



City of Pensacola

Architectural Review Board

Agenda

City of Pensacola
222 W. Main Street
Pensacola, FL 32502

January 18, 2024, 2:00 PM

Whibbs Conference Room, 1st floor

The meeting can be watched via live stream at cityofpensacola.com/video.

CALL TO ORDER / QUORUM

APPROVAL OF MINUTES

1. 24-43 ARCHITECTURAL REVIEW BOARD MEETING MINUTES
Attachments: 12-21-23 ARB minutes

OPEN FORUM

NEW BUSINESS

2. 24-40 306 W. BLOUNT STREET
NORTH HILL PRESERVATION DISTRICT / ZONE PR-1AAA / CITY
COUNCIL DISTRICT 6
ACCESSORY BUILDING FOR A CONTRIBUTING STRUCTURE
*Attachments: Florida Master Site File Form
Images
Application and Materials*
3. 24-41 718 N. REUS STREET
NORTH HILL PRESERVATION DISTRICT / ZONE PC-1 / CITY COUNCIL
DISTRICT 6
EXTERIOR ALTERATIONS AT A CONTRIBUTING STRUCTURE
*Attachments: Florida Master Site File Form
Images
Application and Materials*
4. 24-68 914 N. PALAFOX STREET
ZONE R-NC / CITY COUNCIL DISTRICT 6
HISTORIC STRUCTURE DEMOLITION REVIEW

Attachments: Images
Historic Structure Demolition Application

5. 24-70 1611 E. GADSDEN STREET
EAST HILL / ZONE R-1AA / CITY COUNCIL DISTRICT 6
HISTORIC STRUCTURE DEMOLITION REVIEW

Attachments: Images
Historic Structure Demolition Application

6. 24-42 DISCUSSION
NATIONAL PARK SERVICE PRESERVATION BRIEF NO. 16: THE USE OF
SUBSTITUTE MATERIALS ON HISTORIC BUILDING EXTERIORS

*Attachments: Preservation Brief 16: The Use of Substitute Materials on Historic
Building Exteriors*

ADJOURNMENT

The City of Pensacola adheres to the Americans with Disabilities Act and will make reasonable accommodations for access to City services, programs and activities. Please call 850-435-1606 (or TDD 850-435-1666) for further information. Request must be made at least 48 hours in advance of the event in order to allow the City time to provide the requested services.

If any person decides to appeal any decision made with respect to any matter considered at such meeting, he will need a record of the proceedings, and that for such purpose he may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based.



City of Pensacola

ARCHITECTURAL REVIEW BOARD

MINUTES

City of Pensacola
222 W. Main Street
Pensacola, FL
32502

December 21, 2023

2:00 PM

Whibbs Conference Room, 1st
Floor

CALL TO ORDER / QUORUM

Members Present: Anna Fogarty, Derek Salter, Jordan Yee, George R Mead, II, Ross Pristera

Members Absent: Lou Courtney, Yuri Ramos, Brian Spencer

Also Present: Assistant Planning & Zoning Division Manager
Harding, Digital Media Specialist Russo, Historic
Preservation Planner Walker, IT Specialist Green,
Arthur Davis, Matt Markham, Jeff Cutter, Winford
Lindsay

APPROVAL OF MINUTES

1. 23-1079 ARCHITECTURAL REVIEW BOARD MEETING MINUTES

Board Member Mead made a motion to approve the November 16, 2023, minutes, seconded by Board Member Fogarty, and it carried 4-0.

OPEN FORUM

NEW BUSINESS

2. 23-1080 610 E. GOVERNMENT STREET PENSACOLA HISTORIC DISTRICT / ZONE HC-1 / CITY COUNCIL DISTRICT 6 EXTERIOR IMPROVEMENTS AT A NONCONTRIBUTING STRUCTURE

Jeff Cutter is seeking approval for exterior improvements at a non-contributing

structure including a new gunite pool with a raised wall with two fire bowls and a six-foot waterfall, landscaping, a new paver driveway, and replacing the existing grass in the front with artificial turf. Historic Preservation Planner Walker noted that city engineering was consulted regarding work depicted in the city right of way, which is outside the purview of the ARB. The artificial turf will not be permitted in city right of way and the curb cut must be inset one foot from the property line.

Jeff Cutter and Matt Markham presented to the board. Board Member Yee asked for clarification about the work in city right of way. Historic Preservation Planner Walker answered that the artificial turf is not allowed in the city right of way and the curb cut has requirements that will be handled during the permitting phase. Mr. Markham noted that there is an existing curb cut.

Board Member Mead asked for clarification on the standard in this district with regard to artificial turf. Historic Preservation Planner Walker answered that Pensacola Historic District has a landscaping section, Sec. 12-3-10(1)e.6., within the front yard setback the use of grass, ground cover, or shrubs is required. This code has been interpreted in the past that those should be living elements and natural plantings versus artificial. Chairperson Salter asked for clarification on the general height of the sabal palms that will be up lighted. Mr. Markham answered 8-10 feet is the overall height of the palms and the 3,000 kelvin lights are adjustable and will be shining into just the canopy and will not shine on neighbors. Chairperson Salter asked about the SL04 mini flood light and if it would be installed. Mr. Markham noted it is a possibility depending on the size of the trees. Chairperson Salter noted based on the ordinance cited by staff, the use of artificial turf in the front of the house would not be allowed and is not supported by the Chairman.

Mr. Markham noted there are two houses, identified by the applicant as 414 Zarragossa, one has artificial turf and in the right of way and the other side has it too and it is currently being installed. The applicant's customer's only request was artificial turf, which cuts down on maintenance and noise from lawn equipment. Chairperson Salter noted that during his time on the board, the board has never approved artificial turf as a yard material in a residence or the primary. Historic Preservation Planner Walker noted that there is no record of ARB approval for artificial turf at the neighboring properties mentioned by the applicant. One of the properties in question requested artificial turf for an accessory structure but during an abbreviated review the turf was changed to sod so there was never an approval for artificial turf even in the rear of the property. Mr. Markham asked if that unapproved artificial turf will have to be removed. Historic Preservation Planner Walker answered that since it has been brought to the attention of city staff, code enforcement can be alerted to investigate.

Chairperson Salter noted that the ARB has no way to enforce unapproved work and that is up to the city. The ARB has not approved the use of artificial turf on a residential property and certainly not on street view, though it has been approved in

very specific circumstances in regard to commercial, limited use for very specific purposes. The task of the board is to maintain the character of the historic district and artificial turf did not exist historically. Board Member Fogarty echoed Chairperson Salter's opinion on the appropriateness of artificial turf and asked if another type of ground cover was available with minimum maintenance needs. Mr. Markham answered grass is the only other option and noted that the customer is from out of town and will see the properties that did not ask for permission and wonder why they cannot also have artificial turf. A driveway is being poured with no footer. Everyone should be fair. Mr. Markham does not love artificial turf, but the board might want to rethink the quietness of artificial turf and it is being installed in a lot of places. It will look green year-round. Mr. Markham noted his customer will question why they didn't receive approval but there is turf installed down the street, and this should be addressed. Assistant Planning and Zoning Division Manager Harding noted that he sent an email to the Deputy Building Official and Inspections Services to send someone by to investigate.

Board Member Mead made a motion to approve the submittal with the exception of the artificial turf in the front and immediate side yard and that be submitted for alternative ground cover for abbreviated review. Board Member Fogarty seconded the motion and it carried 4-0.

3. 23-1081 433 E. ZARRAGOSSA STREET
PENSACOLA HISTORIC DISTRICT / ZONE HC-1 / CITY COUNCIL DISTRICT 6
CHANGE OF WINDOWS ON ACCESSORY BUILDING AT A CONTRIBUTING
STRUCTURE

Arthus Davis is seeking approval to replace five windows on an accessory building at a contributing structure. Five existing wood windows are to be replaced with vinyl windows that match the sides and rear of the primary structure with six over six grilles-between-the-glass. The proposed vinyl windows have already been purchased.

Mr. Davis presented to the board and noted that the property has since been sold. Mr. Davis also noted that he was under the impression the windows would have exterior grilles but after purchasing, they arrived and had grilles-between-the-glass. The accessory structure is in the rear and cannot be seen. The windows are vinyl and match what was placed on the primary structure during a modification in 2015. The proposed windows are also more durable for hurricanes.

Chairperson Salter asked staff if there is a record of the 2015 approval for the primary. Historic Preservation Planner Walker answered there are several different applications and minutes for this property but no materials were identified for the primary or accessory structure. Chairperson Salter asked when the guest cottage was constructed. Mr. Davis answered to the best of his knowledge the primary structure was built around 1896 and underwent an extensive renovation in 2015 by Nina Campbell. The accessory structure has had very little done to it and Mr. Davis

assumes it was built around the same time as the primary. The fence was installed in 2015. Mr. Pristera noted that he also could not find an exact date, but it was similar to when the house was built or shortly thereafter, so the early 1900s. Board Member Mead noted the accessory structure is likely a contributing structure based on the presumed dates and it is in keeping with the overall architectural design elements for a building of this period. Board Member Mead is concerned about allowing an exception to the requirements for the historic district and the board has been very careful with questions regarding windows on contributing structures. Board Member Mead might feel differently if it was a non-contributing structure, given its position, but it is visible to other surrounding properties even if it is not necessarily as visible from the street. Depending on what happens with those other properties it could become visible from other vantage points and Board Member Mead is inclined not to approve it based on those factors.

Chairperson Salter clarified that based on the information the board has, the accessory structure would be as contributing as the main structure and therefore the use of the proposed vinyl window in the historic district on a contributing structure would not be appropriate. Board Member Mead concurred and stated that the accessory appears to be a contributing structure based on its position and would predate the establishment of the district and therefore likely to be a contributing structure in and of itself. Mr. Davis asked if it would be acceptable to add grilles on the outside of the window and reminded the board there are vinyl windows on the main house. Board Member Mead asked staff how the vinyl was used on the main house. Historic Preservation Planner Walker answered that the records from the 2015 renovation include only elevations and do not include material information. Mr. Pristera noted he checked the UWF Historic Trust records and the application and plans were lacking.

Assistant Planning and Zoning Division Manager Harding noted there a handful of houses on Zarragossa over a two-to-three-year period that there was a considerable amount of unpermitted work done. The city found out because homeowners or neighbors were reporting materials such as Hardi board and there were no records of ARB approval. Board Member Mead stated his concern is that approving the proposed vinyl windows sets a precedent for this property. Chairperson Salter noted that 12-3-10(1)f.6. states that windows on contributing structures should be fabricated of wood and must, in the judgment of the architectural review board, closely approximate the scale and configuration of the original window designs. The board's interpretation of that in the past has been that the primary structure of the window should be wood and the board has allowed clad windows where the cladding is considered like a painted surface. The code also states that all windows shall have true divided lites. The board in the past has interpreted that simulated divided lites can meet the visual aesthetic of a full divided lite. Based on the criteria set forth in the code and what we know about this structure, in agreement with Board Member Mead, Chairperson Salter does not think that the proposed product meets the requirements set forth in the code. Mr. Davis noted he is out \$10,000.

Board Member Mead made a motion to deny the application. Chairperson Salter clarified the motion was based on the discussion of the requirements of 12-3-10(1)f.6.3. Board Member Mead concurred, stating the status of his comments with respect to the contributing structure and lack of true divided lites and the fact the windows are vinyl would not be consistent with that portion of the code cited. Board Member Fogarty seconded the motion and it carried 4-0.

4. 23-1082 517 E. GOVERNMENT STREET
PENSACOLA HISTORIC DISTRICT / ZONE HC-1 / CITY COUNCIL DISTRICT 6
EXTERIOR ALTERATION AT A CONTRIBUTING STRUCTURE

Ronald Nelson is seeking approval to add a 46 x 76 inch window opening on the rear of a contributing structure. The proposed window is a Jeld Wen double hung siteline clad Auralast pine window in the color Hartford green with six over six simulated divided lites to match the existing windows. The shutters will be made of red cedar and will be painted green to match the existing and the hinges and tiebacks will match existing.

Mr. Nelson presented to the board. Chairperson Salter asked for clarification about the 5/8" putty SDL on the quote sheet and confirm it is correct. Mr. Nelson answered correct and it matches the existing windows. Board Member Mead asked for clarification about the side facades and Mr. Nelson clarified the photograph in question was the viewpoint taken from the house looking toward the neighbor. Both sides of the structure match with the ornate head casements above the windows. Board Member Mead asked about the shutter treatments and ornate header components. Mr. Nelson answered that the shutters and ornate header components will match the existing.

Board Member Fogarty made a motion to approve. Chairperson Salter seconded the motion and it carried 4-0.

5. 23-1083 600 S. PALAFOX STREET
PALAFOX HISTORIC BUSINESS DISTRICT / ZONE C-2A / CITY COUNCIL
DISTRICT 6
FINAL REVIEW FOR A NEW HOTEL DEVELOPMENT

Buck Lindsay is seeking final approval for a new eight-story Tempo by Hilton hotel with 213 guest rooms, lobby area, dining, a meeting space, fitness area, swimming pool, and surface parking. This project received conceptual approval at the November 2023 meeting.

Winford Buck Lindsay presented to the board. Chairperson Salter asked about the west and east elevation through-the-wall mechanical units are identified but there is nothing for the north and south elevations. Mr. Lindsay answered that a vertical thin blade louver is depicted on the north and south elevations to service two rooms

and the louver becomes an architectural feature itself. The north and south rooms are Tempo rooms, which is more upscale than the Home 2 Suites rooms with louvers under the window. Chairperson Salter asked if there is information on the louver in the application package. Mr. Lindsay answered no, but there is information for the decorative, below the window louver. The vertical thin blade louvers will be painted to match the color of the wall surface to minimize their visual impact. Board Member Mead asked about the blade signage on the Palafox Street side. Mr. Lindsay noted a separate application for signage will be submitted and Historic Preservation Planner Walker answered that signage will be handled through an abbreviated review. Board Member Mead and Chairperson Salter complimented the application and efforts made by the applicant.

Board Member Yee made a motion to approve the application as submitted. Chairperson Salter offered an amendment that the product information for the thin blade louver come through for abbreviated review. Board Member Yee accepted the amendment. Board Member Fogarty seconded the motion and it carried 4-0.

6. 23-1084 DISCUSSION

NATIONAL PARK SERVICE PRESERVATION BRIEF NO. 16: THE USE OF SUBSTITUTE MATERIALS ON HISTORIC BUILDING EXTERIORS

This item is meant to give the Board an opportunity to discuss a recently released preservation brief from the National Park Service regarding substitute materials for historic building exteriors. The term substitute materials is used to describe building materials that have the potential to match the appearance, physical properties, and related attributes of historic materials well enough to make them alternatives for use in current preservation practice when historic materials require replacement. The Board adopted a policy on June 17, 2021 regarding alternative materials for siding and decking, railings, and other architectural details to be considered on a case-by-case basis.

Historic Preservation Planner provided context to the board regarding the preservation brief. Board Member Mead proposed to defer the discussion to the January meeting and suggested that staff publicize the discussion for more fruitful, public input. Chairperson Salter agreed that the topic comes up frequently and it would benefit from a full board discussion and public input. Board Member Mead strongly urged staff to publicize the discussion with neighborhood preservation associations, contractors, and previous applicants. Assistant Planning and Zoning Division Manager Harding noted this information can be provided with the new year meeting calendar that is sent out.

Board Member Mead made motion to move the discussion item to the January meeting. Board Member Fogarty seconded the motion and it carried 4-0.

ADJOURNMENT



City of Pensacola

222 West Main Street
Pensacola, FL 32502

Memorandum

File #: 24-40

Architectural Review Board

1/18/2024

LEGISLATIVE ACTION ITEM

SUBJECT:

306 W. Blount Street
North Hill Preservation District / Zone PR-1AAA / City Council District 6
Accessory Building for a Contributing Structure

SUMMARY:

Tuff Shed, Inc. is seeking approval to install a prefabricated wood shed on the grass with a shed floor measuring 8 x 10 ft. at a contributing structure. The accessory structure includes panel siding, a shingle roof, a PVC horizontal sliding window, and a single wood shed door.

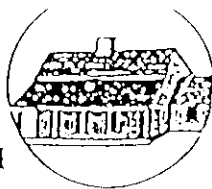
Please find attached all relevant documentation for your review.

RECOMMENDED CODE SECTIONS

Sec. 12-3-10(2)d.2. North Hill Preservation District; Procedure for review; Decisions.
Sec. 12-3-10(2)e.6. NHPD; Regulations and guidelines for any development within the preservation district; Residential accessory structures.

ATTACHMENTS:

1. Florida Master Site File Form
2. Images
3. Application and Materials



HISTORICAL STRUCTURE FORM FLORIDA SITE FILE

Version 2.0 7/92

Site #8 ES00916
Recorder #
Field Date 5 / 4 / 95
Form Date 7 / 27 / 95

Original
☒ Update

SITE NAMES (addr. if none) W. H. OWENS HOUSE /MULT. LIST. #8
SURVEY NORTH HILL /SURVEY # 4758
NATIONAL REGISTER CATEGORY ☒ building ☐ structure ☒ district ☐ site ☐ object

LOCATION IDENTIFICATION

ADDRESS (Include N,S,E,W; st., ave., etc.) 304 W. BLOUNT STREET
CROSS STREETS nearest/between N. BARCELONA AND N. REUS ST.
NEAREST CITY/TOWN PENSACOLA IN CURRENT CITY LIMITS ☒ yes ☐ no
COUNTY ESCAMBIA TAX PARCEL # 9010-003-166
SUBDIVISION NAME NORTH HILL BLOCK 166 LOT NO.
OWNERSHIP ☐ private-profit ☐ priv-nonprofit ☒ priv-indiv ☐ priv-unspecified ☐ city ☐ county ☐ state ☐ federal ☐ unknown
NAME OF PUBLIC TRACT (e.g., park) BELMONT TRACT
ROUTE TO

MAPPING

USGS 7.5' MAP NAME 30087-D2-TF-024 1987
TOWNSHIP 25 RANGE 30W SECT. 26 1/4 1/4-1/4 IRREG. SECT.? ☒ y ☐ n
UTM: ZONE 16 17 EASTING 111110 NORTHING 111110
PLAT OR OTHER MAP (Map's name, location)

DESCRIPTION

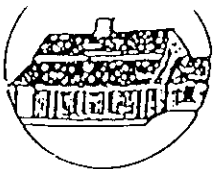
STYLE MASO EXTERIOR PLAN IRRE NO. STORIES 1
STRUCTURAL SYSTEMS MASO
FOUNDATION: Types CONT Materials BRIC
EXTERIOR FABRICS BRIC/STUC
ROOF: Types GAHP Materials SHCO
Secondary strucs. (dormers etc.) CRGA
CHIMNEY: No. 2 Materials BRIC LOCATIONS EAST END, CENTER
WINDOWS (types, materials, and placements) RIDGE
DHS, 4/1, WOOD; JALOUSIE

MAIN ENTRANCE (stylistic details)
PORCHES: #open #closed #incised Locations
Porch roof types
EXTERIOR ORNAMENT EXPOSED RAFTERS

INTERIOR PLAN CONDITION: ☐ excellent ☒ good ☐ fair ☐ deteriorated ☐ ruinous
SURROUNDINGS (N=None, S=Some, M=Most, A=All or nearly all) ☐ commercial ☐ residential ☐ institutional ☐ rural
ANCILLARY FEATURES (No., type of outbuildings; major landscape features)

ARCHAEOLOGICAL REMAINS AT SITE Archaeological form completed? ☐ y ☐ n (No-explain; yes-attach!)

Artifacts or other remains
NARRATIVE (E.g. description of interior, landscape, architecture, etc; please limit to 3 lines and attach full statement on separate sheet)



HISTORICAL STRUCTURE FORM

Site #8

HISTORY

CONSTRUCTION DATE 1933 CIRCA ☒ yes ☐ no
 ARCHITECT: (last name first) UNKNOWN
 BUILDER: (last name first) UNKNOWN
 MOVES ☐ yes ☒ no Dates _____ Orig. addr. _____
 ALTERATIONS ☐ yes ☒ no Dates _____ Nature _____
 ADDITIONS ☐ yes ☒ no Dates _____ Nature _____
 ORIGINAL USES (give dates) RESIDENCE
 INTERMEDIATE USES (give dates) _____
 PRESENT USES (give dates) RESIDENCE
 OWNERSHIP HISTORY (especially original owner) GREGORY B. HALL (CURRENT)

SURVEYOR'S EVALUATION OF SITE

Potentially elig. for local designation? ☐ yes ☐ no ☐ insuff. info
 Individually elig. for Nat. Register? ☐ yes ☐ no ☐ insuff. info
 Potential contributor to NR district? ☐ yes ☐ no ☐ insuff. info

Local Designation Category _____

HISTORICAL ASSOCIATIONS (ethnic heritage, etc.) _____

EXPLANATION OF EVALUATION (required; limit to three lines; attach full statement on separate sheet)

CROSS REFERENCES

BIBLIOGRAPHIC REFERENCES (Author, date, title, publication information. If unpublished, give FSF Manuscript Number, or location where available)

PHOTOGRAPHS (REQUIRED) B&W print(s) at least 3 x 5, at least one main facade. Label the back of the print with the FSF site number (site name if not available), direction and date of photograph: use pencil. Attach to back of the second to last page with a plastic or coated clip.

Location of negatives/neg. nos. R24, F5-6

RECORDER

NAME (last first)/ADDR/PHONE/AFFILIATION HPPB

FOR DETAILED INSTRUCTIONS: *Guide to the 1992 Historic Structure Form of the Florida Site File.*

OFFICIAL EVALUATIONS		OUR USE ONLY	
NR DATE	KEEPER-NR ELIGIBILITY: ☐ Y ☐ N ☐ PE ☐ I	Date	/ /
DELIST DATE	SEPC-NR ELIGIBILITY: ☐ Y ☐ N ☐ PE ☐ I	Date	/ /
	LOCAL DESIGNATION: _____	Date	/ /
	Local office		

REQUIRED:

- (1) USGS MAP WITH STRUCTURE PINPOINTED
 (2) LARGE SCALE STREET OR PLAT MAP
 (3) PHOTO OF MAIN FACADE, PREFER B&W, AT LEAST 3X5



FLORIDA MASTER SITE FILE
Site Inventory Form

FDAHRM 802 = =
1009 = =

Site No. ES-916
Site Name Owens, W.H. House 830 = = Survey Date 8009 820 = =
Address of Site: 306 W. Blount St. Pensacola, FL 32501 905 = =
Instruction for locating pm M sode pf W. Blount St. between N.
Barcelona St. and N. Reus St. 813 = =
Location: Clapp Tract 166 W60' of E130' of S 1/2 868 = =
subdivision name block no. lot no.
County: Escambia 808 = =
Owner of Site: Name: Swett, Ethel P.
Address: 306 W. Blount St. 902 = =
Pensacola, FL 32501 832 = =
Type of Ownership private 848 = = Recording Date
Recorder:
Name & Title: Gantzhorn, Alan; Hawley, Nancy
Address: HPPB 818 = =

Condition of Site: Integrity of Site: Original Use residence 838 = =
Check One Check One or More
☐ Excellent 863 = = ☒ Altered 858 = = Present Use residence 850 = =
☒ Good 863 = = ☐ Unaltered 858 = = Dates: Beginning + 1933 844 = =
☐ Fair 863 = = ☐ Original Site 858 = = Culture/Phase American 840 = =
☐ Deteriorated 863 = = ☐ Restored () (Date:) () 858 = = Period 20th Century 845 = =
☐ Moved () (Date:) () 858 = =
916 = =

NR Classification Category: District
Threats to Site:
Check One or More
☐ Zoning (X) 878 = = ☐ Transportation (X) 878 = =
☐ Development (X) 878 = = ☐ Fill (X) 878 = =
☐ Deterioration (X) 878 = = ☐ Dredge (X) 878 = =
☐ Borrowing (X) 878 = =
☐ Other (See Remarks Below): 878 = =
Areas of Significance: Architecture 910 = =

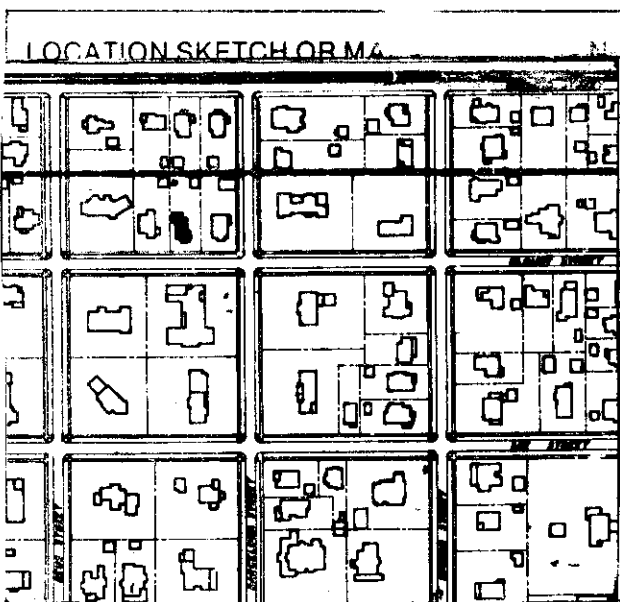
Significance:

An example of a single story brick cottage character-
istic of houses built in Pensacola during the 1930's.

SEE SITE FILE STAFF FOR
ORIGINAL PHOTO(S) OR MAP(S)

911 = =

ARCHITECT unknown 872 ==
 BUILDER unknown 874 ==
 STYLE AND/OR PERIOD masonry vernacular 964 ==
 PLAN TYPE irregular 966 ==
 EXTERIOR FABRIC(S) brick; common bond; stucco 854 ==
 STRUCTURAL SYSTEM(S) masonry 856 ==
 PORCHES none 942 ==
 FOUNDATION: continuous; brick 942 ==
 ROOF TYPE: gable on hip 942 ==
 SECONDARY ROOF STRUCTURE(S): cross gables 942 ==
 CHIMNEY LOCATION: E end; center ridge 942 ==
 WINDOW TYPE: DHS; 4/1; wood # jalousie 942 ==
 CHIMNEY: brick 882 ==
 ROOF SURFACING: composition shingle; butt 882 ==
 ORNAMENT EXTERIOR: brackets 882 ==
 NO. OF CHIMNEYS 2 952 == NO. OF STORIES 1 950 ==
 NO. OF DORMERS 0 954 ==
 Map Reference (incl. scale & date) USGS 7.5 MIN Pensacola 1970;
North Hill, Gordon Richmond, 1974 809 ==
 Latitude and Longitude: 800 ==
 Site Size (Approx. Acreage of Property): LT 1 833 ==



Township	Range	Section	
2S	30W	26	812 ==

UTM Coordinates:

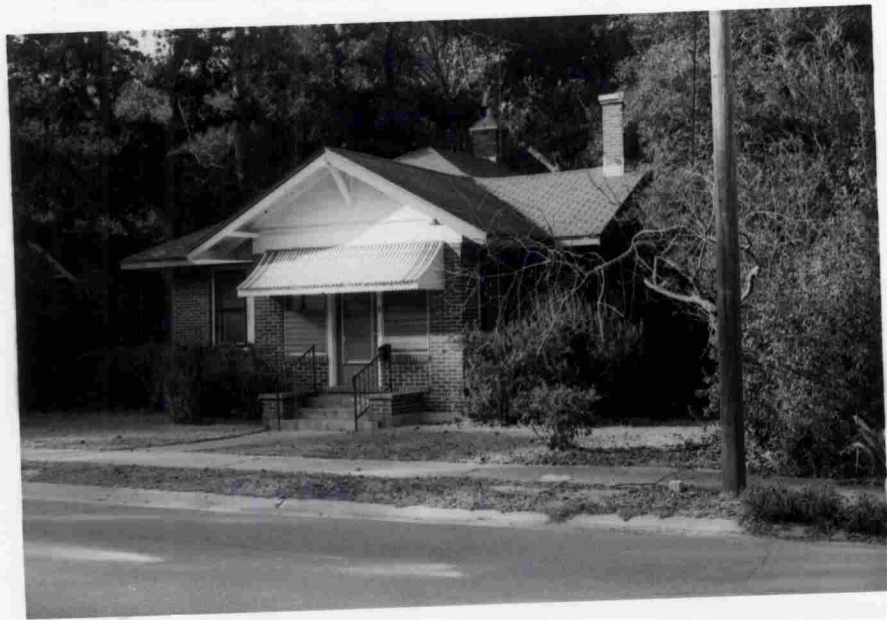
Zone Easting Northing 890 ==

Photographic Records Numbers HPPB P.81.1 Fr. 28 860 ==

Contact Print

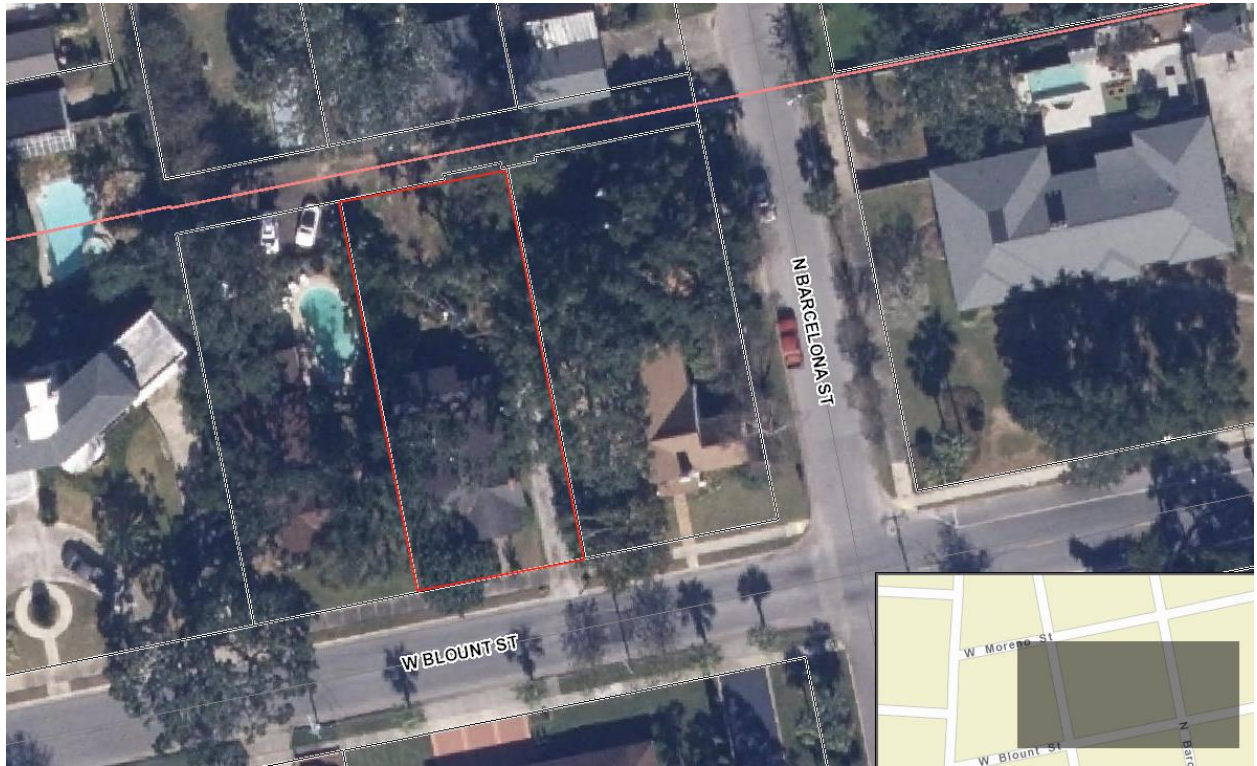
ES 916







306 W. Blount Street





**Architectural Review Board Application
Full Board Review**

Application Date: 12.15.2023

Project Address: 306 W BLOUNT ST PENSACOLA, FL 32501

Applicant: Tuff Shed, Inc.

Applicant's Address: 3450 Armour Ave Mobile AL 36617

Email: 600_permits@tuffshed.com **Phone:** 251-244-4537

Property Owner: Curtis Black

District: ☐ PHD ☒ NHPD ☐ OEHPD ☐ PHBD ☐ GCD
(If different from Applicant)

Application is hereby made for the project as described herein:

- ☒ Residential Homestead – \$50.00 hearing fee
☐ Commercial/Other Residential – \$250.00 hearing fee

** An application shall be scheduled to be heard once all required materials have been submitted and it is deemed complete by the Secretary to the Board. You will need to include eight (8) copies of the required information. Please see pages 3 – 4 of this application for further instruction and information.*

Project specifics/description:

No MEPF. Install of a 8'x10' prefabricated wooden shed on grass with shed floor.

I, the undersigned applicant, understand that payment of these fees does not entitle me to approval and that no refund of these fees will be made. I have reviewed the applicable zoning requirements and understand that I must be present on the date of the Architectural Review Board meeting.

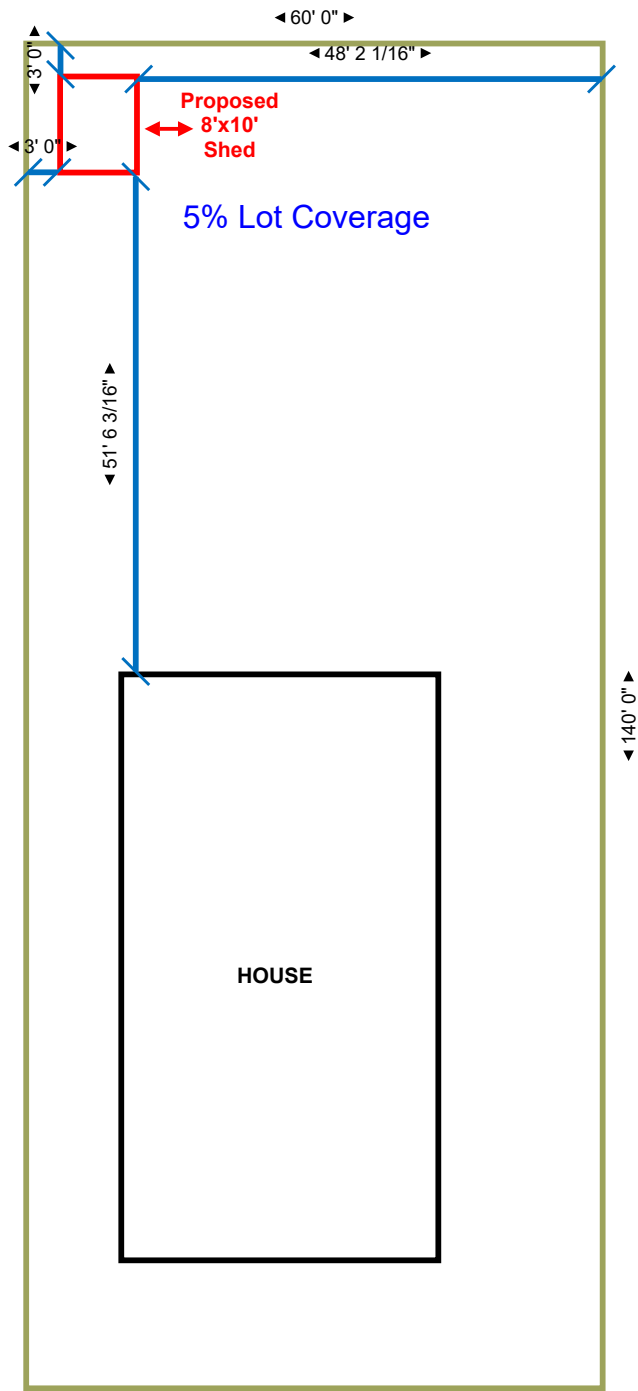
Savannah M. Hudson
Applicant Signature

12.15.2023
Date

BUILDING DATA:
1. CONSTRUCTION TYPE: VB
2. OCCUPANCY GROUP: U
3. USE: STORAGE SHED
4. FIRE SPRINKLERS: NONE

GOVERNING CODES:
2022 CBC, 2022 CRC, 2022 CMC, 2022 CEC, 2022 CPC,
2022 CPC, 2022 CA ENERGY CODE, 2022 BUILDING
EFFICIENCY STANDARDS, 2022 CGBC

NO MEP UNDER THIS PERMIT



Owner: Curtis Black			Drawn: Savannah Hudson	Purpose of site plan: Site Plan	
Address: Address 306 W Blount St 32501	Scale: 1":20'0"	Date: 12.01.2023	Rev: A		



Curtis Black
306 West Blount Street
Pensacola FL 32501
Q-2425744

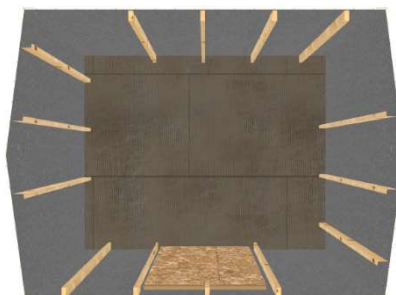


Height: 8' 10"



Wall D

Wall A



Wall C

Wall B

Base Details/Permit Details

Building Size & Style

Premier Ranch - 8' wide by 10' long

Door

4' x 6'2" Single Shed Door, Left Hinge Placement, In Door Horizontal Transom (4' door)

Paint Selection

Base: Southern Breeze, Trim: Notorious

Roof Selection

Charcoal Dimensional Premium Shingle

Drip Edge

White

Is a permit required for this job?

Yes

Who is pulling the permit?

Tuff Shed

Optional Details

High Wind

High Wind - Retail

Windows

2 2'x2' Insulated Horizontal Sliding Window

Floor and Foundation

4 Ea Shed Anchor into Dirt - Auger or MR88

Vents

2 Ea 16"x8" Wall Vent - White

Jobsite/Installer Details

Do you plan to insulate this building after Tuff Shed installs it?

No

Is there a power outlet within 100 feet of installation location?

Yes

The building location must be level to properly install the building. How level is the install location?

Within 4" of level

Will there be 18" of unobstructed workspace around the perimeter of all four walls?

Yes

Can the installers park their pickup truck & trailer within approximately 200' of your installation site?

Yes

Substrate Shed will be installed on?

Grass

DocuSigned by:

Curtis Black

C8422B23DE6D447...

Customer Signature: _____ Date: 11/29/2023



TUFF SHED

1777 S. Harrison St.
#600 Denver, CO 80210

FL Product approvals

PRODUCT TYPE	MANUFACTURER	MODEL	FL PRODUCT #	EXPIRATION
SIDING(PANEL)	LP BUILDING SOLUTIONS	SWING	FL9190.3	12/31/2030
SIDING (LAP)	JAMES HARDIE BUILDING PRODUCTS, INC	LAP	FL10477.1	12/31/2023
SIDING (CEMENT)	JAMES HARDIE BUILDING PRODUCTS, INC	CEMENT STUCCO	FL13223.2	12/31/2023
IMPACT SLIDING WINDOW	ECO IMPACT SLIDER	IMPACT SLIDER	NOA 19-219.08	6/19/2024
SLIDING WINDOW	TAFCOO CORPORATION	SLIDER	FL20743.1	2/1/2025
TUFF SHED DOUBLE DOOR	TUFF SHED, INC	SHED DOOR	FL22202.1	6/14/2028
TUFF SHED DOUBLE DOOR(HVHZ)	TUFF SHED, INC	SHED DOOR	FL22202.2	6/14/2028
TUFF SHED SINGLE DOOR	TUFF SHED, INC	SHED DOOR	FL22202.3	6/14/2028
TUFF SHED SINGLE DOOR(HVHZ)	TUFF SHED, INC	SHED DOOR	FL22202.4	6/14/2028
STEEL DOOR INSWING	JELD-WEN	6 PANEL/3068	FL11136.1	10/31/26
STEEL DOOR OUTSWING	JELD-WEN	6 PANEL/3068	FL11136.2	8/31/2024
FULL LITE DOOR	JELD-WEN	EXTERIOR DOOR	FL17454.1	12/31/2027
9 DOOR INSWING	JELD-WEN	EXTERIOR DOOR	FL12509.2	10/31/2028
9 LITE DOOR OUTSWING	JELD-WEN	EXTERIOR DOOR	FL12509.4	10/31/2028
FLOOD VENTS	SMART VENT PRODUCT, INC	FOUNDATION	FL5822.1	12/31/2023
RIDGE VENTS	GAF COBRA RIDGE RUNNER	RIDGE VENT	NOA 17-0822.06	11/01/2027
RIDGE VENTS	GAF COBRA RIGID VENT3	RIDGE VENT	FL6267.1	7/12/2025
IMPACT RESISTANT OVERHEAD	OVERHEAD DOOR CORP	GARAGE DOOR	FL14170.6	12/31/2023
ROOF UNDERLAYMENT	GAF	FELTBUSTER	FL18686.1	2/22/2023
ASPHALT SINGLES	GAF	SHINGLES	FL10124.1	12/16/2025

As Required by Florida statute 553.842 and Florida Administrative Code 9b-72, please provide the information and product approval number(s) for the building components listed below if they will be utilized on the building structure. Florida approved products are listed online at www.floridabuilding.org or can be obtained from local product supplier.
All products are per Florida building code 7th edition

Compliance Statement FL20743
January 27, 2021

Evaluator: Lucas A. Turner, FL PE #58201, 2428 Old Natchez Trace Trl., Camden, TN

Florida Product Approval Reference: FL20743

Product Description: Series 82000 PVC Horizontal Sliding Window, Non-Impact

Manufacturer: Tafco Corporation, 1953 North 17th Ave., Melrose Park, Illinois 60160

Statement of Compliance: I have reviewed the above-listed product and Florida Product Approval, previously submitted for 2017 Florida Building Code (FBC) compliance, per the requirements of FAC Product Approval Rule Chapter 61G20-3.007(f) for Self-Affirmation.

The new edition of the code, 7th Edition (2020) FBC, does not require a material or substantive change of this approved product or its installation. The testing standards and standard dates used in the product testing and evaluation as indicated below, are also compliant with the 7th Edition (2020) FBC and are therefore valid and acceptable under the new code.

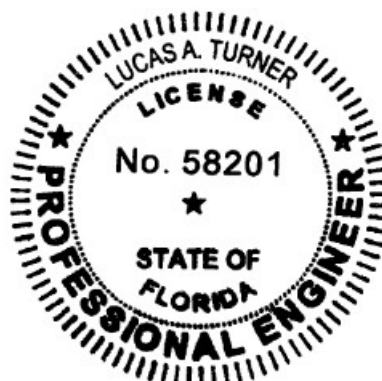
This product complies with the requirements of the 7th Edition (2020) Florida Building Code outside the High Velocity Hurricane Zone.

Technical Documentation Reviewed:

- 1) Evaluation Report FPA-82000, as approved in 2017 FBC FL20743
- 2) Installation Drawing FPA-82000, as approved in 2017 FBC FL20743
- 3) Test Reports F5086.01-109-44-R0 and F9644.01-109-44-R0, from Intertek/ATI, York, PA, with testing performed: AAMA/WDMA/CSA 101/I.S.2/A440-08/11

Certification of Independence: I do not have, nor do I intend to acquire, nor will I acquire, a financial interest in Tafco Corporation or in any company manufacturing or distributing products for which this report is being issued. I do not have, nor do I intend to acquire, nor will I acquire, a financial interest in any other entity involved in the testing or approval process of this product.

Lucas Turner
2021.01.27
11:33:46
-06'00'



22

1/27/2021
Lucas A. Turner, P.E.
FL PE #58201

UNINHABITED UTILITY SHED UP TO 12' WIDE x UP TO 24' LONG
SR600, TR700, PR

- NOTES:
1. BUILDING CODE: FLORIDA BUILDING CODE, 7th EDITION (2020)
BUILDINGS ARE NOT FOR HIGH-VELOCITY HURRICANE ZONES (HVHZ)

2. DESIGN LOADING:

WIND SPEED: $V_{ult} = 165$
 $V_{asd} = 128$

EXPOSURE: C

ROOF LIVE LOAD: 20 PSF

ROOF DEAD LOAD: 10 PSF

FLOOR LIVE LOAD: MIN. 50 PSF (SEE NOTE 5, DETAIL 1, SHEET 3)

RISK CATEGORY: I

COMPONENT AND CLADDING:

ROOF:

21/-33 PSF (ZONE 1)

21/-57 PSF (ZONE 2)

21/-84 PSF (ZONE 3)

36/-39 PSF (ZONE 4)

36/-48 PSF (ZONE 5)

WIND PRESSURE (psf) (ASD VALUES)

(BASED ON 10 SQ FT)

WALL:
- HEADER NAILING:
HEADER TO STUD - 4-16d END NAIL DOUBLED HEADER
- 16d @ 16" STAGGERED FACE NAIL
- NAILING:
REFER TO SHEET 2 FOR WALL AND ROOF SHEATHING NAILING.
- MAX WALL HEIGHT FOR EACH SHED:
- SR600 - 5'-8¼" (68¼")
TR700 - 6'-8¼" (80¼")
PR - 6'-8¼" (80¼")
- | SHED SIZE CHART | | | | |
|-----------------|-------|-----------------|--|---------------------------------------|
| WIDTH | PITCH | SIDEWALL HEIGHT | OVERALL HEIGHT | MID-ROOF HEIGHT |
| 6' | 4/12 | 5'-8¼" | 7'-5⅓⅓ ¹³ ⅓ ₁₆ " | 6'-11⅓ ¹¹ ⅓ ₈ " |
| 8' | 4/12 | 5'-8¼" | 7'-9⅓ ¹¹ ⅓ ₁₆ " | 7'-1⅓ ¹¹ ⅓ ₁₆ " |
| 10' | 4/12 | 5'-8¼" | 8'-1⅓ ⁹ ⅓ ₁₆ " | 7'-3⅓ ¹¹ ⅓ ₁₆ " |
| 12' | 4/12 | 5'-8¼" | 8'-5⅓ ¹¹ ⅓ ₁₆ " | 7'-5" |
| 6' | 4/12 | 6'-8¼" | 8'-5⅓ ¹³ ⅓ ₁₆ " | 7'-11⅓ ¹¹ ⅓ ₈ " |
| 8' | 4/12 | 6'-8¼" | 8'-9⅓ ¹¹ ⅓ ₁₆ " | 8'-1⅓ ¹¹ ⅓ ₁₆ " |
| 10' | 4/12 | 6'-8¼" | 9'-1⅓ ⁹ ⅓ ₁₆ " | 8'-3⅓ ¹¹ ⅓ ₁₆ " |
| 12' | 4/12 | 6'-8¼" | 9'-5⅓ ¹¹ ⅓ ₁₆ " | 8'-5" |
- | ROOF SHEATHING (⅓⅓ ¹¹ ⅓ ₁₆ " OSB) | | | |
|---|---------|--------------------|--------------------|
| WIDTH | LENGTH | FIELD NAILING | EDGE NAILING |
| 6' | 6'-18' | 8d NAILS @ 12" O.C | 8d NAILS @ 4" O.C. |
| 8' | 8'-24' | 8d NAILS @ 12" O.C | 8d NAILS @ 4" O.C. |
| 10' | 10'-24' | 8d NAILS @ 12" O.C | 8d NAILS @ 4" O.C. |
| 12' | 12'-24' | 8d NAILS @ 12" O.C | 8d NAILS @ 4" O.C. |
- NOTES:
1. USE 8d COMMON OR GALVANIZED BOX NAILS.
- | ⅓⅓ ¹¹ ⅓ ₈ " SMARTSIDE NAILING REQUIREMENTS
FOR SR600, TR700, AND PR | | | |
|--|---------|--------------------|--------------------|
| SIDEWALL NAILING (MIN. 2'-0" RETURN EACH END) | | | |
| WIDTH | LENGTH | FIELD NAILING | EDGE NAILING |
| 6' | 6'-20' | 8d NAILS @ 6" O.C. | 8d NAILS @ 3" O.C. |
| 8' | 8'-24' | 8d NAILS @ 6" O.C. | 8d NAILS @ 3" O.C. |
| 10' | 10'-24' | 8d NAILS @ 6" O.C. | 8d NAILS @ 3" O.C. |
| 12' | 12'-24' | 8d NAILS @ 6" O.C. | 8d NAILS @ 3" O.C. |
- | ⅓⅓ ¹¹ ⅓ ₈ " SMARTSIDE NAILING REQUIREMENTS
FOR SR600, TR700, AND PR | | | |
|--|---------|--------------------|--------------------|
| END WALL NAILING (MIN. 2'-0" RETURN EACH END) | | | |
| WIDTH | LENGTH | FIELD NAILING | EDGE NAILING |
| 6' | 6'-20' | 8d NAILS @ 6" O.C. | 8d NAILS @ 3" O.C. |
| 8' | 8'-24' | 8d NAILS @ 6" O.C. | 8d NAILS @ 3" O.C. |
| 10' | 10'-24' | 8d NAILS @ 6" O.C. | 8d NAILS @ 3" O.C. |
| 12' | 12'-24' | 8d NAILS @ 6" O.C. | 8d NAILS @ 3" O.C. |
- SIDING TABLE NOTES:

1. NAILING IS FOR ⅓⅓¹¹⅓₈" SMARTSIDE PANEL OR ⅓⅓¹¹⅓₈" SMARTSIDE WITH FOIL BACKER.

2. MINIMUM 2'-0" RETURN FROM EACH END OF EACH WALL.

3. NO SINGLE OPENING GREATER THAN 8'-0"

4. * 6' WIDE X 6'-9' LENGTH BUILDINGS ARE BASED ON 3-SIDED DIAPHRAGM. THE END WALL OPPOSITE OF THE OPENING MUST BE FULLY SHEATHED, IN THE 3-SIDED DIAPHRAGM CASES. THE END WALL WITH THE OPENING DOES NOT HAVE A MIN. RETURN WALL ON EACH SIDE OF THE OPENING.

5. USE COMMON OR GALVANIZED BOX NAILS.

6. ON THESE BUILDINGS 6' X 10' THE 3' DOOR IN THE END WALL WILL NEED TO BE OFF SET. THERE WILL BE A 2' PANEL ON ONE SIDE AND A 1' PANEL ON THE OTHER SIDE OF THE DOOR.

7. BUILDING SIZES BELOW REQUIRE SHEATHING ON BOTH SIDES OF WALL WITH OPENING (⅓⅓¹¹⅓₁₆" OSB ON INSIDE OF WALL):

6'X10' WITH 3' OF OPENING ON END WALL WITH 2' OF SHEAR (SEE NOTE 6)

8'X16'-24' WITH 3' OF OPENING ON END WALL WITH 5' OF SHEAR

8'X14'-22' WITH 4' OF OPENING ON END WALL WITH 4' OF SHEAR

10'X20'-24' WITH 3' OF OPENING ON END WALL WITH 7' OF SHEAR

10'X18'-24' WITH 4' OF OPENING ON END WALL WITH 6' OF SHEAR

10'X12'-24' WITH 6' OF OPENING ON END WALL WITH 4' OF SHEAR

12'X18'-24' WITH 6' OF OPENING ON END WALL WITH 6' OF SHEAR

12'X14'-24' WITH 8' OF OPENING ON END WALL WITH 4' OF SHEAR

8. NO OPENINGS ARE ALLOWED ON THE END WALLS OF 6' WIDE BUILDINGS LONGER THAN 14'. THE ENDWALL OF 6' WIDE X 10'-14' LONG BUILDINGS MAY HAVE A SINGLE 2' OPENING CENTERED ON THE WALL.
- | FL PRODUCT APPROVALS | | | |
|---------------------------------------|-------------------------------------|---------------|----------------|
| PRODUCT TYPE | MANUFACTURER | MODEL | FL PRODUCT # |
| SIDING (PANEL) | LP BUILDING SOLUTIONS | SIDING | FL9190.3 |
| SIDING (LAP) | JAMES HARDIE BUILDING PRODUCTS, INC | LAP | FL10477.1 |
| SIDING (CEMENT) | JAMES HARDIE BUILDING PRODUCTS, INC | CEMENT STUCCO | FL13223.2 |
| IMPACT SLIDING WINDOW | ECO IMPACT SLIDER | IMPACT SLIDER | NOA 19-0219.08 |
| SLIDING WINDOW | TAFCO CORPORATION | SLIDER | FL20743.1 |
| TUFF SHED DOUBLE DOOR | TUFF SHED, INC. | SHED DOOR | FL22202.1 |
| TUFF SHED DOUBLE DOOR (HVHZ) | TUFF SHED, INC. | SHED DOOR | FL22202.2 |
| TUFF SHED SINGLE DOOR | TUFF SHED, INC. | SHED DOOR | FL22202.3 |
| TUFF SHED SINGLE DOOR (HVHZ) | TUFF SHED, INC. | SHED DOOR | FL22202.4 |
| STEEL DOOR INSWING | JELD-WEN | 6 PANEL/3068 | FL11136.1 |
| STEEL DOOR OUTSWING | JELD-WEN | 6 PANEL/3068 | FL11136.2 |
| FULL LITE DOOR | JELD-WEN | EXTERIOR DOOR | FL17454.1 |
| 9 LITE DOOR INSWING | JELD-WEN | EXTERIOR DOOR | FL12509.2 |
| 9 LITE DOOR OUTSWING | JELD-WEN | EXTERIOR DOOR | FL12509.4 |
| FLOOD VENTS | FLOOD SOLUTIONS | FOUNDATION | FL17588.1 |
| RIDGE VENTS | GAF COBRA RIDGE RUNNER | RIDGE VENT | NOA 17-0822.06 |
| RIDGE VENTS | GAF COBRA RIGID VENT3 | RIDGE VENT | FL6267.1 |
| IMPACT RESISTANT OVERHEAD GARAGE DOOR | OVERHEAD DOOR CORP | GARAGE DOOR | FL14170.6 |
| ROOF UNDERLAYMENT | GAF | FELTBUSTER | FL18686.1 |
| ASPHALT SHINGLES | GAF | SHINGLES | FL10124.1 |
| METAL ROOFING | MARLYN METALS, INC | MAR-RIB | FL8993 |
-
- Order #.

Customer:

Site Address:

Building Size:WIDTH - LENGTH - HEIGHT - SQ. FT. AREA
- P.O. #

Drawn By: PK

Date: 6/21/21

Checked By:

Date:

Scale: N.T.S.
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- TUFF SHED, INC.
ENGINEERING DEPARTMENT

RICHARD J. WILLS, P.E.
RWILLS@TUFFSHED.COM
1777 S. HARRISON STREET
DENVER, COLORADO 80210
(303) 753-8833 EXT. 96315
- TITLE

PROJECT NOTES

NAILING REQUIREMENTS

FBC, 7th EDITION (2020)

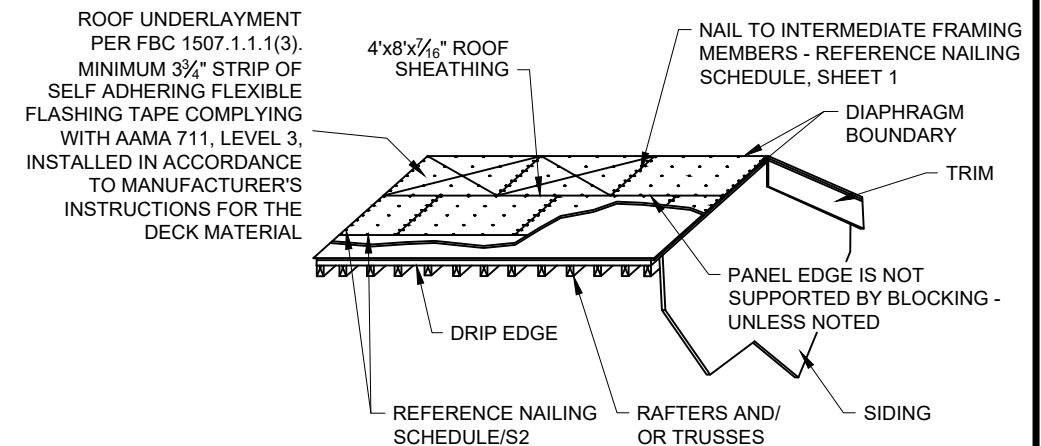
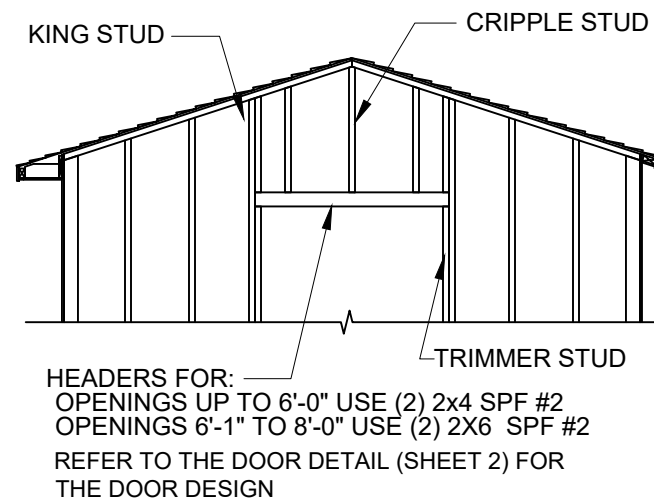
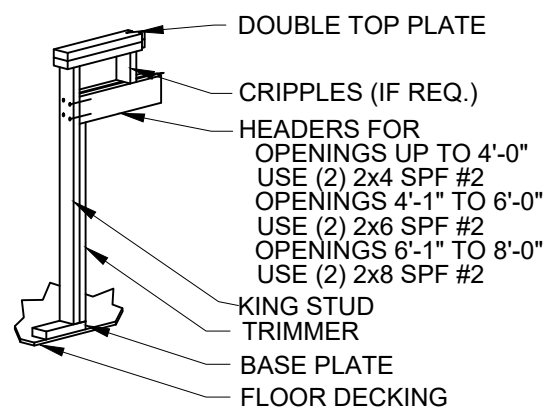
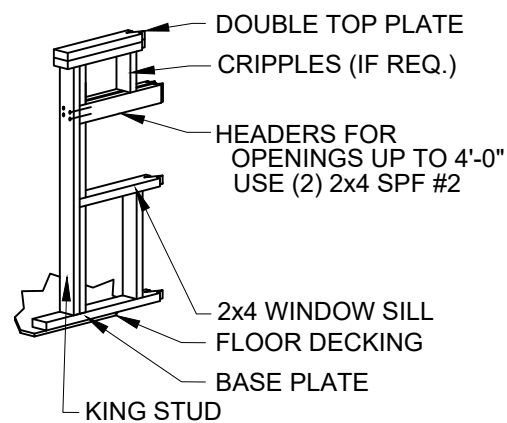
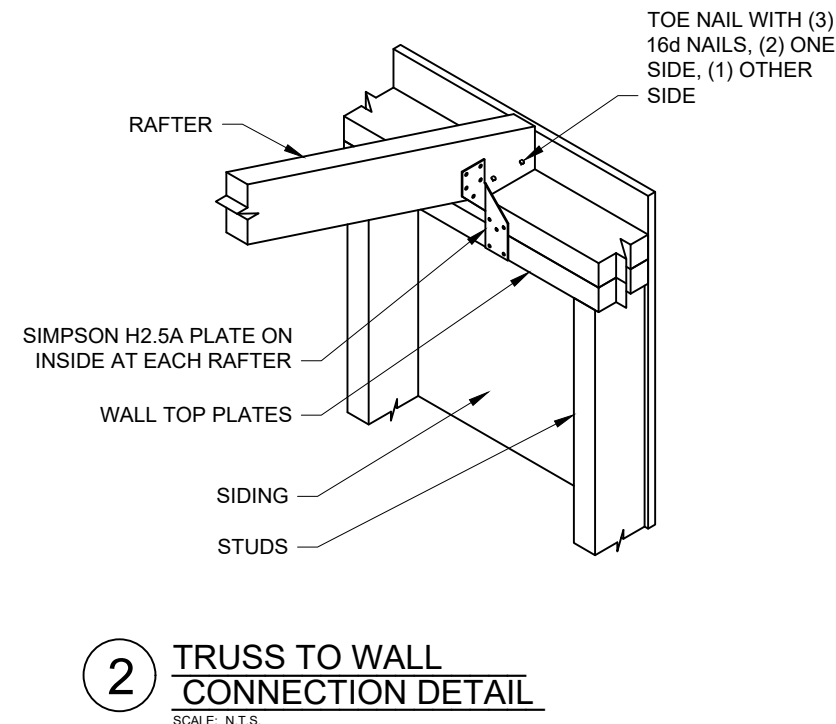
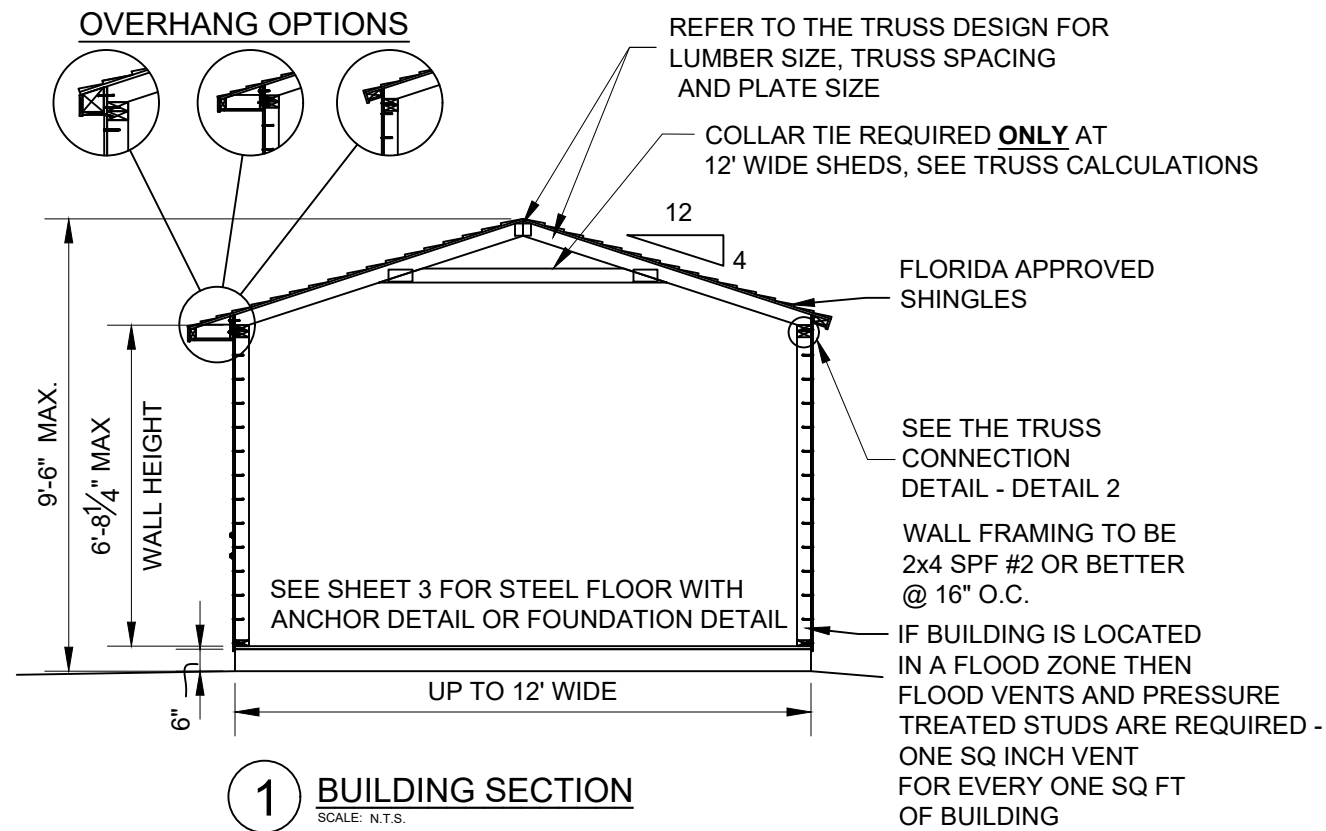
162C
- DRAWING NO.

FL-PR-SR-TR-01

REV. LEVEL 01

SHEET 1

PAGE 1 OF 4
- 19 JAN 2022
Page 25 of 118



Order #.	
Customer:	
Site Address:	
Building Size: WIDTH - LENGTH - HEIGHT - SQ. FT. AREA	

P.O. #	
Drawn By: PK	
Date: 6/21/21	
Checked By:	
Date:	
Scale: N.T.S.	

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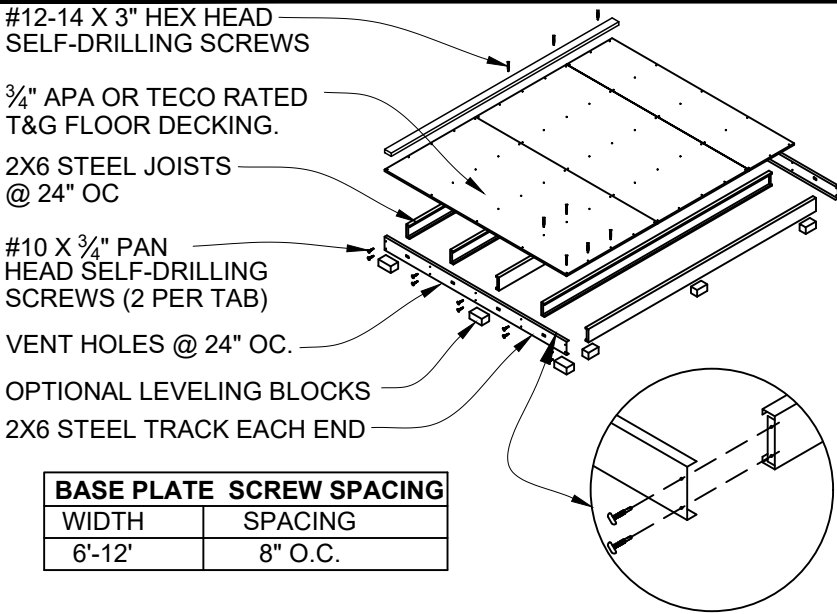
TUFF SHED, INC.
ENGINEERING DEPARTMENT

RICHARD J. WILLS, P.E.
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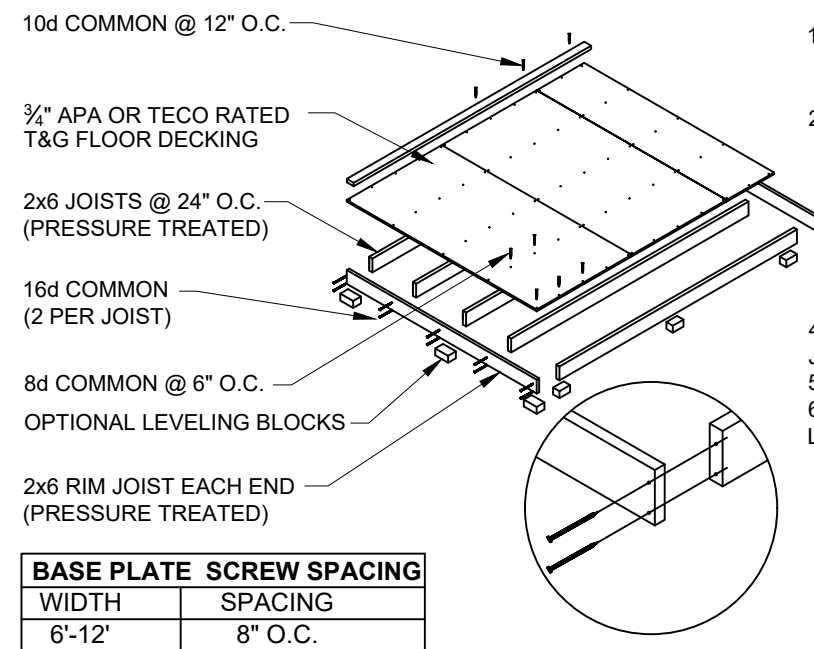
TITLE

BUILDING SECTIONS
HEADER FRAMING DETAILS
FBC, 7th EDITION (2020)
162C

DRAWING NO.	FL-PR-SR-TR-01
REV. LEVEL	01
SHEET	2
PAGE	2 OF 4



1. STEEL SHED FOUNDATION:
600T125-054 - 16 GAUGE STEEL TRACKS G140 ZINC COATED
600S137-054 - 16 GAUGE STEEL JOISTS G140 ZINC COATED @ 24" O.C.
(SUPPLIER: ALLIED STUDCO (JOIST: 600S137-054 / TRACK: 600T125-054) ICC ER-4943P.
2. 3/4" APA OR TECO RATED TONGUE AND GROOVE FLOOR DECKING. 24" MAX PANEL SPAN. STAGGER PANEL LAYOUT.
3. FASTEN FLOOR DECKING TO JOIST & TRACKS USING #8 x 1 5/8" ZINC PLATED SCREWS @ 12" O.C. NO BLOCKING REQUIRED. ALL EDGES SHALL LIE ON FLOOR JOISTS. STAGGER PANEL LAYOUT PER APA CONDITION 1.
4. FASTEN SOLE PLATE THROUGH FLOOR DECKING INTO JOISTS OR TRACKS WITH #12-14 X 3" GALVANIZED SELF-DRILLING SCREWS. REFERENCE SPACING CHART.
5. ALLOWABLE FLOOR LIVE LOAD: 75 PSF FOR STEEL JOISTS CONTINUOUSLY SUPPORTED. 50 PSF FOR JOISTS ON BLOCKS AS SHOWN.
6. USE OPTIONAL CONCRETE BLOCKS AS REQUIRED TO LEVEL BUILDING:
SUGGESTED SIZES: 2" x 8" x 16", 4" x 8" x 16", OR 8" x 8" x 16".
BLOCKS UNDER JOISTS SPACED @ 8'-0" O.C. MAXIMUM.
BLOCKS UNDER TRACK SPACED @ 4'-0" O.C. MAXIMUM.



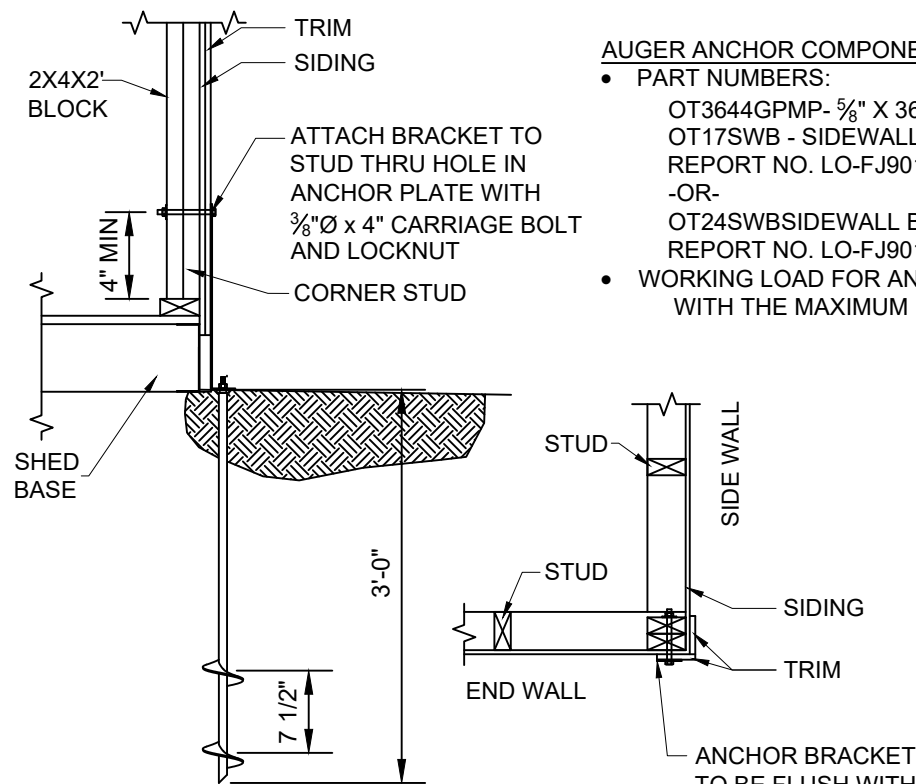
1. WOOD SHED FOUNDATION:
2x6 #2 PRESSURE TREATED SPRUCE-PINE-FIR RIM JOISTS
2x6 #2 PRESSURE TREATED SPF JOISTS @ 24" O.C.
2. 3/4" APA OR TECO RATED TONGUE AND GROOVE FLOOR DECKING. 24" MAX PANEL SPAN. NO BLOCKING REQUIRED. ALL EDGES SHALL LIE ON FLOOR JOISTS. STAGGER PANEL LAYOUT PER APA CONDITION 1. NAIL PLYWOOD TO JOISTS AND RIM JOISTS:
BORDER: 8d COMMON SPACED @ 6" O.C.
EDGE: 8d COMMON SPACED @ 6" O.C.
FIELD: 8d COMMON SPACED @ 12" O.C.
4. FASTEN SOLE PLATE THROUGH FLOOR DECKING INTO JOISTS OR RIM JOISTS WITH 10d COMMON SPACED @ 12" O.C.
5. ALLOWABLE FLOOR LIVE LOAD: 40 PSF
6. USE OPTIONAL CONCRETE BLOCKS AS REQUIRED TO LEVEL BUILDING:
SUGGESTED SIZES: 2" x 8" x 16", 4" x 8" x 16", OR 8" x 8" x 16".
BLOCKS UNDER JOISTS SPACED @ 8'-0" O.C. MAXIMUM.
BLOCKS UNDER RIM JOISTS SPACED @ 4'-0" O.C. MAXIMUM.

1 OPTIONAL STEEL SHED BASE DETAIL

SCALE: N.T.S.

2 OPTIONAL WOOD SHED BASE DETAIL

SCALE: N.T.S.



AUGER ANCHOR COMPONENTS BY OLIVER TECHNOLOGIES

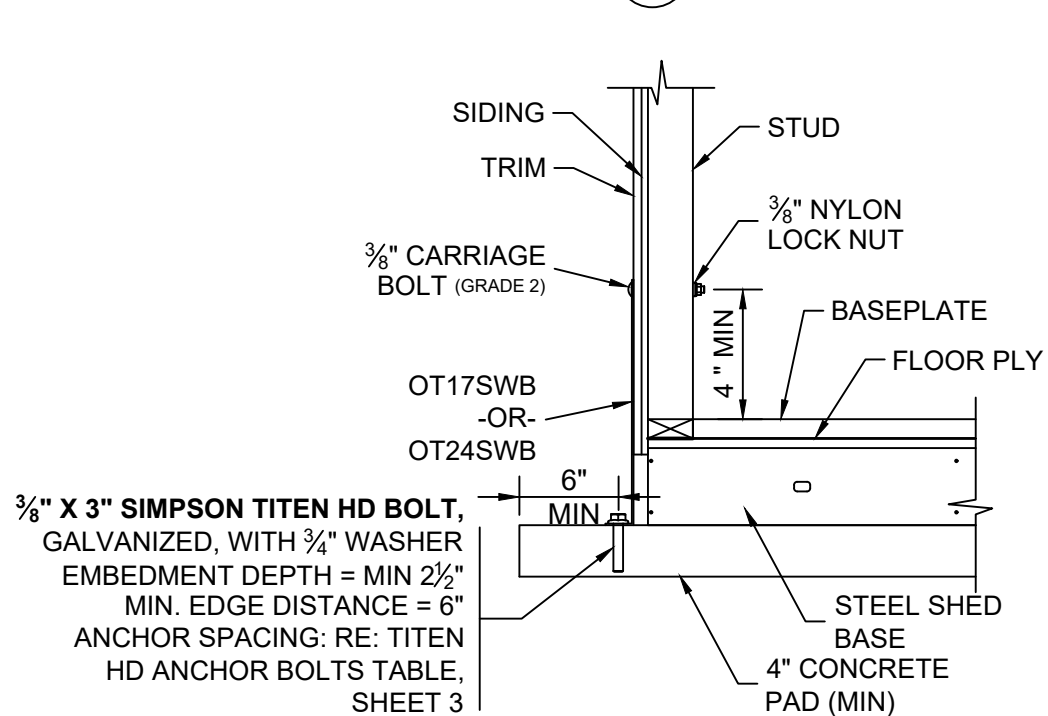
- PART NUMBERS:
OT3644GPMP- 5/8" X 36" (36" IMBED) GALVANIZED AUGER
OT17SWB - SIDEWALL BRACKET FOR USE WITH THRU BOLTS
REPORT NO. LO-FJ90129-A
-OR-
OT24SWBSIDEWALL BRACKET FOR USE WITH THRU BOLTS
REPORT NO. LO-FJ90129-B
- WORKING LOAD FOR ANCHOR SYSTEM IS 3,150 LBS WITH THE MAXIMUM LOAD OF 5,080 LBS

AUGER ANCHORS		
WIDTH	LENGTH	# OF ANCHORS
6'	6'-20'	4 ANCHORS
8'	8'-20'	4 ANCHORS
8'	22'-24'	6 ANCHORS
10'	10'-16'	4 ANCHORS
10'	18'-24'	6 ANCHORS
12'	12'-14'	4 ANCHORS
12'	16'-22'	6 ANCHORS
12'	24'	8 ANCHORS

4-ANCHORS PROVIDE (1) AT EA. CORNER OF THE BUILDING.
6-ANCHORS PROVIDE (1) AT EA. CORNERS OF THE BUILDING AND (1) AT THE CENTER OF EA. SIDE WALL.
8-ANCHORS PROVIDE (1) AT EA. CORNERS OF THE BUILDING AND (1) AT THE CENTER OF EACH WALL.

3 OPTIONAL AUGER ANCHOR DETAIL

SCALE: N.T.S.



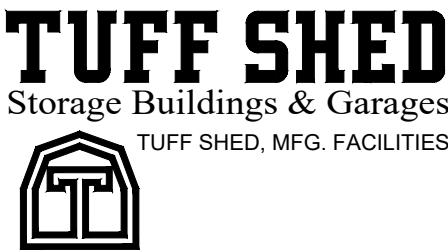
TITEN HD ANCHOR BOLTS (INTO CONCRETE) RE: DETAIL 3 SHEET 3

WIDTH	LENGTH	QTY
6'	6'-10'	4
6'	12'-20'	6
8'	8'-16'	6
8'	18'-24'	8
10'	10'-16'	6
10'	18'-20'	8
10'	22'-24'	10
12'	12'-18'	8
12'	20'-22'	10
12'	24'	12

- NOTES:
1. ANCHORS TO BE SIMPSON TITEN HD ANCHORS. ANCHORS MAY BE GALVANIZED OR STAINLESS STEEL.
 2. PROVIDE (1) ANCHOR AT EA. CORNER OF THE BUILDING. THE REMAINING ANCHORS EQUALLY SPACED ALONG THE LENGTH OF THE BUILDING. (1/2 THE REMAINING ANCHORS ON EA. LENGTH SIDE EQUALLY SPACED).

4 OPTIONAL SIDEWALL BRACKET DETAIL

SCALE: N.T.S.



Order #.	_____
Customer:	_____
Site Address:	_____
Building Size:	WIDTH - LENGTH - HEIGHT - SQ. FT. AREA

P.O. #	_____
Drawn By:	PK
Date:	6/21/21
Checked By:	_____
Date:	_____
Scale:	N.T.S.

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TUFF SHED, INC.
ENGINEERING DEPARTMENT

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RWILLS@TUFFSHED.COM
1777 S. HARRISON STREET
DENVER, COLORADO 80210
(303) 753-8833 EXT. 96315

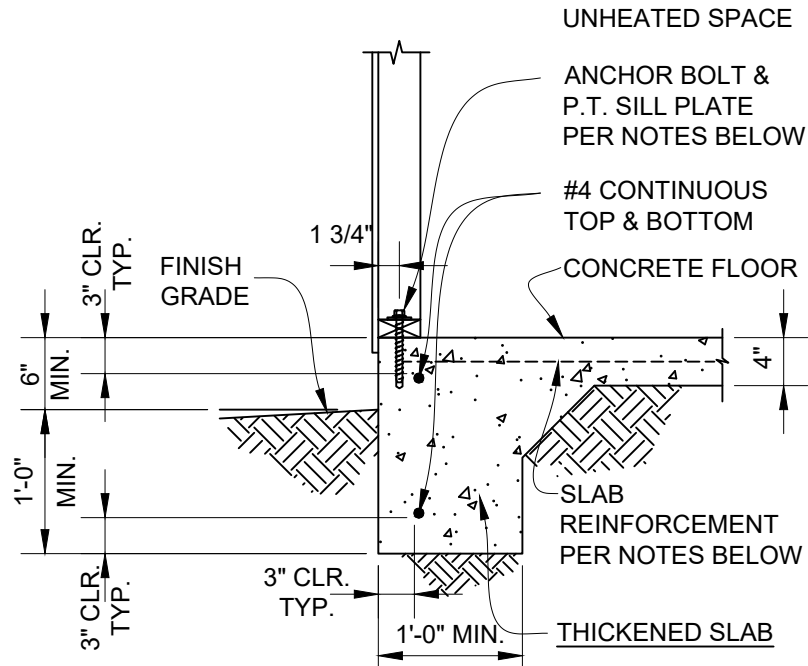
TITLE

DETAILS

FBC, 7th EDITION (2020)

162C

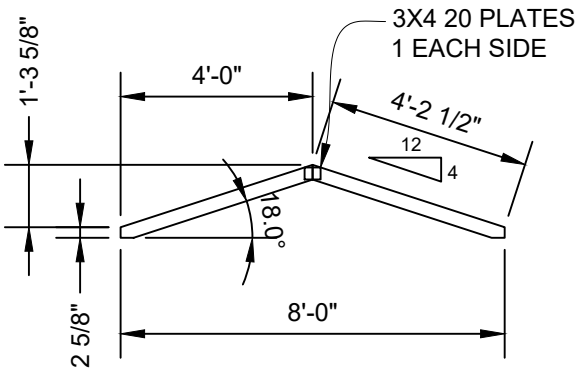
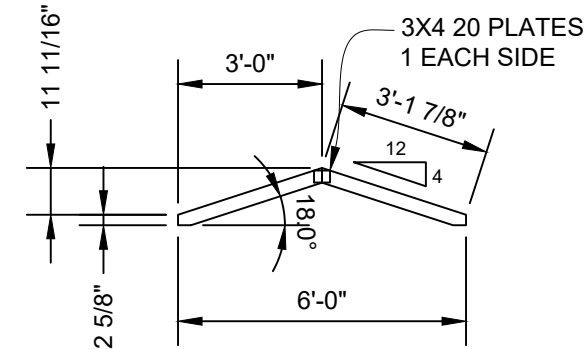
DRAWING NO.	FL-PR-SR-TR-01
REV. LEVEL	01
SHEET	3
PAGE	3 OF 4



- CONTINUOUS FOOTING NOTES
1. TOP OF SLAB TO BE 6" MIN. ABOVE GRADE. SLAB REINFORCEMENT SHALL BE WWF 6X6 W1.4xW1.4 . LOCATE AT MID-DEPTH OF SLAB.
-OR-
SLAB REINFORCEMENT SHALL BE FIBERMESH 150 OR BLENDED FIBERMESH150. FIBERMESH SHOULD BE DISPERSED UNIFORMLY THROUGH CONCRETE W/ MIN. 1 POUND PER CUBIC YARD OF CONCRETE.
 2. ALL FOOTING FORMS SHALL BE INSPECTED FOR SIZE AND REINFORCING BEFORE POURING CONCRETE.
 3. FOOTINGS SHALL BEAR ON UNDISTURBED NATURAL, COMPETENT SOIL, OR PROPERLY COMPACTED STRUCTURAL FILL. ALLOWABLE SOIL BEARING PRESSURE IS 1000 PSF AT 12" BELOW GRADE.
 4. CONCRETE: MINIMUM 28 DAY COMPRESSIVE STRENGTH, $f_c = 2500$ PSI.
 5. REINFORCING STEEL: A615, GRADE 40 OR GRADE 60. ALL REINFORCING STEEL SHOWN TO BE CONTINUOUS MAY BE LAPPED A MINIMUM OF 38 BAR DIAMETERS OR 24" MINIMUM, WHICHEVER IS LARGER.
 6. SEISMIC DESIGN CATEGORY: A
 - A. ATTACH PRESSURE TREATED SOLE PLATE TO THE FOOTING USING $\frac{1}{2}$ "Ø X 8" LONG SIMPSON TITEN HD ANCHOR WITH WASHERS.
 - B. EXPANSION BOLTS SHALL BE EMBEDDED AT LEAST 5" INTO THE CONCRETE AND SHALL BE SPACED NOT MORE THAN 6' OC.
 - C. THERE SHALL BE A MINIMUM OF 2 BOLTS PER SOLE PLATE PIECE WITH 1 BOLT LOCATED NOT MORE THAN 12" NOR LESS THAN 7 BOLT DIAMETERS FROM EACH END OF EACH PIECE.

NOTE: FOR BUILDINGS 18' AND LONGER OR ANY BUILDING DESIGNED AS A 3-SIDED DIAPHRAGM, ADD SIMPSON SSTB16 ANCHORS AND HDU2 HOLD DOWNS AT EACH CORNER OF THE END WALLS. FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.

1 **OPTIONAL CONCRETE FOUNDATION DETAIL**
SCALE: N.T.S.



DESIGN LOADS:
TOP CHORD LIVE LOAD = 20 PSF
TOP CHORD DEAD LOAD = 10 PSF
COLLAR TIE DEAD LOAD = 5 PSF

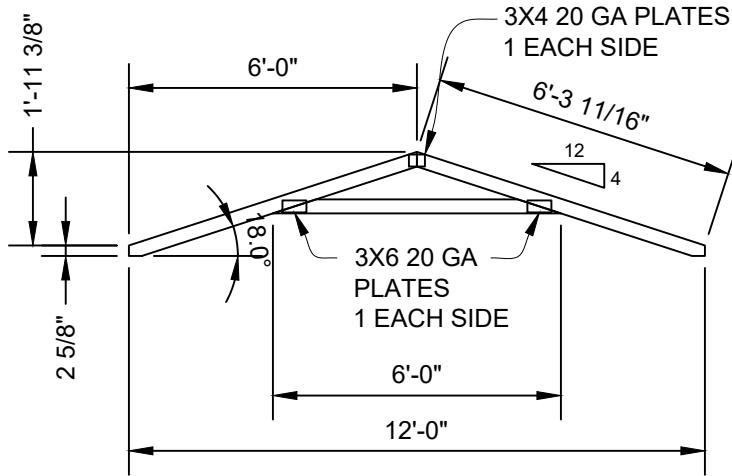
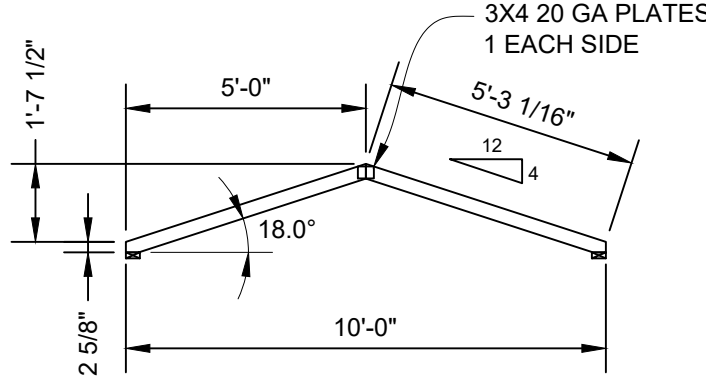
MAXIMUM DEFLECTION (12 FT. SPAN)
VERT LL: 0.06 in.
VERT TL: 0.08 in.

NOTES:
FBC, 7th EDITION (2020)
ANSI/TPI 1-2014
TRUSSES TO BE SPACED @ 24" OC
MATERIAL TO BE 2X4 SPRUCE PINE FIR GRADE #2 OR BETTER
PLATES ARE TO BE PRESSED IN THE WOOD PER TPI.

REP MEMBER INCREASE: YES
LUMBER D.O.L.: 1.25

WIND:
ASCE 7-16, 162 mph, Exposure C, D.O.L.=1.60

PLATES ARE MANUFACTURED BY EAGLE METAL PRODUCTS,
ICC-ES #ESR-1082.



6' SPAN
REACTIONS:
MAX. VERTICAL: 180 LBS.
MAX. UPLIFT: -195 LBS.

NOTE:
TRUSS MAY BE USED ON BUILDING LENGTHS UP TO 12FT UNLESS CEILING JOIST OR OTHER TENSION TIE IS PROVIDED.

8' SPAN
REACTIONS:
MAX. VERTICAL: 240 LBS.
MAX. UPLIFT: -245 LBS.

NOTE:
TRUSS MAY BE USED ON BUILDING LENGTHS UP TO 14FT UNLESS CEILING JOIST OR OTHER TENSION TIE IS PROVIDED.

10' SPAN
REACTIONS:
MAX. VERTICAL: 300 LBS.
MAX. UPLIFT: -310 LBS.

NOTE:
TRUSS MAY BE USED ON BUILDING LENGTHS UP TO 20FT UNLESS CEILING JOIST OR OTHER TENSION TIE IS PROVIDED.

12' SPAN
REACTIONS:
MAX. VERTICAL: 390 LBS.
MAX. UPLIFT: -400 LBS.

NOTE:
TRUSS MAY BE USED ON BUILDING LENGTHS UP TO 24FT UNLESS CEILING JOIST OR OTHER TENSION TIE IS PROVIDED.

ALL PERSONS FABRICATING, HANDLING, ERECTING OR INSTALLING THIS TRUSS ARE TO DO SO IN ACCORDANCE TO THE RECOMMENDATIONS OF THE LATEST VERSION OF THE BCSI.

TUFF SHED

Storage Buildings & Garages

TUFF SHED, MFG. FACILITIES

8524 EAST COLONIAL DRIVE
ORLANDO, FL 32817
(888) 788-TUFF
STORE 520

Order #.

Customer:

Site Address:

Building Size:WIDTH - LENGTH - HEIGHT - SQ. FT. AREA

P.O. #

Drawn By: PK

Date: 6/21/21

Checked By:

Date:

Scale: N.T.S.

THESE DRAWINGS AND THE DESIGN ARE THE PROPERTY OF TUFF SHED, INC. THESE DRAWINGS ARE FOR A BUILDING TO BE SUPPLIED AND BUILT BY TUFF SHED. ANY OTHER USE IS FORBIDDEN BY BOTH TUFF SHED AND THE ENGINEER OF RECORD

TUFF SHED, INC.
ENGINEERING DEPARTMENT

RICHARD J. WILLS, P.E.
RWILLS@TUFFSHED.COM
1777 S. HARRISON STREET
DENVER, COLORADO 80210
(303) 753-8833 EXT. 96315

TITLE

TRUSS DETAILS

FBC, 7th EDITION (2020)

162C

DRAWING NO.

FL-PR-SR-TR-01

REV. LEVEL 01

SHEET 4

PAGE 4 OF 4











City of Pensacola

222 West Main Street
Pensacola, FL 32502

Memorandum

File #: 24-41

Architectural Review Board

1/18/2024

LEGISLATIVE ACTION ITEM

SUBJECT:

718 N. Reus Street
North Hill Preservation District / Zone PC-1 / City Council District 6
Exterior Alterations at a Contributing Structure

SUMMARY:

Matthew Savoie is seeking approval for exterior alterations at a contributing structure including converting the shingle roof to 5-V metal crimp, changing aluminum and vinyl siding to cedar mill Hardie plank lap siding, changing aluminum windows to white PlyGem 1500 single hung vinyl windows, moving the rear door to the north side of the structure, altering the front façade composition, and altering window locations and opening sizes. The structure will receive new exterior lighting and will be painted Benjamin Moore Revere Pewter.

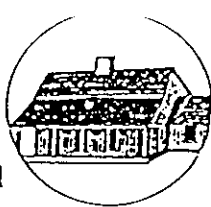
Please find attached all relevant documentation for your review.

RECOMMENDED CODE SECTIONS

Sec. 12-3-10(2)d.2. North Hill Preservation District; Procedure for review; Decisions.
Sec. 12-3-10(2)e.5. NHPD; Regulations and guidelines for any development within the preservation district; Paint colors.
Sec. 12-3-10(2)f. NHPD; Restoration, rehabilitation, alterations or additions to existing contributing structures in the North Hill preservation district.

ATTACHMENTS:

1. Florida Master Site File Form
2. Images
3. Application and Materials



HISTORICAL STRUCTURE FORM FLORIDA SITE FILE

Version 2.0 7/92

Site #8 ES00691

Recorder #

Field Date 5 / 1 / 95

Form Date 7 / 7 / 95

Original
☒ Update

SITE NAMES (addr. if none) C. H. ALSTON RENTAL [MULT. LIST. #8]
SURVEY NORTH HILL [SURVEY # 4758]
NATIONAL REGISTER CATEGORY ☒ building ☐ structure ☒ district ☐ site ☐ object

LOCATION & IDENTIFICATION

ADDRESS (Include N,S,E,W; st., ave., etc.) 718 N. REUS ST.
CROSS STREETS nearest/between SE CORNER OF N. REUS ST. AND W. CERVANTES ST.
NEAREST CITY/TOWN PENSACOLA IN CURRENT CITY LIMITS ☒ yes ☐ no
COUNTY ESCAMBIA TAX PARCEL # 9010-090-029
SUBDIVISION NAME NORTH HILL BLOCK 29 LOT NO. 9-10
OWNERSHIP ☐ private-profit ☐ priv-nonprofit ☒ priv-indiv ☐ priv-unspecified ☐ city ☐ county ☐ state ☐ federal ☐ unknown
NAME OF PUBLIC TRACT (e.g., park) BELMONT TRACT
ROUTE TO

MAPPING

USGS 7.5' MAP NAME 30087-D2-TF-024 1987
TOWNSHIP 2S RANGE 30W SECT. 19 1/4 1/4-1/4 IRREG. SECT.? ☐ y ☐ n
[UTM: ZONE 16 17 EASTING 111110 NORTHING 111110]
PLAT OR OTHER MAP (Map's name, location)

DESCRIPTION

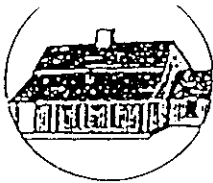
STYLE FRAM EXTERIOR PLAN RECT NO. STORIES 1
STRUCTURAL SYSTEMS WF
FOUNDATION: Types PIER Materials BRIC
EXTERIOR FABRICS ALUM
ROOF: Types GA Materials SHCO
Secondary strucs. (dormers etc.)
CHIMNEY: No. Materials LOCATIONS
WINDOWS (types, materials, and placements) SLIDING, 2 LIGHT, ALUMINUM # FIXED, SINGLE LIGHT

MAIN ENTRANCE (stylistic details)
PORCHES: #open #closed #incised Locations WEST, ONE STORY HIPPED PORCH,
Porch roof types HALF ENCLOSED, ONE BAY ACCESS FROM WEST
EXTERIOR ORNAMENT

INTERIOR PLAN CONDITION: ☐ excellent ☒ good ☐ fair ☐ deteriorated ☐ ruinous
SURROUNDINGS (N=None, S=Some, M=Most, A=All or nearly all) ☐ commercial ☒ residential ☐ institutional ☐ rural
ANCILLARY FEATURES (No., type of outbuildings; major landscape features)

ARCHAEOLOGICAL REMAINS AT SITE Archaeological form completed? ☐ y ☐ n (No-explain; yes-attach!)

Artifacts or other remains
NARRATIVE (E.g. description of interior, landscape, architecture, etc; please limit to 3 lines and attach full statement on separate sheet)

**HISTORY**CONSTRUCTION DATE 1904 CIRCA xyes no

ARCHITECT: (last name first) _____

BUILDER: (last name first) _____

MOVES yes xno Dates _____ Orig.addr. _____ALTERATIONS yes no Dates _____ Nature _____ADDITIONS yes no Dates _____ Nature _____ORIGINAL USES (give dates) RESIDENCEINTERMEDIATE USES (give dates) RESIDENCEPRESENT USES (give dates) RESIDENCEOWNERSHIP HISTORY (especially original owner) LESLIE AND GLADYS OLIGE (CURRENT)**SURVEYOR'S EVALUATION OF SITE**Potentially elig. for local designation? yes no insuff. infoIndividually elig. for Nat. Register? yes no insuff. infoPotential contributor to NR district? yes no insuff. info

Local Designation Category _____

HISTORICAL ASSOCIATIONS (ethnic heritage, etc.) _____

EXPLANATION OF EVALUATION (required; limit to three lines; attach full statement on separate sheet)

CROSS-REFERENCES

BIBLIOGRAPHIC REFERENCES (Author, date, title, publication information. If unpublished, give FSF Manuscript Number, or location where available) _____

PHOTOGRAPHS (REQUIRED) B&W print(s) at least 3 x 5, at least one main facade. Label the back of the print with the FSF site number (site name if not available), direction and date of photograph: use pencil. Attach to back of the second to last page with a plastic or coated clip.

Location of negatives/neg. nos. R4, F24-25**RECORDER**NAME (last first)/ADDR/PHONE/AFFILIATION HPPBFOR DETAILED INSTRUCTIONS: *Guide to the 1992 Historic Structure Form of the Florida Site File.*

DNR USE ONLY		OFFICIAL EVALUATIONS				DNR USE ONLY	
NR DATE		KEEPER-NR ELIGIBILITY*	y	n	pe	n	Date
		SHPO-NR ELIGIBILITY*	y	n	pe	n	Date
DELIST DATE		LOCAL DESIGNATION*					Date
		Local office					

* y=Yes; n=No; pe=Potentially Eligible; n=Insufficient Information

REQUIRED:

- (1) USGS MAP WITH STRUCTURE PINPOINTED
- (2) LARGE SCALE STREET OR PLAT MAP
- (3) PHOTO OF MAIN FACADE, PREFER B&W, AT LEAST 3X5



FLORIDA MASTER SITE FILE
Site Inventory Form

FDAHRM 802 ==
1009 ==

Site Name Alston, C.H. Rental House Site No. 85691
Address of Site: 718 N. Reus St. Pensacola, FL 32501 Survey Date 8005
Instruction for locating SE corner of N. Reus St. and W. Cervantes St.

Location: Belmont Tract 29 9
subdivision name block no. lot no.

County: Escambia

Owner of Site: Name: Cooper, Mary L. & Lois Y.
Address: 718 N. Reus St., Pensacola, FL 32501

Type of Ownership private 848 == Recording Date 832 ==

Recorder: Name & Title: Guedez, Susan; Gantzhorn, Alan
Address: HPPB

Condition of Site: Integrity of Site: Original Use residence 818 ==
838 ==

Check One Check One or More
☐ Excellent 863 == ☒ Altered 858 ==
☒ Good 863 == ☐ Unaltered 858 ==
☐ Fair 863 == ☒ Original Site 858 ==
☐ Deteriorated 863 == ☐ Restored () (Date:) 858 ==
☐ Moved () (Date:) 858 ==

Present Use residence 850 ==
Dates: Beginning +1904 844 ==
Culture/Phase American 840 ==
Period 20th century 845 ==

NR Classification Category: District 916 ==

Threats to Site: Check One or More

☐ Zoning () 878 == ☐ Transportation () 878 ==
☐ Development () 878 == ☐ Fill () 878 ==
☐ Deterioration () 878 == ☐ Dredge () 878 ==
☐ Borrowing () 878 ==
☐ Other (See Remarks Below): 878 ==

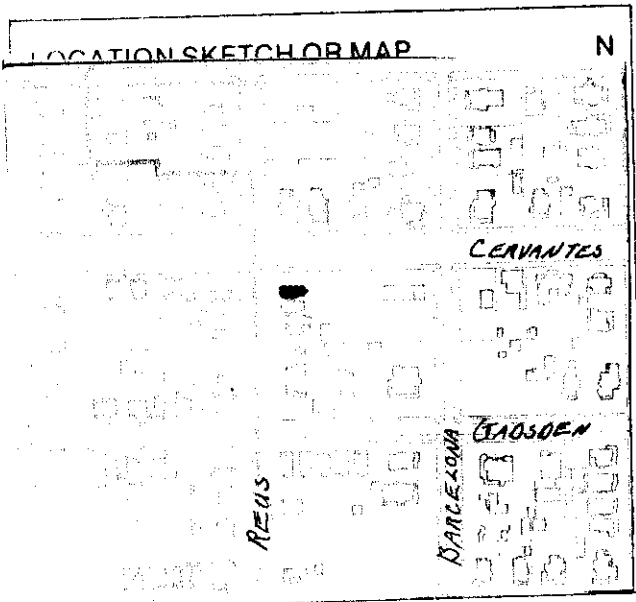
Areas of Significance: Architecture, history 910 ==

Significance:

This modest shotgun house was constructed as a rental unit by C.H. Alston. Alston was a black attorney and a leader in the black community at the turn of the century.

911 ==

ARCHITECT Unknown 872 ==
 BUILDER Unknown 874 ==
 STYLE AND/OR PERIOD Frame vernacular (shot gun) 964 ==
 PLAN TYPE rectangle 966 ==
 EXTERIOR FABRIC(S) aluminum siding 854 ==
 STRUCTURAL SYSTEM(S) wood frame 856 ==
 PORCHES W/1 story hipped porch, half enclosed; 1 bay; access from W 942 ==
 FOUNDATION: brick pier 942 ==
 ROOF TYPE: gable 942 ==
 SECONDARY ROOF STRUCTURE(S): none 942 ==
 CHIMNEY LOCATION: none 942 ==
 WINDOW TYPE: sliding, 2 light, aluminum # fixed, single light 942 ==
 CHIMNEY: none 882 ==
 ROOF SURFACING: composition shingle, butt 882 ==
 ORNAMENT EXTERIOR: none 882 ==
 NO. OF CHIMNEYS 0 952 == NO. OF STORIES 1 950 ==
 NO. OF DORMERS 0 954 ==
 Map Reference (incl. scale & date) USGS 7.5 MIN Pensacola 1970; North Hill, Gordon Richmond, 1974 809 ==
 Latitude and Longitude: 800 ==
 Site Size (Approx. Acreage of Property): LT 1 833 ==



Township	Range	Section	
2S	30W	19	812 ==

UTM Coordinates:

Zone Easting Northing

890 ==

Photographic Records Numbers HPPB P80.21, Fr 19 860 ==

Contact Print





718 N. Reus Street





City of
Pensacola
*America's First Settlement
And Most Historic City*

**Architectural Review Board Application
Full Board Review**

Application Date: 12-26-2023

Project Address: 718 N Reus St

Applicant: Matthew Savoie

Applicant's Address: 321 W Jackson St

Email: matthewjsavoie@gmail.com **Phone:** (850) 803-3973

Property Owner: Matthew Savoie

District: ☒ **PHD** ☒ **NHPD** ☐ **OEHPD** ☐ **PHBD** ☐ **GCD**

(If different from Applicant)

Application is hereby made for the project as described herein:

- ☐ Residential Homestead – \$50.00 hearing fee
- ☒ Commercial/Other Residential – \$250.00 hearing fee

** An application shall be scheduled to be heard once all required materials have been submitted and it is deemed complete by the Secretary to the Board. You will need to include eight (8) copies of the required information. Please see pages 3 – 4 of this application for further instruction and information.*

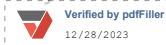
Project specifics/description:

Requesting changing three tab shingle roof to metal roof, changing aluminum and vinyl siding to cement hardie lap siding, changing aluminum windows to white vinyl impact windows, moving door from back of home to left side (next to parking pad, as there is no street parking in front due to stop sign). Also requesting moving front door to the center of home to bring symmetry to exterior and functionality to interior (currently would open into small dining area), omission of 3050 window facing adjacent home to the south, and changing 3050 window to two 3010 windows (also facing the adjacent home to the south).

I, the undersigned applicant, understand that payment of these fees does not entitle me to approval and that no refund of these fees will be made. I have reviewed the applicable zoning requirements and understand that I must be present on the date of the Architectural Review Board meeting.

Matthew Savoie

Applicant Signature



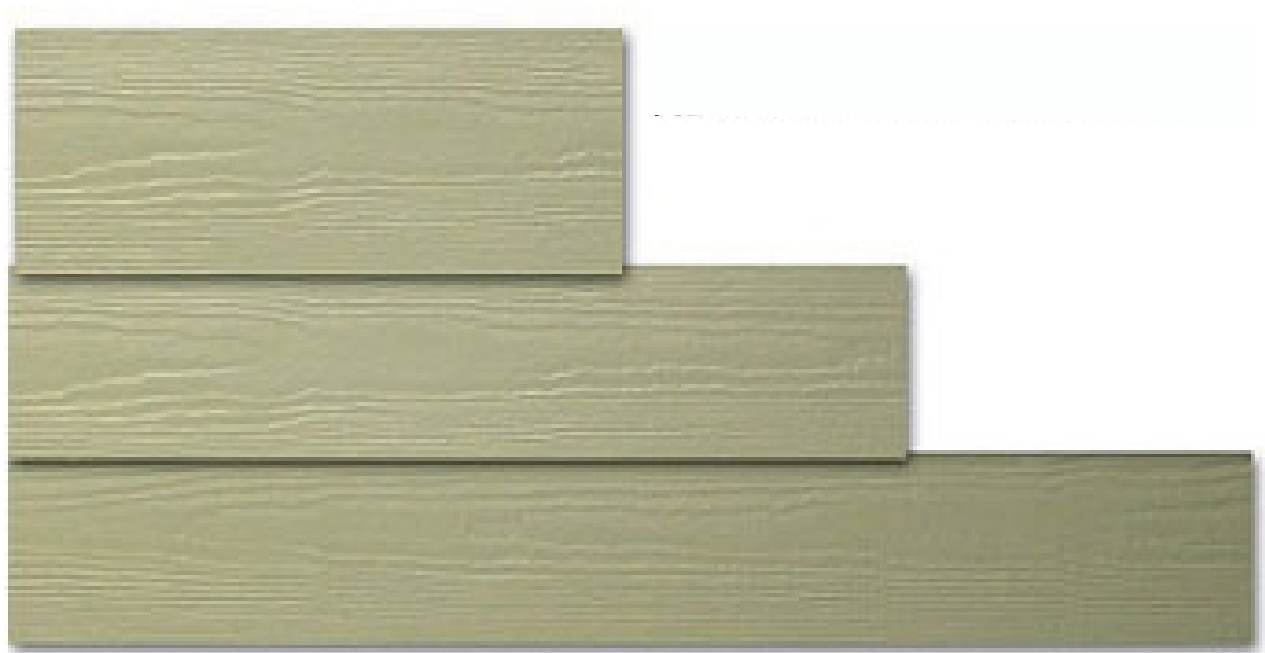
12-26-2023

Date

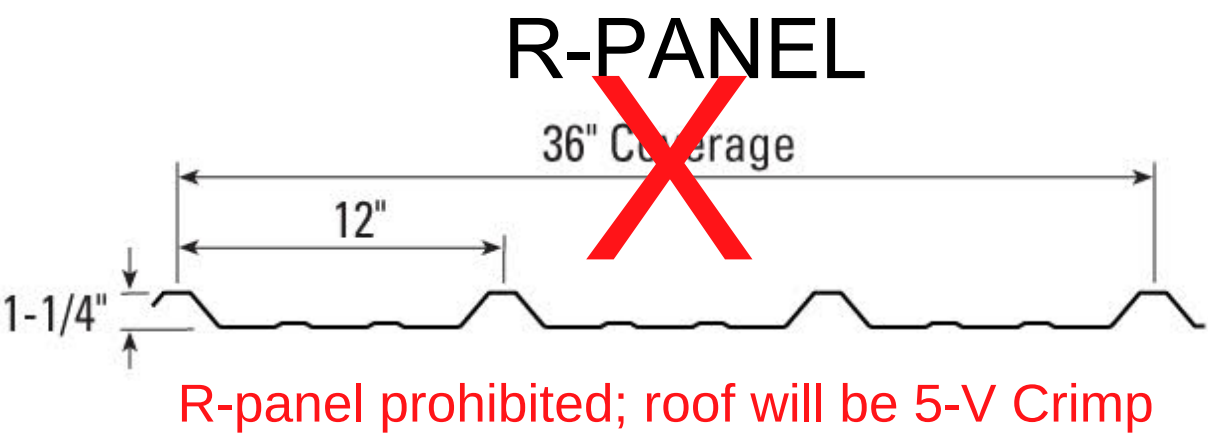
HANDRAILS
Wood Handrails, Decorator's White



SIDING
Cedar HardiePlank



METAL ROOF PANEL



WINDOWS
White, 2-over-2, Impact Resistant



EXTERIOR ENTRANCE LIGHTING



EXTERIOR TRIM COLOR

White Dove
OC-17

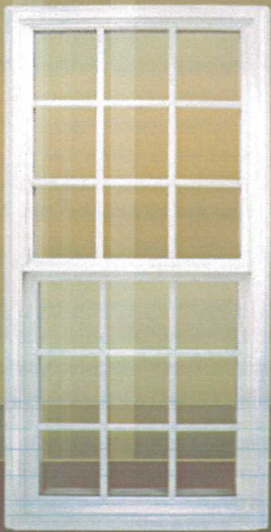
EXTERIOR COLOR

Revere Pewter
HC-172

ROOF COLOR



LIGHT GRAY



1500Vinyl Collection

Single Hung Windows

BUILDER



Building choice into every view.

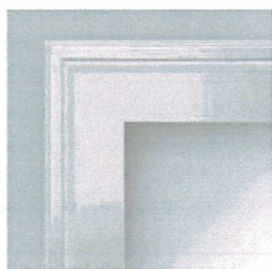
 **PLY GEM**
WINDOWS

1500 Single Hung Windows

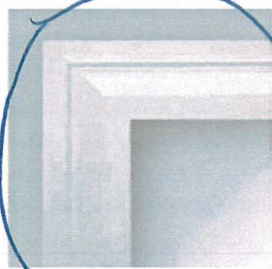


When you build a lot of homes, you expect a lot from your windows. Quality. Performance. Value. A company you can count on. Our new 1500 vinyl windows offer all that and more, including a full range of options to meet your every need.

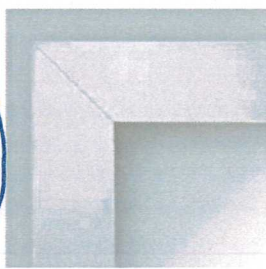
Frame Options



Brickmould



Beveled



Flat

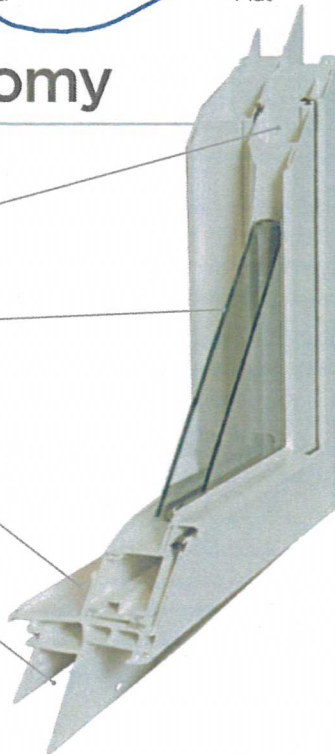
Window Anatomy

Multi-chamber construction with fusion-welded sash and frame

$\frac{7}{8}$ " or 1" dual or triple pane insulated glass with Warm Edge spacer saves energy

Sloped sill drains water away from home exterior

Integral J-channel for simple, secure siding installation (optional double utility trim)



Upgrade your view

- High performance in a builder's window
- Traditional or contemporary frame design
- SDL or GBG grilles
- Sizes to meet your need
- Egress Size: 3050SH, 4040SL
- Limited Lifetime Warranty

Color options

*New exterior colors are on brickmould and flat casing only.



Grille types

*Also available with no grilles.

GBG Grilles



$\frac{3}{4}$ " Flat, $\frac{5}{8}$ " or 1" Sculptured

SDL Grilles



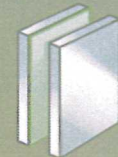
$\frac{7}{8}$ " or 1- $\frac{1}{4}$ " SDL with Shadow Bar

Glass options

Compare U-Factor ratings

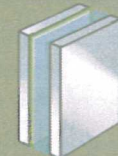
Visit 1500vinylcollection.com for more detailed information

Low-E



$\frac{7}{8}$ " Low-E	.35	SHGC .29
One lite of Low-E		
$\frac{7}{8}$ " Low-E ^{SC}	.35	SHGC .22
One lite of solar cooling Low-E		
$\frac{7}{8}$ " Low-E2+	.30	SHGC .28
One lite of Low-E and one lite of Interior Surface Low-E		

Low-E with Argon



$\frac{7}{8}$ " HP	.32	SHGC .28
One lite of Low-E with argon		
$\frac{7}{8}$ " HP ^{SC}	.32	SHGC .22
One lite of solar cooling Low-E with argon		
$\frac{7}{8}$ " HP2+	.28	SHGC .28
One lite of Low-E and one lite of Interior Surface Low-E with argon		

Triple-Glazed



$\frac{7}{8}$ " HP2 _{MAX}	.25	SHGC .25
Two lites of Low-E with two chambers of argon		
$\frac{7}{8}$ " HP3 _{MAX}	.23	SHGC .22
Two lites of Low-E, two chambers of argon, one lite of Interior Surface Low-E		
1" HP3 _{MAX}	.22	SHGC .22
Two lites of Low-E, two chambers of argon, one lite of Interior Surface Low-E		

Values reflect 3050 coil size brickmould run-drywall glazed single window with 3mm glass, no grilles.



Scan with your
smartphone for product
performance data.
1500VinylCollection.com



easyinstall

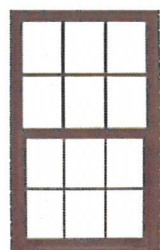
for a quick, correct fit

- Alignment clips
- Integral mull
- Removable meeting rail
- Double utility trim
- Integral J-channel or flange
- Drywall receiver and return
- Accessory grooves
- Protective construction film

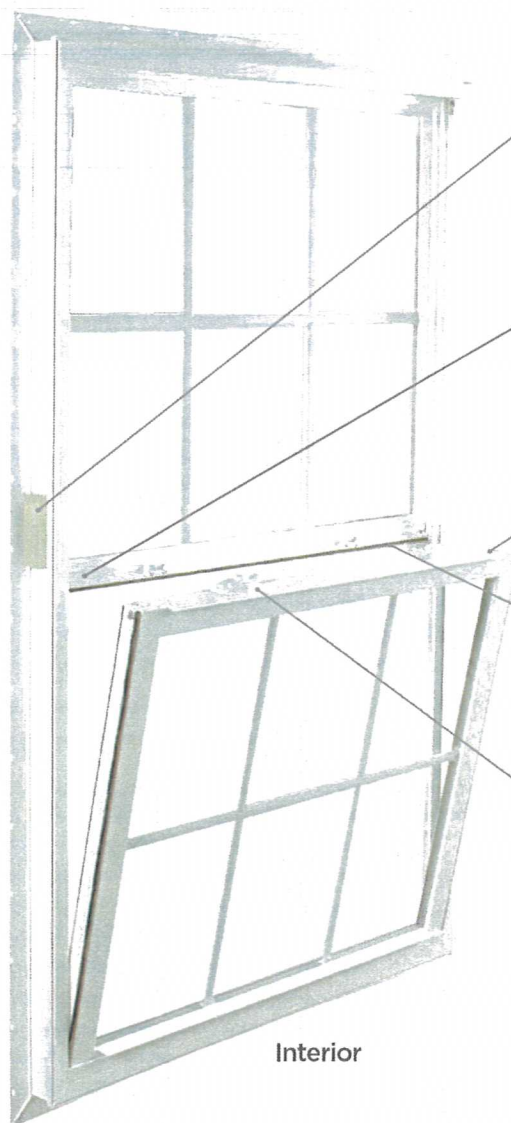
Window Highlights



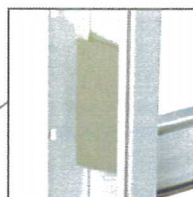
Optional
H-LC 50
Upgrade
in Limited
Sizes



Exterior

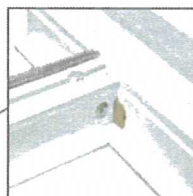


Interior



Jamb Alignment Clips

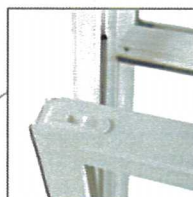
Aligns and holds frame in place during installation; enables one person to center smaller windows.



Removable Meeting Rail

Patent pending meeting rail anchor makes removing rail simple; ideal for drywall applications.

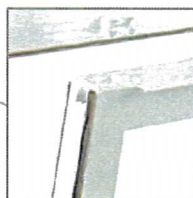
Patent Pending number: 61746220



Recessed Tilt-latch

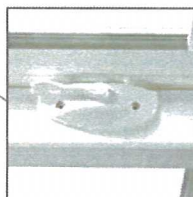
Low profile design features a patent pending barrel tilt latch that locks under load.

Patent Pending number: 61746222



Interlocking Sashes

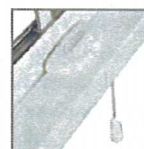
Sashes lock tightly together to help keep out intruders and inclement weather.



Forced Entry Resistant Locks

Enhanced security locks meet tough AAMA forced entry requirements.

ADA and auto-lock options available.



ADA Lock



Auto Lock



Scan with your smartphone
for performance data, window
sizes, CAD drawings and more.
1500VinylCollection.com



Building choice into every view

WindowSpecs

FRAME

3 1/2" dual wall brickmould frame depth
2 7/8" beveled frame depth
1 3/8" integral nail fin set back
Optional 1/2" flush flange for block installs
Optional 3 1/2" flat casing
Optional double utility trim simplifies siding installation
Custom and traditional sizing to meet your needs
Integral J-pocket simplifies siding installations
Interior/exterior accessory grooves
Sloped sill for water management
Screen clip PP#: 61738783
Mixed operating and fixed integral mulls PP#: 61820933

SASH

Interior glazed top glass
Exterior glazed bottom glass
Interlocking sash with dual pile weatherstripping
Inverted block & tackle or constant force coil balances
Recessed tilt-latch locks under load PP#: 61746222
Dual lift rails for easy operation
Easy to remove meeting rail PP#: 61746220
Half screens (shipped separately or installed)

GLASS

Double: Low-E, Low-E^{SC}, Low-E2+, Low-E2+^{SC}, HP, HP^{SC}, HP2+, HP2+^{SC}
Triple: HP2^{MAX}, HP2^{MAX}^{SC}, HP3^{MAX}, HP3^{MAX}^{SC}
Optional Warm Edge+ spacers
Configurable STC values up to 33
Impact, tempered, obscure and rain options
EZ Clean option

GRILLES

GBG (Grilles Between Glass) 3/4" Flat, 5/8" or 1" Sculptured
SDL (Simulated Divided Lite) 7/8" or 1 1/4" with Shadow Bar
Colonial, Plaza, Prairie, Diamond, Gothic patterns available

LOCKS

Standard forced entry resistant cam lock
Self-latching forced entry resistant auto-lock option
ADA forced entry resistant auto-lock option

PERFORMANCE CERTIFICATIONS



FLORIDA APPROVED FL16103
For a list of Ply Gem's Florida approved
products visit floridabuilding.org.

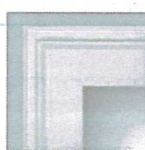


CANADIAN STANDARDS ASSOCIATION CERTIFIED



TEXAS DEPARTMENT OF INSURANCE
WIN1769 non-impact, WIN1771 impact

1



Brickmould



Beveled

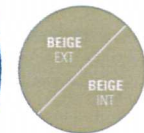
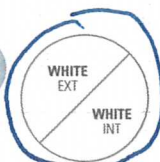


Flat

Select a frame profile

We offer different profiles
to complement different
architectural styles.

2

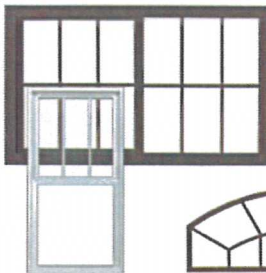


Select colors

We provide several color
options to suit your
home's unique style.

*(New exterior colors are on brickmould
and flat casing only and are not available
on beveled.)*

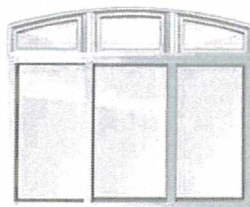
3



Add character with grilles and shapes.

Choose from a variety
of distinctive looks.

4



Multiply the effect.

Combine fixed and operating windows
to make a dramatic statement.

5

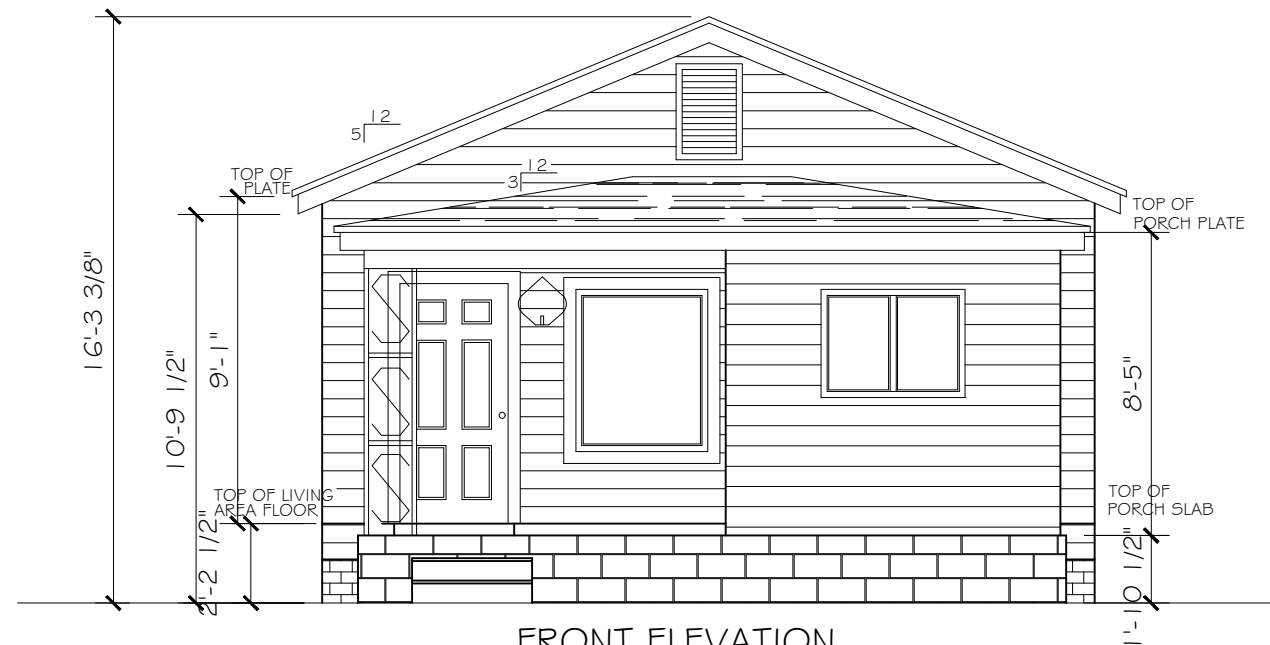
Enjoy the view.



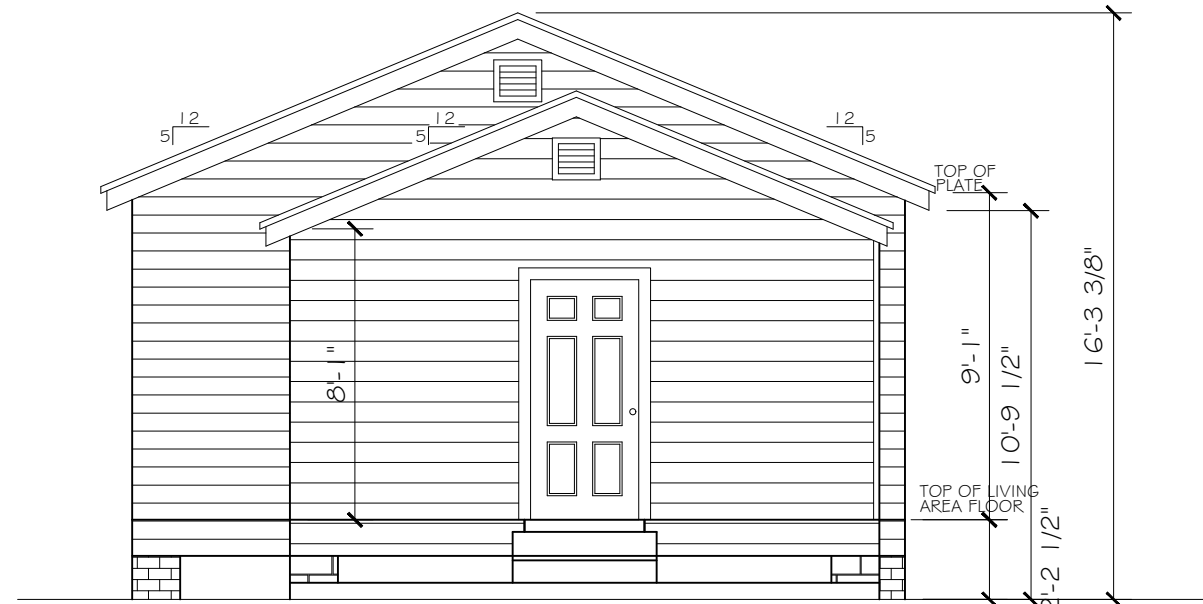
For more information, call 888-9PLYGEM.



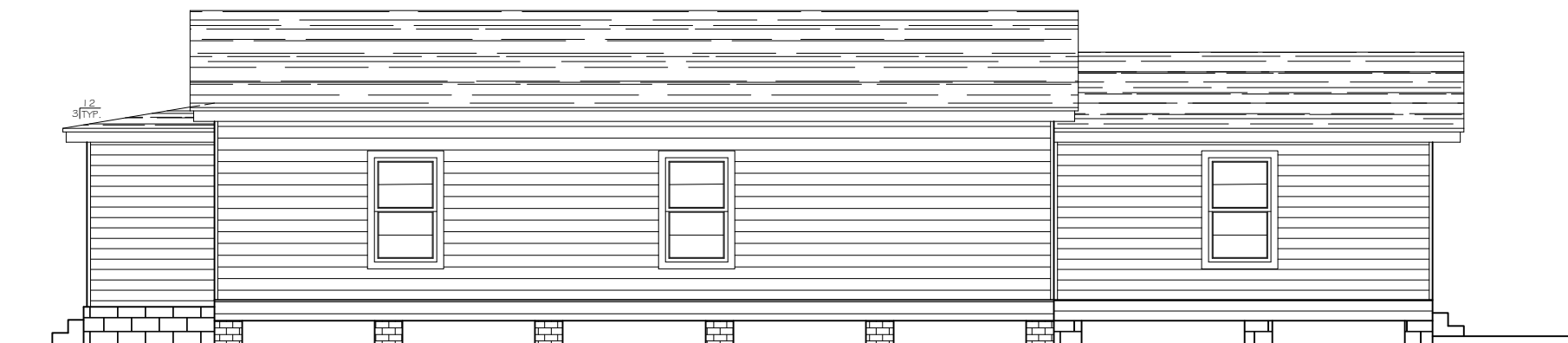
Page 50 of 118



FRONT ELEVATION
3/16"=1'-0"



REAR ELEVATION
3/16"=1'-0"



RIGHT SIDE
1/8"=1'-0"



LEFT SIDE
1/8"=1'-0"

EXISTING:

- * 8" Overhangs Typ.
- * 12" Overhangs Max. @ Gable End(s).
(Unless noted otherwise)
- * Aluminum Siding Exterior Finish w/ Trim.
- * Asphalt OR Approved Shingle Roofing.
- * Wood and Vinyl Eaves & Soffit-work



Dreamcatcher Designs, Inc.

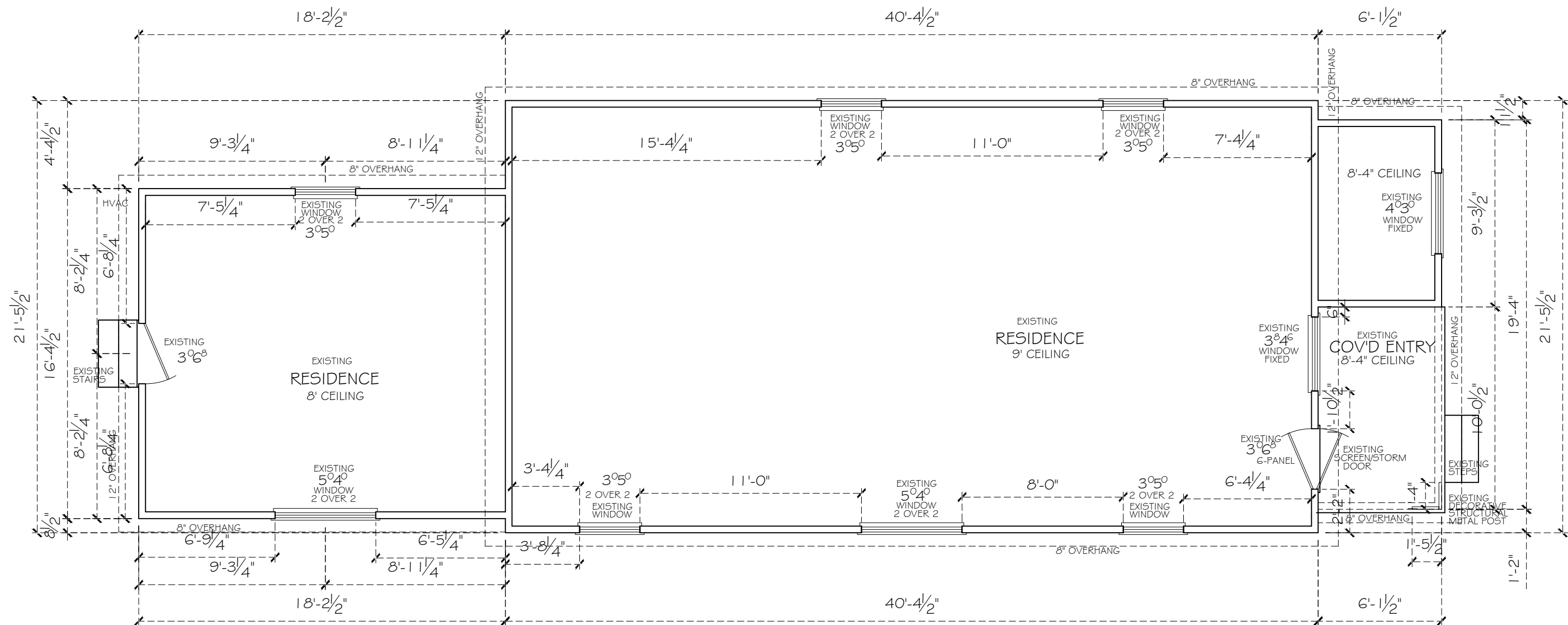
Phone/Fax: (850) 968-0053

JOB: DCD-308-N-REUS

DATE: 12-27-23

PAGE: ELEVATIONS
EXISTING

SCALE: 3/16"=1'-0"
AND-1/8"=1'-0"



AREAS:

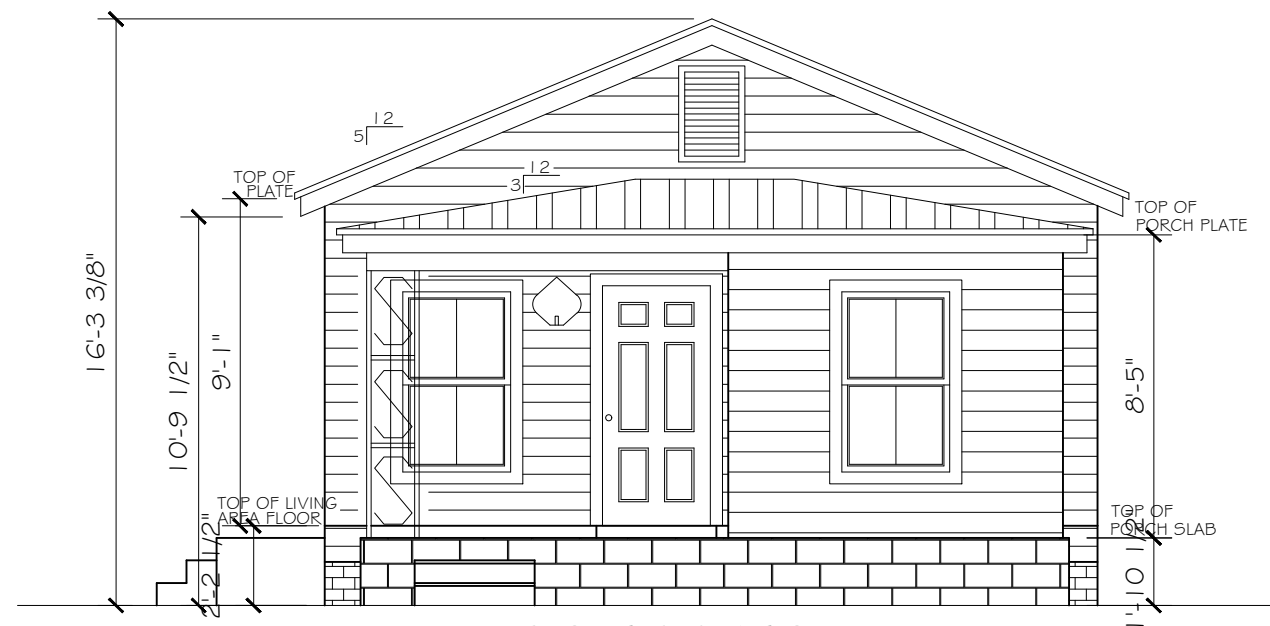
LIVING AREA: 1221 S.F.
 COV'D ENTRY: 62 S.F.
 TOTAL UNDER ROOF: 1283 S.F.
 OPEN PATIO: 150 S.F.

718 N. REUS STREET
 PENSACOLA, FL 32501

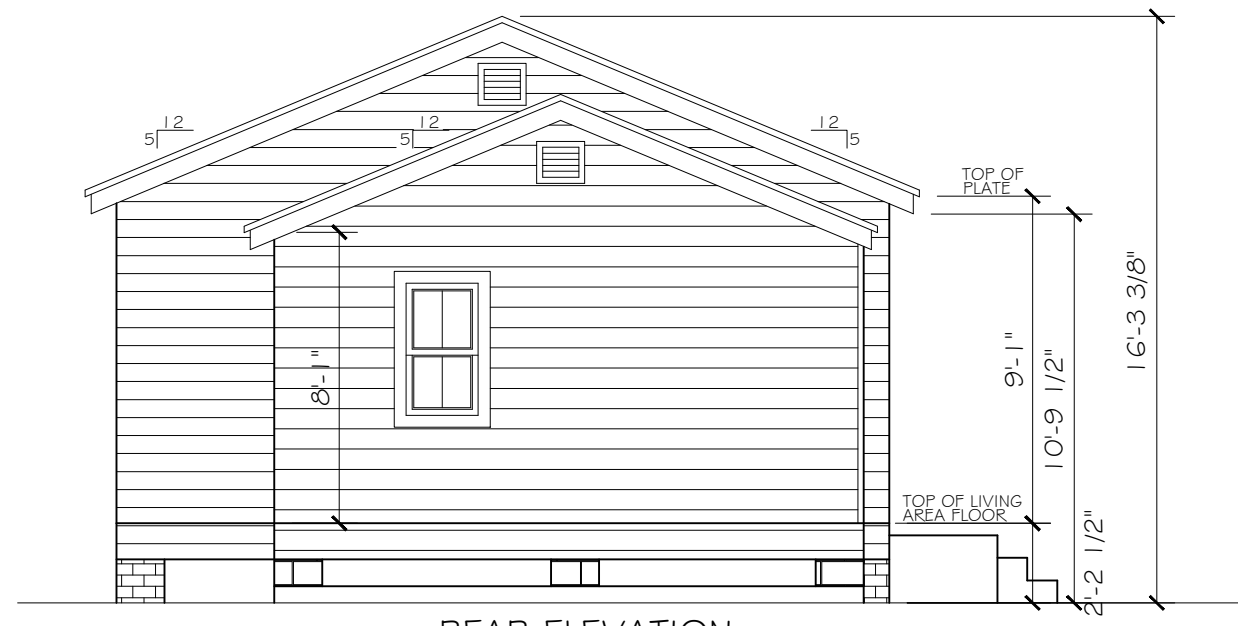
Dreamcatcher Designs, Inc.
 Phone/Fax: (850) 968-0053



JOB: DCD-308-N-REUS DATE: 12-27-23
 PAGE: FLOOR-PLAN SCALE: 3/16" = 1'-0"
 EXISTING



FRONT ELEVATION
3/16" = 1'-0"



REAR ELEVATION
3/16" = 1'-0"



RIGHT SIDE
1/8" = 1'-0"



LEFT SIDE
1/8" = 1'-0"

EXISTING:

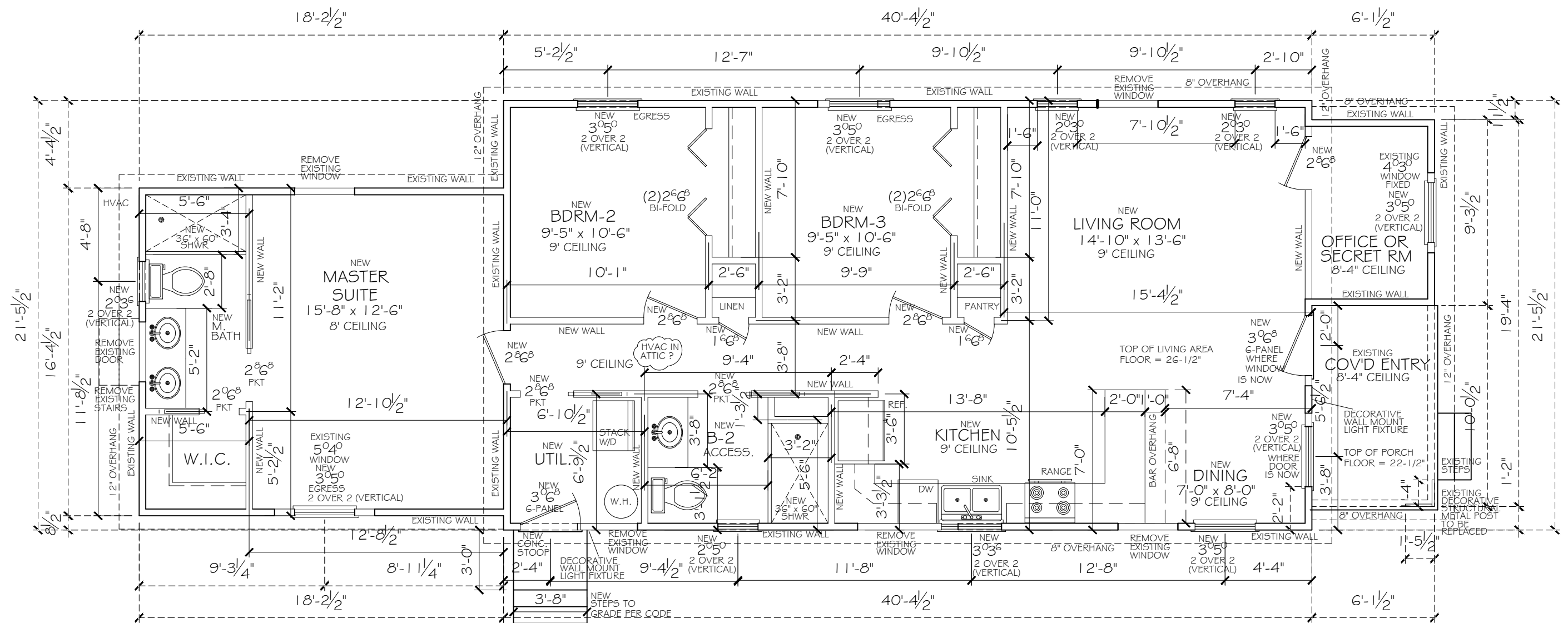
- * 8" Overhangs Typ.
- * 12" Overhangs Max. @ Gable End(s).
(Unless noted otherwise)
- * Aluminum Siding Exterior Finish w/ Trim.
- * Asphalt OR Approved Shingle Roofing.
- * Wood and Vinyl Eaves & Soffit-work



Dreamcatcher Designs, Inc.
Phone/Fax: (850) 968-0053

JOB: DCD-308-N-REUS
PAGE: ELEVATIONS
NEW

DATE: 01-05-24
SCALE: 3/16" = 1'-0"
AND- 1/8" = 1'-0"



AREAS:

LIVING AREA: 1221 S.F.
 COV'D ENTRY: 62 S.F.
 TOTAL UNDER ROOF: 1283 S.F.
 OPEN PATIO: 150 S.F.

718 N. REUS STREET
 PENSACOLA, FL 32501

Dreamcatcher Designs, Inc.
 Phone/Fax: (850) 968-0053



JOB: DCD-308-N-REUS DATE: 01-05-24
 PAGE: FLOOR-PLAN SCALE: 3/16"=1'-0"

FRONT



FRONT LEFT



ENTIRE LEFT



MIDDLE LEFT



RIGHT FRONT



RIGHT MIDDLE



RIGHT BACK





LEFT BACK



BACK

NEIGHBORING HOME
IMMEDIATELY SOUTH



NEIGHBORING HOME
IMMEDIATELY SOUTH



NEIGHBORING HOME
2 HOMES SOUTH



NEIGHBORING HOME
2 HOMES SOUTH



NEIGHBORING HOME
ACROSS STREET WEST



NEIGHBORING HOME
ACROSS STREET WEST



NEIGHBORING HOME
ACROSS STREET SOUTH WEST



NEIGHBORING HOME
ACROSS STREET SOUTH WEST





City of Pensacola

222 West Main Street
Pensacola, FL 32502

Memorandum

File #: 24-68

Architectural Review Board

1/18/2024

LEGISLATIVE ACTION ITEM

SUBJECT:

914 N. Palafox Street
Zone R-NC / City Council District 6
Historic Structure Demolition Review

SUMMARY:

Per the City of Pensacola's Historic Building Demolition Review Ordinance, the referenced structure has been found to be potentially significant in regard to its architecture as well as its association with the lives of persons potentially significant in our local past. Per the ordinance, the Board is tasked with determining whether or not this structure meets the criteria for listing in the National Register of Historic Places. If eligible and deemed historically significant by those criteria, the Board must also determine if the building is subject to a demolition delay of now more than 60 days. To determine that a historically significant building is subject to a demolition delay, the Board must find that in the interest of the public it is preferable that the building be preserved or rehabilitated rather than demolished.

Please find attached all relevant documentation for your review.

RECOMMENDED CODE SECTIONS

[Sec. 12-11-5\(5\) Historic Building Demolition Review Ordinance](#)

Sec. 12-11-5(5)e.3. Criteria for determining significance

Sec. 12-11-5(5)e.4. Criteria for determining that building is subject to demolition delay

ATTACHMENTS:

1. Florida Master Site File Form
2. Images
3. Historic Structure Demolition Application

FLORIDA MASTER SITE FILE
Site Inventory Form

FDAHRM 802 ==
1009 ==

Site No. ES 894
Site Name 830 == Survey Date 8009 820 ==
Address of Site: 914 N. Palafox St. Pensacola, Fl. 32501 905 ==
Instruction for locating E side N. Palafox between Strong and DeSoto 813 ==
Location: Belmont 45 port 6-12, 27-29 868 ==
County: Escambia 808 ==
Owner of Site: Name: Curland, Marvin L. and Dorothy B.
Address: 917 N. Palafox St. 902 ==
Pensacola, Fl. 32501 832 ==
Type of Ownership Private 848 == Recording Date 8009
Recorder:
Name & Title: Gantzhorn, Alan; Hawley, Nancy
Address: HPPB

Condition of Site: Integrity of Site: Original Use Residence 838 ==
Check One Check One or More
☐ Excellent 863 == ☒ Altered 858 ==
☒ Good 863 == ☐ Unaltered 858 ==
☐ Fair 863 == ☒ Original Site 858 ==
☐ Deteriorated 863 == ☐ Restored () (Date:) () 858 ==
☐ Moved () (Date:) () 858 ==
Present Use Residence 850 ==
Dates: Beginning c+ 1930 844 ==
Culture/Phase American 840 ==
Period 20th Century 845 ==

NR Classification Category: District 916 ==

Threats to Site:

Check One or More
☐ Zoning () () 878 == ☐ Transportation () () 878 ==
☐ Development () () 878 == ☐ Fill () () 878 ==
☐ Deterioration () () 878 == ☐ Dredge () () 878 ==
☐ Borrowing () () 878 ==
☐ Other (See Remarks Below): 878 ==

Areas of Significance: Architecture 910 ==

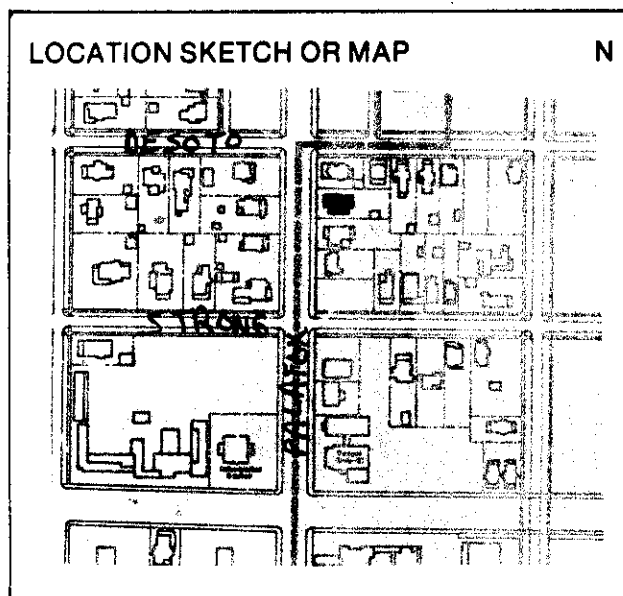
Significance:

A typical frame vernacular cottage of North Hill.

SEE SITE FILE STAFF FOR
ORIGINAL PHOTO(S) OR MAP(S)

911 ==

ARCHITECT Unknown 872 ==
 BUILDER Unknown 874 ==
 STYLE AND/OR PERIOD Frame vernacular 964 ==
 PLAN TYPE L 966 ==
 EXTERIOR FABRIC(S) Brick and novelty 854 ==
 STRUCTURAL SYSTEM(S) Wood frame 856 ==
 PORCHES none
 942 ==
 FOUNDATION: Piers: brick 942 ==
 ROOF TYPE: Intersecting gable 942 ==
 SECONDARY ROOF STRUCTURE(S): Hipped porch, now enclosed 942 ==
 CHIMNEY LOCATION: S/ ext. : ridge 942 ==
 WINDOW TYPE: DHS, 2/2, wood; bay(seni-octagonal 942 ==
 CHIMNEY: Brick 882 ==
 ROOF SURFACING: Conosition shingle: diamond 882 ==
 ORNAMENT EXTERIOR: 882 ==
 NO. OF CHIMNEYS 1 952 == NO. OF STORIES 1 950 ==
 NO. OF DORMERS 0 954 ==
 Map Reference (incl. scale & date) USGS 7.5 min Pensacola 1970
North Hill, Gordon Richmond 1974 809 ==
 Latitude and Longitude: 800 ==
 Site Size (Approx. Acreage of Property): LT 1 833 ==



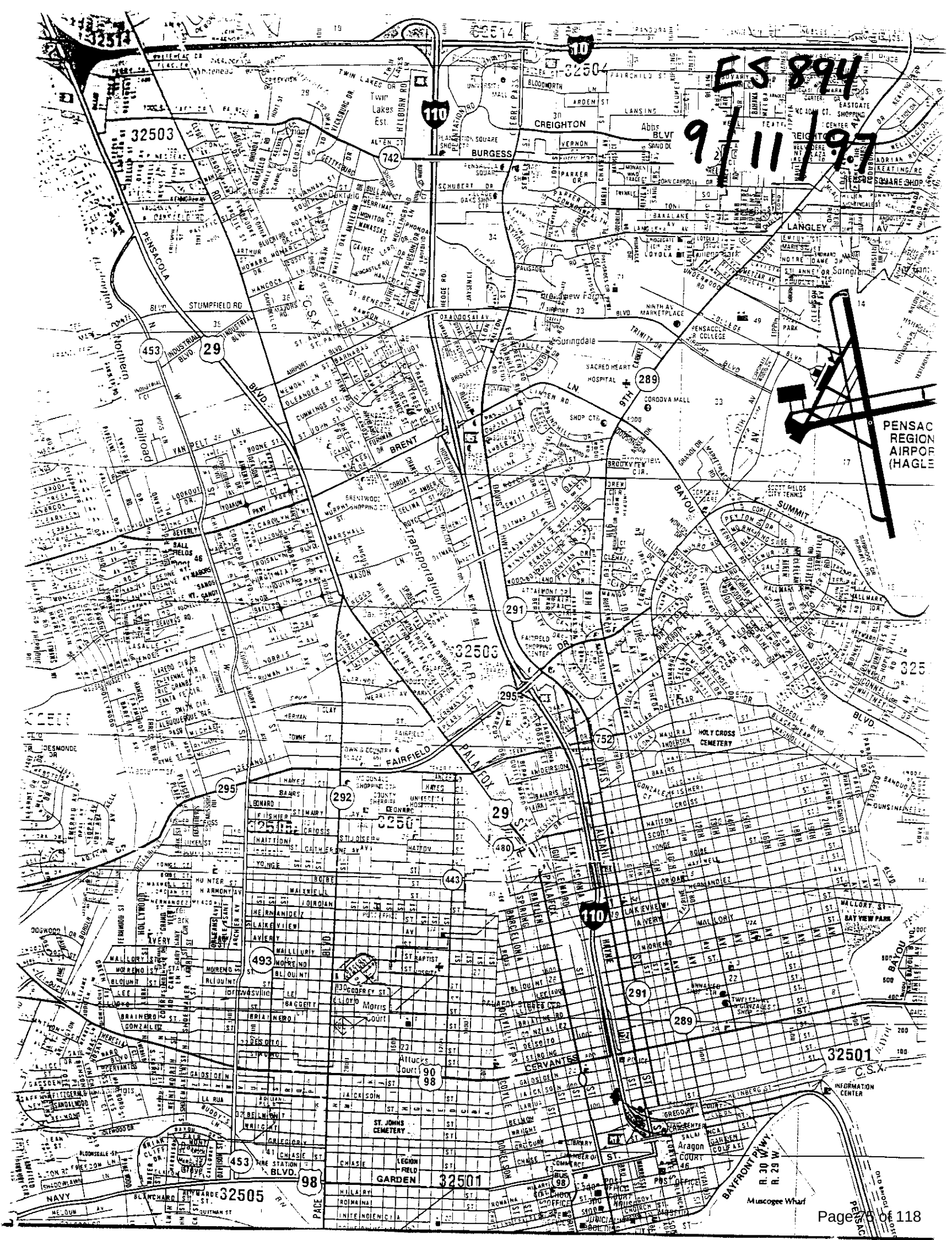
Township	Range	Section	
2S	30W	19	812 ==

UTM Coordinates:

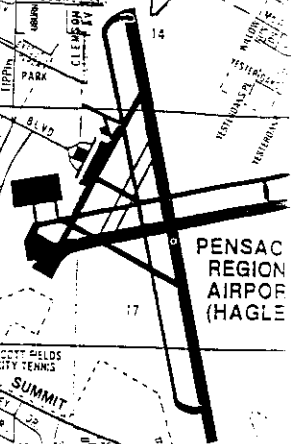
Zone	Easting	Northing	
			890 ==

Photographic Records Numbers HPPB P80.30 Fr. 21 860 ==

Contact Print



ES 894
9/11/97



PENSACOLA
REGION
AIRPORT
(HAGLEY)



914 N. Palafox Street





City of
Pensacola
*America's First Settlement
And Most Historic City*

**Architectural Review Board Application
Abbreviated Review for Historic Structure
Demolition**

Application Date: 12/20/2023

Project Address: 914 N Palafox St., Pensacola, FL 32501

Applicant: Stephen J Chrisco

Applicant's Address: 3890 Mariners Dr., Gulf Breeze, FL 32563

Email: chrisco.construction@yahoo.c **Phone:** (850) 816-5423

Signature of Property Owner or Agent: _____

(If different from Applicant)

(Office Use)

Construction Year: 1928 zone R-NC

Current Use: vacant residential

Ownership History: Pratt, Ronald & Merrie (1986-present); Green, Patricia & Don (1984-1986);
Curland, Marvin & Dorothy (?-1984); no further ESCPA records

Meets NRHP criteria: _____

Notes: materials- wood frame, asphalt shingle, wood siding, wood windows

Historical significance determination based on National Register of Historic Places criteria (see Sec. 12-11-5(E)(3).
If applicable, provide photographs of all elevations and a completed FMSF Historical Structures Form.

This request was reviewed by the following member of Planning Staff.

Adrienne F. Walker
ARB Secretary Signature

12/21/2023
Date

This request was reviewed by the following members of the Architectural Review Board:

Comments: _____

Architect Signature / Date

R. P. W. 1-8-24
UWFHT Representative Signature / Date

Comments: Send to ARB for Review

Planning Services
222 W. Main Street * Pensacola, Florida 32502
(850) 435-1670
Mail to: P.O. Box 12910 * Pensacola, Florida 32521



Chris Jones Escambia County Property Appraiser

[Real Estate Search](#)

[Tangible Property Search](#)

[Sale List](#)

[Back](#)

Nav. Mode ☒ Account ☐ Parcel ID

[Printer Friendly Version](#)

General Information						
Parcel ID:	000S009010005045					
Account:	131371000					
Owners:	PRATT RONALD P PRATT MERRIE J					
Mail:	108 W BRAINERD ST PENSACOLA, FL 32501					
Situs:	914 N PALAFOX ST 32501					
Use Code:	SINGLE FAMILY RESID 🔑					
Taxing Authority:	PENSACOLA CITY LIMITS					
Tax Inquiry:	Open Tax Inquiry Window					
Tax Inquiry link courtesy of Scott Lunsford Escambia County Tax Collector						

Assessments				
Year	Land	Imprv	Total	Cap Val
2023	\$52,250	\$95,007	\$147,257	\$147,257
2022	\$52,250	\$84,775	\$137,025	\$134,904
2021	\$52,250	\$70,390	\$122,640	\$122,640
Disclaimer				
Tax Estimator				
File for New Homestead Exemption Online				
Report Storm Damage				

Sales Data						
Sale Date	Book	Page	Value	Type	Official Records (New Window)	
09/04/2019	8157	1462	\$100	WD	📄	
02/1986	2182	222	\$45,000	WD	📄	
02/1984	1871	945	\$100	WD	📄	
02/1969	428	576	\$8,500	WD	📄	
02/1967	325	426	\$100	WD	📄	
Official Records Inquiry courtesy of Pam Childers Escambia County Clerk of the Circuit Court and Comptroller						

2023 Certified Roll Exemptions
None
Legal Description
LT 5 AND S 30 FT OF LTS 6 TO 9 AND N 20 FT OF LTS 27 28 29 AND S 20 FT OF LTS 10 AND 11 AND OF W 15 FT OF LT 12... 🔑
Extra Features
None

Section Map Id:
[CA077](#)

Approx. Acreage:
0.2479

Zoned:
R-NC
R-NC
R-NC

Evacuation & Flood Information
[Open](#)
[Report](#)

Parcel Information

[Launch Interactive Map](#)

[View Florida Department of Environmental Protection\(DEP\) Data](#)

Address: 914 N PALAFOX ST, Year Built: 1928, Effective Year: 1950, PA Building ID#: 17883

Structural Elements

DECOR/MILLWORK-BELOW AVERAGE

DWELLING UNITS-1

EXTERIOR WALL-SIDING-SHT.AVG.

FLOOR COVER-VINYL/CORK

FOUNDATION-WOOD/SUB FLOOR

HEAT/AIR-CENTRAL H/AC

INTERIOR WALL-DRYWALL-PLASTER

NO. PLUMBING FIXTURES-6

NO. STORIES-1

ROOF COVER-COMPOSITION SHG

ROOF FRAMING-GABLE-HI PITCH

STORY HEIGHT-0

STRUCTURAL FRAME-WOOD FRAME

 Areas - 2146 Total SF

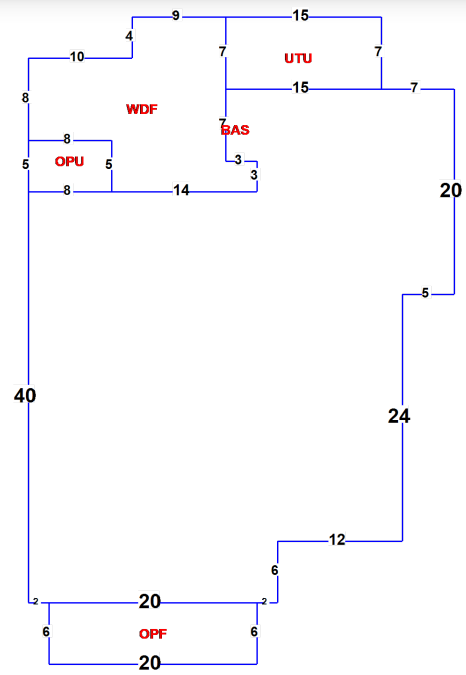
BASE AREA - 1629

OPEN PORCH FIN - 120

OPEN PORCH UNF - 40

UTILITY UNF - 105

WOOD DECK FIN - 252



Images

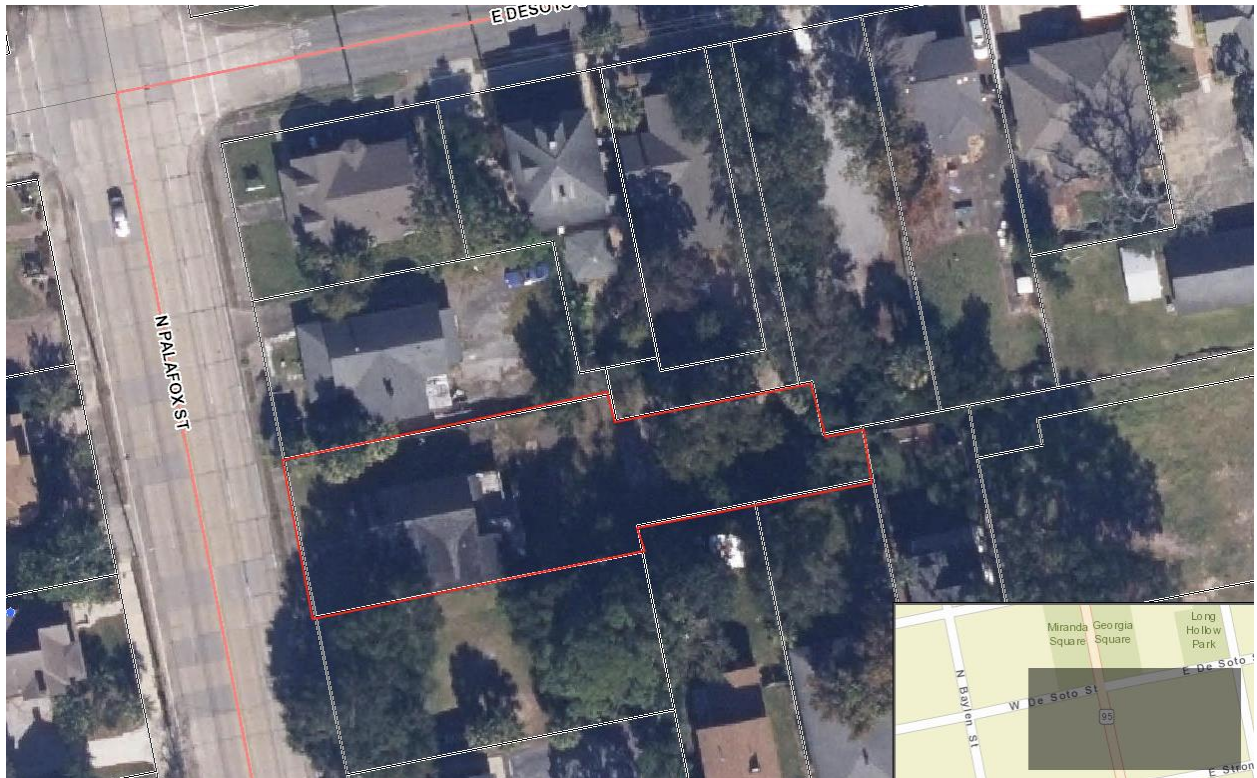


9/23/2019 12:00:00 AM

The primary use of the assessment data is for the preparation of the current year tax roll. No responsibility or liability is assumed for inaccuracies or errors.

Last Updated: 12/21/2023 (tc.2684)

914 N. Palafox Street









City of Pensacola

222 West Main Street
Pensacola, FL 32502

Memorandum

File #: 24-70

Architectural Review Board

1/18/2024

LEGISLATIVE ACTION ITEM

SUBJECT:

1611 E. Gadsden Street
East Hill / Zone R-1AA / City Council District 6
Historic Structure Demolition Review

SUMMARY:

Per the City of Pensacola's Historic Building Demolition Review Ordinance, the referenced structure has been found to be potentially significant in regard to its architecture as well as its association with the lives of persons potentially significant in our local past. Per the ordinance, the Board is tasked with determining whether or not this structure meets the criteria for listing in the National Register of Historic Places. If eligible and deemed historically significant by those criteria, the Board must also determine if the building is subject to a demolition delay of now more than 60 days. To determine that a historically significant building is subject to a demolition delay, the Board must find that in the interest of the public it is preferable that the building be preserved or rehabilitated rather than demolished.

Please find attached all relevant documentation for your review.

RECOMMENDED CODE SECTIONS

Sec. 12-11-5(5) Historic Building Demolition Review Ordinance

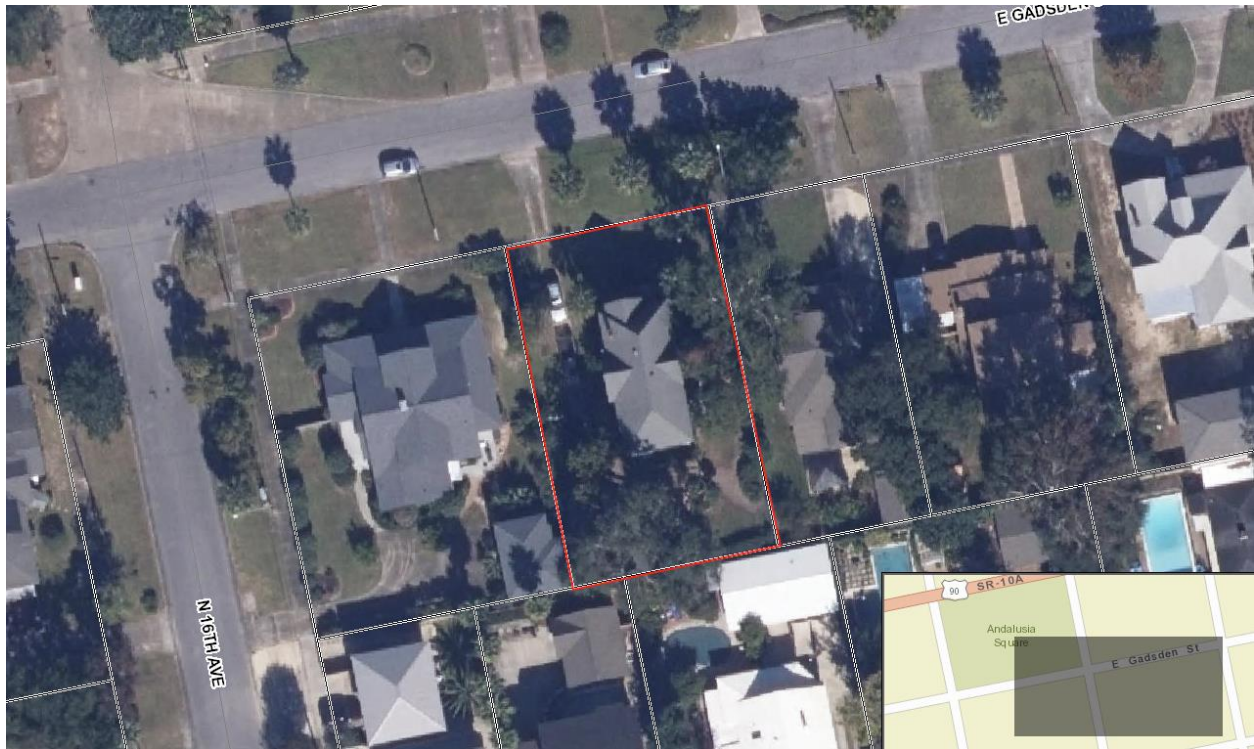
Sec. 12-11-5(5)e.3. Criteria for determining significance

Sec. 12-11-5(5)e.4. Criteria for determining that building is subject to demolition delay

ATTACHMENTS:

1. Images
2. Historic Structure Demolition Application

1611 E. Gadsden Street





City of
Pensacola
America's First Settlement
And Most Historic City

**Architectural Review Board Application
Abbreviated Review for Historic Structure
Demolition**

Application Date: 12.20.23

Project Address: 1611 E Gadsden St.

Applicant: Parry Malone

Applicant's Address: 56 Highpoint Dr., Gulf Breeze 32561

Email: parry360@gmail.com **Phone:** 850-516-6986

Signature of Property Owner or Agent: Parry Malone

(If different from Applicant)

(Office Use)

Construction Year: 1911 **zone** R-1AA

Current Use: vacant residential

Ownership History: Malone, Parry (2020-present); Irby, Steve & Parry Malone (2016-2020); Hitchcock, Winifred & Colette (?-2016); no further records on ESCPA

Meets NRHP criteria: _____

Notes: materials- wood frame, aluminum siding, asphalt shingle, X windows

Historical significance determination based on National Register of Historic Places criteria (see Sec. 12-11-5(E)(3). If applicable, provide photographs of all elevations and a completed FMSF Historical Structures Form.

This request was reviewed by the following member of Planning Staff.

Adrienne F. Walker

ARB Secretary Signature

12/21/2023

Date

This request was reviewed by the following members of the Architectural Review Board:

Comments: _____

Architect Signature / Date

R. W. 1-8-24

UWFHT Representative Signature / Date

Comments: send to ARB for Review
Significant to East Hill Development

Planning Services

222 W. Main Street * Pensacola, Florida 32502

(850) 435-1670

Mail to: P.O. Box 12910 * Pensacola, Florida 32521



Chris Jones Escambia County Property Appraiser

Real Estate Search

Tangible Property Search

Sale List

[Back](#)

Nav. Mode ☒ Account ☐ Parcel ID

Printer Friendly Version

General Information	
Parcel ID:	000S009025003092
Account:	140642000
Owners:	MALONE PARRY
Mail:	56 HIGHPOINT GULF BREEZE, FL 32561
Situs:	1611 E GADSDEN ST 32501
Use Code:	SINGLE FAMILY RESID 
Taxing Authority:	PENSACOLA CITY LIMITS
Tax Inquiry:	Open Tax Inquiry Window
Tax Inquiry link courtesy of Scott Lunsford Escambia County Tax Collector	

Assessments				
Year	Land	Imprv	Total	Cap Val
2023	\$190,800	\$160,935	\$351,735	\$329,199
2022	\$180,200	\$143,604	\$323,804	\$299,272
2021	\$159,000	\$113,066	\$272,066	\$272,066
Disclaimer				
Tax Estimator				
File for New Homestead Exemption Online				
Report Storm Damage				

Sales Data						2023 Certified Roll Exemptions	
Sale Date	Book	Page	Value	Type	Official Records (New Window)	None	
01/22/2020	8236	697	\$100	QC		Legal Description E1/2 OF LT 3 AND ALL LT 4 AND W1/2 OF LT 5 BLK 92 NEW CITY TRACT OR 7542 P 1864 OR 8236 P 697 CA 41	
06/20/2016	7542	1864	\$150,000	WD			
01/1967	347	813	\$13,500	WD			
Official Records Inquiry courtesy of Pam Childers Escambia County Clerk of the Circuit Court and Comptroller						Extra Features None	

Section Map Id:
[CA041](#)

Approx. Acreage:
0.2433

Zoned:
R-1AA
R-1AA
R-1AA

Evacuation & Flood Information
[Open Report](#)

[View Florida Department of Environmental Protection\(DEP\) Data](#)

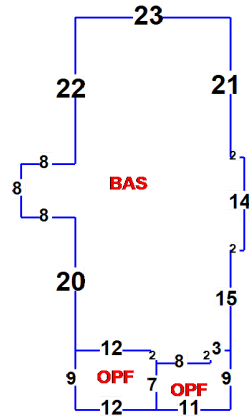
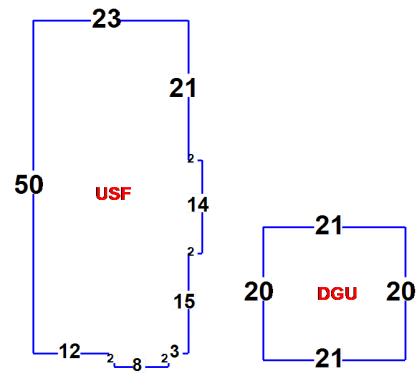
Parcel Information

Launch Interactive Map

Buildings
Address:1611 E GADSDEN ST, Year Built: 1911, Effective Year: 1940, PA Building ID#: 20434

Structural Elements

DECOR/MILLWORK-BELOW AVERAGE
DWELLING UNITS-1
EXTERIOR WALL-ALUMINUM SIDING
FLOOR COVER-HARDWOOD/PARQUET
FOUNDATION-WOOD/SUB FLOOR
HEAT/AIR-UNIT HEATERS
INTERIOR WALL-DRYWALL-PLASTER
NO. PLUMBING FIXTURES-8
NO. STORIES-2
ROOF COVER-DIMEN/ARCH SHNG
ROOF FRAMING-GABL/HIP HI PTC
STORY HEIGHT-0
STRUCTURAL FRAME-WOOD FRAME



Areas - 3063 Total SF

BASE AREA - 1258
DET GARAGE UNF - 420
OPEN PORCH FIN - 191
UPPER STORY FIN - 1194

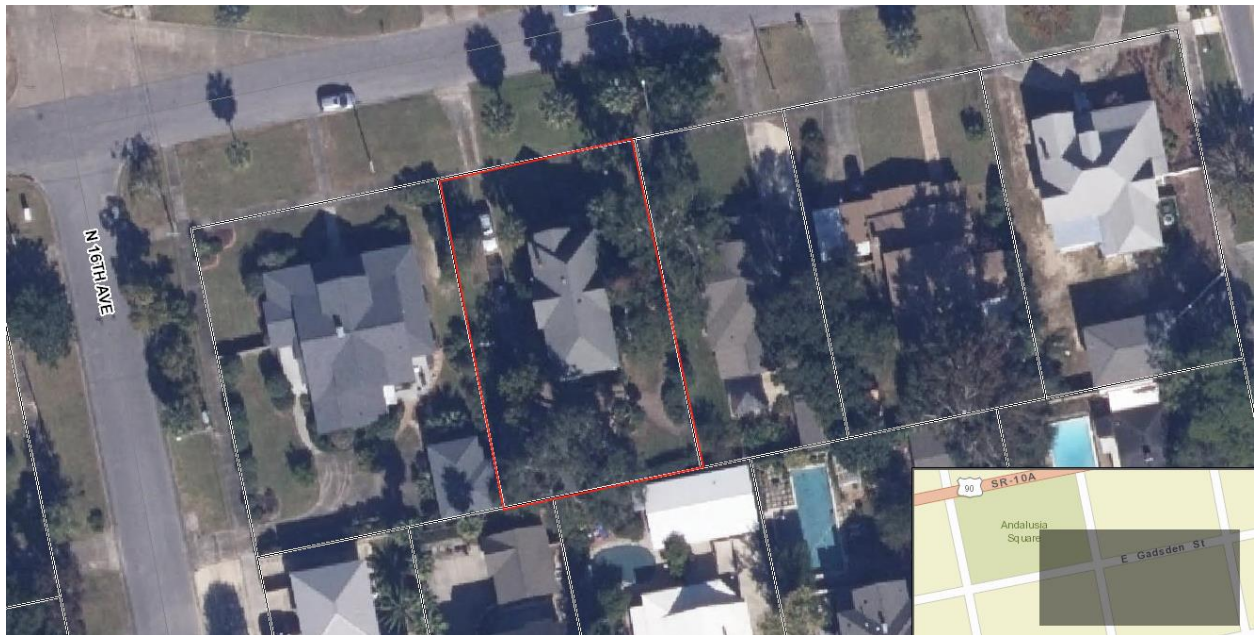


12/31/2018 12:00:00 AM

The primary use of the assessment data is for the preparation of the current year tax roll. No responsibility or liability is assumed for inaccuracies or errors.

Last Updated:12/20/2023 (tc.3391)

1611 E. Gadsden Street













City of Pensacola

222 West Main Street
Pensacola, FL 32502

Memorandum

File #: 24-42

Architectural Review Board

1/18/2024

PRESENTATION

SUBJECT:

Discussion

National Park Service Preservation Brief No. 16: The Use of Substitute Materials on Historic Building Exteriors

SUMMARY:

This item is meant to give the Board an opportunity to discuss a recently released preservation brief from the National Park Service regarding substitute materials for historic building exteriors. The term substitute materials is used to describe building materials that have the potential to match the appearance, physical properties, and related attributes of historic materials well enough to make them alternatives for use in current preservation practice when historic materials require replacement. The Board adopted a policy on June 17, 2021 regarding alternative materials for siding and decking, railings, and other architectural details to be considered on a case-by-case basis.

Please find attached all relevant documentation for your review.

ATTACHMENTS:

1. Preservation Brief 16: The Use of Substitute Materials on Historic Building Exteriors

16 PRESERVATION BRIEFS

The Use of Substitute Materials on Historic Building Exteriors

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The *Secretary of the Interior's Standards for Rehabilitation* generally require that deteriorated distinctive architectural features of a historic property be repaired rather than replaced. Standard 6 of the *Standards for Rehabilitation* further states that when replacement of a distinctive feature is necessary, the new feature must “match the old in composition, design, color, texture, and other visual properties, and, *where possible*, materials” (emphasis added). While the use of matching materials to replace historic ones is always preferred under the *Standards for Rehabilitation*, the Standards also purposely recognize that flexibility may sometimes be needed when it comes to new and replacement materials as part of a historic rehabilitation project. Substitute materials that closely match the visual and physical properties of historic materials can be successfully used on many rehabilitation projects in ways that are consistent with the Standards.

The flexibility inherent in the *Standards for Rehabilitation* must always be balanced with the preservation of the historic character and the historic integrity of a building, of which historic materials are an important aspect. Any replacement work reduces the historic integrity of a building to some degree, which can undermine the historic character of the property over time. With limited exceptions, replacement should only be considered when damage or deterioration is too severe to make repair feasible. When needed replacement is made with a material that matches the historic material, the impact on integrity can be minimal, especially when only a small amount of new material is needed. When a substitute material is used for the replacement, the loss in integrity can sometimes, although not always, be greater than that of a matching material. Also, whether historic or substitute material, there is a point where the amount of replacement can become excessive and the building's historic integrity is diminished to an unacceptable degree, regardless of the material used—that is, a loss of authenticity and the physical features and characteristics closely associated with the property's historic significance.

The term *substitute materials* is used to describe building materials that have the potential to match the appearance, physical properties, and related attributes of historic materials well enough to make them alternatives for use in current preservation practice when historic materials require replacement.

Compelling reasons to use a substitute material instead of the historic material include the unavailability or poor performance of the historic material, or environmental pressures or code-driven requirements that necessitate a change in material. When using a substitute material for replacement it is critical that it match the historic material in all of its visual and physical properties to preserve the historic character of the building and minimize the impact on its integrity.

Substitute materials can be cost-effective, permit the accurate visual duplication of historic materials, and provide improved durability. While the behavior of traditional, historic materials is generally well understood, the behavior of newer materials can be less established and sometimes less predictable. Substitute materials are most successful when the properties of both the original material and the substitute are thoroughly understood by all those involved in the design and construction process. The architect must be adept at the selection of substitute materials and their incorporation into architectural plans and specifications. The contractor or tradesperson in the field must also be experienced with their use.

This Preservation Brief provides general guidance on the use of substitute materials as replacement materials for distinctive features on the exterior of historic buildings. Due to the ever-evolving product market for construction materials, this Brief does not provide specifications for substitute materials. This guidance should be used in conjunction with qualified professionals who are knowledgeable in current construction and historic preservation practices.

This Brief includes a discussion of the appropriate use of substitute materials and provides a path for decision-making in their use. In considering the use of substitute materials, such issues as the deterioration or failure of the historic building component and material must be understood. The existing component's physical and visual properties, profile, surface texture, dimensions, and performance should be identified to establish the basis for evaluating a possible replacement material. The physical and visual properties of the various substitute materials available should also be assessed and compared to the original material for their physical and visual compatibility. Lastly, the suitability of a given substitute replacement material should be determined based on how well the material matches both the physical and visual properties of the existing material as well as any specific performance or application needs. The Brief's descriptions of common substitute materials are not meant to be comprehensive, and, as the performance history of newer materials continues to grow and new materials are developed, available options will change, and our understanding of current material performance will continue to evolve.

Historical Use of Substitute Materials

The tradition of using affordable and common materials in imitation of more expensive and less available materials is a long one. At Mount Vernon, for example, George Washington used wood painted with sand-impregnated paint to imitate rusticated stone. This technique, along with scoring stucco into block patterns, was common in Colonial America to imitate stone.

Nineteenth-century technology made a variety of materials readily available and widely used that were not only able to imitate traditional materials but were also cheaper to fabricate and easier to use. Traditionally, carved stone units were individually worked. Molded or cast materials greatly increased efficiency in creating repetitive elements. Cement-based products such as cast stone could provide convincing imitations of natural stone with carefully chosen aggregates and cements and was typically a commercially manufactured product. It could be tooled like natural stone, though that could reduce much of the cost advantage. These carefully-crafted cementitious products were widely used as trim elements for masonry structures or as the face material for an entire building. At the other end of the spectrum, mail-order catalogs provided a wide variety of forms for molding concrete that were merely evocative of natural stone and did little to match its appearance. Concrete masonry units could be fabricated locally and on site, avoiding expensive quarrying and shipping costs.

Offering similar efficiencies as cast stone for reproducing repetitive and even complex decorative shapes, terra cotta could mimic the surface characteristics of stone with various textures and glazes. It was popular in the late nine-

teenth and early twentieth centuries for details on stone or brick buildings as well as for the entire skin of large and elaborately detailed buildings.

Cast iron was also used to imitate stone, often with very decorative profiles, for a variety of architectural features ranging from window hoods to columns, piers, balustrades, and even whole façades. Cast iron offered its own set of efficiencies including cost, fabrication time, and weight, but required a painted finish.

While cast stone, terra cotta, and cast iron offered efficiencies over quarried and, particularly, carved stone, they were not cheap or impermanent materials. Less costly, but also less durable, stamped or brake-formed sheet metal, typically galvanized, could also be used instead of masonry for cornices, window hoods, roofing tiles, and even entire building façades.

Substitute Materials and Applying the Standards for Rehabilitation

The *Standards for Rehabilitation* are focused on preserving the important and distinctive character-defining features of a historic property (Standards 2 and 6), and they are to be applied in a reasonable manner, taking into account economic and technical feasibility ([36 CFR 67.7](#) and [36 CFR 68](#)). The Standards have an inherent flexibility that facilitates their application to diverse projects, historic properties, and conditions. They are to be applied on a "cumulative-effect" basis, when the overall effect of all work in the context of the specific conditions of the property and the project is consistent with the property's historic character.

The *Standards for Rehabilitation* require that the replacement of a distinctive feature match the old in physical and visual properties. While the use of matching materials is always preferred, the Standards purposely allow for the use of substitute materials when the use of original materials is not reasonably possible, such as in consideration of economic and technical feasibility or in new construction. They also provide additional flexibility in the treatment of secondary, less distinctive features that are less important in defining the historic character of the property. The *Standards for Rehabilitation* recognize that flexibility is appropriate to facilitate "a compatible use for a property ... while preserving those portions or features which convey its historical, cultural, or architectural values" (definition of "Rehabilitation," [36 CFR 67.2\(b\)](#)).

Examples of Historical Use of Substitute Materials



Figure 2a: Casting concrete blocks to mimic quarried stone was a popular late 19th- to mid 20th-century technique. Concrete masonry units could be completed by local craftsman, saving time and shipping costs. Photo: John Sandor, NPS.



Figure 2b: The 19th century also produced a variety of metal products used to imitate other materials. Across the country, cast iron was used in storefronts to imitate stone. Photo: John Sandor, NPS.



Figure 2c: Stucco has been used to imitate a number of building materials for many centuries. Seen here, stucco was applied to a brick structure and scored to represent a stone façade. Photo: John Sandor, NPS.

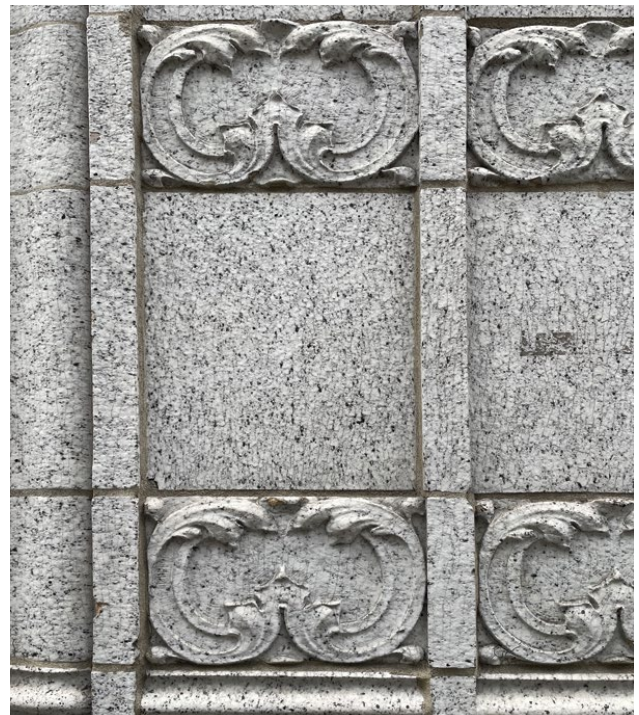


Figure 2d: Terra cotta gained popularity in the late 19th century as a cheap and lightweight alternative to stone. Glazing techniques allowed the blocks to imitate a variety of natural stone materials. Photo: John Sandor, NPS.

These examples of one material used to imitate another, more often in initial construction than for later repair and replacement purposes, are referred to as *imitative materials* in the *Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings*, updated in 2017, that accompany the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. These imitative materials, while evoking other materials, usually had distinctive qualities of their own and were not always a very close match in appearance to the historic material they were meant to imitate.

Many of the traditional materials discussed above are still available and used to replace damaged or missing original features, both to replace matching historic materials and sometimes as substitute materials. Because of their extensive use over time and their known physical and chemical properties, cast stone, cast iron, and terra cotta are well understood substitute materials. This continued usage and familiarity means their installation requirements and service life are well established, which in turn makes it easier to determine when and how to use these traditional materials as substitutes for a deteriorated material. However, innovation in replacement materials continues, and new products (many of them consisting of synthetic materials) are continually introduced. These non-traditional products are an increasing part of both the new construction and rehabilitation industries. Some materials, like glass fiber reinforced polymers, glass fiber reinforced concrete, or fiber cement, have been in use long enough for an accurate prediction of their service life and performance. Other newer, non-traditional materials may be too new to have established performance records, thus, understanding their material properties is critical, and their use should be approached with more caution.

When to Consider Using Substitute Materials in Preservation Projects

According to the *Standards for Rehabilitation*, deterioration should generally be addressed through repair if in repairable condition. Repair can entail a variety of treatments that retain the unit of building material and remove and patch or replace only the damaged portion. This approach can be done with traditional methods and materials such as a dutchman, where like-kind material is precisely inserted into wood or stone, or it may employ other materials such as epoxies for wood repair or cementitious compounds for masonry. As long as the repair methods are sound and do not damage or accelerate the deterioration of the historic material, repairs are generally preferable to replacement of an entire element. More complex manufactured products, typical of more recent historic materials (as well as a lot of modern building materials generally), may be more difficult to repair, if they can be repaired at all.

There are situations, however, when the level of deterioration makes localized repairs infeasible and entire fea-



Figure 3: Incremental repair is best done using in-kind material to minimize differences in the performance characteristics that could negatively affect the overall assembly. Photo: NPS.

tures or units of historic material must be replaced. While achieving an effective match of all of the visual qualities of a material can be challenging, even when replacement is in kind, it can be even more challenging when the replacement is a substitute material. A good visual match is not the only consideration when a substitute material is to be used for incremental replacement within a larger assembly of historic material. When an individual siding board or a single block of ashlar is being replaced, it is usually best achieved with the original material. Introduction of a different material into an intact assembly requires that its inherent properties, such as expansion and contraction, moisture resistance, or permeability, be thoroughly considered relative to those of the surrounding historic materials to avoid causing damage.



Figure 4. While occasionally used to imitate other materials such as wood or slate shingle, many asbestos shingles and siding materials had their own distinct shape and profile. No longer manufactured today, alternative materials must be found to replace these materials when they are distinctive features on a historic structure. Drawing: Association for Preservation Technology, Building Technology Heritage Library.



Figure 5. (Left) Asbestos shingles were often used as a substitute for traditional slate roof shingles. The historic asbestos roof on this rehabilitation project had reached the end of its lifespan and required complete replacement. (Right) Given the limited replacement materials available to match the historic asbestos shingles, utilizing natural slate was determined to be the best visual match for the original shingles and design intent in this instance. Photos: Crosskey Architects.

Circumstances in which the use of substitute materials may generally be considered appropriate, taking into consideration technical and economic feasibility reasons, include: the unavailability of historic materials; the unavailability of skilled artisans or historic craft techniques; inadequate durability of the original materials; the replacement of a secondary feature; construction of a new addition; the reconstruction of a missing feature; code-required performance; and for enhanced resilience and sustainability:

- **Unavailability of historic material.** A common reason for using substitute materials is the difficulty in finding a good match using the historic material (particularly a problem for masonry materials where the color and texture are derived from the material itself). This may be due to the actual unavailability of the material or to protracted delivery dates, particularly if the material cannot be sourced domestically. It is not uncommon for a local quarry that is no longer in operation to have been the source of an original stone. If another quarry cannot supply a satisfactory match, a substitute material such as dry-tamp cast stone or textured precast concrete may be an appropriate alternative, if care is taken to ensure that the detail, color, and texture of the original stone are matched. Even when the color is successfully matched, the appearance of a cementitious product may diverge from that of the historic stone as the substitute material ages.

Many manufactured materials that were used historically on buildings are no longer made. Terne-plated steel, which was the material most typically used for painted standing-seam or flat-seam roofing, is no longer made. However, because it was always painted, other metals including galvanized steel or copper can generally be substituted if painted. When the historic material needing to be replaced is a manufactured product developed as an imitation of

a natural material, which was the case with asbestos shingles meant to imitate slate, the natural material may now be an appropriate substitute material to consider for the manufactured one that is no longer produced.

- **Unavailability of skilled artisans or historic craft techniques.** These two issues can complicate any preservation or rehabilitation project. This is particularly true for intricate ornamental work, such as carved wood, carved stone, wrought iron, or cast iron. While skilled craftsmen may not be as difficult to find as they once were, there can still be limitations geographically, even in finding less specialized skills, and particularly if a project is small. Technical advances have allowed some stone or wood carvers to take advantage of computerized equipment, but complex designs will likely still require hand work. It may also be possible to mimic a carved element using a material that can be cast in a mold, adding significant efficiency where an historic element survives from which a mold can be made. Options for casting include aluminum, cast stone, fiberglass, glass fiber reinforced concretes, and terra cotta, but not all carved elements can be duplicated by a casting, and mold-making and casting still require skilled craftsmen.
- **Inadequate durability of the original material.** Some historic building materials were of inherently poor quality or were not durable. In other cases, one material was naturally incompatible with other materials on the building, causing staining or galvanic corrosion. Examples of poor-quality materials are very soft sandstones, which eroded quickly, and brownstone, which is vulnerable to delamination. In some cases, more durable natural stones may be visually similar enough to stand in for these soft stones but cast stone or another material may be needed to achieve an appropriate match.

The ready availability of manufactured ornamental wood features fed a nineteenth-century taste for decorative architectural details that were often used on the exterior of buildings with little concern for how they would be affected by moisture or maintained. Even old-growth wood from decay-resistant species often could not prevent features with severe exposure from eventually needing to be replaced. Today's available commercial supplies of lumber no longer provide the denser, more decay-resistant wood of old-growth forests, so even careful matching to species, which is not always possible, will not yield a replacement equal in performance to the historic material. Old-growth wood is likely to be very expensive, if it can be found, and may not be available from a sustainable, environmentally responsible source. When features with severe exposure need to be replaced or reproduced, substitute materials that are less susceptible to decay can have a longer life, and when the feature is painted, as exterior wood features generally are, the visual effect of a substitute material can be minimal.

- **Replacement of a secondary feature.** When it is necessary to replace a less distinctive, secondary feature that is less important in defining the historic character of the property, there is more flexibility in how it can be replaced. While it may be less important to find an exact match in materials when replacing

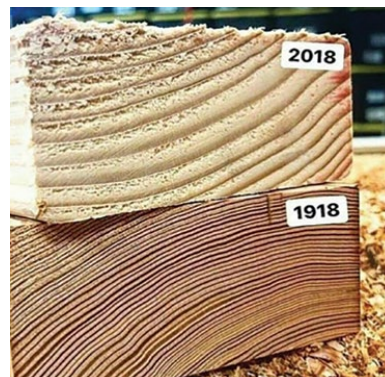


Figure 6. The dramatic difference in the number of growth rings between old-growth wood and wood that was recently harvested from second- or third-growth forests is indicative of the diminished dimensional stability and durability of most lumber currently available. Photo: Zachary Dettmore.

such a feature, the retention of the overall historic character should still guide selection of an appropriate replacement material. For example, replacing secondary features such as those with limited visibility (e.g., siding materials on a rear elevation) may permit replacement materials that are similar in appearance or character without having to be a perfect match.

- **Construction of a new addition.** The *Standards* require that new additions to historic buildings and related new construction be differentiated from the old as well as be compatible with the historic character of the property and its site and environment. Using materials that evoke, without matching, the historic material can be an effective means of achieving the needed balance between compatibility and



Figure 7. A new addition replaced non-historic construction on the rear elevation of this building. Fiber cement gives the addition a compatible appearance without replicating the exposure for thickness of the historic siding. Photo: Ward Architecture + Preservation.

differentiation for new additions and new construction. Even if differentiation is achieved through design rather than materials, there generally is no basis for requiring the use of matching historic materials for new additions and new construction as part of a rehabilitation project.

- **Reconstruction of a missing feature.**

Many buildings lose significant features over the course of their lives for reasons such as those previously discussed. When a missing feature is to be reconstructed, the importance of matching the original material may be less important to the effect replacing the missing feature may have on the overall historic character and appearance of the building. Though replacement of missing features must be substantiated by documentary, physical, or pictorial evidence, in many cases the authenticity of the material may be secondary to the overall visual qualities. The use of a more cost-effective substitute material for the construction of a missing feature can often be an important factor in the feasibility of undertaking such work.

- **Code-required performance.**

Modern building codes are regularly amended to require higher performance levels for new and existing buildings in such areas as life safety, seismic retrofits, and accessibility. Rehabilitation projects often trigger compliance with code requirements that were not in place when a building was constructed. Although building codes may often allow for the retention of historic materials and assemblies, substitute materials can offer an alternative in situations when the historic materials are non-compliant and cannot otherwise be reasonably retained. In these instances, a change in material may be appropriate to meet code requirements, while in other instances selecting the optimal code compliance method for the project may achieve code-compliant solutions that also allow for the preservation of a building's historic materials and finishes.

For example, fire codes may require increased resistance to flame spread for buildings within dense urban environments where building proximity and separation between buildings is a concern. Some substitute materials are non-combustible, have good ratings for flame spread, and can provide an alternative to help meet

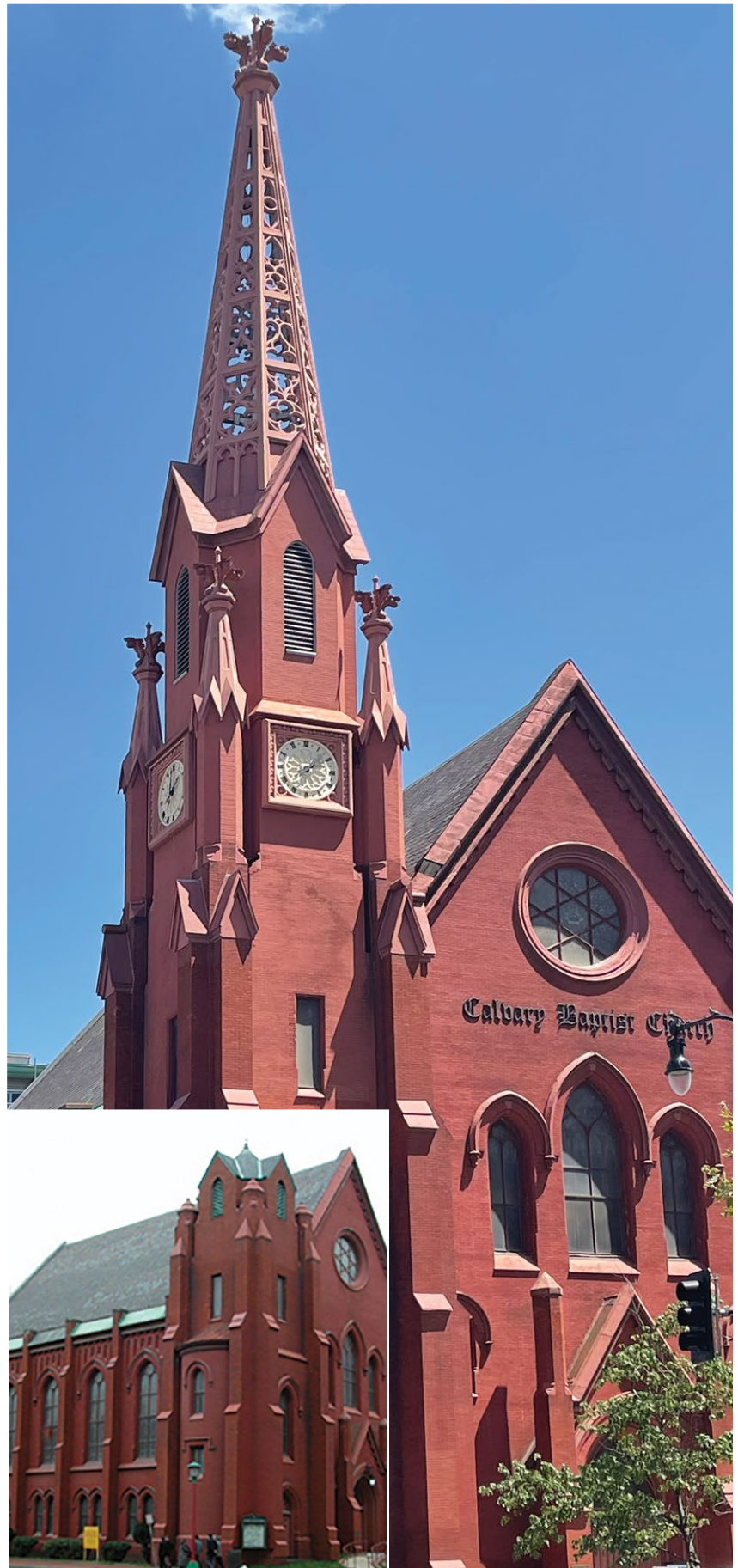


Figure 8. A long-missing cast-iron steeple was reconstructed in aluminum and fiber-reinforced polymer (FRP). Photo: John Sandor, NPS, Inset: Quinn Evans.

fire code requirements. Depending on the building component and the material, however, a substitute material may not resist fire any better than the historic material. In addressing code issues, all feasible alternatives should be considered to minimize the impact on the historic character of the building while still meeting code requirements.

With specific provisions in building code related to issues such as seismic hazards, the choice of materials for features inherently unstable in a seismic event can be a key part of a code-compliant retrofit solution. Elements at risk of falling such as parapets, finials, and overhanging cornices may be made safe by anchoring them to new structural frames. However, for some heavy masonry features, especially where there is deterioration or the feature is difficult to effectively brace, adequately anchoring the existing feature may not prove feasible. In such cases removing and replacing these features with lighter-weight replicas that incorporate a resilient structural framework can help preserve the historic character of the building while improving life safety performance.

- **Enhanced resilience and sustainability.** Wildfires, earthquakes, floods, hurricanes, and other extreme weather events put historic buildings and their occupants at risk and may require adaptive treatments that are more invasive than might be accepted in other circumstances, including related to the use of substitute materials. In these contexts, it is still necessary to try to minimize impacts on a building's historic character as much as possible while still adapting it to be more resilient. Widespread wildfires, for example, have increased demand for fire resistant materials for the exterior building envelope. Flood events may necessitate the replacement of historic materials that have been damaged or inundated with hazardous substances in contaminated floodwaters. When undertaking repairs in such circumstances, substitute materials may offer greater resilience to anticipated future exposure to natural hazard risks.

Similarly, efforts to improve energy efficiency and performance may include the use of substitute materials as replacement components when modifications to building assemblies are required and the historic materials cannot be preserved. When evaluating substitute materials in the context of sustainability objectives, factors such as the environmental impact of production, the full life cycle of products, and the embodied carbon of the materials already in place should be carefully analyzed. There may be more sustainable choices for a replacement material, including the use of more traditional materials in place of manufactured products that may consist of non-renewable resources or hazardous materials. While some synthetic substitute materials are made from recycled materials or are otherwise sustainably produced, many are not repairable, salvageable, or recyclable themselves, and

they may have shorter lifespans to their historic material counterparts. When either greater resilience or sustainability is a factor, all feasible alternatives should be considered in finding a balanced approach that maintains historic character while meeting resilience and sustainability goals.

Substitute Materials and Economic Feasibility

Economic feasibility is inevitably a concern when choosing a material for any part of a project, whether a historic or substitute material, but it should not be the sole determinant factor at the expense of maintaining the



Figure 9. Previously bricked-in openings below the flood line were reopened and new aluminum windows installed with cellular PVC trim detailed to hold back moderate flood waters and survive exposure to water. Photo: John Sandor, NPS.

historic character and historic integrity of a building. Other factors may prompt the consideration of a substitute material, such as the cost of maintaining the historic material, because it is comparatively difficult or costly to reach or access, or the frequency of required maintenance the historic material needs. Additionally, where in-kind replacement material is found to be prohibitively expensive, it may be reasonable to consider a substitute that offers an alternative and is a good physical and visual match. Not all substitute materials are, however, cost-effective replacements. Long-term durability and maintainability are other factors that should be considered in conjunction with initial cost.

Maintenance of a material, particularly where accessibility is difficult or expensive, can be an important part of a

cost evaluation. Maintenance costs should not be considered without also considering life-cycle expenses. While some substitute materials may offer reduced initial costs, they may be as or more costly than traditional materials to maintain over time. For example, many substitute materials are not readily repairable, necessitating full replacement when damaged. The cost to replace a material or assembly at the end of its lifespan may also be greater than the accumulated incremental expense to maintain the historic material, particularly if it is a more traditional, repairable material. Maintenance cost should never be the sole reason for replacing a historic material that is not deteriorated.

Criteria for the Appropriate Use of Substitute Materials

Substitute materials must meet three basic criteria to be considered: they must be compatible with the historic materials in appearance; their physical properties must be similar to those of the historic materials, or the materials must be installed in a manner that tolerates differences; and they must meet certain basic performance expectations over an extended period of time.

- **Matching the Appearance of the Historic Material**

Any material's appearance varies depending on the nature of the material and how it is used. Some historic materials, such as wood and ferrous metals, were typically painted, making the color of the substitute unimportant, though the texture of the surface, which telegraphs through a paint layer, is still an important consideration. Texture can be a large part of distinguishing a material formed by hand from one that is machine-made. Many historic materials, such as most building stones, are used without any coating, making the color, pattern, and reflectivity, as well as surface texture, dependent on the material itself. Matching the color and surface

characteristics of a historic natural material with a man-made substitute can often be quite difficult.

When the color and surface characteristics of an existing material are important, cleaning the material should be the starting point for evaluating a potential matching material. In situations where there are subtle variations in color and texture within the original material, the substitute material should be similarly varied so that it is not conspicuous by its uniformity. If a material is custom fabricated, a sufficient number of samples should be supplied to permit on-site comparison of color, texture, detailing, and other critical visual qualities. For a manufactured product with preset choices of color or texture, it may be necessary to look at samples from more than one manufacturer to find the best match. Similarly, prefabricated products, such as roofing slate, may offer limited, if any, choice of unit size, which can be a critical factor for achieving a good match. A substitute material should not be used to replace distinctive, character-defining materials and features if an adequate match in design and appearance is not possible.

As all exposed materials are subject to ultraviolet degradation, samples of a new material, particularly when custom formulated, should be prepared during the early planning phases to allow for evaluation of the effects of weathering on color stability. When that is not possible, or if a prefabricated product is used, the fabricator or manufacturer may be able to identify regional locations where equivalent products have been installed long enough ago to get a better sense of how the material weathers and performs.

While a perfect match is the desired goal for replacing distinctive features, it is not always possible, even when the same matching material is chosen for the replacement. When any compromise



Figure 10. Polymer slates offer a choice of shapes but not sizes, limiting their ability to achieve a good visual match for some historic slate. With the size of the polymer slates (right) being nearly twice that of the historic slates (left), the scale of the entire feature is incompatibly altered. The molded edges of this material, which contribute to its ability to replicate slate, would be lost if each shingle was resized by cutting. Photo: John Sandor, NPS.



Figure 11. The thickness of the wood siding on the front (left) creates a deeper shadow line than is achieved with the fiber cement siding used on the side (right) elevation. While the exposure can be adjusted, fiber cement siding is not available in a matching thickness. Photo: John Sandor, NPS.

must be made in the precision of the match, it is wise to consider the vantage point from which the material will be seen. Sometimes what seems important at close range, such as variations in the texture of a surface, may be secondary to other aspects of the material when viewed from some distance. The closer a feature is to the viewer, the more closely the material and craftsmanship should match the original. An on-site mock-up using a sample of the proposed material can help evaluate whether it is an adequate visual match.

- **Matching the Physical Properties of the Historic Material**

Carefully chosen substitute materials can often closely match the appearance of historic materials, but their physical properties may differ greatly. These differences are most critical when incrementally replacing components of a larger assembly that retains significant historic material. The chemical composition of the material (e.g., the presence of acids, alkalis, salts, or metals) should be evaluated to ensure that the replacement materials will be compatible with the adjacent historic materials. Materials that will cause galvanic corrosion or other chemical reactions must be isolated from one another.

The thermal- and moisture-driven expansion and contraction coefficients of each adjacent material must be within narrow limits or be accommodated



Figure 12. Cellulose composite materials, like wood, expand and contract with moisture. Here it was used to reconstruct a missing storefront. Unlike solid wood that is dimensionally stable parallel to the grain, this composite moves equally in all dimensions, resulting in gaps that were not adequately anticipated in the design. Photo: John Sandor, NPS.

by carefully designed joints and fasteners. Joints can play a role both in accommodating movement of materials as well as in managing moisture, either to keep it from entering the enclosure assembly or to let it escape from the building envelope, or both. Because some synthetic materials are less permeable to moisture than more traditional materials, installations must take into account the potential to trap moisture and cause deterioration of historic and new materials. An assembly incorporating new and historic materials should be designed so that if material failures occur, the failures occur within the new material rather than the historic one.

During installation, surface preparation is critical to ensure proper attachment. Deteriorated underlying material must be removed or stabilized. Non-corrosive anchoring devices or fasteners that are designed to carry the new material and to withstand wind, rain, snow, and other destructive elements should be used. Since physical failures often result from poor anchorage or improper installation techniques, a structural engineer should be included in planning any major project. For readily available, off-the-shelf materials, manufacturers' recommendations for attachment and spacing should be followed.

Nearly all substitute materials have some properties that are different from the historic materials they may replace. Even when substitute materials are isolated from historic materials and features, it is important to understand the substitute materials' properties in order to use them successfully.

- **Performance of the Material Over Time**

When more traditional materials are used to replace damaged historic materials and features, their performance is predictable in most cases. An exception may be modern wood that has durability and other prop-

erties different than those of historic wood from old-growth forests. Many of the materials used as substitutes have been in use long enough to provide some idea of how they perform over time. Other material may only have test results from accelerated weathering. The length of manufacturer warranties may be an indicator of expected durability and lifespan. Warranties only predict a manufacturer's expectation of a product's performance and are no guarantee that the manufacturers will still be in business at the time needed to stand behind them. Just as new manufacturers emerge with new materials, others disappear. Where possible, projects involving substitute materials in similar installations and exposures should be examined before selecting a new, less-tested material. It is unrealistic to expect a substitute material, which can be quite different in composition than the historic material, not to age differently.

Even traditional materials will not perform well if not used or detailed appropriately, and experienced architects, engineers, fabricators, and installers rely on their professional knowledge and experience to ensure proper installation and techniques when working with familiar materials. This is just one of many reasons that using the original materials for needed replacement is usually the best choice. Some of the materials now available as substitutes have properties that differ greatly from the traditional materials they may be used to replace. It is critical to the successful performance of substitute materials that everyone involved in the selection, design, and installation fully understands the material's properties, especially how it is different than the material it is replacing, and how that will affect the surrounding materials and building systems.

Many traditional building materials can be repaired either with traditional methods and materials or with more modern conservation techniques using substances like epoxies. However, many modern substitute materials (particularly synthetic ones) are not as easily repaired, if repairable at all, as their more traditional counterparts. Confirming that a material is repairable may be important for those used, e.g., where impact or significant wear or abrasion is likely.

Finally, it is critical that the substitute materials be documented as part of the historical record of the building so that proper care and maintenance of all of the building materials continue, ensuring the continued life of the historic building.

Choosing an Appropriate Substitute Material

Once all reasonable options for repair and replacement in kind have been considered and sufficient justification for substitute materials has been established, the choice among the variety of substitute materials currently available must be made. Rapidly developing technologies allow a wide variety of materials to choose from that are intended to mimic historic materials. Many of the materials that were historically used as substitutes for more traditional historic materials have themselves become historic, and some of these early substitutes continue to be reasonable options as substitute materials today. No substitute material will exactly match the historic material in all aspects, but many are able to adequately match the appearance and relevant physical attributes to make for a potential substitute. If a substitute material is not

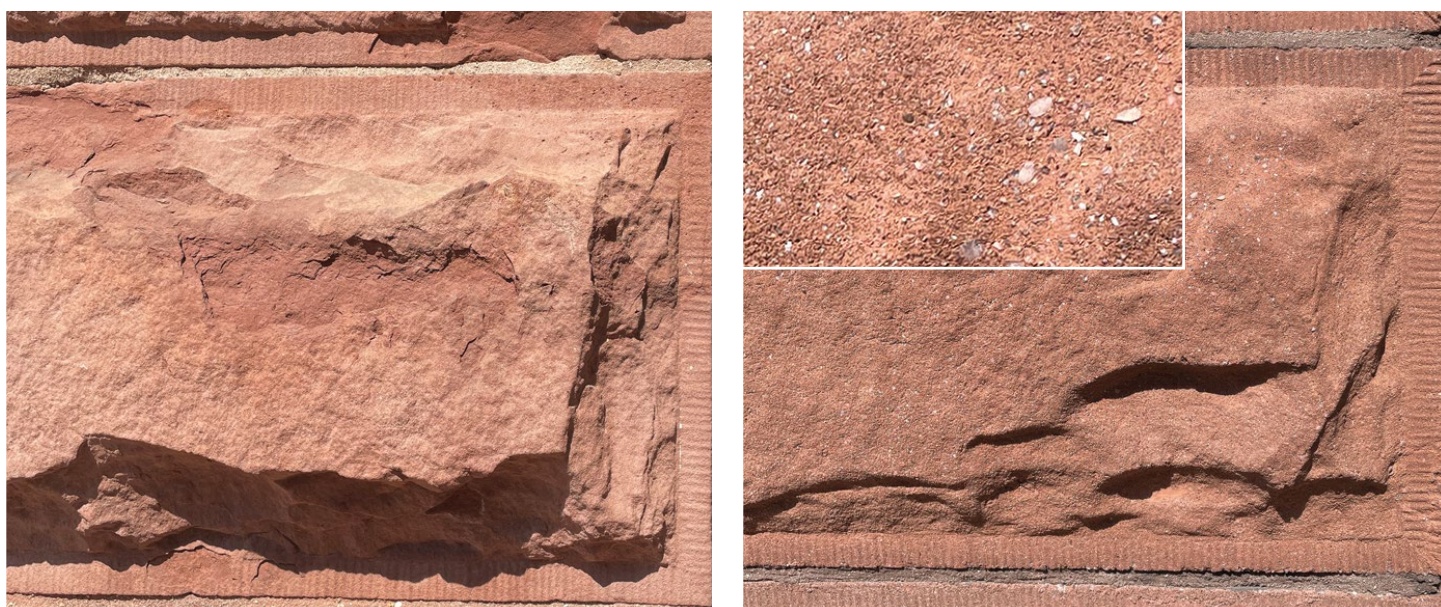


Figure 13. Cast stone was used to effectively replace individual blocks of sandstone. Both the original (left) and the substitute material (right) retain similar physical and visible properties. Having weathered for over 30 years, some erosion of the binder has revealed quartz grains of the aggregate (inset), but it is only noticeable upon close inspection. Photo: John Sandor, NPS.

an adequate physical and visual match given the specific conditions of the building and the project, then it should not be used to replace distinctive, character-defining materials and features.

Listed below are various building components or features and the substitute materials which may, in some circumstances, be considered for use as possible replacement materials in a historic rehabilitation project consistent with the *Standards for Rehabilitation*. This list includes different substitute material options available today for these building features and poses questions that should be asked and considered when choosing between the original material and various types of substitute materials. This is followed by a list of some of the more commonly used, currently available materials that may have some applications as substitute materials and the properties of each that affect their suitability for use as substitutes. This list should not be read as an endorsement of any of these materials, generally, or their appropriateness for use as a substitute material, but it serves as a reminder that the successful use of any building material requires a careful consideration of its properties relative to where and how it will be used.

Considering Substitute Materials

Considering the use of a substitute material should begin with the following questions about the conditions and location where it will be used:

- Will the significance or visibility of the historic feature require a very precise match?
- Is the entire feature being replaced or just a component of it?
- Are pre-existing conditions contributing to the failure of the existing material, and, if so, how will they be addressed/corrected?
- Is the need for replacement due to inherent deficiencies of the original material?
- Will the material need to resist any environmental hazards such as flooding or fire?

Historic Features and Substitute Materials

		Historic Building Features					
		Masonry Stone, terra cotta	Architectural Metals Cast & wrought iron, steel, pressed metal	Siding Wood, asbestos	Roofing Wood shingle, slate, tile	Decking Tongue-and-groove & square-edge wood	Molding / Trim Wood
Potential Substitute Materials	Aluminum	●	●	●			●
	Cast Stone & Precast Concrete	●			●		
	Fiber Reinforced Concretes	●					
	Glass Fiber Reinforced Polymers	●	●				
	Fiber Cement			●	●		●
	Mineral / Polymer Composite			●	●	●	●
	Cellulose Fiber / Polymer Composite			●	●	●	●
	Non-composite Polymers		●			●	●
	Cellular PVC			●		●	●

The above chart lists materials that are sometimes used as substitutes for replacement of historic building features. Even within a given category, all materials may not be equally suitable as a substitute replacement material for the actual historic material or feature. Any substitute material should be selected based on its specific physical and visual characteristics, conditions, and intended application consistent with the Secretary of the Interior's Standards for Rehabilitation.

Historic Building Features: Criteria for selecting an appropriate replacement material

Masonry

FEATURES: corbels, brackets, balusters, cornices, window and door surrounds, friezes, wall surfaces, horizontal surfaces, incidental ornament, columns

HISTORIC MATERIALS: terra cotta, cast stone, stone, concrete

POTENTIAL SUBSTITUTES: cast stone, pre-cast concrete, GFRC, GFRP, non-composite polymers (polyurethane), cast or stamped metal

Questions to ask about the replacement material:

- Can it serve a structural function?
- How is the material affected by moisture?
- Can the material survive flooding and be reused?
- Can it reproduce the surface texture of the original?
- Is its shrinkage in curing low enough to allow it to be molded from existing stones?
- Can matching color be achieved without a coating and with UV stability?
- Can an adequate match of the surface (color and texture) be achieved with a coating?
- Is a coating required?
- If it is not self-supporting, is it lightweight enough to be supported by an underlying framework?
- Can multiple original units be replicated with a single replacement piece?
- Where thermal movement is different from the original material, how will joints accommodate?
- Is the material combustible?

Architectural Metals

FEATURES: pilasters, door and window surrounds, cornices, incidental ornament, columns, spandrels, ceilings, sheathing, roofing

HISTORIC MATERIALS: cast and wrought iron, steel, bronze, lead, aluminum, and stamped steel (usually galvanized or terne-coated)

POTENTIAL SUBSTITUTES: GFRP, aluminum, non-composite polymer (polyurethane), GFRC, metallic/polymer composite

Questions to ask about the replacement material:

- Will the replacement material serve a structural or cosmetic role?
- Will it expand and contract with temperature change enough to require special accommodation in its installation?
- If part of an assembly of mixed materials, how will any expansion and contraction of the dissimilar materials be accommodated?
- Will the replacement material increase deterioration of the historic or surrounding elements, for instance due to galvanic corrosion, moisture entrapment, jacking of original material, off-gassing creating a corrosive environment, or poor original design of the historic material?
- How will the replacement material mimic the surface color/patination of the original material?
- If a coating is needed, what preparation is needed, and what is its durability or service life of the finish?
- What attachment and support systems are necessary?
- If the original element is structural, but the new material is not, how can supplemental structure be introduced to support the new?



Figure 14. Surface texture is an important aspect in matching the appearance of a historic material, especially when a material is viewed at close range. As seen in these two images, many of the substitute materials produced for siding and trim have an embossed wood grain, making them incompatible for replacing historic wood that was typically planed to a smooth surface. Some substitute products are available with a smooth surface as well. Photos: John Sandor, NPS.

Siding

FEATURES: clapboard, tongue-and-groove or shiplap siding, board and batten, shingles

HISTORIC MATERIALS: wood and asbestos

POTENTIAL SUBSTITUTES: cellular PVC, wood fiber/polymer composite, fiber cement, mineral/polymer composite

Questions to ask about the replacement material:

- What are the widths, lengths, profiles, thicknesses, and textures available?
- What, if any, are the finishing requirements, and/or is it available factory-finished?
- How well does it hold paint, and can prefinished surfaces be renewed?
- What tools are needed to cut it, and can it be machined?
- Does it absorb moisture and, if so, to what effect?
- Can the material survive flooding and be reused?
- Will it expand and contract with temperature change enough to require special accommodation in its installation?
- What characteristics can affect its handling (e.g., weight, flexibility, brittleness)?
- Does it have specific fastening requirements?
- Is it susceptible to insect damage?
- What is its impact resistance?
- Does it have a flame spread rating?
- What is the expected lifespan and/or warranty?

Roofing

HISTORIC MATERIALS: wood shingle, slate shingle, asbestos shingle, clay tile, concrete tile, metal

POTENTIAL SUBSTITUTES: fiber cement, mineral/polymer composite, wood fiber/polymer composite, pre-cast concrete, metal

Questions to ask about the replacement material:

- What sizes and shapes are available?
- What are color choices?
- What is the color stability of the new material, and how will it age/weather?
- What is the impact resistance?
- What is its flame spread rating?
- What are the installation requirements of the new material?
- Can the feature being replaced be custom-produced if ready-made ones of the new material are not an accurate match?
- What is the expected lifespan and/or warranty?

Decking

FEATURES: tongue-and-groove, square-edge flooring

HISTORIC MATERIALS: wood

POTENTIAL SUBSTITUTES: cellular PVC, wood fiber/polymer composite, mineral/polymer composite, non-composite polymers (solid PVC)

Questions to ask about the replacement material:

- What are the widths, lengths, and textures available?
- Is it site painted or prefinished?
- How well does it hold paint, and can prefinished surfaces be renewed?
- What tools are needed to cut it, and can it be machined?
- What dimensional span does its strength allow?
- Does it absorb water, and if so, to what effect?
- Can the material survive flooding and be reused?
- Does it require a drainage plane, or can it be installed atop a membrane?
- Will it expand and contract with temperature change enough to require special accommodation in its installation?
- Is it susceptible to insect damage?
- Is it impact resistant?
- Does it have a flame spread rating?
- What is the expected lifespan and/or warranty?

Molding / Trim

FEATURES: run moldings, flat boards, casings, cornice, frieze, railings, balustrade, columns

HISTORIC MATERIALS: wood, metal

POTENTIAL SUBSTITUTES: cellular PVC, wood fiber/polymer composite, mineral/polymer composite, non-composite polymer (polyurethane), GFRP, sheet metal

Questions to ask about the replacement material:

- What are the widths, lengths, and textures available?
- What, if any, are the finishing requirements and/or is it available factory-finished?
- How well does it hold paint, and can prefinished surfaces be renewed?
- What tools are needed to cut it, and can it be machined?
- Does it absorb moisture, and if so, to what effect?
- Can the material survive flooding and be reused?
- Will it expand and contract with temperature change enough to require special accommodation in its installation?
- What characteristics can affect its handling (e.g., weight, flexibility, brittleness)?
- Does it have specific fastening requirements?
- Is it susceptible to insect damage?
- What is its impact resistance?
- Does it have a flame spread rating?
- What is the expected lifespan and/or warranty?



Figure 15. Tongue-and-groove porch flooring is manufactured in several different substitute materials. Each type has different properties, though most are more moisture-resistant than wood. The prefinished product shown can be painted when worn, but repainting is not recommended for some product choices. Photo: Oak Alley Foundation.

Potential Substitute Materials: Matching properties and performance needs

Physical Composition and Properties

After assessing different material options based on the intended application, the appropriateness of a substitute material should also be considered in context of the material's physical composition, associated properties, and necessary visual match.

Aluminum

MATERIAL: Aluminum is a highly corrosion-resistant alloy that can be cast, wrought, or extruded. Molten aluminum is cast into permanent (metal) molds or one-time sand molds forming cast aluminum. Extruded aluminum is formed by passing heated aluminum through a die which produces the desired form. Wrought aluminum is worked using the heated metal and then bending, stamping, and otherwise shaping the metal. If not self-supporting, aluminum elements are generally screwed or bolted to a structural frame. Aluminum can be welded, but more often sections, particularly extruded ones, are mechanically connected.

PROPERTIES:

- Isotropic
- Lightweight
- Thermal movement greater than cast iron or wood
- Corrosion-resistant, but direct contact with other metals may trigger galvanic corrosion
- Lower structural strength than iron or steel
- Ductile - less brittle than cast iron
- Non-combustible
- Retains high definition through molding process and produces crisp profiles through extrusion
- Can be given a durable metallic finish through anodization. Surface etching required for paint adhesion
- Can be machined into a large variety of shapes/ dimensions



Figure 16. Aluminum is a highly corrosion-resistant metal that is commonly used as a substitute material for cast iron. Aluminum can be a more affordable and lightweight alternative to cast iron that retains a similar texture, shape, and maintenance cycle. Photo: NPS.



Figure 17. The balustrade consists of multiple prior campaigns of using cast stone to replace the natural stone. The effective match for the surface texture and color of the original stone allowed individual elements to be incrementally replaced only when they had failed, thus retaining the maximum amount of original material as long as possible. Photo: EverGreene Architectural Arts.

Cast Stone & Precast Concrete

MATERIAL: A cement lime and aggregate mixture that is dry-tamped into a mold is generally referred to as cast stone. Cast stone is one of the original substitute materials. Its longevity has proved that the material ages compatibly with stone. A wet mix of cement and aggregate poured into molds also has a long history of being used to produce concrete masonry units mimicking stone and roofing tiles mimicking clay tile. Both methods have minimal shrinkage during curing, though they employ different curing and finishing techniques. Both can include reinforcing bars and anchorage devices installed during fabrication. The dry-tamp fabrication method is especially effective at producing an outer surface with the appearance of stone.

PROPERTIES:

- Isotropic
- Weight equivalent to stone
- Expansion/contraction similar to stone
- Water absorption may differ from that of any particular stone
- Can be structural
- Non-combustible
- Vapor-permeable
- May achieve a wide range of color and surface textures by varying mix, but use of pigments may reduce UV stability
- Can be coated
- May be tooled to match the appearance of tooled stone
- Repairs similarly to stone



Figure 18. Missing historic terra cotta spandrel panels on all floor levels were recreated utilizing glass fiber reinforced concrete (GFRC) replacements. New spandrels were fabricated as individual components and attached with metal clips between historic terra cotta piers. Photo: Kris Frail, Dewberry.

Fiber Reinforced Concretes (GFRC, CFRC)

MATERIAL: Fiber reinforced concretes are lightweight concrete compounds modified with additives and reinforced with alkaline resistant glass fibers (GFRC), or less frequently carbon fibers (CFRC). They are generally fabricated as thin-shelled panels and applied to a separate structural frame or anchorage system. GFRC is typically sprayed into forms, although it can be poured, and anchoring devices are included in the fabrication. The color is derived from the natural aggregates and, if necessary, a small percentage of added pigments. Because of its low shrinkage in curing, it can be produced using molds taken directly from the building.

PROPERTIES:

- Isotropic
- Lighter weight than solid masonry
- Expansion/contraction similar to stone
- No load bearing capacity, so underlying framework must be used to accommodate any loads
- Material can be fire-rated
- Vapor-permeable
- Can be produced in larger sections efficiently reproducing repetitive elements or features that were originally made up of small individual units
- Large range of colors achievable by varying aggregates, but when pigments are needed UV stability may be reduced
- May be left uncoated or may be painted



Figure 19. A new, lightweight fiber reinforced polymer is attached to a new metal armature to replicate damaged and missing elements of a terra cotta cornice. Photo: Quinn Evans.

Glass Fiber Reinforced Polymers (FRP, Fiberglass)

MATERIAL: Fiberglass is the most well-known of the FRP products generally produced as a thin, rigid, laminate shell formed by pouring a polyester or epoxy resin gelcoat into a mold. When tack-free, layers of chopped glass or glass fabric are added along with additional resins. The surface gel coat can be pigmented or painted. Reinforcing rods and attachment devices can be added when necessary. Because of its low shrinkage in curing, it can be produced using molds taken directly from the building. Rather than being produced as standard components, FRP is custom fabricated for individual applications.

PROPERTIES

- Isotropic
- Lighter weight than masonry, similar to sheet metal
- More thermally driven expansion than masonry or metals
- No load bearing capacity, so underlying framework must be used to accommodate any loads
- High strength to weight ratio
- Flammable
- Not vapor-permeable
- Can be produced in larger sections efficiently reproducing repetitive elements or features that were originally made up of small individual units
- May be difficult to match false joints in multi-unit assemblies to actual joints that need to accommodate movement
- Color can be incorporated into the surface gel-coat, or the surface may be coated



Figure 20. Cement board was used to replace a non-historic infill and mimics the configuration of a typical vehicular door of the period.
Photos: Historic Augusta.

Fiber Cement

MATERIAL: Fiber cement products are made from fiber, sand that is ground to a powder, cement, and proprietary additives to reduce moisture absorption. The fiber used in roof products is glass fiber alone, whereas siding and trim board products are primarily wood fiber. The material is formed with a smooth or textured surface, cut to standard sizes of panels, boards, or shingles, and cured in an autoclave. Roofing material has integral color, but board and siding products are produced with a primer, if not fully factory finished. Most siding and trim boards are embossed with a wood grain on one surface and are smooth on the other, the smooth side being the appropriate surface to imitate planed wood.

PROPERTIES:

- Products are minimally orthotropic
- Heavier and more brittle than wood, limiting available lengths
- Very little thermal- and no moisture-driven movement
- Low water absorption, but not recommended for ground or roof contact
- Class A flame spread
- Resists insect damage
- Available in limited thicknesses and widths
- Not machinable, but may be cut with special carbide blades; cutting requires dust collection and personal protective equipment
- Cut edges require sealing
- Available unfinished, primed, or prefinished, and must be painted (with latex paint)
- 15-year limited warranty typical



Figure 21. A mineral polymer composite siding was available in the profile very similar to the historic siding. The replacement siding was used where the original material was almost completely missing beneath a more modern covering. Areas where the original wood was largely intact were replaced with matching wood to sustain more of the material integrity of the building. Photo: Belk Architecture.

Mineral / Polymer Composite

MATERIAL: Calcium carbonate or fly ash are mineral ingredients held in a matrix of various polymers to produce materials formed or molded into a number of building products. Additives found in some of the roofing products include pigments and UV stabilizers. Some use a substantial portion of recycled material. Different combinations yield products with different properties, each formulated for a specific building component. When the material is fly ash with some glass fibers bound in a matrix of polyurethane, it is identified as polyash. Siding, trim, bead board, and deck products are primed or prefinished, whereas roof products have integral color.

PROPERTIES:

Fly ash (siding and trim)

- Isotropic
- Heavier and more brittle than wood, and lacking structural capacity
- Little thermal or moisture-driven movement
- Sufficiently low water absorption to permit ground contact
- Class C flame spread
- Resists insect damage
- Available in limited thicknesses and widths
- Machinable with carbide tools blades; requires dust collection
- Cut edges do not require sealing

- Must be painted
- 30-year limited warranty typical

Calcium carbonate or recycled rubber (roofing)

- Isotropic
- More thermally-driven movement than slate or wood
- Little to no moisture absorption
- As shingles: lighter and more flexible than slate
- As tongue-and-groove decking: heavier and harder than wood
- Not vulnerable to insect damage
- Available in limited dimensions
- As shingles: Class 4 impact resistance, and flame spread ratings ranging from Class A to Class C depending on the specific product
- As shingles: integral color, that may be subject to fading
- As tongue-and-groove decking: prefinished with non-renewable finish, and can be cut with woodworking tools
- 50-year limited warranties on roofing products typical

Cellulose Fiber / Polymer Composite

MATERIAL: Wood strands or fibers are coated with resin for moisture resistance and zinc-borate for insect and fungal-decay resistance, then consolidated under heated pressure. Solid composite core boards are cut from sheets of material, then factory-primed or finished. Resulting siding and trim board products can be referred to as engineered wood, fiber board, or hardboard. Products may be embossed with a wood grain or have a smooth finish, the smooth side being the appropriate surface to imitate planed wood. Siding, trim, and tongue-and-groove decking with a slightly different properties are produced by extruding polyvinyl chloride (PVC) combined with non-wood cellulose. Roofing shingles are molded from fine wood fibers, color additives, and UV stabilizers bound with polypropylene or polyethylene (thermoplastics).

PROPERTIES:

Predominantly Cellulose (siding, trim and decking)

- Minimal thermal movement
- Resistant to moisture-driven movement
- Lighter and more flexible than solid wood, but lacks structural capacity
- Rice hull cellulose: can span typical floor-framing spacing as decking
- Low water absorption (for wood, no ground or roof contact)
- Class A or Class C flame spread
- Resists insect damage
- Available in limited dimensions
- Machinable with woodworking tools
- Wood cellulose: Cut edges must be sealed and may need additional surface prep for finish; must be painted if unfinished or primed, also available prefinished
- Rice hull cellulose: Accepts stain/paint, but no finish required
- 30–50 year limited warranty, depending on manufacturer

Predominantly Polymer (roofing)

- Minimal thermal movement
- Little to no moisture absorption
- Lighter and more flexible than slate
- Class 4 impact-resistance
- Class A flame spread
- Available in limited shingle size
- 50-year limited warranty typical



Figure 22. A porch was reconstructed using posts fabricated on site from a smooth-surface cellulose/polymer composite material. Though the face of the posts are painted, the lack of paint on the bottom at the cut ends is not consistent with manufacturers' recommendations. This treatment will allow moisture to be absorbed, shortening the life of the new replacement feature. Photo: John Sandor, NPS.



Figure 23. 3-D printing using various polymers is occasionally used to replicate missing metal or wood features. This new application is continually being refined, but the application can be successful when a painted, lightweight feature needs to be replicated. Photo: NPS.

Non-composite Polymers

MATERIALS: The main two polymer materials used without significant other components are polyurethane and polyvinyl chloride (PVC). Polyurethane millwork is constructed of urethane foam created by mixing isocyanate and resin. The polyurethane mixture is kept under pressure in a mold as it expands to any desired shape. These molded products have a closed-cell, foamed core with a denser surface skin. Polyurethane products can have exterior applications but are more often used for interior features. Polyvinyl chloride (PVC) in a solid extruded form is another polymer that can have architectural application as tongue-and-groove decking. Various polymers formed using 3-D printing are also being explored as replacements for painted metal or wood ornamental features.

PROPERTIES: Each of the two groupings has distinct physical properties

Urethane Foam (moldings and decorative elements)

- Lightweight and flexible, but lacking structural capacity
- More thermally-driven movement than wood or stone, but less than cellular PVC
- Does not absorb water
- Flammable
- Resists insect damage
- Can be cut with standard woodworking tools
- Adhesive and mechanical fasteners both recommended for installation

- Supplied primed and must be painted (latex paint)
- Lifetime limited warranty typical

Solid PVC (flooring)

- Isotropic
- Heavier and less flexible than wood
- Minimal thermal movement
- Does not absorb water
- Strength to span typical floor-framing spacing
- Impact-resistance greater than wood
- Class A flame spread
- No insect susceptibility
- Good paint adhesion, but also available prefinished
- 20-year warranty typical

Cellular Polyvinyl Chloride (PVC)

MATERIAL: Varying amounts of calcium carbonate and a foaming agent are added to melted PVC before passing through an injection die and then a calibrator to produce the shape and size of the finished product. Cellular PVC is produced as sheets, boards, and moldings. Differences in the specifics of the equipment and the rate of cooling create two varieties of product, with distinct properties. One is known as free-foam, having a fairly consistent structure throughout its section, and the other is identified as Celuka, having a skin that is denser than its core. This primarily affects the ease with which the product can be milled and shaped. The material is white and needs no applied finish. When produced for decking the material has a colored and textured wear layer over the PVC core.

PROPERTIES

- Isotropic
- Lighter and more flexible than wood
- Less strong than wood (in tension and shear), but can span typical floor- framing spacing as decking
- More impact-resistance than wood
- Negligible water absorption; no moisture-driven movement, unlike wood
- Subject to thermal expansion and contraction significantly greater than wood, though the thermal movement is less for the same dimension than the cross-grain moisture-driven movement of wood
- For longer pieces, thermal movement requires manufacturer's specifications to be followed for attachment, and inclusion of expansion joints when installed at low temperature (joints should be glued)
- Class A flame spread
- Resists insect damage
- Machinable with woodworking tools, though cut edges may need additional surface prep for finish
- Good paint adhesion; if painted, high light reflectance (HLV) is recommended to minimize heat driven expansion
- 25–30-year limited warranty, depending on manufacturer



Figure 24. Cellular PVC when painted can be used to replace deteriorated wood features. This beadboard set in a wood frame was not historically designed to shed water effectively and had deteriorated. Cellular PVC was able to match the appearance of the wood details, while its properties were well matched to the shady location, painted finish, and limited size and configuration within the overall assembly; thus, it should provide a long-lasting solution for this application. Photo: Jennifer Balson Alvarez, NPS.

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