



Structural Assessment Report:
Key West Historic Diesel Plant

Property Address:
**100 Angela St & 709 Fort St & 101 Geraldine St
Key West, FL 33040**



Serge Mashtakov, PE, FL License No. 71480

Date

This item has been digitally signed and sealed by Serge Mashtakov, P.E. on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.



Figure 1: Location Map (Google Earth, Imagery Date: 2018)

Introduction

Purpose of Assessment

Artibus Design, LLC was contracted by the City of Key West (City) to complete a structural assessment of the existing building. The intent of this assessment is to determine the feasibility of repairing the structure for re-occupancy. This report intends to:

1. Determine the existing condition of the structure
 - a. Identify structural members in need of repair
 - b. Identify items required to "dry-in" the structure
2. Provide an opinion of probable cost

Excluded Repairs

The assessment is related to the building shell (structural members) & envelope (exterior surfaces that protect the building from the elements). The following items are excluded from this report; the requirements of these items will be determined based on the future occupants' needs. It is expected that the future tenant will be responsible for interior build-out and utilities, including:

1. Interior finishes and features, as required by occupancy
2. Electrical service, as required by occupancy
3. Water service, as required by occupancy
4. Sewer service, as required by occupancy
5. Data service, as required by occupancy
6. HVAC, as required by occupancy
7. Fire suppression, as required by occupancy
8. Life safety features, as required by occupancy

PAGE 2 OF 24

Scope of Assessment and Observations

This assessment is based on visual observations of readily accessible structural elements. Site observations were made by Serge Mashtakov P.E. and Justin Henika P.E., between March 2025 – May of 2025. It should be noted that no exploratory demolition, excavation, or in-situ testing was performed. This assessment is related to the structural members only. This assessment is intended for use by the City of Key West (City) and may not be relied upon, used by, or referenced by any third party.

Description of the Structure

General

Original construction is reported circa 1900, with modifications and additions over the following decades. This assessment focusses on the current condition of the structure. It is recommended that the City complete thorough historic research when determining future actions.

This assessment references the building sections as shown below. It is expected that section A is the oldest of the remaining three sections. Sections B & C are later additions, with section C being the latest constructed. This is notable because the building materials used in each section (i.e. brick and grout) may differ in physical properties. It is important that any replacement brick and mortar match the existing properties (stiffness, permeability, & aesthetics) of the section in which it is used.

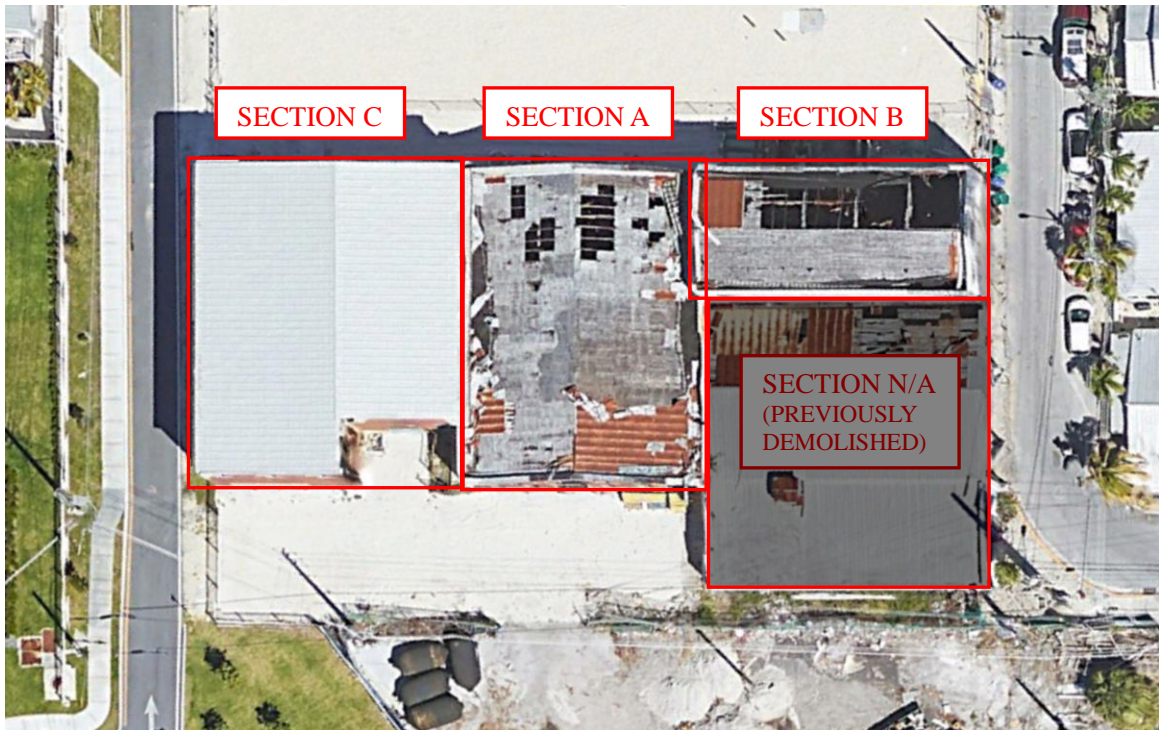


Figure 2: Site Map (Google Earth Imagery, Date: 2018)



Section A: General Construction of Current Conditions

Foundation: Unknown

Walls: Brick and mortar

Roof: Wood framing supported on interior steel columns & beams

Section B: General Construction of Current Conditions

Foundation: Unknown

Walls (bottom half): Brick and mortar

Walls (Top half): Cast in place concrete, with minimal reinforcing bar

Roof: Timber girder trusses with secondary wood framing

Section C: General Construction of Current Conditions

Foundation: Concrete footing

Walls: Brick and mortar

Roof: Wood trusses supported on interior steel columns & beams (note: this replaced the previous concrete roof in 2001)

Records

Historic Plans: KEYS Energy Services is the previous owner of the property and has hard copies of some historic plans. It is highly recommended that the City work with KEYS Energy Services to obtain all available historic plans and make digital copies.

History: KEYS Energy Services published a document "KEYS ENERGY SERVICES, Powering Paradise for 75 Years, 1943-2018." This document provides some history of the structure and the electric industry in Key West. Additionally, it provides references to other documents that may be beneficial for historic research.

Findings & Discussion

Below is a general discussion of damage observed and recommended repairs. Please see **APPENDIX A** for detailed information and photos.

Hazardous Materials

It is expected that the existing property contains hazardous materials, considering its age. This hazardous material may include lead paint, asbestos, and contaminated soils.

Prior to initiating work, it is recommended that an environmental and hazardous material assessment be completed. Hazardous material abatement should be completed, as required.

Foundations & Settlement

No significant evidence of foundation damage or settlement was observed.

Interior Concrete Floor Slabs

No significant damage was observed. However, large portions of the floor slab were not observed due to debris and equipment. It is expected that portions of these slabs will require demolition during the initial construction (e.g. to repair



steel column bases). Additionally, it is expected that the future build-out will require partial demolition to route utilities.

It is recommended that floor slabs be repaired to make them safe, where damaged or demolished for construction.

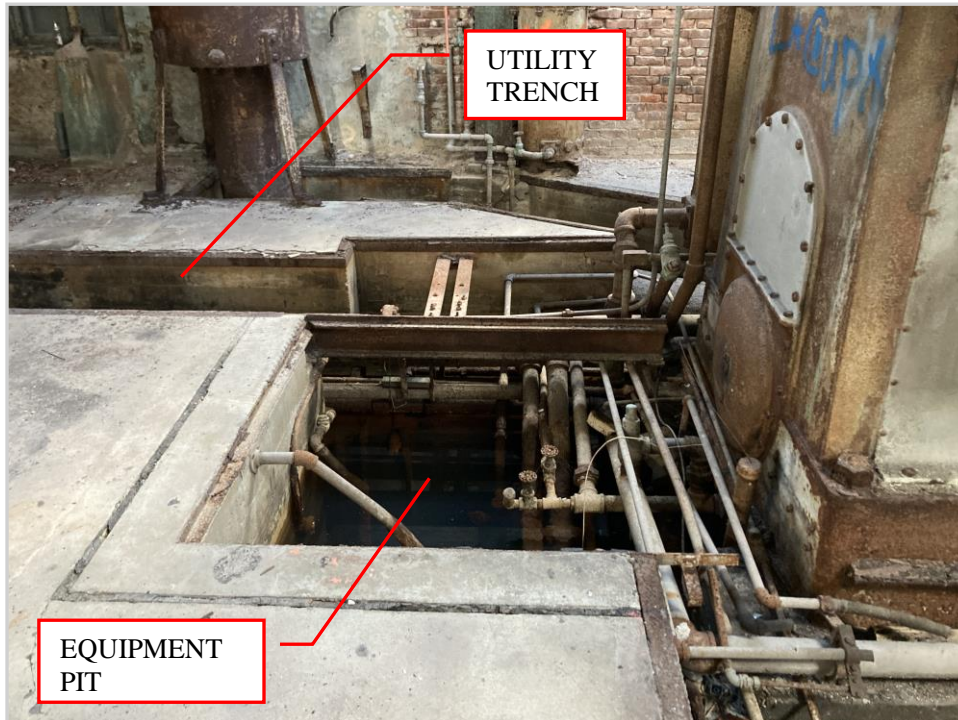
It is notable that the existing slabs are unlikely to have a vapor barrier below. These structures were originally intended to be unconditioned. Therefore, the final build-out of the space should consider this when determining floor finishes.

Equipment Pits

Throughout the structure there are many floor pits (and trenches), used for previous or existing equipment. These pits need to be made safe; however, their existence could benefit future build-out (utility installation). Therefore, temporary infilling is recommended.

It is recommended that these pits be infilled with temporary wood framing and plywood flooring. Upon final build-out, it is recommended that these pits have their bottoms opened (to not entrap water), filled with earth, and a permanent concrete slab be installed.





Equipment and Machinery

Equipment occupies the majority of the floor area. This includes:

- (4) Generators
- (1) Large air compressor
- (1) Concrete pedestal containing electrical gear

It is our understanding that the City intends to remove some of the equipment to allow room for future use.

It is recommended that the City determine equipment to be removed, before initial repair of the structure. This will allow easier demolition and removal of the equipment. Where equipment is removed, the floor pit should be temporarily infilled, as discussed in this assessment. Equipment selected to stay should be made safe and prepared for display.



Walls: Brick

Nearly all existing walls are constructed of brick and mortar. These walls were observed to be plumb (via a 4' digital level) and no significant evidence of movement was observed. However, the walls evidenced significant and varied deterioration throughout. This deterioration is generally caused by exposure; including exterior elements and the interior industrial environment (during the building's operation). The disrepair of the roofs and windows contributes significantly by allowing rainwater into the structure and into the wall mass.

It is recommended that all brick walls (interior and exterior faces) be re-pointed. Re-pointing is the process of removing the outside layer of deteriorated mortar, from the joints, of a brick wall and replacing it with new mortar. It is critical that this process is completed by skilled craftworkers with ample experience in restoring historic brick buildings. If done properly, re-pointing:

1. Improves the structural integrity of the wall
2. Improves the performance of the building envelope to limit water intrusion, while still allowing water vapor to exit the wall
3. Improves aesthetics

However, if done poorly, re-pointing can cause further damage to structural integrity, building envelope performance, and aesthetics.

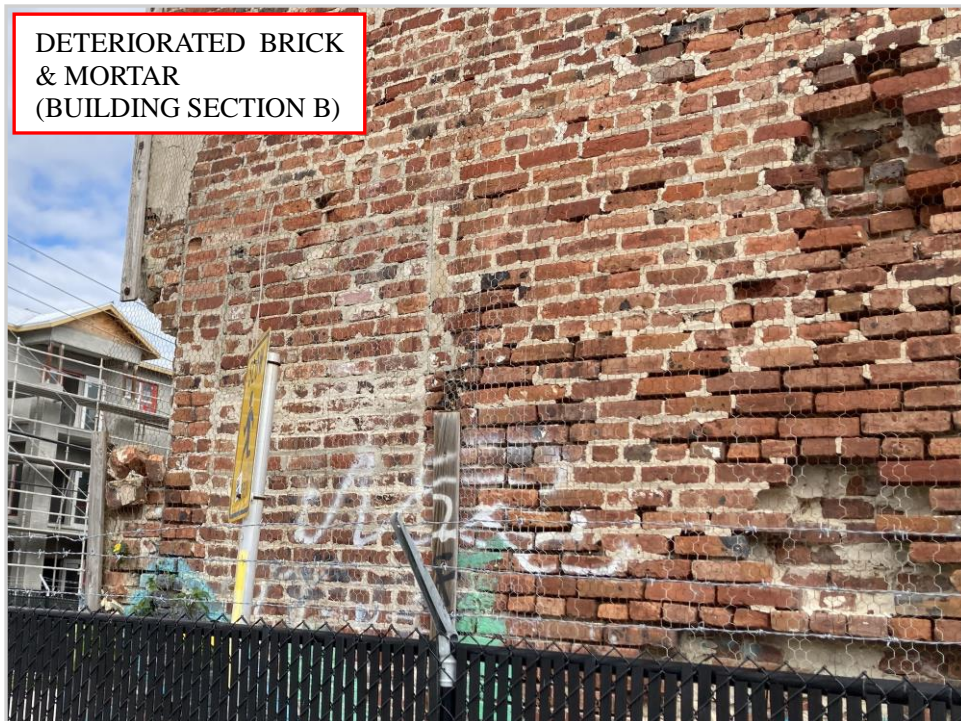
It is also recommended that missing, dislodged, and damaged bricks be reconstructed. It is critical that all brick and mortar used, match the properties of the existing surrounding brick and mortar (stiffness, permeability, & aesthetics). Otherwise, it can cause further damage to structural integrity, building envelope performance, and aesthetics.

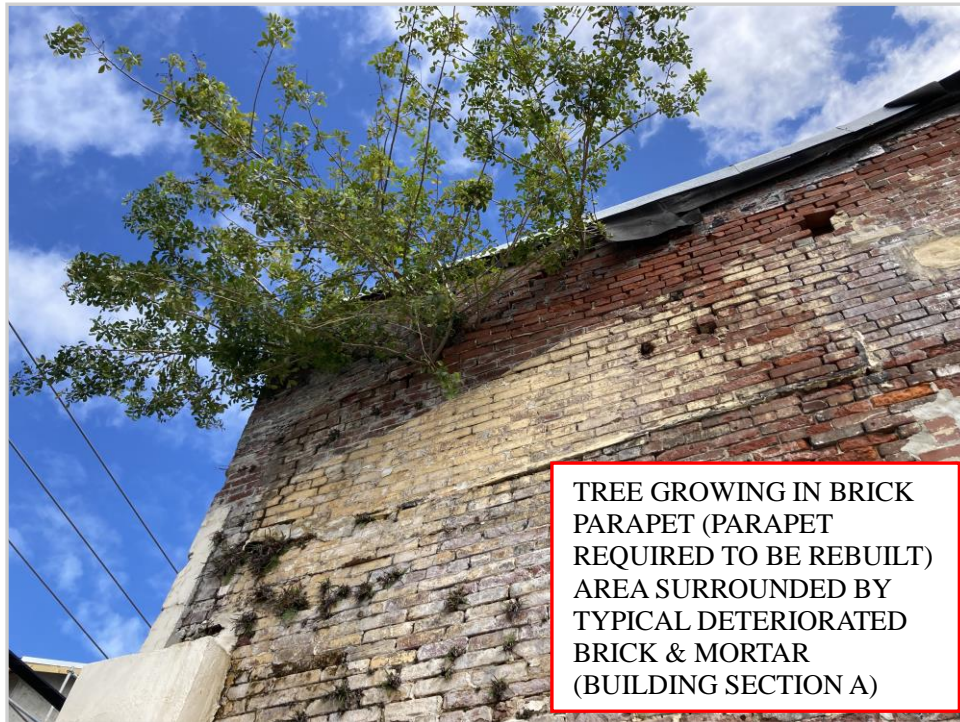


ARTIBUS DESIGN

ENGINEERING AND PLANNING







In addition to general deterioration, there are a number of locations (interior and exterior) where abandoned steel and wood are embedded in the existing walls. These abandoned materials are from earlier structures or equipment. Corroding embedded steel (including structural framing, equipment anchors, and steel window frames) expands in volume and can exert large forces on the surrounding brick; this force has damaged and dislodged the brick. Deteriorated embedded wood has left voids in the wall that exacerbate water intrusion into the wall mass.

It is recommended that all abandoned embedded steel or wood be removed, and brick be replaced or rebuilt, as required.





Walls: Concrete

The upper half of Building Section B and some infilled wall openings are constructed of cast in place concrete, with minimal steel reinforcement bar. This wall did not evidence significant damage; however there are two locations in need of patch repairs.

It is recommended that the existing concrete wall be repaired, with partial section patch repairs.



Exterior Windows

All exterior windows are heavily damaged due to deterioration and possible vandalism. Both wood framed and steel framed windows exist. Steel framed windows are located in concrete walls or accompanied by steel lintels where installed in brick walls. Metal framed windows and steel lintels are significantly corroded and have damaged and dislodged surrounding brick. Wood framed windows are located in brick walls with brick arch headers. These headers are not significantly damaged. Concrete and brick windowsills throughout the structure are significantly damaged.

It is recommended that all windows be replaced with aluminum framed windows, as approved by the Key West Historic Architectural Review Commission (HARC). Aluminum framed windows provide significant performance advantages for wind loads and water intrusion. Furthermore, they are significantly more corrosion resistant than steel and require much less maintenance compared to wood or steel. Additionally, all windowsills shall be replaced to mitigate water intrusion, and steel lintels shall be reconstructed of stainless steel. This work will

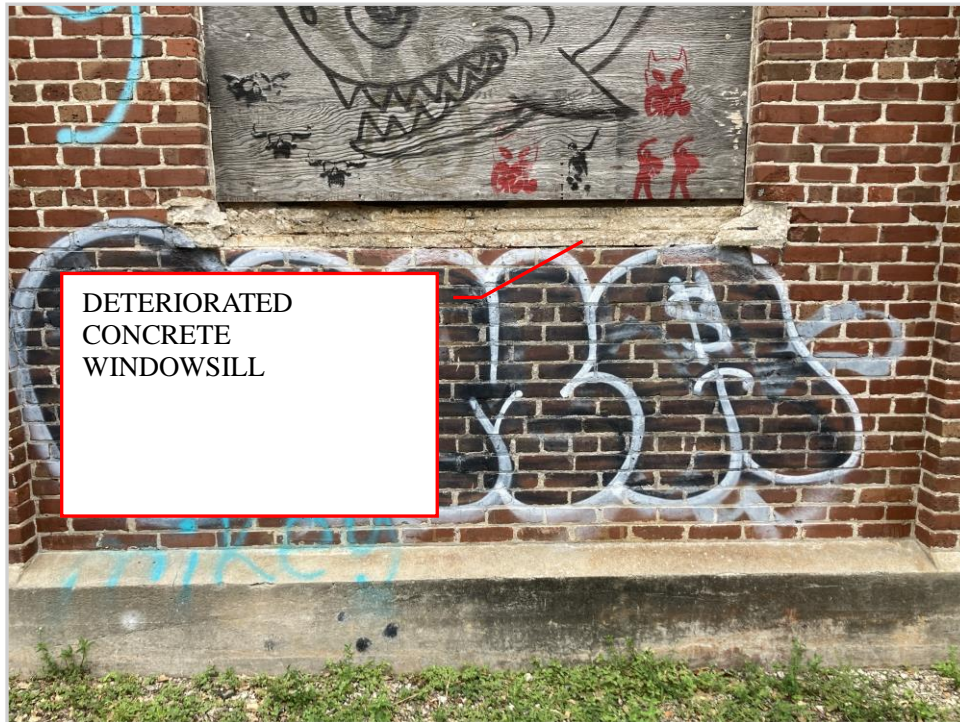


ARTIBUS DESIGN

ENGINEERING AND PLANNING

require reconstruction of surrounding brickwork, where currently deteriorated or where required to be partially demolished.





Exterior Doors

Eight exterior door openings exist in the structure (5 wood barn doors, 1 metal overhead door, and 2 wall openings without doors). All doors are significantly damaged.

It is recommended that all doors be replaced with aluminum-framed doors, as approved by HARC. Aluminum framed doors are recommended for reasons as described for windows. It may be feasible to include decorative wood doors, fixed to adjacent walls, to achieve the desired aesthetics.



Steel Framing

Building sections A,B,&C all include interior steel framing (columns and beams). This framing was intended to support overhead cranes and other equipment; additionally, it supports roof framing in sections A&C. This steel framing also assists in the structural integrity of the buildings, by bracing walls and anchoring walls to the roof diaphragm.

The steel framing was visually observed from the ground; however, close observation of the elevated members was not completed, due to safety concerns. All column bases (near the floor slab) are corroded. Some steel members embedded in brick walls also evidenced corrosion. The remainder of the framing did not appear to be significantly damaged; however, it is expected that some sections of steel (in addition to the column bases) will require repair or replacement.

It is recommended that the existing steel framing be thoroughly observed once shoring is installed and required demolition has occurred. Recommended repairs include:

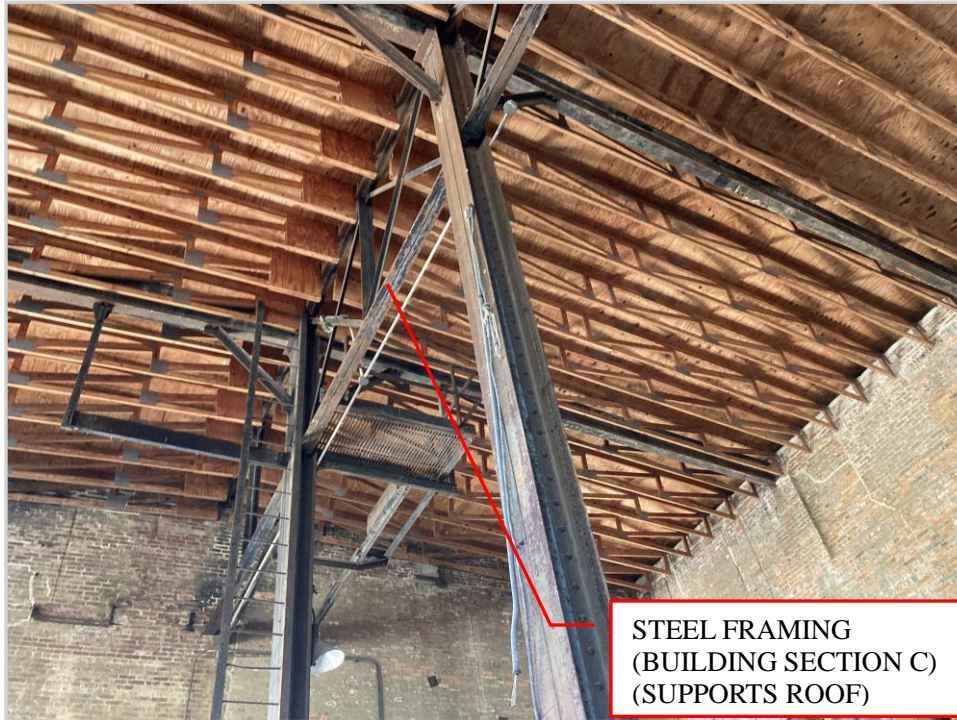
1. Reconstructing column bases ($\pm 1'$ above slab to foundation footing below slab)
2. Reconstructing embeds in walls, where significantly damaged
3. Miscellaneous member repair or replacement, where required
4. Repaint all steel



ARTIBUS DESIGN

ENGINEERING AND PLANNING



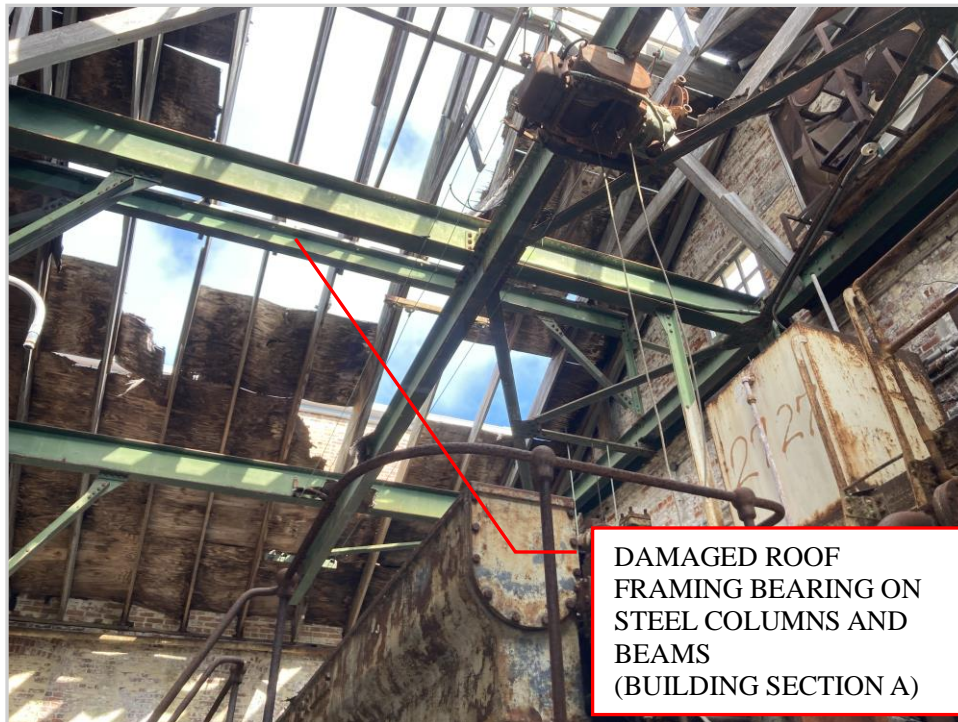




Roof Framing

Building Section A: The existing wood frame roof is significantly damaged throughout this section. This roof framing bears on brick walls and interior steel supports. The interior steel supports appear to be a later modification replacing the original timber girder trusses. Additionally, the existing framing layout includes “dead valleys”, where the roof slopes into adjacent walls and parapets with minimal slope to the existing scuppers. These dead valleys are problematic and often contribute to leaks.

It is recommended that the roof framing in section A be reconstructed in its entirety. New framing should utilize interior steel supports; reverting back to the large timber girder trusses is not practical, due to geometry and current wind loads. Additionally, new framing should include significantly sloped crickets to mitigate the issues related to dead valleys.





ARTIBUS DESIGN

ENGINEERING AND PLANNING

Building Section B: The existing wood frame roof is significantly damaged throughout this section. This roof framing bears on the two exterior walls (cast in place concrete). The framing consists of timber girder trusses spaced at approximately 12' on center, with secondary wood framing between the girder trusses.

It is recommended that the roof framing in section B be reconstructed in its entirety. New framing should match the timber girder truss aesthetic.



Building Section C: The existing wood roof trusses in this area did not evidence significant damage or deterioration. The roof in this section was originally constructed of concrete, supported by exterior walls and interior steel framing. Per 2001 plans provided by KEYS Energy Services, this concrete roof was removed and replaced with the trusses that exist today. It should be noted that the trusses lack any bottom chord bracing; this bracing is critical to resist large wind uplift loads.

It is recommended that this roof framing remain with the following voluntary improvements:

1. Provide bottom chord bracing by wood frame bracing or continuous sheathing (or furring & drywall)
2. Retrofit existing roof-to-wall anchors to meet current wind loads. One anchor strap currently exists; however, an additional strap may be necessary to meet current Florida Building Code loads.



Roofing

Building Section A&B: Existing roofing, flashing, and downspouts are significantly damaged or missing. The inability for the structure to shed water away from the building is causing significant damage to the remainder of the structural elements. Additionally, the layout of the roofs include dead valleys, parapets, and scuppers; these details are problematic and often contribute to leaks.

It is recommended that new metal panel roofing be installed once roof framing is replaced. Additionally, it is critical that flashing, crickets, internal gutters, scuppers, and downspouts be constructed to efficiently remove rainwater and direct it away from the building.

Building Section C: This roofing was replaced along with the roof framing (circa 2001) and does not appear to evidence significant damage. However, no rooftop inspection was completed for this assessment; observations are limited to google earth aerial photographs and observation of the roof deck from below. The roof consists of plywood sheathing, rigid insulations, 5-ply built up roofing, blocking, then a decorative metal V-crimp roof. It should be noted that, the 2001 plans state that the design wind uplift load was -48 psf; current Florida Building Code requires uplift wind pressures (at building corners) approximately three times that value. This discrepancy is because current code requirements recognize that the uplift wind pressures near edges and corners are considerably higher than the remainder of the roof.



It is recommended that this roofing be considered for replacement, if budget allows. Both options (below) require new flashing, gutters, and downspouts.

Roofing to remain:

- Perform roof inspection during building repair to determine if any significant damage is present
- If undamaged, the roofing can remain per Florida Building Code – Existing Building

Roof to be replaced:

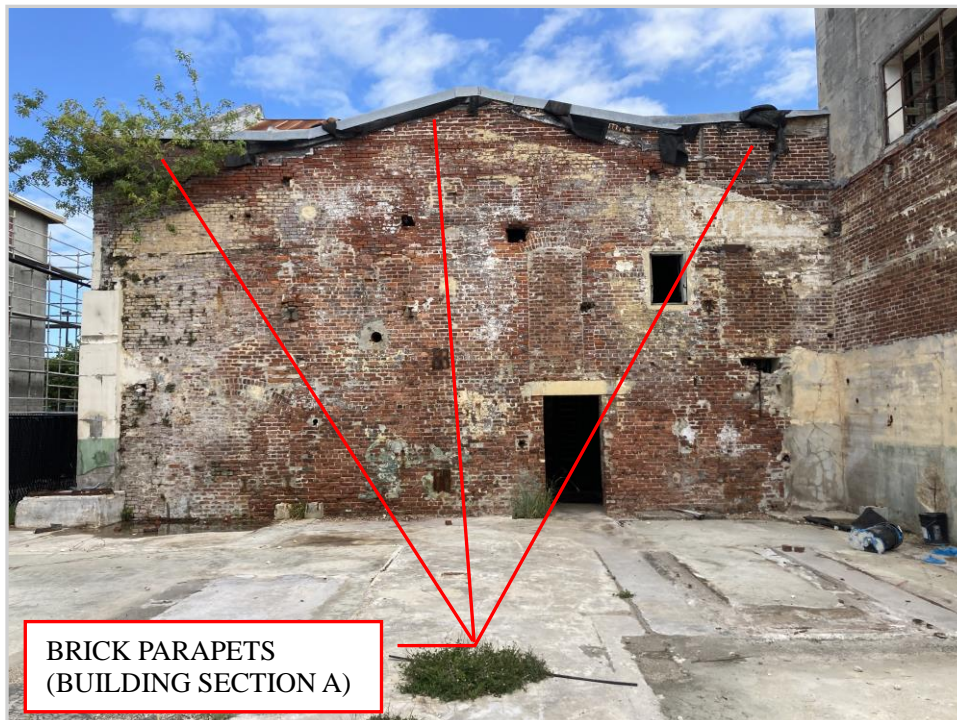
Although the roof may remain per the Florida Building Code – Existing Building, the City may proactively choose to replace.

- The existing roof is functional; however, it is less capable of resisting hurricane wind loads, compared to a new roof
- The existing roof is approximately 24 years old, more than half of its estimated lifespan (approx. 40 years, considering the environment)
- Replacing the roof would provide consistent roofing throughout

Brick Parapets

Building Section A contains parapets that are constructed of unreinforced brick. These parapets may be susceptible to failure during high wind loads.

It is recommended that the wind loads on these parapets be analyzed during design, to determine if bracing is required. Bracing can anchor parapets to the roof diaphragm or adjacent walls. Additionally, the design of the roof crickets may be detailed to brace the parapets.





Conclusion

General

The existing structure is in disrepair and considered unsafe for occupancy in its current state. However, it is considered repairable and can be reoccupied upon extensive repairs. The building's service life may be prolonged significantly, if properly repaired and thoroughly maintained. However, it should be noted that proper maintenance will include significant ongoing costs and periodic interruptions to use. All repairs must be completed in accordance with the Florida Building Code-Existing Building and engineered plans.

Nearly all damage is due to deterioration from exposure. The lack of roofs and functioning building envelope has increased the rate of deterioration. If left as is, the rate of deterioration will continue to increase, requiring more extensive repairs and/or leading to further structural failure and potential collapse.

Of the repairs noted, rehabilitating the brick and mortar walls is the most delicate. Therefore, sourcing the skilled labor, as well as the proper brick and mortar is critical to the success of the repair. Brick and mortar must match the physical properties (stiffness, permeability, & aesthetics) of each building section it is used in; otherwise, further damage can result.

Historic Exception of the Florida Building Code Flood Requirements

It is understood that this structure is considered historic and will continue to be a historic building after the proposed work is completed. Therefore, the building is exempt from Florida Building Code flood elevation requirements. This allows the structure to be repaired at its current floor elevation. Additionally, flood proofing the structure to any significant flood depth would be difficult and cost prohibitive.

Non-Substantial Structural Damage or Alteration

Per Florida Building Code – Existing Building, Section 202 General Definitions: The current structure is **not** considered to meet the definition of "Substantial Structural Damage" or "Substantial Structural Alteration". Therefore, the existing brick and concrete walls are permitted to be restored to their pre-damaged condition.

Limitations of the Repaired Structure to Resist Hurricane Forces

As discussed above, all repairs shall meet requirements of the Florida Building Code-Existing Building. These repairs will result in a structure that is safe for occupancy, with substantial resistance to high wind loads. However, these repairs **do not** result in a "hurricane proof" building, nor do they result in a building matching the hurricane resistance of a new structure.



ARTIBUS DESIGN

ENGINEERING AND PLANNING

OPINION OF PROBABLE COST: STABILIZE & DRY IN STRUCTURE

Work Description	Approx. Qty	Units	Cost
<u>Repair Preparation</u>			
Shoring	1	Lump Sum	\$ 150,000
Environmental Report	1	Lump Sum	\$ 25,000
Lead Abatement	1	Lump Sum	\$ 150,000
Asbestos Abatement	1	Lump Sum	\$ 75,000
Remove Roof and Roof Framing to be Rebuilt	5440	SF	\$ 54,000
Remove Unwanted Machinery, Equipment, and Debris	1	Lump Sum	\$ 200,000
Remove Deteriorated Concrete Pedestal	1	Lump Sum	\$ 25,000
Remove Deteriorated Parging (Interior)	4500	SF	\$ 27,000
Remove Abandoned Steel Embedded in Walls	1	Lump Sum	\$ 75,000
Demolition Disposal & Temporary Facilities	1	Lump Sum	\$ 100,000
<u>REPAIR - Slab & Equipment to Remain</u>			
Infill Floor Pits (Temporary Wood Frame and Plywood)	1	Lump Sum	\$ 25,000
Clean and Prepare Machinery & Equipment for Display	1	Lump Sum	\$ 40,000
<u>REPAIR - Existing Steel Framing</u>			
Steel Framing Repair	1	Lump Sum	\$ 350,000
<u>REPAIR - Exterior Walls</u>			
Repoint Brick Walls (Interior & Exterior Faces)	18992	SF (80% of brick surface)	\$ 1,614,000
Replace Brick in Walls (Interior & Exterior Faces)	2374	SF (10% of brick surface)	\$ 415,000
Concrete Wall Repair	20	SF	\$ 10,000
Replace Doors	480	SF	\$ 144,000
Replace Windows	1400	SF	\$ 420,000
Reconstruct Steel Lintels (w/ Stainless)	9	Locations	\$ 135,000
Reconstruct Steel Box Headers	2	Locations	\$ 100,000
Replace Concrete Window Sills	34	Locations	\$ 102,000
New Metal Clad Cast in Place Wall (see Appendix A)	325	SF	\$ 41,000
<u>REPAIR - Roofs</u>			
Section A: New Roof Framing, Roofing, and Insulation	3840	SF	\$ 384,000
Section B: New Roof Framing, Roofing, and Insulation	1780	SF	\$ 178,000
Section C: Brace Bottom Chord & Retrofit Anchors of Existing Roof Trusses	3660	SF	\$ 22,000
Section C: New Roofing and Insulation (OPTIONAL)	3660	SF	\$ 92,000
Section A: Brace Parapets	1	Lump Sum	\$ 50,000
New Copper Flashing, Gutters, and Downspouts (Throughout)	1	Lump Sum	\$ 50,000
SUBTOTAL			\$ 5,053,000
<u>ADDITIONAL</u>			
Design and Engineering	5%	Percent of Subtotal	\$ 252,650
Engineering Bid Phase and Construction Phase	5%	Percent of Subtotal	\$ 252,650
Mobilization & Demobilization	10%	Percent of Subtotal	\$ 505,300
Interior Build-Out, Electrical, Water, Sewer, Fire, & HVAC	N/A		N/A
NOT INCLUDED (Occupant to Determine Needs)			
TOTAL			\$ 6,063,600
Additional Contingency (20% Percent of Subtotal)			\$ 1,010,600



Recommendations

If the City intends to maintain and utilize the structure, it is recommended that repairs be completed as soon as practical. The structure in its current state is unsafe for occupants. If left as is, the structure's rate of deterioration will increase; leading to an unstable building that would pose a safety concern to surrounding properties. If the City determines that the building will not be repaired, the structure should be considered for demolition to remove the potential hazard.

It is recommended that work on the structure start within 2 years of this report; otherwise, a re-evaluation of the structure should be conducted. The City should continue to monitor the structure while planning for further action. Additionally, observations should be conducted following any "High Wind Warning" events (defined as 1-minute average surface winds of 40 mph or greater lasting for 1 hour or longer, or winds gusting to 58 mph or greater regardless of the duration). The structure should be re-evaluated if changes to the structure are observed (including falling bricks, further roof collapse, or leaning walls).

Where repair of the entire existing structure is cost prohibitive, the City may consider partial rehabilitation. Pending HARC approval, one or two of the building sections may be rehabilitated, along with demolition of the remaining section(s). Additionally, brick wall rehabilitation is the costliest repair; therefore, the city may consider parging the interior faces of brick walls, as an alternative to repointing the interior wall surfaces. Parging is a process similar to stuccoing. This process is less labor intensive than re-pointing and can provide similar rehabilitation of the wall's structural integrity.

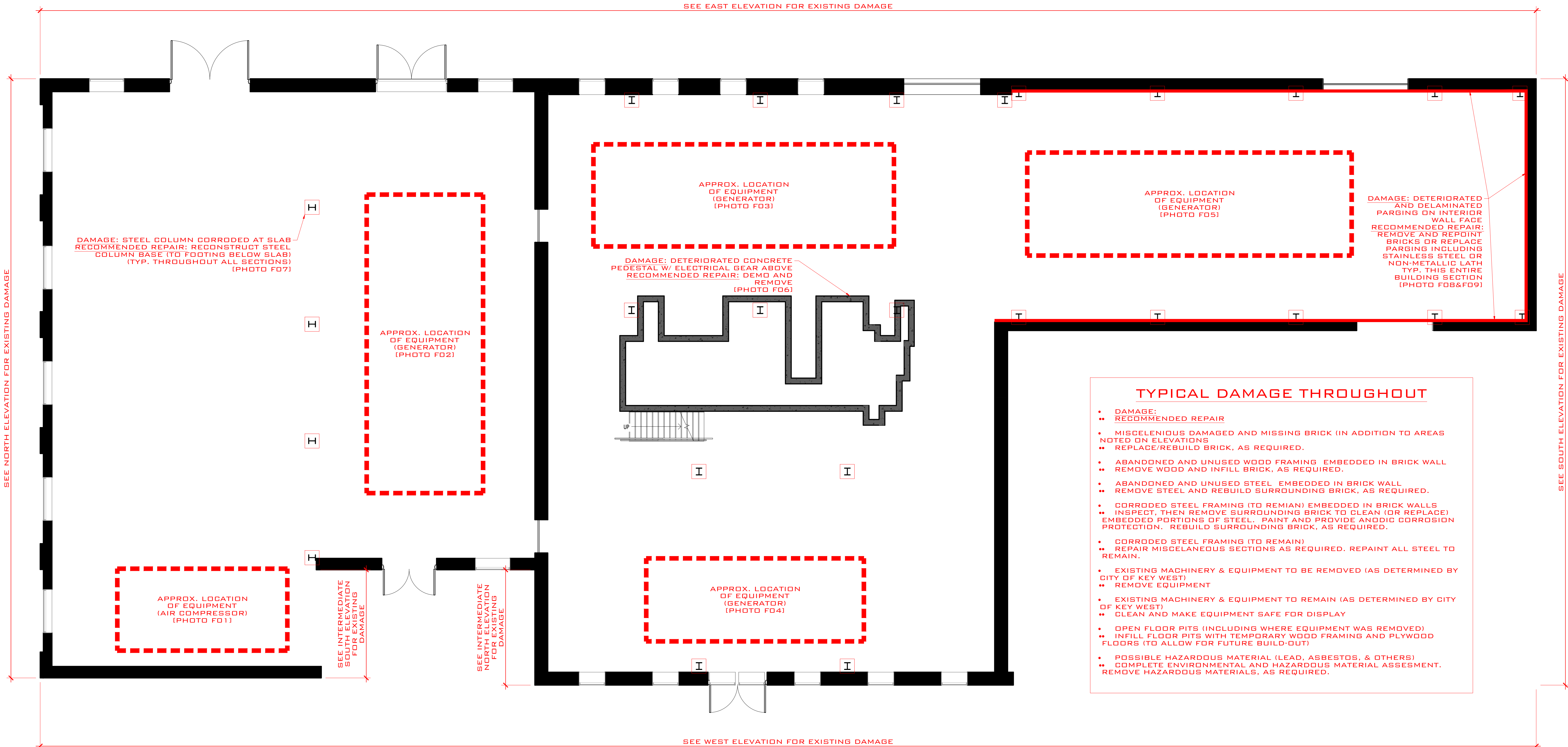
It is highly recommended that all repair work be completed by specialized contractors with ample experience in rehabilitating structures of this age, construction, and size. The most critical is utilizing skilled craftworkers in the masonry industry to complete the rehabilitation of the brick walls.

In the immediate term, it is recommended that a fence be installed along Angela Street as this is the only remaining wall accessible to the public. Current access exposes the public to the risk of falling bricks and debris (due to corroding embedded steel lintels and window frames). It also exposes the structure to further vandalism. Evidence of trespassers was observed inside the structure. Therefore, it is recommended that the remaining existing fence be maintained and signage posted to stop trespassing onto this unsafe property.

The opinions of this report are based on observations of readily visible members at the time of the assessment. Non-visible conditions that currently exist may affect the conclusions and recommendations of this assessment.

Sincerely,
Artibus Design LLC
Serge Mashtakov, P.E.
President

PAGE 24 OF 24



TYPICAL DAMAGE THROUGHOUT

- DAMAGE: RECOMMENDED REPAIR
- MISCELLENIOUS DAMAGED AND MISSING BRICK (IN ADDITION TO AREAS NOTED ON ELEVATIONS)
- REPLACE/REBUILD BRICK, AS REQUIRED.
- ABANDONED AND UNUSED WOOD FRAMING EMBEDDED IN BRICK WALL
- REMOVE WOOD AND INFILL BRICK, AS REQUIRED.
- ABANDONED AND UNUSED STEEL EMBEDDED IN BRICK WALL
- REMOVE STEEL AND REBUILD SURROUNDING BRICK, AS REQUIRED.
- CORRODED STEEL FRAMING (TO REMAIN) EMBEDDED IN BRICK WALLS
- INSPECT, THEN REMOVE SURROUNDING BRICK TO CLEAN (OR REPLACE) EMBEDDED PORTIONS OF STEEL, PAINT AND PROVIDE ANODIC CORROSION PROTECTION. REBUILD SURROUNDING BRICK, AS REQUIRED.
- CORRODED STEEL FRAMING (TO REMAIN)
- REPAIR MISCELANEOUS SECTIONS AS REQUIRED. REPAINT ALL STEEL TO REMAIN.
- EXISTING MACHINERY & EQUIPMENT TO BE REMOVED (AS DETERMINED BY CITY OF KEY WEST)
- REMOVE EQUIPMENT
- EXISTING MACHINERY & EQUIPMENT TO REMAIN (AS DETERMINED BY CITY OF KEY WEST)
- CLEAN AND MAKE EQUIPMENT SAFE FOR DISPLAY
- OPEN FLOOR PITS (INCLUDING WHERE EQUIPMENT WAS REMOVED)
- INFILL FLOOR PITS WITH TEMPORARY WOOD FRAMING AND PLYWOOD FLOORS (TO ALLOW FOR FUTURE BUILD-OUT)
- POSSIBLE HAZARDOUS MATERIAL (LEAD, ASBESTOS, & OTHERS)
- COMPLETE ENVIRONMENTAL AND HAZARDOUS MATERIAL ASSESSMENT. REMOVE HAZARDOUS MATERIALS, AS REQUIRED.

EXISTING DAMAGE - FLOOR PLAN
SCALE: 1/8" = 1'-0"

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY SERGE MASTAKOV, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SERGE MASTAKOV
PROFESSIONAL ENGINEER
STATE OF FLORIDA
LICENSE NO. 71280

NOTE: SCHEMATIC DAMAGE PLAN NOT FOR CONSTRUCTION

ARTIBUS DESIGN
ENGINEERING AND PLANNING

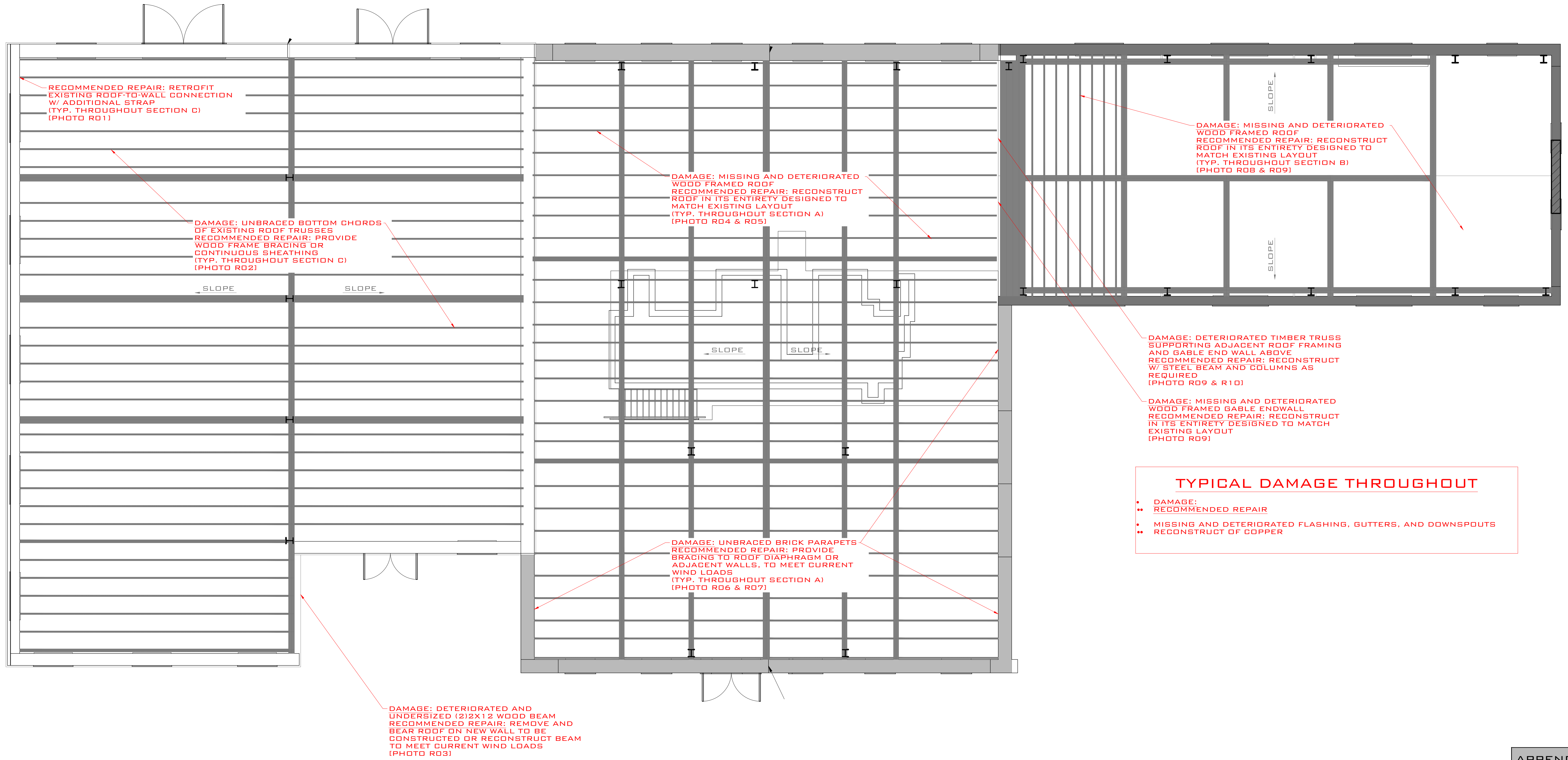
ARTIBUS DESIGN
3710 N. ROOSEVELT BLVD
KEY WEST, FL 33040
(305) 304-3312
WWW.ARTIBUSDESIGN.COM
CA # 30835

CITY OF KEY WEST
ENGINEERING DEPARTMENT

PROJECT:
STRUCTURAL ASSESSMENT
OF KEY WEST HISTORIC
DIESEL PLANT

100 ANGELA ST & 709 FORT ST
& 101 BERALDINE ST
KEY WEST, FL 33040

FLOOR PLAN			
DATE PLOTTED	DATE	DRAWN	CHECKED
As shown	05-23-23	JCH	SAM
PROJECT NO.	2503-03	APP-A.1	1



- TYPICAL DAMAGE THROUGHOUT**
- DAMAGE: RECOMMENDED REPAIR
 - MISSING AND DETERIORATED FLASHING, GUTTERS, AND DOWNSPOUTS
 - RECONSTRUCT OF COPPER

EXISTING DAMAGE - ROOF
SCALE: 1/8" = 1'-0"

APPENDIX A

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY SERGE MASHYAKOV, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SERGE MASHYAKOV
PROFESSIONAL ENGINEER
STATE OF FLORIDA
LICENSE NO. 71280

NOTE: SCHEMATIC DAMAGE PLAN
NOT FOR CONSTRUCTION

ARTIBUS DESIGN
ENGINEERING AND PLANNING

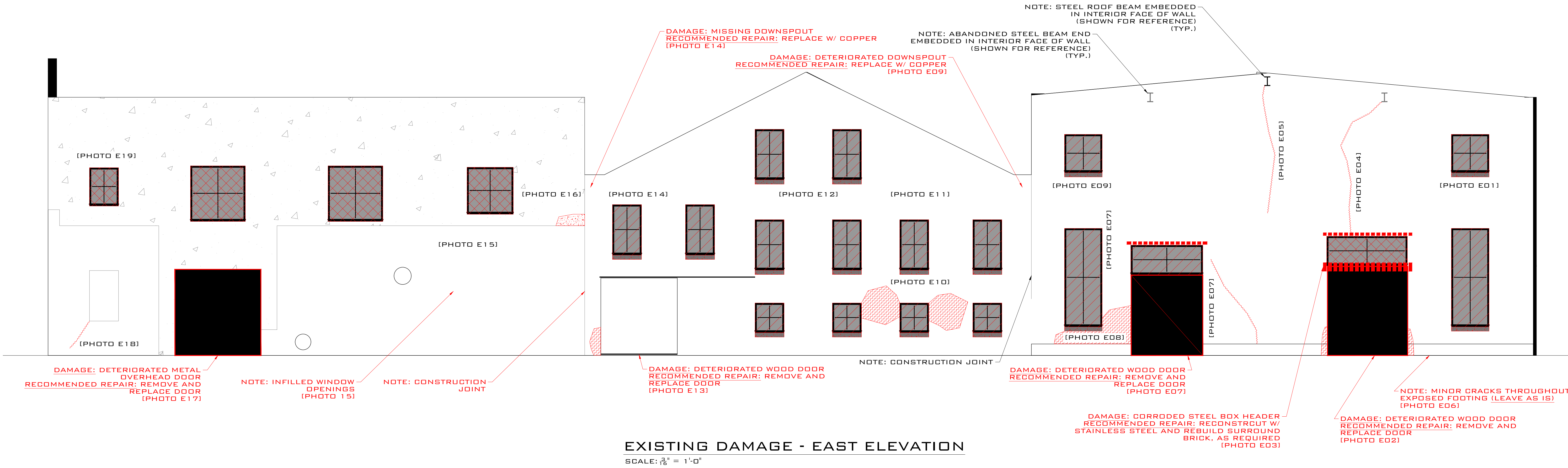
ARTIBUS DESIGN
3710 N. ROOSEVELT BLVD
KEY WEST, FL 33040
(305) 304-3312
WWW.ARTIBUSDESIGN.COM
CA # 30835

CITY OF KEY WEST
ENGINEERING DEPARTMENT

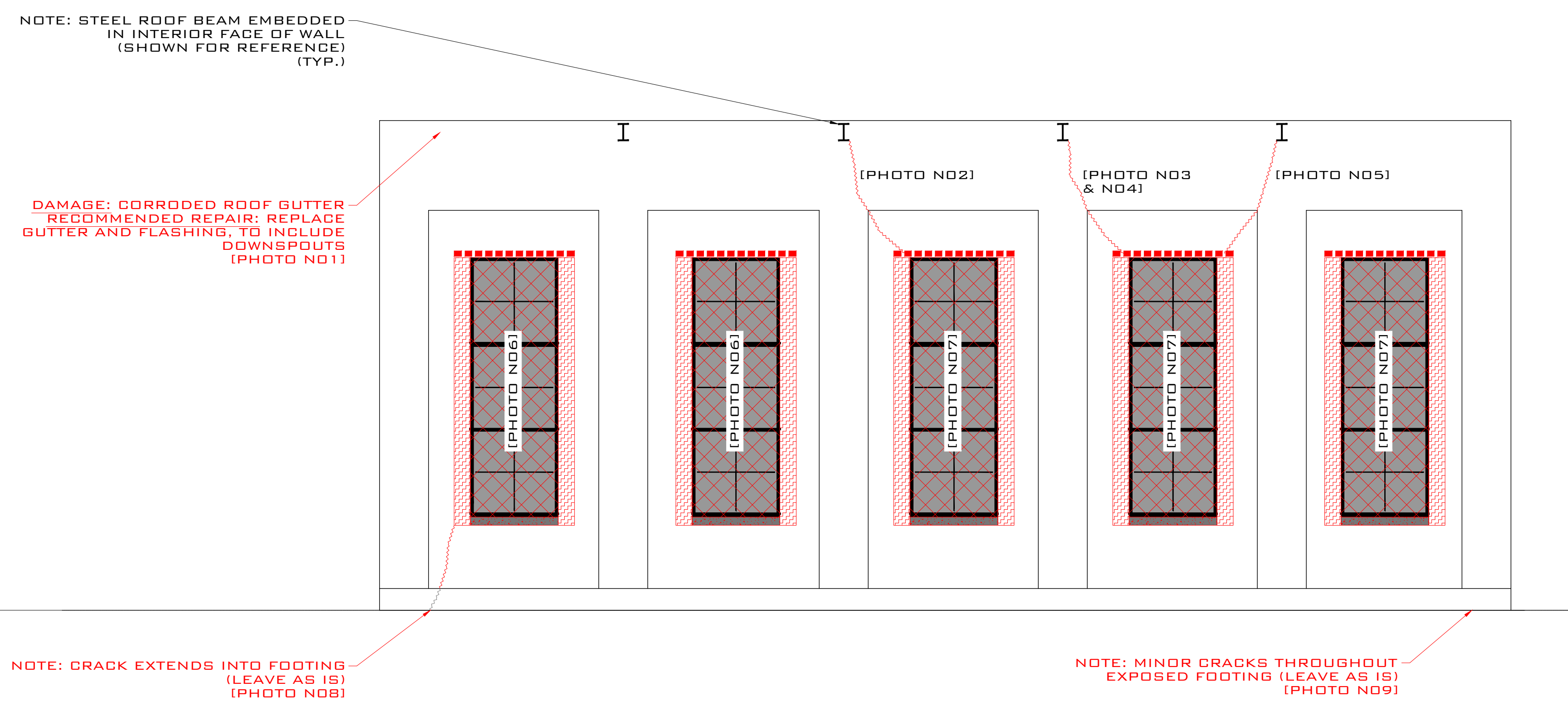
PROJECT:
STRUCTURAL ASSESSMENT
OF KEY WEST HISTORIC
DIESEL PLANT

1100 ANGELA ST & 709 FORT ST
& 101 HERALDING ST
KEY WEST, FL 33040

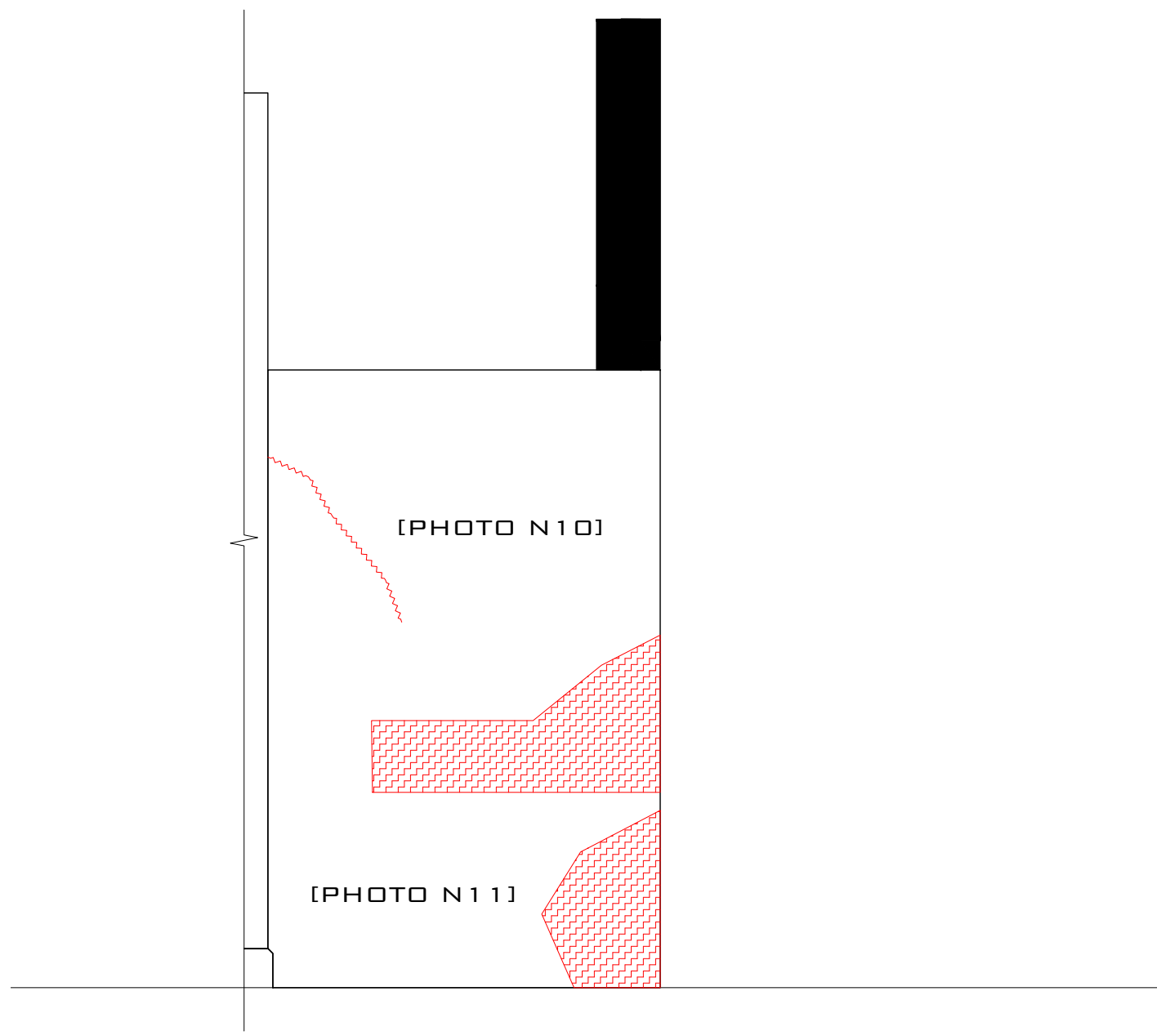
DATE PLOTTED:	DATE:	DRAWN:	CHECKED:
2503-03	05-23-23	JDH	SAM
TITLE:		SHEET:	
ROOF PLAN		APP-A.2	
TOTAL SHEETS:		SHEET NO.:	
1		1	



EXISTING DAMAGE - EAST ELEVATION
SCALE: 3/8" = 1'-0"



EXISTING DAMAGE - NORTH ELEVATION
SCALE: 3/8" = 1'-0"



EXISTING DAMAGE INTERMEDIATE NORTH ELEVATION
SCALE: 3/8" = 1'-0"

DAMAGE LEGEND - ELEVATIONS	
	DAMAGE: CORRODING STEEL LINTEL RECOMMENDED REPAIR: REPLACE W/ STAINLESS STEEL AND REBUILD SURROUNDING BRICK, AS REQUIRED
	DAMAGE: DAMAGED STEEL FRAME WINDOW RECOMMENDED REPAIR: REPLACE WINDOW (NOTE: EMBEDDED STEEL WINDOW FRAME CAUSES DISLODGED BRICKS, AS NOTED ON PLANS)
	DAMAGE: DAMAGED WOOD FRAME WINDOW RECOMMENDED REPAIR: REPLACE WINDOW NOTE: WOOD FRAME WINDOWS HAVE BRICK ARCH HEADER (AKA NO STEEL LINTEL), RE-POINT BRICK ARCH AS REQUIRED
	DAMAGE: DAMAGED AND/OR DISLODGED CAST CONCRETE SILL RECOMMENDED REPAIR: REPLACE SILL
	DAMAGE: BRICK WALL CRACK RECOMMENDED REPAIR: REPOINT WALL AND REPAIR BRICKS AS REQUIRED
	DAMAGE: DISLODGED, MISSING, OR DETERIORATED BRICK RECOMMENDED REPAIR: REBUILD BRICK IN KIND
	DAMAGE: DAMAGED CONCRETE RECOMMENDED REPAIR: REBUILD WITH REPAIR MORTAR OR NEW CONCRETE SECTION

APPENDIX A

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY SERGE MASTAKOV, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED VALID UNLESS THE SIGNATURE AND SEAL ARE VERIFIED ON ANY ELECTRONIC COPIES.

SERGE MASTAKOV
PROFESSIONAL ENGINEER
STATE OF FLORIDA
LICENSE NO. 71280

NOTE: SCHEMATIC DAMAGE PLAN NOT FOR CONSTRUCTION

ARTIBUS DESIGN
ENGINEERING AND PLANNING

ARTIBUS DESIGN
3710 N. ROOSEVELT BLVD
KEY WEST, FL 33040
(305) 304-3312
WWW.ARTIBUSDESIGN.COM
CA # 30835

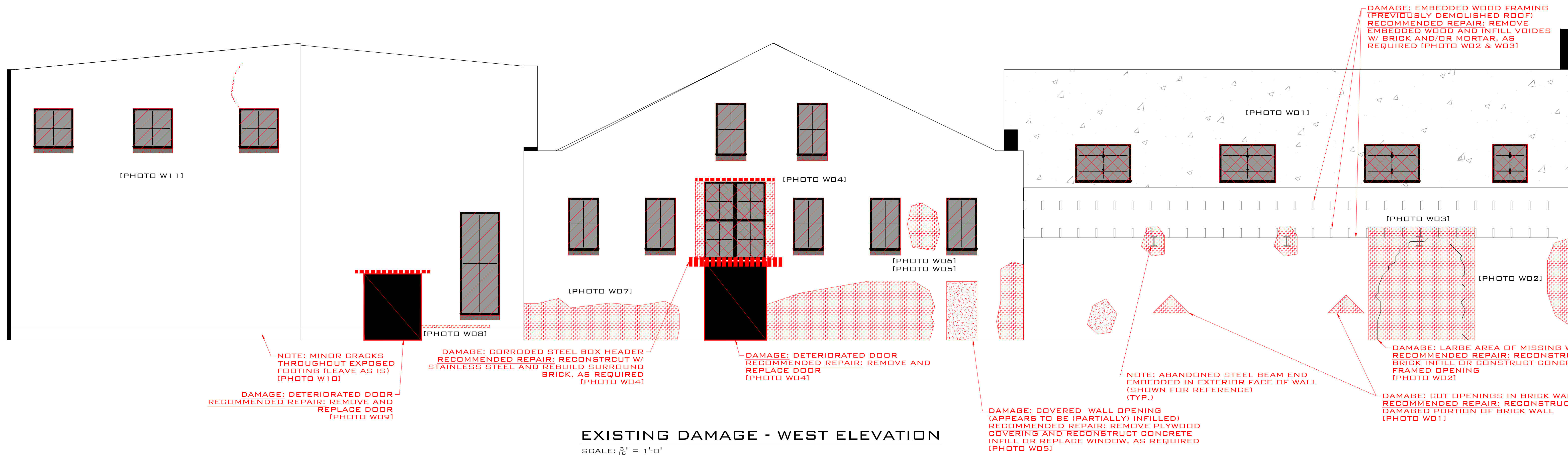
CITY OF KEY WEST
ENGINEERING DEPARTMENT

PROJECT:
STRUCTURAL ASSESSMENT
OF KEY WEST HISTORIC
DIESEL PLANT

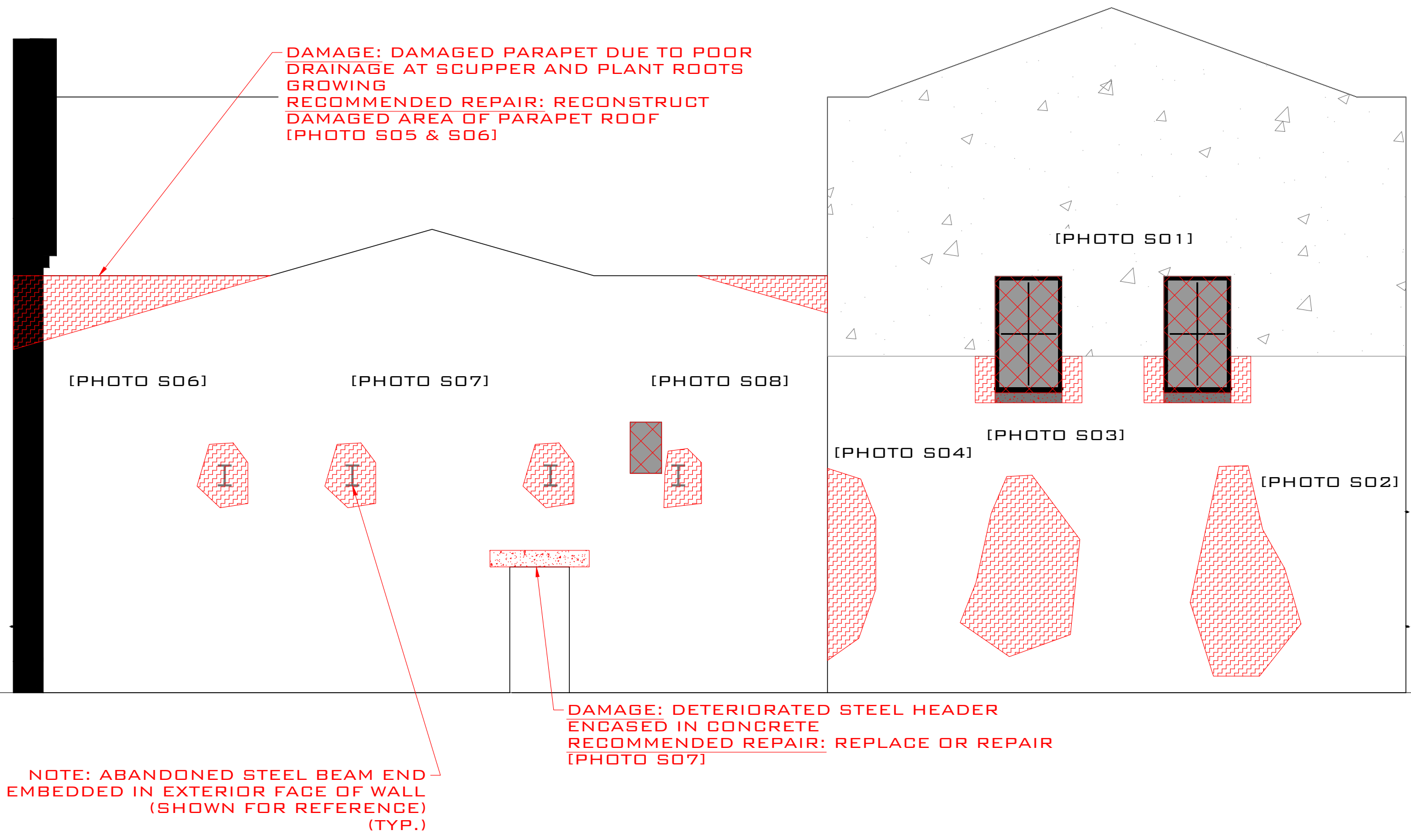
100 ANGELA ST & 709 FORT ST
& 101 SEVERALDINE ST
KEY WEST, FL 33040

ELEVATIONS

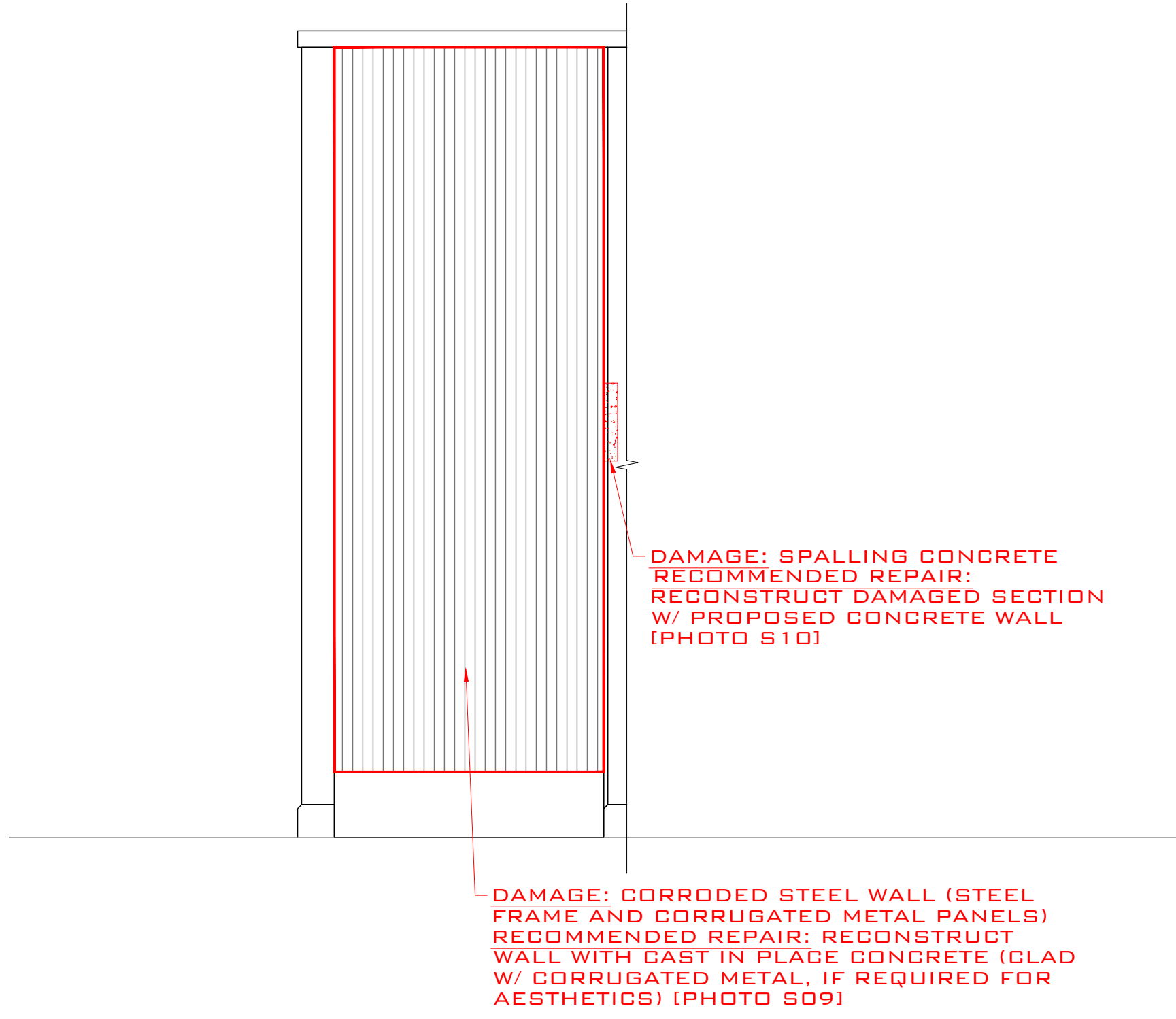
DATE PLOTTED:	DATE:	DRAWN:	CHECKED:
2503-03	05-23-23	JCH	SAM
PROJECT NO:	PROJECT:	SCALE:	REVISION:
2503-03	APP-A.3		1



EXISTING DAMAGE - WEST ELEVATION
SCALE: 3/8" = 1'-0"



EXISTING DAMAGE - SOUTH ELEVATION
SCALE: 3/8" = 1'-0"



EXISTING DAMAGE INTERMEDIATE SOUTH ELEVATION
SCALE: 3/8" = 1'-0"

DAMAGE LEGEND - ELEVATIONS	
	DAMAGE: CORRODING STEEL LINTEL RECOMMENDED REPAIR: REPLACE W/ STAINLESS STEEL AND REBUILD SURROUNDING BRICK, AS REQUIRED
	DAMAGE: DAMAGED STEEL FRAME WINDOW RECOMMENDED REPAIR: REPLACE WINDOW (NOTE: EMBEDDED STEEL WINDOW FRAME CAUSES DISLODGED BRICKS, AS NOTED ON PLANS)
	DAMAGE: DAMAGED WOOD FRAME WINDOW RECOMMENDED REPAIR: REPLACE WINDOW NOTE: WOOD FRAME WINDOWS HAVE BRICK ARCH HEADER (AKA NO STEEL LINTEL), RE-POINT BRICK ARCH AS REQUIRED
	DAMAGE: DAMAGED AND/OR DISLODGED CAST CONCRETE SILL RECOMMENDED REPAIR: REPLACE SILL
	DAMAGE: BRICK WALL CRACK RECOMMENDED REPAIR: REPOINT WALL AND REPAIR BRICKS AS REQUIRED
	DAMAGE: DISLODGED, MISSING, OR DETERIORATED BRICK RECOMMENDED REPAIR: REBUILD BRICK IN KIND
	DAMAGE: DAMAGED CONCRETE RECOMMENDED REPAIR: REBUILD WITH REPAIR MORTAR OR NEW CONCRETE SECTION

APPENDIX A

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY SERGE MASTAKOV, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SERGE MASTAKOV
PROFESSIONAL ENGINEER
STATE OF FLORIDA
LICENSE NO. 71280

NOTE: SCHEMATIC DAMAGE PLAN NOT FOR CONSTRUCTION

ARTIBUS DESIGN
ENGINEERING AND PLANNING
ARTIBUS DESIGN
3710 N. ROOSEVELT BLVD
KEY WEST, FL 33040
(305) 304-3312
WWW.ARTIBUSDESIGN.COM
CA # 30835

CITY OF KEY WEST
ENGINEERING DEPARTMENT

PROJECT:
STRUCTURAL ASSESSMENT
OF KEY WEST HISTORIC
DIESEL PLANT

100 ANGELA ST & 709 FORT ST
& 101 HERALDING ST
KEY WEST, FL 33040

TITLE: **ELEVATIONS**

DATE PLOTTED:	DATE:	DRAWN:	CHECKED:
AS SHOWN:	05-23-23	JCH	SAM
PROJECT NO:	2503-03	APP-A.4	1

DAMAGE PHOTOS: FLOOR PLAN



PHOTO F01

EXIST. EQUIPMENT COMPRESSOR

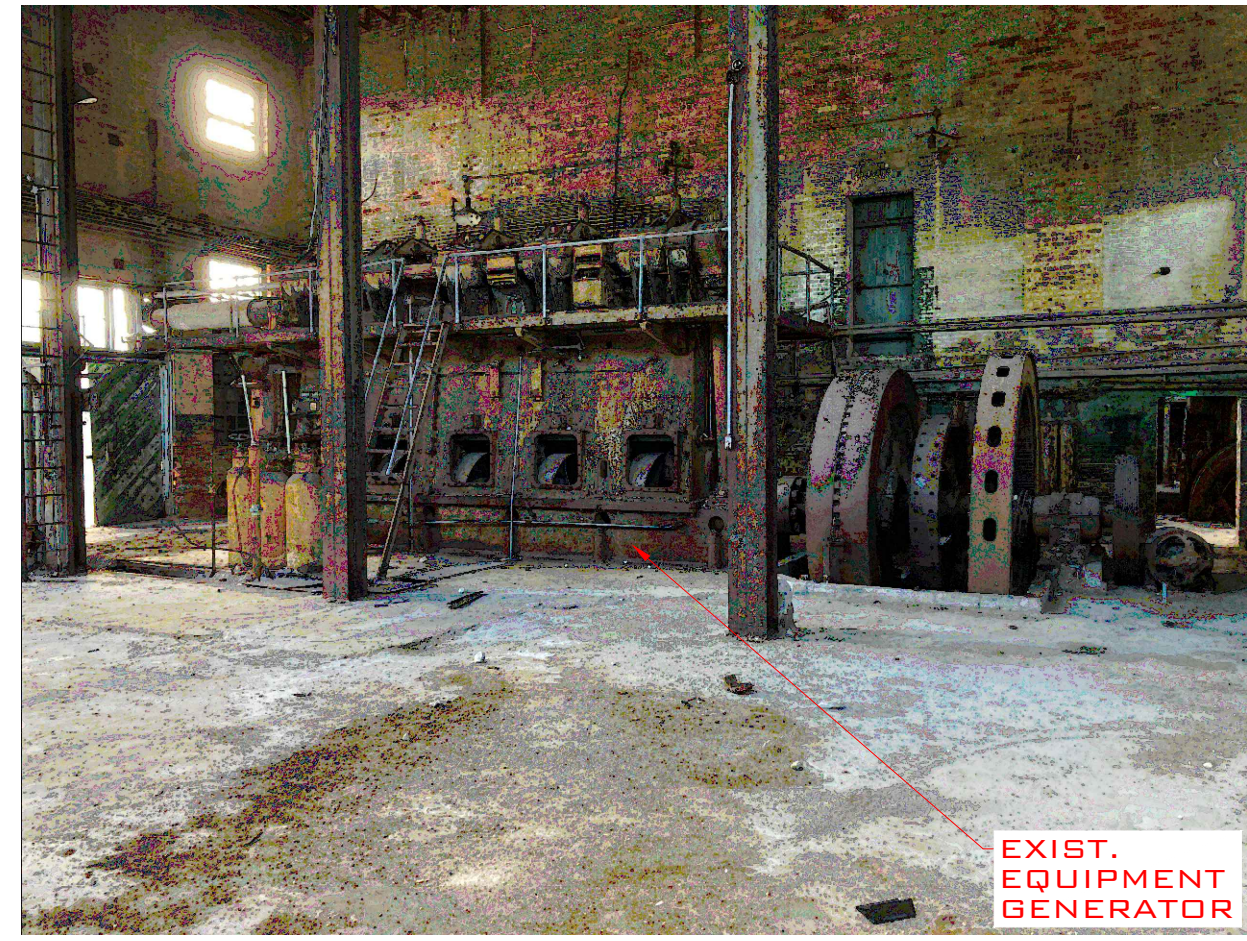


PHOTO F02

EXIST. EQUIPMENT GENERATOR

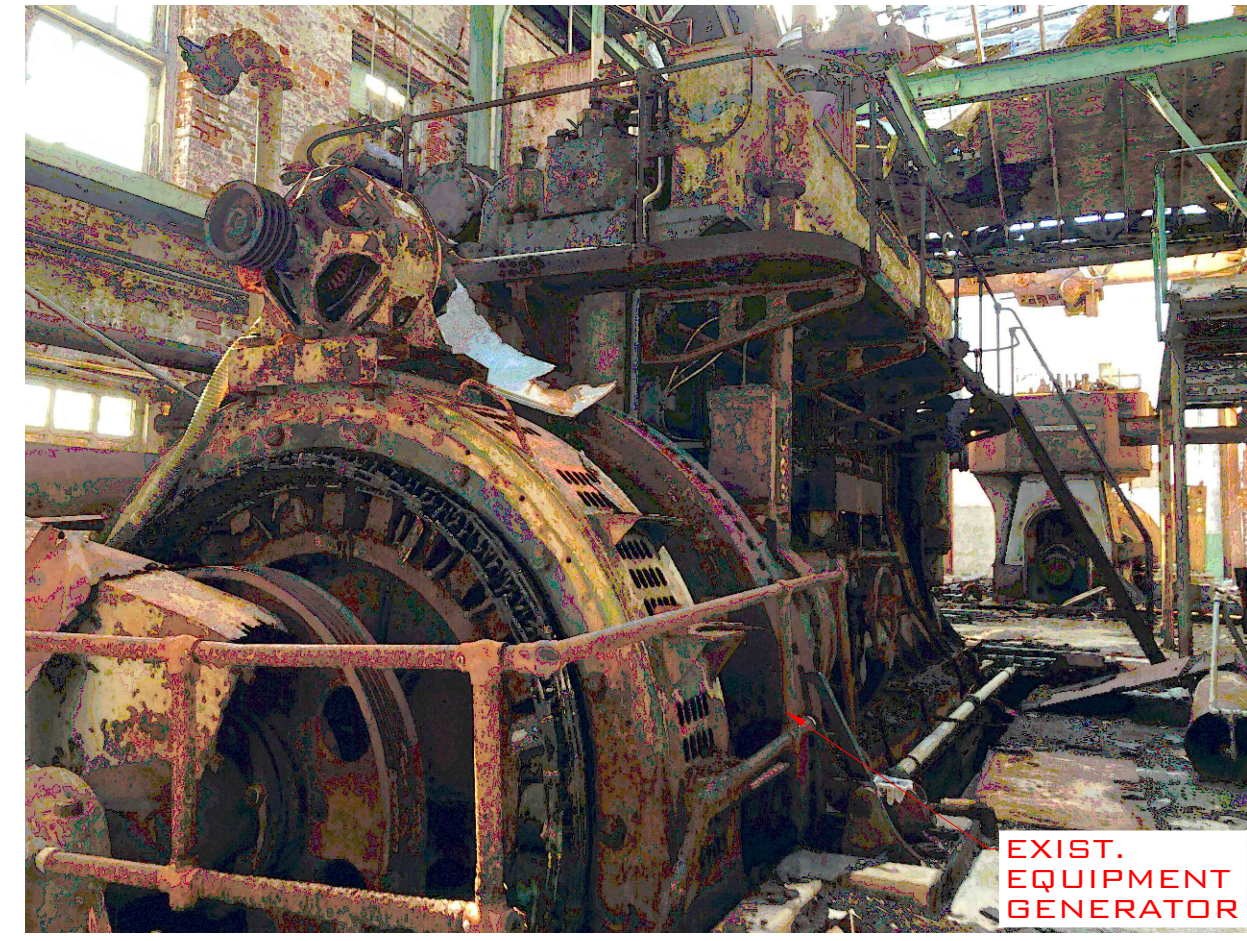


PHOTO F03

EXIST. EQUIPMENT GENERATOR

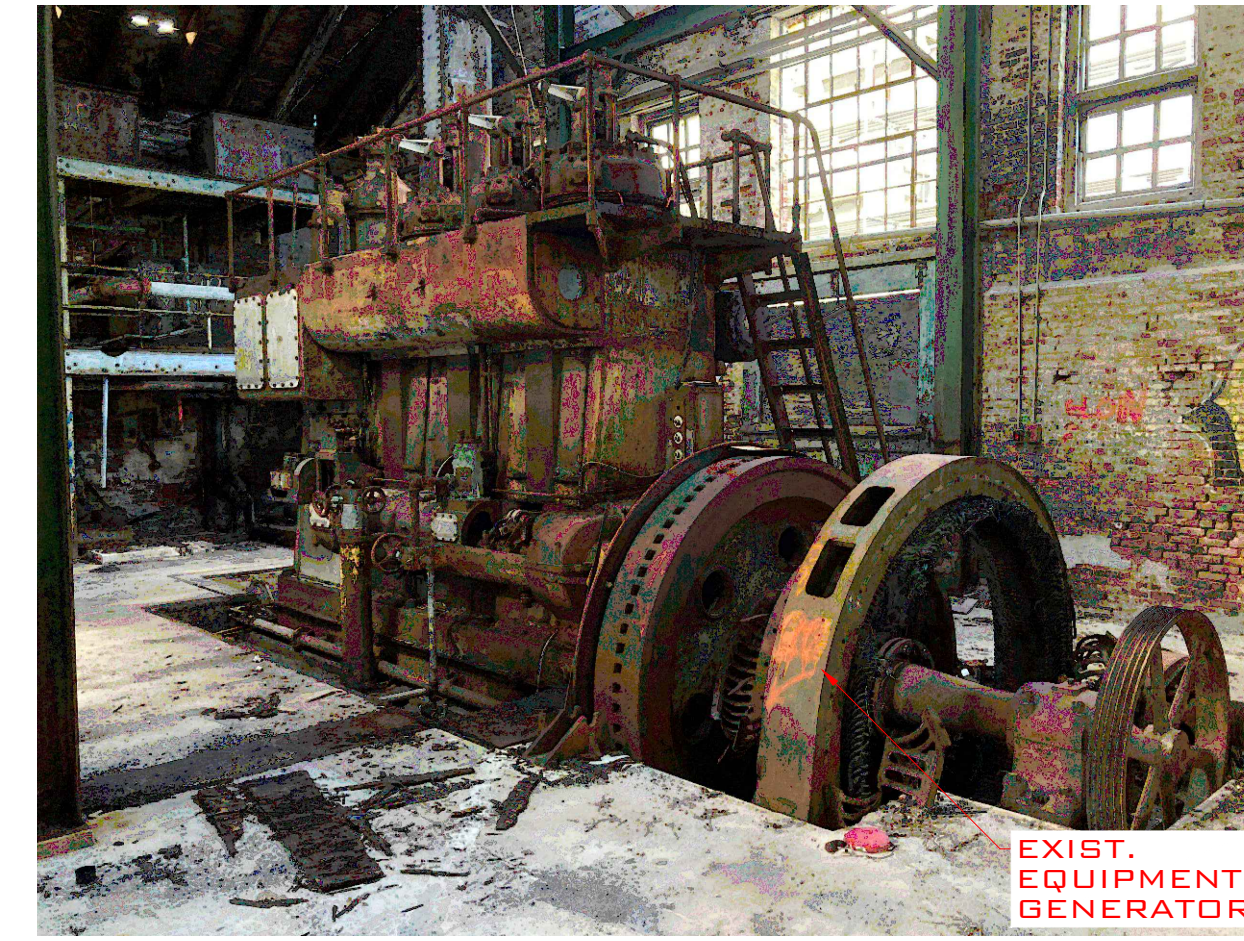


PHOTO F04

EXIST. EQUIPMENT GENERATOR



PHOTO F05

EXIST. EQUIPMENT GENERATOR



PHOTO F06

EXIST. EQUIPMENT ELECTRICAL GEAR ON CONC. PEDESTAL



PHOTO F07

CORRODED COLUMN BASE (TYP.)



PHOTO F08

DETERIORATED PARKING COAT



PHOTO F09

DETERIORATED PARKING COAT

APPENDIX A

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY SERGE MASHITAKOV, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SERGE MASHITAKOV
PROFESSIONAL ENGINEER
STATE OF FLORIDA
LICENSE NO. 71280

NOTE: SCHEMATIC DAMAGE PLAN NOT FOR CONSTRUCTION

ARTIBUS DESIGN
ENGINEERING AND PLANNING

ARTIBUS DESIGN
3710 N. ROOSEVELT BLVD
KEY WEST, FL 33040
(305) 304-3312
WWW.ARTIBUSDESIGN.COM
CA # 30835

CITY OF KEY WEST
ENGINEERING DEPARTMENT

PROJECT:
STRUCTURAL ASSESSMENT
OF KEY WEST HISTORIC
DIESEL PLANT

1100 ANGELA ST & 709 FORT ST
& 101 GERALDINE ST
KEY WEST, FL 33040

PHOTOS			
DATE	BY	DATE	BY
2503-03	APP-A.5	05-23-23	JCH
			SAM
			REVISION
			1

DAMAGE PHOTOS: ROOF



EXIST. ROOF-TO-WALL CONNECTION (SINGLE STRAP)

PHOTO R01



UNBRACED BOTTOM CHORD OF ROOF TRUSSES

PHOTO R02



DETERIORATED AND UNDERSIZED WOOD BEAM
NOTE: WALL TO BE RECONSTRUCTED

PHOTO R03



DETERIORATED ROOF FRAMING

PHOTO R04



DETERIORATED ROOF FRAMING BEARING INTO BRICK WALL

PHOTO R05



UNBRACED BRICK PARAPETS

PHOTO R06



UNBRACED BRICK PARAPETS

PHOTO R07



DETERIORATED ROOF FRAMING

PHOTO R08



DETERIORATED ROOF FRAMING
DETERIORATED WOOD FRAMED GABLE END WALL
DETERIORATED TIMBER TRUSS SUPPORTING GABLE END WALL AND ADJACENT ROOF FRAMING

PHOTO R09



DETERIORATED TIMBER TRUSS SUPPORTING GABLE END WALL AND ADJACENT ROOF FRAMING

PHOTO R10

APPENDIX A

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY SERGE MASHITKOV, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONTROLLED COPIES AND SHALL AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SERGE MASHITKOV
PROFESSIONAL ENGINEER
STATE OF FLORIDA
LICENSE NO. 71280

NOTE: SCHEMATIC DAMAGE PLAN NOT FOR CONSTRUCTION

ARTIBUS DESIGN
ENGINEERING AND PLANNING

ARTIBUS DESIGN
3710 N. ROOSEVELT BLVD
KEY WEST, FL 33040
(305) 304-3312
WWW.ARTIBUSDESIGN.COM
CA # 30835

CITY OF KEY WEST
ENGINEERING DEPARTMENT

PROJECT:
STRUCTURAL ASSESSMENT
OF KEY WEST HISTORIC
DIESEL PLANT

100 ANGELA ST & 709 FORT ST
& 101 GERALDINE ST
KEY WEST, FL 33040

TITLE:
PHOTOS

DATE	BY	DATE	BY	DATE	BY
2503-03	APP-A.6	05-23-23	JDH	05-23-23	SAM

DAMAGE PHOTOS: NORTH ELEVATIONS



DETERIORATED GUTTER AND MISSING DOWNSPOUTS

PHOTO N01



WALL CRACK PROPAGATING FROM EMBEDDED STEEL BEAM TO WINDOW OPENING

PHOTO N02



WALL CRACK PROPAGATING FROM EMBEDDED STEEL BEAM TO WINDOW OPENING

PHOTO N03



INSIDE WALL CRACK PROPAGATING FROM EMBEDDED STEEL BEAM TO WINDOW OPENING

PHOTO N04



WALL CRACK PROPAGATING FROM EMBEDDED STEEL BEAM TO WINDOW OPENING

PHOTO N05



DETERIORATED STEEL FRAMED WINDOWS AND LINTELS

PHOTO N06



DETERIORATED STEEL FRAMED WINDOWS AND LINTELS

PHOTO N07



MINOR CRACKS IN WALL AND FOOTING

PHOTO N08



MINOR CRACKS THROUGHOUT FOOTING

PHOTO N09



WALL CRACK AND DETERIORATED WALL

PHOTO N10



WALL CRACK AND DETERIORATED WALL

PHOTO N11

APPENDIX A

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY SERGE MASHATKOV, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SERGE MASHATKOV
PROFESSIONAL ENGINEER
STATE OF FLORIDA
LICENSE NO. 71280

NOTE: SCHEMATIC DAMAGE PLAN NOT FOR CONSTRUCTION

ARTIBUS DESIGN
ENGINEERING AND PLANNING

ARTIBUS DESIGN
3710 N. ROOSEVELT BLVD
KEY WEST, FL 33040
(305) 304-3312
WWW.ARTIBUSDESIGN.COM
CA # 30835

CITY OF KEY WEST
ENGINEERING DEPARTMENT

PROJECT:
STRUCTURAL ASSESSMENT
OF KEY WEST HISTORIC
DIESEL PLANT

1100 ANGELA ST & 709 FORT ST
& 101 BERALDINE ST
KEY WEST, FL 33040

TITLE:
PHOTOS

DATE PLOTTED	DATE	DRAWN	CHECKED
AS SHOWN	05-23-23	JDH	SAM

PROJECT NO.	DOCUMENT	REVISION
2503-03	APP-A.7	1

DAMAGE PHOTOS: EAST ELEVATIONS



DETERIORATED WOOD FRAMED WINDOWS

PHOTO E01



DETERIORATED WOOD DOOR AND STEEL FRAMED WINDOW

PHOTO E02



DETERIORATED WOOD DOOR AND STEEL FRAMED WINDOW

PHOTO E03



WALL CRACK PROPAGATING FROM EMBEDDED STEEL BEAM TO WINDOW OPENING

PHOTO E04



WALL CRACK PROPAGATING FROM EMBEDDED STEEL BEAM

PHOTO E05



MINOR CRACKS THROUGHOUT FOOTING

PHOTO E06



WALL CRACK PROPAGATING FROM EMBEDDED STEEL FITTING TO WINDOW OPENING

DETERIORATED WOOD DOOR AND STEEL FRAMED WINDOW

PHOTO E07



DETERIORATED WALL BRICKS (INTERIOR FACE)

PHOTO E08



DETERIORATED WOOD FRAMED WINDOW
DETERIORATED DOWNSPOUT

PHOTO E09



DETERIORATED WOOD FRAMED WINDOWS
DETERIORATED BRICK

PHOTO E10



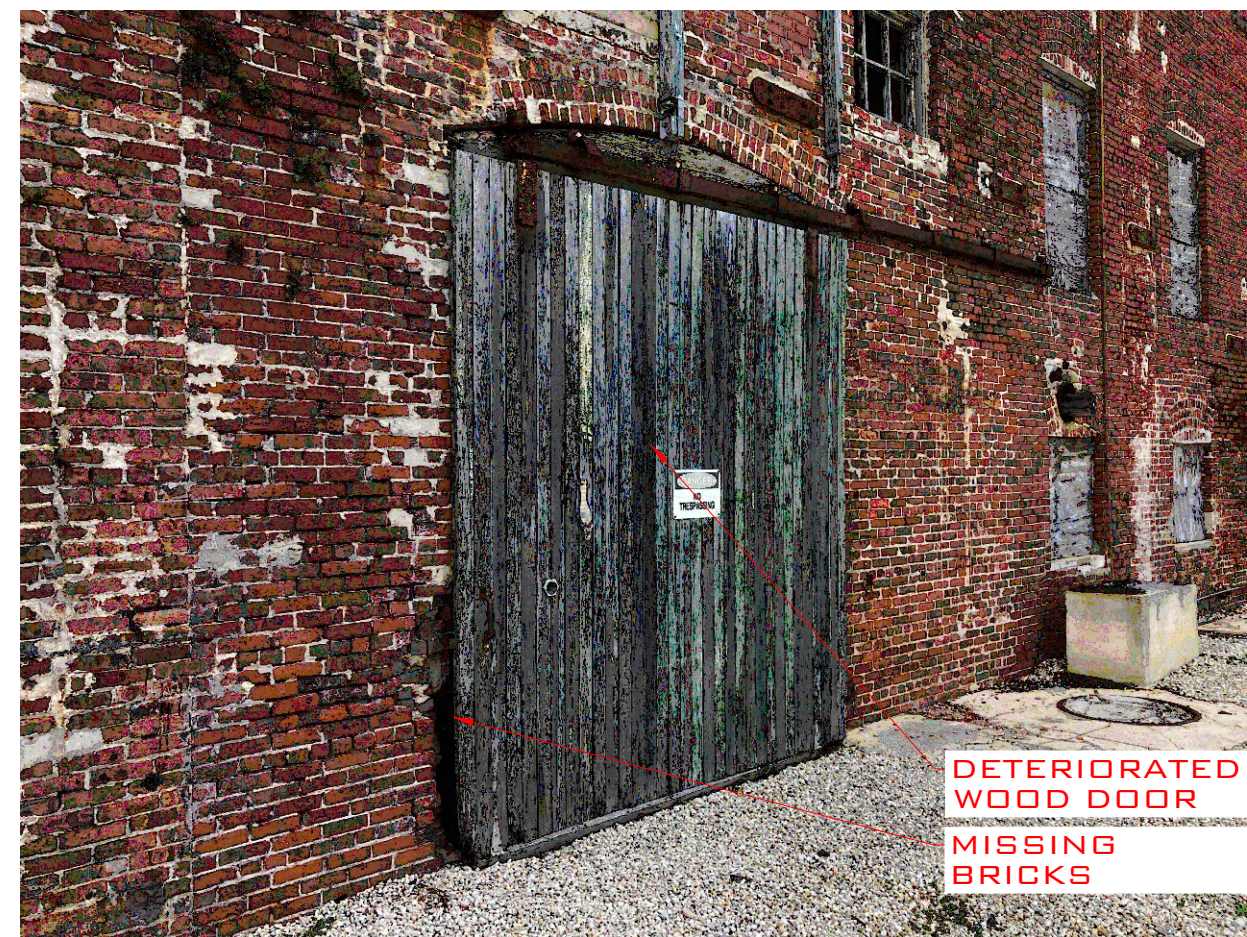
DETERIORATED WOOD FRAMED WINDOWS

PHOTO E11



DETERIORATED WOOD FRAMED WINDOWS

PHOTO E12



DETERIORATED WOOD DOOR
MISSING BRICKS

PHOTO E13



SCUPPER W/O DOWNSPOUT

DETERIORATED WOOD FRAMED WINDOWS

PHOTO E14



DETERIORATED STEEL FRAMED WINDOWS

INFILLED WINDOW OPENINGS

PHOTO E15



DAMAGED CONCRETE WALL

PHOTO E16



DETERIORATED METAL OVERHEAD DOOR W/ PLYWOOD INFILL

PHOTO E17



WALL CRACK PROPAGATING FROM WINDOW OPENING

PHOTO E18



DETERIORATED STEEL FRAMED WINDOW

PHOTO E19

APPENDIX A

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY SERGE MASTRACYO, P.E. ON THE DATE ADJACENT TO THE SEAL. THE PRINTED COPIES OF THIS DOCUMENT ARE NOT CONTROLLED. ANY CHANGES TO THE SEAL AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SERGE MASTRACYO
PROFESSIONAL ENGINEER
STATE OF FLORIDA
LICENSE NO. 71280

NOTE: SCHEMATIC DAMAGE PLAN NOT FOR CONSTRUCTION

ARTIBUS DESIGN
ENGINEERING AND PLANNING
3710 N. ROOSEVELT BLVD
KEY WEST, FL 33040
(305) 304-3312
WWW.ARTIBUSDESIGN.COM
CA # 30835

CITY OF KEY WEST
ENGINEERING DEPARTMENT
PROJECT:
STRUCTURAL ASSESSMENT
OF KEY WEST HISTORIC
DIESEL PLANT

1100 ANGELA ST & 709 FORT ST
111 HERALD DR
KEY WEST, FL 33040

PHOTOS			
DATE PLOTTED:	DATE:	DRAWN:	CHECKED:
2503-03	05-23-25	JDH	SAM
PROJECT NO:	APPENDIX:	REVISION:	
2503-03	APP-A.B		1

DAMAGE PHOTOS: SOUTH ELEVATIONS



PHOTO S01



PHOTO S02



PHOTO S03



PHOTO S04



PHOTO S05

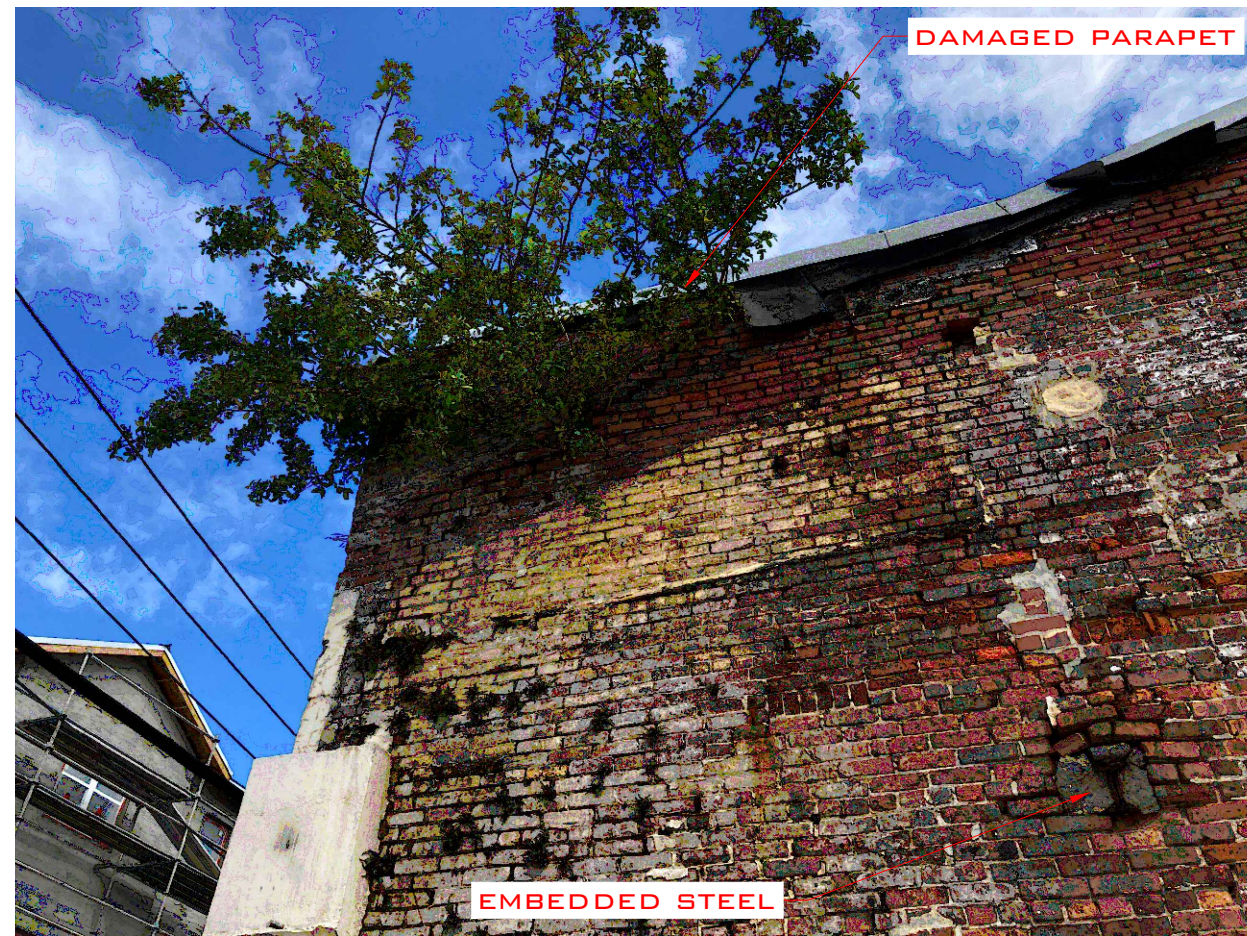


PHOTO S06



PHOTO S07



PHOTO S08

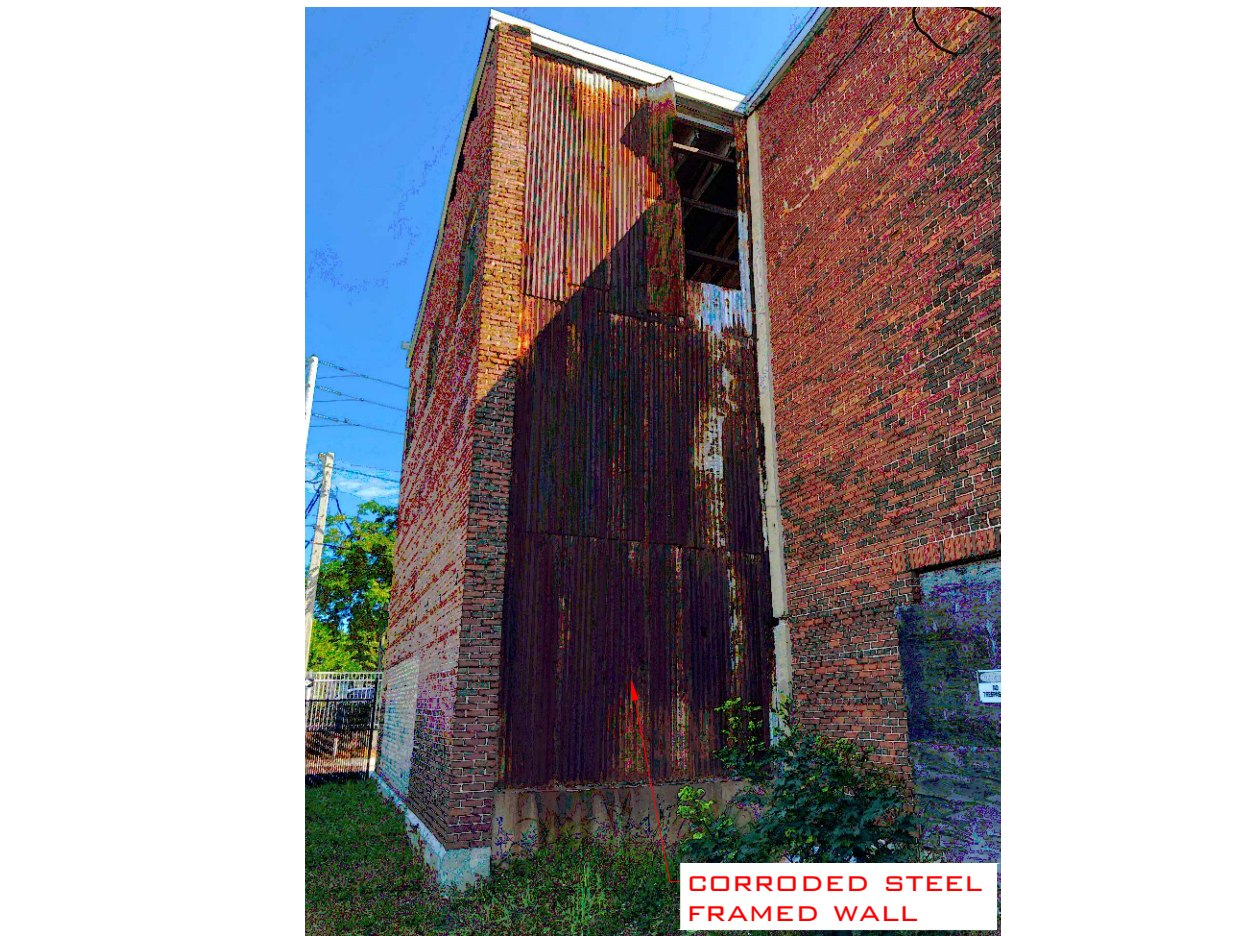


PHOTO S09



PHOTO S10

APPENDIX A

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY SERGE MASHYAKOV, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SERGE MASHYAKOV
PROFESSIONAL ENGINEER
STATE OF FLORIDA
LICENSE NO. 71280

NOTE: SCHEMATIC DAMAGE PLAN
NOT FOR CONSTRUCTION

ARTIBUS DESIGN
ENGINEERING AND PLANNING

ARTIBUS DESIGN
3710 N. ROOSEVELT BLVD
KEY WEST, FL 33040
(305) 304-3312
WWW.ARTIBUSDESIGN.COM
CA # 30835

CITY OF KEY WEST
ENGINEERING DEPARTMENT

PROJECT:
STRUCTURAL ASSESSMENT
OF KEY WEST HISTORIC
DIESEL PLANT

1100 ANGELA ST & 709 FORT ST
& 101 BERVALDINE ST
KEY WEST, FL 33040

TITLE:
PHOTOS

DATE PLOTTED	DATE	DRAWN	CHECKED
2503-03	05-23-23	JDH	SAM

PROJECT NO. 2503-03 APP-A.9 1

DAMAGE PHOTOS: WEST ELEVATIONS



PHOTO W01



PHOTO W02



PHOTO W03



PHOTO W04



PHOTO W05



PHOTO W06



PHOTO W07



PHOTO W08



PHOTO W09



PHOTO W10



PHOTO W11

APPENDIX A

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY SERGE MASHATKOV, P.E. ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

SERGE MASHATKOV
PROFESSIONAL ENGINEER
STATE OF FLORIDA
LICENSE NO. 71280

NOTE: SCHEMATIC DAMAGE PLAN
NOT FOR CONSTRUCTION

ARTIBUS DESIGN
ENGINEERING AND PLANNING

ARTIBUS DESIGN
3710 N. ROOSEVELT BLVD
KEY WEST, FL 33040
(305) 304-3312
WWW.ARTIBUSDESIGN.COM
CA # 30835

CITY OF KEY WEST
ENGINEERING DEPARTMENT

PROJECT:
STRUCTURAL ASSESSMENT
OF KEY WEST HISTORIC
DIESEL PLANT

1100 ANGELA ST & 709 FORT ST
& 101 GERALDINE ST
KEY WEST, FL 33040

PHOTOS			
DATE PLOTTED	DATE	DRAWN	CHECKED
As shown	05-23-23	JCH	SAM
PROJECT NO.	2503-03	APP-A.10	REVISION
			1



ARTIBUS DESIGN
ENGINEERING AND PLANNING

APPENDIX B:

Video of the Digital Structure (See attached file)

As part of this assessment, the structure was scanned using Lidar (Reality Sync, by Preferences Consulting). A digital fly-through is provided to show general scale and existing conditions of the structure's interior.