REQUEST FOR PROPOSALS

REQUEST FOR PROPOSALS FOR PURCHASE OF THE CITY OF BUCHANAN'S ROSS-SANDERS HOUSE LOCATED AT 107 WEST FRONT, BUCHANAN, MICHIGAN

BACKGROUND

The Ross-Sanders House is an iconic historic structure located at 107 West Front Street, which is part of a Historic District listed in the National Register of Historic Places, under the National Historic Preservation Act of 1966. The building consists of a central two-story Greek Revival structure erected around 1856 with two wings later remodeled in the Second Empire style, and a rear wing now containing jail cells. A rear addition and carport were added in 1970. The City acquired the building in 1948 and remodeled it for city offices, the library, and the police department. As City offices moved out a succession of commercial businesses rented different spaces within the building. A small city park is located immediately adjacent to the building lot.

CITY OBJECTIVES

The City's objective is to sell the property to either a not-for-profit organization or a private for profit business and achieve exterior renovation to period appropriate appearance and interior restoration and use for business purposes as well as providing public meeting space. The renovation, maintenance and use of the Ross-Sanders House will be subject to a Historic Preservation and Conservation Easement Deed held by the Buchanan Preservation Society, a 501c3 non-profit organization (Attachment 1) and in accordance with the Ross-Sanders House Historic Preservation Elements document (Attachment 2).

SITE DESCRIPTION

The building has been owned by the City since 1948. It is currently exempt from real property taxes; however, the assessed value of the land and building in 2022 was $92,900. The building has a total floor area of approximately 4,300 square feet, making up one main floor and a smaller second floor area. The property is within the City's central business district, which allows for such uses as any and all retail and related commercial and/or community uses. The building is constructed of brick, with mostly carpeted wood floors. Some of the interior ceilings finished with acoustic tile, but the original tall ceilings remain intact. There are three vintage jail cells in the rear of the first floor area, which add to the historic character of the building. A use-appropriate driveway and parking spaces are also on the premises. Due to the age of the building and multiple uses, significant repairs will be required and must be addressed specifically as part of any proposal responsive to this RFP, as set out in the attached 2013 Structural Existing Conditions Report conducted by Fitzpatrick Engineering (Attachment 3). Due to the nature of the needed repairs, a successful respondent must be able to demonstrate that it has a ready cash reserve, or ready access to credit, in the amount of at least $400,000. As mentioned above, a small city park is located immediately adjacent to the building lot. As a condition of purchase, the successful respondent shall enter into a covenant to maintain the adjacent city park, which covenant will run with the land.

CONCEPT PROPERTY PARCEL

The structure and property for sale currently sit on multiple parcels. New lot lines will need to be drawn to create a new property parcel from the existing parcels as proposed in Concept Property Parcel (Attachment 4). Concept Property Parcel is considered a draft. Final lot lines will be negotiated with the party submitting the selected proposal.

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BUILDING INSPECTION AND WALKTHROUGH

Guided inspection walkthroughs will be held for a maximum three (3) hours duration by appointment with the Community Development Director. Building testing or inspection that is damaging or mars or punctures any building surfaces shall not be permitted.

PROPOSAL SUBMISSION REQUIREMENTS

All interested parties are invited to submit sealed written proposals to the City of Buchanan Community Development Department that must include the following:

A. Letter of Interest. Formal letter of interest on letterhead of the respondent addressed to: Richard Murphy, Community Development Department, City of Buchanan 302 N. Redbud Trail, Buchanan, MI 49107. All sealed proposals must be received by the Community Development Department and time/date stamped on or before 3:00 p.m. on July 10, 2023. The City reserves the right to reject late proposals without review. All timely bids shall be publicly opened and announced by the Community Development Director at City Hall on July 10, 2023 after 3:00 p.m.

B. Respondent History. The respondent must provide a description and general history of its organization. The respondent's specific experience in implementing the type of project proposed under this RFP should be highlighted. Resumes and qualifications of the proposed project manager, prime contractor and other relevant staff shall be included.

C. Description of the Development Proposal. The respondent must provide a detailed description of the development proposal, including the following:

- Purchase price offered.
- Development plan and timetable for the renovation and future use of the property.
- Prior experience with projects similar to that under this RFP.
- Proposed detailed building plans, elevations and interior space plans. The plans must demonstrate how respondent will conduct building renovation and occupancy consistent with the requirements of the Historic Preservation and Conservation Easement Deed with the Buchanan Preservation Society (Attachment 1), Ross-Sanders House Historic Preservation Elements document (Attachment 2), and the 2013 Structural Existing Conditions Report (Attachment 3).
- Estimated total cost of all improvements and renovation and the approximate schedule for completion.
- Proposed sources and uses of funds. The proposal must include written assurances of a bank or financial institution acceptable to the City, in its sole discretion, that the respondent had a ready cash reserve or readily available credit in the amount of at least $400,000.

- Anticipated level of jobs creation associated with the new use of the building.

D. Commercial or Trade References. The respondent must identify (by listing parties, case number, jurisdiction and current case status) any current, pending or threatened litigation against respondent related to its business or real estate dealings. The respondent must attest to having no litigation pending or contemplated against the City of Buchanan. The respondent must also list, by location and nature of project, its current involvement in or involvement within the last ten (10) years in any projects that are the same or similar to that proposed under this RFP.

E. Obligations to the City. The respondent must attest to having no outstanding or overdue tax, lien or fine obligations to the City of Buchanan.

F. Proposal Acceptance/Rejection. The City of Buchanan may elect to deem a submission non-responsive if the submission fails to comply with the specific requirements of this RFP. Note, the offering price will not be the sole determinant in the sale of the property. Other factors, such as, but not limited to those cited above, will be given consideration. The City reserves the right to reject any and/or all proposals for any or no reason, or for non-compliance with this RFP, or to waive any noncompliance with this RFP.

PROPOSAL REVIEW PROCESS:

The City shall review all proposals through the City Commission appointed RFP Committee ("Committee"). The Committee may request written clarification from respondents, and will forward all proposals and non-binding recommendations on proposals to the City Commission for final consideration and award of bid and request to enter into a Purchase Agreement and the Historic Preservation and Conservation Easement Deed (Attachment 1), which includes the Ross-Sanders Historic Building Elements document (Attachment 2). The City of Buchanan reserves the right to terminate the RFP process at any point prior to the approval of a proposal.

Proposal Evaluation Criteria:

The committee shall consider the following information when evaluating proposals to which proposal is in the best interests of historic preservation, the community and the City of Buchanan:

- Quality of the development proposal, with specific attention to occupancy and use plans.
- Submission of detailed renovation plans and compliance of those plans with the provisions set out in this RFP.
- Financial capability of the respondent to consummate the purchase and complete the development proposal in a reasonably short timeframe.
- Qualifications of the respondent to implement its development proposal.
- Compatibility of the development proposal with site planning, City codes and the surrounding historic district.
- Benefit to the community and City, with consideration to purchase price offered, potential of the real estate, and the benefits of the proposed use to the general Downtown area and public.

The Committee may request supplemental information as it deems necessary, including business and personal financial statements from any of, all of, or none of the respondents.

GENERAL CONDITIONS OF RFP

A. Costs of Preparation and Submission of Proposals. Each respondent shall be solely responsible for all costs and fees incurred in preparing and submitting a proposal in response to this RFP. All material and documents submitted by any respondent shall become property of the City and will not be returned. Each respondent that participates in any inspection of the premises, engages the services of any consultants or professionals, or incurs any other costs or expenses in any further interviews and negotiations shall be solely responsible for all of the respondent's costs and fees incurred during those processes.

B. Non-Discrimination. The City is committed to achieving diversity in the award of contracts and in the purchase of goods and services throughout all aspects of its development initiatives. The City provides minorities and women equal opportunity to participate in all aspects of City contracting and purchasing programs, including but not limited to participation in procurement contracts for commodities and services as well as for contracts relating to construction, repair work, and/or leasing activities. The City also prohibits discrimination against any person or business in pursuit of these opportunities on the basis of race, color, sex, religion, orientation, or national origin and to conduct its contracting and purchasing programs so as to prevent such discrimination.

C. Information Contacts. Contact the City of Buchanan Development Department using the contact information listed below with any questions you may have. All questions regarding this RFP must be submitted in writing by email to the Community Development Director on or before July 7, 2023. Questions submitted after that date or by phone contact will not be accepted.

Richard Murphy, Community Development Director
City of Buchanan
302 N. Redbud Trail
Buchanan, MI 49107
E-Mail: rmurphy@cityofbuchanan.com

D. Delivery Requirement. Each Respondent shall assume the risk of the method of dispatching any communication or proposal to the City. The City assumes no responsibility for delays, delivery or system failures resulting from the dispatch.

E. Reservation of Rights. The City reserves the right to determine, in its sole discretion, the appropriate and adequate responses to written comments, questions, and requests for clarification.

F. Modification of Solicitation. The City reserves the right to increase, reduce, add, or delete any item, service or activity to this solicitation as deemed necessary where it is consistent with City's goals, policies or strategies to do so. Only the City's official, written responses and communications shall be considered as authoritative with regard to the requirements of this RFP. The City reserves the right to determine, at its sole discretion, the method of conveying official responses and communications pursuant to this RFP.

ATTACHMENT LIST

Attachment 1 | Historic Preservation and Conservation Easement Deed
Attachment 2 | Ross-Sanders House Historic Preservation Elements Which Require Preservation document
Attachment 3 | 2013 Structural Existing Conditions Report
Attachment 4 | Concept Property Parcel

THIS PRESERVATION AND CONSERVATION EASEMENT DEED, made as of the

____ day of _____, 20__, by and between Michigan Gateway Community Foundation ("Grantor") and Buchanan Preservation Society ("Grantee"), a nonprofit corporation of Michigan.

WITNESSETH:

WHEREAS, Grantor is or will be owner in fee simple of certain real property located in the City of Buchanan, more particularly described in Exhibit A attached hereto and incorporated herein (hereinafter "the Property"), said Property consisting of the Ross-Sanders House, a residence (later a municipal building) constructed of masonry dating from 1856 (hereinafter "the Residence") and the existing lawn and adjacent areas;

WHEREAS, Grantee is authorized to accept preservation and conservation easements to protect property significant in national, state, or local history and culture under the provisions of State of Michigan Natural Resources and Environmental Protection Act MCLA 324.2140 et seq (hereinafter "the Act");

WHEREAS, Grantee is a publicly supported, tax-exempt, nonprofit organization whose purposes include the preservation and conservation of sites, buildings, and objects of historic significance and is a qualifying recipient of qualified conservation contributions under Section 170(h) of the Internal Revenue Code of 1986, as amended, and the regulations thereunder (hereinafter, "the Code");

WHEREAS, the Property stands as a significant example of Greek Revival architecture in the State of Michigan, illustrates aesthetics of design and setting, and possesses integrity of materials and workmanship;

WHEREAS, because of its architectural, historic, and cultural significance the Property was certified by the National Park Service on 2 September 2009 as a contributing building in the Buchanan Downtown National Register Historic District, and is a certified historic structure as described under Section 170(h) of the Code;

WHEREAS, Grantor and Grantee recognize the architectural, historic, and cultural values (hereinafter "conservation and preservation values") and significance of the Property, and have the common purpose of conserving and preserving the aforesaid conservation and preservation values and significance of the Property;

WHEREAS, the Property's conservation and preservation values are documented in a set of reports, drawings, and photographs (hereinafter, "Baseline Documentation") attached as Exhibit B and incorporated herein by reference, which Baseline Documentation the parties agree provides an accurate representation of the Property as of the effective date of this grant. In the event of any discrepancy between the two counterparts produced, the counterpart retained by Grantee shall control;

WHEREAS, the Baseline Documentation shall consist of the following: Structural Report (2013), Historic Elements to be Preserved Report (2021), and Current Condition Survey (2022);

WHEREAS, the grant of a preservation and conservation easement by Grantor to Grantee on the Property will assist in preserving and maintaining the Property and its architectural, historic, and cultural features for the benefit of the people of the City of Buchanan, the State of Michigan, and the United States of America;

WHEREAS, to that end, Grantor desires to grant to Grantee, and Grantee desires to accept, a preservation and conservation easement (hereinafter, the "Easement") in gross in perpetuity on the Property pursuant to the Act.

NOW, THEREFORE, in consideration of Ten Dollars ($10.00) and other good and valuable consideration, receipt of which is hereby acknowledged, and pursuant to Section 170(h) of the Code and the Act, Grantor does hereby voluntarily grant and convey unto the Grantee a preservation and conservation easement in gross in perpetuity over the Property described in Exhibit A.

PURPOSE

1. Purpose. It is the Purpose of this Easement to ensure that the architectural, historic, cultural, and associated open space features of the Property will be retained and maintained forever substantially in their current or better condition for conservation and preservation purposes and to prevent any use or change of the Property that will significantly impair or interfere with the Property's conservation and preservation values.

GRANTOR'S COVENANTS

2.1 Grantor's Covenants: Covenant to Maintain. (a) Grantor agrees at all times to maintain the Building in the same or better structural condition and state of repair as that existing on the effective date of this Easement. Grantor's obligation to maintain shall require replacement, repair, and/or reconstruction by Grantor whenever necessary to preserve the Building in the same or better structural condition and state of repair as that existing on the date of this Easement.

(b) Grantor's obligation to maintain shall also require that the existing lawn areas shall be maintained as lawns, regularly mowed. Vegetation should be regularly cut back to prevent the growth of woody vegetation where none currently grows.

(c) Subject to the casualty provisions of Paragraphs 7 and 8, the obligation to maintain shall require replacement, repair, and/or reconstruction whenever necessary in accordance with the standards stated in Paragraph 4.

2.2 Grantor's Covenants: Prohibited Activities. The following acts or uses are expressly forbidden on, over, or under the Property:
(a) The Building shall not be demolished, removed, or razed except as provided in Paragraphs 7 and 8.
(b) Nothing shall be erected or allowed to grow on the Property which would impair the visibility of the Property and the Building from the street level or other public rights of way.
(c) The Property shall not be divided or subdivided in law or in fact and the Property shall not be devised or conveyed except as a single unit. For the purposes of this Easement the term "subdivision" shall

include a use of any portion of the Property that creates the characteristics of a subdivision of the property, as determined in the sole discretion of the Grantee. The term “subdivision” shall also include division into condominium or cooperative interests or the partition of undivided interests in the property.
(d) The dumping of trash, rubbish, ashes, or any other unsightly or offensive materials is prohibited on the Property.

GRANTOR’S CONDITIONAL RIGHTS SUBJECT TO APPROVAL

3.1 Conditional Rights Requiring Approval by Grantee. The following acts are prohibited except with the prior express written approval of the Grantee, which approval may be withheld or conditioned in the sole discretion of Grantee:
(a) Grantor shall not increase or decrease the height of, make additions to, change the exterior construction materials or colors of, or move, improve, alter, reconstruct, or change the facades (including fenestration) and roofs of the Building.
(b) Grantor shall not remove, demolish, or alter the following interior features located in the Residence: see Historic Elements to be Preserved Report (2021), which is incorporated by reference.
(c) Grantor shall not change the historic floor plan of the 1856 portion of the Residence (areas designated M1, M2, M0, WW, EW, and JW in Historic Elements to be Preserved Report) except in regard to the arrangement of new bathrooms as described and illustrated in Exhibit C.
(d) Grantor shall not erect or place on the Property any additional buildings or structures, including but not limited to, sheds, barns, similar ancillary structures, and non-building structures such as utility transmission lines (subject to utility easements already recorded), satellite receiving dishes, antennas, cellular communications transmitters, or similar electronic frequency receiving or emitting devices, flagpoles, fences, walls, wind turbines, solar panels or other similar devices, tents of longer duration than 30 days, mobile homes or trailers, dumpsters, storage containers, camping accommodations, or other similar temporary structures, except that existing utility lines may be upgraded and new satellite receiving dishes, antennas, cellular communications transmitters, or similar electronic frequency receiving or emitting devices may be erected on or behind the Rear Wing of the Residence (as defined by the floorplans in Historic Elements to be Preserved Report, 2021) if such new elements are not visible to a six-foot tall person standing on the sidewalk along the north lot line of the Residence.
(e) Grantor shall not erect or allow to be erected any external signs or external advertisements except: (i) such plaque permitted under Paragraph 19 of this Easement; (ii) a sign stating the name and/or address of the Property and owner and containing a single line of reader board text, and (iii) a temporary sign to advertise the sale or rental of the Property. In addition, a sign or signs with text stating the name and address of office(s) or occupants may be applied to the glass of the doors and windows of the front and west sides of the Residence. Any signage must be mutually approved, in writing, by Grantor and Grantee and be in compliance with city ordinances.

(f) Grantor shall not cut down or remove live trees located on the property unless diseased or damaged as determined in the sole discretion of the Grantee. Grantee may require, at Grantor’s expense, a professional arborist’s report as a condition of reviewing any request to remove live trees.

(g) Grantor shall not change the use of the Property to another use that is inconsistent with the Purpose of this Easement.

3.2 Review of Grantor's Requests for Approval.
(a) Pursuant to Paragraph 3.1, Grantor shall submit in writing to Grantee for Grantee's approval information (including plans, specifications, and designs where appropriate) together with a specific request identifying the proposed activity. In addition, Grantor shall also submit to Grantee a timetable for the proposed activity which is sufficient to permit Grantee to monitor such activity. Grantor shall not make changes or take any action subject to the approval of Grantee unless and until expressly authorized in writing by an authorized representative of Grantee.
(b) Grantee reserves the right to consult with governmental agencies, nonprofit preservation and conservation organizations, and/or other advisors deemed appropriate by the Grantee, concerning the appropriateness of any activity proposed under this Easement.
(c) All approval rights of the Grantee shall be exercised in the reasonable discretion of Grantee. Grantee agrees to use its reasonable efforts to respond to any written request of Grantor not later than forty-five (45) days following receipt by Grantee of Grantor's request. Failure of Grantee to respond to Grantor within the forty-five (45) day period shall not, however, be deemed to constitute approval of Grantor's request.
(d) In the event that the Grantor does not implement any approval granted pursuant to Paragraphs 3.1 and 3.2, for a period of one (1) year, such approval shall be void. Grantor may resubmit the request for approval; however, such approval may be given or denied in the sole discretion of the Grantee.

STANDARDS FOR REVIEW

4. Standards for Review. In exercising any authority created by this Easement to inspect the Property or the interior of the Residence; to review any construction, alteration, repair, or maintenance; or to review casualty damage or to reconstruct or approve reconstruction following casualty damage, Grantee shall apply the following standards (hereinafter "the Secretary's Standards"), as they may be amended from time to time: For buildings and structures: The Secretary of the Interior's Standards for Rehabilitation (36 C.F.R. § 67.7) and the National Park Service 's Guidelines for Rehabilitating Historic Buildings referenced therein.

GRANTOR'S RESERVED RIGHTS

5. Grantor's Reserved Rights Not Requiring Further Approval by Grantee. Subject to the provisions of Paragraphs 2.1, 2.2, and 3.1, the following rights, uses, and activities of or by Grantor on, over, or under the Property are permitted by this Easement and by Grantee without further approval by Grantee:
(a) the right to engage in all those acts and uses that: (i) are permitted by governmental statute or regulation; (ii) do not substantially impair the conservation and preservation values of the Property; and (iii) are not inconsistent with the Purpose of this Easement;
(b) the right to maintain and repair the Building strictly according to the Secretary's Standards, subject to the following qualifications:
(i) The right to maintain and repair shall mean the use by Grantor of in-kind materials and colors, applied with workmanship comparable to that which was used in the construction or application of those materials being repaired or maintained, for the purpose of retaining in good condition the appearance and construction of the Building.

(ii) The right to maintain and repair shall not include the right to make changes in appearance, materials, colors, and workmanship from that existing prior to the maintenance and repair without the prior written approval of Grantee in accordance with the provisions of Paragraphs 3.1 and 3.2.
(iii) The right to maintain and repair shall not include the right to replace historic materials unless such historic materials are significantly deteriorated or damaged in the determination of the Grantee.
(c) the right to continue all manner of existing use and enjoyment of the Property's Building, including but not limited to the maintenance, repair, and restoration of existing fences; the right to maintain existing driveways, roads, and paths with the use of same or similar surface materials; the right to maintain existing utility lines, gardening and building walkways, steps, and garden fences; the right to cut, remove, and clear grass or other vegetation and to perform routine maintenance, landscaping, horticultural activities, and upkeep, consistent with the Purpose of this Easement.

PUBLIC ACCESS

6. Grantor shall make the Property and interior portions of the Residence protected under the Easement as applicable accessible to the public on a minimum of one day per year. This requirement may be fulfilled through an open house, house tour, or similar event that is open to the general public following published notice. Grantor shall have a representative present during such public access, and access shall be subject to reasonable restrictions to ensure security of the property and safety of the visitors. At other reasonable times, upon request of Grantee made with reasonable notice to Grantor, persons affiliated with educational organizations, professional architectural associations, and historical societies shall be admitted to study the property. In addition, Grantee may make photographs, drawings, or other representations documenting the significant historical, cultural, and architectural character and features of the property and may use or publish them (or authorize others to do so) to fulfill its charitable or educational purposes.

CASUALTY DAMAGE OR DESTRUCTION; INSURANCE

7. Casualty Damage or Destruction. In the event that the Building or any part thereof shall be damaged or destroyed by fire, flood, windstorm, hurricane, earth movement, or other casualty, Grantor shall notify Grantee in writing within fourteen (14) days of the damage or destruction, such notification including what, if any, emergency work has already been completed. No repairs or reconstruction of any type, other than temporary emergency work to prevent further damage to the Building and to protect public safety, shall be undertaken by Grantor without Grantee's prior written approval. Within thirty (30) days of the date of damage or destruction, if required by Grantee, Grantor at its expense shall submit to the Grantee a written report prepared by a qualified restoration architect and an engineer who are acceptable to Grantor and Grantee; this report shall include the following:
(a) an assessment of the nature and extent of the damage;
(b) a determination of the feasibility of the restoration of the Building and/or reconstruction of damaged or destroyed portions of the Building; and
(c) a report of such restoration/reconstruction work necessary to return the Building to the condition existing at the effective date of this instrument.
8. Review After Casualty Damage or Destruction. If, after reviewing the report provided in Paragraph 7 and assessing the availability of insurance proceeds, Grantor and Grantee agree that the Purpose of the

Easement will be served by such restoration/reconstruction, Grantor and Grantee shall establish a schedule under which Grantor shall complete the restoration/reconstruction of the Building in accordance with plans and specifications consented to by the parties up to at least the total of the casualty insurance proceeds available to Grantor.
If, after reviewing the report and assessing the availability of insurance proceeds, Grantor and Grantee agree that restoration/reconstruction of the Property is impractical or impossible, or agree that the Purpose of the Easement would not be served by such restoration/reconstruction, Grantor may, but only with the prior written consent of Grantee, alter, demolish, remove, or raze the Building, and/or construct new improvements on the Property. Grantor and Grantee may agree to extinguish this Easement in whole or in part in accordance with the laws of the State of Michigan and Paragraph 23.2 of this instrument.

9. Insurance.
(a) Grantor shall keep the Property insured by an insurance company rated "Secured" by Best's for the full replacement value against loss from the perils commonly insured under standard fire and extended coverage policies and comprehensive general liability insurance against claims for personal injury, death, and property damage.
(b) Property damage insurance shall include change in condition and building ordinance coverage, in form and amount sufficient to replace fully the damaged Property and Building without cost or expense to Grantor or contribution or coinsurance from Grantor. Such insurance shall include Grantee's interest and name Grantee as an additional insured.
(c) Grantor shall deliver to Grantee a certificate of insurance annually or when coverage is renewed by Grantor. If Grantor fails to submit proof of insurance coverage annually or at the time of renewal, Grantor must deliver proof of coverage, within ten (10) business days of Grantee's written request for documentation of coverage.

INDEMNIFICATION AND TAXES

10. Indemnification. Grantor hereby agrees to pay, protect, indemnify, hold harmless and defend at its own cost and expense, Grantee, its agents, trustees, directors, officers and employees, or independent contractors from and against any and all claims, liabilities, expenses, costs, damages, losses, and expenditures (including reasonable attorneys' fees and disbursements hereafter incurred) arising out of or in connection with injury to or death of any person; physical damage to the Property; the presence or release in, on, or about the Property, at any time, of any substance now or hereafter defined, listed, or otherwise classified pursuant to any law, ordinance, or regulation as a hazardous, toxic, polluting, or contaminating substance; or other injury or other damage occurring on or about the Property, except to the extent that such injury or damage is caused by Grantee or any agent, trustee, director, officer, employee, or independent contractor of Grantee. In the event that Grantor is required to indemnify Grantee pursuant to the terms of this paragraph, the amount of such indemnity, until discharged, shall constitute a lien on the Property with the same effect and priority as a construction lien.
11. Taxes. Grantor shall pay immediately, when first due and owing, all general taxes, special taxes, special assessments, water charges, sewer service charges, and other charges which may become a lien on the Property unless Grantor timely objects to the amount or validity of the assessment or charge and diligently prosecutes an appeal of the charge, in which case the obligation to pay such charges as defined in this paragraph shall be suspended for the period permitted by law for prosecuting such

appeal and any applicable grace period following completion of such action. In place of Grantor, Grantee is hereby authorized, but in no event required or expected, to make or advance upon three (3) days prior written notice to Grantor any payment relating to taxes, assessments, water rates, sewer rentals and other governmental or municipality charge, fine, imposition, or lien asserted against the Property. Grantee may make such payment according to any bill, statement, or estimate procured from the appropriate public office without inquiry into the accuracy of such bill, statement, or assessment or into the validity of such tax, assessment, sale, or forfeiture. Such payment if made
by Grantee shall constitute a lien on the Property with the same effect and priority as a construction lien.

ADMINISTRATION AND ENFORCEMENT

12. Written Notice. Any notice which either Grantor or Grantee may desire or be required to give to the other party shall be in writing and shall be delivered by one of the following methods: by overnight courier postage prepaid, registered or certified mail with return receipt requested, or hand delivery; if to Grantor, then at 107 West Front Street, Buchanan, MI 49107, and if to Grantee, then to PO Box 357, Buchanan, MI 49107 or to the President of the Grantee at his or her designated address. Each party may change its address set forth herein by a notice to such effect to the other party.
13. Evidence of Compliance. Upon request by Grantor, Grantee shall promptly furnish Grantor with a certification that, to the best of Grantee's knowledge, Grantor is in compliance with the obligations of this Easement, or that otherwise describes the status of this Easement to the extent of Grantee's knowledge.
14. Inspection. With at least twenty-four hour prior notice to Grantor, Representatives of Grantee shall be permitted at all reasonable times to inspect the Property, including the interior of the Residence.
15. Grantee's Remedies. Grantee may, following reasonable written notice to Grantor, institute suit(s) to enjoin any violation of the terms of this Easement by ex parte, temporary, preliminary, and/or permanent injunction, including prohibitory and/or mandatory injunctive relief, and to require the restoration of the Property and Building to the condition and appearance that existed prior to the violation complained of in the suit. Grantee shall also have available all legal and other equitable remedies to enforce Grantor's obligations contained in this instrument. In the event Grantor is found to have violated any of its obligations, Grantor shall reimburse Grantee for all costs and expenses incurred in connection with Grantee's enforcement of the terms of this Easement, including but not limited to all reasonable court costs, and attorney's, architectural, engineering, and expert witness fees. Exercise by Grantee of one remedy hereunder shall not have the effect of waiving or limiting any other remedy, and the failure to exercise any remedy shall not have the effect of waiving or limiting the use of any other remedy or the use of such remedy at any other time.
16. Notice from Government Authorities. Grantor shall deliver to Grantee copies of any notice of violation or lien relating to the Property received by Grantor from any government authority within five (5) days of receipt by Grantor. Upon request by Grantee, Grantor shall promptly furnish Grantee with evidence of Grantor's compliance with such notice or lien where compliance is required by law.
17. Notice of Proposed Sale. Grantor shall promptly notify Grantee in writing of any proposed offer to sell the Property or of any listing of the Property for sale and provide the opportunity for Grantee to explain the terms of the Easement to the real estate listing agent and potential new owners prior to sale closing.

18. Liens created pursuant to Easement. Any lien on the Property created pursuant to any paragraph of this Easement may be confirmed by judgment and foreclosed by Grantee in the same manner as a construction lien.
19. Plaque. Grantor agrees that Grantee may provide and maintain a plaque on the Property, which plaque shall not exceed 24 by 24 inches in size, giving notice of the significance of the Property and the existence of this Easement.

BINDING EFFECT AND ASSIGNMENT

20. Runs with the Land. Except as provided in Paragraphs 8 and 23.2, the obligations imposed by this Easement shall be effective in perpetuity and shall be deemed to run as a binding servitude with the Property. This Easement shall extend to and be binding upon Grantor and Grantee, their respective successors in interest and all such persons in the future claiming under or through Grantor and Grantee; the words "Grantor" and "Grantee" when used in this instrument shall include all such persons. Any right, title, or interest granted in this instrument to Grantee also shall be deemed granted to each successor and assign of Grantee and each following successor and assign; the word "Grantee" shall include all such successors and assigns. An owner of the Property shall have no obligation pursuant to this instrument where such owner shall cease to have any ownership interest in the Property by reason of a bona fide transfer; provided, however, that the owner shall not thereby be deemed released from any liability arising from or related to the owner's obligations pursuant to this instrument during its period of ownership. The restrictions, stipulations, and covenants contained in this Easement shall be inserted by Grantor, verbatim or by express reference, in any subsequent deed or other legal instrument by which Grantor divests itself of either the fee simple title to or any lesser estate in the Property, including by way of example and not limitation, a lease of the Property.
20.1 Liens Subordinated. Grantor represents that as of the date of this grant (and effective through the date of recordation), there are no liens or mortgages outstanding against the Property. Grantor has the right to use the Property as collateral to secure the repayment of debt, provided that any lienor other rights granted for such purpose, regardless of date, are subordinate to Grantee's rights under this Easement. Under no circumstances may Grantee's rights be extinguished or otherwise affected by the recording, foreclosure, or any other action taken concerning any subsequent lien or other interest in the Property created as a result of the use of the Property as collateral for the repayment of debt.
21. Assignment. Grantee may convey, assign, or transfer this Easement to a unit of federal, state, or local government or to a similar local, state, or national organization that is a "qualified organization" under Section 170(h) of the Code whose purpose, among other things, is to promote preservation or conservation of historical, cultural, or architectural resources, provided that any such conveyance, assignment, or transfer requires that the Purpose for which the Easement was granted will continue to be carried out.
22. Recording and Effective Date. Grantee shall do and perform at its own cost all acts necessary to the prompt recording of this instrument in the land records of the County of Berrien, State of Michigan. Grantor and Grantee intend that the restrictions arising under this Easement take effect on the day and year the initial deed of the property to Grantor is recorded in the land records of County of Berrien, State of Michigan.

PERCENTAGE INTERESTS AND EXTINGUISHMENT

23.1 Percentage Interests. For purposes of allocating proceeds pursuant to Paragraphs 23.2 and 23.3, Grantor and Grantee stipulate that as of the date of this Easement, Grantor and Grantee are or will be each vested with real property interests in the Property and that such interests have a stipulated percentage interest in the fair market value of the Property. These percentage interests shall be determined by the ratio of the Easement's value on its effective date to the value of the Property, without deduction for the value of the Easement, on the effective date of this Easement. The values on the effective date of the Easement shall be those values used to calculate the deduction for federal income tax purposes allowable by reason of this grant, pursuant to Section 170(h) of the Code. The parties shall include the ratio of those values with the Baseline Documentation and shall amend such values, if necessary, to reflect any final determination by the Internal Revenue Service or court of competent jurisdiction. For purposes of this paragraph, the ratio of the value of the Easement to the value of the Property unencumbered by the Easement shall remain constant, and the percentage interests of Grantor and Grantee in the fair market value of the Property thereby determinable shall remain constant, except that the value of any improvements made by Grantor after the effective date of this Easement is reserved to Grantor.

23.2 Extinguishment. Grantor and Grantee hereby recognize that circumstances may arise that may make the continued ownership or use of the Property in a manner consistent with the Purpose of this Easement impossible and that extinguishment of the Easement may be necessary. Such circumstances may include, but are not limited to, partial or total destruction of the building resulting from casualty. Extinguishment must be the result of a judicial proceeding in a court of competent jurisdiction. Unless otherwise required by applicable law at the time, in the event of any sale of all or a portion of the Property (or any other property received in connection with an exchange or involuntary conversion of the Property) after such termination or extinguishment, and after the satisfaction of prior claims and any costs or expenses associated with such sale, Grantor and Grantee shall share in any net proceeds resulting from such sale in accordance with their respective percentage interests in the fair market value of the Property, as such interests are determined under the provisions of Paragraph 23.1, adjusted, if necessary, to reflect a partial termination or extinguishment of this Easement. Net proceeds shall also include, without limitation, net insurance proceeds. In the event of extinguishment, the provisions of this paragraph shall survive extinguishment and shall constitute a lien on the Property with the same effect and priority as a construction lien.

23.3 Condemnation. If all or any part of the property is taken under the power of eminent domain by public, corporate, or other authority, or otherwise acquired by such authority through a purchase in lieu of a taking, Grantor and Grantee shall join in appropriate proceedings at the time of such taking to recover the full value of those interests in the Property that are subject to the taking and all incidental and direct damages resulting from the taking. After the satisfaction of prior claims and net of expenses reasonably incurred by Grantor and Grantee in connection with such taking, Grantor and Grantee shall be respectively entitled to compensation from the balance of the recovered proceeds in conformity with the provisions of Paragraphs 23.1 and 23.2 unless otherwise provided by law.

INTERPRETATION

24.Interpretation. The following provisions shall govern the effectiveness, interpretation, and duration of the Easement.

(a) Any rule of strict construction designed to limit the breadth of restrictions on alienation or use of Property shall not apply in the construction or interpretation of this Easement, and this instrument shall

be interpreted broadly to affect its Purpose and the transfer of rights and the restrictions on use contained in this instrument.
(b) This instrument may be executed in two counterparts, one of which may be retained by Grantor and the other, after recording, to be retained by Grantee. In the event of any disparity between the counterparts produced, the recorded counterpart shall in all cases govern.
(c) This instrument is made pursuant to the Act, but the invalidity of such Act or any part thereof shall not affect the validity and enforceability of this Easement according to its terms, it being the intent of the parties to agree and to bind themselves, their successors, and their assigns in perpetuity to each term of this instrument whether this instrument be enforceable by reason of any statute, common law, or private agreement in existence either now or hereafter. The invalidity or unenforceability of any provision of this instrument shall not affect the validity or enforceability of any other provision of this instrument or any ancillary or supplementary agreement relating to its subject matter.
(d) Nothing contained in this instrument shall be interpreted to authorize or permit Grantor to violate any ordinance or regulation relating to building materials, construction methods, or use. In the event of any conflict between any such ordinance or regulation and the terms of this instrument, Grantor promptly shall notify Grantee of such conflict and shall cooperate with Grantee and the applicable governmental entity to accommodate the purposes of both this Easement and such ordinance or regulation.
(e) To the extent that Grantor owns or is entitled to development rights which may exist now or hereafter under any applicable zoning or similar ordinance, that would permit the Property to be developed to a use or uses more intensive (in terms of height, bulk, number of structures, assemblage of lots, subdivision, or other criteria related by such ordinances) than that to which the Property is devoted as of the date of this Easement, such development rights shall not be exercisable on, above, or below the Property during the term of the Easement, nor shall they be transferred to any adjacent or other parcel.
(f) To the extent that any action taken by Grantee pursuant to this Easement gives rise to a claim of breach of contract, Grantor and Grantee agree that the sole remedy on the part of Grantor shall be reimbursement of actual direct out-of-pocket expenses reasonably incurred by Grantor as a result of such breach and that Grantor shall not have any right to indirect, consequential, or monetary damages in excess of such actual, direct, and reasonable out-of-pocket expenses.
(g) While it is the mutual intention of Grantor and Grantee that the grant of this Easement shall constitute a qualified conservation contribution under federal and/or state law, Grantor is solely responsible for ensuring that the terms of the Easement and the circumstances of the grant meet the qualifications necessary for Grantor to obtain federal or state benefits applicable to qualified conservation contributions. Grantee makes no representation that the grant of this Easement entitles Grantor to any tax or other benefit under federal, state, or local law, and Grantor's failure to qualify for any such benefit relating to the grant of this Easement shall not constitute grounds for the rescission, termination, extinguishment, or amendment of this Easement, or for any claim of damages.

AMENDMENT

25. Amendment. If circumstances arise under which an amendment to or modification of this Easement would be appropriate, Grantor and Grantee may by mutual written agreement jointly amend this Easement, provided that no amendment shall be made that will adversely affect the qualification of this Easement or the status of Grantee under any applicable laws, including Sections 170(h) and 501(c)(3) of

the Code and the laws of the State of Michigan. Any such amendment shall be consistent with the protection of the conservation and preservation values of the Property and the Purpose of this Easement; shall not affect its perpetual duration; shall not permit additional residential and/or commercial development on the Property other than the residential and/or commercial development permitted by this Easement on its effective date; shall not permit any private inurement to any person or entity; and shall not adversely impact the overall architectural and historic values protected by this Easement. Any such amendment shall be recorded in the land records of County of Berrien, State of Michigan. Nothing in this paragraph shall require Grantor or Grantee to agree to any amendment or to consult or negotiate regarding any amendment.

GIFT ACKNOWLEDGMENT

26. Gift Acknowledgment. Grantee hereby acknowledges the gift by Grantor of the real property interest described in this Deed of Preservation and Conservation Easement, effective as of the date stated above, and further acknowledges that no goods or services were provided to Grantor in exchange for the donation of the Easement.

THIS EASEMENT reflects the entire agreement of Grantor and Grantee. Any prior or simultaneous correspondence, understandings, agreements, and representations are null and void upon execution of this agreement, unless set out in this instrument. Grantor acknowledges that this Easement affects important legal rights and obligations of Grantor, including the rights and obligations of Grantor's successors and assigns, and that Grantor has had the opportunity to consult with knowledgeable legal counsel of Grantor's own choosing prior to execution of the Easement. TO HAVE AND TO HOLD, the said Preservation and Conservation Easement, unto the said Grantee and its successors and permitted assigns forever. This DEED OF PRESERVATION AND CONSERVATION EASEMENT may be executed in two counterparts and by each party on a separate counterpart, each of which when so executed and delivered shall be an original, but both of which together shall constitute one instrument.

IN WITNESS WHEREOF, Grantor and Grantee have set their hands under seal on the days and year set forth below.

Witness **Grantor – Michigan Gateway Community Foundation**

_____ _____

_____ _____

Date Date

Witness **Grantee – Buchanan Preservation Society**

_____ _____

_____ _____

Date Date

Schedule of Exhibits:

A) Property Description
B) Baseline Documentation
C) New Bathrooms Floorplan

ROSS-SANDERS HOUSE HISTORIC BUILDING ELEMENTS WHICH REQUIRE PRESERVATION
By the Buchanan Preservation Society, 22 February 2023

In general, all extant pre-1949 building features shall be preserved, as well as a few representative features from the house's time as a municipal building. Identifying which elements of the house are pre-1949 is not always clear cut. The conclusions that follow are based solely on visual observations and did not involve any removal or destruction of layers. In many cases, especially with wall, ceiling, and floor finishes, the presence of historical elements cannot be known until existing surface treatments are removed. The following list of building elements to be retained is therefore preliminary and will require additional observations and analysis if layers are removed.

In the list that follows, words like "keep", "retain", "must be preserved", etc. indicate that the element is historical and must not be removed or replaced with anything different and should be repaired (or replicated) if necessary. If changes are made to non-historical elements, the work must move the element toward something more similar to identified historical elements.

Note that the 1970 "Rear Wing" addition on the southeast side of the building does not contain any historical elements and is therefore never considered in the notes that follow.

Our analysis is based on the relevant Secretary of Interior Standards, which we present here for reference:

Secretary of the Interior Standards for Rehabilitation as a Treatment of Historic Properties
(from https://www.nps.gov/tps/standards/four-treatments/treatment-rehabilitation.htm)
Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.

Standards for Rehabilitation
The Standards will be applied taking into consideration the economic and technical feasibility of each project.
1. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces and spatial relationships.

2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces and spatial relationships that characterize a property will be avoided.

3. Each property will be recognized as a physical record of its time, place and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.
5. Distinctive materials, features, finishes and construction techniques or examples of craftsmanship that characterize a property will be preserved.
6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

9. New additions, exterior alterations or related new construction will not destroy historic materials, features and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.
10. New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Rehabilitation as a treatment

When repair and replacement of deteriorated features are necessary; when alterations or additions to the property are planned for a new or continued use; and when its depiction at a particular period of time is not appropriate, Rehabilitation may be considered as a treatment. The Guidelines for the Treatment of Historic Properties illustrate the practical application of these treatment standards to historic properties:

[Guidelines for the Treatment of Historic Properties]

ROSS-SANDERS HOUSE FLOOR PLANS:

M1: Main structure, 1st floor
M2: Main structure, 2nd floor
M0: Main structure, basement
WW: West Wing
EW: East Wing
JW: Jail Wing

Note: several existing window openings are not represented on these drawings

ROSS-SANDERS HOUSE EXTERIOR

1) Roofs: The roofs of the M2 (Main Building), EW (East Wing), WW (West Wing) and JW (Jail Wing) must be retained. Wood shingles must be retained (or repaired). Fiberglass shingles and membrane roofing may remain and be repaired/renewed, but if different materials are to be introduced, they must be historical (for example, wood shingles or traditional metal roofing).

2) Roof Trim, Dentils, and Frieze: retain all on M2, EW, WW, and JW. Custom-run fascia stock intended to replace missing original molding on the upper story roof (on M2) is currently located in the upstairs stair hall (M2-b).

3) Exterior Walls: See attached floor plans. The original exterior walls which must be retained are highlighted in yellow. All the brickwork in these walls must be preserved.

4) Foundations: Foundations and the foundation stonework of all exterior walls to be retained (per attached floor plans) must be preserved. Original grade (approximately 8"-18" below current grade) must be re-established on the west and southwest sides of the building in order to expose the historic foundation and restore the historic grade. The masonry of the the West Wing walls has and continues to suffer accelerated deterioration due to excessive dampness and water infiltration caused by the elevated grade.

5) Doors: See Table I, below. None are historical so all may be replaced.

6) Windows: See table I, below.

7) Front Porch: Keep/repair all trim and columns. Roof surface and concrete floor are not historical and may be replaced with materials which are more historically accurate.

8) Roof canopies on EW and WW: Not historical, may be removed.

9) Steps to Porch and Metal Railing: Not historical, may be replaced.

10) Front Walk and Sidewalk: Not historical but great care is necessary in planning any replacement.

11) Concrete Ramp: Not historical, may be replaced.

12) Downspouts: Retain or replace with like.

13) Utility Pole with Antenna and Siren: Not historical, should be removed.

TABLE I: EXTERIOR ELEMENTS

Area	Element	North Wall	East Wall	South Wall	West Wall	***keep*** *means must be retained;* ***save*** *means wall may be removed but element must be preserved for reuse*
M1	Door frame, threshold, & trim					
M1	Window sill, frame, & trim	E:keep W:keep				
M1	Window sashes	E:keep W:keep				
M1	Storm windows					
M2	Window sill, frame, & trim	E:keep Ctr:keep W:keep	N:keep Ctr:keep S:keep	E:keep W:keep	N:keep Ctr:keep S:keep	Frieze window grillwork on east and west walls must be retained and should be repaired
M2	Window sashes	E:keep Ctr:keep W:keep	N:keep Ctr:keep S:keep	E:keep W:keep	N:keep Ctr:keep S:keep	There may be no sash behind west wall center grille; north wall center window sash is repairable and must not be replaced.

TABLE I: EXTERIOR ELEMENTS (continued)

Area	Element	North Wall	East Wall	South Wall	West Wall	***keep*** *means must be retained;* ***save*** *means wall may be removed but element must be preserved for reuse*
M0	Window sill, frame, & trim	E:keep W:keep		keep		visible only from the basement, not from the outside
M0	Window sashes			keep		visible only from the basement, not from the outside
EW	Door frame, threshold, & trim					
EW	Window sill, frame, & trim	keep	N:keep S:keep			
EW	Window sashes	keep	N:keep S:keep			
EW	Storm windows		N:keep S:keep			
EW	Historic elements to be preserved	Cast iron vents on east wall foundation				
WW	Door frame, threshold, & trim					
WW	Window sill, frame, & trim	keep			N:keep S:keep	
WW	Window sashes	keep			N:replicate* S:keep	*WW west wall north sashes should be rebuilt to match EW east wall north window
WW	Storm windows					
JW	Window sill, frame, & trim		N:keep S:keep	keep		
JW	Window sashes			keep		East wall has window frames but no sashes; south wall sash is repairable
JW	Historic elements to be preserved	Bars on windows on east and south walls				

ROSS-SANDERS HOUSE INTERIOR

1) Partitions: See attached floor plans. The partitions which must be retained are highlighted in blue. Please note that a structural engineer should analyze and approve any proposed removal of partitions.

2) Wall and Ceiling Finishes: It is difficult to establish which wall and ceiling finishes are original (lath and plaster or plaster on brick) and which are later replacements without performing destructive exploration. It is clear, however, that all acoustic tile, drop ceiling, and plywood paneling and wainscoting are non-historical treatments and consequently can (and should) be removed. After they are removed though, it will be necessary to assess each wall or ceiling under them and establish at that time whether they are historical and therefore should be repaired and retained or if they are non-historical (or non-existent) and therefore can or must be replaced.

3) Floor Finishes: The original, historic flooring in the house is 1”x5” tongue and groove hardwood flooring (usually poplar). Examples of such first floor flooring are visible in the stairway leading to the basement. In general, all original, historic flooring of this type is to be retained. Linoleum tile, vinyl flooring, Pergo, wall-to-wall carpeting, and the like should all be removed to expose original floors or, if necessary, replaced by floorboards similar to the historic flooring. The process will have to be similar to the process described for wall and ceiling finishes above, that removal of the existing non-historic surface or destructive exploration needs to be followed by analysis and determination of the historic character of what lies beneath.

4) Doors, Door Casings and Frames, Window Casings and Frames, Baseboards, and Other Historical Elements: See table II, below.

5) Several cast iron radiators remain in the house and are in operation. They should remain in place and continue to be used.

TABLE II: INTERIOR ELEMENTS

Room	Element	North Wall	East Wall	South Wall	West Wall	***keep*** *means must be retained;* ***save*** *means wall may be removed but element must be preserved for reuse*
M1-a	Window casing & frame	W:keep E:keep				
M1-a	Doors		keep			
M1-a	Door casing & frame		keep			
M1-a	Baseboard					
M1-b	Window casing & frame					
M1-b	Doors					
M1-b	Door casing & frame		keep	keep	keep	
M1-b	Baseboard	keep	keep		keep	
M1-b	Other Historic Elements to be preserved	All elements of the staircase (steps, banister, newel post, skirt, etc.)				
M1-c	Doors			keep*		*upper stile and panels should be rebuilt
M1-c	Door casing & frame			keep		
M1-c	Baseboard					
M1-c	Other Historic Elements to be preserved	The disconnected radiator should be reconnected and retained if it is still operable				
M1-d	Door casing & frame	E:keep W:keep		E:keep* W:keep*		*wall can be removed but the old door casing & frame must be saved
M1-d	Baseboard					
M1-e	Window casing & frame					
M1-e	Doors	save*				*wall can be removed but the old door must be saved
M1-e	Door casing & frame	save*				*wall can be removed but the old door casing & frame must be saved
M1-e	Baseboard			keep		
M1-f	Window casing & frame					
M1-f	Doors	save*				*wall can be removed but the old door must be saved
M1-f	Door casing & frame	save*				*wall can be removed but the old door casing & frame must be saved
M1-f	Baseboard		keep	keep		

TABLE II: INTERIOR ELEMENTS (continued)

Room	Element	North Wall	East Wall	South Wall	West Wall	***keep*** *means must be retained;* ***save*** *means wall may be removed but element must be preserved for reuse*
M2-a	Window casing & frame	W:keep E:keep		keep	N:keep* S:keep	*west wall center window casing and frame must be kept if it is found under the existing wall finish
M2-a	Doors		keep			
M2-a	Door casing & frame		N:keep S:keep			
M2-a	Baseboard	keep*	keep			*baseboard is buried behind filler strips installed for the baseboard heating element
M2-a	Other Historic Elements to be preserved	Attic hatch and molding around hatch opening				
M2-b	Window casing & frame	keep	N:keep S:keep			
M2-b	Doors				keep	
M2-b	Door casing & frame			keep	N:keep S:keep	
M2-b	Baseboard	keep	keep	keep	keep	
M2-b	Other Historic Elements to be preserved	Stair railing				
M2-b	Other Historic Elements to be preserved	Pole mounted on wall used to operate hinged frieze windows				
M2-c	Window casing & frame		keep	keep		
M2-c	Door casing & frame	keep				
M2-c	Baseboard	keep	keep	keep	keep	
M0	Window casing & frame	W:keep E:keep		keep		
M0	Doors			keep*		*door at top of basement stairs
M0	Door casing & frame			keep*		*doorway at top of basement stairs
M0	Baseboard	keep*	keep*		keep*	*located on upper walls of basement stairway
M0	Other Historic Elements to be preserved	Brick floor and foundation stonework must be retained and must remain exposed (i.e. no finish coat may be applied)				
M0		Stringers supporting the basement steps (but not the steps themselves)				
M0		South door frame and stone walls of the old exterior basement access				
M0		Stacks of old brick at north and south walls should be retained for any necessary masonry repair work				
M0		Cistern (in crawlspace under WW-d)				
EW-a	Window casing & frame	keep	N:keep S:keep	keep		
EW-a	Doors				N:keep* Vault: keep**	*This pair of doors are illustrative of the structure's post-1949 use as a municipal building **The vault door is also illustrative of the structure's post-1949 use as a municipal building and should be preserved unless it is a hazard or if its retention presents impossible obstacles
EW-a	Door casing & frame				N:keep S:keep Vault:keep	
EW-a	Baseboard					

TABLE II: INTERIOR ELEMENTS (continued)

Room	Element	North Wall	East Wall	South Wall	West Wall	***keep*** *means must be retained;* ***save*** *means wall may be removed but element must be preserved for reuse*
EW-b	Window casing & frame					
EW-b	Doors					
EW-b	Door casing & frame			W:keep		
EW-b	Baseboard					
WW-a	Window casing & frame	keep			keep	
WW-a	Doors					
WW-a	Door casing & frame					
WW-a	Baseboard					
WW-b	Window casing & frame				keep	
WW-b	Door casing & frame			keep*		*keep east (vertical) casing & frame only
WW-b	Baseboard	keep	keep	keep	keep	
WW-c	Doors					
WW-c	Door casing & frame	keep*		keep*,**		*keep casings & frame on internal wall as well **keep only original frame and casing, not the modern overlay
WW-c	Baseboard	keep*	keep	keep*	keep	*keep baseboard on internal wall as well
WW-c	Other Historic Elements to be preserved	Trim around attic access hatch				
WW-d	Window casing & frame			keep*		*keep only the frame and the hidden (buried) remnant of the original sill - the exposed 1x13 top sill is not historical and may be removed
WW-d	Door casing & frame	W:keep* E:keep**				*keep east (vertical) casing & frame only **keep the original frame and casing; the modern overlay frame may be removed
WW-d	Baseboard	keep	keep	keep	keep	
WW-d	Other Historic Elements to be preserved	Shackle at floor next to east doorway (illustrative of post-1949 use as Police HQ)				

TABLE II: INTERIOR ELEMENTS (continued)

Room	Element	North Wall	East Wall	South Wall	West Wall	***keep*** *means must be retained;* ***save*** *means wall may be removed but element must be preserved for reuse*
JW-a	Window casing & frame	keep*				*keep only the frame and the hidden (buried) remnant of the original sill - the casing and the exposed 1x13 top sill are not historical and may be removed
JW-a	Doors					
JW-a	Door casing & frame					
JW-a	Baseboard					
JW-a	Other Historic Elements to be preserved	Red pigment or paint on part of the south (former exterior) brick wall				
JW-b	Doors			keep*		*The door is illustrative of the wing's use as a jail
JW-b	Door casing & frame			keep*		*The door, casing, and frame are illustrative of the wing's use as a jail
JW-c	Window casing & frame		N:keep* S:keep*	keep		*keep if found behind the drywall
JW-c	Door casing & frame	keep*				*The door, casing, and frame are illustrative of the wing's post-1949 use as a jail
JW-c	Other Historic Elements to be preserved	Jail cells, bunks, drains, and plumbing fixture stubs (illustrative of post-1949 use as Police HQ)				

Ross-Sanders House

107 W Front Street, Buchanan, Michigan

Structural Existing Conditions Report

January 28, 2013

Fitzpatrick Structural Engineering, P.C.

PO Box 1506 • Ann Arbor • MI • 48106

ph 734-769-0320 • www.fsepc.net

Executive Summary and Introduction

The Ross-Sanders House located at 107 West Front Street, Buchanan, Michigan, was constructed in 1856[1]. The house is a prominent structure in downtown Buchanan; originally a residence for an early Buchanan settler. The house is now used as city offices and police headquarters. The City Fire Station is located on the rear of the property in a separate building referred to as the garage. The garage was originally constructed in 1951 with a western addition that dates no earlier than 1977. There is an asphalt paved parking lot between the buildings and to the immediate west of the house. A masonry retaining wall along the west side of the parking lot is in poor condition with local areas of complete failure. The house fronts West Front Street to the north. To the east of the house, there is a small city park or garden area. The creek that helped create the City of Buchanan runs along the southeast edge of the Ross-Sanders property.

Both the house and the garage are in fair condition; both are in need of general maintenance to ensure their longevity. The house has some conditions that warrant more significant repairs. Some of the more significant concerns have existed for decades; others are areas of deterioration that are compounding in severity with each year the condition goes without repair.

With time, there have been alterations and additions to the home, but the original structure appears to be relatively intact. The structure is beginning to 'show its age' with deteriorating masonry and some timber framing concerns. The majority of the areas of distress and deterioration are the result of man-made efforts such as cut joists, water infiltration from lack of proper maintenance, and improper use of materials. However, it is my opinion, that all of the concerns discussed herein can be corrected through a major renovation/rehabilitation project. This project, if done respectfully and correctly, would ensure the lifetime of the structure for many more decades.

On October 8, 2010, Cheryl Early, P.E. of Fitzpatrick Structural Engineering, P.C. walked through the buildings to provide a verbal assessment of the condition of the structure with the Buchanan Preservation Society (BPS). During this visit my thoughts were recorded and later transcribed into a draft report by Ms. Pamela Hall-O'Connor, "Conditions Assessment Ross-Sanders House and Fire Station" dated March 27, 2011. On March 6 and 7, 2012, Ms. Early completed a more thorough investigation of the structure, with the assistance of Ms. Pamela Hall O'Connor and other members of the BPS, verifying actual member sizes, spacings, and conditions for the purposes of completing a full structural analysis of both the house and the garage structures. The survey was completed with a digital camera (borrowed from Ms. Pamela Hall O'Connor), flashlight, tape measure, pocket knife, hammer, 4-foot mason's level, and other tools pertinent to the investigation. Ladders were graciously provided by the BPS and the fire department. Destructive access to structural members was limited to selected areas to provide a full inspection of the structure. Mr. Dave Varney of Century Restoration of South Haven, Michigan also assisted on Tuesday, March 6, 2012, in the field survey. Architectural CAD drawings of the house were provided in advance of the survey to assist in the field survey. It should be noted that the drawings are not exact; they are a working set of drawings completed by a volunteer effort. Drawings were not available for the garage structure. Digital photographs

[1] *O'Connor, Pamela Hall. Conditions Assessment Ross-Sanders House and Fire Station. March 27, 2011 Draft Report.*

were taken; Ms. Pamela Hall O'Connor has a copy of all photographs taken. Ms. Early thanks Ms. O'Connor and the Buchanan Historical Society for their assistance during the physical surveys.

All of the conditions observed of the buildings' structural systems are described within this report. Please note that the conditions described tend to reflect on only the negative aspects of the condition of the buildings. As the report is read, please remember to consider all areas where the structural elements are in good condition and are only briefly discussed. An attempt has been made to discern between those areas of concern that are typical of 150 year old buildings, but may not meet current building codes; and those that are more severe in nature. The house is discussed on the exterior, then the interior, at each level starting at the basement and continuing up through the building. The same approach is then taken for the garage structure.

A brief synopsis on the structural analysis of both the house and the garage follow the visual observation discussion. The intent of the structural analysis is two-fold: 1) to determine the safe allowable live load capacity of the floor systems of the house, and 2) verify the structural adequacy of the buildings for environmental loads as prescribed by today's building codes. The analysis was completed with basic engineering principals using the American Society of Civil Engineers, *Minimum Design Loads for Buildings and Other Structures* (ASCE 7-10). The analysis is basic in nature, assuming all connections, bearing capacities, and other details are adequate. A safe allowable live load capacity was determined by assuming allowable stresses in the existing old growth lumber framing. The old growth lumber has significantly more strength than standard lumber bought off the shelves today.

Prioritized recommendations are included at the end of the report. The recommendations are of a schematic nature and as per *The Secretary of Interior's Standards for the Treatment of Historic Properties*. The recommendations provide enough detail to determine reasonable, 'ballpark' cost estimating that can be used for general budgeting purposes. Together, this report and the cost estimate, can be used to make qualified, educated decisions on the future use of the buildings. It should be noted that this report does not evaluate other disciplines such as mechanical, electrical, plumbing and fire safety. Egress and accessibility issues are also not included in this report. The cost estimate is provided in the appendix, as are the plans of the house and the garage and the catalog of photos taken during the site surveys. Many of the photos are used and referenced within the report text.

Conditions Observed

Overall the house structure is in fair condition. There are significant concerns about the condition of the masonry walls and the roof structures of the east and west wings. Alterations to the original first floor structure are relatively minor, especially considering the age of the structure. I suspect alterations to the upper level wood framed areas are also minimal. The garage structure is industrial or commercial construction, very basic steel and masonry systems. The garage structures are in better condition than the house, although some concerns were still observed with cracking in the masonry walls. All distresses observed are discussed in detail below.

Main House – Exterior:

The Greek Revival structure has undergone many additions and alterations over the 150 years it has stood. However, the changes did not greatly affect the structural systems – members were not cut or supports removed. The additions and changes simply added to the existing structural systems. For instance, the original front porches on the east and west wings have since been enclosed and made to be part of the existing first floor layout.

The footprint of the original main house is composed of three rectangles aligned side to side with the outer most rectangles shifted to the south. There is a traditional Greek Revival porch structure along the front center portion of the house, which is also the only two-story portion of the house. Mansard roof structures are constructed over the east and west wings. A rear addition (the jail cells) was constructed along the west end of the rear of the building. A second addition was constructed along the south side of the building, east of the 'jail cell' addition in 1949. A wood framed carport was constructed south of the 1949 addition and east of the 'jail cell' addition thereafter.

Windows and doors are proportionately located along the building, aligning vertically between upper and lower levels. The roof slopes are minimal at the wings except for the vertical sides of the mansard shaped roof. The upper, center portion of roof is estimated to be a 6 on 12 sloped gabled roof. The roof over the 'jail cell' addition is barrel-vaulted shaped; there are shed style roofs over the front porch, 1949 rear addition, and the carport. The exterior walls are of brick masonry construction with the stone foundation walls exposed along the east elevation. The walls of the 1949 addition are of concrete masonry unit (cmu) construction. All of the masonry is painted white, and the shingled gabled and mansard roofs are green. The gabled center portion roofing is of asphalt shingles; the mansard roof shingles are painted wood shingles. EPDM (rubber roofs) were installed over both rear additions, and metal roof deck is installed over the carport.

Fig 1: North elevation

North Elevation:

It is the Ionic columns for the porch roof and the style of the entablature that give the house its Greek Revival style of architecture (Figure 1). These are prominent features on the north façade. The center bay of the house is the only two story portion with large windows aligned with the large window and door openings below. The wood frieze is discontinuous at the gable end, stopping short at each end of the two-story elevation. The wood at these discontinuous ends is rotted with birds nesting in this area.

R.1: Rebuild the wood friezes to make the structure weather tight.

From a distance, the brick at the second floor level and pediment appear to be in good condition with little to no significant cracking occurring. The lintels over the windows are stone and show no signs of distress or deterioration. At the first floor level, the brick of the center bay is cracking in some locations. Through brick cracks were observed at each side of the stone window lintels. The sill of the center window at the first floor level is cracked, and minor hairline, through brick cracking was observed between the center and east windows. This cracking appears to be related to the basement windows along this wall. As discussed below, bricks could be removed by hand in this area, indicating the wall support is inadequate currently.

R.2: Provide proper support at the basement level windows.
R.3: Tuckpoint or repair the masonry cracks in brick wall and stone sills.
R.4: Replace cracked bricks.
R.5: Monitor for recracking.

A four-foot mason's level was placed vertically against the wall alongside each window opening. The masonry wall was measured to be plumb. The masonry on the center bay was measured to have 2-1/4" tall by 8-1/4" long bricks with header courses every 8 courses. The header courses were laid in a Flemish bond pattern; only every other brick is turned showing the short end of the brick.

On the east and west wings, the masonry is laid with header courses every seventh course. The bricks used in the east wing are of the same dimension as the center bay. However, the bricks used in the west wing were measured to be ½ inch taller and longer (2-3/4" x 8-3/4") than the brick used at the center bay. The change in brick size will support the history that the original porch structure of the west wing was enclosed.

The walls, on either side of the windows of the east and west wings, were measured to be plumb, except for at the eastern end of the east wing. There, the wall was measured to be leaning outward at the bottom up to 3/8" in the four foot length of the level. The wall may have been constructed with this lean. A thin, vertical step crack was observed at this location stemming from the bottom western corner of the window. A similar crack was noted on the western side of this same window opening. No other distresses were observed.

R.6: Tuckpoint the masonry cracks.
R.7: Monitor the lean.

The stone foundation is exposed on the north elevation of the east wing. It has been tuckpointed (the mortar between the joints removed and replaced) at least three times. At least one of the mortars appears to have a high Portland cement content which could harm the stone, although no distresses were observed during the survey. The Portland cement is stronger than most building stone, thus, should the wall crack, the stone may crack as opposed to the more easily repairable mortar joint.

The north façade of the west wing is in fair condition. The masonry is cracking in a pattern that reflects that the foundation is settling (the stone foundation below requires rebuilding, not that the soil is settling) (Figure 2). Step cracks were observed at the top western cor-

Fig 2: Cracking in exterior brick north wall west wing

Fig 3: Deteriorating exterior brick north wall west wing

Fig 4: Deteriorating column bases at north porch

ner of the window and at the bottom corner of the north façade. Vertical through brick cracks are observed below the window, spaced approximately 8 inches apart. The paint is missing along the bottom of the wall, most likely related to snow melt and the use of deicing chemical (salts) (Figure 3) on the adjacent sidewalk. The brick has a 'worn' appearance in this area, with the fired surface of the brick deteriorating.

R.8: Secure or rebuild the foundations.

R.9: Tuckpoint the masonry cracks.

R.10: Replace cracked and deteriorated bricks.

The porch structure is in fair condition. The roof structure is hidden behind a wood bead board ceiling finish. The beams supporting the flat roof rafters are presumed to be box beams spanning between the Ionic columns. Leaning of columns related to either foundation movement or deterioration of the column bases was noted. Some of the columns and column bases have been rebuilt. Nearly all of the column bases show signs of deterioration. The joints within the bases are splitting open, and some of the wood is punky – easily penetrated with a pocket knife (Figure 4).

R.11: Replace all of the column bases.

The concrete slab on grade for the porch floor slopes down to the north and the paint is peeling off of the slab (Figure 5). "Pop-outs" (aggregate is loosening from the concrete leaving a depression in the slab surface) were observed throughout the slab surface. Cracking was observed near the columns on either side of the stair. There are three control joints between the slab panels, and each of these panels has shifted slightly. The grade below the bottom step has been undercut, eroded by water that flows off of the porch and down the steps. The foundations have been pargeted, but are still in need of repair.

Fig 5: Concrete slab of north porch

R.12: Improve grade; ideally re-route water to prevent the scour from occurring.

R.13: Remove pargeting; Tuckpoint the masonry cracks.

R.14: Verify depth of porch foundations, and underpin or regrade if needed.

Fig 6: East elevation

Fig 7: East elevation - Vertical cracked joint

Fig 8: East elevation - Cracking below window

East Elevation:

There is a vertical joint in the east wing, approximately mid-length of the wall that appears to be a construction joint that has cracked open (Figure 7). The crack is widest at the top, and steps (follows the mortar joints) at the bottom of the crack. The joint is further along the wall than the perimeter of the original porch, but the reconstruction of the masonry may have extended to this location to accommodate the reworking of window and door openings. The coursing on either side of the joint does not align, with some of the bricks on the southern side being slightly lower than the bricks on the northern side of the joint. On the south side of the joint, the top of the wall is leaning inward (to the west) slightly; the wall was measured to be plumb on the north side of the joint. On the north side of this joint, the brick is built with continuous (common bond) headers every 8 courses. From the midpoint of the northern window to the north corner, however, this brick pattern changes to every seven courses, and a different sized brick is used (Figure 8). There are faint cracking patterns in this northern corner masonry with vertical and step cracks forming off of the bottom corners of this northern most window.

R.15: Tuckpoint the masonry cracks.

R.16: Monitor for recracking.

R.17: Secure or rebuild the foundations.

The stone foundation walls are exposed along the east wing's east elevation. Similar to the foundation wall that is exposed along the north elevation of this wing, the stone mortar joints have been tuckpointed at least three times, potentially with a high Portland cement mix. Some areas of the exposed foundation wall are missing mortar, but where the wall has been tuckpointed, the joint is sound, but the craftsmanship is poor. Step cracking was observed

on the north side of the southern window, directly above and below the window. Brick spalling was observed at the top of the wall at the gas meter and at the downspout location at the southeast corner of the wall. The downspout from the east wing is discharging directly against the foundation wall of the east wing (Figure 9).

R.18: Tuckpoint the masonry cracks.

R.19: Monitor for recracking and additional spalling.

R.20: Secure or rebuild the foundations.

R.21: Direct water from the downspout down and away from the foundation.

Limited evaluation of the second story east façade was possible, however, from a distance it was observed that an ornate iron bar on the southern most window needs to be replaced (Figure 10). The chimney was also observed to be missing mortar; it has been patched previously near the roof level. The asphalt shingles

Fig 9: East elevation - Downspout discharging directly against foundation

Fig 10: East elevation - Missing iron bar

Fig 11: East elevation - Handrail support with no bearing

on the gabled roof are in need of replacement, and some repair is needed of broken and missing wood shingles on the mansard roof.

R.22: Repair/Replace roofing materials.

R.23: Replace missing iron bar in window.

R.24: Tuckpoint chimney.

The man door at the south elevation of the east wing has a covered roof structure. The roof structure is minimal at best, constructed out of nominal 2x4s bearing on a ledger bolted into the wall and on a 2x plate and 1x facia board spanning between two steel columns. There is a painted steel handrail for the steps up to this door. The vertical post at the top of the steps has rusted completely providing no bearing for the handrail (Figure 11).

R.25: Reinforce the roof structure to meet

Fig 12: East elevation - Mainly vertical step crack

current building code requirements, which would include reinforcement of the ledger connection to the wall and the eastern support beam.

R.26: Provide proper guard and hand rails at stair to meet current code requirements.

The east wall of the 1949 addition is painted cmu. The wall is in good condition. The mortar joints are cracking. In some locations the cracks appear to be a paint failure only, however, there are locations where the mortar has cracked.

R.27: Tuckpoint the masonry cracks.

R.28: Remove the cracked paint and repaint with breathable masonry paint.

The east wall of the 'jail' addition is constructed with a Flemish bond pattern using 2"x 7-1/2"x3-3/4" (header face) sized bricks. A vertical step crack, 1/16" wide, is extending down from the south bottom corner of the south window of the east elevation of the jail addition (Figure 12). When measured with a four foot mason's level, the wall was measured to be moving 1-5/8" in the four foot length of the level, with the bottom of the wall moving toward the east. There is a visual 'bulge' in the center of this wall. An older, infilled, crack extends from the south corner of the northern window down to this bulged area. This crack has not reopened suggesting this bulge is old movement

Fig 13: South elevation - Downspouts at corner of 1949 Addition and Jail

that is no longer occurring. The downspout in the corner between the jail and the 1949 addition is disengaged (Figure 13). Heavy water staining is occurring in this corner.

R.29: Tuckpoint the masonry cracks.

R.30: Replace deteriorated bricks.

R.31: Monitor for recracking and additional movement.

R.32: Secure or rebuild the foundations and masonry walls.

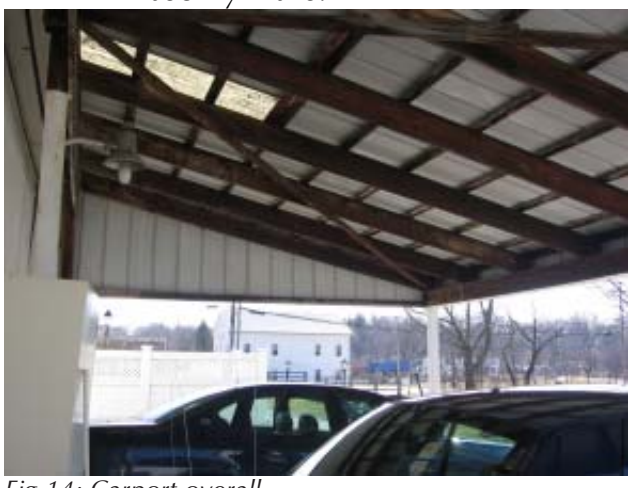

Fig 14: Carport overall

Fig 15: Carport column condition

R.33: Repair the downspout to direct water from the downspout down and away from the foundation.

The carport is tucked inside the corner of the 'jail' addition and the 1949 addition (Figure 14). It is primarily a two-bay carport, wood framed with a metal roof deck. The treated wood nominal 4x6 posts are buried into the ground and are deteriorating. A pocket knife could be inserted into (or below?) the post easily where one of the posts is not encased in pavement (Figure 15). Foundations for the posts were not discovered.

R.34: Replace columns, or at least bottom 12" of columns.

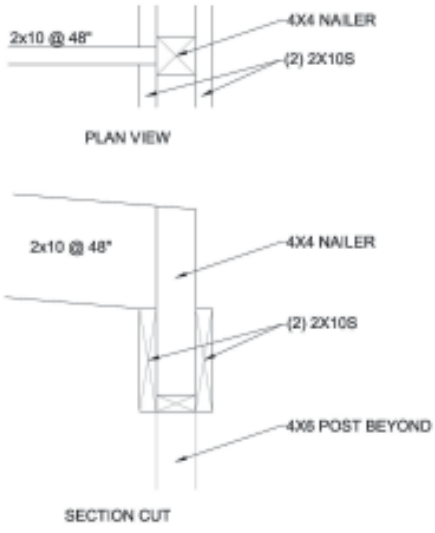

Fig 16: Carport - South beam detail

Fig 17: Carport - North beam detail

R.35: Verify foundations and provide if inadequate.

The roof structure is constructed of treated nominal 2x4s on flat laid on top of nominal 2x10 treated rafters at 48 inches on center. The rafters then span north south to end beams that are supported by the nominal 4x6 posts. The southern beam is typical of post and beam construction, with each nominal 2x10 ply of the doubled beam 'sandwiching' the 4x6 post and nailed to the post. At each rafter end, there is a nominal 4x4 blocking that is also nailed to each ply of the doubled beam. Therefore the rafter is bearing directly on the interior ply, but also transferring some of the load to the exte-

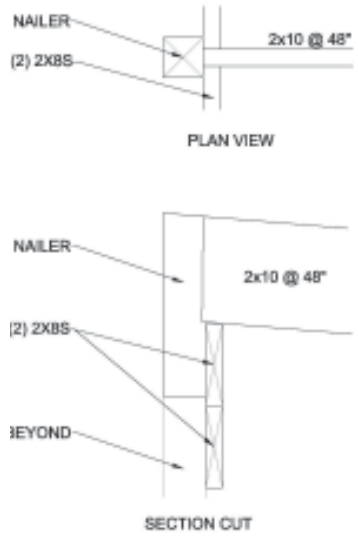

Fig 18: Carport - North beam detail

rior ply through the 4x4 blocking (See Figure 16). At the northern bearing, the beam is a doubled 2x8, and both plies are on the southern face of the 4x6 posts (for installation reasons). However, instead of being doubled next to each other, one ply is on top of the second ply. Essentially, this is forcing the top, single 2x8 to accept all of the load, unless the facia board is also accepting load (Figures 17 and 18). The east gable end is simply metal siding secured to the end rafter and a single nominal 2x4 spanning between the north and south posts. Cross bridging with nominal 2x4s occurs in each bay on the underside of the rafters. Besides the peculiar detailing, no distresses or deterioration was observed in the carport members other than the posts.

R.36: Monitor the wood structure and metal deck annually.

<u>*South Elevation:*</u>

The south elevation is mainly the south wall of the 'jail' addition and the south wall of the 1949 addition. The south wall of the two story portion of the original house can also be seen. (Figure 19) The original house, from a distance, appears to be in good condition with normal paint wear and no significant cracking in the brick masonry. The wood shingles on the mansard roof are in need of repair to make the structure weather tight (Figure 20).

R.37: Repair the wood shingles.

The south wall of the 1949 addition is cmu, and is in good condition. Similar to the east elevation, the paint is failing at the mortar joints giving the appearance that the joints are cracked. The lintels over the windows are solid grouted cmu without an angle or steel plate to support the lintel. This is acceptable, providing there is horizontal reinforcement in the cmu lintel. As no distresses were observed, no action is required. Two concrete masonry units (blocks) cantilever over the location of a crawl space vent. The joint between these cmus (blocks) is cracking (Figure 21). A better detail would have been to have a single cmu span over the opening and bear on each side of the vent on the blocks below.

R.38: Repoint the cracked vertical joint.

R.39: Remove the cracked paint and repaint with breathable masonry paint.

R.40: Monitor the wall for cracking.

The south wall of the "jail" addition is in need

Fig 19: South elevation

Fig 20: South elevation - Deteriorated shingles

Fig 21: South elevation - Cracked cmu over vent

of 100 percent repointing. The paint is trapping moisture in the brick and causing the brick to spall (face of the brick 'pops off'). The moisture can be direct rain and snow; or it could be natural condensation resulting from a conditioned space on the interior side of the wall and an unconditioned exterior space. A consolidant may be required for some areas, depending on how the paint is removed from the wall. There may be isolated brick replacement, especially below the window. The paint removal must be done with care; sandblasting and even pressure washing may cause more harm to the brick. A chemical paint stripper is recommended. Settlement cracking was observed in the southwest corner of the "jail" addition. This settlement may be old. The south wall was measured to have a 1-1/2" in four foot length of the level lean below the window.

Fig 22: West elevation - Severely deteriorated brick

Fig 23: West elevation - Deterioration of top courses of antenna enclosure cmu walls

R.41: Remove paint with non-abrasive methods. Repaint with breathable masonry paint.
R.42: Tuckpoint the masonry cracks.
R.43: Replace deteriorated bricks.
R.44: Monitor for recracking and additional movement.
R.45: Secure or rebuild the foundations and masonry walls.

<u>*West Elevation:*</u>

The brick for the 'jail' addition is in poor condition. There are two original windows that have since been infilled with brick. There is extensive paint wear, missing and deteriorated bricks, and the joints are in full need of repointing (Figure 22). The wall is wavy and bowing along its length with up to 1" out of plumb in a four foot length of a mason's level placed plumb against the wall. Two colors of brick, red and yellow, were observed in this wall, indicating either a modification or previous repair. A vertical crack was observed between the one full window remaining in this wall and the northern most infilled original window.

R.46: Remove paint with non-abrasive methods. Repaint with breathable masonry paint.
R.47: Tuckpoint the masonry cracks.
R.48: Replace deteriorated bricks.
R.49: Monitor for recracking and additional movement.
R.50: Secure or rebuild the foundations and masonry walls.

Where the 'jail' addition meets the original house, there is a free standing cmu wall structure that is enclosing a radio antenna. The cmu is cracked in a stepped pattern (the crack follows the mortar joints and does not extend through the masonry units). The top courses of the north wall of this enclosure are cracking, with spalling of the coping course and crazed cracking on the cmu face (Figure 23).

R.51: Tuckpoint the masonry cracks.
R.52: Replace deteriorated cmu and copings.
R.53: Monitor for recracking and additional movement.

At the original house wall behind this cmu enclosure there is damage to the bricks related to a downspout at this location. At minimum, three bricks are missing (Figure 24).

R.54: Remove paint with non-abrasive methods. Repaint with breathable masonry paint.
R.55: Tuckpoint the masonry cracks.
R.56: Replace deteriorated and missing bricks.
R.57: Monitor for recracking and additional movement.
R.58: Secure or rebuild the foundations and masonry walls.

Framing the man door on this elevation, just north of the cmu antenna enclosure, are two steel columns supporting a wood framed shed roof above. The roof appears to be in good condition, although there is rusting of the steel columns at the sidewalk. At the wall itself two steel channels are bolted tight to the masonry wall – one on each side of the door. Two additional channels are located approximately 5 feet and 12 feet north of the door opening (Figure 25). These steel channels were an attempt to reinforce the masonry wall. The channels have tied the masonry together, but have provided little other structural reinforcement of the walls. The steel channels are rusting at the sidewalk level (Figure 26). A vertical crack was observed between the northern most window and the northern most steel reinforcing channel. This crack is a vertical joint that has opened up. The brick coursing does not align on either side of the joint (Figure 27). Caulk was observed in some of the masonry joints, as opposed to structural mortar.

A four foot mason's level was placed vertically

Fig 24: West elevation - Deterioration of brick at antenna enclosure

Fig 25: West elevation - Existing channel brace

Fig 26: West elevation - Existing channel brace rusting

Fig 27: West elevation - Vertical crack at construction joint

against the wall at each wall panel (segments of the wall between window and door openings). The wall was measured to be out of plumb up to 1-1/2 inches in the four foot length of the level. This is an extreme movement. Directly south of the northern most window the brick is in poor condition and will need to be rebuilt. Considering the amount of movements in the wall and the previous reinforcement attempt, consideration should be given to rebuilding the west wall.

R.59: Remove paint with non-abrasive methods. Repaint with breathable masonry paint.

R.60: Remove caulk from masonry joints.

R.61: Tuckpoint the masonry cracks and joints that were caulked.

R.62: Replace deteriorated and missing bricks.

R.63: Monitor for recracking and additional movement.

R.64: Secure or rebuild the foundations and masonry walls.

At the second story level, the masonry appears to be in good condition when observed from a distance. Similar to the east elevation, a decorative iron bar at the southern most window is missing.

R.65: Replace decorative iron bar.

It has been reported that water ponds regularly against the west elevation after high precipitation events. This is supported with the amount of masonry damage and deterioration and rusting steel noted at the base of the walls. This is critical for any wall of any age – both in terms of stresses in the wall and the damage that water can cause masonry.

R.66: Regrade, or divert the water from, the west parking lot to prevent water from flowing and collecting against the building.

Main House – Interior:

Overall, the interior has undergone some significant 'wear and tear' on the existing finishes. In general, the original detailing in door and window trim, plaster ceilings hidden behind suspended ceilings, and other historic details are still in place.

Basement:

There is a full depth basement below the center portion of the house. The floor is a brick

paver floor with some bricks requiring replacement in a few locations due to deterioration of the bricks (Figure 28). The floor slopes almost randomly. There are concrete pad foundations used for previous and existing mechanical equipment.

R.67: Replace missing and deteriorated bricks in paver floor.

The walls of the basement are of cut stone masonry, approximately 6'-8" tall (Figure 29) and 16 inches wide. The walls have been tuckpointed with a concrete mortar (based on color), but the tuckpointing was done hastily and not finished well (Figure 30). Approximately 15 percent of each of the basement walls is missing mortar. There is significant mortar dust at the base of the south wall (Figure 31). Efflorescence was observed on the west wall. There is a slight waviness along the length of the east wall, with perhaps the bottom leaning inward toward the basement.

R.68: Tuckpoint stone masonry walls (approximately 15% of surface area of each wall).

R.69: Clean efflorescence off of wall.

R.70: Monitor movement of east wall.

A drip bucket to collect a leak near a utility meter in the northwest corner of the basement was overflowing, and appears to have been overflowing for some time (Figure 32). At the north wall, an original window opening was framed for two lights (Figure 33); the eastern light has been infilled with brick. The brick is in poor condition, with only one wythe that appears to be sound. All other infill wythes at this location are loose and deteriorating. A

Fig 28: Basement - Deteriorated floor pavers

Fig 29: Basement - Cut stone masonry walls

Fig 30: Basement - Cut stone masonry walls repointed

Fig 31: Basement - Mortar dust at base of south wall

torn screen fills the western light of this window. Leaves and other debris were observed to be inches thick at the bottom of the lightwell against this screen.

R.71: Correct leak at northwest corner.

R.72: Provide proper support of window openings.

R.73: Replace screen with proper finish.

R.74: Remove organic debris from area well.

<u>*East Crawl Space:*</u>

The East Crawl space is relatively accessible, but it is littered with old pipe insulation that is presumed to have asbestos material in it. Testing of the insulation is required, and potential abatement of the insulation may be required prior to completing any significant repairs in this area. The floor is an earth floor, and the walls are of field stone (Figure 34) with significant dust on all of the horizontal surfaces that project out from the wall. The stone is smaller than what was used for the cut stone in the basement walls. A significant pile of mortar dust was observed along the east wall where a single wood strut system is bracing the wall (Figure 35). There appears to be two northern foundation walls, one inset approximately 5 feet from the exterior of the building. This 'internal' foundation line supports the history of there being an exterior porch that had been enclosed.

R.75: Test pipe insulation for asbestos, abate if required.

R.76: Tuckpoint the stone foundation walls.

Fig 32: Basement - Leak near a utility meter captured into overflowing bucket below

Fig 34: East Crawl Space - Stone masonry walls, excessive masonry dust presumed asbestos insulation

Fig 33: Basement - Window infill and deteriorating brick at north wall

Fig 35: East Crawl Space - Wood bracing system along east exterior wall, excessive mortar dust pile

Fig 36: West Crawl Space - Excessive brick masonry dust at base of walls

Fig 37: West Crawl Space - Excessive brick masonry dust at base of walls

R.77: Rebuild portion of east wall.

<u>West Crawl Space:</u>

The West Crawl space has the double north foundation wall similar to the east wing. This crawl space is not as accessible though as the grade is much closer to the underside of the structure at the west crawl space than the east. Potential asbestos insulation was observed in this crawl space as well. Extreme amounts of red brick dust were observed along the west wall. The amount of dust observed is disconcerting (Figure 36, Figure 37). The mortar in the stone foundation walls is powdery or missing; stones appear to be loose (Figure 38).

R.78: Test pipe insulation for asbestos, abate if required.

Fig 38: West Crawl Space - Excessive brick masonry dust at base of walls; loose stones in foundation wall

Fig 39: First Floor Structure - East beam line, south end, 3 of 4 plies have bearing on wood column

R.79: Tuckpoint the stone foundation walls.

R.80: Rebuild walls as needed (northwest corner minimum?)

<u>First Floor Structure, Center Portion:</u>

The first floor structure over the basement is of wood construction. The original joists are 2-1/2" x 10" members spaced at 16-1/2" and spanning east-west between the stone masonry walls. The joists are fire cut and bear on a 1x plate that is embedded into the masonry walls. Fire cutting allows the joist to rotate out of the wall should the center of the joist fail (from fire typically); if the joist is tapered at its bearing (fire cut), the joist will rotate out of the wall pocket, leaving the wall standing. The 1x is a nailer used to secure the joist to the wall.

Fig 40: First Floor Structure - Floor infill at previous floor opening in southeastern corner

Fig 42: First Floor Structure - Cut joist in northeast corner

Fig 41: First Floor Structure - Floor infill at previous floor opening east of stair opening

Fig 43: First Floor Structure - Cracked floor joist in northwest corner

There is a beam and post line directly west of the stair opening, and another beam and post line at the western third point of the span (approximately 7 feet east of the west wall). Both beam and post lines are non-original to the structure. The eastern beam is a nominal 4x4 with (4) nominal 4x4 posts and (1) steel jack post along its span. The western beam is of (4) 2x6s, nominally supported on (3) 4x4 nominal posts, a steel jack post, and a slender 2-1/2"x3-3/4" wood post. Only three of the four plies of the western beam have bearing at the southern end (Figure 39). There is a single nominal 4x4 beam and single post at the south end of the basement, at approximately midspan of the joists.

R.81: Provide bearing for all four plies of the western beam at the southern post.

The joists are in relatively good condition with the exception of a few locations. An opening in the floor was infilled with newer 2x12 framing at the southeastern corner (Figure 40). Miscellaneous framing infills the floor area directly east of the stair (Figure 41). A cut joist in the northeast corner is left unsupported (Figure 42). A joist is cracked significantly in the northwest corner (Figure 43) at the west bearing. Select other joists are also split and cracked (approximately 1/2 dozen total). The tenons of the mortise and tenon connection into the header members at the stair opening have pulled away from the headers, on both the east and west sides of the stair.

Fig 44: First Floor Structure - Visual curvature in center beam in east wing

R.82: Sister the split, notched, and cut joists with new members spanning bearing to bearing.

R.83: Install joist hangers at joist to header connections at the stair opening.

R.84: Reinforce the header beams at the stair openings to support the floor and wall structures above.

First Floor Structure, East Wing:

Knob and tube wiring still hangs from the underside of the 2-1/8" x 9-1/4" joists spaced at approximately 16-1/2" on center and spanning east-west in the east wing. There is a center beam line that is comprised of multiple (at least 2, potentially 3) nominal 2x6s. The beam is posted in three locations with adjustable steel shore posts and continues out to the northern most stone foundation wall. No insect or significant water damage was observed from the crawl space access. At least two of the joists have been cut and left unsupported. A visual curvature to the nominal 2x6 beam could be observed (Figure 44) (the beam is sagging).

R.85: Reinforce the center beam if needed for floor capacity requirements.

R.86: Sister the cut joists with new members spanning bearing to bearing.

First Floor Structure, West Wing:

This floor structure has been replaced with a newer nominal 2x12 structure. The joists are

Fig 45: First Floor Structure - Notched joists at east bearing in west wing

Fig 46: First Floor Structure - Deteriorated center beam in west wing

1-1/2" x 11-1/4" spaced at 16 inches on center and bearing on the east and west stone foundation walls. To accommodate the deeper joist depth of the newer joists as compared to the original joists, the bottoms of the newer joists have been notched 1 inch over the 1x plate that is inset in the masonry wall (Figure 45).

Fig 47: First Floor Level - Water damage below air conditioning unit in east exterior wall

Fig 48: First Floor Level - Water damage at north wall of the east wing

There is a nominal 4x4 beam line at approximately the center span. This beam appears to be water stained and potentially 'punky' between the northern foundation walls (Figure 46). The beam is bearing on masonry piers in the crawl space.

R.87: Reinforce the center beam if needed for floor capacity requirements.

Fig 49: First Floor Level - Crack in west wall, north end of west wing

First Floor Structure, 1949 Addition:

The structure in this 1949 rear addition feels as if it is newer than 60 years, although it may the original structure to the addition. The nominal 2x10 joists are spanning east-west between exterior cmu foundation walls with a steel beam spanning north-south within the joist span. The joists are spaced at 16 inches on center, and are end-butted over the steel beam with a wood nailer plate. At the west foundation wall, the joists bear on a header or ledger board. The grade is nearly tight to the underside of the steel support beam. The floor to bottom of first floor joist was measured to be 10 inches; however, the steel beam has a deeper 'feel' to it. No distresses were observed in this floor structure.

First Floor Level, Original House:

The first floor level is finished with carpet, drywall, plaster, and suspended tile ceilings hung below plaster ceilings. Significant distresses or areas of deterioration were not observed in general. Plaster cracking was noted in the interior stud wall finishes. Trim and wood paneling have shifted, indicating movements of the supporting structure below these walls. Water damage was recorded at the air conditioning unit in the east wing east wall (Figure 47), and at the window at the north wall of the east wing (Figure 48). In the west wing, water damage was observed in the northeast corner of

Fig 50: First Floor Level - Brick dust at man door in west wing

Fig 51: First Floor Level - Horizontal crack at top of jail west wall

the northern most room. In the same room, in the northwest corner the drywall was observed to be buckled. A crack was observed at the west wall of this same room as well (Figure 49). At the man door to the exterior in the west wall, brick dust was observed at the base of the wall (Figure 50). The floor felt soft underfoot in this area.

R.88: Reinforce structure below interior walls to support weight of plaster partition walls.

R.89: Remove finishes to expose exterior masonry walls along the west side of the building.

R.90: Tuckpoint the masonry cracks.

R.91: Replace deteriorated and missing bricks.

R.92: Monitor for recracking and additional movement.

R.93: Secure or rebuild the foundations and masonry walls.

The floor at the main stairwell at the center of the house slopes 1-1/4" down to the west and ½" down to the north when measured with a four foot mason's level. This movement correlates with the condition of the framing at the stairwell in the first floor structure. The floor in the west wing slopes down 1" in the four foot length of the level at the southern end of the original west wing of the house toward a partition wall. In the east wing, floor slopes 1 inch in the four foot length of the level were noted.

R.94: Reinforce structure to remove a majority of the floor slopes (some of the slopes will be permanent due to creep of the wood structure).

First Floor Level, Jail Addition:

At the 'jail addition', the east wall is furred, hiding the conditions of the brick masonry wall. Along the west wall, there is a horizontal crack near the ceiling that has been repaired in the past, but has since re-cracked (Figure 51). The crack was measured to be 1/16" wide at one location. Where the mason's level could be placed vertically against the wall, the wall was recorded to have moved inward at the top of the wall ¼" in the four foot length of the level. Bulging was observed at the northern end of this horizontal crack. Cracks were also observed at each side of the window in the south wall, with daylight observed through the cracks. Significant cracking was observed in the southwest corner.

R.95: Remove finishes to expose exterior masonry walls.

R.96: Tuckpoint the masonry cracks.

R.97: Replace deteriorated, missing bricks.

R.98: Monitor for recracking and additional movement.

R.99: Secure or rebuild the foundations and masonry walls.

The floor is a concrete slab on grade that is in fair condition.

First Floor Level, 1949 Addition:
In the 1949 addition, cracking was observed in several of the corners of the offices, especially at the 'jail addition' common wall. Wood trim and paneling appear to have shifted downward relative to each other, although it may have been constructed this way (Figure 52). A crack was observed over the northern closet door at the east wall of the addition. The floor slopes were reasonable when measured with a four foot mason's level.

R.100: Repair the cracks in drywall finishes.
R.101: Monitor for recracking and additional movement.

Second Floor Structure:
The second floor structure is assumed to be nominal 2x10s spanning east-west based on the depth of the floor at the stair opening.

Fig 52: First Floor Level - Vertical shift in chair rail trim in 1949 addition walls

Second Floor Level:
The second floor level finishes are similar to those of the first floor level, but do not exhibit the extreme wear and tear the first floor finishes exhibit. Water damage to the plaster walls was observed at the east wall in the hallway and at the north window in the western room. Cracks were also observed to be stemming for the bottom corners of the southern window in the western room. Cracking above the window in the north wall of the hallway suggests that the lintel may be inadequate. Cracks were observed over the doors in the center partition walls.

The floors were observed to slope in several directions. At the north end of the second floor level, the floor uniformly slopes down to the west ½" in the four foot length of the level and ½" down to the south just north of the stair opening. The movement down to the west indicates potential settlement of the western bearing. The movement down to the south suggests inadequate framing at the stair opening. At the south end of the second floor level, the floor slopes down to the south ½" in the four foot length south of the stair opening. The floor slopes up to 1" in the four foot length of the level down towards the center north-south partition wall this area, on both sides of the wall. These movements at the south end are related to the constant weight of the plaster partitions bearing on the presumed clear spanning joists.

R.102: Expose lintel over the north window in the hallway and verify its condition.
R.103: Repair water damaged and cracked plaster.
R.104: Provide adequate support for stud interior walls in floor structures below.
R.105: Provide adequate support for stair opening in floor structure.

Attic/Roof Structures, Center Portion:
The main roof structure forms a gable shape with tapered 2"x6" rafters at 16 inches on cen-

Fig 53: Attic and Roof Structures- Butt jointed rafters and collar ties in central attic

Fig 54: Attic and Roof Structures- Water staining in southeast corner of the east wing

ter framing butt ends together at the ridge (Figure 53). The tapered ends of the rafters alternate along the length of the roof. At the four original chimney locations, the rafters are headered with a single ply member. The headers bear on the adjacent, single ply, rafters that 'sandwich' the chimneys. Water staining was prevalent at all of the chimney locations. The rafter that is cut short for the chimney penetration in the northwest corner is split. Some of the rafters still have the tree bark on them. The original roof sheathing has been replaced with newer plywood sheathing. There are 1x6 collar ties at every other rafter with the top of the collar tie 46" above the top of the attic joists. The attic joists (second floor ceiling joists) are 2" x 7-1/2" at 17-1/2" on center. The wood structure is in good condition with the butt ends relatively tight. A plywood gusset plate may be warranted if the butt ends are observed to be pulling apart.

R.106: Reinforce split rafter at northwest corner.

R.107: Reinforce stringers that 'sandwich' the four chimney locations.

R.108: Locate and repair source of water penetration.

The interior wythe of brick is observed at both gable ends and appears to be in good condition, although it was only inspected visually. The condition of the mortar is unknown, but is most likely original. Daylight was observed through the header course at the top of the southern gable end. There were wasp nests in this attic space.

R.109: Repair daylight areas in gable end.

Attic/Roof Structures, East Wing:

The attic and roof structures of the east wing of the main house are similar to that recorded for the west wing as discussed below. Access was obtained through the south eaves of the east wing where finishes had been removed in an office of the 1949 addition. The split in the hip ridges at the brick wall bearing was excessive, possibly greater than what was observed in the west wing structure. The structure observed is the structure of the original roof; the structure of the mansard roof that is there now was not observed. Water staining was observed in the southeast corner where ceiling tiles have been removed (Figure 54).

R.110: Repair or replace the hip ridges of the original roof system, assuming the mansard roof is bearing on these as they are for the west wing.

R.111: Locate and repair source of water penetration in southeast corner.

R.112: Reinforce or replace deteriorated wood members as required.

Attic/Roof Structures, West Wing:

The original roof was a shallow hip ridge struc-

Fig 55: Attic and Roof Structures- Severely split hip ridge member at wall bearing, west wing

Fig 57: Attic and Roof Structures- Significant movement of rafters out of bearing pockets in west wing

Fig 56: Attic and Roof Structures- Severely split hip ridge member at wall bearing, west wing

Fig 58: Attic and Roof Structures- Bracing of mansard roof construction of west wing

ture with large single timbers as the hip ridges spanning from the corners of the wing up to the west wall of the center portion of the main house. It is wood shingled. After the original construction, the mansard roof structure that is there now was constructed over the hipped roof.

The hip ridges of the original roof are notched and pocketed into the brick masonry wall of the center portion of the main house. At this bearing, the hip ridges are severely split and have lost significant load bearing capacity (Figure 55, Figure 56). The rafters that bear between the hip ridges on the west masonry wall of the center portion of the main house are also notched and pocketed into the masonry wall. They have pulled out and away from the wall (Figure 57). It is most likely because of these failures that the mansard roof was constructed. It is disconcerting that the newer roof is bearing on this failed original roof structure.

R.113: Repair or replace the hip ridges of the original roof system

R.114: Reinforce bearing for (install ledger board?), or replace rafters that are pulling away from the wall.

R.115: Reinforce or replace deteriorated wood members as required.

A panel was created through the original roof to gain access to the mansard roof structure above. The walls of the mansard roof are constructed of two 2"x4" studs at 24 inches on cen-

ter. One of the 2x4s is vertical and aligns approximately one foot east of the masonry wall below. The other 2x4 stud is on the steep slope of the exterior mansard and aligns with the masonry wall below. The wall is braced with 1x2 braces nailed from the top of the stud wall back to the wood shingles of the original roof below (Figure 58). A 2"x7" beam bears on top of the studs where they meet (Figure 59). This beam supports the 2x6 flat roof rafters that are notched over this beam. The flat portion of the roof replicates the hip ridges of the original roof below, however the members are shallower than the original roof structure. The hip ridge is a single 2x6 and the 2x6 rafters flush frame into the hip ridge at 20 inches on center. There are five central rafters that span full east-west direction of the wing. At least one of these long span rafters are splitting (Figure 60). There are single studs 6'-0" from the vertical studs of the mansard roof wall that are supporting these long spanned rafters. There are also wood studs or posts supporting the 2x6 ridge beam onto the original ridge beams below. The eastern most wood posts were hanging from the upper ridge during the spring site survey; light was observed to travel below the bottom of the stud and the top of the original roof structure (Figure 61). A ledger board was observed at the end of the rafters at the west wall of the center portion of the main house.

Fig 59: Attic and Roof Structures- Mansard roof construction details, note water staining in wood members in west wing

Fig 60: Attic and Roof Structures- Long span rafter splitting in west wing

Fig 61: Attic and Roof Structures- Gap observed between bottom of stud supporting hip ridge and top of original hipped roof in west wing

This board is nailed to the wall with a minimal three nails per rafter space (Figure 62). Daylight was observed in this upper attic space in many locations. Extensive water damage was observed at the 2x7 beam at the mansard wall in the beam, rafters, and studs (Figure 63). The upper mansard roof structure is bearing on the original hipped roof structure. The condition of the hipped roof structure is in a critical state of repair and should be addressed immediately.

R.116: Reinforce or replace split and deteriorated members of the mansard roof.

R.117: Enclose the attic space to make it weathertight (remove daylight locations).

R.118: Replace the 2x7 beam, rafters, and studs at the mansard wall at water

Fig 62: Attic and Roof Structures- Ledger board at masonry wall supporting rafters in west wing

Fig 63: Attic and Roof Structures- Extensive water damage at mansard wall framing in west wing

damaged locations (assume full perimeter, conservatively).

R.119: Reinforce the ledger at the masonry wall supporting the rafters.

Roof Structures, Jail Addition:

The roof structure of the jail addition was not accessible during the survey.

Roof Structures, 1949 Addition:

In the office directly south of the east wing, the finishes were partially removed allowing inspection of the roof structure. The roof is constructed of nominal 2x10 (1-1/2" x 9") spaced at 24 inches on center spanning north-south. There is a 2" notch on the bottom of the rafters at their north bearing. The rafters are in good condition (Figure 64). Daylight was observed at the east wall at the rafter elevation.

R.120: Make structure weathertight (remove daylight locations).

The carport structure is discussed under "Exterior, East Elevation" portion of this report.

Garage – Exterior:

The garage is constructed of the original cmu building with a large, more current (post 1977) cmu addition that houses the fire trucks and the common room at the station. Both the original building and the addition are rectangular in footprint with the original building being nearly 11 feet longer than the addition. The newer addition is taller than the original building by approximately 4 feet. The exterior of the original building has a stucco finish; both the original building and the addition are painted white with green trim. The southeast corner of the original building is less than 10 feet away from the edge of the nearby creek; the creek follows along the east wall of the original building as it winds towards the east, away from the buildings.

North Elevation:

There are four garage door openings on the north elevation, the eastern most opening has been infilled, but the shadow of the opening remains (Figure 65). The lintels on the origi-

Fig 64: Attic and Roof Structures- Rafters over 1949 addition in good condition

Fig 65: Garage- North elevation

Fig 66: Garage- North elevation, visual sag in lintels

nal building are visually sagging (Figure 66).

R.121: Monitor the sag in the lintels.

R.122: Further investigate size and type of lintel if sagging worsens for reinforcement or replacement.

The east wall of the addition was built directly on top of the original west wall (the masonry courses were extended up). There is a vertical crack in the joint where the addition meets the original wall (Figure 67). This crack is related to differential settlement of the addition in relation to the original building.

R.123: Tuckpoint the masonry cracks.

R.124: Monitor for recracking and additional movement.

There is also step cracking at the western end of the north wall – near the garage door lintel (Figure 68). I suspect the garage door lintel is not stiff enough and has caused the cracking in the masonry.

R.125: Tuckpoint the masonry cracks.

R.126: Monitor for recracking and additional movement.

R.127: Further investigate size and type of lintel if sagging worsens for reinforcement or replacement.

East Elevation:

The east wall has five window openings and one man door on the north end of the wall. The lintels over the windows are reinforced concrete and the one lintel that was exposed on the exterior is in poor condition. The steel reinforcement in the lintel was observed to have severely corroded and to be expanding in size. The remaining windows were shuttered, but are most likely in similar condition. The sill of the one exposed window is of brick construction. The sill is missing portions of bricks and the horizontal mortar joints are

Fig 67: Garage- North elevation, vertical crack at joint between original and addition constructions

cracked.

R.128: Replace window lintel.

R.129: Expose the remaining window lintels of the original building to evaluate their condition.

R.130: Tuckpoint masonry sills.

R.131: Rebuild masonry sills where bricks are missing.

Much of the stucco is cracked or missing, especially near the window openings. The mortar joints of the masonry behind the stucco are 'ghosting' through the stucco indicating moisture is collecting in the walls. Vegetation prohibited full inspection of the south end of the east wall, but typical cracking observed elsewhere in the stucco was observed. Currently vegetation is growing out the gutters (Figure 69), and the downspouts are left discharging against the side of the building without any extension (Figure 70, Figure 71). There is a significant step crack at the edge of a window opening near the northern most downspout. This crack is related to the water discharging so close to the building and the utility connection of the antenna tower adjacent to the wall. All cracks observed on this wall are as follows:

- north of the man door, horizontal cracks in joints
- step cracking over the man door
- vertical, through block cracking at north edge of second window from the north, near downspout
- vertical, through block cracking at north edge of third window from the north, near downspout and antenna conduit penetration
- vertical and step cracking at south end of east wall

Vegetation (algae, mold) was observed to be growing in several locations in the cracks in the stucco.

R.132: Tuckpoint the masonry cracks.

R.133: Repair stucco to maintain

Fig 68: Garage- North elevation, step cracking at lintel bearing and western corner of wall

Fig 69: Garage- East elevation, heavy vegetation growth in gutter system

Fig 70: Garage- East elevation, downspout discharging against exterior wall of building

Fig 71: Garage- East elevation, downspout discharging against exterior wall and step cracking in masonry

weathertightness of structure.

R.134: Monitor for recracking and additional movement. Contact a professional engineer if further movement is observed, as it may be due to settling of the foundations. Contact a registered architect to verify the weathertightness of building system.

R.135: Remove vegetation off of wall.

R.136: Repair or replace the gutter and downspout system to discharge water down and away from the building.

<u>South Elevation:</u>

The south wall of the original building was covered with vegetation preventing inspection of its condition (Figure 72). The south wall of the addition is inset further north, exposing a length of masonry of the original west wall. Vegetation was also growing on this wall, and the shutters over the window on this wall have been broken (Figure 73). Cracking was observed below the window in this wall that is approximately 1/16 inch wide. The vegetation continues along the length of the south wall of the addition. It should be noted that these back walls have been painted a pink or flesh color, not the white color observed elsewhere. Water staining was observed along joints and at the bottoms of the cmu courses in the addition walls (Figure 74). As per <u>www.accuweather.com</u>, the area received 0.6 inches of snow and 0.04 inches of rain each of the previous two days of the site survey. However, this amount of precipitation received does not correlate with the amount of water observed in the masonry. Step cracking in the masonry was observed, especially along the west end of the wall. This cracking is related to the moisture in the walls freezing and thawing. As water freezes, it expands, and this expansion pressure is enough to crack masonry.

R.137: Verify condition and weathertightness of all roof flashings and coping stones.

Fig 72: Garage- South elevation, heavy vegetation on wall prohibiting inspection of wall

Fig 73: Garage- South elevation, south wall of addition and west wall of original building

R.138: Tuckpoint the masonry cracks.
R.139: Remove vegetation off of the walls.

West Elevation:

Step cracking was observed at the south end of the west wall of the addition over the southern most window (Figure 75). The cracking is related to the window opening. There is cracking relating to the rusting of the steel lintel over the nearby man door (Figure 76). The rusting of the steel expands the steel and pushes against the masonry. Similar to frost, this 'rust jacking' will crack and move masonry.

R.140: Tuckpoint the masonry cracks.
R.141: Wire brush clean and repaint exposed steel lintels to prevent further rusting.

There is a masonry retaining wall along the west edge of the property that is need of full replacement. This is out of the scope of work for this project, but it is currently failing (Figure 77) and warrants discussion.

Fig 74: Garage- South elevation, south wall of addition cracking and moisture shown

Fig 75: Garage- South elevation, step cracking south of southern window

Fig 76: Garage- South elevation, rusting of steel lintel at man door

R.142: Rebuild masonry retaining wall.

Garage – Interior:

The interior of the garage is used for storage of the fire equipment, parking for the fire trucks, and living space for the fire fighters. The floor is a concrete slab on grade that is in good condition. The walls are in fair to good condition. Some of the cracking observed on the exterior translated into the interior surface of the walls, especially on the original eastern half of the garage. The original masonry walls were measured to be nominal 8" cmu; the addition walls were measured to be nominal 10" cmu.

Step cracking was observed above the garage door headers in the north wall of the addition. The cracking is related to the strength of the

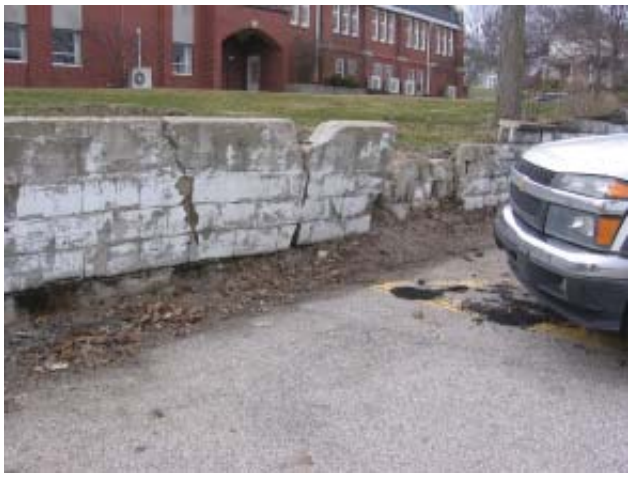

Fig 77: Failing retaining wall at west edge of property

lintel over the door opening. The lintel is not stiff enough to support the weight of the cmu wall above the door. As the lintel sags, tension stresses are created in the masonry, and the masonry cracks at the lintel bearings. This is not a life safety issue; only a serviceability issue as the cracks will need continual repair and maintenance until the lintel is stiffened.

R.143: Tuckpoint the masonry cracks.

Fig 78: Garage - Masonry pier for roof beam bearing is cracked and rotating inward

Fig 79: Garage - Masonry cracking on interior that relates to cracking on east exterior wall

R.144: Monitor for recracking and additional movement.

R.145: Expose the lintel to verify its size and type.

R.146: Design reinforcement or replacement of the lintel as required.

Both the east and west walls of the original building have masonry piers extending 4 inches into the interior space to support the roof beams bearing on these piers. The second set of piers from the north wall are cracking and shifting in the upper courses, indicating the beams are pulling the piers down as the beams deflect under the weight of the snow and other roof loads; or the masonry wall is pulling away from the piers under high wind loads (Figure 78). Moisture may also have penetrated the structural systems at these areas and caused additional movement and cracking. The step cracking observed on the exterior near the antenna translates through to the interior surface of the wall (Figure 79) as do other cracks along the east and south walls of the original building.

R.147: Tuckpoint the masonry cracks.

R.148: Monitor for recracking and additional movement.

The east wall of the addition/west wall of the original structure is of the same construction as the east wall of the original building. Where an original window opening has been infilled,

Fig 80: Garage - Vertical masonry crack in common wall between original and addition buildings

Fig 81: Garage - Vertical masonry crack in common wall between original and addition buildings; note stucco is discontinuous at new addition wall coursing

Fig 82: Garage - Vertical masonry crack in expansion joint on both interior and exterior surfaces of west wall

a vertical crack through the stucco finish was observed below this window (Figure 80) and along the north edge of the window. Cracking was noted at the openings between the original and the addition buildings. The stucco finish does not continue up where the newer cmu was added to increase the height of the wall for the newer addition (Figure 81).

R.149: Tuckpoint the masonry cracks.

R.150: Monitor for recracking and additional movement.

An expansion joint in the west wall of the addition was observed to be cracked on both the interior and exterior surfaces of the wall (Figure 82).

R.151: Repair the expansion joint for full thermal expansion and contraction.

In the original building, a central line of columns was observed, spaced approximately 16 feet apart and supporting roof beams that are supporting the nominal 2x8 roof joists that are spaced at 16 inches on center and spanning north to south.

The open web steel joists of the roof structure are pocketed into the east and west masonry walls of the addition. The joist pockets are not grouted solid, and a tall, steel shim plate could be observed below the joist seat. The joists are 18" deep and spaced at 5'-0" centers with round web members and small double angle chord members. A corrugated metal deck spans between the joists.

R.152: Grout the joist pockets solid to prevent rotation of the joists at the bearing locations.

Structural Analysis

A structural load analysis was completed on the known structural members to determine their safe allowable live load capacity and determine any deficiencies in the exterior envelope to meet environmental loads as prescribed by today's building codes. Members were considered to be intact with no deterioration or distress, and connections adequate.

Standards Referenced:

When the house was originally constructed, building codes were non-existent; they were built with the knowledge of basic framing principals for residential structures. These structures typically have a safe allowable live load (people, furniture, etc.) capacity ranging from 20 to 40psf (pounds per square foot) in addition to the self weight of the structure. Today, the building codes are complex, referencing a library of material and specialty codes. For the purposes of this report, the current Michigan Building Code (2009) was used, which references the American Society of Civil Engineers, *Minimum Design Loads for Buildings and Other Structures (ASCE7),* 2005 edition. However, the next edition of ASCE7 has been published and is expected to be accepted as a reference in future building codes. As such, this newer, 2010 addition of ASCE7 was used for the analysis of the buildings.

The buildings are currently used as a police and fire station, essential facilities in cases of emergencies. Because of this use, the importance factor (a factor of safety that is used in determining code required minimum loads) is increased as compared to a building with typical, non-essential use. If the building use is changed to a non-essential facility, the minimum design loads are reduced, although the reductions are not that significant to ease concern about the issues discussed below. The major difference between the two load cases is in the structural elements detailing (connections, bearings, HVAC connections, etc.).

The roof systems were considered for a 16psf dead load (self weight); a 20psf roof live load, a ground snow load of 50psf reduced for environment, increased for drift as required; and wind loads of 41psf pressure or up to 84psf suction at the corners based on 115mph wind speed. These loads were combined as per the Allowable Stress Design load combination equations in ASCE 7-10. Detailed load compilation calculations can be provided upon request.

The essential facility use does place the building in a Seismic Design Category C, assuming Type D soils (stiff soil with 'n' values (blow counts) between 15 and 50). The construction details of the existing building do not meet today's requirements of Seismic Design Category C. If the use of the building changes, the Seismic Design Category becomes a Category A, the minimum requirements for seismic detailing where wind load design usually controls the design of the structure. If the soil structure is also proven to be a Type C (very dense soil and soft rock with 'n' values greater than 50), the Seismic Design Category is A, and the wind loading controls the detailing of the structure.

Allowable stresses in the building materials were taken from both known standards and engineering judgment. The brick masonry is assumed to have an allowable 1000psi compressive strength (fm'). In comparison with a new building constructed today that would typically have a compressive strength of 1500psi specified. The cmu of the garage struc-

Seismic Design Category

Soil Type	Essential Use	Non-Essential Use
C	A	A
D	C*	A

** Structural detailing requires improvement*

Michigan is mainly Type D Soils, a geotechnical engineer is required to confirm Soil Type. Police and Fire Station use are considered "Essential" facilities.

ture is probably 1200psi to 1500psi. The wood members vary in allowable stress depending on their age. The original joists, rafters and studs of the main house are old growth lumber. Old growth lumber is from felled trees that were native to the area when the settlers first arrived. The trees were strong, with long, tube shaped cellular structures (think of drinking straws bunched together in your hand). This cellular alignment allows for higher safe allowable stress levels than lumber that is felled today. Today's lumber is not given the opportunity to improve its cellular structure, thus the bending and other stress allowables are considerably smaller than that of 'old growth' lumber. The 1949 addition, the original garage structure, and the carport lumber all have allowable stress levels similar to that of today's lumber, although slightly higher in comparing the codes historically. The steel used in the garage addition is not as strong as steel used today either. The steel is assumed to have a yield stress of 30,000psi, as opposed to 36,000 or even 50,000psi steel today.

Main House Floor Structures:

The first floor structure of the center portion of the main house as constructed allows for a 30psf safe allowable live load. This live load is limited by a reasonable live load deflection of L/360 where "L" is the span of the joists in inches. The 30psf compares to other residential structures. The east and west wings were also constructed to clear span between wall bearings. Live load deflection also limits the safe allowable live load capacity of the joists to 70psf in the east wing, and 75psf in the west wing (west wing joists are 2x12; east wing are 2x10).

As the floors were bouncy underfoot, and due to the change in use from residential to office and public spaces, shore beams were installed in all three areas of the main house. In the east and west wings, these shore beams are inadequate though to support the required live loads. The beam in the east wing can safely support a live load of 12psf. However, as stated above, the floor joists can span between walls (not relying on the center beam at all), and allow a safe allowable live load of 70psf or higher. This essentially negates the need for the beam.

R.153: Reinforce the wing floor structures if the floors are required to exceed 70psf live load capacity.

The center area of the house has one continuous beam at the west side of the span, and a partial beam span at the east side of the joist span – mainly at the stair opening. The safe allowable live load capacity of the western beam is again controlled by the live load deflection of the beam; it is limited to 36psf. The joists are more than capable of safely supporting a 100psf (public use) live load with this western beam line.

R.154: Reinforced or replace the western beam to meet current live load requirements for its current or future use. Head height clearance in the basement below this beam will be critical in the design of the beam.

The second floor structure is assumed to be the same as the first floor structure, center portion. The safe allowable live load capacity is 30psf. This does not include the stair opening framing however, as the exact framing for this opening is unknown at this time. The stringers for the stair opening (note, not the stair stringers themselves), will most likely limit the safe allowable live load of the floor.

Main House Roof Structures:

The main house, center portion roof is adequate to safely support the minimum snow, wind and self weight loads prescribed by ASCE7.

The main house east and west wing roofs are in need of repair based on their condition

alone. A properly designed and constructed roof should be constructed once a period of significance is determined (either the original hipped roof structure or the mansard roofs). If the mansard roof structure is chosen, it should be noted that the original roof structure will need to be reinforced to accept the loads of the mansard roof as the vertical studs at the perimeter are supported on this original roof structure.

R.155: Reinforce or replace the hip ridges.

R.156: Reinforce or replace the deteriorated roof framing members.

R.157: Consider rebuilding the roof systems in whole due to cost effectiveness.

The 1949 Addition Roof Structure is adequate to safely support the snow, wind and self weight loads as prescribed in ASCE7 for typical situations. This is assuming there is an interior bearing line, allowing for a maximum 12 foot span. However, where drift load will accumulate (approximately 10 feet south of the main house), these rafters are overstressed. Again, the structure has serviced for over 50 years with no apparent distresses noted.

R.158: Reinforce the rafters that are overstressed due to snow drift loads.

The carport roof structure is precarious at best. The rafters and beams are all significantly overstressed to accept the local ground snow load of 42psf. As this is a utilitarian structure, the need to reinforce this structure makes this a low priority recommendation.

R.159: Reinforce or replace the roof structural elements to meet current building code requirements.

<u>Garage:</u>

In the original roof structure, the sizes of the roof beams could not be determined during the field survey. The capacity of roof and floor structures is typically dependent on the capacity of the beams. I would recommend the roof beams be exposed to allow for a full analysis of the beams considering the snow drift load the addition creates on these beams. The roof joists, recorded as nominal 2x8s spaced at 16 inches on center and spanning up to 16′-0" are inadequate to safely support the minimum design loads as prescribed in ASCE 7-10. Considering only the dead and flat roof snow loads (note, this is not the extreme load case), the nominal 2x8 joist would be deflecting nearly 2 inches. This is excessive as members begin to loose their bearings. However, the roof has stood for probably over 50 years with no significant visible signs of distress.

R.160: Unless water is penetrating through the roof (with the exception of penetration due to improper roof flashing and edge detailing), finishes are severely cracked, other distresses become apparent, or something is to change with the building that would effect the roof system, the roof structure should be monitored.

R.161: If a significant rehabilitation project is to occur, or a mechanical unit is to be placed on the roof, anticipate significant reinforcing of the wood framed roof system.

R.162: Reinforce the roof structure to accept the snow drift loads created from the taller addition. This could be by sistering the existing rafters or installing additional beams and columns midspan of the rafters.

The roof system of the newer addition is reasonably adequate for the prescribed code minimum loads. The open web steel joists were recorded to be 18" deep, spaced at 5′-0" on center. The joist tag that was pulled from one of the joist ends was project specific, indicating only the fabrication codes necessary to verify the proper joists were shipped to the proper project. Additional joist tags were not found. A detailed survey of the joists would be required to properly model the joist to gain a more accurate indication of its capacity in

comparison to current building codes. Again, the roof has serviced for approximately 30 years with no visible signs of distress.

R.163: Continue to monitor the roof structure and evaluate the roof system only if significant changes are made to the building.

A wind load analysis was completed on the wall panels between the windows on the east wall. The cmu wall must have reinforcing in it. The stresses considering plain, ungrouted masonry were too high to be reasonable.

R.164: Tuckpoint the masonry cracks.

R.165: Replace cracked cmu.

R.166: Monitor the wall for additional cracking or distresses.

R.167: If the cracks reoccur, investigate further to determine where the reinforcement is at, and to determine if the cracking is primarily related to settlement or water infiltration.

Schematic Recommendations:

Below is a comprehensive list of the recommendations made in the *Observations* and *Structural Analysis* sections of this report. The recommendations are grouped in three different ways: 1) by building/area, 2) by priority, and 3) by trade. Priority of the recommendations are given as: immediate, high, low, or maintenance. Immediate is of significant concern, and all efforts should be placed into completing these recommendations to protect the occupants and/or the structures. High priority is also of significance, but does not warrant immediate action. Low priority is more of the ideal solutions or recommendations, if funding and time were not limiting factors. Maintenance is considered those repairs or monitoring that should be done on a regular basis. Areas identified below as "Maintenance" are in addition to, or should be given extra attention to, during an annual structural review of the buildings.

Other terms used in the recommendations are inherently assumed to mean certain criteria when working with historic structures. For instance, to 'replace' inherently means to replace 'in kind,' matching the existing member in size, shape, texture, color, etc. (eg. replacing exterior bricks). Where the structural element is hidden from view (behind finishes, in a crawl space, etc.), matching 'in kind' may not be as critical, but the new materials must still be compatible with the existing conditions (eg. head height clearances in the basement for new beams). Of course, a combination of the two situations may occur as well (eg. a cmu foundation wall that has a shelf to support stone that would be exposed on the exterior).

Determining the best method of repair is the next step in this design process. This determination relies on other influencing factors such as intended use of the buildings, time, funding, and coordination with the other work that is to occur on the structures. It is critical that the period of significance be determined to help evaluate some of the options available in making the proper repairs to the structures. *The Secretary of Interior Standards for the Treatment of Historic Properties* is the guideline for all of the structural recommendations.

The numbering system used below relates to the chronological order in which the recommendation appears in this report.

BY BUILDING AREA:

Consult with architect that is sensitive to historic structures regarding building systems not covered in this report.

Main House - Exterior:

In summary, the paint should be stripped and the brick, cmu and stone masonry walls be properly tuckpointed. Repair damaged masonry. Improve the weathertightness of the structure. Drain water down and away from the structure, repairing and maintaining the gutter and downspout system. Either regrade or divert the water from the west parking lot away from the building. Replace the column bases for the Ionic columns of the front porch. Consider rebuilding the east wing foundation walls. Rebuilding of the 'jail addition' walls (and foundations?), the west wing west walls (and foundations?), and the west wing north walls (and foundations?) are recommended. Masonry repair of these areas may be possible, but will probably end up with nearly full replacement anyway once construction exposes the walls in full. Improve the small canopy structures over entrances on the east and west wings. Consider replacing roof structure for wings or installing significant reinforcement.

North Elevation:

High Priority:

R1. Rebuild the wood friezes to make the structure weather tight.

R2. Provide proper support at the basement level windows.

R3. Tuckpoint or repair the masonry cracks in the brick wall and stone sills in the center portion.

R4. Replace cracked bricks in the center portion.

R6. Tuckpoint the masonry cracks in the east wing.

R9. Tuckpoint the masonry cracks in the west wing.

R10. Replace cracked and deteriorated bricks in the west wing.

R11. Replace all of the column bases at the porch.

R12. Improve grade at porch; ideally reroute water to prevent the scour from occurring.

R13. Remove pargeting on porch foundations; Tuckpoint the masonry cracks.

Low Priority:

R8. Secure or rebuild the foundations of the west wing.

R14. Verify depth of porch foundations and underpin or regrade if needed.

Maintenance:

R5. Monitor for recracking.

R7. Monitor the lean of the walls.

East Elevation:

Immediate:

R29. Tuckpoint the masonry cracks in the 'jail' addition.

R30. Replace deteriorated bricks in the 'jail' addition.

High Priority:

R15. Tuckpoint the masonry cracks in the brick masonry of the east wing.

R18. Tuckpoint the masonry cracks in the stone foundation of the east wing.

R21. Direct water from the downspout down and away from foundation.

R22. Repair/Replace roofing materials.

R24. Tuckpoint chimney.

R25. Reinforce the roof structure to meet current building code requirements, which would include reinforcement of the ledger connection to the wall and the eastern support beam.

R26. Provide proper guard and hand rails at stair to meet current code requirements.

R27. Tuckpoint the masonry cracks in the 1949 addition.

R28. Remove the cracked paint and repaint with breathable masonry paint in the east wall of the 1949 addition.

R33. Repair the downspout to direct water from the downspout down and away from the foundation.
R34. Replace carport columns, or at least bottom 12" of columns.

Low Priority:

R17. Secure or rebuild the foundations of the east wing.
R20. Secure or rebuild the foundations of the east wing.
R23. Replace missing iron bar in window.
R32. Secure or rebuild the foundations and masonry walls in the 'jail addition'.
R35. Verify foundations of carport columns and provide if inadequate.
R159. Reinforce or replace the roof structural elements to meet current building code requirements.

Maintenance:

R16. Monitor for recracking the east wing wall.
R19. Monitor for recracking and additional spalling in the east wing.
R31. Monitor for recracking and additional movement in the 'jail' addition.
R36. Monitor the wood structure and metal deck of the carport annually.

South Elevation:

Immediate:

R41. Remove paint of "jail" addition with non-abrasive methods. Repaint with breathable masonry paint.
R42. Tuckpoint the masonry cracks of the "jail" addition.
R43. Replace deteriorated bricks of the "jail" addition.

High Priority:

R37. Repair the wood shingles.
R38. Repoint the cracked vertical joint in the 1949 addition.

Low Priority:

R39. Remove the cracked paint on the 1949 addition and repaint with breathable masonry paint.
R45. Secure or rebuild the foundations and masonry walls of the "jail" addition.

Maintenance:

R40. Monitor the wall of the 1949 addition for cracking.
R44. Monitor for recracking and additional movement in the "jail" addition.

West Elevation:

Immediate:

R46. Remove paint of 'jail' addition with non-abrasive methods. Repaint with breathable masonry paint.
R47. Tuckpoint the masonry cracks of the 'jail' addition.
R48. Replace deteriorated bricks of the 'jail' addition.
R54. Remove paint with non-abrasive methods of the west wing. Repaint with breathable masonry paint.
R55. Tuckpoint the masonry cracks in the west wing.
R56. Replace deteriorated and missing bricks in the west wing.
R59. Remove paint with non-abrasive methods of west wing. Repaint with breathable masonry paint.
R60. Remove caulk from masonry joints in west wing.
R61. Tuckpoint the masonry cracks and joints that were caulked in west wing.
R62. Replace deteriorated and missing bricks in west wing.
R66. Regrade, or divert the water from, the west parking lot to prevent water from flowing and collecting against the building.

High Priority:

R51. Tuckpoint the masonry cracks in cmu antenna enclosure.
R52. Replace deteriorated cmu and copings in cmu antenna enclosure.

Low Priority:

R50. Secure or rebuild the foundations and masonry walls of the 'jail' addition.

R58. Secure or rebuild the foundations and masonry walls in the west wing.

R65. Replace decorative iron bar in west wing.

R64. Secure or rebuild the foundations and masonry walls in west wing.

Maintenance:

R49. Monitor for recracking and additional movement of the 'jail' addition.

R53. Monitor for recracking and additional movement in cmu antenna enclosure.

R57. Monitor for recracking and additional movement in the west wing.

R63. Monitor for recracking and additional movement in the west wing.

Main House - Interior:

In summary, repair split and deteriorated framing members. Reinforce the support of the interior stairwell structure at both levels. Maintain weathertightness of the building. Restructure the roofs of the east and west wings to properly support the code required design loads. Either the roof systems can be replaced to match the desired profile, or the existing structures might be able to be reinforced. Considering access to these tight areas, rebuilding is the easiest and most cost effective solution, although not as historically sensitive.

Basement:

Immediate:

R72. Provide proper support of window openings.

High Priority:

R71. Correct leak at northwest corner.

R73. Replace screen with proper finish.

Low Priority:

R67. Replace missing and deteriorated bricks in paver floor.

R58. Tuckpoint stone masonry walls (approximately 15% of surface area of each wall).

R69. Clean efflorescence off of wall.

R74. Remove organic debris from area well.

Maintenance:

R70. Monitor movement of east wall.

East Crawl Space:

Immediate:

R75. Test pipe insulation for asbestos, abate if required.

R76. Tuckpoint the stone foundation walls.

R77. Rebuild portion of east wall.

West Crawl Space:

Immediate:

R78. Test pipe insulation for asbestos, abate if required.

R79. Tuckpoint the stone foundation walls.

R80. Rebuild walls as needed (northwest corner minimum?)

First Floor Structure, Center Portion:

High Priority:

R81. Provide bearing for all four plies of the western beam at the southern post.

R82. Sister the split, notched, and cut joists with new members spanning bearing to bearing.

R83. Install joist hangers at joist to header connections at the stair opening.

R84. Reinforce the header beams at the stair openings to support the floor and wall structures above.

R154. Reinforced or replace the western beam to meet current live load requirements for its current or future use. Head height clearance in the basement below this beam will be critical in the design of the beam.

First Floor Structure, East Wing:

High Priority:

R86. Sister the cut joists with new members spanning bearing to bearing.

Low Priority:

R85. Reinforce the center beam if needed for floor capacity requirements.

R153. Reinforce the wing floor structures if the floors are required to exceed 70psf live load capacity.

First Floor Structure, West Wing:

Low Priority:

R87. Reinforce the center beam if needed for floor capacity requirements.

R153. Reinforce the wing floor structures if the floors are required to exceed 70psf live load capacity.

First Floor Structure, 1949 Addition:

No structural recommendations in this space.

First Floor Level, Original House:

Immediate:

R89. Remove finishes to expose exterior west and north masonry walls of the west wing.

R90. Tuckpoint the masonry cracks.

R91. Replace deteriorated and missing bricks.

High Priority:

R88. Reinforce structure below interior walls to support weight of plaster partition walls.

R94. Reinforce structure to remove a majority of the floor slopes (some of the slopes will be permanent due to creep of the wood structure).

R93. Secure or rebuild the foundations and masonry walls.

Maintenance:

R92. Monitor for recracking and additional movement.

First Floor Level, Jail Addition:

Immediate:

R95. Remove finishes to expose exterior masonry walls.

R96. Tuckpoint the masonry cracks.

R97. Replace deteriorated and missing bricks.

R99. Secure or rebuild the foundations and masonry walls.

Maintenance:

R98. Monitor for recracking and additional movement.

First Floor Level, 1949 Addition:

Low Priority:

R100. Repair the cracks in the drywall finishes.

Maintenance:

R101. Monitor for recracking and additional movement

Second Floor Structure:

High Priority:

R104. Provide adequate support for stud interior walls in floor structures below.

R105. Provide adequate support for stair opening in floor structure.

Second Floor Level:

High Priority:

R102. Expose lintel over the north window in the hallway and verify its condition.

R103. Repair water damaged and cracked plaster.

Attic/Roof Structures, Center Portion:

High Priority:

R106. Reinforce split rafter at northwest corner.

R107. Reinforce stringers that 'sandwich' the four chimney locations.

R108. Locate and repair source of water penetration.

R109. Repair area of daylight in south gable end.

Attic/Roof Structures, East Wing:

Immediate:

R110. Repair or replace the hip ridges of the original roof system, assuming the mansard roof is bearing on these as they are for the west wing.

R155. Reinforce or replace the hip ridges.

R156. Reinforce or replace the deteriorated roof framing members.

High Priority:

R111. Locate and repair source of water penetration in southeast corner.

R112. Reinforce or replace deteriorated wood members as required.

R157. Consider rebuilding the roof systems in whole due to cost effectiveness.

Attic/Roof Structures, West Wing:

Immediate:

R113. Repair or replace the hip ridges of the original roof system.

R114. Reinforce bearing for (install ledger board?), or replace rafters that are pulling away from the wall.

R115. Reinforce or replace deteriorated wood members as required.

R116. Reinforce or replace split and deteriorated members of the mansard roof.

R118. Replace the 2x7 beam, rafters, and studs at the mansard wall at water damaged locations (assume full perimeter, conservatively).

R155. Reinforce or replace the hip ridges.

R156. Reinforce or replace the deterioration roof framing members.

High Priority:

R117. Enclose the attic space to make it weathertight (remove daylight locations).

R119. Reinforce the ledger at the masonry wall supporting the rafters.

R157. Consider rebuilding the roof systems in whole due to cost effectiveness.

Roof Structures, Jail Addition:

The roof structure of the jail addition was not accessible during the survey.

Roof Structures, 1949 Addition:

High Priority:

R120. Make structure weathertight (remove daylight locations).

R158. Reinforce the rafters that are overstressed due to snow drift loads.

Garage – Exterior:

Overall, the exterior should be cleaned of any vegetation growing on the walls and tuckpointed to keep water out of the walls. Verification of roof flashings and coping stone joints should be evaluated to keep the structure weathertight. Typical wire brushing and repainting of the exposed steel lintels will prevent further rust jacking from occurring.

High Priority:

R123. Tuckpoint the masonry cracks in the north elevation, east end.

R125. Tuckpoint the masonry cracks in the north elevation, west end.

R128. Replace window lintel in east elevation.

R129. Expose the remaining window lintels of the original building to evaluate their condition.

R130. Tuckpoint masonry sills.

R131. Rebuild masonry sills where bricks are missing.

R132. Tuckpoint the masonry cracks in the east elevation.

R133. Repair stucco to maintain weathertightness of structure in the east elevation.

R135. Remove vegetation off of wall in the east elevation.

R136. Repair or replace the gutter and downspout system to discharge water down and away from the building.

R137. Verify condition and weathertightness of all roof flashings and coping stones.
R138. Tuckpoint the masonry cracks in the south elevation.
R139. Remove vegetation off of the walls in the south elevation.
R140. Tuckpoint the masonry cracks in the west elevation.
R141. Wire brush clean and repaint exposed steel lintels to prevent further rusting.
R142. Rebuild masonry retaining wall.
R164. Tuckpoint the masonry cracks.
R165. Replace cracked cmu.

Low Priority:

R127. Further investigate size and type of lintel if sagging worsens for reinforcement or replacement.

Maintenance:

R121. Monitor the sag in the lintels in the north elevation.
R122. Further investigate size and type of lintel if sagging worsens for reinforcement or replacement.
R124. Monitor for recracking and additional movement in north elevation, east end.
R126. Monitor for recracking and additional movement in north elevation, west end.
R134. Monitor for recracking and additional movement in the east elevation. Contact a professional engineer if further movement is observed, as it may be due to settling of the foundations. Contact a registered architect to verify the weathertightness of building system.
R166. Monitor the wall for additional cracking or distresses.
R167. If the cracks reoccur, investigate further to determine where the reinforcement is at, and to determine if the cracking is primarily related to settlement or water infiltration.

Garage – Interior:

Reinforcement of the original roof rafters to accept the snow drift load created by the west addition is the most critical of the recommendations. Typical masonry tuckpointing and repair is also recommended, especially along the eastern most wall.

High Priority:

R143. Tuckpoint the masonry cracks in north wall.
R147. Tuckpoint the masonry cracks in east and west walls of original building.
R149. Tuckpoint the masonry cracks in west addition walls.
R151. Repair the expansion joint for full thermal expansion and contraction in west wall of addition.
R152. Grout the joist pockets solid to prevent rotation of the joists at the bearing locations.

Low Priority:

R145. Expose the lintel to verify its size and type in north wall.
R146. Design reinforcement or replacement of the lintels in north wall as required.
R160. Unless water is penetrating through the roof (with the exception of penetration due to improper roof flashing and edge detailing), finishes are severely cracked, other distresses become apparent, or something is to change with the building that would effect the roof system, the roof structure should be monitored.
R161. If a significant rehabilitation project is to occur, or a mechanical unit is to be placed on the roof, anticipate significant reinforcing of the wood framed roof system.
R162. Reinforce the roof structure to accept the snow drift loads created from the taller addition. This could be by sistering the existing rafters or

installing additional beams and columns midspan of the rafters.

Maintenance:

R144. Monitor for recracking and additional movement.

R148. Monitor for recracking and additional movement in the east and west walls of the original building.

R150. Monitor for recracking and additional movement in west addition walls.

R163. Continue to monitor the roof structure and evaluate the roof system only if significant changes are made to the building.

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BY PRIORITY:

These are the same recommendations listed above by Building Area, but are now organized by priority. By repairing the walls and foundations immediately, ideally enough time will be gained to properly address the deterioration of the masonry. Potential replacement of the west wing northand west walls and foundations; the east wing foundation walls, and the jail addition walls (and foundations?) are the ideal, and most likely, required solutions.

As stated previously, immediate priority is of significant concern, and all efforts should be placed into completing these recommendations to protect the occupants and/or the structures. High priority is also of significance, but does not warrant immediate action. Low priority is more of the ideal solutions or recommendations, if funding and time were not limiting factors. Maintenance is considered those repairs or monitoring that should be done on a regular basis. Areas identified below as "Maintenance" are in addition to, or should be given extra attention to, during an annual structural review of the buildings.

Immediate:

East Elevation:

R29. Tuckpoint the masonry cracks in the 'jail' addition.

R30. Replace deteriorated bricks in the 'jail' addition.

South Elevation:

R41. Remove paint of "jail" addition with non-abrasive methods. Repaint with breathable masonry paint.

R42. Tuckpoint the masonry cracks of the "jail" addition.

R43. Replace deteriorated bricks of the "jail" addition.

West Elevation:

R46. Remove paint of 'jail' addition with non-abrasive methods. Repaint with breathable masonry paint.

R47. Tuckpoint the masonry cracks of the

'jail' addition.

R48. Replace deteriorated bricks of the 'jail' addition.

R54. Remove paint with non-abrasive methods of the west wing. Repaint with breathable masonry paint.

R55. Tuckpoint the masonry cracks in the west wing.

R56. Replace deteriorated and missing bricks in the west wing.

R59. Remove paint with non-abrasive methods of west wing. Repaint with breathable masonry paint.

R60. Remove caulk from masonry joints in west wing.

R61. Tuckpoint the masonry cracks and joints that were caulked in west wing.

R62. Replace deteriorated and missing bricks in west wing.

R66. Regrade, or divert the water from, the west parking lot to prevent water from flowing and collecting against the building.

Basement:

R72. Provide proper support of window openings.

East Crawl Space:

R75. Test pipe insulation for asbestos, abate if required.

R76. Tuckpoint stone foundation walls.

R77. Rebuild portion of east wall.

West Crawl Space:

R78. Test pipe insulation for asbestos, abate if required.

R79. Tuckpoint the stone foundation walls.

R80. Rebuild walls as needed (northwest corner minimum?)

First Floor Level, Original House:

R89. Remove finishes to expose exterior west and north masonry walls of the west wing.

R90. Tuckpoint the masonry cracks.

R91. Replace deteriorated and missing bricks.

First Floor Level, Jail Addition:

R95. Remove finishes to expose exterior masonry walls.

R96. Tuckpoint the masonry cracks.

R97. Replace deteriorated and missing bricks.

R99. Secure or rebuild the foundations and masonry walls.

Attic/Roof Structures, East Wing:

R110. Repair or replace the hip ridges of the original roof system, assuming the mansard roof is bearing on these as they are for the west wing.

R155. Reinforce or replace the hip ridges.

R156. Reinforce or replace the deteriorated roof framing members.

Attic/Roof Structures, West Wing:

R113. Repair or replace the hip ridges of the original roof system.

R114. Reinforce bearing for (install ledger board?), or replace rafters that are pulling away from the wall.

R115. Reinforce or replace deteriorated wood members as required.

R116. Reinforce or replace split and deteriorated members of the mansard roof.

R118. Replace the 2x7 beam, rafters, and studs at the mansard wall at water damaged locations (assume full perimeter, conservatively).

R155. Reinforce or replace the hip ridges.

R156. Reinforce or replace the deterioration roof framing members.

<u>High Priority:</u>

North Elevation:

R1. Rebuild the wood friezes to make the structure weather tight.

R2. Provide proper support at the basement level windows.

R3. Tuckpoint or repair the masonry cracks in the brick wall and stone sills in the center portion.

R4. Replace cracked bricks in the center portion.

R6. Tuckpoint the masonry cracks in the east wing.

R9. Tuckpoint the masonry cracks in the west wing.

R10. Replace cracked and deteriorated bricks in the west wing.

R11. Replace all of the column bases at the porch.

R12. Improve grade at porch; ideally reroute water to prevent the scour from occurring.

R13. Remove pargeting on porch foundations; Tuckpoint the masonry cracks.

East Elevation:

R15. Tuckpoint the masonry cracks in the brick masonry of the east wing.

R18. Tuckpoint the masonry cracks in the stone foundation of the east wing.

R21. Direct water from the downspout down and away from foundation.

R22. Repair/Replace roofing materials.

R24. Tuckpoint chimney.

R25. Reinforce the roof structure to meet current building code requirements, which would include reinforcement of the ledger connection to the wall and the eastern support beam.

R26. Provide proper guard and hand rails at stair to meet current code requirements.

R27. Tuckpoint the masonry cracks in the 1949 addition.

R28. Remove the cracked paint and repaint with breathable masonry paint in the east wall of the 1949 addition.

R33. Repair the downspout to direct water from the downspout down and away from the foundation.

R34. Replace carport columns, or at least bottom 12" of columns.

South Elevation:

R37. Repair the wood shingles.

R38. Repoint the cracked vertical joint in the 1949 addition.

West Elevation:

R51. Tuckpoint the masonry cracks in cmu antenna enclosure.

R52. Replace deteriorated cmu and copings in cmu antenna enclosure.

Basement:

R71. Correct leak at northwest corner.

R73. Replace screen with proper finish.

First Floor Structure, Center Portion:

R81. Provide bearing for all four plies of the western beam at the southern post.

R82. Sister the split, notched, and cut joists with new members spanning bearing to bearing.

R83. Install joist hangers at joist to header connections at the stair opening.

R84. Reinforce the header beams at the stair openings to support the floor and wall structures above.

R154. Reinforced or replace the western beam to meet current live load requirements for its current or future use. Head height clearance in the basement below this beam will be critical in the design of the beam.

First Floor Structure, East Wing:

R86. Sister the cut joists with new members spanning bearing to bearing.

First Floor Level, Original House:

R88. Reinforce structure below interior walls to support weight of plaster partition walls.

R94. Reinforce structure to remove a majority of the floor slopes (some of the slopes will be permanent due to creep of the wood structure).

R93. Secure or rebuild the foundations and masonry walls.

Second Floor Structure:

R104. Provide adequate support for stud interior walls in floor structures below.

R105. Provide adequate support for stair opening in floor structure.

Second Floor Level:

R102. Expose lintel over the north window in the hallway and verify its condition.

R103. Repair water damaged and cracked plaster.

Attic/Roof Structures, Center Portion:

R106. Reinforce split rafter at northwest corner.

R107. Reinforce stringers that 'sandwich' the four chimney locations.

R108. Locate and repair source of water penetration.

R109. Repair area of daylight in south gable end.

Attic/Roof Structures, East Wing:

R111. Locate and repair source of water penetration in southeast corner.

R112. Reinforce or replace deteriorated wood members as required.

R157. Consider rebuilding the roof systems in whole due to cost effectiveness.

Attic/Roof Structures, West Wing:

R117. Enclose the attic space to make it weathertight (remove daylight locations).

R119. Reinforce the ledger at the masonry wall supporting the rafters.

R157. Consider rebuilding the roof systems in whole due to cost effectiveness.

Roof Structures, 1949 Addition:

R120. Make structure weathertight (remove daylight locations).

R158. Reinforce the rafters that are overstressed due to snow drift loads.

Garage – Exterior:

R123. Tuckpoint the masonry cracks in the north elevation, east end.

R125. Tuckpoint the masonry cracks in the north elevation, west end.

R128. Replace window lintel in east elevation.

R129. Expose the remaining window lintels of the original building to evaluate their condition.

R130. Tuckpoint masonry sills.

R131. Rebuild masonry sills where bricks are missing.

R132. Tuckpoint the masonry cracks in the east elevation.

R133. Repair stucco to maintain weathertightness of structure in the east elevation.

R135. Remove vegetation off of wall in the east elevation.

R136. Repair or replace the gutter and downspout system to discharge water down and away from the building.

R137. Verify condition and weathertightness of all roof flashings and coping stones.

R138. Tuckpoint the masonry cracks in the south elevation.

R139. Remove vegetation off of the walls in the south elevation.

R140. Tuckpoint the masonry cracks in the west elevation.

R141. Wire brush clean and repaint exposed steel lintels to prevent further rusting.

R142. Rebuild masonry retaining wall.

R164. Tuckpoint the masonry cracks.

R165. Replace cracked cmu.

R143. Tuckpoint the masonry cracks in north wall.

R147. Tuckpoint masonry cracks in east and west walls of original building.

R149. Tuckpoint the masonry cracks in west addition walls.

R151. Repair the expansion joint for full thermal expansion and contraction in west wall of addition.

R152. Grout the joist pockets solid to prevent rotation of the joists at the bearing locations.

<u>Low Priority:</u>

North Elevation:

R8. Secure or rebuild the foundations of the west wing.

R14. Verify depth of porch foundations

and underpin or regrade if needed.

East Elevation:

R17. Secure or rebuild the foundations of the east wing.

R20. Secure or rebuild the foundations of the east wing.

R23. Replace missing iron bar in window.

R32. Secure or rebuild the foundations and masonry walls in the 'jail addition'.

R35. Verify foundations of carport columns and provide if inadequate.

R159. Reinforce or replace the roof structural elements to meet current building code requirements.

South Elevation:

R39. Remove the cracked paint on the 1949 addition and repaint with breathable masonry paint.

R45. Secure or rebuild the foundations and masonry walls of the "jail" addition.

West Elevation:

R50. Secure or rebuild the foundations and masonry walls of the 'jail' addition.

R58. Secure or rebuild the foundations and masonry walls in the west wing.

R65. Replace decorative iron bar in west wing.

R64. Secure or rebuild the foundations and masonry walls in west wing.

Basement:

R67. Replace missing and deteriorated bricks in paver floor.

R58. Tuckpoint stone masonry walls (approximately 15% of surface area of each wall).

R69. Clean efflorescence off of wall.

R74. Remove organic debris from area well.

First Floor Structure, East Wing:

R85. Reinforce the center beam if needed for floor capacity requirements.

R153. Reinforce the wing floor structures if the floors are required to exceed 70psf live load capacity.

First Floor Structure, West Wing:

R87. Reinforce the center beam if needed for floor capacity requirements.

R153. Reinforce the wing floor structures if the floors are required to exceed 70psf live load capacity.

First Floor Level, 1949 Addition:

R100. Repair the cracks in the drywall finishes.

Garage – Exterior:

R127. Further investigate size and type of lintel if sagging worsens for reinforcement or replacement.

Garage – Interior:

R145. Expose the lintel to verify its size and type in north wall.

R146. Design reinforcement or replacement of the lintels in north wall as required.

R160. Unless water is penetrating through the roof (with the exception of penetration due to improper roof flashing and edge detailing), finishes are severely cracked, other distresses become apparent, or something is to change with the building that would effect the roof system, the roof structure should be monitored.

R161. If a significant rehabilitation project is to occur, or a mechanical unit is to be placed on the roof, anticipate significant reinforcing of the wood framed roof system.

R162. Reinforce the roof structure to accept the snow drift loads created from the taller addition. This could be by sistering the existing rafters or installing additional beams and columns midspan of the rafters.

<u>Maintenance:</u>

North Elevation:

R5. Monitor for recracking.

R7. Monitor the lean of the walls.

East Elevation:

R16. Monitor for recracking the east wing wall.

R19. Monitor for recracking and additional spalling in the east wing.

R31. Monitor for recracking and additional movement in the 'jail' addition.

R36. Monitor the wood structure and metal deck of the carport annually.

South Elevation:

R40. Monitor the wall of the 1949 addition for cracking.

R44. Monitor for recracking and additional movement in "jail" addition.

West Elevation:

R49. Monitor for recracking and additional movement of the 'jail' addition.

R53. Monitor for recracking and additional movement in cmu antenna enclosure.

R57. Monitor for recracking and additional movement in the west wing.

R63. Monitor for recracking and additional movement in the west wing.

Basement:

R70. Monitor movement of east wall.

First Floor Level, Original House:

R92. Monitor for recracking and additional movement.

First Floor Level, Jail Addition:

R98. Monitor for recracking and additional movement.

First Floor Level, 1949 Addition:

R101. Monitor for recracking and additional movement

Garage – Exterior:

R121. Monitor the sag in the lintels in the north elevation.

R122. Further investigate size and type of lintel if sagging worsens for reinforcement or replacement.

R124. Monitor for recracking and additional movement in north elevation, east end.

R126. Monitor for recracking and additional movement in north elevation, west end.

R134. Monitor for recracking and additional movement in the east elevation. Contact a professional engineer if further movement is observed, as it may be due to settling of the foundations. Contact a registered architect to verify the weathertightness of building system.

R166. Monitor the wall for additional cracking or distresses.

R167. If the cracks reoccur, investigate further to determine where the reinforcement is at, and to determine if the cracking is primarily related to settlement or water infiltration.

Garage – Interior:

R144. Monitor for recracking and additional movement.

R148. Monitor for recracking and additional movement in the east and west walls of the original building.

R150. Monitor for recracking and additional movement in west addition walls.

R163. Continue to monitor the roof structure and evaluate the roof system only if significant changes are made to the building.

BY BUILDING TRADE:

A combination of numbering systems is used here. To avoid repetitiveness, the general scope of work is described under the proper trade. These general recommendations are simply numbered. If a recommendation is specific, the recommendation, as numbered in the earlier text of this report, is used.

This list is not an all inclusive list of recommendations by trades, and some tasks will overlap with representative trades. Only the structural trades have been specified, all others are grouped together here:

1. Consult with architect that is sensitive to historic structures regarding building systems not covered in this report.
2. Improve gutter and downspout system to direct water down and away from the buildings.
3. Remove vegetation on buildings.
4. Repair/Replace roofing materials.
5. Repair cracks in drywall and plaster.
6. Repair areas of daylight around perimeter of structures. Make the structures weathertight.

R71. Correct leak at northwest corner.

R73. Replace screen with proper finish.

R67. Replace missing and deteriorated bricks in paver floor.

R75. Test pipe insulation for asbestos, abate if required.

Concrete:

7. Depending on reinforcement systems chosen, new concrete spread foundations may be required for columns.
8. If foundation walls are to be replaced, a concrete strip foundation would be constructed below the new foundation wall.

R66. Regrade, or divert the water from, the west parking lot to prevent water from flowing and collecting against the building.

R34. Replace carport columns, or at least bottom 12" of columns.

Masonry:

9. Strip paint off of exterior walls.
10. Repoint all brick masonry, interior and exterior. Assume 75% total surface area for budgeting purposes.
11. Replace damaged, cracked and spalled brick. Assume 10% surface area of all walls except west wing north and west walls and jail addition walls.
12. Rebuild west wing west and north walls (partial height of north wall may be possible).
13. Rebuild jail addition walls.
14. Rebuild east wing foundation walls.
15. Rebuild west wing foundation walls.
16. Rebuild north wall at windows in basement.
17. Repoint 15% of basement foundation walls on interior.
18. Repoint all exterior cmu on garage. Assume 100% repointing for budgeting purposes.
19. Repoint cracked joints on interior of garage. Assume 30% repointing for budgeting purposes.
20. Rebuild brick sills on garage windows.

R102. Expose lintel over the north window in the hallway; verify its condition.

R151. Repair the expansion joint for full thermal expansion and contraction in west wall of addition.

R152. Grout the joist pockets solid to prevent rotation of the joists at the bearing locations.

Steel:

21. Replace missing decorative iron pieces in second story windows (2 thus).

R26. Provide proper guard and hand rails at stair to meet current code requirements.

R128. Replace window lintel in east elevation.

R141. Wire brush clean and repaint exposed steel lintels to prevent further rusting.

Wood:

22. Reinforce east and west wing roof structures.

23. Reinforce floor structures at stair openings.

24. Reinforce floor structures to meet safe allowable live load requirements for intended use.

25. Sister the split, notched, and cut joists with new members spanning bearing to bearing.

R1. Rebuild the wood friezes to make the structure weather tight.

R11. Replace all of the column bases at the porch.

R159. Reinforce or replace the roof structural elements of carport to meet current building code requirements.

R81. Provide bearing for all four plies of the western beam at the southern post.

R83. Install joist hangers at joist to header connections at the stair opening.

R158. Reinforce the rafters that are overstressed due to snow drift loads.

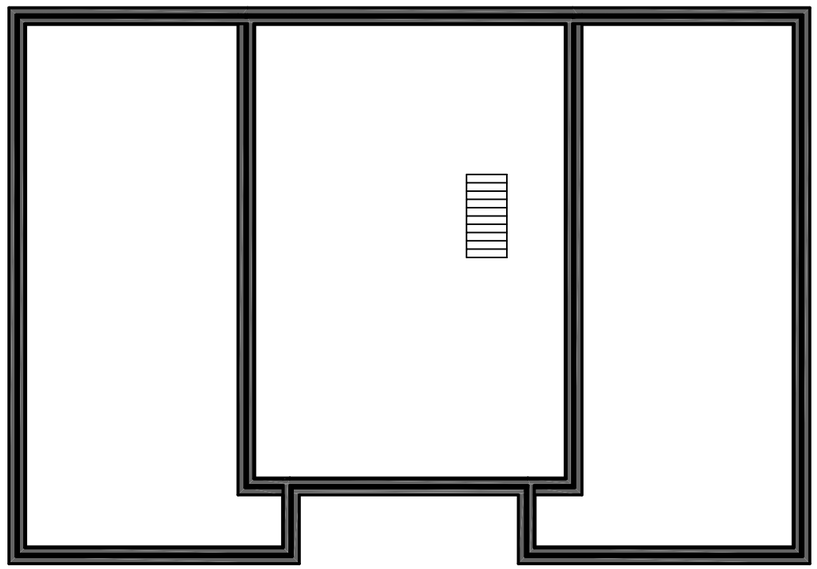
Conclusion

This report highlights the repairs required for the structures to be upgraded to existing building codes – to compare it to a newly constructed building. It considers the age of the property in the analysis, but the age of the property may not be expressed throughout the report (eg. It's stood this long…). This report also tends to highlight the poor structural elements of the buildings, as there is simply more to discuss with the poor elements than the elements that need no repair.

Overall the structures are in fair condition. Significant repair or reconstruction is required of the east and west wings and jail addition of the main house. All other recommendations are relatively typical of historic structures, with some even being considered general maintenance and upkeep of the structures. The desired use of the facilities will determine if structural reinforcement/upgrade of the structure will be needed.

Appendix A:

Architectural Plans



North

PLAN LAYOUT
Scale: 3/32" = 1'–0"

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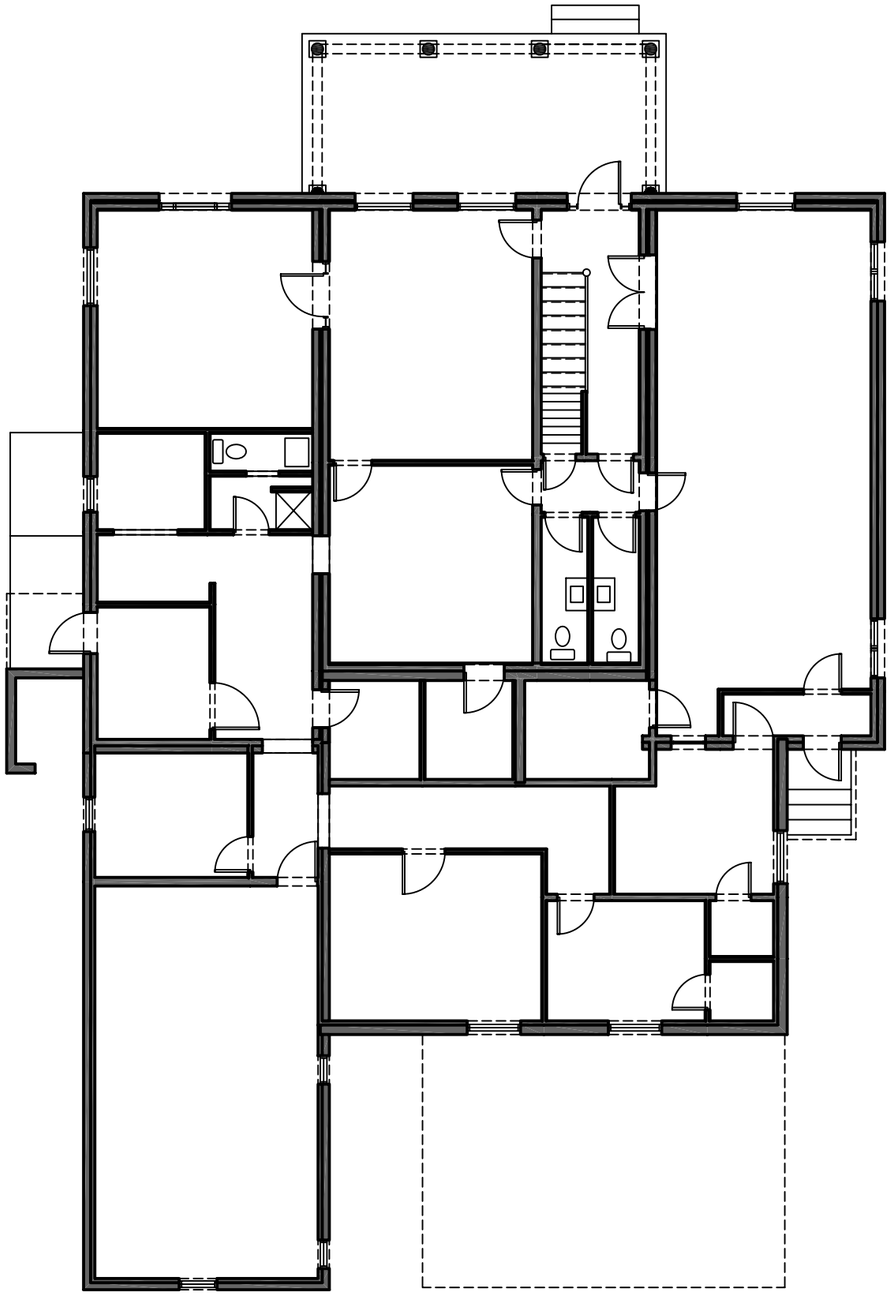
Structural Conditions Assessment Report

MAIN HOUSE - BASEMENT PLAN

JAN. 28, 2013

by: CLE



North

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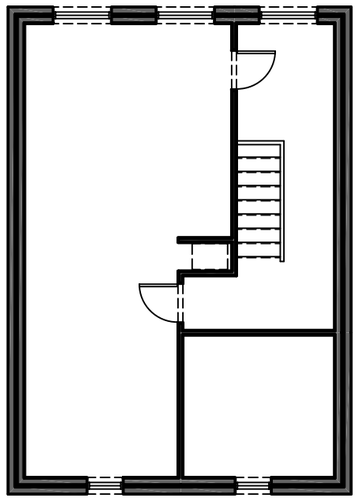
MAIN HOUSE - FIRST FLOOR PLAN

JAN. 28, 2013

by: CLE



North

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MAIN HOUSE - SECOND FLOOR PLAN

JAN. 28, 2013

by: CLE

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

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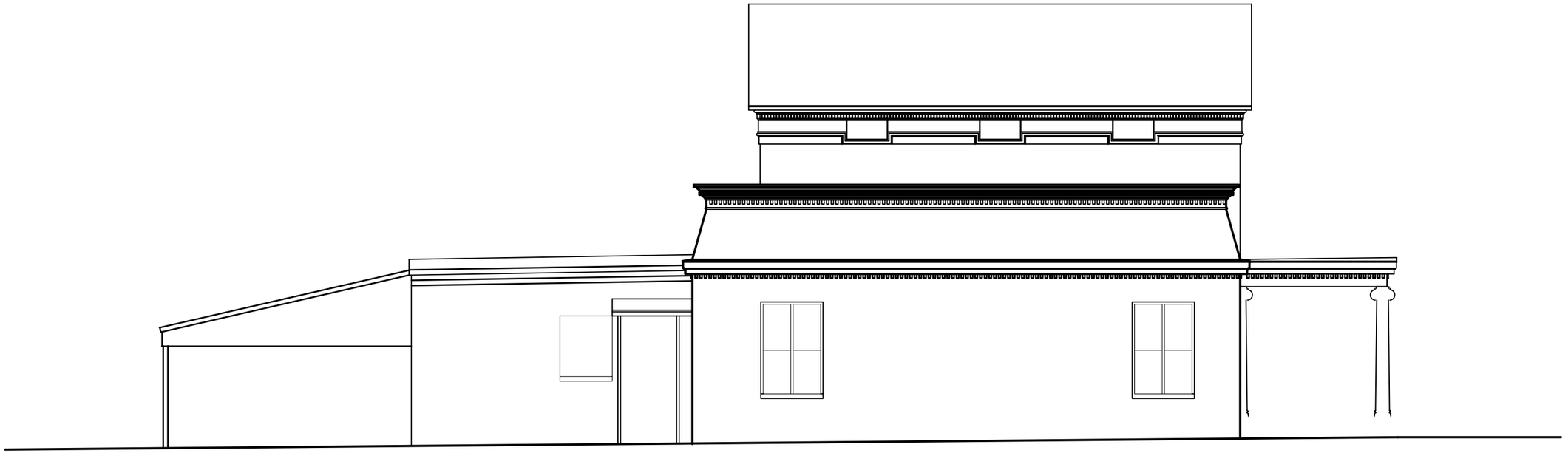
MAIN HOUSE - NORTH ELEVATION

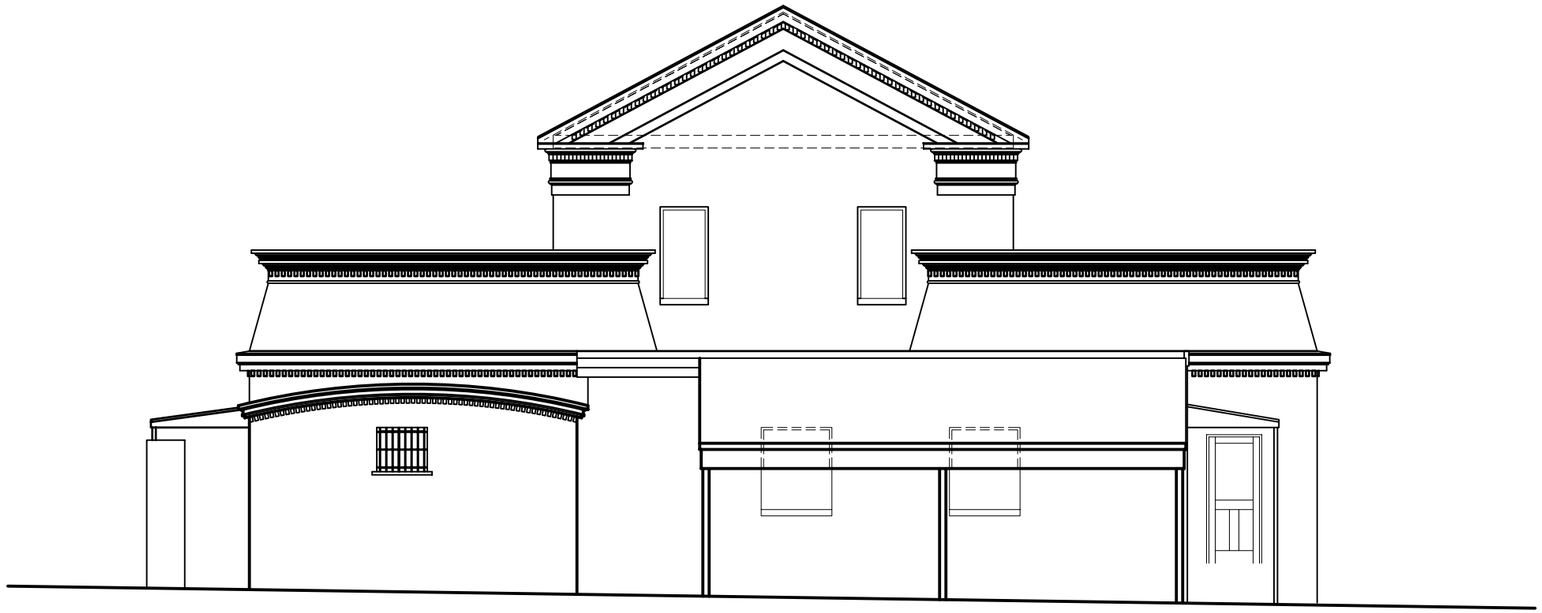
JAN. 28, 2013

by: CLE



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

Ross-Sanders House and Garage Buchanan, Michigan Structural Conditions Assessment Report MAIN HOUSE - EAST ELEVATION	JAN. 28, 2013 by: CLE Sheet 5 of 8



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

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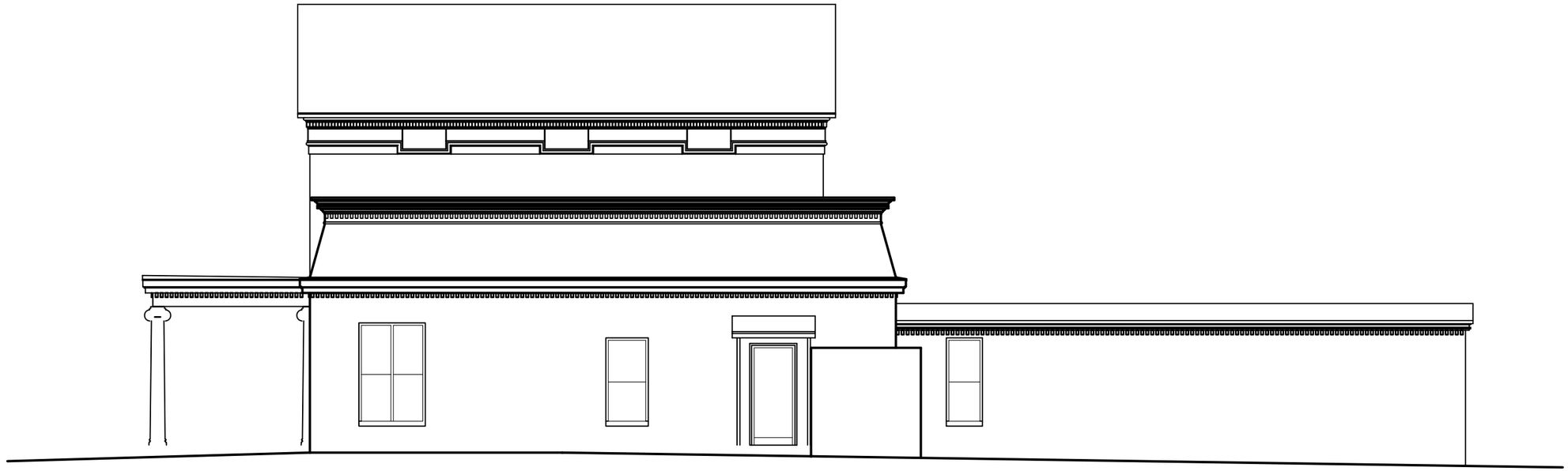
MAIN HOUSE - SOUTH ELEVATION

JAN. 28, 2013

by: CLE



WEST ELEVATION
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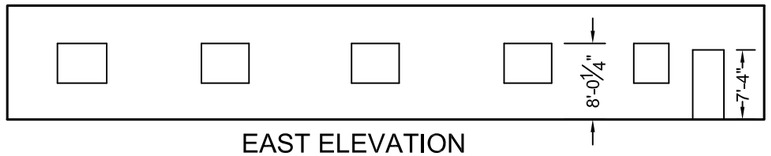
MAIN HOUSE - WEST ELEVATION

JAN. 28, 2013

by: CLE



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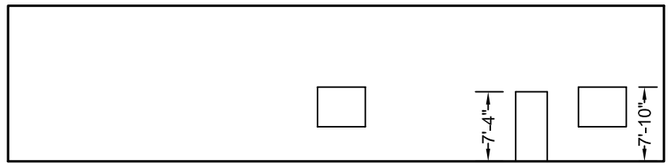

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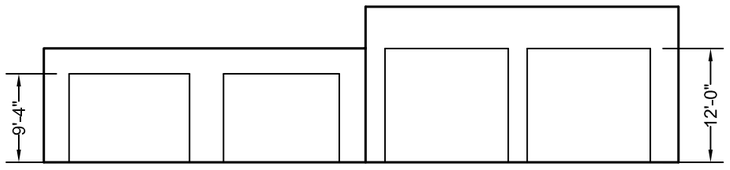

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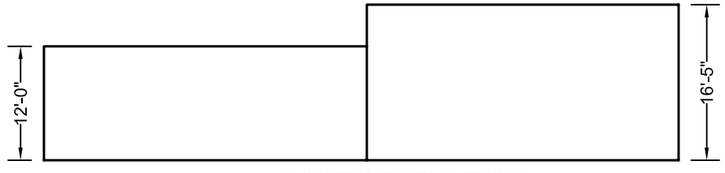

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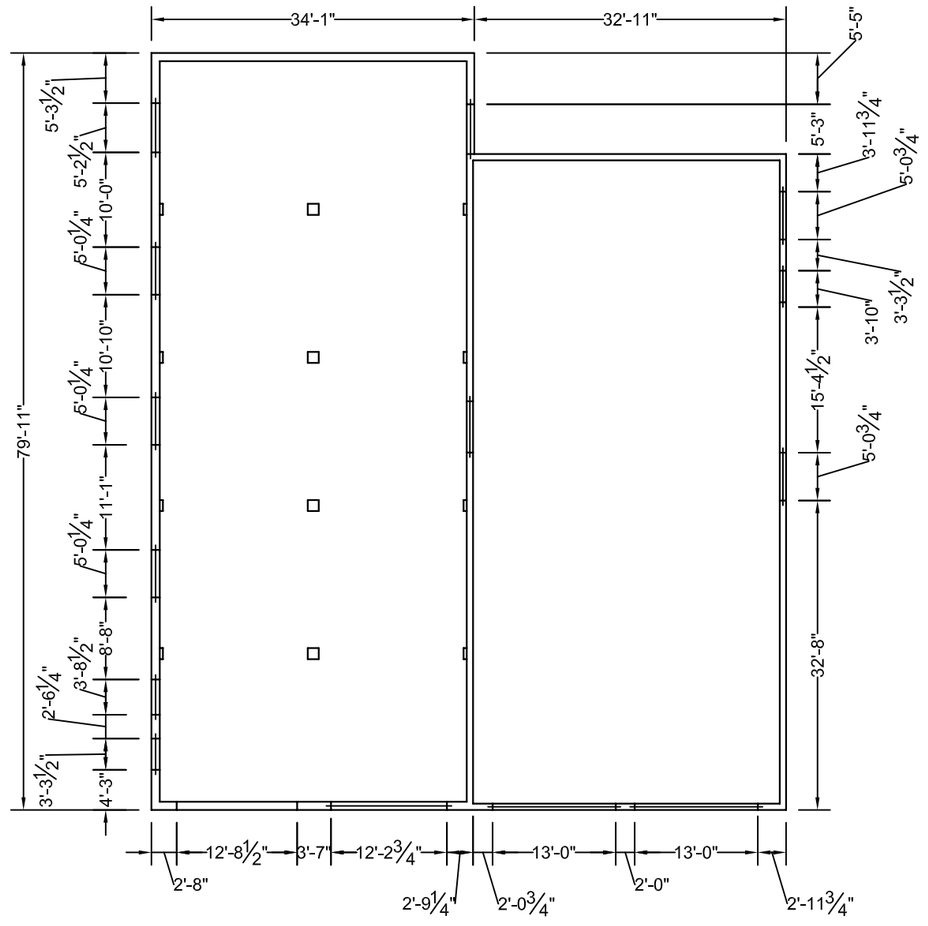

North

PLAN LAYOUT
Scale: 1/16" = 1'-0"

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Ross-Sanders House and Garage
Buchanan, Michigan
Structural Conditions Assessment Report

GARAGE PLAN AND ELEVATIONS

JAN. 28, 2013

by: CLE

Appendix B:
Full Photo Catalog

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Ross Sanders House Buchanan, MI

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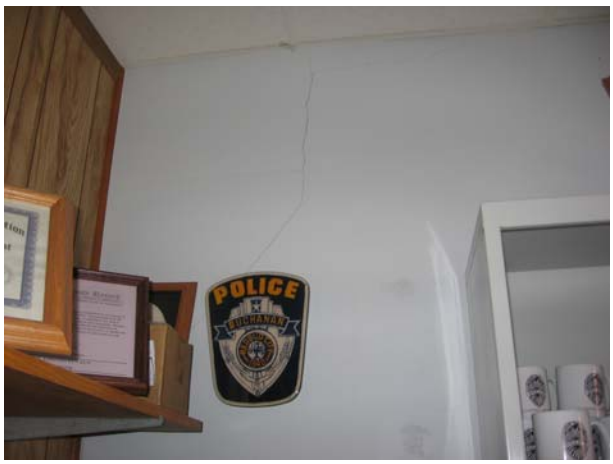

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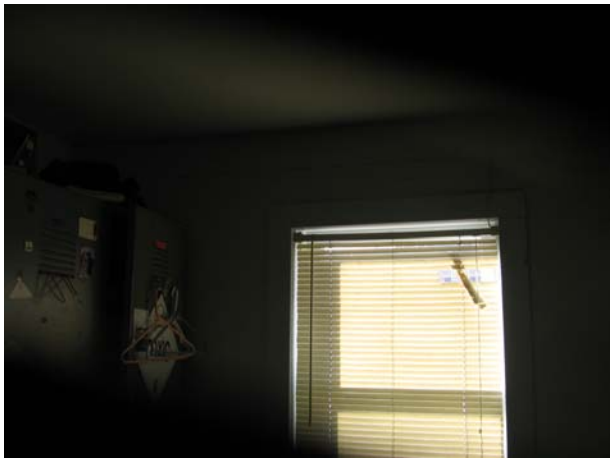

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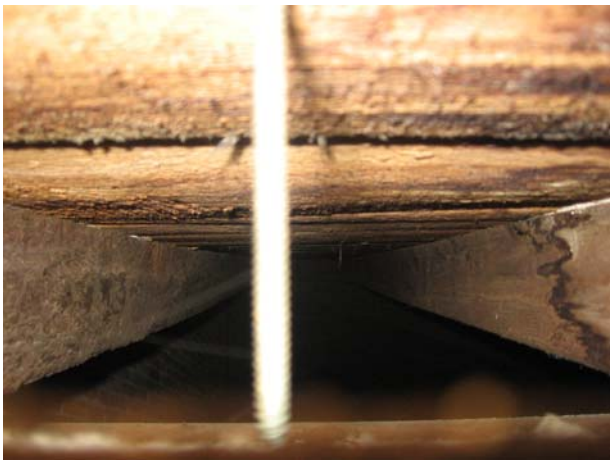

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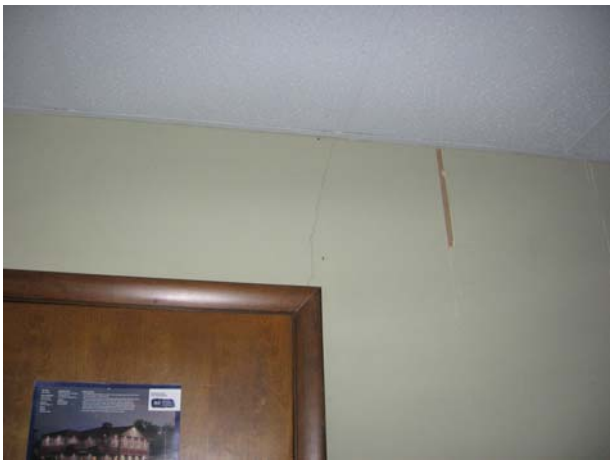

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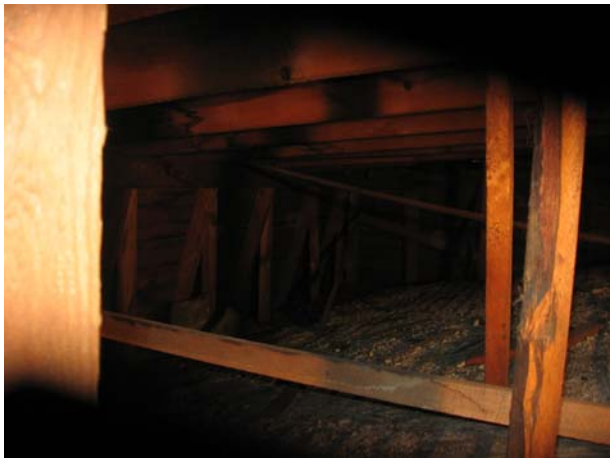

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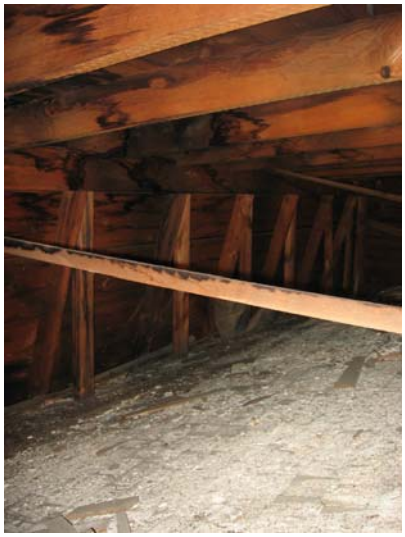

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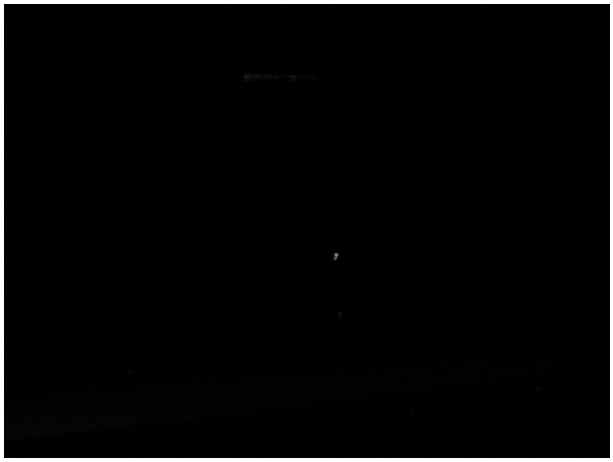

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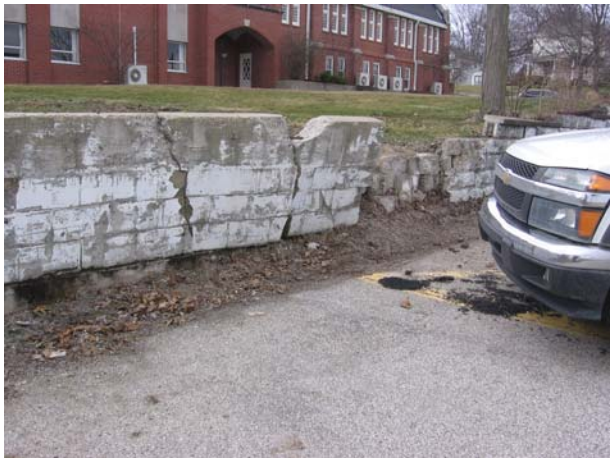

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Appendix C:

Cost Estimate

Cost Estimate

The following has been determined by Century Restoration, LLC of South Haven, Michigan.

To clarify and reiterate, this cost estimate is intended to be used for planning purposes only; not necessarily budgeting purposes. It is meant to reflect the differences in completing one task versus another; to help 'ballpark' the construction costs. The cost estimates do not reflect additional architectural, engineering, or other professional services. The cost estimates do not reflect all work related to the structural work that is described in the recommendations in this report, including, but not limited to, hazardous material abatement, mechanical, electrical, plumbing upgrades, interior finishes, and more. Contingencies, prevailing wage expenses, or bond expenses are not included in the figures provided.

Upon completion of the final report, some modifications to the cost estimate were made, and are described in a letter herein. The modifications include providing new foundations below much of the east wing, west wing, and jail addition. This is in lieu of simply repointing and rebuilding isolated areas of the foundation walls.

Please refer to Century Restoration LLC's full report for detailed breakdown.

December 4, 2012

Cheryl Early
Fitzpatrick Structural Engineering, P.C.
PO Box 1506
Ann Arbor, MI 48106

Dave Varney
Century Restoration, LLC
608 Center Street
South Haven, MI 49090

Cost Budget
Ross-Sanders House
107 W. Front Street
Buchanan, MI

This budget addresses structural issues identified in Fitzpatrick's evaluation dated 10/11/12. It does not cover costs for non-structural work related to a full restoration of the premises. In some instances, where non-structural items are specifically identified in Fitzpatrick's evaluation, costs for those items have been included. In other instances, where new exterior work must be protected from the elements, the cost for work such as painting has been included. Items R1 through R152 in Fitzpatrick's evaluation have been addressed. It is assumed that items R153 through R167 are summaries of work previously described.

This budget is not a cost estimate to be used for bidding purposes. It is premature to solicit formal proposals from subcontractors and, therefore, this has not been done at this point. This budget is intended to be used for project planning purposes.

Structures addressed in the budget are the original house with its east and west wings, the 1949 addition, the jail, the detached garage and the west parking lot.

The budget does not include additional architectural, engineering or construction management services.

General items of work include such things as:

- Foundation repair
- Masonry tuck pointing
- Replacement of deteriorated brick and CMU
- Masonry wall reconstruction where required
- Repair of deteriorated decorative components
- Repair of wood shingle detailing
- Reinforcement of floor framing system
- Reinforcement of roof framing system
- Removal of interior perimeter wall and ceiling finishes to expose masonry for evaluation
- New roofing at original house center gable roof

The cost of bonds, if required, have not been included. Costs associated with a prevailing wage project, if required, have not been included. Contingencies are typically used in historic restoration projects upwards of 20 percent; this has not been included.

Sincerely,
Dave Varney

December 4, 2012

Cheryl Early
Fitzpatrick Structural Engineering, P.C.
PO Box 1506
Ann Arbor, MI 48106

Dave Varney
Century Restoration, LLC
608 Center Street
South Haven, MI 49090

Budget Qualifications
Ross-Sanders House
107 W. Front Street
Buchanan, MI

The intent of this budget is to assign rough cost figures to Fitzpatrick's structural evaluation dated 10/11/12. It does not address all costs associated with a full restoration of the premises.

All exterior wall surfaces of the house, 1949 addition, jail and garage require varying degrees of masonry work. Repainting has been specified for the 1949 addition. Total paint removal and re-painting has been specified for the jail. (Paint removal would not be required if the jail walls were to be totally re-built) No paint removal or re-painting of the house and garage exterior walls is included in the budget.

Foundation work is figured as rehabilitation or reconstruction of the existing stone foundation. Only after exposing problem areas of the foundation can a definitive solution be determined. At that point, a structural engineering firm must make further recommendations as to what type of foundation system would be appropriate.

The extent of masonry work is guided by the directive found in the "By Building Trade" section of the Fitzpatrick report.

Wood shingle repair at the house mansard roof has been specified for the east and south elevations. (Painting of these areas is included.) No repair or painting of the exterior cornice moldings or wood trim has been included.

Demolition of perimeter wall finishes in the west wing of the house and jail interiors is specified in order to assess the condition of the underlying brick walls. In order to accomplish this, all existing door, window and base trim must be removed. Acoustic ceilings must also be removed. Assessment of the second level floor framing system is specified. In order to accomplish this, the first floor plaster ceiling must be removed. (After exposing the floor framing, further structural recommendations are in order.) Demolition of the first level interior partition wall finishes is not specified, nor is demolition of any wall finishes on the second level of the house. Installation of new wall and ceiling finishes, new trim and painting of these items in the house and jail has not been included in this budget. Repair of cracked wall and ceiling plaster has been specified for the second level of the house only. Repair of cracked plaster in interior partition walls on the first level is not included. Floor finishes have not been included. Interior wall finishes or painting in the garage is not included.

Re-working the grade of the west parking area to slope away from the house will require further study. A drainage system should be designed. Re-building of the retaining wall on the west side of the property is not a high priority item and has not been addressed.

A complete restoration project would likely include electrical, HVAC, plumbing, and insulation work. This work is beyond the scope of the Fitzpatrick structural evaluation and is, therefore, not included here.

Sincerely,
Dave Varney

January 25, 2013

Cheryl Early
Fitzpatrick Structural Engineering, P.C.
PO Box 1506
Ann Arbor, MI 48106

Dave Varney
Century Restoration, LLC
608 Center Street
South Haven, MI 49090

Budget Modifications
Ross-Sanders House
107 W. Front Street
Buchanan, MI

The following information is intended to address some concerns that have been expressed about the 12/4/12 Budget.

The Budget Qualifications document of 12/4/12 states that foundation repair is figured as rehabilitation or reconstruction of the existing stone foundation wall. This treatment may not address completely structural issues found at the perimeter of the Jail and the west wall of the House. If total removal and replacement of the existing foundation is required in these areas, the cost would increase.

JAIL	74 LF	ADD	$30,387
HOUSE – west wall only	39 LF	ADD	$14,882

Breakdown:
All New Foundation

Shoring	$225	LF
Masonry	$300	LF
Excavation		
Removal of existing stone		
Concrete footing		
CMU foundation wall		
Perimeter drain		
Waterproofing		
Back fill		
Asphalt	$21	LF
Contingency 15%	$82	LF
	$628	LF

JAIL:

74 LF @ $628	$46,472
Less current budget cost	($16,085)
	$30,387

HOUSE – west wall:

39 LF @ $628	$24,492
Less current budget cost	($9,610)
	$14,882

The following break out numbers from the current budget may be useful in evaluating cost allocation.

Foundation Work - Total dollar amount in current budget	$42,100
JAILWall Repair	
Masonry	$29,840
Paint removal	$3,975
TOTAL	$33,815
HOUSE Wall Repair – west wall only	
Masonry	$18,450
Paint removal	$4.725
TOTAL	$23,175
JAIL Demo – Remove interior finishes to access underlying brick	
Carpentry – Remove plaster & trim	$2,997
Masonry – Tuck pointing and brick replacement	$6,080
TOTAL	$9,077
HOUSE Demo – Remove interior finishes to access underlying brick	
Carpentry – Remove plaster & trim	$5,834
Masonry – Tuck pointing and brick replacement	$13,780
TOTAL	$19,614
GARAGE – Tuck pointing and stucco	$56,687

Wood shingle repair was specified at the east and south elevations only. The additional cost for wood shingle repair at the north and west elevations would be $7,100.

Please let me know if further information is required.

Sincerely,
Dave Varney

12/4/2012

ROSS SANDERS HOUSE
BUCHANAN, MI

Prepared by:
Century Restoration, LLC
South Haven, MI

STRUCTURAL BUDGET

COST BREAKOUTS	Abatement	Masonry	Excavating	Paving	Carpentry	Roofing	Plaster	Painting	TOTAL
BY BUILDING									
HOUSE	$4,500	$67,220	$988	$1,600	$62,197	$6,275	$4,500	$9,280	**$156,560**
1949 ADDITION	$0	$4,960	$0	$250	$3,147	$0	$400	$1,510	**$10,267**
JAIL	$0	$56,225	$1,335	$1,625	$3,258	$0	$0	$10,065	**$72,508**
GARAGE	$0	$56,687	$0	$0	$1,108	$200	$0	$150	**$58,145**
PARKING LOT	$0	$0	$9,750	$8,400	$0	$0	$0	$0	**$18,150**
	$4,500	**$185,092**	**$12,073**	**$11,875**	**$69,710**	**$6,475**	**$4,900**	**$21,005**	**$315,630**
BY AREA									
HOUSE Exterior	$0	$38,345	$988	$1,600	$19,804	$5,225	$0	$9,280	**$75,242**
HOUSE Basement & Crawl Spaces	$4,500	$11,950	$0	$0	$688	$0	$0	$0	**$17,138**
HOUSE 1st. Floor	$0	$16,900	$0	$0	$18,314	$0	$0	$0	**$35,214**
HOUSE 2nd Floor	$0	$0	$0	$0	$6,430	$0	$4,500	$0	**$10,930**
HOUSE Attic	$0	$25	$0	$0	$16,961	$1,050	$0	$0	**$18,036**
JAIL Exterior	$0	$45,205	$1,335	$1,625	$261	$0	$0	$10,065	**$58,491**
JAIL Interior	$0	$11,020	$0	$0	$2,997	$0	$0	$0	**$14,017**
1949 ADDITION Exterior	$0	$4,960	$0	$250	$3,147	$0	$0	$1,510	**$9,867**
1949 ADDITION Interior	$0	$0	$0	$0	$0	$0	$400	$0	**$400**
GARAGE Exterior	$0	$38,412	$0	$0	$1,108	$200	$0	$150	**$39,870**
GARAGE Interior	$0	$18,275	$0	$0	$0	$0	$0	$0	**$18,275**
PARKING LOT	$0	$0	$9,750	$8,400	$0	$0	$0	$0	**$18,150**
	$4,500	**$185,092**	**$12,073**	**$11,875**	**$69,710**	**$6,475**	**$4,900**	**$21,005**	**$315,630**
BY PRIORITY									
IMMEDIATE	$4,500	$80,100	$9,750	$8,400	$20,887	$0	$0	$16,185	**$139,822**
HIGH	$0	$77,032	$0	$400	$43,564	$6,475	$4,500	$3,895	**$135,866**
LOW	$0	$25,585	$1,998	$2,745	$5,091	$0	$400	$925	**$36,744**
MAINTENANCE	$0	$2,375	$325	$330	$168	$0	$0	$0	**$3,198**
	$4,500	**$185,092**	**$12,073**	**$11,875**	**$69,710**	**$6,475**	**$4,900**	**$21,005**	**$315,630**

ESTIMATE # :
ESTIMATE NAME :
DATE :

ABATEMENT

LABOR RATE:

TASK	QT.	UNIT	UNIT $	MAT.	LAB HR	LAB $	TOTAL
INTERIOR							
EAST CRAWL SPACE							
R75 - Abatement							
Possible asbestos abatement at crawl space piping.							**$2,000**
WEST CRAWL SPACE							
R78 - Abatement							
Asbestos abatement from piping							**$2,500**

ESTIMATE # :
ESTIMATE NAME :
DATE :

MASONRY

LABOR RATE:

TASK	QT.	UNIT	UNIT $	MAT.	LAB HR	LAB $	TOTAL
EXTERIOR							
NORTH ELEVATION							
R2 - Repair basement window construction							
Dissassemble and re-build brick window construction	2						**$900**
R3 - Tuckpoint							
Tuckpoint cracks - 75% of 269 SF	202	SF					**$2,020**
R4 - Replace brick							
Replace cracked brick - 10% of 269 SF	27	SF					**$540**
Replace stone window sill	1						**$500**
							$1,040
R6 - Tuckpoint							
Tuckpoint cracks - 75% of 162 SF	122	SF					**$1,220**
Replace cracked brick - DV - 10% of 162 SF	16	SF					**$320**
							$1,540
R8 - Rebuild foundation							
Shoring	16	LF					**$400**
Rebuild foundation	48	SF					**$2,640**

MASONRY

LABOR RATE:

TASK	QT.	UNIT	UNIT $	MAT.	LAB HR	LAB $	TOTAL
							$3,040
R9 - Tuckpoint							
Tuckpoint - 75% of 162 SF	122	SF					**$1,220**
R10 - Replace brick							
Replace brick - 10 % of 162 SF	16	SF					**$320**
R13 - Tuckpoint foundation							
Remove pargeting	50	SF					**$600**
Hand dig around foundation	50	LF					**$150**
Repair foundation	100	SF					**$1,200**
							$1,950
EAST ELEVATION							
R15 - Tuckpoint							
Tuck point - 75% of 234 SF	176	SF					**$1,760**
Replace some vertical carcked brick - 10% of 234 SF	24	SF					**$480**
							$2,240
R-17 - Rebuild foundation							
Shoring	15	LF					**$375**
Rebuild foundation	38	SF					**$2,090**
							$2,465
R18 - Tuckpoint							
Tuckpoint - 75% of 234 SF	176						**$1,760**
Some brick replacement - 10 % of 234 SF	24	SF					**$480**

MASONRY

LABOR RATE:

TASK	QT.	UNIT	UNIT $	MAT.	LAB HR	LAB $	TOTAL
							$2,240
R20 - Repair foundation							
Repair foundation	60	SF					**$720**
R24 - Tuckpoint chimney							
Tuckpoit chimney							**$200**
R27 - Tuckpoint							
Tuckpoint block - 75% of 245 SF	184	SF					**$1,840**
R29 - Tuckpoint							
Re-build wall - 50 % of 177	88	SF	$45.00				**$3,960**
R30 - Replace brick							
Re-build wall - 50% of 177 SF	88	SF	$45.00				**$3,960**
R32 - Rebuild foundation							
Shoring	18	LF					**$450**
Rebuild foundation	35	SF					**$1,925**
							$2,375
SOUTH ELEVATION							
R38 - Tuckpoint							
Tuckpoint - 75% of 416 SF	312	SF					**$3,120**

MASONRY

LABOR RATE:

TASK	QT.	UNIT	UNIT $	MAT.	LAB HR	LAB $	TOTAL
R42 - Tuckpoint							
Rebuild wall - 50% of 170 SF	85	SF	$45.00				**$3,825**
R43 - Replace brick							
Rebuild wall - 50% of 170 SF	85	SF	$45.00				**$3,825**
R45 - Rebuild foundation							
Shoring	18	LF					**$450**
Rebuild foundation	35	SF					**$1,925**
							$2,375
WEST ELEVATION							
R47 - Tuckpoint							
Rebuild wall - 50% of 352 SF	176		$45.00				**$7,920**
R48 - Replace brick							
Rebuild wall - 50% of 352 SF	175	SF	$45.00				**$7,920**
R50 - Rebuild foundation							
Shoring	38	LF	$25.00				**$950**
Rebuild foundation	135	SF	$55.00				**$7,425**
							$8,375

MASONRY

LABOR RATE:

TASK	QT.	UNIT	UNIT $	MAT.	LAB HR	LAB $	TOTAL
R51 - Tuckpoint							
Tuckpoint - 75% of 72 SF	52	SF					**$520**
R52 - CMU coping							
Replace top CMU coping							**$150**
R55, R56, R57 & R58							
Included in R47, R48, R49 & R50							**$0**
R61 - Tuckpoint							
Rebuild wall - 50% of 410 SF	205	SF	$45.00				**$9,225**
R62 - Rebuild brick wall							
Rebuild wall - 50% of 410 SF	205	SF					**$9,225**
INTERIOR							
BASEMENT							
R67 - Replace pavers							
Replace pavers	30						**$300**
R68 - Tuckpoint stone							
Tuckpoint stone walls	85	SF					**$1,020**

MASONRY

LABOR RATE:

TASK	QT.	UNIT	UNIT $	MAT.	LAB HR	LAB $	TOTAL
R69 - Clean efflorescence							
Clean efflorescence							**$250**
R72 - Support windows							
Provide support for windows	2						**$150**
EAST CRAWL SPACE							
R76 - Tuckpoint							
Tuckpoint stone foundation walls	240	SF					**$2,880**
R77 - Rebuild foundation wall							
Shoring	10	LF					**$250**
Rebuild portion of stone foundation wall	40	SF					**$2,200**
							$2,450
WEST CRAWL SPACE							
R79 - Tuckpoint							
Tuckpoint stone foundation walls	110	SF					**$1,650**
R80 - Rebuild foundation wall	50	SF					**$3,250**
1 FL. ORIGINAL							
R90 - Tuckpoint							
Tuckpoint walls - 75% of 1450 SF	1088	SF	$10.00				**$10,880**

MASONRY

LABOR RATE:

TASK	QT.	UNIT	UNIT $	MAT.	LAB HR	LAB $	TOTAL
R91 - Replace brick							
Replace brick - 10% of 1450 SF	145	SF	$20.00				**$2,900**
R93 - Repair interior foundation walls							
Repair interior foundation walls - 78 LF - 50% of 520 SF	260	SF					**$3,120**
1 FL. JAIL							
R96 - Tuckpoint							
Tuckpoint - 75% of 640 SF	480	SF	$10.00				**$4,800**
R97 - Replace brick							
Replace brick - 10% of 640 SF	64	SF	$20.00				**$1,280**
R99 - Rebuild foundation							
Shoring	26	LF					**$650**
Rebuild interior foundation wall	78	SF					**$4,290**
							$4,940
ATTIC - CENTER							
R109 - Repair gap							
Replace missing mortar at one gap							**$25**

MASONRY

LABOR RATE:

TASK	QT.	UNIT	UNIT $	MAT.	LAB HR	LAB $	TOTAL
GARAGE							
EXTERIOR							
NORTH ELEVATION							
R123 - Tuckpoint							
Tuckpoint - 50% of 405 SF	202	SF	$8.00				**$1,616**
R125 - Tuckpoint							
Tuckpoint - 50% of 405 SF	202	SF	$8.00				**$1,616**
Stucco repair	175	SF	$8.00				**$1,400**
							$3,016
EAST ELEVATION							
R128 - Lintel							
Replace concrete window lintel							**$250**
R129 - Expose lintels							
Expose window lintels and evaluate condition	4						**$150**
R130 - Tuckpoint							
Tuckpoint brick window sills	5						**$250**

MASONRY

LABOR RATE:

TASK	QT.	UNIT	UNIT $	MAT.	LAB HR	LAB $	TOTAL
R131 - Repair brick sills							
Replace damaged bricks at window sills	5						**$250**
R132 - Tuckpoint							
Tuckpoint crackint CMU joints 100% of 800 SF	800	SF	$8.00				**$6,400**
R133 - Stucco repair							
Repair damaged stucco	800	SF	$8.00				**$6,400**
SOUTH ELEVATION							
R138 - Tuckpint							
Tuckpoint walls - 100% of 1000 SF	1000	SF	$8.00				**$8,000**
Repair stucco	455	SF	$8.00				**$3,640**
							$11,640
WEST ELEVATION							
R140 - Tuckpoint							
Tuckpoint walls - 100% of 1055 SF	1055	SF	$8.00				**$8,440**
INTERIOR							
R143 - Tuckpoint							
Tuckpoint - 30% of 1680 SF	505	SF	$8.00				**$4,040**
Stucco repair - 30% of 730 SF	220		$8.00				**$1,760**
							$5,800

MASONRY

LABOR RATE:

TASK	QT.	UNIT	UNIT $	MAT.	LAB HR	LAB $	TOTAL
R147 - Tuckpoint							
Tuckpoint - 30% of 1680 SF	505	SF	$8.00				**$4,040**
Stucco repair - 30% of 730 SF	220		$8.00				**$1,760**
							$5,800
R149 - Tuckpoint							
Tuckpoint - 30% of 1680 SF	505	SF	$8.00				**$4,040**
Stucco repair - 30% of 730 SF	220		$8.00				**$1,760**
							$5,800
R151 - Expansion joint							
Repair one wall expansion joint							**$125**
R152 - Grout bearing pocket							
Grout solid the bearing pockets for the bar joists	34						**$750**
							$185,092

ESTIMATE # :
ESTIMATE NAME :
DATE :

EXCAVATION

LABOR RATE:

TASK	QT.	UNIT	UNIT $	MAT.	LAB HR	LAB $	TOTAL
EXTERIOR							
NORTH ELEVATION							
R8 - Rebuild foundation							
Excavate & back fill	16	LF	$18.00				**$288**
EAST ELEVATION							
R32 - Repair foundation							
Excavate & back fill	18	LF					**$325**
SOUTH ELEVATION							
R45 - Rebuild foundation							
Excavate & backfill	18	LF					**$325**
WEST ELEVATION							
R50 - Rebuild foundation							
Excavate & backfill	38	LF					**$685**
R64 - Rebuild foundation							
Excavate & Back fill	39	LF					**$700**

EXCAVATION

LABOR RATE:

TASK	QT.	UNIT	UNIT $	MAT.	LAB HR	LAB $	TOTAL
R66 - Divert water							
Grading							**$1,500**
Fill dirt							**$1,500**
Burms if needed							**$750**
Install large drywell							**$5,000**
Piping if needed							**$1,000**
							$9,750

ESTIMATE # :
ESTIMATE NAME :
DATE :

PAVING

LABOR RATE:

TASK	QT.	UNIT	UNIT $	MAT.	LAB HR	LAB $	TOTAL
EXTERIOR							
NORTH ELEVATION							
R8 - Rebuild foundation							
Demo old - form & pour sidewalk	40	SF	$12.00				**$480**
R12 - Porch slab							
Patch cracks							**$200**
Patch pop-outs							**$200**
							$400
EAST ELEVATION							
R32 - Rebuild foundation							
Asphalt paving	55	SF					**$330**
R35 - Post footings							
Replace asphalt around posts	3						**$250**
SOUTH ELEVATION							
R45 - Rebuild foundation							
Asphalt paving	55	SF					**$330**

PAVING

LABOR RATE:

TASK	QT.	UNIT	UNIT $	MAT.	LAB HR	LAB $	TOTAL
WEST ELEVATION							
R50 - Rebuild foundation							
Asphalt	115	SF					**$965**
R64 - Rebuild foundation							
Asphalt	120	SF					**$720**
R66 - Water diversion							
Demo asphalt & repave	1200	SF					**$8,400**

ESTIMATE # :
ESTIMATE NAME :
DATE :

CARPENTRY

LABOR RATE: **$56**

TASK	QT.	UNIT	UNIT $	MAT.	TAX	LAB HR	LAB $	TOTAL
				0	0	0	0	0
EXTERIOR								
					$0		$0	**$0**
NORTH ELEVATION				$0	$0	0.0	$0	**$0**
R1 - Repair wood frieze				$0	$0	0.0	$0	**$0**
Replace frieze elements	2			$35	$2	8.0	$448	**$485**
Replace metal cap flashing	2			$100	$6	4.0	$224	**$330**
Lift equipment				$349	$21	0.0	$0	**$370**
Misc.				$50	$3	4.0	$224	**$277**
				$534	$32	16.0	$896	**$1,462**
					$0		$0	**$0**
R2 - Repair basement window construction					$0		$0	**$0**
Remove & re-install iron floor grills	2			$15	$1	6.0	$336	**$352**
Remove & re-install windows	2			$30	$2	8.0	$448	**$480**
Misc.				$15	$1	3.0	$168	**$184**
				$60	$4	17.0	$952	**$1,016**
					$0		$0	**$0**
R11 - Column repair					$0		$0	**$0**
Replace column bases	4			$800	$48	148.0	$8,288	**$9,136**
					$0		$0	**$0**
					$0		$0	**$0**
EAST ELEVATION					$0		$0	**$0**
R21 - Downspout					$0		$0	**$0**
Install downspout extension				$20	$1	2.0	$112	**$133**
					$0		$0	**$0**
					$0		$0	**$0**
					$0		$0	**$0**

CARPENTRY

LABOR RATE: **$56**

TASK	QT.	UNIT	UNIT $	MAT.	TAX	LAB HR	LAB $	TOTAL
R22 - Cedar shingles					$0		$0	**$0**
Cedar shingle - bottom 2 courses	78	SF		$195	$12	20.0	$1,120	**$1,327**
Replace some diamond cut shingles - 25% of 115 SF	29	Ea.		$174	$10	10.0	$560	**$744**
Lift equipment				$670	$40	0.0	$0	**$710**
				$1,039	$62	30.0	$1,680	**$2,781**
					$0		$0	**$0**
R23 - Replace iron decore					$0		$0	**$0**
Instal new custom made iron bar orniment	1			$150	$9	4.0	$224	**$383**
Lift equipment				$198	$12	0.0	$0	**$210**
Misc.				$25	$2	2.0	$112	**$139**
				$373	$22	6.0	$336	**$731**
					$0		$0	**$0**
R25 - Secure roof structure					$0		$0	**$0**
Secure roof structure				$25	$2	4.0	$224	**$251**
					$0		$0	**$0**
					$0		$0	**$0**
R26 - Guard rail					$0		$0	**$0**
Demo old rail				$0	$0	1.0	$56	**$56**
Install new rail				$275	$17	3.0	$168	**$460**
				$275	$17	4.0	$224	**$516**
					$0		$0	**$0**
R33 - Downspout					$0		$0	**$0**
Install downspout extension				$35	$2	4.0	$224	**$261**
					$0		$0	**$0**
					$0		$0	**$0**
R34 - Replace posts					$0		$0	**$0**
Shore up structure				$135	$8	4.0	$224	**$367**
Anchor post bases to asphalt				$100	$6	2.0	$112	**$218**
Replace posts	3			$135	$8	6.0	$336	**$479**
Misc.				$15	$1	2.0	$112	**$128**
				$385	$23	14.0	$784	**$1,192**
					$0		$0	**$0**
					$0		$0	**$0**

CARPENTRY

LABOR RATE: **$56**

TASK	QT.	UNIT	UNIT $	MAT.	TAX	LAB HR	LAB $	TOTAL
R35 - Post footings					$0		$0	**$0**
Cut out asphalt				$10	$1	2.0	$112	**$123**
Dig post holes				$0	$0	2.0	$112	**$112**
Pour footing & sonotube pier				$100	$6	4.0	$224	**$330**
Misc.				$25	$2	2.0	$112	**$139**
				$135	$8	10.0	$560	**$703**
					$0		$0	**$0**
SOUTH ELEVATION					$0		$0	**$0**
R37 - Cedar shingle repair					$0		$0	**$0**
Replace lower 2 courses	88	SF		$220	$13	22.0	$1,232	**$1,465**
Replace some diamond shingles - 25% of 132 SF	33	Ea.		$198	$12	11.0	$616	**$826**
Lift equipment				$745	$45	0.0	$0	**$790**
				$1,163	$70	33.0	$1,848	**$3,081**
					$0		$0	**$0**
WEST ELEVATION					$0		$0	**$0**
R65 - Replace iron decore					$0		$0	**$0**
Replace iron decore	2			$300	$18	8.0	$448	**$766**
Lift equipment				$397	$24	0.0	$0	**$421**
Misc.				$50	$3	4.0	$224	**$277**
				$747	$45	12.0	$672	**$1,464**
INTERIOR								
BASEMENT					$0		$0	**$0**
R71 - Plumbing leak					$0		$0	**$0**
Correct leak				$0	$0	3.5	$196	**$196**
R73 - Window screens					$0		$0	**$0**
Provide new fixed screen windows	2			$200	$12	4.0	$224	**$436**
					$0		$0	**$0**
					$0		$0	**$0**

CARPENTRY

LABOR RATE: **$56**

TASK	QT.	UNIT	UNIT $	MAT.	TAX	LAB HR	LAB $	TOTAL
R74 - Clean debris					$0		$0	**$0**
Clean debris from window wells				$0	$0	1.0	$56	**$56**
					$0		$0	**$0**
					$0		$0	**$0**
1 FL. STRUCTURE CENTER					$0		$0	**$0**
R81 - Beam bearing					$0		$0	**$0**
Poor concrete pier for new support post				$25	$2	4.0	$224	**$251**
Install 6X6 Post				$50	$3	2.0	$112	**$165**
				$75	$5	6.0	$336	**$416**
					$0		$0	**$0**
R82 - Sister floor joists					$0		$0	**$0**
Sister compromised floor joists	8			$200	$12	24.0	$1,344	**$1,556**
					$0		$0	**$0**
					$0		$0	**$0**
R83 - Stabalize joints					$0		$0	**$0**
Install joist hangers at joists adjacent to stair				$25	$2	2.0	$112	**$139**
					$0		$0	**$0**
					$0		$0	**$0**
R84 - Reinforce beam					$0		$0	**$0**
Reinforce header beams at stair				$75	$5	8.0	$448	**$528**
					$0		$0	**$0**
					$0		$0	**$0**
1 FL. STRUCTURE EAST					$0		$0	**$0**
					$0		$0	**$0**
					$0		$0	**$0**
R85 - Support beam					$0		$0	**$0**
Pour footings for support posts	2			$50	$3	8.0	$448	**$501**
Install support posts				$100	$6	4.0	$224	**$330**
				$150	$9	12.0	$672	**$831**
					$0		$0	**$0**
R86 - Sister joists					$0		$0	**$0**
Sister unsupported floor joists	3			$75	$5	9.0	$504	**$584**
					$0		$0	**$0**

CARPENTRY

LABOR RATE: **$56**

TASK	QT.	UNIT	UNIT $	MAT.	TAX	LAB HR	LAB $	TOTAL
					$0		$0	**$0**
FIRST FLOOR STRUCTURAL WEST					$0		$0	**$0**
R87 - Reinforce beam					$0		$0	**$0**
Sister new 4X6 beam along sid existing				$100	$6	8.0	$448	**$554**
Footings for support posts	3			$75	$5	12.0	$672	**$752**
				$175	$11	20.0	$1,120	**$1,306**
					$0		$0	**$0**
1 FL. ORIGINAL HOUSE					$0		$0	**$0**
R88 - Reinforce structure					$0		$0	**$0**
Reinforce partion walls from below				$300	$18	32.0	$1,792	**$2,110**
					$0		$0	**$0**
R89 - Remove finishes					$0		$0	**$0**
Demo perimeter wall to expose brick - 145 LF	1450	SF		$50	$3	48.0	$2,688	**$2,741**
Demo all acoustic ceilings	1200	SF		$10	$1	12.0	$672	**$683**
Remove & salvage all base moulding				$10	$1	10.0	$560	**$571**
Remove & salvage door trim	8			$10	$1	10.0	$560	**$571**
Remove & salvage window trim	9			$10	$1	14.0	$784	**$795**
Misc.				$25	$2	8.0	$448	**$475**
				$115	$7	102.0	$5,712	**$5,834**
					$0		$0	**$0**
R94 - Level floors					$0		$0	**$0**
Attempt to level floors as far as possible				$500	$30	80.0	$4,480	**$5,010**
					$0		$0	**$0**
1 FL. JAIL					$0		$0	**$0**
R95 - Remove finishes					$0		$0	**$0**
Demo perimeter wall to expose brick - 80 LF	640	SF		$25	$2	24.0	$1,344	**$1,371**
Demo all acoustic ceilings	335	SF		$5	$0	4.0	$224	**$229**
Remove & salvage all base moulding				$5	$0	4.0	$224	**$229**
Remove & salvage door trim	1			$0	$0	1.5	$84	**$84**
Remove & salvage window trim	4			$5	$0	6.5	$364	**$369**
Deal with jail cell construction	3			$25	$2	8.0	$448	**$475**
Misc.				$15	$1	4.0	$224	**$240**
				$80	$5	52.0	$2,912	**$2,997**

CARPENTRY

LABOR RATE: **$56**

TASK	QT.	UNIT	UNIT $	MAT.	TAX	LAB HR	LAB $	TOTAL
					$0		$0	**$0**
2 FL. ORIGINAL HOUSE					$0		$0	**$0**
R102 - Expose lintel					$0		$0	**$0**
Expose north hallway window lintel and assess condition.				$0	$0	2.0	$112	**$112**
					$0		$0	**$0**
					$0		$0	**$0**
R104 - Reinforce floor structure					$0		$0	**$0**
Demo entire first floor plaster ceiling	1100	SF		$50	$3	48.0	$2,688	**$2,741**
Assess floor slopes and solutions				$0	$0	8.0	$448	**$448**
Jack up sagging areas and sister floor joists as required.				$200	$12	32.0	$1,792	**$2,004**
Misc.				$75	$5	8.0	$448	**$528**
				$325	$20	96.0	$5,376	**$5,721**
					$0		$0	**$0**
R105 - Support stair opening					$0		$0	**$0**
Reinforce stair opening framing				$35	$2	10.0	$560	**$597**
					$0		$0	**$0**
					$0		$0	**$0**
ATTIC CENTER					$0		$0	**$0**
R106 - Reinforce rafter					$0		$0	**$0**
Sister new rafter at chimney split rafter				$15	$1	3.0	$168	**$184**
					$0		$0	**$0**
					$0		$0	**$0**
R107 - Reinforce rafters					$0		$0	**$0**
Double up rafters on all sides of chimney penetrations	4			$100	$6	12.0	$672	**$778**
					$0		$0	**$0**
					$0		$0	**$0**
ATTIC EAST					$0		$0	**$0**
R110 - Repair rafter					$0		$0	**$0**
Reinforce splitting hip ridge rafters	2			$100	$6	16.0	$896	**$1,002**
Jack up from below				$25	$2	4.0	$224	**$251**
Misc.				$50	$3	4.0	$224	**$277**
				$175	$11	24.0	$1,344	**$1,530**
					$0		$0	**$0**

CARPENTRY

LABOR RATE: **$56**

TASK	QT.	UNIT	UNIT $	MAT.	TAX	LAB HR	LAB $	TOTAL
R112 - Repair rafters					$0		$0	**$0**
Repair all deteriorated rafters, etc.				$150	$9	16.0	$896	**$1,055**
					$0		$0	**$0**
					$0		$0	**$0**
ATTIC WEST					$0		$0	**$0**
R113 - Rafter repair					$0		$0	**$0**
Reinforce splitting hip ridge rafters	2			$100	$6	16.0	$896	**$1,002**
Jack up from below				$25	$2	4.0	$224	**$251**
Misc.				$50	$3	4.0	$224	**$277**
				$175	$11	24.0	$1,344	**$1,530**
					$0		$0	**$0**
R114 - Rafter bearing					$0		$0	**$0**
Install ledger board under rafters				$35	$2	4.0	$224	**$261**
Secure rafters to prevent further withdrawl from their wall bearing pocket				$150	$9	12.0	$672	**$831**
Misc.				$50	$3	4.0	$224	**$277**
				$235	$14	20.0	$1,120	**$1,369**
					$0		$0	**$0**
R115 - Rafter repairs					$0		$0	**$0**
Repair all deteriorated rafters, etc. - 15'-6" X 40' - 6"				$150	$9	18.0	$1,008	**$1,167**
					$0		$0	**$0**
					$0		$0	**$0**
R116 - Reinforce mansard roof members					$0		$0	**$0**
Repair or replace all deteriorated roof members				$400	$24	68.0	$3,808	**$4,232**
					$0		$0	**$0**
					$0		$0	**$0**
R117 - Weather seal mansard attic					$0		$0	**$0**
Correct all gaps open to the weather				$200	$12	28.0	$1,568	**$1,780**
					$0		$0	**$0**
					$0		$0	**$0**
R118 - Repair mansard posts & beams				$200	$12	36.0	$2,016	**$2,228**
					$0		$0	**$0**
					$0		$0	**$0**
					$0		$0	**$0**

CARPENTRY

LABOR RATE: **$56**

TASK	QT.	UNIT	UNIT $	MAT.	TAX	LAB HR	LAB $	TOTAL
R119 - Reinforce mansard ledger					$0		$0	**$0**
Install more anchor bolts into brick wall at ledger				$200	$12	16.0	$896	**$1,108**
					$0		$0	**$0**
					$0		$0	**$0**
ROOF 1949					$0		$0	**$0**
R120 - Seal roof gaps					$0		$0	**$0**
Seal all gaps open to the weathere				$35	$2	8.0	$448	**$485**
					$0		$0	**$0**
					$0		$0	**$0**
					$0		$0	**$0**
					$0		$0	**$0**
GARAGE					$0		$0	**$0**
					$0		$0	**$0**
EXTERIOR					$0		$0	**$0**
					$0		$0	**$0**
EAST ELEVATION					$0		$0	**$0**
R134 - Remove vegetation					$0		$0	**$0**
Remove vegetation from walls & gutters				$0	$0	3.0	$168	**$168**
					$0		$0	**$0**
					$0		$0	**$0**
R136 - Gutters					$0		$0	**$0**
Replace gutters and down spouts				$200	$12	10.0	$560	**$772**
					$0		$0	**$0**
					$0		$0	**$0**
SOUTH ELEVATION					$0		$0	**$0**
R139 - Vegetation					$0		$0	**$0**
Remove vegetation				$0	$0	3.0	$168	**$168**
					$0		$0	**$0**
					$0		$0	**$0**

ESTIMATE # :
ESTIMATE NAME :
DATE :

ROOFING

LABOR RATE:

TASK	QT.	UNIT	UNIT $	MAT.	LAB HR	LAB $	TOTAL
EXTERIOR							
EAST ELEVATION							
R22 - Roofing							
Asphalt shingle roofing	1045	SF					**$5,225**
INTERIOR							
ATTIC - CENTER							
R108 - Fix leaks							
Install new flashing at chimneys	4						**$900**
ATTIC - EAST							
R111 - Repair leaks							
Find and repair roof leaks							**$150**
GARAGE							
EXTERIOR							
SOUTH ELEVATION							
R137 - Inspect roof							
Inspect flashing and coping for leaks - Make recommendations							**$200**

ESTIMATE # :
ESTIMATE NAME :
DATE :

PLASTER

LABOR RATE:

TASK	QT.	UNIT	UNIT $	MAT.	LAB HR	LAB $	TOTAL
INTERIOR							
1 FL. 1949 ADDITION							
R100 - Crack repair							
Repair cracks in drywall							**$400**
2 FL. HOUSE							
R103 - Plaster crack repair							
Repair all cracked and damaged plaster at all walls & ceilings.							**$4,500**

ESTIMATE # :
ESTIMATE NAME :
DATE :

PAINTING

LABOR RATE:

TASK	QT.	UNIT	UNIT $	MAT.	LAB HR	LAB $	TOTAL
EXTERIOR							
NORTH ELEVATION							
R1 - Repair wood frieze							
Paint repaired areas	2						**$150**
R2 - Support windows							
Paint iron grills	2						**$100**
R3 - Tuck point							
Paint area							**$50**
R4 - Brick replacement							
Paint area							**$50**
R6 - Tuckpoint							
Paint area							**$50**
R9 - Tuckpoint							
Paint area							**$75**

PAINTING

LABOR RATE:

TASK	QT.	UNIT	UNIT $	MAT.	LAB HR	LAB $	TOTAL
R10 - Replace brick							
Paint area							**$75**
R11 - Column repair							
Paint columns	4						**$500**
R12 - Repair porch slab							
Paint slab	295	SF					**$400**
Paint stair							**$100**
							$500
EAST ELEVATION							
R15 - Tuckpoint							
Paint area	40	SF					**$160**
R18 - Tuckpoint							
Paint area	25	SF					**$100**
R22 - Cedar roof shingles							
Paint all cedar shingles	195	SF					**$585**
R23 - Replace iron orniment							
Paint new iron decore	1						**$35**

PAINTING

LABOR RATE:

TASK	QT.	UNIT	UNIT $	MAT.	LAB HR	LAB $	TOTAL
R25 - Paint roof structure							
Paint roof structure							**$100**
R26 - Guard rail							
Paint new guard rail							**$150**
R28 - Paint wall							
Scrape loose paint at joints							**$75**
Paint Entire wall - 1 coat	245	SF					**$365**
							$440
R30 - Replace brick							
Total paint removal	135	SF					**$2,025**
Paint entire wall - 2 coat	180	SF					**$540**
							$2,565
SOUTH ELEVATION							
R37 - Shingle replacement							
Paint all cedar shingles	220	SF					**$660**
R39 - Paint wall							
Scrape paint							**$100**
Paint wall	480	SF					**$720**
							$820

PAINTING

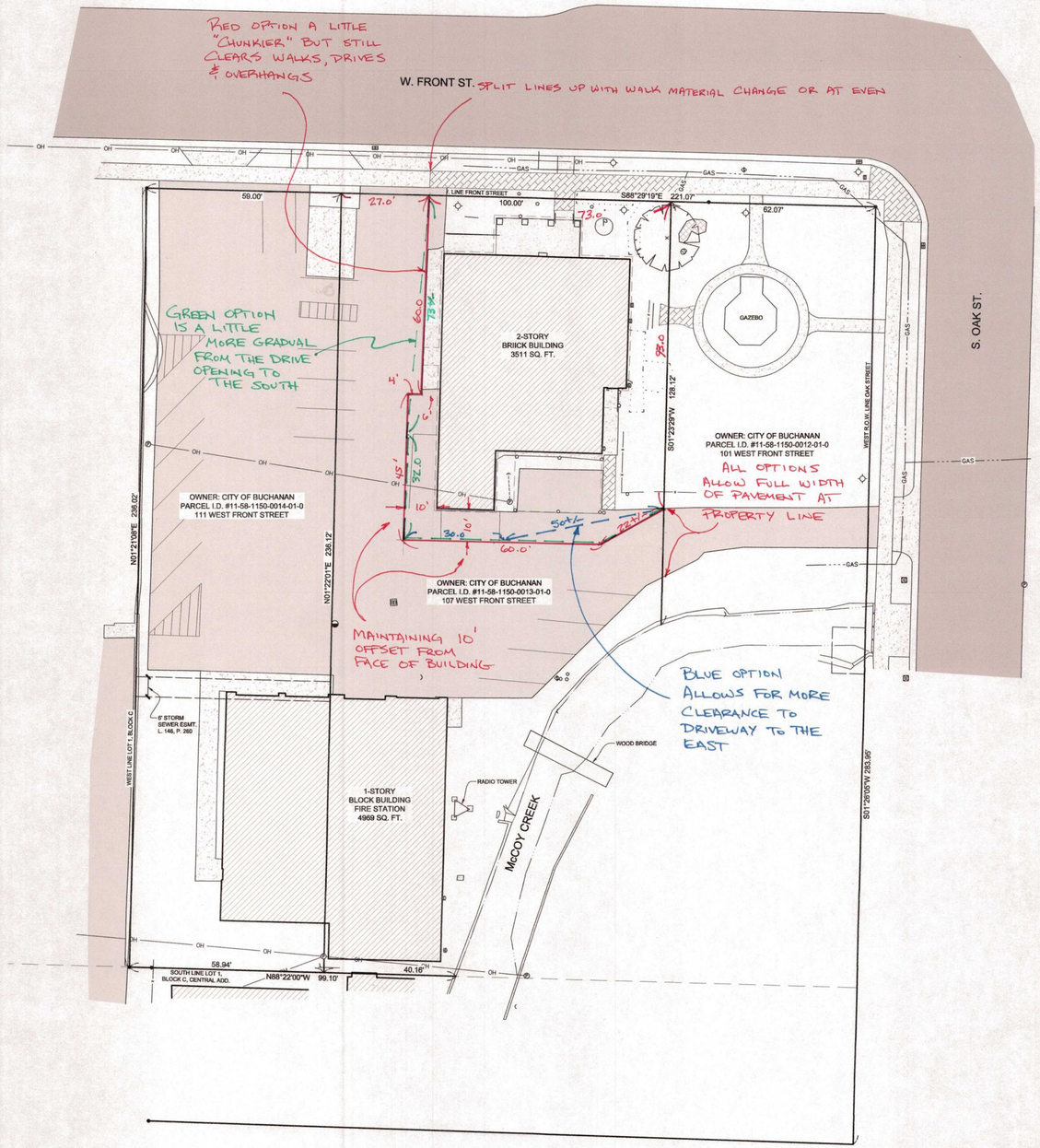
LABOR RATE:

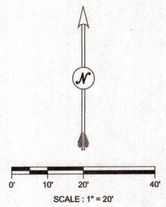
TASK	QT.	UNIT	UNIT $	MAT.	LAB HR	LAB $	TOTAL
R41 - Paint wall							
Total paint removal	130	SF					**$1,950**
Paint entire wall	175	SF					**$525**
							$2,475
WEST ELEVATION							
R46 - Paint wall							
Total paint removal on entire wall	265	SF					**$3,975**
Paint entire wall	350	SF					**$1,050**
							$5,025
R54 - Paint wall							
Included in R46							**$0**
R59 - Paint wall							
Total paint removal on entire wall	315	SF					**$4,725**
Paint wall							**$1,395**
							$6,120
R65 - Replace iron decore							
Paint iron decore	2						**$70**
INTERIOR							
NO WORK							

PAINTING

LABOR RATE:

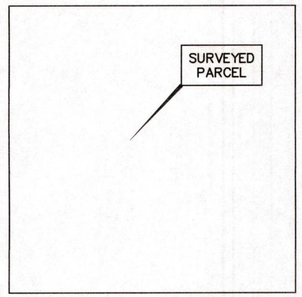
TASK	QT.	UNIT	UNIT $	MAT.	LAB HR	LAB $	TOTAL
GARAGE							
EXTERIOR							
WEST ELEVATION							
R141 - Paint lintel							
	3						**$150**





LEGEND

- DECIDUOUS TREE
- ROCK
- FLAG POLE
- IRRIGATION CONTROL BOX
- SIGN
- CATCH BASIN - RECTANGULAR FRAME
- CATCH BASIN - ROUND FRAME
- CULVERT
- LIGHT POLE
- UTILITY POLE
- GUY ANCHOR
- GAS METER
- MARKER - GAS
- POST
- MAILBOX
- FOUND IRON
- HANDICAP PARKING SPACE
- VEGETATION LINE
- FENCELINE
- GAS MAIN
- BUILDING OVERHEAD
- EDGE OF WATER
- ASPHALT
- CONCRETE
- BUILDING
- GRAVEL
- BRICK WALK
- LANDSCAPING



VICINITY MAP

SCALE : NONE

PRELIMINARY

NO.	REVISIONS	BY	DATE

Drawn By : S.J.V./C.A.K.
Checked By : X.X.X.
Date : 05/30/2023
Project No. 2230309
Sheet 1 OF 1

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TENTATIVE PARCEL MAP
FOR
107 W. FRONT ST.
SECTION 35 T. 8 S., R. 18 W.
CITY OF BUCHANAN, BERRIEN COUNTY, MICHIGAN