

**INSPECTION REPORT**  
**EVALUATION OF EXISTING BUILDING STRUCTURE**  
**FOR**

**212 SEABREEZE AVENUE**  
**DELRAY BEACH, FL 33483**



**ENGINEERING PLUS**  
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# ENGINEERING PLUS

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September 9, 2020

212 Seabreeze Ave.  
Delray Beach, FL 33483

### REFERENCE:

Investigation and evaluation of existing two-story standing alone wood and steel frame building structure with deep foundation system, at the aforementioned address

Gentlemen;

This letter summarizes our observations and conclusion based on visual surveys conducted at the site beginning on my first visit to the site on October 22, 2018 through the development period of the structural permit plans of September 18, 2019, submitted for approval to the City of Delray Beach Building Department, and subsequent inspections up to August 17, 2020

### ***1. OBSERVATIONS***

The following general observations were noted during the inspections;

- i. Excessive moisture, stain, rotting, section loss and fully decayed wood members were encountered throughout roof rafters and exterior wall structure members that spread throughout the entire building
- ii. Wood Beams and Headers were severely rotted and deteriorated throughout the entire building
- iii. Existing wood fascia, sub fascia and sills were totally damaged and rotted
- iv. Missing exterior wood wall base plates and their connections throughout the entire structure
- v. All exterior Wood Siding, Jams and Bucks around window/door openings were severely damaged from constant water intrusion.
- vi. Excessive Deflection observed at flat roof rafter.

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- vii. There were no forms of fastening or nailing at wall to roof rafter and wall connections (typical at perimeter). There was no continuous load path provided to resist wind forces.
  - i. Water damage was seemed active throughout the building
  - ii. There were traces of active termite damage at wood members
  - iii. All structural load bearing steel beams had structural damage/section loss and weakened connections.
  - iv. Severe existing roofing deterioration is observed throughout the building. Excessive deflection of roof rafters and sheathing indicate improper design of existing roof structure to carry the superimposed weight of AC equipment that were installed on the roof top. Active water damage and seepage observed from the numerous locations at roof top equipment and ductwork/pipe penetration locations. The roofing was not built and fastened as per Florida Building code requirements.
- viii. Lateral load resisting system of the overall roof and wall diaphragm system and sheathing did not exist. This condition weakens lateral stability of the members and minimize resistance to any wind event. Since overall bracing system is inadequate, buckling of roof joists and walls is certain during a large out of plane rotating force.

## **2. RECOMMENDATIONS**

Since the damage at structural wood members at roof level and second floor (roofing, rafters, roof sheathing, wall studs, fascia, sub fascia, sills, headers, jambs and rim and wall sheathing) at excessive levels where total section losses and loss of strength are observed, I recommend total removal of the damaged roof and second floor wall system and rebuild the structure as per permit plans issued by City Delray Beach Building Department. The construction methods and materials are outlined in detail on sheets **S-2, S-3, S-4, S-6 & S-7** sheet of these plans. Necessary installation and attachment details are provided in order for this building to meet requirements of current Florida Building Code and to be structurally sound and safe.

Until necessary demolition is performed on the upper level of the building the damaged steel structure cannot be fully accessed. Appropriate steel structure repairs shall be applied on the existing steel beams as per repair details provided and repairs shall be executed by certified welders.

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### 3. CONCLUSION

Two-story standing alone wood and steel frame building with deep foundation at “**212 Seabreeze Avenue, Delray Beach**” has been inspected in order to investigate overall structural condition and integrity of the building. As pointed out at observation section of the report, severe damage to wood members and steel members are encountered. Overall condition of the structural members and their connections are totally compromised and their condition is below the level of basic safe environment for occupation and current building code requirements. Please note that the problematic structural features of the existing house are tied to the original 1955 construction and the 1980 renovation, and the further deterioration of the steel and wood materials that has taken place since then is not a recent event. After the inspection, concern raised about the lateral stability and the performance of the building even under potentially low speed wind event. It is our conclusion that, **life and service expectation of the building structure is beyond repair. It should be emphasized that any effort for retrofitting and strengthening will not be adequate enough to structurally utilize the existing conditions.** New structural component of the building shall be properly erected and connected as per permitted structural plans that are part of construction plans approved by Delray Beach Building Department in order for this building to meet requirements of current Florida Building Code and to be structurally sound and safe.

The observations and recommendations contained in this letter represent our professional opinions. Engineering Plus arrived these opinions in accordance with currently accepted engineering practices and applied current local building code at this time and for this location.

Please feel free to contact me with any questions or comments you may have concerning this report.

Sincerely,



Taylan Kalkan  
Florida P.E. # 67349  
C.A. # 26538



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EXISTING FRONT PLYWOOD SIDING WEST

Exhibit 5. General view of Exterior of the Building



EXISTING ROTTED PLYWOOD SIDING

Exhibit 6. Typical rotted plywood siding at exterior wood frame walls

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EXISTING 2ND FLOOR WOOD DAMAGE

Exhibit 7. Typical rotted wood beam/header at exterior load bearing walls



EXTENSIVE WOOD DAMAGE 2ND FLOOR

Exhibit 8. Typical rotted wood beam/header at exterior load bearing walls

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DAMAGE TO 2ND FLOOR WOOD DUE TO TERMITES/INSECTS

Exhibit 9. Typical termite damage at structural wood members



EXISTING STEEL BEAM DAMAGE

Exhibit 10. Typical structural damage and section loss at load bearing steel members



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STEEL BEAM CORROSION

Exhibit 11. Typical structural damage and section loss at load bearing steel members



STEEL BEAM CORROSION

Exhibit 13. Typical structural damage and section loss at load bearing steel members

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EXISTING 2ND FLOOR JOISTS

Exhibit 13. There were no forms of fastening or nailing at wood members to main structure (typical at perimeter). There was no continuous load path from roof to foundation



AC EQUIPMENT ON ROOF OF EXISTING HOUSE PRIOR TO ROOF REMOVAL

Exhibit 14. Birdseye view of existing roof





EXISTING HOUSE WITH AC EQUIPMENT ON ROOF APRIL 18, 2018



EXISTING 4 LAYER ROOF BEFORE REMOVAL

## Permit Verification

Address: 212 SEABREEZE AVE

| Application Number | Submittal Date | Permit Description             | Permit Status | Status Date |
|--------------------|----------------|--------------------------------|---------------|-------------|
| 20-00193418        | 11/17/2020     | DEMOLITION - INTERIOR/EXTERIOR | IN APPROVAL   | 11/17/2020  |
| 19-00185798        | 9/27/2019      | ADDITION - SINGLE FAMILY       | IN APPROVAL   | 1/29/2021   |
| 18-00179109        | 9/19/2018      | ELECTRICAL WORK                | C.O. ISSUED   | 9/25/2018   |
| 18-00177796        | 7/19/2018      | DEMOLITION - INTERIOR/EXTERIOR | APPROVED      | 9/18/2018   |
| 10-00127296        | 2/17/2010      | AIR CONDITIONING REPLACEMENT   | C.O. ISSUED   | 3/29/2010   |
| 08-00119471        | 5/21/2008      | AIR CONDITIONING REPLACEMENT   | C.O. ISSUED   | 6/27/2008   |
| 06-00105176        | 3/31/2006      | RE-ROOF OF EXISTING STRUCTURE  | C.O. ISSUED   | 7/24/2006   |
| 04-00092241        | 8/6/2004       | ADDITION - SINGLE FAMILY       | C.O. ISSUED   | 9/8/2009    |
| 04-00090779        | 5/11/2004      | RE-ROOF OF EXISTING STRUCTURE  | C.O. ISSUED   | 6/24/2004   |
| 01-00076241        | 9/18/2001      | FENCE - NEW                    | C.O. ISSUED   | 12/21/2001  |
| 00-00070784        | 9/13/2000      | FENCE - NEW                    | C.O. ISSUED   | 11/7/2000   |
| 00-00069763        | 7/6/2000       | FENCE - NEW                    | C.O. ISSUED   | 8/29/2000   |
| 99-00062395        | 6/22/1999      | DRIVEWAY - REPAIR OR RESURFACE | CLOSED        | 11/2/2000   |
| 95-00037301        | 10/12/1995     | SIDING - NEW/REPLACE/REPAIR    | C.O. ISSUED   | 2/8/1996    |
| 95-00032843        | 1/30/1995      | MECHANICAL WORK                | C.O. ISSUED   | 9/15/1998   |
| 93-00024530        | 9/14/1993      | MECHANICAL WORK                | C.O. ISSUED   | 9/6/1994    |
| 93-00024097        | 8/17/1993      | RE-ROOF OF EXISTING STRUCTURE  | CLOSED        | 7/6/1994    |
| 90-00006612        | 6/15/1990      | RE-ROOF OF EXISTING STRUCTURE  | C.O. ISSUED   | 6/26/1990   |





EXISTING 2ND FLOOR WOOD ROT JANUARY 15, 2019



EXISTING ROTTEN WOOD 2ND FLOOR JULY 21, 2020





EXTENSIVE WOOD DAMAGE 2ND FLOOR JULY 21, 2020



EXISTING ROTTED PLYWOOD SIDING JULY 20, 2020





NON HISTORIC COURTENAY LOUVERS





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**To:** CITY OF DELRAY BEACH BUILDING DEPARTMENT

**RE:** Structural Requirement for Replacing Existing Steel Beams at East & West Side of the existing building steel frame with new Steel Beams with same specifications

**Project:** 212 Seabreeze Ave.  
DELRAY BEACH, FL

**Engineer:** TAYLAN KALKAN, P.E.

**Date:** January 26, 2021

Dear Sir:

During the existing steel beam repair process, it has been discovered that existing steel beams located at East & West sides of existing house steel frame system are deteriorated beyond safe and structurally sound repair due to excessive section losses. Any attempt to patch, reweld or sectional replacement will not successfully achieve regaining original structural strength.

**I recommend replacement of existing steel beam located at East & West Side of the existing house steel reframe to be replaced with new steel beam with matching structural speciation's as existing steel beam**

Please do not hesitate to contact me if I may be of further assistance.

Sincerely,



January 26, 2021  
Taylan Kalkan, PE  
State of Florida Registration # 67349 & C.A. # 26538

**Attachment 1:** Photos of deteriorated existing steel beams located at East & West Side of the existing house steel frame (Total 6 photos)

**Attachment 2:** S-2 sheet of the revised permit plans indicating locations of proposed East & West Steel Beams replacement

# AMEXTECH, INC.

## STRUCTURAL ENGINEERING AND CONSULTING SERVICES

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(561) 756 4106 fax (561) 479 3743

**PHOTO 1**





## AMEXTECH, INC.

### STRUCTURAL ENGINEERING AND CONSULTING SERVICES

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**PHOTO 2**



## AMEXTECH, INC.

### STRUCTURAL ENGINEERING AND CONSULTING SERVICES

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**PHOTO 3**





## AMEXTECH, INC.

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**PHOTO 4**





# AMEXTECH, INC.

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**PHOTO 5**





## AMEXTECH, INC.

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**PHOTO 6**





**INSPECTION REPORT**  
**EVALUATION OF EXISTING FLOOR SYSTEM**  
**FOR**

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July 9, 2020

212 Seabreeze Ave.  
Delray Beach, FL 33483

### REFERENCE:

Investigation and evaluation of existing wood floor rafter system for building structure at the aforementioned address

Gentlemen;

This letter summarizes our observations and conclusion based on visual surveys conducted at the site

### ***1. OBSERVATIONS***

The following general observations were noted during the inspections;

- i. Existing Floor System is consistent of 2x10 wood members
- ii. Excessive moisture, stain, rotting, section loss and fully decayed wood members were encountered throughout floor rafters
- iii. Deep and excessive notches on top of wood members close to bearing locations were visible
- iv. Large diameter unreinforced holes for utility lines were bored randomly and closely to each other at multiple spots on the same joist are encountered through the rafter span
- v. Excessive Deflection observed at floor rafters.
  - i. Active water damage was present at floor sheathing and edges of existing rafters
  - ii. All load bearing floor rafters had structural damage/section loss and weakened connections.
  - iii. Existing Blocking/Bridging between floor rafters are inadequate and missing to transfer loads between rafters and provide lateral stability to overall structure.

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### 2. CONCLUSION

It is our conclusion that, **life and service expectation of the existing floor structure is beyond repair. It should be emphasized that any effort for retrofitting and strengthening will not be adequate enough to structurally utilize the existing conditions**

Since the damage at structural wood members of floor level (including floor rafters and sheathing) at excessive levels due to total section losses and loss of strength, **I recommend removal of the existing floor system in entirety and rebuild the floor structure with new wood members designed with the current Florida Building Code requirements.** New structural component of the floor system shall be properly erected and connected as per permitted structural plans approved by Delray Beach Building Department in order for this building to meet requirements of current Florida Building Code and to be structurally sound and safe

The observations and recommendations contained in this letter represent our professional opinions. Engineering Plus arrived these opinions in accordance with currently accepted engineering practices and applied current local building code at this time and for this location.

Please feel free to contact me with any questions or comments you may have concerning this report.

Sincerely,



---

Taylan Kalkan  
Florida P.E. # 67349  
C.A. # 26538

Enclosed: Sample photos at damaged locations (Total 7 photos)



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Exhibit 1. General view of Damaged Floor System



Exhibit 2. General view of Damaged Floor System

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Exhibit 3. General view of Damaged Floor System



Exhibit 4. General view of Damaged Floor System oversized bored holes and notches



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Exhibit 5. General view of Damaged Floor System



Exhibit 6. General view of Damaged Floor System



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Exhibit 7. General view of Damaged Floor System