	
Resilient	$	-	0.00	
Seal Concrete Floor	$	10,940.80	1.60	
Painting	$	25,368.98	3.71	
HVAC	$	75,149.62	10.99	
Plumbing	$	38,580.00	12.86	
Electrical	$	55,080.00	18.36	
Sub-Total	**$**	**641,288.38**		
Profit - Percentage	4.5%	$ 28,857.98		
Overhead - Percentage	1.5%	$ 9,619.33		
TOTAL	**$**	**679,765.68**		

PHOENIX

Final Report August 29, 2013

Rehabilitation Costs by Building

E. Steel Frame Shed

Project Name: 415 West Washington

Job No:

Total area	SF:		4,020
Cost per	SF:	$	40.39

		Budget	Cost/Ft	Remarks
General Conditions	$	22,110.00	5.50	
Demolition	$	14,070.00	3.50	
Metal Fabrication Misc.	$	-	0.00	
Landscaping	$	-	0.00	
Building Concrete - repair	$	12,060.00	3.00	
Site Concrete	$	-	0.00	
Concrete Flatwork	$	-	0.00	
Interior Floor Patch	$	-	0.00	
Stucco Repair	$	-	0.00	
Masonry	$	2,412.00	0.60	
Carpentry- exterior walls	$	-	0.00	
Doors	$	-	0.00	
Rolled Steel Windows	$	-	0.00	
Millwork	$	-	0.00	
Lumber	$	-	0.00	
Insulation	$	-	0.00	
Caulking/Sealants	$	-	0.00	
Roofing - metal	$	58,008.60	14.43	
Gutters	$	13,118.40	1.60	
Hardware	$	-	0.00	
Metal Doors & Frames	$	-	0.00	
Overhead Door/s	$	-	0.00	
Glass & Glazing	$	-	0.00	
Gypsum	$	-	0.00	
Drywall Ceilings	$	-	0.00	
Acoustical Ceiling	$	-	0.00	
Bathroom Accessories	$	-	0.00	
Signage Interior	$	-	0.00	
Resilient	$	-	0.00	
Seal Concrete Floor	$	-	0.00	
Painting	$	14,914.20	3.71	
HVAC	$	-	0.00	
Plumbing - storm leads	$	6,500.00	6.50	
Electrical	$	10,000.00	5.00	Assuming code will require some lighting
Sub-Total	**$**	**153,193.20**		
Profit - Percentage	4.5%	$ 6,893.69		
Overhead - Percentage	1.5%	$ 2,297.90		
TOTAL	**$**	**162,384.79**		

FEMA

Info

Scale: 105 %

LOMC: 12-05-7813A-260213

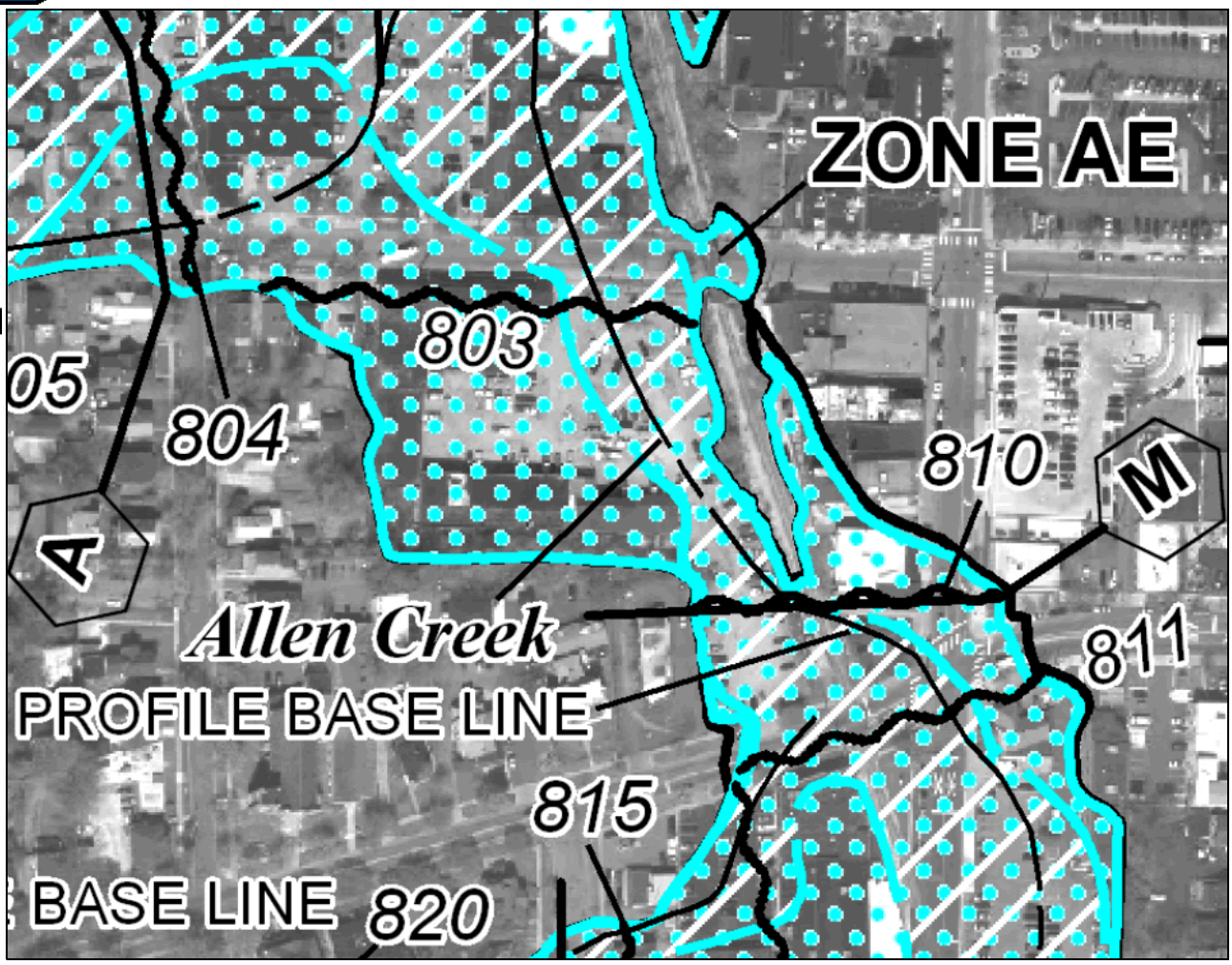
Help

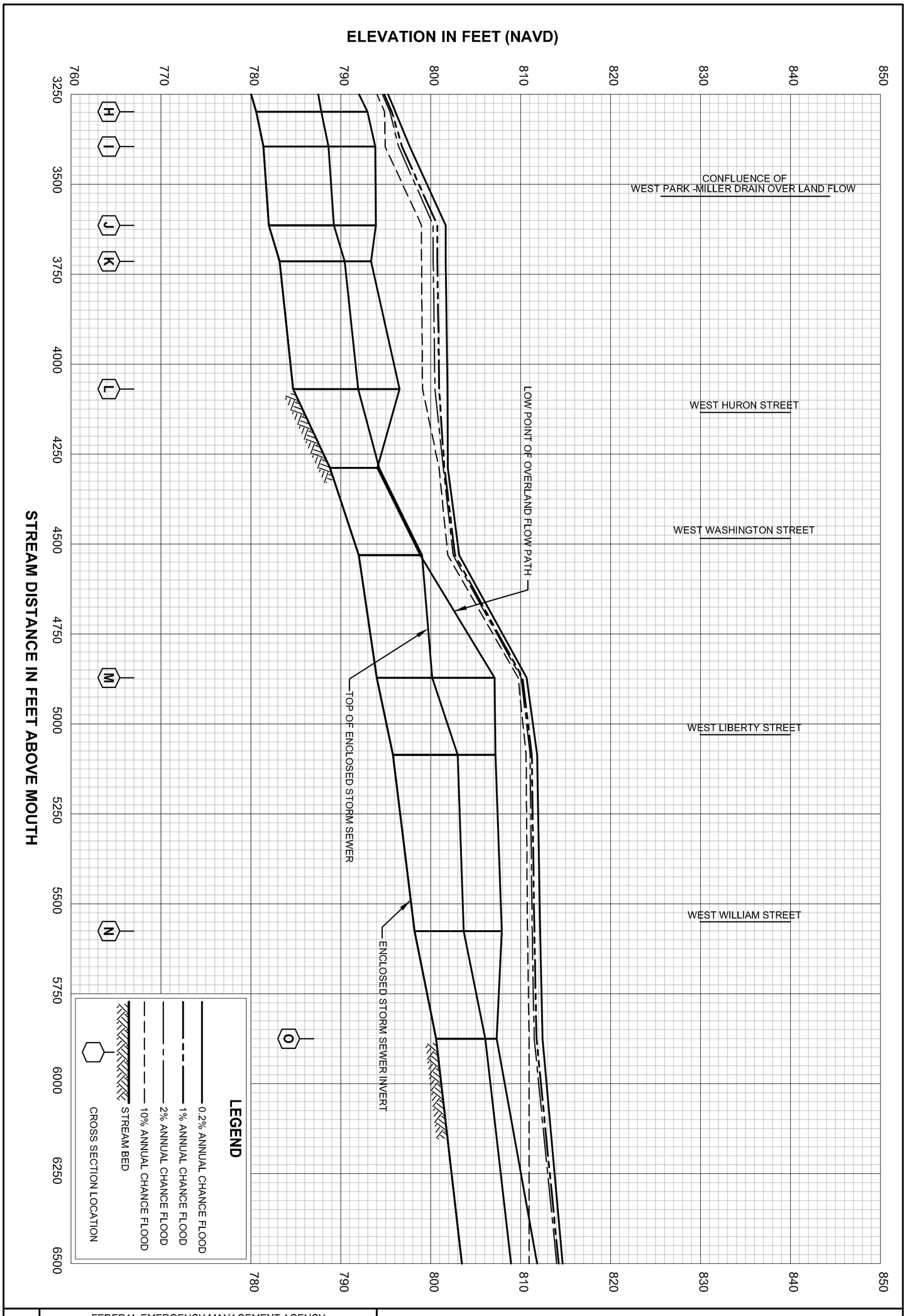
Zoom Win | Pan

Zoom In | Zoom Out

1:1 Zoom In | MAX Zoom Out

Make a FIRMette





02P

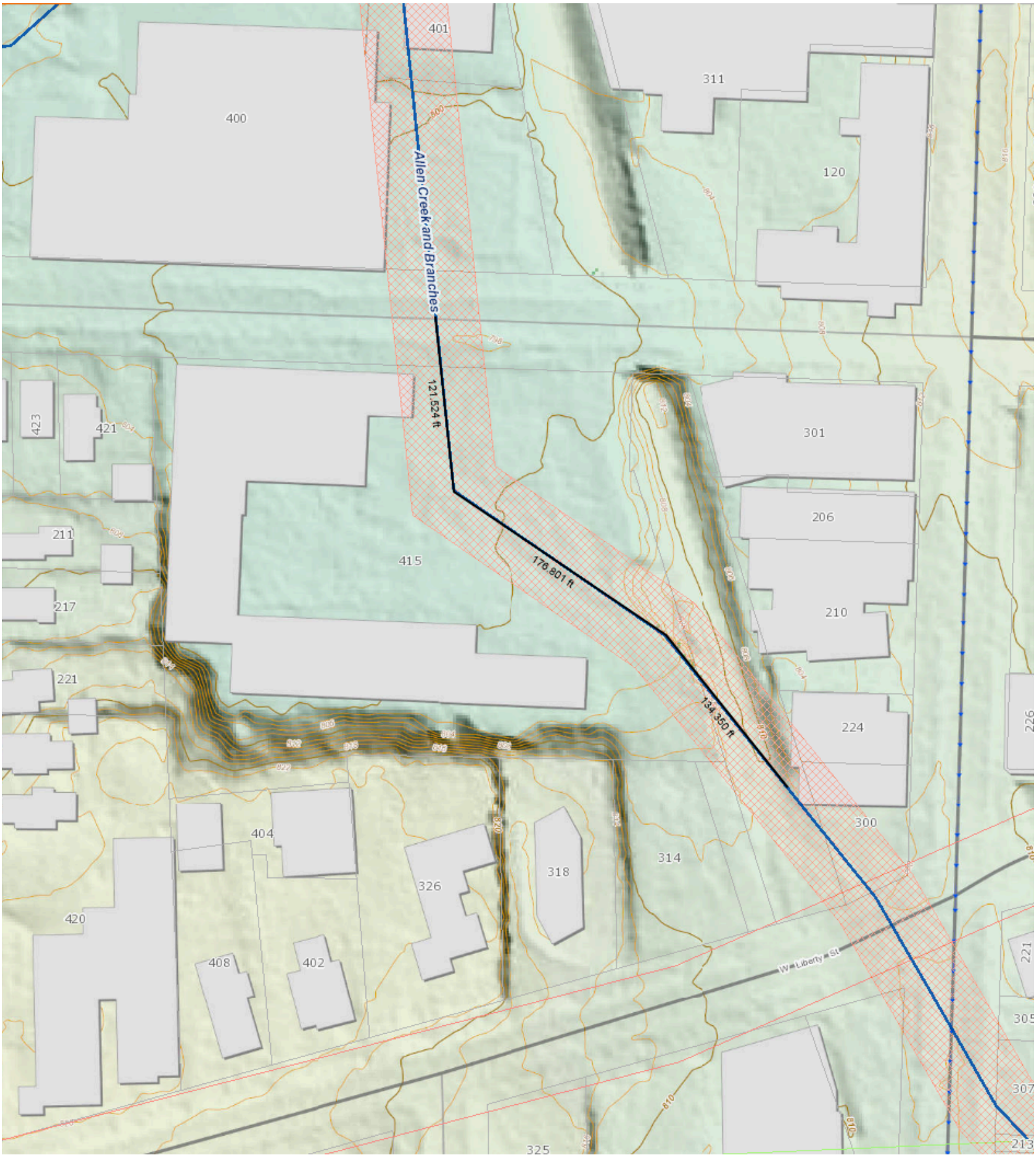
FEDERAL EMERGENCY MANAGEMENT AGENCY

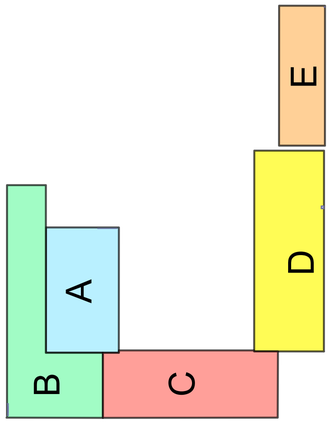
WASHTENAW COUNTY, MI

ALL JURISDICTIONS

FLOOD PROFILES

ALLEN CREEK


Allen Creek and Branches
121.524 ft
176.801 ft
134.350 ft
W Liberty St
401
400
311
120
301
206
210
224
300
314
318
326
404
420
408
402
325
423
421
211
217
221
415
305
307
213

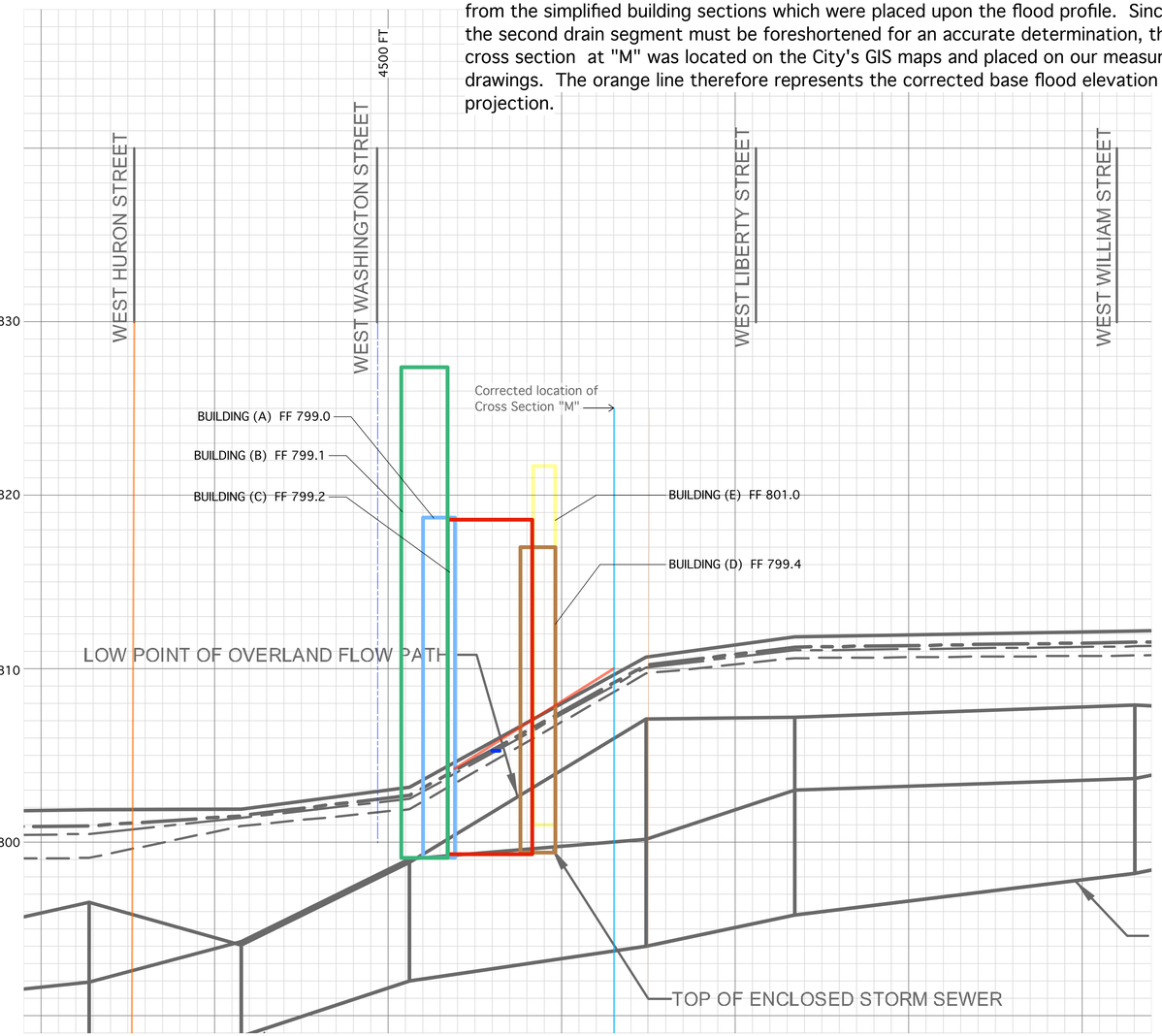


BASE FLOOD ELEVATIONS:

	FIN FLOOR ELEV	BASE FLOOD ELEV	WATER ELEV IN BUILDINGS
BUILDING A:	799.0'	804.2'	5.2'
BUILDING B:	799.1'	803.9'	4.8'
BUILDING C:	799.2'	807.0'	7.8'
BUILDING D:	799.4'	808.1	8.7
BUILDING E:	801.0'	808.1'	7.1

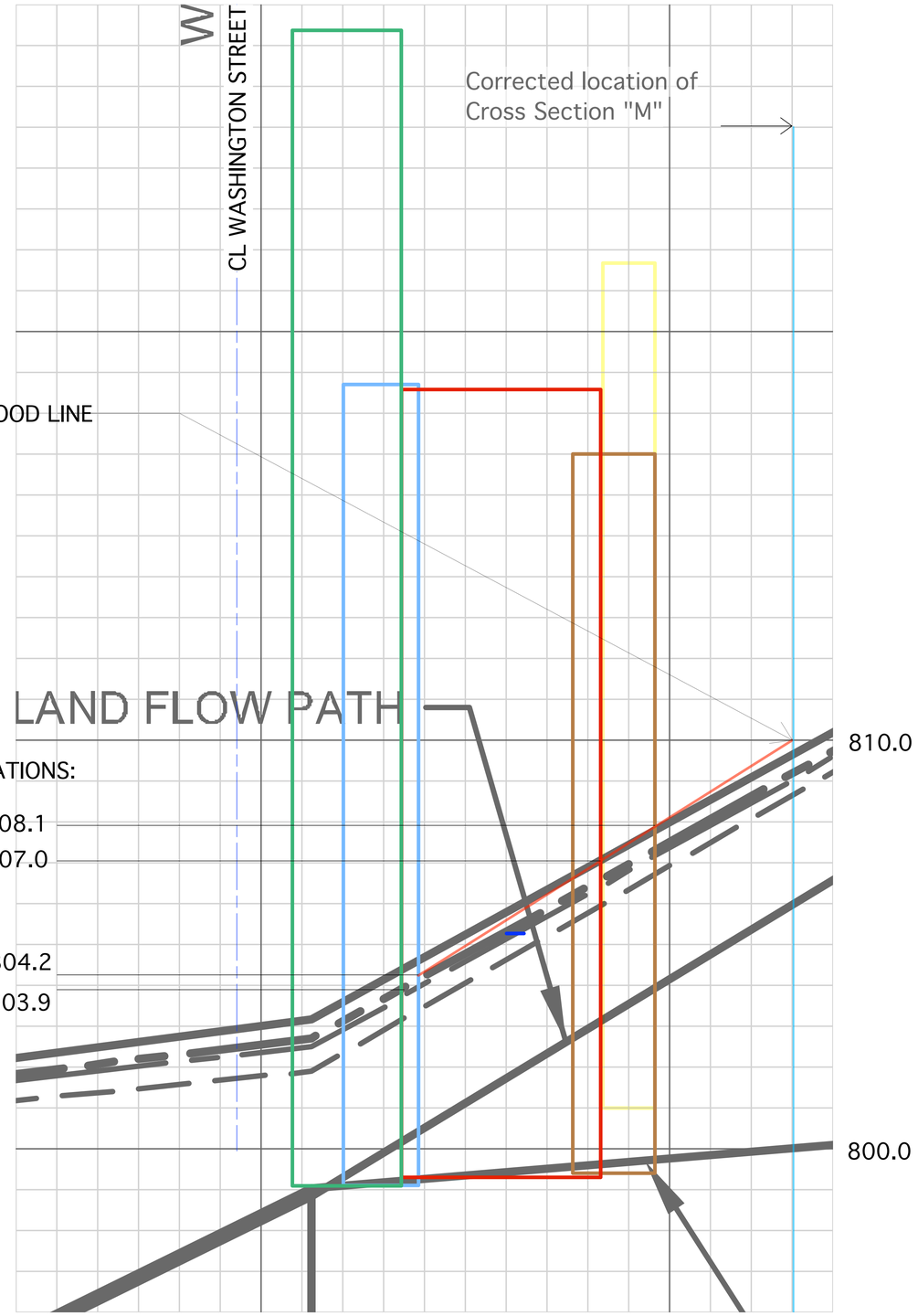
METHODOLOGY: (VERTICAL SCALE: 1 SQUARE =10 FEET) (HORIZONTAL SALE: ONE SQUARE =25 FEET)
The re-scaled FEMA flood profile of Allen Creek was superimposed upon our measured drawings of 415 West Washington. The flood profile map was registered with the center line of West Washington Street. The Allen Creek drain runs roughly parallel to the buildings for approximately 122 feet starting at the center line of Washington Street and then takes a dog-leg to the east for about 177 feet.

The base flood elevations can be read quite accurately for the first segment directly from the simplified building sections which were placed upon the flood profile. Since the second drain segment must be foreshortened for an accurate determination, the cross section at "M" was located on the City's GIS maps and placed on our measured drawings. The orange line therefore represents the corrected base flood elevation projection.



PARTIAL FEMA FLOOD PROFILE OF ALLEN CREEK DRAIN:

CORRECTED 1% FLOOD LINE
(ORANGE)



BASE FLOOD ELEVATIONS:

BUILDING (D & E) 808.1
BUILDING (C) 807.0

BUILDING (A) 804.2
BUILDING (B) 803.9

ENLARGED FEMA FLOOD PROFILE OF ALLEN CREEK DRAIN:

■ RUETER ASSOCIATES ■
ARCHITECTS
515 Fifth Street, Ann Arbor, Michigan 48103
phone: (734) 769-0070, fax: (734) 769-0167

415 WEST LIBERTY
ANN ARBOR, MI 48103

SHEET TITLE:
PRELIMINARY: 05.02.13

A8

U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
National Flood Insurance Program

ELEVATION CERTIFICATE

IMPORTANT: Follow the instructions on pages 1–9.

OMB No. 1660-0008
Expiration Date: July 31, 2015

SECTION A – PROPERTY INFORMATION

FOR INSURANCE COMPANY USE
Policy Number:
Company NAIC Number:

A1. Building Owner's Name: City of Ann Arbor

A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: 415 W. Washington St. (Building A)

City: Ann Arbor | State: MI | ZIP Code: 48103

A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)
Lot 13 Exc. Parc. 40.58 ft. on West and 56.89 ft. on East and Lots 14 thru 17, Blk 2, Ass. Plat No. 3 PID #090929211003

A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.): Non-Residential

A5. Latitude/Longitude: Lat. N42d16'48" Long. W83d45'09" Horizontal Datum: ☐ NAD 1927 ☒ NAD 1983

A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.

A7. Building Diagram Number: 1A

A8. For a building with a crawlspace or enclosure(s):
- a) Square footage of crawlspace or enclosure(s): _____ sq ft
- b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade: _____
- c) Total net area of flood openings in A8.b: _____ sq in
- d) Engineered flood openings? ☐ Yes ☐ No

A9. For a building with an attached garage:
- a) Square footage of attached garage: _____ sq ft
- b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade: _____
- c) Total net area of flood openings in A9.b: _____ sq in
- d) Engineered flood openings? ☐ Yes ☐ No

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. NFIP Community Name & Community Number			B2. County Name		B3. State
City of Ann Arbor, 260213			Washtenaw		Michigan
B4. Map/Panel Number	**B5. Suffix**	**B6. FIRM Index Date**	**B7. FIRM Panel Effective/ Revised Date**	**B8. Flood Zone(s)**	**B9. Base Flood Elevation(s) (Zone AO, use base flood depth)**
0244	E		04/03/2012	AE	805.3

B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9:
☒ FIS Profile ☐ FIRM ☐ Community Determined ☐ Other/Source: _____

B11. Indicate elevation datum used for BFE in Item B9: ☐ NGVD 1929 ☒ NAVD 1988 ☐ Other/Source: _____

B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? ☐ Yes ☒ No
Designation Date: ____ / ____ / ____ ☐ CBRS ☐ OPA

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: ☐ Construction Drawings* ☐ Building Under Construction* ☒ Finished Construction
*A new Elevation Certificate will be required when construction of the building is complete.

C2. Elevations – Zones A1–A30, AE, AH, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO. Complete Items C2.a–h below according to the building diagram specified in Item A7. In Puerto Rico only, enter meters.

Benchmark Utilized: 0013A Vertical Datum: NAVD 1988

Indicate elevation datum used for the elevations in items a) through h) below. ☐ NGVD 1929 ☒ NAVD 1988 ☐ Other/Source: _____
Datum used for building elevations must be the same as that used for the BFE.

		Check the measurement used.	
a) Top of bottom floor (including basement, crawlspace, or enclosure floor)	799 . 0	☒ feet	☐ meters
b) Top of the next higher floor	.	☐ feet	☐ meters
c) Bottom of the lowest horizontal structural member (V Zones only)	.	☐ feet	☐ meters
d) Attached garage (top of slab)	.	☐ feet	☐ meters
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	.	☐ feet	☐ meters
f) Lowest adjacent (finished) grade next to building (LAG)	798 . 7	☒ feet	☐ meters
g) Highest adjacent (finished) grade next to building (HAG)	799 . 1	☒ feet	☐ meters
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	.	☐ feet	☐ meters

SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevation information. *I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.*

☒ Check here if comments are provided on back of form.
☐ Check here if attachments.

Were latitude and longitude in Section A provided by a licensed land surveyor? ☒ Yes ☐ No

Certifier's Name		License Number	
Matthew A. Sheridan		4001058177	
Title	**Company Name**		
Surveyor	City of Ann Arbor		
Address	**City**	**State**	**ZIP Code**
301 E. Huron St.	Ann Arbor	MI	48103
Signature	**Date**	**Telephone**	
	08/08/2013	(734) 794-6410	

U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
National Flood Insurance Program

ELEVATION CERTIFICATE

IMPORTANT: Follow the instructions on pages 1–9.

OMB No. 1660-0008
Expiration Date: July 31, 2015

SECTION A – PROPERTY INFORMATION

FOR INSURANCE COMPANY USE
Policy Number:
Company NAIC Number:

A1. Building Owner's Name: City of Ann Arbor

A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: 415 W. Washington St. (Building B)

City: Ann Arbor State: MI ZIP Code: 48103

A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)
Lot 13 Exc. Parc. 40.58 ft. on West and 56.89 ft. on East and Lots 14 thru 17, Blk 2, Ass. Plat No. 3 PID #090929211003

A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.): Non-Residential

A5. Latitude/Longitude: Lat. N42d16'48" Long. W83d45'09" Horizontal Datum: ☐ NAD 1927 ☒ NAD 1983

A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.

A7. Building Diagram Number: 1A

A8. For a building with a crawlspace or enclosure(s):
- a) Square footage of crawlspace or enclosure(s): _____ sq ft
- b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade: _____
- c) Total net area of flood openings in A8.b: _____ sq in
- d) Engineered flood openings? ☐ Yes ☐ No

A9. For a building with an attached garage:
- a) Square footage of attached garage: _____ sq ft
- b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade: _____
- c) Total net area of flood openings in A9.b: _____ sq in
- d) Engineered flood openings? ☐ Yes ☐ No

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. NFIP Community Name & Community Number: City of Ann Arbor, 260213
B2. County Name: Washtenaw
B3. State: Michigan

B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/ Revised Date	B8. Flood Zone(s)	B9. Base Flood Elevation(s) (Zone AO, use base flood depth)
0244	E		04/03/2012	AE	805.3

B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9:
☒ FIS Profile ☐ FIRM ☐ Community Determined ☐ Other/Source: _____

B11. Indicate elevation datum used for BFE in Item B9: ☐ NGVD 1929 ☒ NAVD 1988 ☐ Other/Source: _____

B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? ☐ Yes ☒ No
Designation Date: ____ / ____ / ____ ☐ CBRS ☐ OPA

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: ☐ Construction Drawings* ☐ Building Under Construction* ☒ Finished Construction
*A new Elevation Certificate will be required when construction of the building is complete.

C2. Elevations – Zones A1–A30, AE, AH, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO. Complete Items C2.a–h below according to the building diagram specified in Item A7. In Puerto Rico only, enter meters.

Benchmark Utilized: 0013A Vertical Datum: NAVD 1988

Indicate elevation datum used for the elevations in items a) through h) below. ☐ NGVD 1929 ☒ NAVD 1988 ☐ Other/Source: _____
Datum used for building elevations must be the same as that used for the BFE.

		Check the measurement used.	
a) Top of bottom floor (including basement, crawlspace, or enclosure floor)	799.1	☒ feet	☐ meters
b) Top of the next higher floor	812.93	☒ feet	☐ meters
c) Bottom of the lowest horizontal structural member (V Zones only)	.	☐ feet	☐ meters
d) Attached garage (top of slab)	.	☐ feet	☐ meters
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	799.1	☒ feet	☐ meters
f) Lowest adjacent (finished) grade next to building (LAG)	798.9	☒ feet	☐ meters
g) Highest adjacent (finished) grade next to building (HAG)	800.1	☒ feet	☐ meters
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	.	☐ feet	☐ meters

SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevation information. *I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.*

☒ Check here if comments are provided on back of form.
☐ Check here if attachments.

Were latitude and longitude in Section A provided by a licensed land surveyor? ☒ Yes ☐ No

Certifier's Name		License Number	
Matthew A. Sheridan		4001058177	
Title: Surveyor	Company Name: City of Ann Arbor		
Address: 301 E. Huron St.	City: Ann Arbor	State: MI	ZIP Code: 48103
Signature	Date: 08/08/2013	Telephone: (734) 794-6410	

See reverse side for continuation.

IMPORTANT: In these spaces, copy the corresponding information from Section A.			FOR INSURANCE COMPANY USE
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 415 W. Washington St. (Building B)			Policy Number:
City Ann Arbor	State MI	ZIP Code 48103	Company NAIC Number:

SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION (CONTINUED)

Copy both sides of this Elevation Certificate for (1) community official, (2) insurance agent/company, and (3) building owner.

Comments Boiler System on First Floor

Signature Date

SECTION E – BUILDING ELEVATION INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO AND ZONE A (WITHOUT BFE)

For Zones AO and A (without BFE), complete Items E1–E5. If the Certificate is intended to support a LOMA or LOMR-F request, complete Sections A, B,and C. For Items E1–E4, use natural grade, if available. Check the measurement used. In Puerto Rico only, enter meters.

E1. Provide elevation information for the following and check the appropriate boxes to show whether the elevation is above or below the highest adjacent grade (HAG) and the lowest adjacent grade (LAG).

a) Top of bottom floor (including basement, crawlspace, or enclosure) is _____ . _____ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

b) Top of bottom floor (including basement, crawlspace, or enclosure) is _____ . _____ ☐ feet ☐ meters ☐ above or ☐ below the LAG.

E2. For Building Diagrams 6–9 with permanent flood openings provided in Section A Items 8 and/or 9 (see pages 8–9 of Instructions), the next higher floor (elevation C2.b in the diagrams) of the building is _____ . _____ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E3. Attached garage (top of slab) is _____ . _____ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E4. Top of platform of machinery and/or equipment servicing the building is _____ . _____ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E5. Zone AO only: If no flood depth number is available, is the top of the bottom floor elevated in accordance with the community's floodplain management ordinance? ☐ Yes ☐ No ☐ Unknown. The local official must certify this information in Section G.

SECTION F – PROPERTY OWNER (OR OWNER'S REPRESENTATIVE) CERTIFICATION

The property owner or owner's authorized representative who completes Sections A, B, and E for Zone A (without a FEMA-issued or community-issued BFE) or Zone AO must sign here. The statements in Sections A, B, and E are correct to the best of my knowledge.

Property Owner or Owner's Authorized Representative's Name

Address City State ZIP Code

Signature Date Telephone

Comments

☐ Check here if attachments.

SECTION G – COMMUNITY INFORMATION (OPTIONAL)

The local official who is authorized by law or ordinance to administer the community's floodplain management ordinance can complete Sections A, B, C (or E), and G of this Elevation Certificate. Complete the applicable item(s) and sign below. Check the measurement used in Items G8–G10. In Puerto Rico only, enter meters.

G1. ☐ The information in Section C was taken from other documentation that has been signed and sealed by a licensed surveyor, engineer, or architect who is authorized by law to certify elevation information. (Indicate the source and date of the elevation data in the Comments area below.)

G2. ☐ A community official completed Section E for a building located in Zone A (without a FEMA-issued or community-issued BFE) or Zone AO.

G3. ☐ The following information (Items G4–G10) is provided for community floodplain management purposes.

G4. Permit Number	G5. Date Permit Issued	G6. Date Certificate Of Compliance/Occupancy Issued

G7. This permit has been issued for: ☐ New Construction ☐ Substantial Improvement

G8. Elevation of as-built lowest floor (including basement) of the building: _____ . _____ ☐ feet ☐ meters Datum _____

G9. BFE or (in Zone AO) depth of flooding at the building site: _____ . _____ ☐ feet ☐ meters Datum _____

G10. Community's design flood elevation: _____ . _____ ☐ feet ☐ meters Datum _____

Local Official's Name Title

Community Name Telephone

Signature Date

Comments

☐ Check here if attachments.

U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
National Flood Insurance Program

ELEVATION CERTIFICATE

IMPORTANT: Follow the instructions on pages 1–9.

OMB No. 1660-0008
Expiration Date: July 31, 2015

SECTION A – PROPERTY INFORMATION

FOR INSURANCE COMPANY USE
Policy Number:
Company NAIC Number:

A1. Building Owner's Name: City of Ann Arbor

A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: 415 W. Washington St. (Building C)
City: Ann Arbor State: MI ZIP Code: 48103

A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.): Lot 13 Exc. Parc. 40.58 ft. on West and 56.89 ft. on East and Lots 14 thru 17, Blk 2, Ass. Plat No. 3 PID #090929211003

A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.): Non-Residential

A5. Latitude/Longitude: Lat. N42d16'48" Long. W83d45'09" Horizontal Datum: ☐ NAD 1927 ☒ NAD 1983

A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.

A7. Building Diagram Number: 1A

A8. For a building with a crawlspace or enclosure(s):
a) Square footage of crawlspace or enclosure(s): _____ sq ft
b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade: _____
c) Total net area of flood openings in A8.b: _____ sq in
d) Engineered flood openings? ☐ Yes ☐ No

A9. For a building with an attached garage:
a) Square footage of attached garage: _____ sq ft
b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade: _____
c) Total net area of flood openings in A9.b: _____ sq in
d) Engineered flood openings? ☐ Yes ☐ No

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. NFIP Community Name & Community Number	B2. County Name	B3. State
City of Ann Arbor, 260213	Washtenaw	Michigan

B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/ Revised Date	B8. Flood Zone(s)	B9. Base Flood Elevation(s) (Zone AO, use base flood depth)
0244	E		04/03/2012	AE	807.5

B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9:
☒ FIS Profile ☐ FIRM ☐ Community Determined ☐ Other/Source: _____

B11. Indicate elevation datum used for BFE in Item B9: ☐ NGVD 1929 ☒ NAVD 1988 ☐ Other/Source: _____

B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? ☐ Yes ☒ No
Designation Date: ____ / ____ / ____ ☐ CBRS ☐ OPA

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: ☐ Construction Drawings* ☐ Building Under Construction* ☒ Finished Construction
*A new Elevation Certificate will be required when construction of the building is complete.

C2. Elevations – Zones A1–A30, AE, AH, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO. Complete Items C2.a–h below according to the building diagram specified in Item A7. In Puerto Rico only, enter meters.

Benchmark Utilized: 0013A Vertical Datum: NAVD 1988

Indicate elevation datum used for the elevations in items a) through h) below. ☐ NGVD 1929 ☒ NAVD 1988 ☐ Other/Source: _____
Datum used for building elevations must be the same as that used for the BFE.

		Check the measurement used.	
a) Top of bottom floor (including basement, crawlspace, or enclosure floor)	799 . 2	☒ feet	☐ meters
b) Top of the next higher floor	_____ . _____	☐ feet	☐ meters
c) Bottom of the lowest horizontal structural member (V Zones only)	_____ . _____	☐ feet	☐ meters
d) Attached garage (top of slab)	_____ . _____	☐ feet	☐ meters
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	_____ . _____	☐ feet	☐ meters
f) Lowest adjacent (finished) grade next to building (LAG)	799 . 1	☒ feet	☐ meters
g) Highest adjacent (finished) grade next to building (HAG)	799 . 2	☒ feet	☐ meters
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	_____ . _____	☐ feet	☐ meters

SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevation information. *I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.*

☒ Check here if comments are provided on back of form.
☐ Check here if attachments.

Were latitude and longitude in Section A provided by a licensed land surveyor? ☒ Yes ☐ No

Certifier's Name		License Number	
Matthew A. Sheridan		4001058177	
Title	Company Name		
Surveyor	City of Ann Arbor		
Address	City	State	ZIP Code
301 E. Huron St.	Ann Arbor	MI	48103
Signature	Date	Telephone	
	08/08/2013	(734) 794-6410	

See reverse side for continuation.

U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
National Flood Insurance Program

ELEVATION CERTIFICATE

IMPORTANT: Follow the instructions on pages 1–9.

OMB No. 1660-0008
Expiration Date: July 31, 2015

SECTION A – PROPERTY INFORMATION

FOR INSURANCE COMPANY USE
Policy Number:
Company NAIC Number:

A1. Building Owner's Name: City of Ann Arbor

A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: 415 W. Washington St. (Building D)

City: Ann Arbor State: MI ZIP Code: 48103

A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)
Lot 13 Exc. Parc. 40.58 ft. on West and 56.89 ft. on East and Lots 14 thru 17, Blk 2, Ass. Plat No. 3 PID #090929211003

A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.): Non-Residential

A5. Latitude/Longitude: Lat. N42d16'48" Long. W83d45'09" Horizontal Datum: ☐ NAD 1927 ☒ NAD 1983

A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.

A7. Building Diagram Number: 1A

A8. For a building with a crawlspace or enclosure(s):
- a) Square footage of crawlspace or enclosure(s): _____ sq ft
- b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade: _____
- c) Total net area of flood openings in A8.b: _____ sq in
- d) Engineered flood openings? ☐ Yes ☐ No

A9. For a building with an attached garage:
- a) Square footage of attached garage: _____ sq ft
- b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade: _____
- c) Total net area of flood openings in A9.b: _____ sq in
- d) Engineered flood openings? ☐ Yes ☐ No

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. NFIP Community Name & Community Number			B2. County Name		B3. State
City of Ann Arbor, 260213			Washtenaw		Michigan
B4. Map/Panel Number	**B5. Suffix**	**B6. FIRM Index Date**	**B7. FIRM Panel Effective/ Revised Date**	**B8. Flood Zone(s)**	**B9. Base Flood Elevation(s) (Zone AO, use base flood depth)**
0244	E		04/03/2012	AE	809.2

B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9:
☒ FIS Profile ☐ FIRM ☐ Community Determined ☐ Other/Source: _____

B11. Indicate elevation datum used for BFE in Item B9: ☐ NGVD 1929 ☒ NAVD 1988 ☐ Other/Source: _____

B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? ☐ Yes ☒ No
Designation Date: ____ / ____ / ____ ☐ CBRS ☐ OPA

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: ☐ Construction Drawings* ☐ Building Under Construction* ☒ Finished Construction
*A new Elevation Certificate will be required when construction of the building is complete.

C2. Elevations – Zones A1–A30, AE, AH, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO. Complete Items C2.a–h below according to the building diagram specified in Item A7. In Puerto Rico only, enter meters.

Benchmark Utilized: 0013A Vertical Datum: NAVD 1988

Indicate elevation datum used for the elevations in items a) through h) below. ☐ NGVD 1929 ☒ NAVD 1988 ☐ Other/Source: _____
Datum used for building elevations must be the same as that used for the BFE.

		Check the measurement used.	
a) Top of bottom floor (including basement, crawlspace, or enclosure floor)	799 . 4	☒ feet	☐ meters
b) Top of the next higher floor	_____ . _____	☐ feet	☐ meters
c) Bottom of the lowest horizontal structural member (V Zones only)	_____ . _____	☐ feet	☐ meters
d) Attached garage (top of slab)	_____ . _____	☐ feet	☐ meters
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	_____ . _____	☐ feet	☐ meters
f) Lowest adjacent (finished) grade next to building (LAG)	799 . 2	☒ feet	☐ meters
g) Highest adjacent (finished) grade next to building (HAG)	799 . 5	☒ feet	☐ meters
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	_____ . _____	☐ feet	☐ meters

SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevation information. *I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.*

☒ Check here if comments are provided on back of form.
☐ Check here if attachments.

Were latitude and longitude in Section A provided by a licensed land surveyor? ☒ Yes ☐ No

Certifier's Name			License Number
Matthew A. Sheridan			4001058177
Title	**Company Name**		
Surveyor	City of Ann Arbor		
Address	**City**	**State**	**ZIP Code**
301 E. Huron St.	Ann Arbor	MI	48103
Signature	**Date**	**Telephone**	
	08/08/2013	(734) 794-6410	

See reverse side for continuation.

U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
National Flood Insurance Program

ELEVATION CERTIFICATE

IMPORTANT: Follow the instructions on pages 1–9.

OMB No. 1660-0008
Expiration Date: July 31, 2015

SECTION A – PROPERTY INFORMATION

FOR INSURANCE COMPANY USE
Policy Number:
Company NAIC Number:

A1. Building Owner's Name: City of Ann Arbor

A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: 415 W. Washington St. (Building E)
City: Ann Arbor State: MI ZIP Code: 48103

A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.): Lot 13 Exc. Parc. 40.58 ft. on West and 56.89 ft. on East and Lots 14 thru 17, Blk 2, Ass. Plat No. 3 PID #090929211003

A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.): Non-Residential

A5. Latitude/Longitude: Lat. N42d16'48" Long. W83d45'09" Horizontal Datum: ☐ NAD 1927 ☒ NAD 1983

A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.

A7. Building Diagram Number: 1A

A8. For a building with a crawlspace or enclosure(s):
a) Square footage of crawlspace or enclosure(s): _____ sq ft
b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade: _____
c) Total net area of flood openings in A8.b: _____ sq in
d) Engineered flood openings? ☐ Yes ☐ No

A9. For a building with an attached garage:
a) Square footage of attached garage: _____ sq ft
b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade: _____
c) Total net area of flood openings in A9.b: _____ sq in
d) Engineered flood openings? ☐ Yes ☐ No

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. NFIP Community Name & Community Number	B2. County Name	B3. State
City of Ann Arbor, 260213	Washtenaw	Michigan

B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/ Revised Date	B8. Flood Zone(s)	B9. Base Flood Elevation(s) (Zone AO, use base flood depth)
0244	E		04/03/2012	AE	809.2

B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9:
☒ FIS Profile ☐ FIRM ☐ Community Determined ☐ Other/Source: _____

B11. Indicate elevation datum used for BFE in Item B9: ☐ NGVD 1929 ☒ NAVD 1988 ☐ Other/Source: _____

B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? ☐ Yes ☒ No
Designation Date: ____ / ____ / ____ ☐ CBRS ☐ OPA

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: ☐ Construction Drawings* ☐ Building Under Construction* ☒ Finished Construction
*A new Elevation Certificate will be required when construction of the building is complete.

C2. Elevations – Zones A1–A30, AE, AH, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO. Complete Items C2.a–h below according to the building diagram specified in Item A7. In Puerto Rico only, enter meters.

Benchmark Utilized: 0013A Vertical Datum: NAVD 1988

Indicate elevation datum used for the elevations in items a) through h) below. ☐ NGVD 1929 ☒ NAVD 1988 ☐ Other/Source: _____
Datum used for building elevations must be the same as that used for the BFE.

		Check the measurement used.	
a) Top of bottom floor (including basement, crawlspace, or enclosure floor)	801 . 0	☒ feet	☐ meters
b) Top of the next higher floor	811 . 0	☒ feet	☐ meters
c) Bottom of the lowest horizontal structural member (V Zones only)	_____ . _____	☐ feet	☐ meters
d) Attached garage (top of slab)	_____ . _____	☐ feet	☐ meters
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	_____ . _____	☐ feet	☐ meters
f) Lowest adjacent (finished) grade next to building (LAG)	800 . 6	☒ feet	☐ meters
g) Highest adjacent (finished) grade next to building (HAG)	801 . 3	☒ feet	☐ meters
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	_____ . _____	☐ feet	☐ meters

SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevation information. *I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.*

☒ Check here if comments are provided on back of form.
☐ Check here if attachments.

Were latitude and longitude in Section A provided by a licensed land surveyor? ☒ Yes ☐ No

Certifier's Name		License Number	
Matthew A. Sheridan		4001058177	
Title	Company Name		
Surveyor	City of Ann Arbor		
Address	City	State	ZIP Code
301 E. Huron St.	Ann Arbor	MI	48103
Signature	Date	Telephone	
	08/08/2013	(734) 794-6410	

Auto-Owners Insurance

AUTO-OWNERS INSURANCE COMPANY
PO BOX 912398
DENVER, CO 80291-2398

Date	Type	Tracking Number	EffectiveDate	Expiration Date	Waiting Period
08/29/2013	New	3002091000	10/01/2013	10/01/2014	Standard 30 Day Wait

PropertyAddress	Insured Name(s)	Mailing Address and Phone	Agency Name, Address, and Phone
415 W WASHINGTON ST ANN ARBOR, MI 48103-4229	RUETER ARCHITECTS ASSOCIATES	415 W WASHINGTON ST ANN ARBOR, MI 48103-4229 **Home Phone:** **Work Phone:** (734) 769-0070 **Cell Phone:** **Email:** MRUETER@RUETERARCHITECTS.COM	MICHIGAN COMMUNITY INSURANCE 21500 HAGGERTY RD STE 200 NORTHVILLE, MI 48167-8992 **Phone Number:** 2484656200 **Producer Code:** 11081800 **Email:** Service@MichiganCommunity.com

Flood Zone and Community Information

CommunityName: ANN ARBOR, CITY OF
Current Flood Zone: AE
Community Number: 260213
Map Panel Suffix: E
Map Panel: 0244
FIRM Date: 06/15/1982
Program Status: Active and participating
Current Base Flood Elevation (BFE): 804.2
Grandfathered Base Flood Elevation N/A
County: WASHTENAW COUNTY

Occupancy Information

Occupancy Type: Non-Residential

Foundation Information

Foundation: Slab on Grade

Risk Rating Method: *Prefirm Elevation Rated - SFR*

Post-FIRM: No
Pre-FIRM, Rated As Post-FIRM: Yes

Coverage/Rate Information

	Coverage	Deductible	Basic Coverage	Basic Rate	Add'l Coverage	Add'l Rate
Building	$500,000	$1,000	$175,000	5.35	$325,000	0.59
Contents	$0	$0	$0	2.51	$0	0.51

Premium Information

** Quote Only, Not An Application * Quote Only, Not An Application **

Deductible	Premium
$1000	**$11914**
$2000	$11441
$3000	$11026
$4000	$10730
$5000	$10434

** Quote Only, Not An Application * Quote Only, Not An Application **