HISTORIC AND DESIGN REVIEW COMMISSION

May 01, 2020

HDRC CASE NO: 2020-113 511 DAWSON ST **ADDRESS:** NCB 560 BLK 18 LOT E 44.4 FT OF S 100 FT OF 10 **LEGAL DESCRIPTION: ZONING:** R-4. H **CITY COUNCIL DIST.:** 2 **Dignowity Hill Historic District DISTRICT: APPLICANT:** Andres Garza/AJG/TX Group LLC **OWNER:** PADRON ANA L & FELIX N JR **TYPE OF WORK:** New construction of a single-story dwelling unit on rear lot **APPLICATION RECEIVED:** March 02, 2020 **60-DAY REVIEW:** May 01, 2020 Huy Pham **CASE MANAGER:**

REQUEST:

The applicant is requesting a Certificate of Appropriateness for approval to construct a rear accessory dwelling.

APPLICABLE CITATIONS:

4. Guidelines for New Construction

1. Building and Entrance Orientation

A. FAÇADE ORIENTATION

i. *Setbacks*—Align front facades of new buildings with front facades of adjacent buildings where a consistent setback has been established along the street frontage. Use the median setback of buildings along the street frontage where a variety of setbacks exist. Refer to UDC Article 3, Division 2. Base Zoning Districts for applicable setback requirements.
ii. *Orientation*—Orient the front façade of new buildings to be consistent with the predominant orientation of historic buildings along the street frontage.

B. ENTRANCES

i. *Orientation*—Orient primary building entrances, porches, and landings to be consistent with those historically found along the street frontage. Typically, historic building entrances are oriented towards the primary street.

2. Building Massing and Form

A. SCALE AND MASS

i. *Similar height and scale*—Design new construction so that its height and overall scale are consistent with nearby historic buildings. In residential districts, the height and scale of new construction should not exceed that of the majority of historic buildings by more than one-story. In commercial districts, building height shall conform to the established pattern. If there is no more than a 50% variation in the scale of buildings on the adjacent block faces, then the height of the new building shall not exceed the tallest building on the adjacent block face by more than 10%.

ii. *Transitions*—Utilize step-downs in building height, wall-plane offsets, and other variations in building massing to provide a visual transition when the height of new construction exceeds that of adjacent historic buildings by more than one-half story.

iii. *Foundation and floor heights*—Align foundation and floor-to-floor heights (including porches and balconies) within one foot of floor-to-floor heights on adjacent historic structures.

B. ROOF FORM

i. *Similar roof forms*—Incorporate roof forms—pitch, overhangs, and orientation—that are consistent with those predominantly found on the block. Roof forms on residential building types are typically sloped, while roof forms on non-residential building types are more typically flat and screened by an ornamental parapet wall.

C. RELATIONSHIP OF SOLIDS TO VOIDS

i. *Window and door openings*—Incorporate window and door openings with a similar proportion of wall to window space as typical with nearby historic facades. Windows, doors, porches, entryways, dormers, bays, and pediments shall be considered similar if they are no larger than 25% in size and vary no more than 10% in height to width ratio from adjacent historic facades.

ii. *Façade configuration*— The primary façade of new commercial buildings should be in keeping with established patterns. Maintaining horizontal elements within adjacent cap, middle, and base precedents will establish a consistent street wall through the alignment of horizontal parts. Avoid blank walls, particularly on elevations visible from the street. No new façade should exceed 40 linear feet without being penetrated by windows, entryways, or other defined bays.

D. LOT COVERAGE

i. *Building to lot ratio*— New construction should be consistent with adjacent historic buildings in terms of the building to lot ratio. Limit the building footprint for new construction to no more than 50 percent of the total lot area, unless adjacent historic buildings establish a precedent with a greater building to lot ratio.

3. Materials and Textures

A. NEW MATERIALS

i. *Complementary materials*—Use materials that complement the type, color, and texture of materials traditionally found in the district. Materials should not be so dissimilar as to distract from the historic interpretation of the district. For example, corrugated metal siding would not be appropriate for a new structure in a district comprised of homes with wood siding.

ii. *Alternative use of traditional materials*—Consider using traditional materials, such as wood siding, in a new way to provide visual interest in new construction while still ensuring compatibility.

iii. *Roof materials*—Select roof materials that are similar in terms of form, color, and texture to traditionally used in the district.

Metal roofs—Construct new metal roofs in a similar fashion as historic metal roofs. Refer to the Guidelines for Alterations and Maintenance section for additional specifications regarding metal roofs.

- Panels that are 18 to 21 inches in width
- Seams are 1 to 2 inches in height
- *Ridges are to feature a double-munch or crimped ridge configuration; no vented ridge caps or end caps are allowed.*
- Roof color will feature a standard galvalume finish or match the existing historic roof.

v. *Imitation or synthetic materials*—Do not use vinyl siding, plastic, or corrugated metal sheeting. Contemporary materials not traditionally used in the district, such as brick or simulated stone veneer and Hardie Board or other fiberboard siding, may be appropriate for new construction in some locations as long as new materials are visually similar to the traditional material in dimension, finish, and texture. EIFS is not recommended as a substitute for actual stucco.

Standard Specifications for Windows in Additions and New Construction

- Consistent with the Historic Design Guidelines, the following recommendations are made for windows to be used in new construction:
- GENERAL: Windows used in new construction should be similar in appearance to those commonly found within the district in terms of size, profile, and configuration. While no material is expressly prohibited by the Historic Design Guidelines, a high-quality wood or aluminum-clad wood window product often meets the Guidelines with the stipulations listed below.
- o SIZE: Windows should feature traditional dimensions and proportions as found within the district.
- SASH: Meeting rails must be no taller than 1.25". Stiles must be no wider than 2.25". Top and bottom sashes must be equal in size unless otherwise approved.
- DEPTH: There should be a minimum of 2" in depth between the front face of the window trim and the front face of the top window sash. This must be accomplished by recessing the window sufficiently within the opening or with the installation of additional window trim to add thickness. All windows should be supplied in a block frame and exclude nailing fins which limit the ability to sufficiently recess the windows.
- TRIM: Window trim must feature traditional dimensions and architecturally appropriate casing and sloped sill detail.
- GLAZING: Windows should feature clear glass. Low-e or reflective coatings are not recommended for replacements. The glazing should not feature faux divided lights with an interior grille. If approved to match a historic window configuration, the window should feature true, exterior muntins.
- COLOR: Wood windows should feature a painted finish. If a clad or non-wood product is approved, white or metallic manufacturer's color is not allowed, and color selection must be presented to staff.

B. REUSE OF HISTORIC MATERIALS

Salvaged materials—Incorporate salvaged historic materials where possible within the context of the overall design of the new structure.

4. Architectural Details

A. GENERAL

i. *Historic context*—Design new buildings to reflect their time while respecting the historic context. While new construction should not attempt to mirror or replicate historic features, new structures should not be so dissimilar as to distract from or diminish the historic interpretation of the district.

ii. *Architectural details*—Incorporate architectural details that are in keeping with the predominant architectural style along the block face or within the district when one exists. Details should be simple in design and should complement, but not visually compete with, the character of the adjacent historic structures or other historic structures within the district. Architectural details that are more ornate or elaborate than those found within the district are inappropriate.

iii. *Contemporary interpretations*—Consider integrating contemporary interpretations of traditional designs and details for new construction. Use of contemporary window moldings and door surroundings, for example, can provide visual interest while helping to convey the fact that the structure is new. Modern materials should be implemented in a way that does not distract from the historic structure.

7. Designing for Energy Efficiency

A. BUILDING DESIGN

i. Energy efficiency—Design additions and new construction to maximize energy efficiency.

ii. *Materials*—Utilize green building materials, such as recycled, locally-sourced, and low maintenance materials whenever possible.

iii. *Building elements*—Incorporate building features that allow for natural environmental control – such as operable windows for cross ventilation.

iv. *Roof slopes*—Orient roof slopes to maximize solar access for the installation of future solar collectors where compatible with typical roof slopes and orientations found in the surrounding historic district.

B. SITE DESIGN

i. *Building orientation*—Orient new buildings and additions with consideration for solar and wind exposure in all seasons to the extent possible within the context of the surrounding district.

ii. Solar access—Avoid or minimize the impact of new construction on solar access for adjoining properties.

FINDINGS:

- a. The primary structure at 511 Dawson was constructed in 2017 and features stucco-textured concrete panel construction, a primary front-facing gabled roof with standing seam metal roofing material with a subordinate gable porch cover, and vinyl sash and picture windows. The structure features approximately 1330 square feet on the 4,356 square foot lot.
- b. DESIGN REVIEW COMMITTEE The request was referred to the Design Review Committee (DRC) at the February 5, 2020, Historic and Design Review Commission (HDRC) hearing. The applicant met with the DRC on February 25, 2020. The DRC concurred with staff to avoid the shed and flat roof and to ensure that the windows, regardless of material, meets the depth profile per the standard specifications for new construction. The applicant has updated their design and drawings that generally adheres to the DRC comments.
- c. REAR ACCESSORY The applicant has proposed to construct a 1,000 square foot rear accessory dwelling with entry doors facing both Booker Alley and the interior of the primary structure's rear yard.
- d. SETBACK The proposed rear accessory dwelling features a setback of 15 feet from Booker Alley, 15 feet from the rear façade plane of the primary accessory structure, and 5 feet from both side property lines. Per the Guidelines for New Construction 1.A.i., applicants should align front facades of new buildings with front facades of adjacent buildings where a consistent setback has been established along the street frontage and use the median setback of buildings along the street frontage where a variety of setbacks exist. While there are currently no structures that face Booker Alley, staff finds that the proposed setbacks are generally consistent with residential structures found within the immediate blocks. The applicant should refer to UDC Article 3, Division 2. Base Zoning Districts for applicable setback requirements.
- e. ORIENTATION The proposed rear accessory dwelling is oriented in the same manner at the primary residential structure with entries facing both the right-of-way and into the interior yard. Per the Guidelines for New Construction 1.A.ii., applicants should orient the front façade of new buildings to be consistent with the predominant orientation of historic buildings along the street frontage. While there are currently no structures that face Booker Alley, staff finds that the proposed orientation is typical to that of primary and accessory structures found within the immediate block.
- f. HEIGHT AND SCALE The proposed accessory dwelling is a one-story 1,000 square foot structure that features a maximum height of 14'--7" from grade to the roof ridge. Per the Guidelines for New Construction 2.A.i., applicants should design new construction so that its height and overall scale are consistent with nearby historic

buildings. In residential districts, the height and scale of new construction should not exceed that of the majority of historic buildings by more than one-story. Staff finds that the proposed height and scale is subordinate to the primary residential structures on the immediate block and is generally appropriate.

- g. FOUNDATION AND FLOOR HEIGHT The proposed accessory dwelling features a slab-on-grade foundation with a floor height of approximately 19 inches. Per the Guidelines for New Construction 2.A.iii., applicants should align foundation and floor-to-floor heights (including porches and balconies) within one foot of floor-to-floor heights on adjacent historic structures. Staff finds that the proposed foundation and floor height is comparable to that of the primary residential structures within the immediate block and is generally appropriate.
- h. ROOF FORM The proposed accessory dwelling features a primary front facing gable with an inset covered porch facing the rear and shed porch cover facing the interior yard. Per the Guidelines for New Construction 2.B.i., applicants should incorporate roof forms—pitch, overhangs, and orientation—that are consistent with those predominantly found on the block; roof forms on residential building types are typically sloped, while roof forms on non-residential building types are more typically flat and screened by an ornamental parapet wall. Staff finds that the proposed roof form is typical to historic and residential structures within the immediate block and the Dignowity Hill Historic District and is generally appropriate.
- i. FENESTRATION The proposed accessory dwelling features one (1) door facing Booker Alley, two (2) doors facing the interior yard, five (5) sash windows, and nine (9) picture windows. Per the Guidelines for New Construction 2.C.i., applicants should incorporate window and door openings with a similar proportion of wall to window space as typical with nearby historic facades. Windows, doors, porches, entryways, dormers, bays, and pediments shall be considered similar if they are no larger than 25% in size and vary no more than 10% in height to width ratio from adjacent historic facades. Staff finds that proposed fenestration pattern including doors and sash windows relate to that of historic structures within the immediate block. While the primary non-historic structure on the property also features picture windows, staff finds that continued use on new construction would contribute to existing non-conforming conditions instead of improving upon them. If picture windows are used, staff finds that their proportion should match the size of one sash of a one-over-one sash window, and that all windows used have a matching head height.
- j. FAÇADE CONFIGURATION The proposed accessory dwelling features façade configurations that include shed porch cover facing the interior yard, an inset covered porch facing the rear alley, and sash and picture windows. Per the Guidelines for New Construction 2.C.ii., maintaining horizontal elements within adjacent cap, middle, and base precedents will establish a consistent street wall through the alignment of horizontal parts; applicants should avoid blank walls, particularly on elevations visible from the street. Staff finds that the proposed front and rear façades relate to historic structures in fenestration and porch configurations. If picture windows are used, staff finds that their proportion should match the size of one sash of a one-over-one sash window, and that all windows used have a matching head height.
- k. LOT COVERAGE The proposed accessory dwelling features 1,000 square feet on a 4,356 square foot lot with an existing 1,330 square foot primary residential structure. Per the Guidelines for New Construction 2.D.i., new construction should be consistent with adjacent historic buildings in terms of the building to lot ratio and applicants should limit the building footprint for new construction to no more than 50 percent of the total lot area, unless adjacent historic buildings establish a precedent with a greater building to lot ratio. Staff finds that both existing and proposed structures' footprint would total approximately of 53 percent of the total lot coverage.
- 1. STRUCTURAL MATERIALS The proposed accessory structure features concrete (USS) panel wall planes with a stucco texture exterior finish, a concrete slab foundation and porches, and a standing-seam metal roof each to match the existing primary residential structure. Per the Guidelines for New Construction 3.A.i., applicants should use materials that complement the type, color, and texture of materials traditionally found in the district; materials should not be so dissimilar as to distract from the historic interpretation of the district. Staff finds that the proposed materials are generally consistent with the Guidelines. The standing seam metal roof should adhere to the *Standard Specifications for Standing Seam Metal Roofs*.
- m. WINDOW MATERIALS The proposed accessory structure features sash and picture vinyl windows with wood framing constructed 2x4 wood members resulting in a 3-inch sill depth to match the windows on the existing primary residential structure. Staff finds the proposed window product and installation is generally appropriate and should otherwise adhere to *Standard Specifications for Windows in Additions and New Construction*.
- n. ARCHITECTURAL DETAILS The proposed addition features a front-facing gable with a shed porch cover facing the interior yard, an inset covered porch facing the rear alley, picture and sash windows, a 19 ³/₄" foundation height, and a standing seam metal roof. Staff finds that these features relate to historic or residential structures within the immediate block and generally adheres to the Guidelines for New Construction 4.A.i through iii: Architectural Details.

RECOMMENDATION:

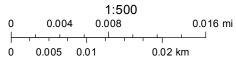
Staff recommends final approval of new construction based on finding b through n with the following stipulations:

- i. That all the windows adhere to the *Standard Specifications for Windows on New Construction*. If picture windows are used, their proportion should match the size of one sash of a one-over-one sash window, and that all windows used have a matching head height.
- ii. That the new standing seam metal roof should adhere to the *Standard Specifications for Metal Roofs*.

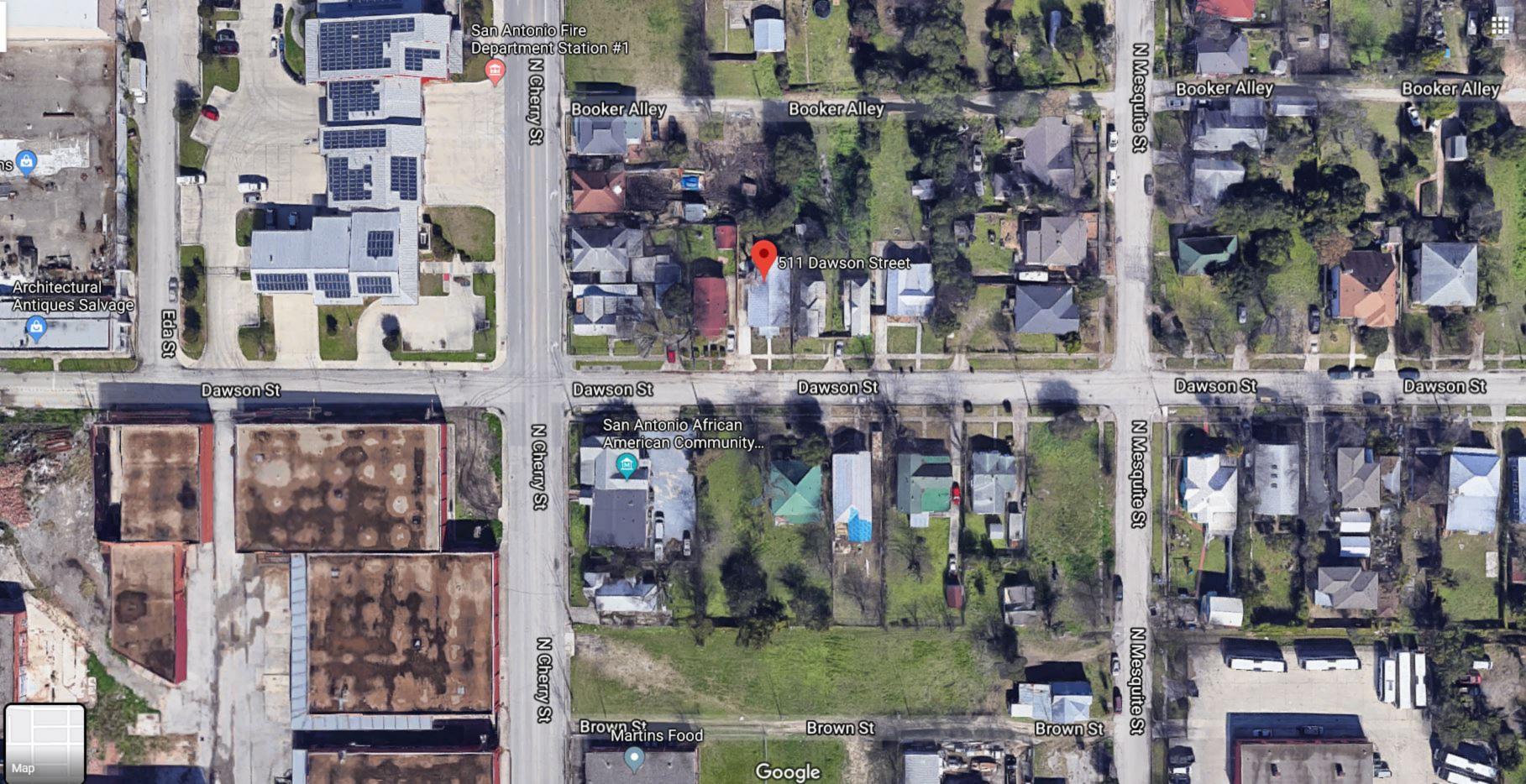
511 Dawson

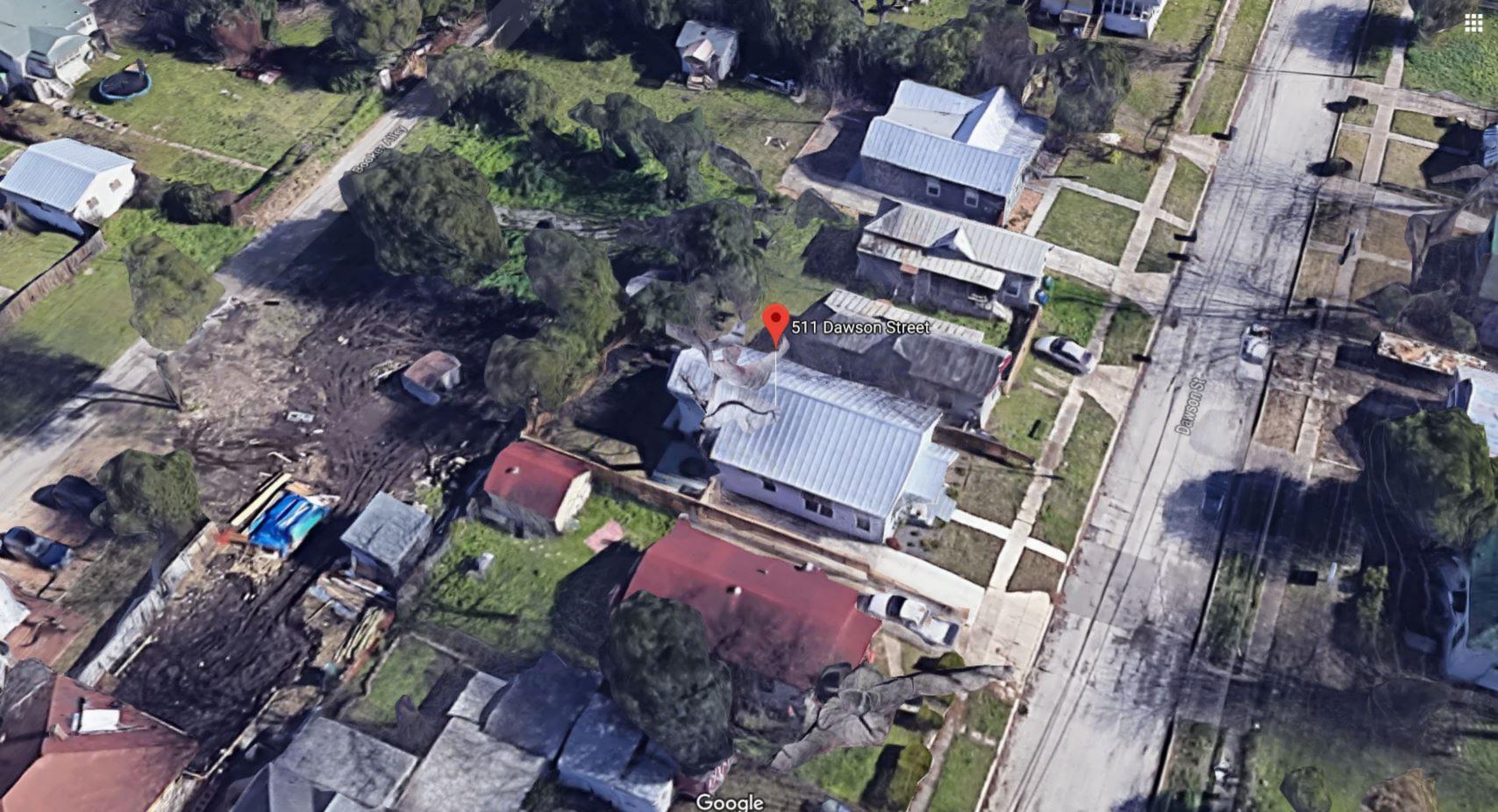


January 29, 2020



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Project Description 511 Dawson St. #2 San Antonio, Texas 78202

This application if for a new 1000sf additional structure. The new structure will sit directly behind the current home at 511 Dawson St.. The new structure will contain a

- 1. Art studio
- 2. Storage
- 3. 2 bedroom, 1 bathroom mother-in-law suite.

This new addition will be built using the same materials used in the front primary house at 511 Dawson <u>St.</u>

House color, windows will be identical, doors will be similar, and roof will be a standing seam galvanized aluminum – again to match the main house.

The home will be built using USS Panels (which is a panel of polystyrene sandwiched between two sheets of welded wire mesh, reinforced with rebar - covered with 2 layers of <u>high strength structural</u> <u>cement</u> which forms the exterior walls, interior walls, second floor and roof). So as to blend with neighboring properties, the roof will be finished using a standing seam galvanized aluminum. The result is a home that has walls that are more than 8 times stronger than wood construction. That is --

- <u>Energy efficient</u> due to excellent insulation
- <u>Sound proof</u> or at least <u>excellent sound reduction</u> of outside noise. Again due to the excellent insulation
- Excellent Strength, durability translates to less maintenance
- <u>Improved safety and security</u> due to strength. There are even videos that calm the panels are bullet proof.
- Fire proof cement is noncombustible; in short nothing to burn
- Excellent hurricane and tornado protection rated for up to 2225mph winds
- Improved resale value

The exterior will be a light to medium blue, accented with white trim. The new driveway and walkway will be either crushed granite combined with patches of cement steps. The exterior wall will look similar to traditional stucco. The only difference is that the exterior will be cement. Where stucco is a mortar.

Materials:

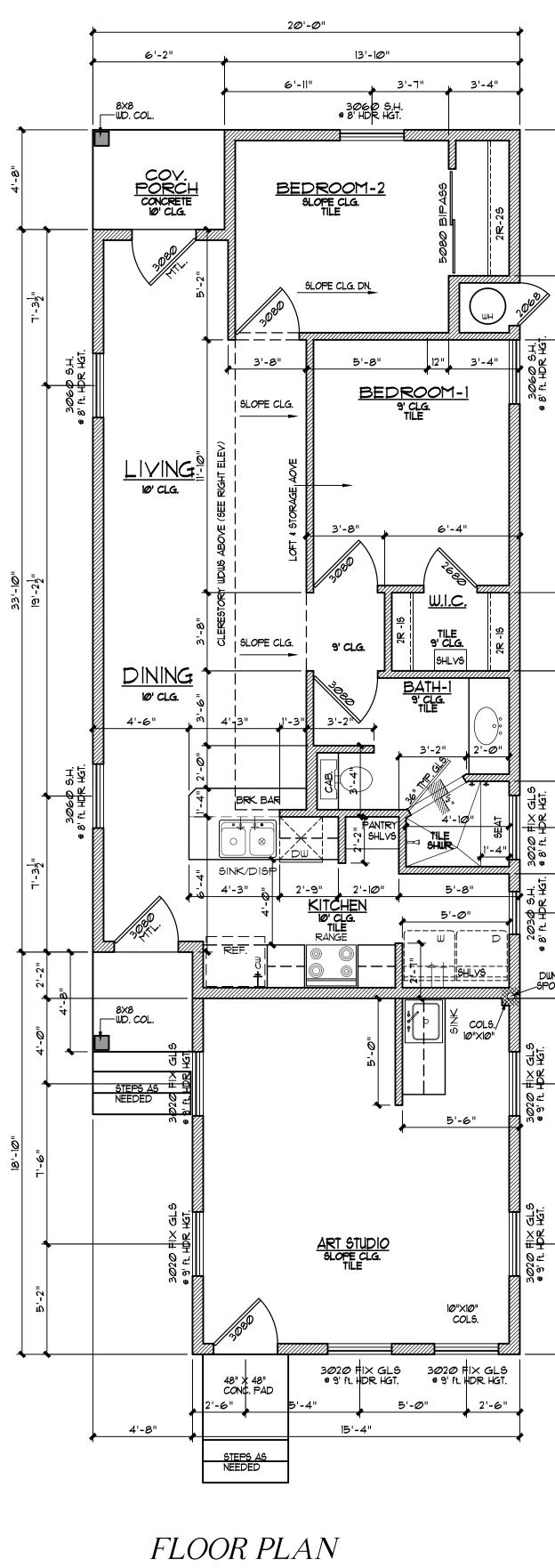
- USS panels with structural cement
 - Cement walls inside and out
 - o Cement roof covered with standing seam galvanized aluminum
- Stainless steel appliances
- Modern Kitchen cabinets
- Granite counter tops
- LED recessed lighting
- Energy rated vinyl windows single hung framed in windows (see attached)
- Laminate flooring
- Ceramic tile shower (master bath)
- Ceramic tile bathtub walls
- Crushed granite/rock landscape/driveway
- Native Texas landscaping

Offsets:

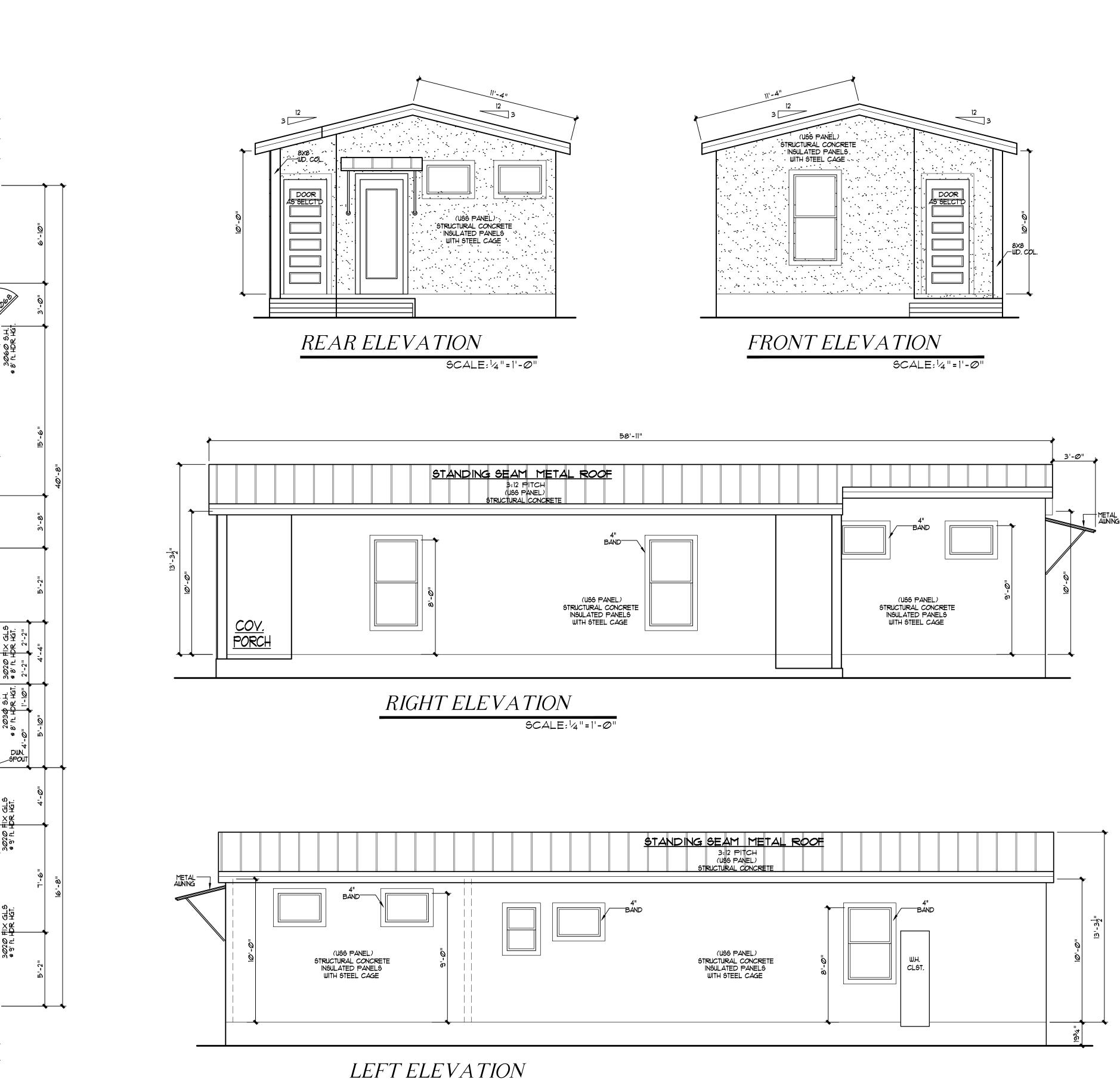
The offsets to the structure will be:

- 15 ft on back side (Booker Alley side)
- 15 ft on front side (facing back house at 511 Dawson St.)
- 5 ft on both left and right sides

These offsets are unique due to the fact that <u>Development services</u> will not give the property a Booker Alley address.



SCALE: 1/4 "=1'-Ø"

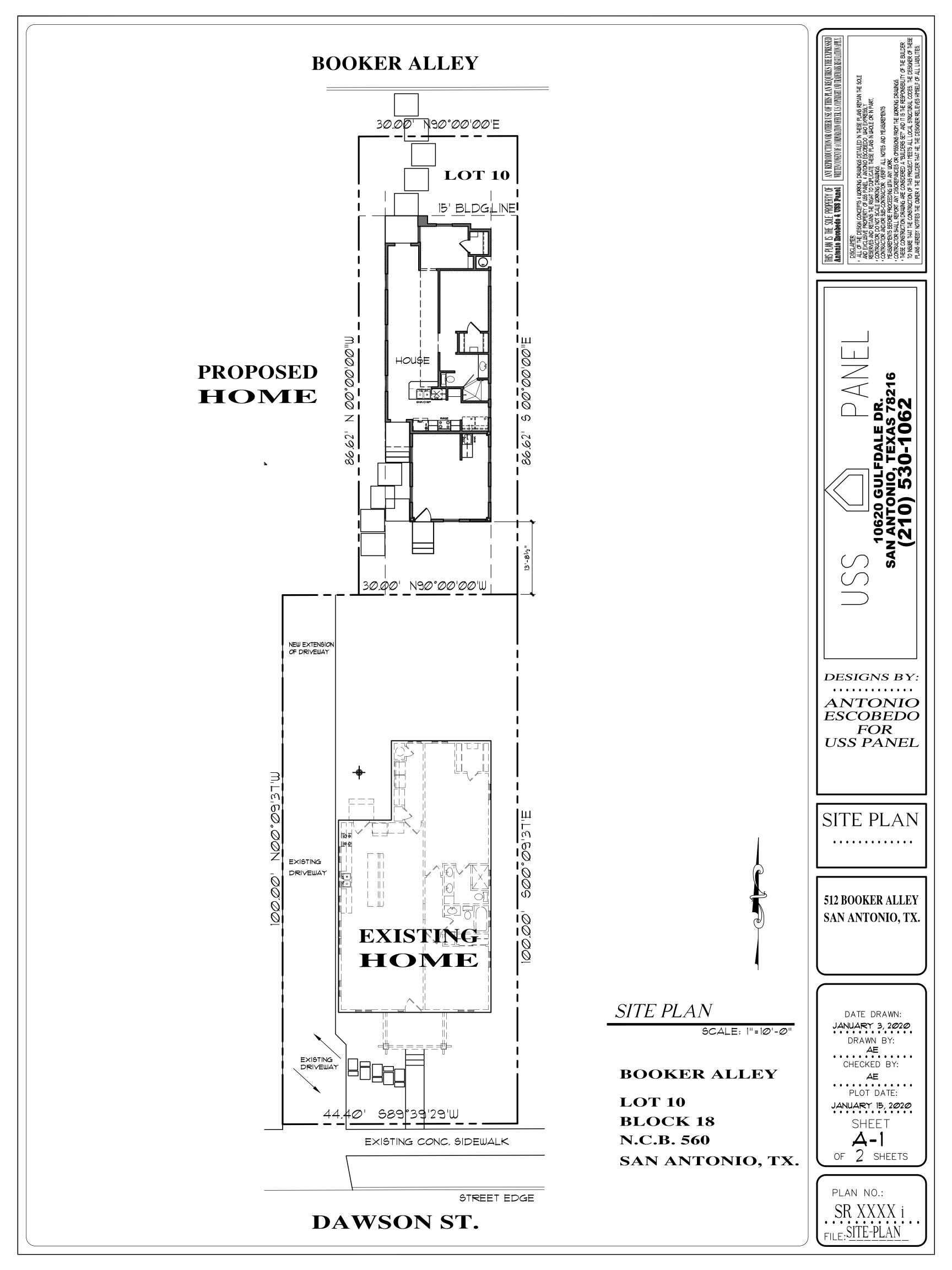


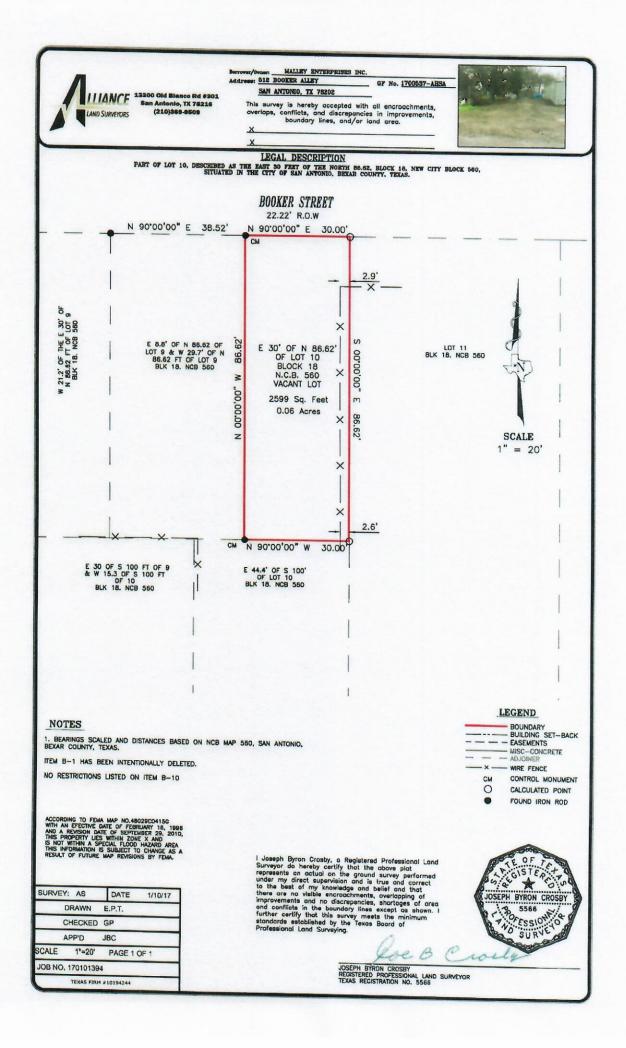
SCALE: 1/4 "=1'-Ø"



Site Plans

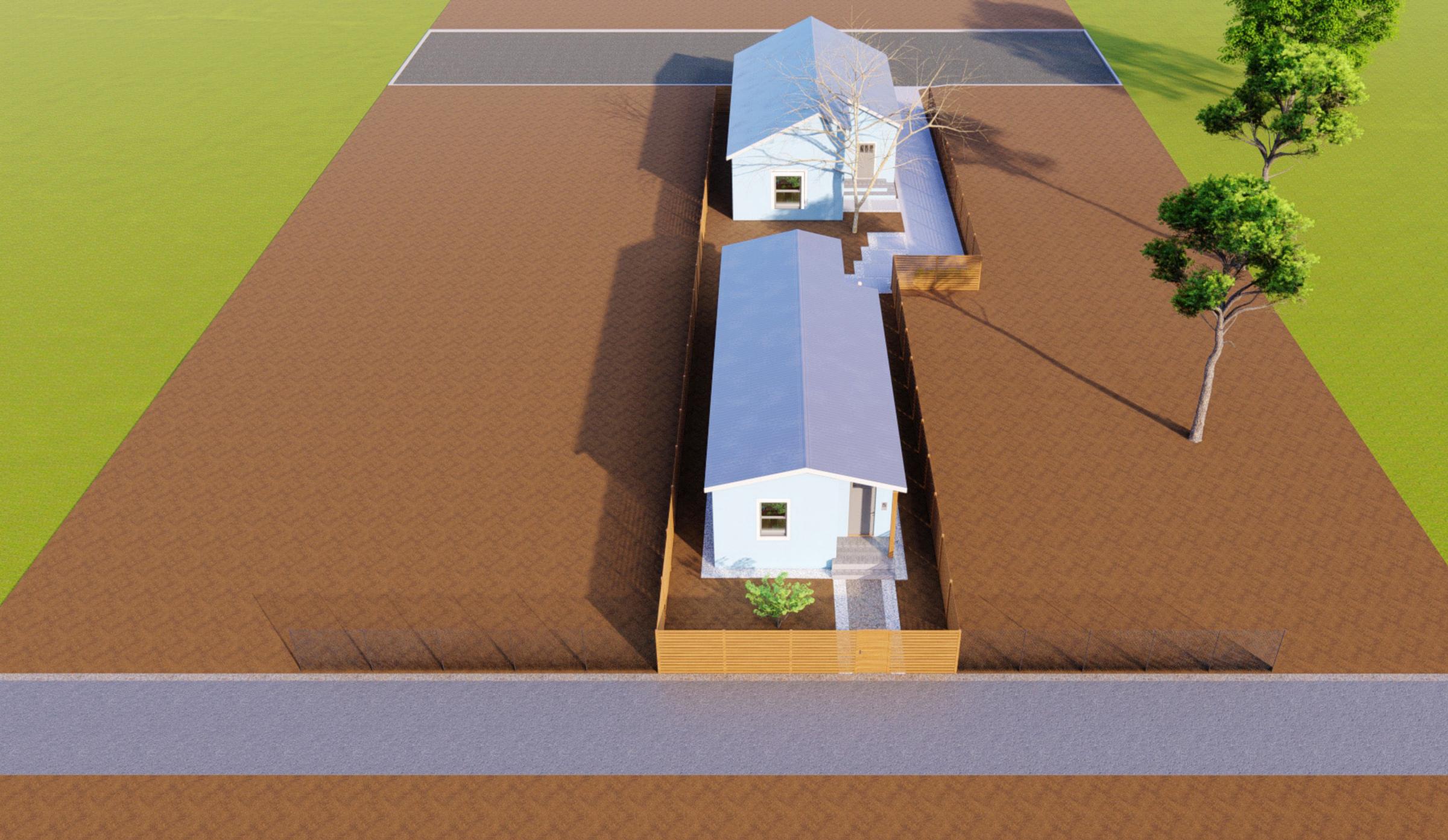
New Secondary structure





3D Renderings

New Secondary structure



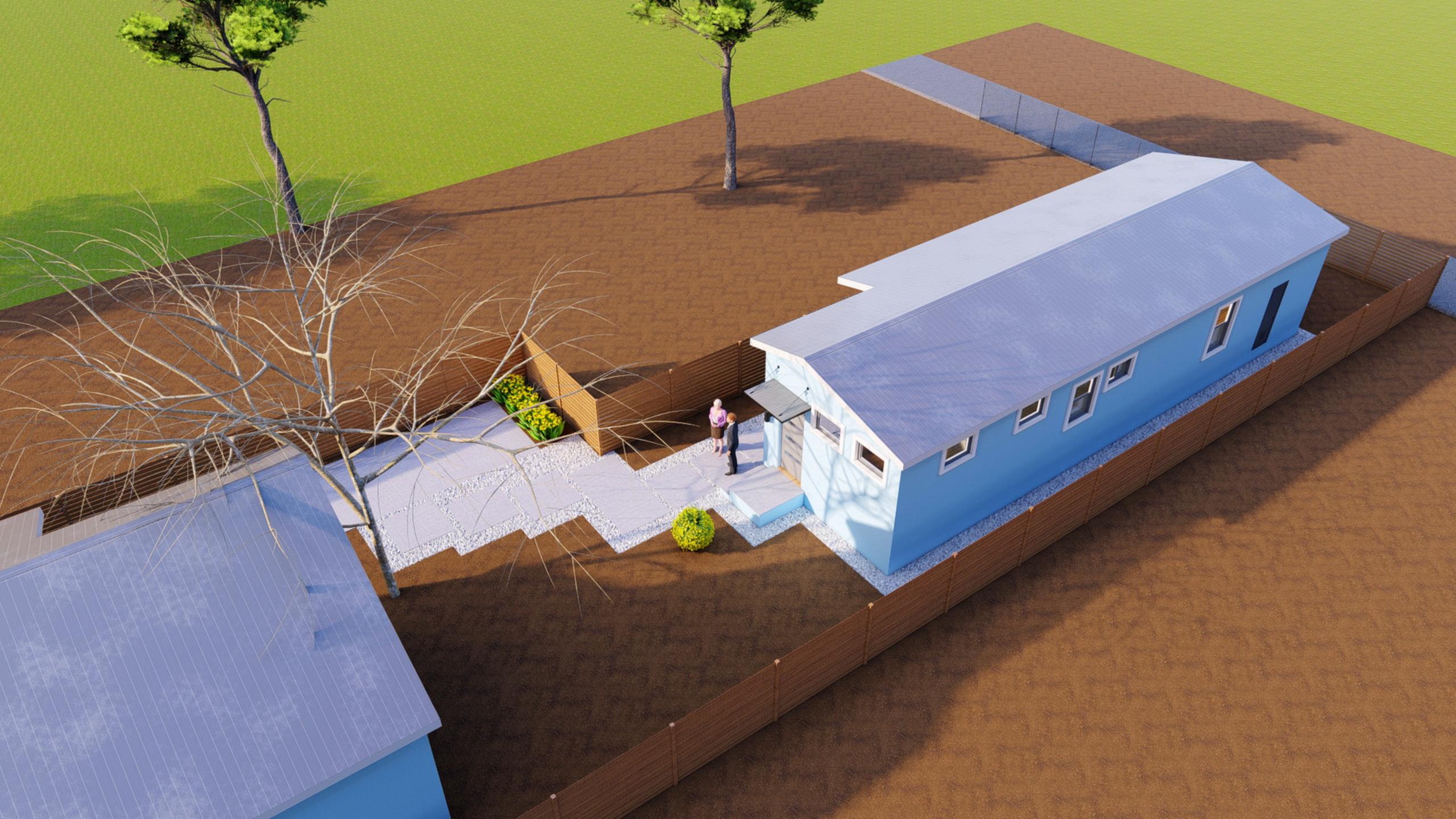






























Material Windows

Proposed Window

(Vinyl window framed in wood)

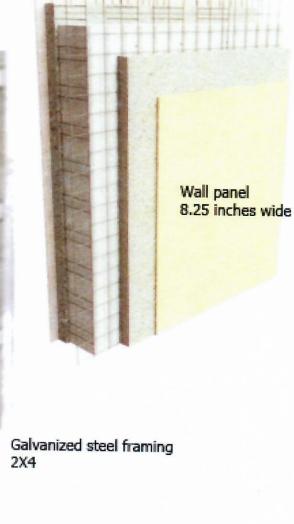


By placing the galvanized 2x4 framing in the middle of the wall, the window should have an exterior window legde of approximately 3 inches.

Proposed Window

Proposed windows openings will be cased with a galvanized 2x4. The vinyl windows will be attached to the galvanized casing. Then the window would be trimed out using wood trim.





Vinyl Window

Wood Trim

By placing the galvanized 2x4 framing in the middle of the wall, the window should have an exterior window legde of approximately 3 inches.

City San Antonio HDRC Application for Accessory 1000 sf Building 511 Dawson St. Unit 2 (Booker Alley 512)

Windows Description -

The windows on the new accessory building are to match the previously approved windows on the main house. Below are photos of <u>Existing Window on Main House</u>.



Windows are Ply Gem 1500 Series Double Hung vinyl windows – clay in color. All windows are cased in wood with a 2.25 inch stile and a minimum 2 inch depth between the front face of the window trim and the front face of the top sash. The supports these depths – the wall is approximately 9 inches wide.



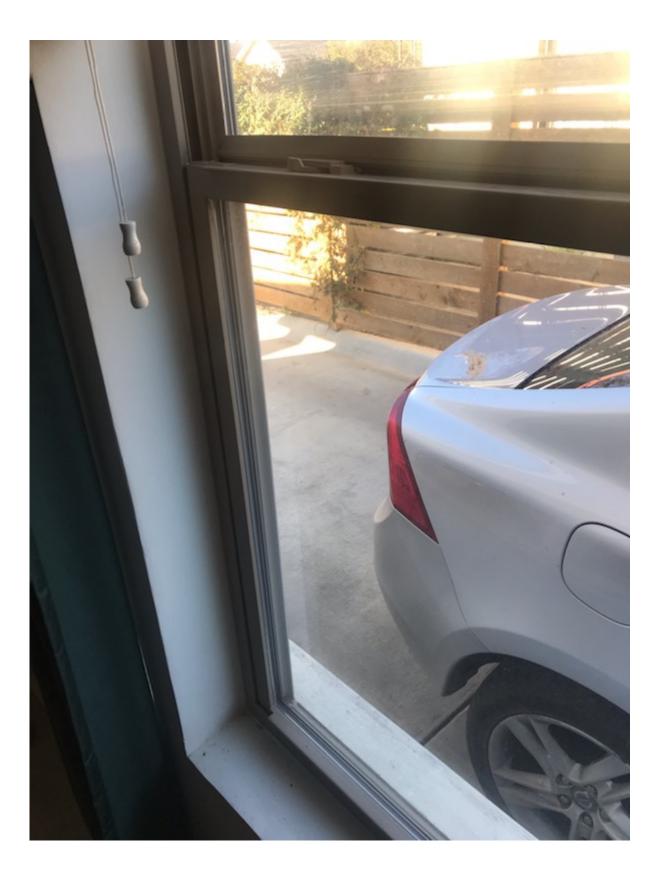
Windows on existing home at 511 Dawson St.











Material Fence

Fence:

All wood 5 ft privacy fence.



Material Walls

USS PANEL.

Panel Data sheet:

These modular panels have a width of 4 feet and an adjustable height which will be equal to the inter-story height. They are composed of a single sheet of expanded polystyrene (shaped with a waved profile along the horizontal direction) with a thickness of 3" to 16" (the panels can be produced in different sizes in order to suite the specific needs for thermal and acoustic insulation) which is inserted between two grids of galvanized and electro-welded steel wire mesh. The wires, which are typically realized using galvanized steel with low carbon content and breakage tension of fyk=450 MPa, have a diameter of 2.5 mm and the mesh is 2.3" x 2.3" basic size . The two grids of wire meshes are linked together with metallic ties having diameter of 3 mm and placed in quantity of 47 for Y² (the ties are appropriately mechanically fixed to the meshes during the production at the factory). These ties actually are embedded within the polystyrene being "nailed" through the modular panel during its production, thus creating a sandwich where concrete is applied on structural walls 2" on the outside and 17/8"

Please refer to ICC ESR 2037 from EMMEDUE, and ICC ESR 3429 from Schnell Home - both tested final product from the above producers of machinery are used by the manufacturer of USS-Panels

- USS wall slab or roof panels designated IPSM are also used as wall, floor or roof slabs consisting of an 1.1.
 - 1.1.1. Working as floor slabs or a roof system, the upper side is poured with a concrete layer (3,500 psi) and
 - The lower side of the section will require a minimum of 0.75" of mortar cover under the outer face of 1.1.2.

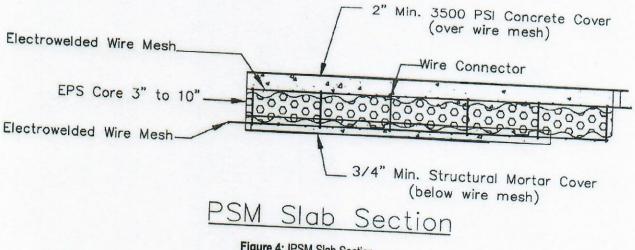


Figure 4: IPSM Slab Section

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USS PANEL

- USS floor or roof panels designated IPFM consist of EPS cores with voids to form two (2) concrete joists for 1.2.
 - 1.2.1. The joist depth will vary from 4" to 10", according to the structural requirements.
 - The upper side is poured with a concrete layer (3,500 psi) and will be 2.4" thick with at least 2" over 1.2.2.
 - The lower side of the section will require a minimum of 0.75" of mortar cover under the outer face of 1.2.3. the wire mesh for a total average depth of 1.4".
 - In addition, a minimum (2) #4 rebar is placed on the tension (lower) side of each concrete joist. 1.2.4.
 - When required by the building design, rebar is placed in the top concrete la 1.2.5.

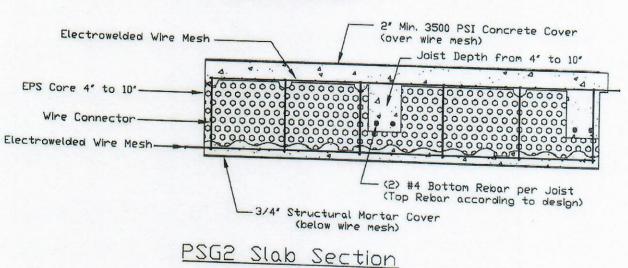


Figure 5: IPFM Slab Section

- USS floor slab or roof panels designated IPFM consist of EPS cores with voids to form three (3) concrete 1.3.
 - The joist depth will vary from 4" to 10", according to the requirements. 1.3.1. 1.3.2.
 - The upper side is poured with a concrete layer (3,500 psi) and will be 2.4" thick with at least 2" over the 1.3.3.
 - The lower side of the section will require a minimum of 0.75" of mortar cover under the outer face of the wire mesh for a total average depth of 1.4". 1.3.4.
 - In addition, a minimum (2) #4 rebar is placed on the tension (lower) side of each concrete joist.
 - 1.3.5. When required by the building design, rebar is placed in the top concrete layer.

USS PANEL.

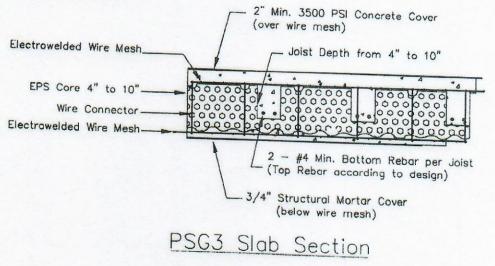
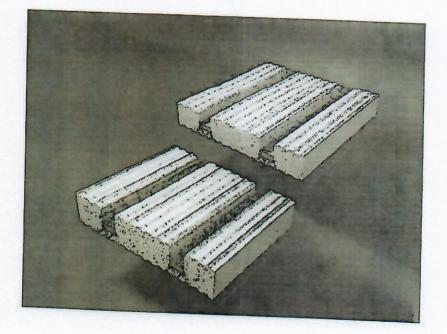


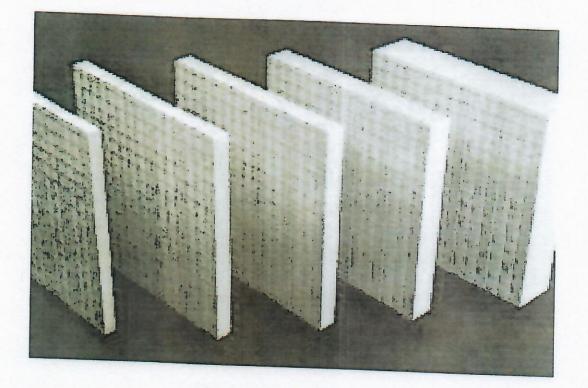
Figure 6: IPFM Slab Section

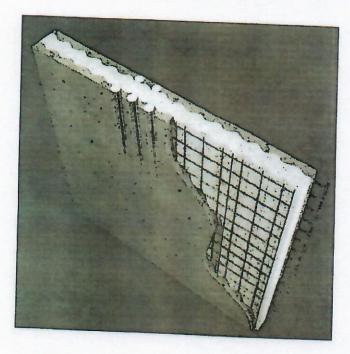
- USS floor and roof panels designated IPFM6 consist of EPS cores with voids to form six (6) concrete joists 1.4.
 - 1.4.1. The joist depth will vary from 4" to 10", according to the requirements. 1.4.2.
 - The upper side is poured with a concrete layer (3,500 psi) and will be 2.4" thick with at least 2" over the
 - 1.4.3. The lower side of the section will require a minimum of 0.75" of mortar cover under the outer face of the wire mesh for a total average depth of 1.4".
 - 1.4.4. In addition, a minimum (2) #4 rebar is placed on the tension (lower) side of each concrete joist.
 - 1.4.5. When required by the building design, rebar is placed in the top concrete la



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USS PANEL.





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EXPANDED POLYSTERYNE DATA SHEET

The EPS used by USS-Panel[™] is a closed cell, lightweight, resilient, foamed plastic composed of hydrogen and carbon atoms. EPS has a compressive strength of 10-60 psi for most construction applications. Within that range the EPS can be molded into structural panels, decorative moldings, roofing and decorative separating walls, to meet specific application requirements. Applied in roofs, walls, and foundations, our EPS has a successful history of efficient use in industrial, commercial, cold storage and primary design considerations, architects have made use of our EPS panels the dominant thermal insulation.

LONG -TERM INSULATION VALUE

The EPS insulation (1.0 pcf) provides a typical R-value of 4.17 per inch (k-factor=0.24) at a mean temperature of 40°F, and a typical R-value of 3.85 per inch (k-factor=0.26) at a mean temperature of 75°F. The higher the R-value, the higher the insulating effect. When properly installed and protected from moisture, the R-value of the EPS insulation remains constant. The R-value will not decrease with age. As a result, the thermal resistance, or R-value the EPS may be used without any adjustment for aging.

MOISTURE RESISTANCE

A study by the Energy Materials Testing Lab (EMTL) has shown that EPS insulation material installed in well-constructed roofs does not absorb appreciable moisture, even under conditions characteristic of prolonged, cold, damp winters. The small amount of moisture absorbed (an average of 0.2% by weight) has little or no effect on the compressive or flexural strength and the EPS insulation retains between 95% and 97% of

Though EPS has low water vapor transmission, EPS is not a vapor barrier. Rather, it "breathes" and, therefore needs no costly venting as do some other relatively impermeable insulation materials which could otherwise trap moisture within walls and roof assemblies.

TEMPERATURE CYCLING

The EPS is able to withstand the abuse of temperature cycling, assuring long-term performance. In a series of tests conducted by Dynatech Research and Development Co., Cambridge, MA, core specimens removed from existing freezer walls, some as old as 16 years, demonstrate EPS freeze thaw cycles without loss of structural integrity or other physical properties.



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Expanded Polystyrene Insulation

Typical Physical Properties

Specification Refer Property	ence:	ASTM C578-92 Units		Type I ASTM Test	Type VIII	Type II	Type IX
Density, minimum		(pcf)	D303 or D1622	0.90			
Density Range			00000101022		1.15	1.35	1.80
				0.90 - 1.14	1.15 - 1.34	1.35 - 1.79	1.80 -2.20
Thernal Conductivity	at 25 F	BTU/(hr.)	C177 or C518				
K Factor	at 40 F	(sp.Ft.)(F/in.)	C1// 01 C518	0.23	0.22	0.21	0.20
	at 75 F	(00.1 0.1(1/11.1		0.24	0.235	0.22	0.21
				0.26	0.255	0.24	0.23
Thermal Resistance		at 25F	at 1 in ab				
R-value*	at 40 F	thickness	at 1 inch	4.35	4.54	4.76	5.00
	at 75 F	CHICKIC33		4.17	4.25	4.55	4.76
				3.85	3.92	4.17	4.35
Strength Properties							
Compressive 10% Def	ormation	psi					
Flexural	ormation	psi	D 1621	10-24	13 - 18	15 - 21	25 - 33
Tensile		psi	C 203	25 - 30	30 - 38	40 - 50	50 - 75
Shear			D 1623	16-20	17 - 21	18 - 22	23 - 27
Shear Modulus		psi	D 723	18 - 22	23 - 25	26 - 32	33 - 37
Modulus of Elasticity		psi		280 - 320	370 - 410	460 - 500	600 - 640
choose and sor clasticity		psi		180 - 220	250 - 310	320 - 360	460 - 500
Moisture Resistance							
WVT		perm. In.					
Absorption (vol.)		%	E 96 C 272	2.0 - 5.0	1.5 - 3.5	1.0 - 3.5	0.6 - 2.0
Capillarity			C 2/2	<4.0	<3.0	<3.0	<2.0
				none	none	none	none
Coefficient of Therma	Expansion	in./(in.)(f)	Deac				
		m./ (m./(f)	D696	0.000035	0.000035	0.000035	0.000035
Maximum Service Ten	perature	F					
Long term exposure							
Intermittent exposure				100	167	167	167
				180	180	180	180
Dxygen Index		%	D 2863	24.0			
					24.0	24.0	24.0
R-value is a measure of r	esistance to he	at flow. The bishes at	- Development				

Flame Spread and Smoke Development recorded while the material remained in the original test position. Surface Burning Characteristics derived from ASTM E-84 are not intended to reflect hazards presented by this product under actual conditions. The manufacturer in no event assumes liability beyond the purchase price or replacement of material proven to be defective and reported in a timely fashion, but not longer than six (6) months after shipment. Only the senior executive of USS-PANEL has the authority to alter or extend these conditions.



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ENVIRONMENTAL IMPACT

EPS insulation is an inert, organic material produced from petroleum and natural gas by-products. EPS insulation does not contain ozone depleting chlorofluorocarbons (Clefts) or hydro chlorofluorocarbons (HCFCs). It is manufactured with hydrocarbon blowing agents. It provides no nutritive value to plants, animals or micro-organisms. It will not rot, and is highly resistant to mildew.

EPS is recyclable. After its original life as insulation, EPS could be recycled into a variety of consumer products. Many EPS molders have been reprocessing their own in-plant scrap for many years. An infrastructure for the collection of EPS is being developed, materials. We can now provide you with a collection bag to return scrap EPS construction insulation as well as offer recycled content products when specified or desired. In addition, when disposed of through incineration EPS foam functions as an energy source contributing more than 15,000 btu's per pound as additional fuel. The products of complete combustion are carbon dioxide, water vapor and trace quantities of nonhazardous ash; similar by-products are produced when wood is burned. When landfilled, EPS does not biodegrade. It will not create methane gas or leachate, materials known to be harmful to air quality and ground water.

EPS insulation does not contain ozone depleting chlorofluorocarbons (CFCs) or Hydro chlorofluorocarbons (HCFCs).

STRENGTH CHARACTERISTICS

For foundation and wall applications in which EPS insulation board provides reasonable absorption of building movement without transferring stress to the outer skins at the joints. Type I EPS (1 lb/ft³) material provides the dimensional stability and compressive strength necessary to withstand light roof traffic and equipment weight at reasonably high surface temperatures. If greater rigidity and strength are needed, compressive strengths up to 60 psi are available. For recommendations, consult with your representative.

STANDARDS COMPLIANCE

EPS insulation may be manufactured to meet or exceed the requirements of major building codes, ASTM C578-07, HUD Use of Materials Bulletin #71, and DOE/RCS Standards.

FABRICATION AND INSTALLATION

EPS insulation is easily fabricated during manufacture to meet specific design and dimensional requirements. Further, because of its light weight, it is easily stored, handled and installed on the job site. In addition, it can be cut to shape with ordinary tools to assure tight joints, thus eliminating heat loss.



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TYPES AND SIZES

In addition to standard EPS board insulation, various types of sandwiched panels with galvanized steel mesh or laminated products are available. These sandwiched or laminates, such as film or foil facings, improve board strength weather ability and can provide additional R-value when used in conjunction with an air space. Prefabricated EPS core panels with metal facings are also available for wall and roof applications. EPS insulation is available in thicknesses ranging from 1/2" to 9.45", widths up to 48" and

COST EFFICIENCY

EPS insulation typically costs less than other rigid board insulations when compared on the basis of R-value. When evaluating the cost efficiency of rigid insulations, compare the price of equal lengths and widths for the cost of the R-value per inch of thickness.

COMBUSTIBILITY

Although our EPS is flame retardant like many construction materials, EPS can be combustible. It should not be left in the yard exposed to flame or other ignition sources. EPS insulation should be covered with a thermal barrier Cement or Steel or otherwise installed in accordance with applicable building code requirements.

SOLVENT ATTACK

EPS is subject to attack by petroleum-based solvents. Care should be taken to prevent contact between EPS and these solvents or their vapors.

ULTRAVIOLET DEGRADATION

Prolonged exposure to sunlight will cause slight discoloration and surface dusting of EPS insulation. The insulating properties will not be significantly affected under normal usage. EPS stored outside should be protected with a light-colored opaque tarpaulin.

VAPOR BARRIERS

Although EPS provides a high level of moisture resistance and breathability recommended design practices for walls and foundations should be followed in the selection of vapor and moisture barriers for severe exposures. Each application should be studied to determine the need for a vapor retarder to control internal condensation.

Warning

EPS products are manufactured with a fire retardant; however, EPS insulation will burn upon exposure to an adequate source of heat or flame. EPS should be kept away from flame or heat sources, including, but not limited to, open flames, welder's torches, or other sources of heat. It is the responsibility of the purchaser to warn all of those who may be in contact with EPS insulation about the need to adhere to these requirements when the product is stored on the

Existing House

Primary structure





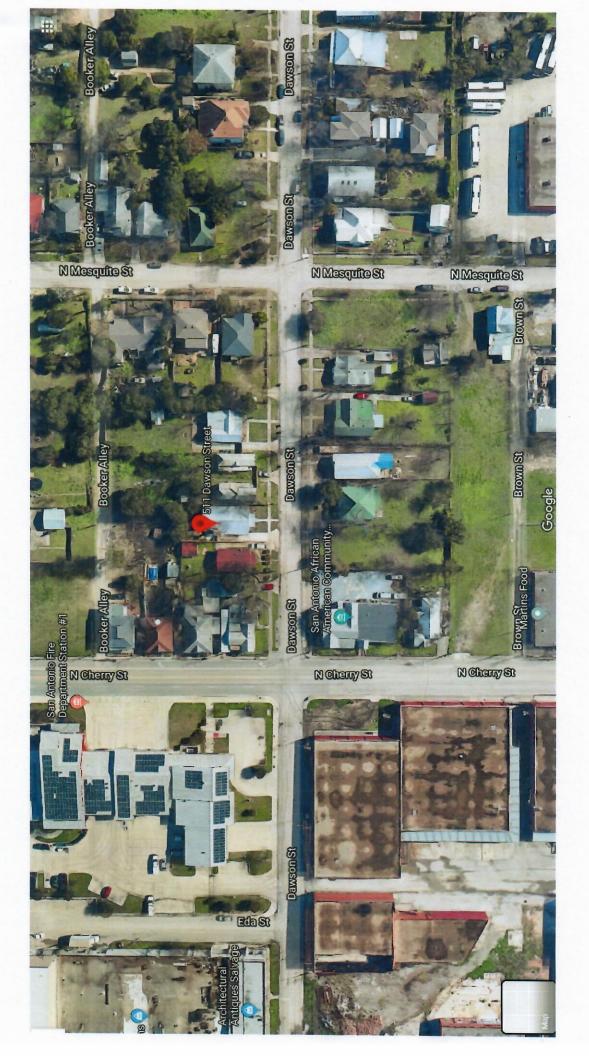


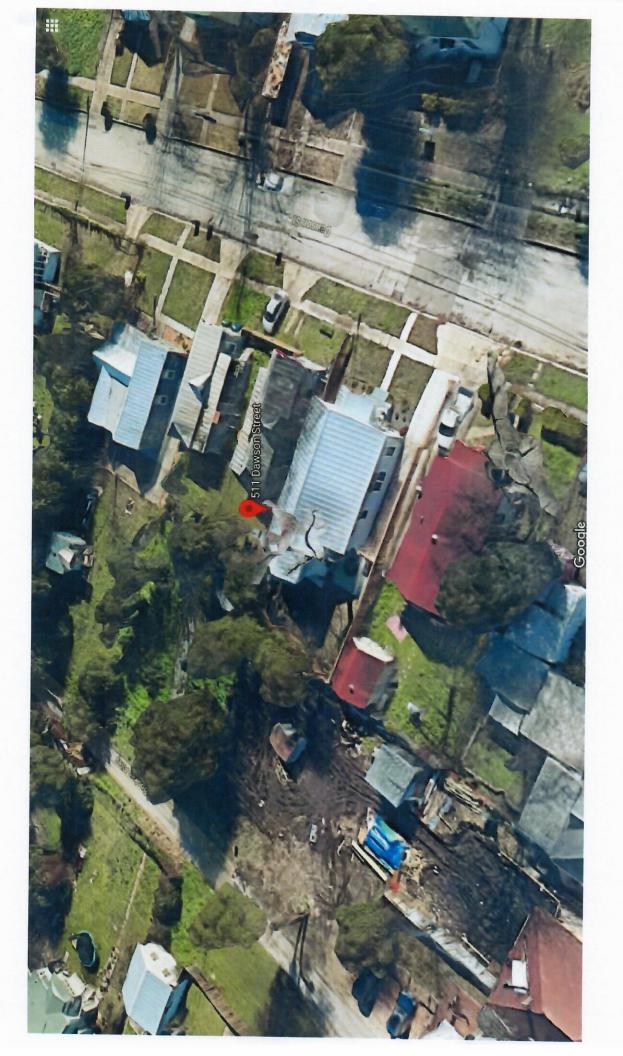
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January 29, 2020

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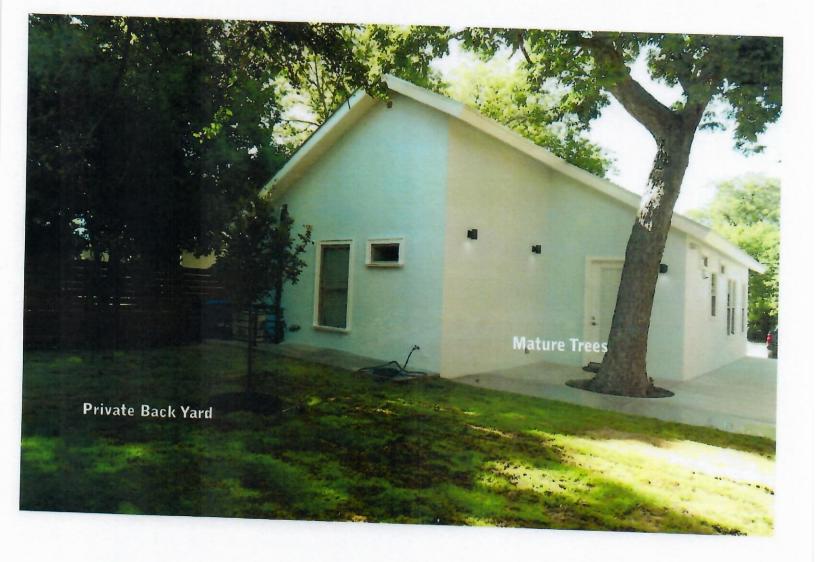






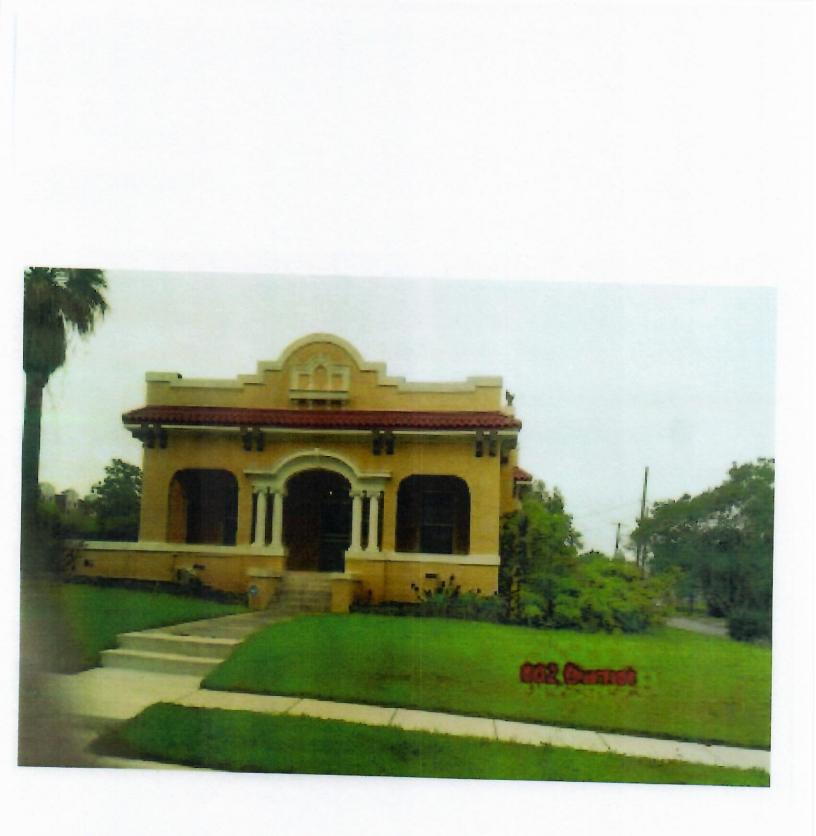






Photos

Properties in the area

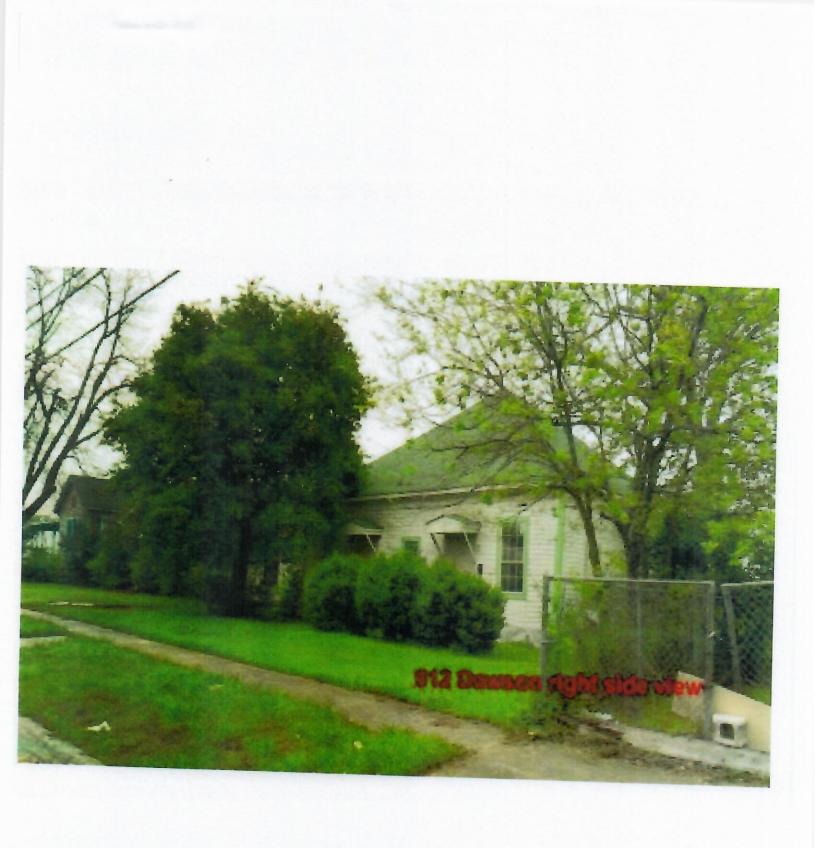




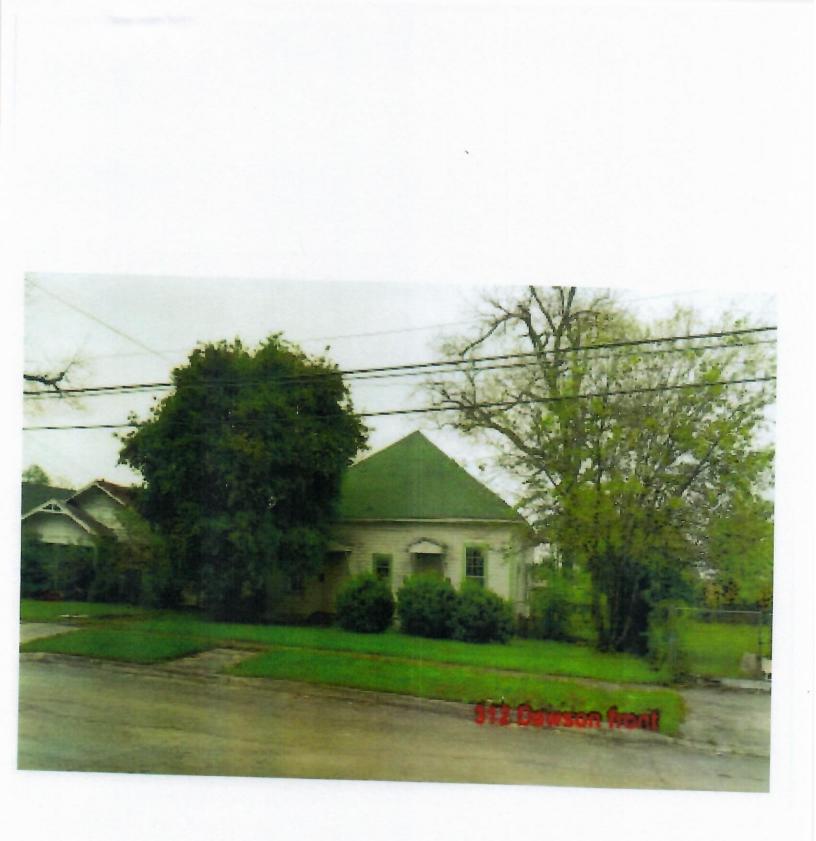




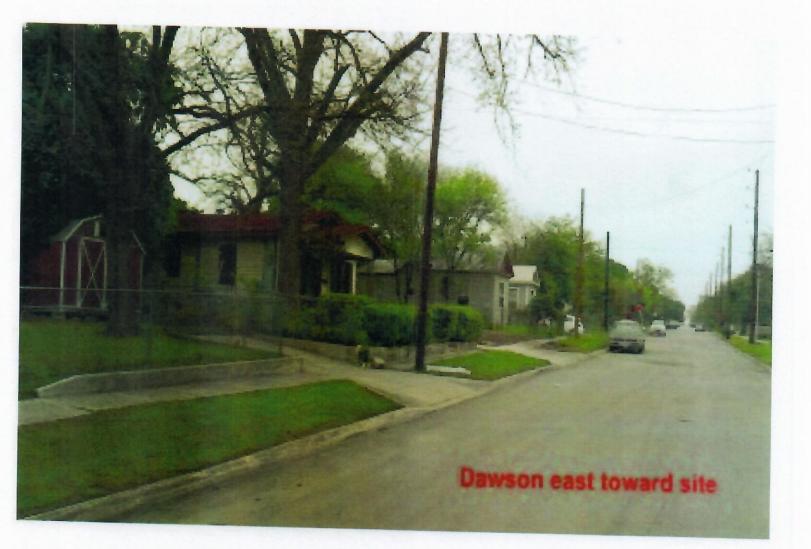


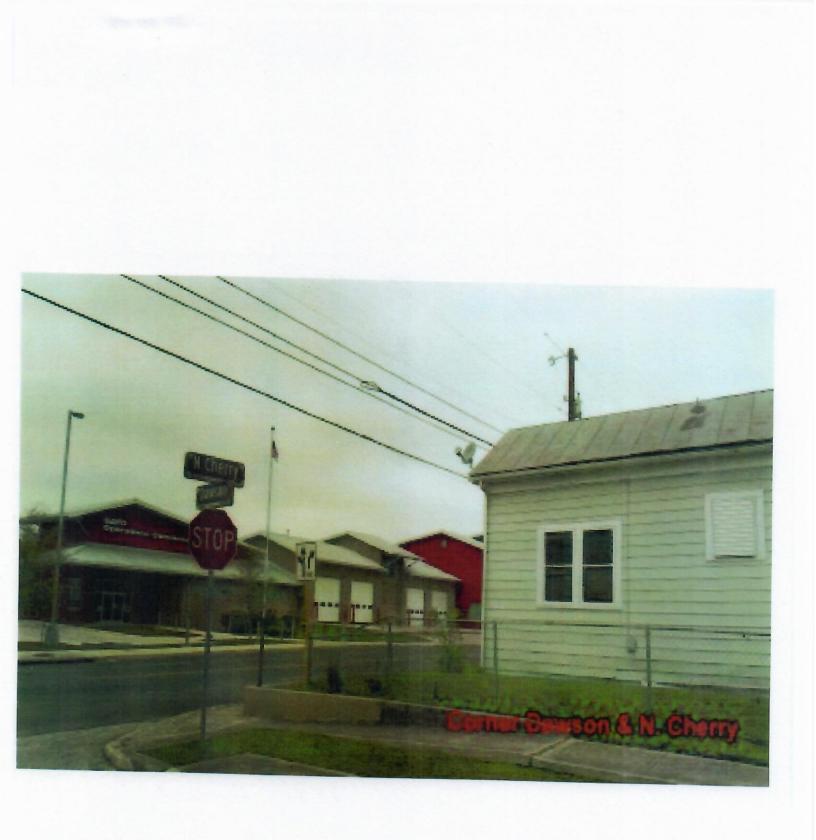




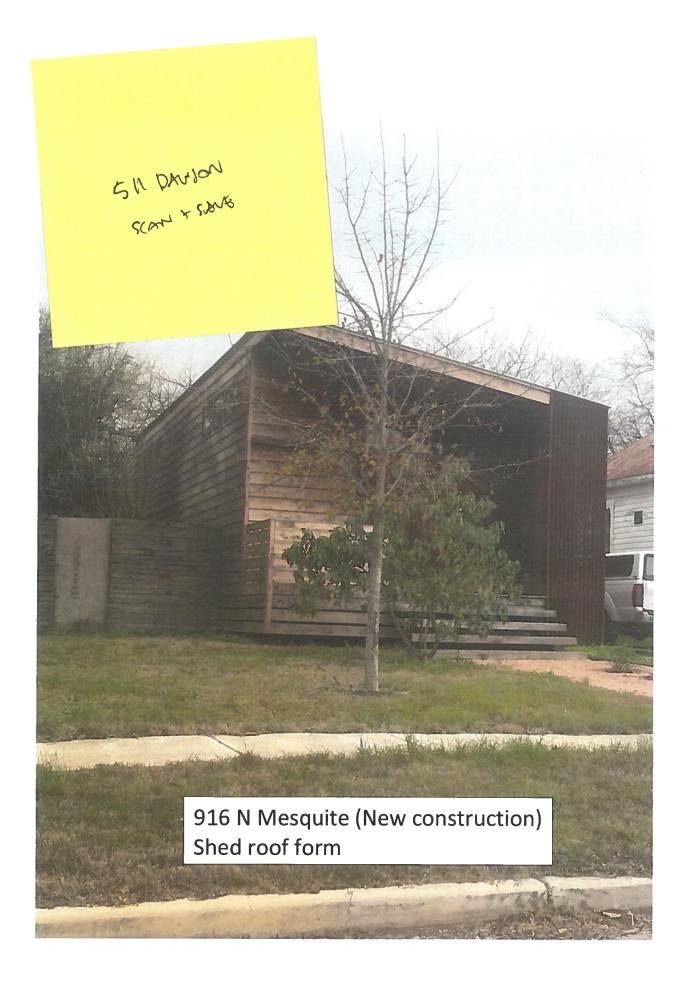






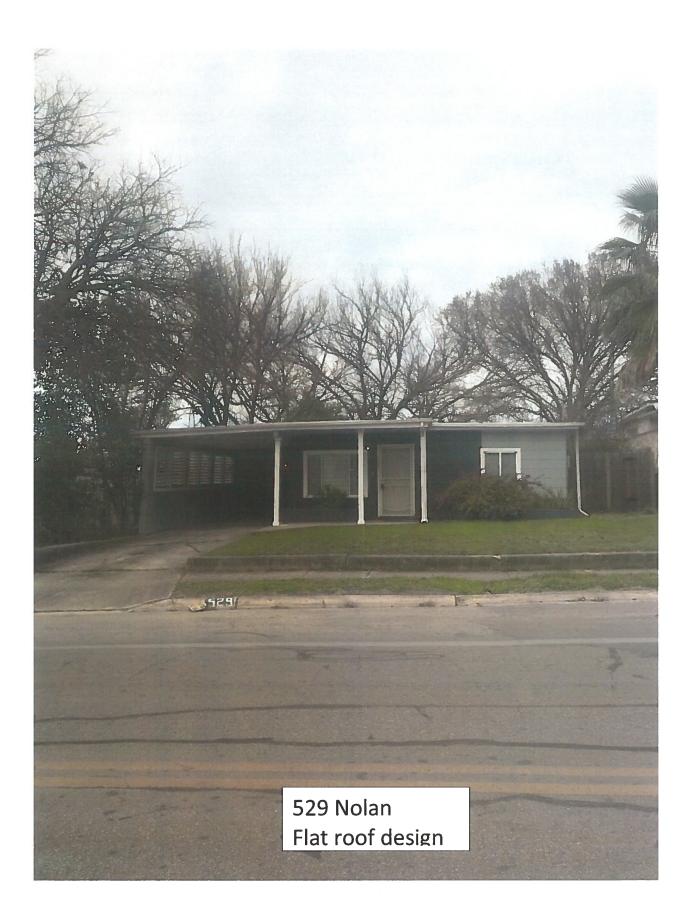


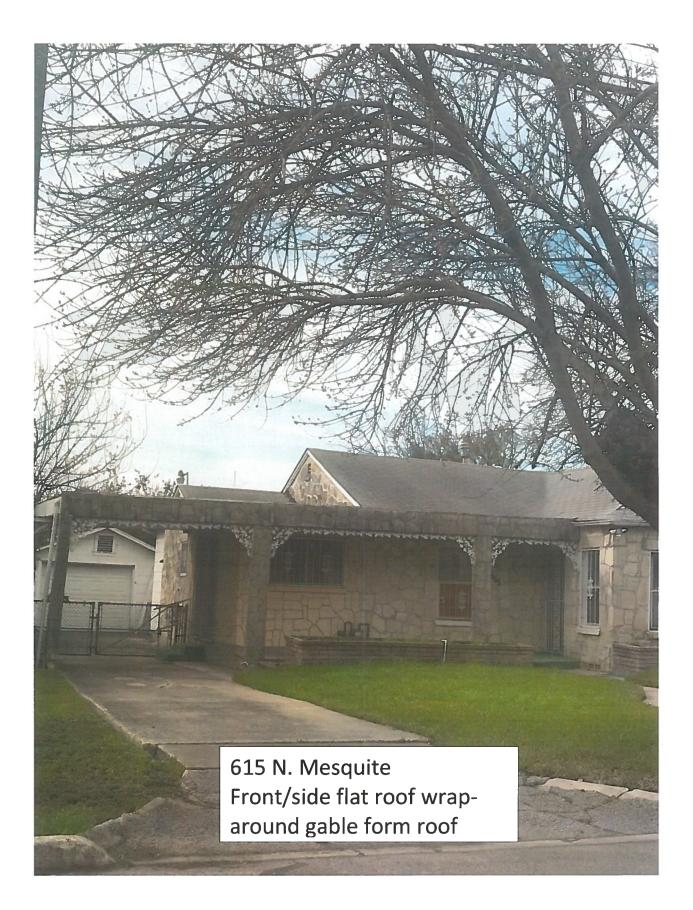


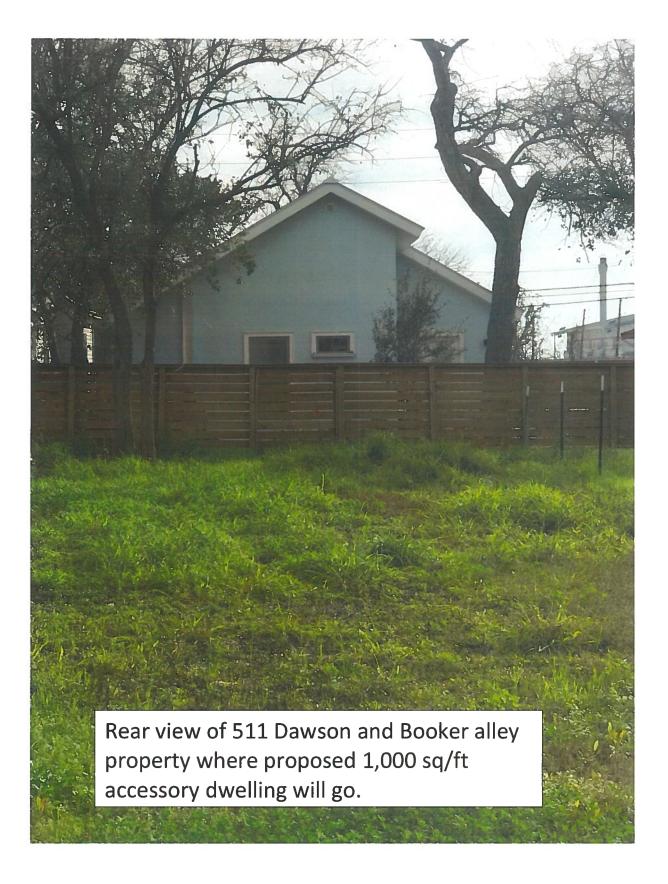


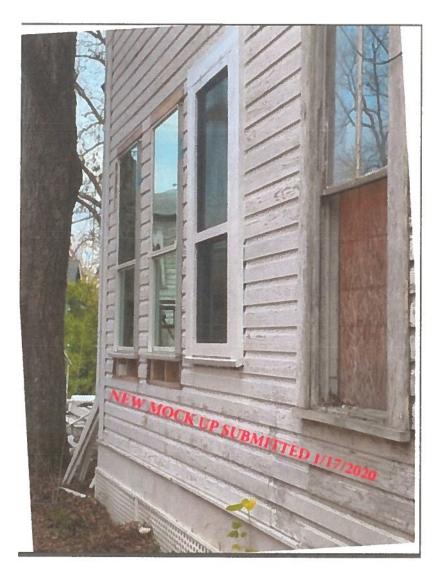


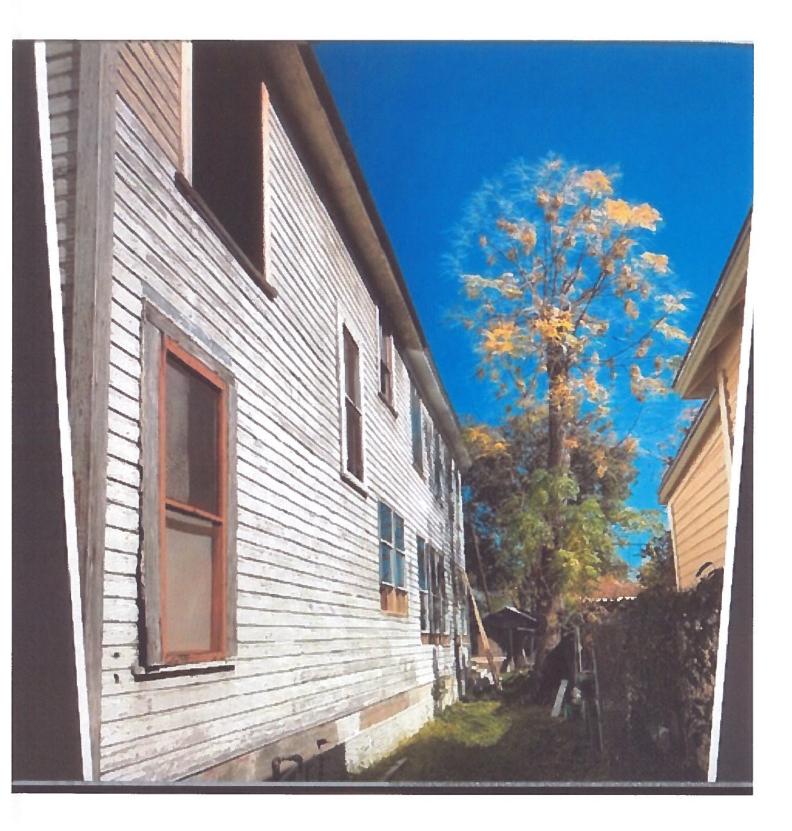
Corner of North Mesquite /Nolan street/ Booker Alley New addition (shed style roof) to historic stone house









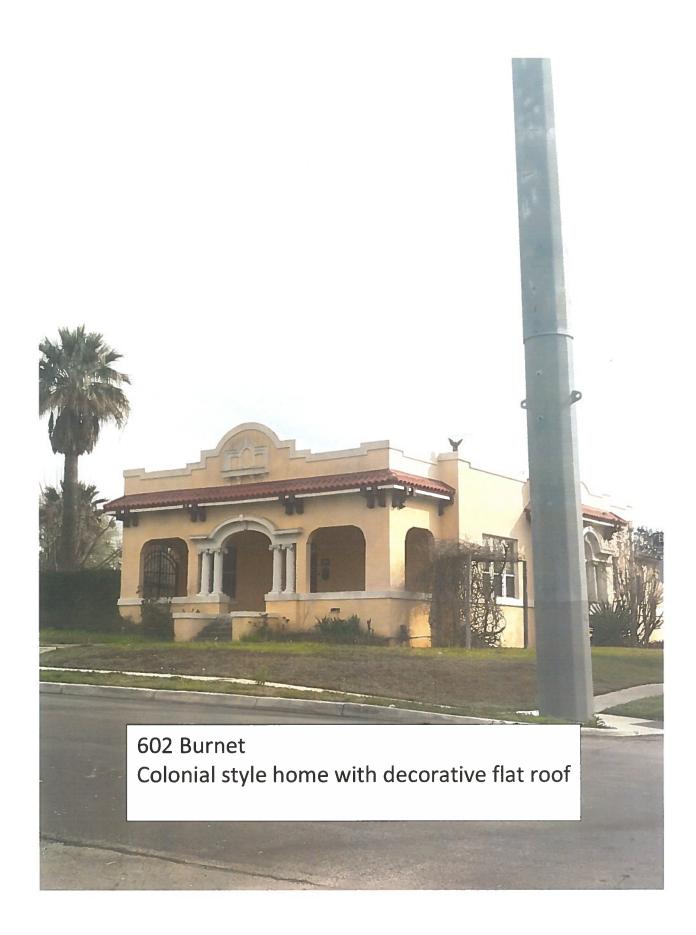




429 Sherman Gable roof form with wrap-around flat roof/canopy

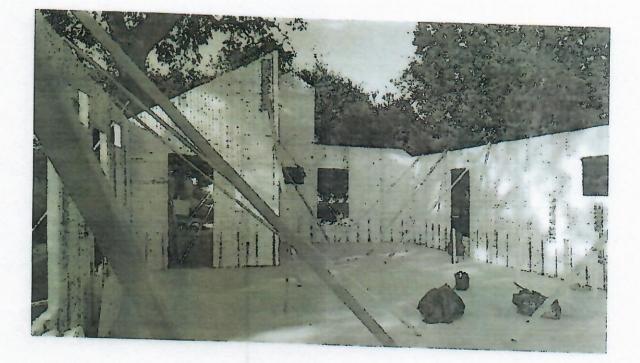


Corner of North Cherry /Burnet New construction town homes with flat roofs





Documents



Quote from the engineer:

"The Unlimited Structural Solutions panel product used in the home construction of 511 Dawson St. in San Antonio were an excellent choice on behalf of the builder. It's a choice that the future owner of this property is going to appreciate for the next number of years.

This building is going to be tornado proof, more energy-efficient, fire resistant, insect resistant and nearly free of exterior maintenance needs that are typical for conventional construction materials. As structural engineers, I expect this building to have twice the economic life as a traditionally built structure.

As a developer, the Trinity Group is anticipating using this product on multifamily developments going forward for all the same reasons!"

Dr. David L Joyner, PE