DESIGN AND HISTORIC REVIEW COMMISSION – MAY 19, 2022
STAFF REPORT

APPLICATION TYPE:	CASE:
River Corridor Review	RC22-06: 1028-1040 Holiday Drive

SYNOPSIS:

The applicant has applied to the Design and Historic Review Commission (DHRC) for a River Corridor District Overlay Zone approval for four new, two-story townhomes. The townhomes will have a combination of different building materials. The first floor will have EIFS facades with stone around the entryways and painted metal garage doors. The second floor will have a combination of board-and-batten and cedar siding, and the roof will be constructed of composite shingles.

LOCATION:	LEGAL DESCRIPTION:
Southwest of S. Bell. St. and South Concho Park Drive	Holiday Terrace Replat, Section 1, Block 2, Lots 1-4

SM DISTRICT / NEIGHBORHOOD:	ZONING:	FUTURE LAND USE:	SIZE:
SMD District #3 – Harry Thomas Glenmore Neighborhood	RM-1	Downtown	0.25 ac.

THOROUGHFARE PLAN:

Holiday Drive – Urban Local Street, required: 50' ROW, 40 paved or 36' paved with a 4' sidewalk; provided: 50' ROW, 40 paved.

S. Concho Park Drive – Urban Local Street, required: 50' ROW, 40 paved or 36' paved with a 4' sidewalk; provided: variable ROW, 28 paved (pre-existing).

STAFF RECOMMENDATION:

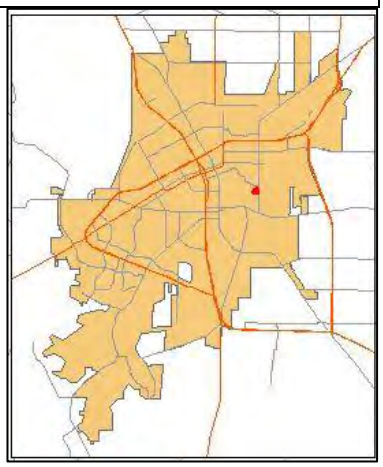
Staff recommends **APPROVAL** of RC22-06, **subject to two Conditions of Approval**.

PROPERTY OWNER/PETITIONER:

Owner and Petitioner: Bryan Benson, Clearview Custom Homes

STAFF CONTACT:

Jeff Fisher, AICP
Chief Planner
(325) 657-4210, Ext. 1550
jeff.fisher@cosatx.us



RC22-09 Analysis:

River Corridor Master Development Plan (RCDMP)
Section 212.D.1.a of the Zoning Ordinance requires that "construction of any part of a structure, canopy, or awning visible from a public right-of-way" requires approval from the Design and Historic Review Commission (DHRC). All improvements shall also be consistent with the respective design guidelines of the River Corridor Master Development Plan (River Corridor Plan) for Multi-Family Housing in Newer Neighborhoods.

Building Mass and Scale
The respective policies state that "multi-family housing should incorporate a variety of different building forms within one project", and "building forms should include façade shifts and articulation, as well as varied building materials and colors, in order to avoid mirror-image duplications of the same building or ends of the same building." Staff believes that the applicant's plans satisfy these policies. The applicant has used five different façade materials consistent the first policy above (stone, metal, EIFS, cedar siding, and board-and-batten siding on the two-story homes. The colors are a mix of earth tones that will blend in with the River Corridor (see below). Staff also believes that the combination of different colors and materials, along with articulation using traditional stone elements and hanging light fixtures provides a creative building form.

Colors and Materials
The policies recommend "building materials that convey a sense of permanence and quality are appropriate and encouraged" and "the palette of colors used should complement the architectural theme and harmonize with the colors of the natural materials used". The materials used are quality construction materials and can be found on other homes abutting the River in San Angelo. The stone around the front door and EIFS around the garage will provide differentiation from the existing townhomes to the east which use a brick façade on the first floor. Staff also believes the color choices are appropriate for the townhomes in which the rear of the homes will face the River Corridor. The garage doors and trim elements will use black fox, which is a dark bronze tone. The front wood doors will be painted black and the rear fiberglass doors will have black trim. The 1st floor EIFS will be Greek Villa or Natural Choice, both crème shades and the second floor siding will be Illusive Green, an earth tone color that will complement the River Corridor and natural vegetation surrounding the properties. Finally, the black metal wall sconce lights will provide an attractive entry feature.

Recommendation:
Staff's recommendation is for the Design and Historic Review Commission to **APPROVE** RC22-06, **subject to the following two Conditions of Approval**:

1. The colors, dimensions, and materials of all improvements shall be consistent with the renderings approved by the Design and Historic Review Commission. Minor deviations may be approved by the Planning and Development Services Director.

2. The applicant shall obtain all required permits from the Building Permits and Inspections Division.

Attachments:

Aerial Map
Photos
Site Plan
Color and Material Rendering
Material Samples
Application

River Corridor Overlay Zone

RC22-06: 1028-1040 Holiday Drive

Council District: Harry Thomas - District 3
Neighborhood: Glenmore
Scale: 1 " approx. = 100 ft

1028-1040 Holiday Drive

Legend

Subject Properties:
Current Zoning: CBD
Requested Zoning Change: N/A
Vision: Downtown

N

Photos of Site and Surrounding Area

LOOKING EAST (SUBJECT PROPERTY TO RIGHT)

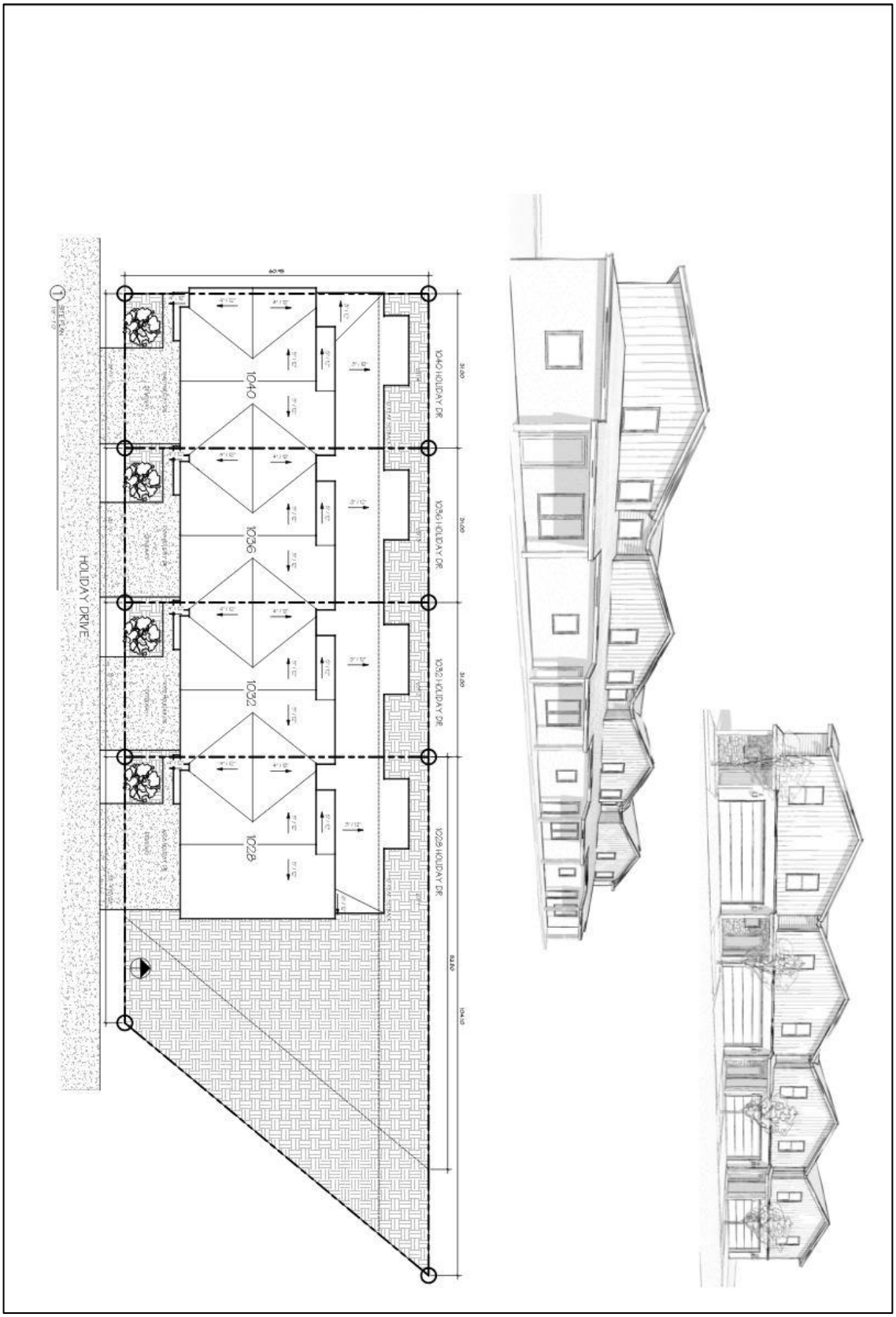
NEW TOWNHOMES UNDER CONSTRUCTION (1012-1024 HOLIDAY DRIVE)

EXISTING TOWNHOMES (1002-1008 HOLIDAY DR)

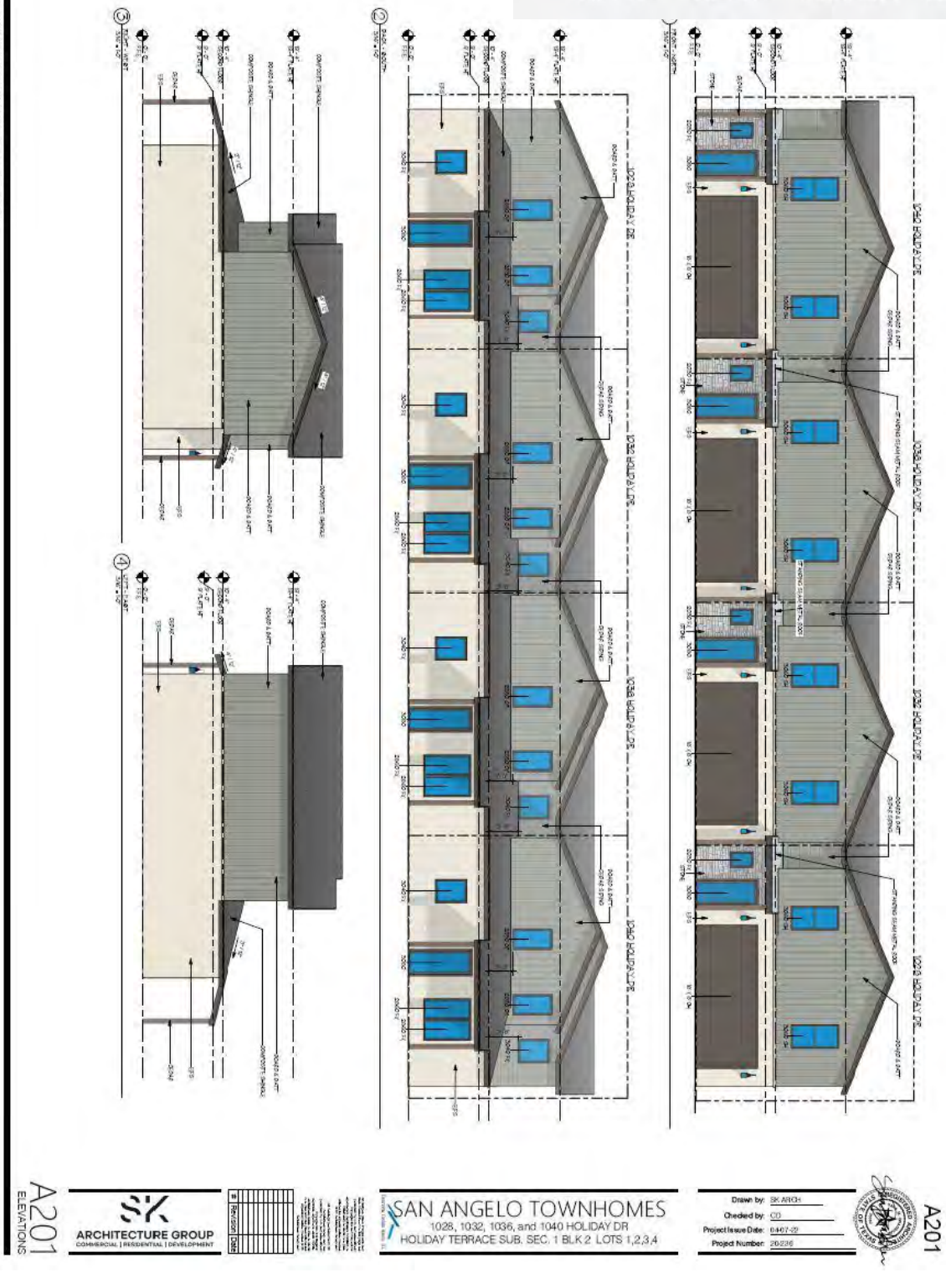
LOOKING WEST TOWARDS S. BELL ST.

VIEW FROM BEHIND HOMES LOOKING TOWARDS RIVER

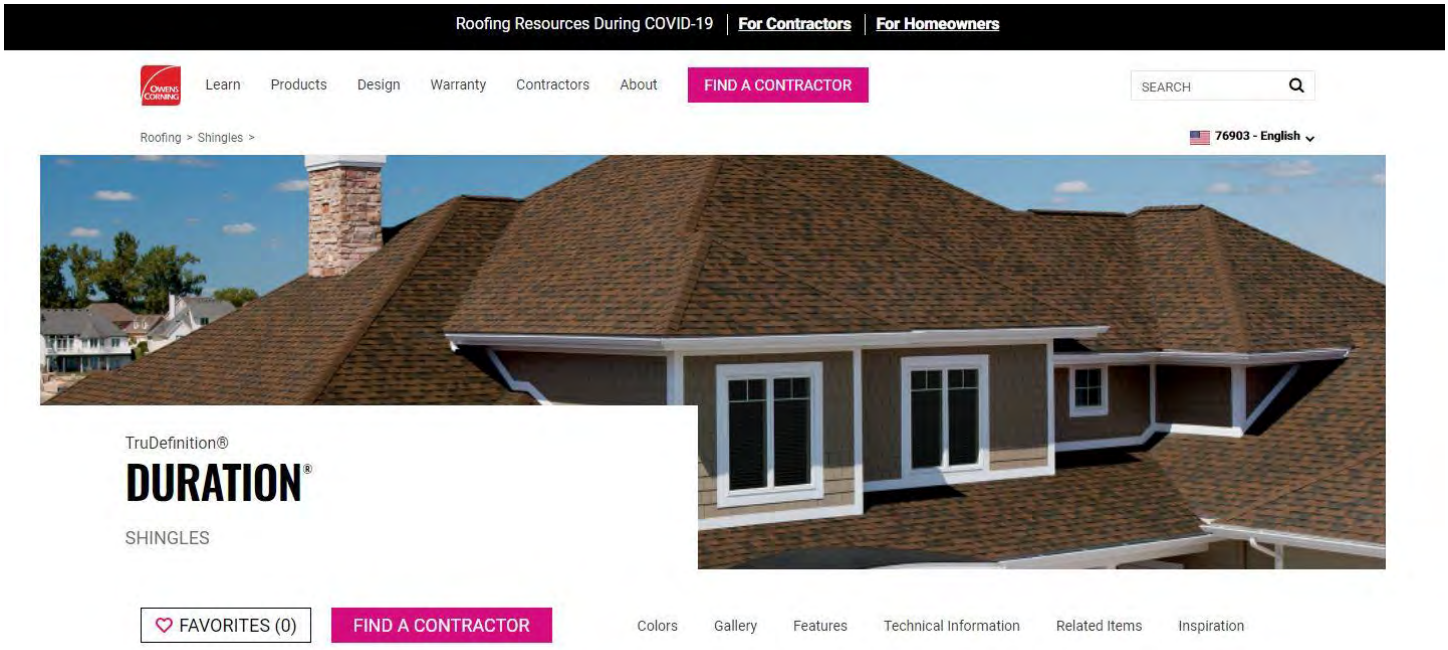
Site Plan

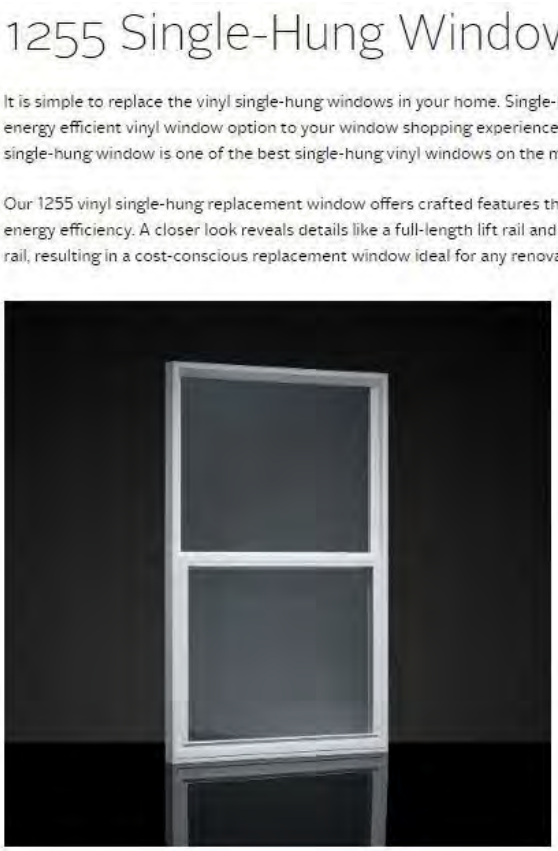


Color and Material Renderings



Material Samples





Effective January 3, 2017

City of San Angelo, Texas – Planning Division
52 West College Avenue

Application for River Corridor Review

Section 1: Basic Information

Name of Applicant(s): Clearview Custom Homes

☒ Owner ☐ Representative (Notarized Affidavit Required)

4264 S Jackson	San Angelo	TX	76903
Mailing Address	City	State	Zip Code

325.234.0085	bryan@clearviewcustomhomes.com
Contact Phone Number	Contact E-mail Address

1024-1038 Holiday	San Angelo	TX	76903
Subject Property Address	City	State	Zip Code

.0110, Lot 1, Blk 2, Subd: Holiday Terrace (Replat) Sec 1
Legal Description (*can be found on property tax statement or at www.tomgreencad.com*)

Zoning: rm-1

Section 2: Site Specific Details

Proposed Work:

☒ New construction in the Corridor over 1200 square feet.
☐ Remodeling the exterior of an existing building in the Corridor.
☐ Moving of an existing building to a lot within the Corridor.
☐ Signs over 50 square feet in the Corridor.
☐ Request for subdivision approval of any kind within the Corridor.
☐ Illuminated sign in the Corridor (any size)

Specific details of request: *use separate attachment if necessary*

Hours of Operation: 8 AM -12 PM & 1PM – 5 PM 325-657-4210, #2 www.cosatx.us/planning

Effective January 3, 2017

Section 2 continued: Site Specific Details

Explain why and how you think the proposed work is necessary and/or consistent with the character of the River Corridor: New construction that will be eye catching and look good with natural colors and blend in with the river.

Section 3: Applicant(s) Acknowledgement
(By checking the boxes you indicate that you understand below regulations)

- ☑ On administrative applications, the Director makes the final decision, appeals may be directed to the Design and Historic Review Committee.
- ☑ On other applications the Design and Historic Review Committee makes the final decision, appeals may be directed to the City Council.
- ☑ Approval of this request does not constitute approval of permits, site plans, or other processes that require separate approval.
- ☑ Any changes to the design made after this approval may require a second approval by the Manager and/or the Commission.
- ☑ The decision of the Commission may be appealed to the City Council.
- ☑ Proposed construction into a public right-of-way may require additional approvals.
- ☑ Buildings on historical landmarks or district also require a Certificate of Appropriateness.

I/We the undersigned acknowledge that the information provided above is true and correct.

Signature of licensee or authorized representative

5-3-22
Date

Bryan Benson
Printed name of licensee or authorized representative

Clearview Custom Homes
Name of business/Entity of representative

FOR OFFICE USE ONLY:

☐ Description/photograph of site ☐ Sketches, plans, sketches of work ☐ Sample(s) of materials to be used

☐ Verified Complete ☐ Verified Incomplete

Case No.: RCC_____--_____ Related Case No.: _____--_____ Date Related case will be heard: _____

Nonrefundable fee: $_____ Receipt #: _____ Date paid: _____/_____/_____

Reviewed/Accepted by: _____ Date: _____/_____/_____

Hours of Operation: 8 AM -12 PM & 1PM – 5 PM 325-657-4210, #2 www.cosatx.us/planning

DESIGN AND HISTORIC REVIEW COMMISSION – MAY 19, 2022
STAFF REPORT

APPLICATION TYPE:	CASE:
Downtown District Review	DD22-19: 24 E. College Avenue

SYNOPSIS:

The applicant has applied to the Design and Historic Review Commission (DHRC) for a Downtown District Overlay Zone approval for a new 115-foot tall, high grade steel monopole telecommunication tower with related equipment. The tower will be a light gray color to blend in with surrounding buildings and the sky. It will be co-locatable. The applicant also plans to erect a 7' brick masonry fence around the tower for screening and security. All structures will be located within a 907-sq. ft. leased area at the northeast corner of the property which is being used as a parking lot for First Christian Church.

LOCATION:	LEGAL DESCRIPTION:
Northeast of N. Chadbourne St. and E. College Ave.	San Angelo Addition, Block 43, Lots 4-6 and the west 25' of Lots 1-3; and Miles Acre Lots Addition, the south 100' of Block 8 and 8 ¼ and the south 100' of the east part of Lot 7

SM DISTRICT / NEIGHBORHOOD:	ZONING:	FUTURE LAND USE:	SIZE:
SMD District #3 – Harry Thomas Downtown Neighborhood	CBD	Downtown	0.828 ac.

THOROUGHFARE PLAN:

E. College Avenue – Urban Local Street, required: 50' ROW, 40 paved or 36' paved with a 4' sidewalk; provided: 56' ROW, 50 paved with 4' sidewalks on both sides of street.

STAFF RECOMMENDATION:

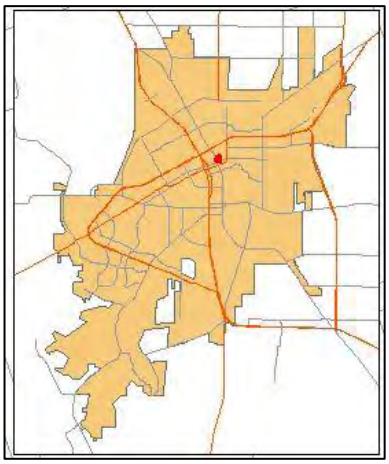
Staff recommends **APPROVAL** of DD21-19, **subject to three Conditions of Approval**.

PROPERTY OWNER/PETITIONER:

Owner: First Christian Church
Petitioner: Mr. Dane Wilkins, Vincent Gerard & Associates

STAFF CONTACT:

Jeff Fisher, AICP
Principal Planner
(325) 657-4210, Ext. 1550
jeff.fisher@cosatx.us



DD21-19 Analysis:

Zoning Ordinance: The Zoning Ordinance exempts telecommunication facilities located in the Central Business District (CBD) from the development standards and setbacks outlined in Section 426. However, the tower and related facilities are still required to meet the general CBD development standards, a 25-foot front yard setback (no side or rear setback but Permitting may require additional setbacks at time of permitting). The fenced area which will contain the tower and equipment is 195 feet from the front of the property at East College Avenue, in compliance with the CBD setback requirement. ***The telecommunication facility will require a Conditional Use approval from the Planning Commission as required by the Zoning Ordinance.***

River Corridor Master Development Plan (RCDMP)
Section 212.D.1.a of the Zoning Ordinance requires that "all telecommunication towers and facilities 35 feet in height or greater" require approval from the Design and Historic Review Commission (DHRC). All improvements shall also be consistent with the respective design guidelines of the River Corridor Master Development Plan (River Corridor Plan) for Commercial Use Outside of the Historic City Center.

Site Design and Layout
The respective policies state that "development should relate to the site's setting, considering impacts and enhancements to natural features and important view corridors." The site is most visible from College Avenue and the applicant has located the new tower and equipment along with screening wall at the far northeast of the property. As indicated, this will be 195' back from W. College Avenue, reducing impacts and view corridors from the street. The tower will be located immediately adjacent to another parking lot for Shannon Medical and will be at least 172 feet from this property line facing North Oakes Street.

Colors and Materials
The policies recommend "light to medium colors with low reflectivity are preferred." Staff is satisfied that the light gray color for the tower is consistent with this policy and of similar color to the building immediately to the east. The policies also state that "materials such as stone, brick, and precast concrete, cast stone and architectural metals can be combined to enrich the appearance of a building and highlight specific architectural features." Staff believes the solid red brick masonry is appropriate and of quality construction. This red brick can be found on buildings in the immediate area including the First Christian Church building across the street. The columns will be slightly elevated to break up the wall expanse. The solid steel tower is of quality construction and typical of monopole tower design.

Recommendation:
Staff's recommendation is for the Design and Historic Review Commission to **APPROVE** DD21-19, **subject to the following three Conditions of Approval**:

1. The colors, dimensions, and materials of all improvements shall be consistent with the renderings

approved by the Design and Historic Review Commission. Minor deviations may be approved by the Planning and Development Services Director.

2. The applicant shall obtain all required permits from the Building Permits and Inspections Division.

3. The applicant shall submit for and obtain approval a Conditional Use from the Planning Commission for the telecommunication tower and related facilities.

Attachments:
Aerial Map
Photos
Concept Plan
Elevations
Application

Downtown Overlay Zone

DD22-19: 24 E. College Avenue

Council District: Harry Thomas - District 3
Neighborhood: Downtown
Scale: 1 " approx. = 125 ft
24 E. College Avenue 0.828 ac.

Legend

Subject Properties:
Current Zoning: CBD
Requested Zoning Change: N/A
Vision: Downtown

N

Photos of Site and Surrounding Area

LOOKING NORTH TOWARDS TOWER LOCATION

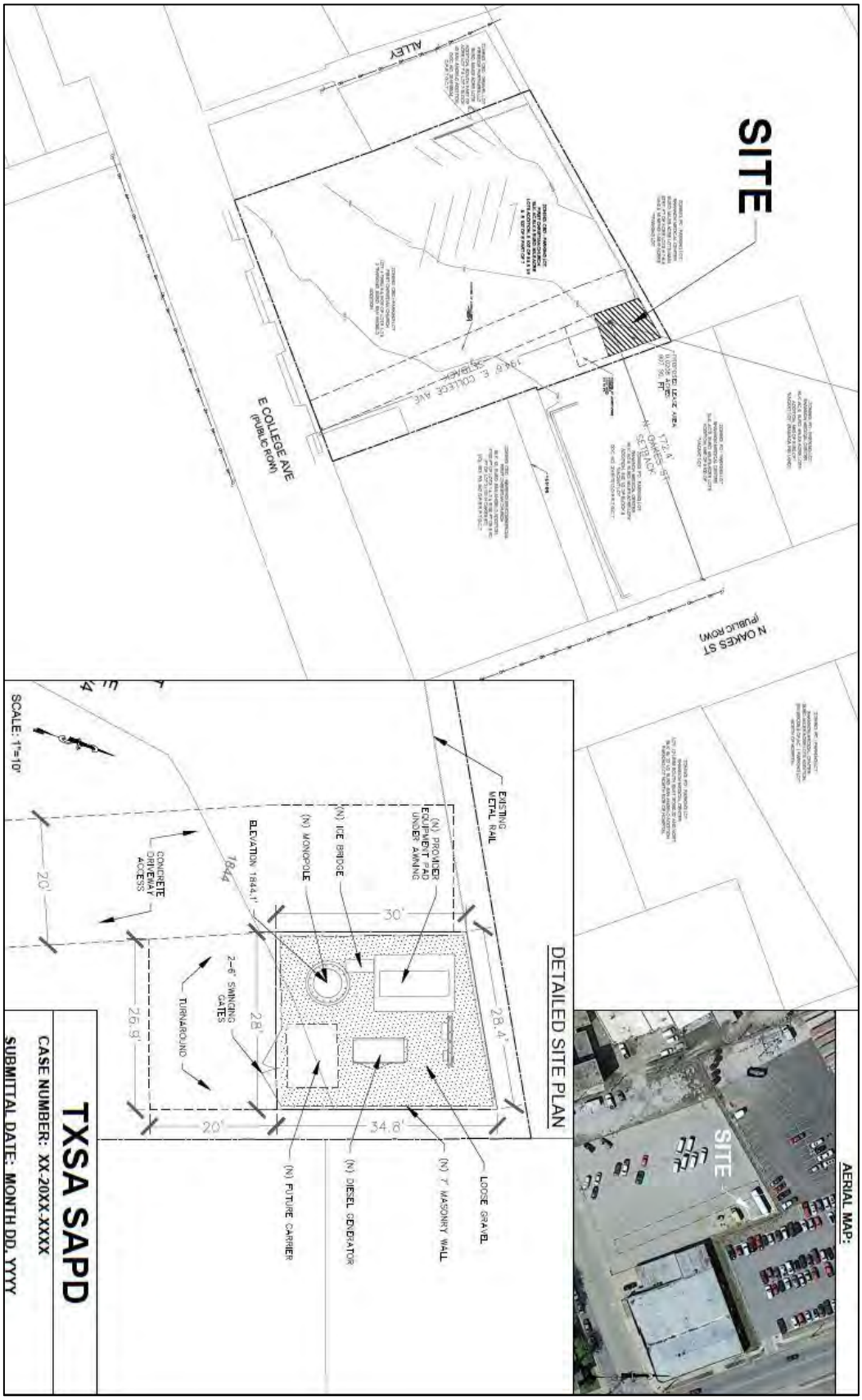
PROPOSED TOWER LOCATION TOWARDS OAKES ST.

LOOKING SOUTH TOWARDS COLLEGE AVE.

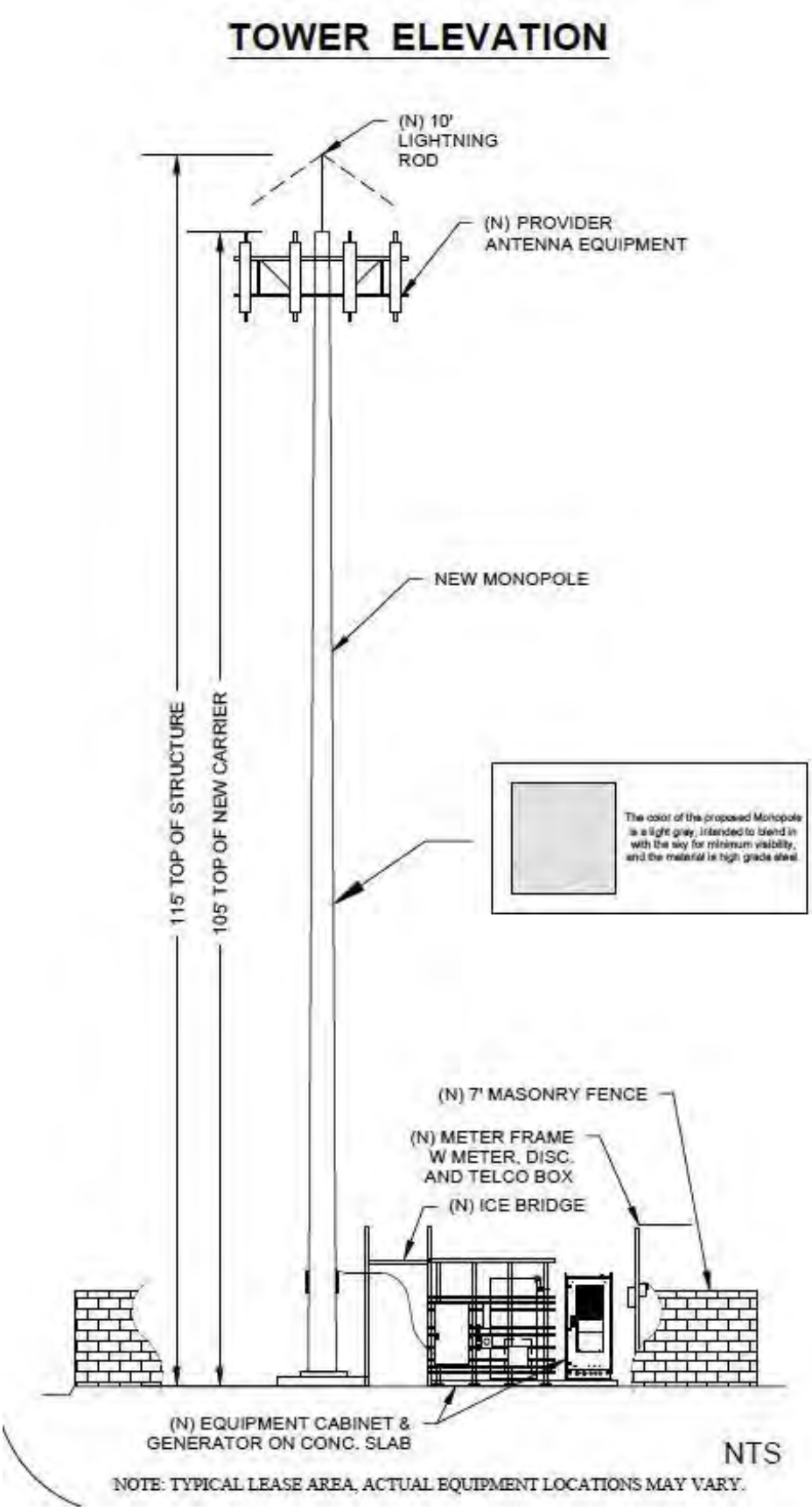
LOOKING WEST TOWARDS S. BELL ST.

LOOKING SOUTH AT CHURCH

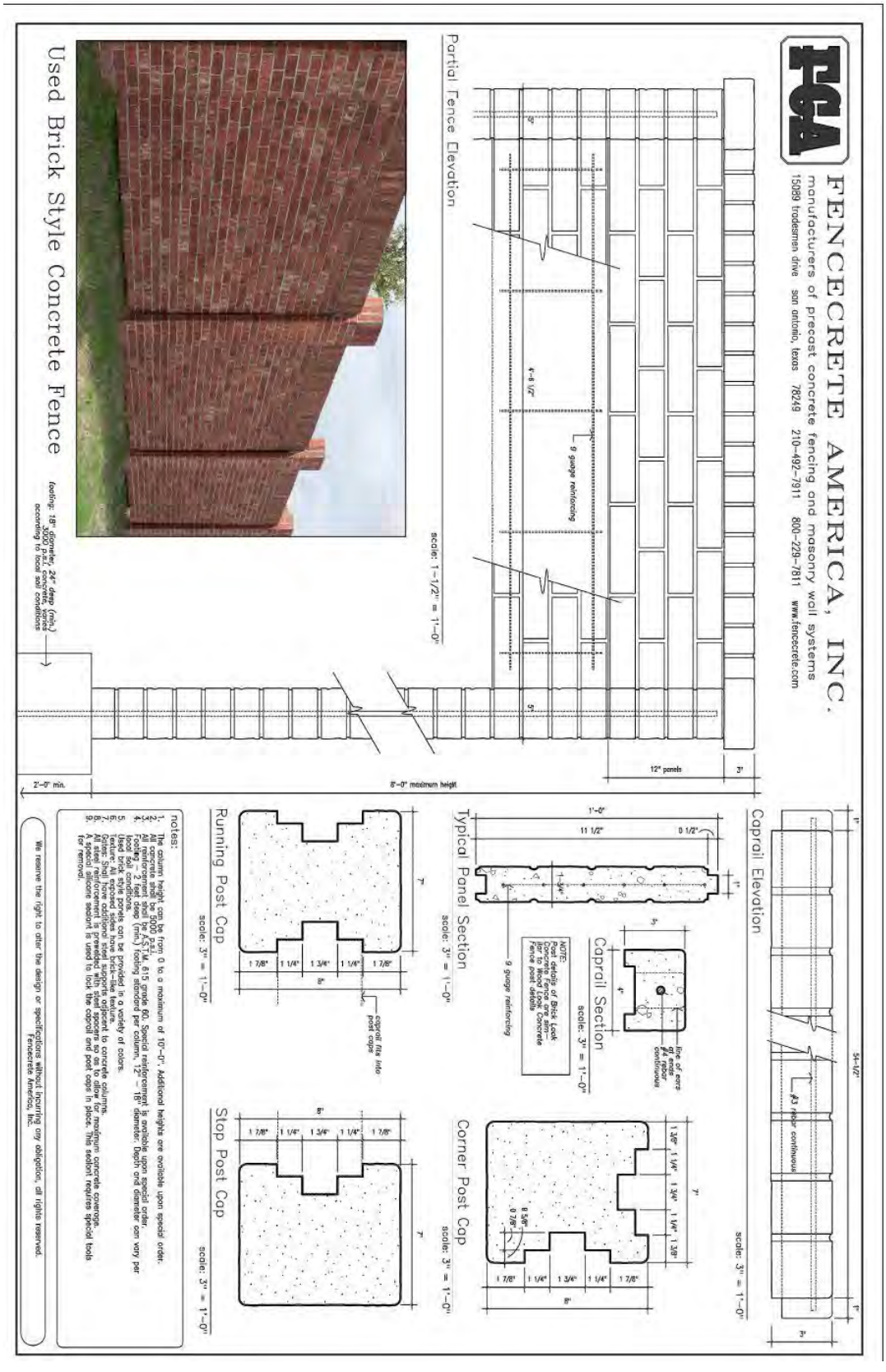
Concept Plan



Tower Elevation



7’ tall screening fence



Effective January 3, 2017

City of San Angelo, Texas – Planning Division
52 West College Avenue

Application for River Corridor Review

Section 1: Basic Information

Name of Applicant(s): Dane Wilkins

☐ Owner ☒ Representative (Notarized Affidavit Required)

Mailing Address	City	State	Zip Code
1715 S. Capital of Texas Hwy #207	Austin	TX	78746

Contact Phone Number	Contact E-mail Address
512-328-2693	DaneW@VincentGerard.com

Subject Property Address	City	State	Zip Code
24 E. College Avenue	San Angelo	TX	76903

Legal Description (*can be found on property tax statement or at www.tomgreencad.com*): Acres: 0.464, Lot 4 thru 6 & W25' of lots 1,2&3, *PARKI, Block 43 Subd: San Angelo Addition

Zoning: CBD

Section 2: Site Specific Details

Proposed Work:

- ☒ New construction in the Corridor over 1200 square feet.
- ☐ Remodeling the exterior of an existing building in the Corridor.
- ☐ Moving of an existing building to a lot within the Corridor.
- ☐ Signs over 50 square feet in the Corridor.
- ☐ Request for subdivision approval of any kind within the Corridor.
- ☐ Illuminated sign in the Corridor (any size)

Specific details of request: "use separate attachment if necessary" See attached plans

Hours of Operation: 8 AM -12 PM & 1PM – 5 PM 325-657-4210, #2 www.cosatx.us/planning

Effective January 3, 2017

Section 2 continued: Site Specific Details

Explain why and how you think the proposed work is necessary and/or consistent with the character of the River Corridor:

This is a critical wireless telecommunications facility that fills a gap in the under served region of downtown, please reference attached Radio Frequency maps provided, this indicates weak signal. In keeping with downtown aesthetics we have identified masonry that is in line with the color and texture of the current downtown and river corridor, please see our Fencecrete Diagram attached. We are would prefer to use this rather than the traditional chain link or cinder block fence's used else where in the state.

Section 3: Applicant(s) Acknowledgement
(By checking the boxes you indicate that you understand below regulations)

- ☑ On administrative applications, the Director makes the final decision, appeals may be directed to the Design and Historic Review Committee.
- ☑ On other applications the Design and Historic Review Committee makes the final decision, appeals may be directed to the City Council.
- ☑ Approval of this request does not constitute approval of permits, site plans, or other processes that require separate approval.
- ☑ Any changes to the design made after this approval may require a second approval by the Manager and/or the Commission.
- ☑ The decision of the Commission may be appealed to the City Council.
- ☑ Proposed construction into a public right-of-way may require additional approvals.
- ☑ Buildings on historical landmarks or district also require a Certificate of Appropriateness.

I/We the undersigned acknowledge that the information provided above is true and correct.

Dane Wilkins — Signature of licensee or authorized representative

4/7/2022 — Date

Dane Wilkins K Whitton for J. Whitten 4-5-2022 — Printed name of licensee or authorized representative

Verizon Wireless c/o Vincent Gerard & Assoc. — Name of business/Entity of representative

FOR OFFICE USE ONLY:

☐ Description/photograph of site ☐ Sketches, plans, sketches of work ☐ Sample(s) of materials to be used

☐ Verified Complete ☐ Verified Incomplete

Case No.: ~~RCE~~ DD 22 - 19 Related Case No.: _____ - _____ Date Related case will be heard: 5/19/22

Nonrefundable fee: $_____ Receipt #: _____ Date paid: ____/____/____

Reviewed/Accepted by: _____ Date: 4/20/22

Hours of Operation: 8 AM -12 PM & 1PM – 5 PM 325-657-4210, #2 www.cosatx.us/planning

STAFF REPORT

Design and Historic Review Commission: May 19, 2022

APPLICATION TYPE:	CASE:
Downtown Design Review	DD22-20: 59 N. Koenigheim

SUMMARY:

A request for Downtown District approval to allow repainting and signage onto an existing building, fencing, and walk-in cooler, located at 59 N. Koenigheim Street, being 0.458 acres.

LOCATION:	LEGAL DESCRIPTION:
59 N. Koenigheim St., San Angelo, TX, 76903, USA	Lot: Lot: 11 THRU 13 & PT LOTS 14 & 15 "QUIZNOS", Blk: A, Subd: MILES ADDITION

SM DISTRICT / NEIGHBORHOOD:	ZONE DISTRICT:	VISION PLAN:	SIZE:
Council District 3: Harry Thomas Downtown Neighborhood	CBD	Downtown	Acres: .458

NOTIFICATIONS:

N/A

THOROUGHFARE PLAN

W. First Street: Urban Street, 50’ ROW required (80’ Existing), 40’ pavement required (54’ Existing)

STAFF RECOMMENDATION:

Staff recommends **approval** of DD22-20: 59 N. Koenigheim to allow repainting and signage onto an existing building, fencing, and walk-in cooler, **subject to two conditions of approval.**

PROPERTY OWNER/PETITIONER:

Property Owner: *Erik Zobel*

STAFF CONTACT:

Kyle Warren
Planner
(325) 657-4210, Extension 1546
kyle.warren@cosatx.us

River Corridor Master Development Plan (RCMDP): Section 212 of the Zoning Ordinance requires the DHRC to review construction of any part of a structure visible from a public right-of-way. The proposed improvements shall be consistent with the respective design guidelines of the *River Corridor Master Development Plan (RCMDP)* for *Commercial Use outside the Historic City Center*.

a. **Site Design and Layout:** *The goal of site planning is to take into consideration the presentation of natural amenities, existing topography, and panoramic views within the scope of placing a building or project on a site* (RCMDP, 25).

   The proposed site improvements will be in character with the existing building and will be both tasteful in aesthetics and blend well with the overall downtown district.

b. **Architectural Detail:** *Details included in the building façade should assist in reducing the visual scale of a large building* (RCMDP, 26).

   The changes made to the building façade include an added sign to the front face for Zero One Ale House, which will be similar in design for the sign that was approved for their 20 W. Beauregard location (see rendering). The four window awnings will be a Sunbrella Silver color with the third to also have a 6 square foot 'Zero One Z' logo on it. The front stucco color for the building and walk in cooler will have Sherwin Williams 'Knitting Needles' (# 7672) as well as 'Peppercorn' #(7674) for the window trim. (See picture provided for color samples).

c. **Building Materials and Color:** *High-quality durable materials are* encouraged (RCDMP, 26).

   The proposed building materials are high quality durable building materials that will continue to add value to this section of downtown. The material list provided shows a wood picket fence (supported by metal posts), a wrought iron fence, and stucco.

d. **Roofs:** *Rooflines should be varied to add visual interest in large buildings* (RCMDP, 27).

   The roofline will not be altered in anyway outside of the addition to the walk in cooler addition. The addition will be 9' 6" in height and shorter than the existing roofline.

e. **Walls and Fences:** *Walls, fences, and retaining walls should be designed to blend with the* building (RCDMP, 28).

   The proposed fences will be both a tan colored wood picket fence and a black wrought iron fence with gate. The tan colored fence will also have the company's logo (a 50 and 1/3 square foot sign) facing W. First Street. The black wrought iron fence will cover the front of the existing porch cover that extends east from the building with a wrought iron gate to allow for entrance into the covered patio. (See renderings).

Recommendation: Staff's recommendation is for the **approval** of DD22-20: 59 N. Koenigheim to allow repainting and signage onto an existing building, fencing, and walk-in cooler **subject to two conditions of approval:**

1. The colors, dimensions, and materials of all improvements shall be consistent with the renderings approved by the Design and Historic Review Commission. Minor deviations may be approved by the Planning Director.

2. The applicant shall obtain all required permits from the Building Permits and Inspections Division.

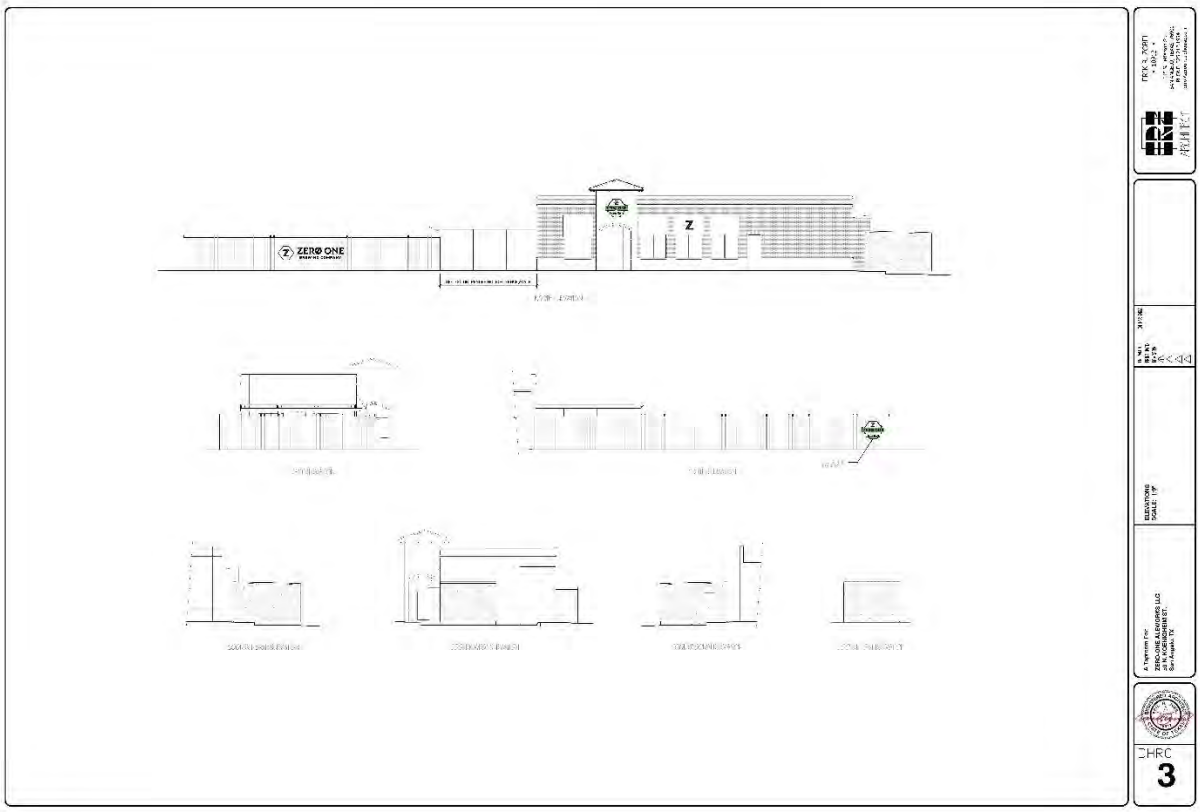
Attachments:
Location Map
Location Images
Site Elevations
Colors and Materials

Location Map

Location Images

Site Elevations


ZERO ONE
BREWING COMPANY
ZERO ONE
BREWING COMPANY


ZERO ONE
BREWING COMPANY

Colors and Materials


FENCE DETAIL SAME AS EXISTING,
RAILS TO FACE INWARD TOWARD BEER GARDEN


Stucco at cooler

DESIGN AND HISTORIC REVIEW COMMISSION – MAY 19, 2022
STAFF REPORT

APPLICATION TYPE:	CASE:
Downtown District Review	DD22-21: 5 W. Concho Avenue

SYNOPSIS:

On November 20, 2014, the owner of 1 W. Concho Avenue obtained approval from the Design and Historic Review Commission (DHRC) for exterior improvements for a new restaurant, The Angry Cactus (RCC14-13, as amended). On August 15, 2019, the applicant then obtained approval for exterior improvements for the subject building at 5 W. Concho Avenue, immediately west of the subject property (RCC19-13). These improvements included new windows and doors, wood paneling, one mounted lantern light, two projecting signs, and low-insulated glass windows. The applicant has now applied to revise RCC19-13 to expand the restaurant at 1 W. Concho Avenue into this building. The new improvements will 1) add new windows that include garage door windows that slide open, 2) a new door to the west instead of the middle, 3) two new downspout gutters, and 4) two wall sconce lights instead of a lantern light. The applicant plans to install new cedar kickplate panels under the windows as they did in the previous request.

LOCATION:	LEGAL DESCRIPTION:
5 W. Concho Avenue, generally located 85 feet southwest of the intersection of W. Concho Avenue and S. Chadbourne Street.	Being the east part of Lot 1 and the west 3 feet, 9 inches of Lot 2 in Block 1 of the San Angelo Addition

SM DISTRICT / NEIGHBORHOOD:	ZONING:	FUTURE LAND USE:	SIZE:
SMD District #3 – Harry Thomas Downtown Neighborhood	CBD	Downtown	0.828 ac.

THOROUGHFARE PLAN:

W. Concho Avenue – Urban Local Street, required: 50' ROW, 40 paved or 36' paved with a 4' sidewalk; provided: 100' ROW, 74 paved with 10' sidewalk.

STAFF RECOMMENDATION:

Staff recommends **APPROVAL** of DD22-21, **subject to two Conditions of Approval**.

PROPERTY OWNER/PETITIONER:

Owner: 1 W. Concho LLC (Lee Pfluger)
Petitioner: Ms. Jamie Massey, Franz Architects

STAFF CONTACT:

Jeff Fisher, AICP
Principal Planner
(325) 657-4210, Ext. 1550
jeff.fisher@cosatx.us

DD22-21 Analysis:

River Corridor Master Development Plan (RCDMP)
Section 212.D.1.a of the Zoning Ordinance requires that "construction of any part of a structure, canopy, or awning visible from a public right-of-way" requires approval from the Design and Historic Review Commission (DHRC). All improvements shall also be consistent with the respective design guidelines of the River Corridor Master Development Plan (River Corridor Plan) for Commercial and Mixed Use Outside in the Historic City Center.

Architectural Detail
The respective policies state that "patterns and rhythms in the façade of the building can be created with recessed windows, columns, ledges, changes of materials, and other architectural features" and that the basic scale and proportion of windows "should be similar to those seen historically in the area." The proposed building design is consistent with these policies. The applicant provides differentiation in materials and design, maintain the brick façade but adding cedar panels under the windows, metal downspouts, and new windows and doors. The windows will have a slight horizontal orientation consistent with the adjacent restaurant and other buildings in the surrounding area. They will match the same low insulated glass as the adjacent windows.

Colors and Materials
The policies state "materials and colors should relate to historic precedents apparent in the immediate environment". Applicants should use "subtle yet rich colors rather than intense, bright colors" which should be "harmonious with those colors found on adjacent buildings." Finally, "quality finished materials should be used." Staff is satisfied with the color and material choices proposed by the applicant which will be generally consistent with the existing Angry Cactus restaurant next door. The red brick façade will be cleaned to match the restaurant, and the wall sconces and downspouts (dark bronze), will be painted to match the adjacent restaurant colors. The classic black color for the paneling will provide an appealing contrast from the lighter colors above and match what was previously approved. Finally, the new doors will be painted to match the exiting dark bronze doors on the adjacent building.

Recommendation:
Staff's recommendation is for the Design and Historic Review Commission to **APPROVE** DD22-21, **subject to the following two Conditions of Approval**:

1. The colors, dimensions, and materials of all improvements shall be consistent with the renderings approved by the Design and Historic Review Commission. Minor deviations may be approved by the Planning and Development Services Director.

2. The applicant shall obtain all required permits from the Building Permits and Inspections Division.

Attachments:

Aerial Map
Photos
New Renderings with Proposed Materials and Colors
Previous approved renderings for 5 W. Concho Ave. (RCC19-13)
Previous approved renderings for 1 W. Concho Ave. (RCC14-13)
Application

Downtown District Overlay Zone

DD22-21: 5 W. Concho Ave.

Council District: Harry Thomas - District 3
Neighborhood: Downtown
Scale: 1 " approx. = 100 ft

5 W. Concho Avenue

Legend

Subject Properties:
Current Zoning: CBD
Requested Zoning Change: N/A
Vision: Downtown

N

Photos of Site and Surrounding Area

SUBJECT PROPERTY – 5 W. CONCHO AVENUE

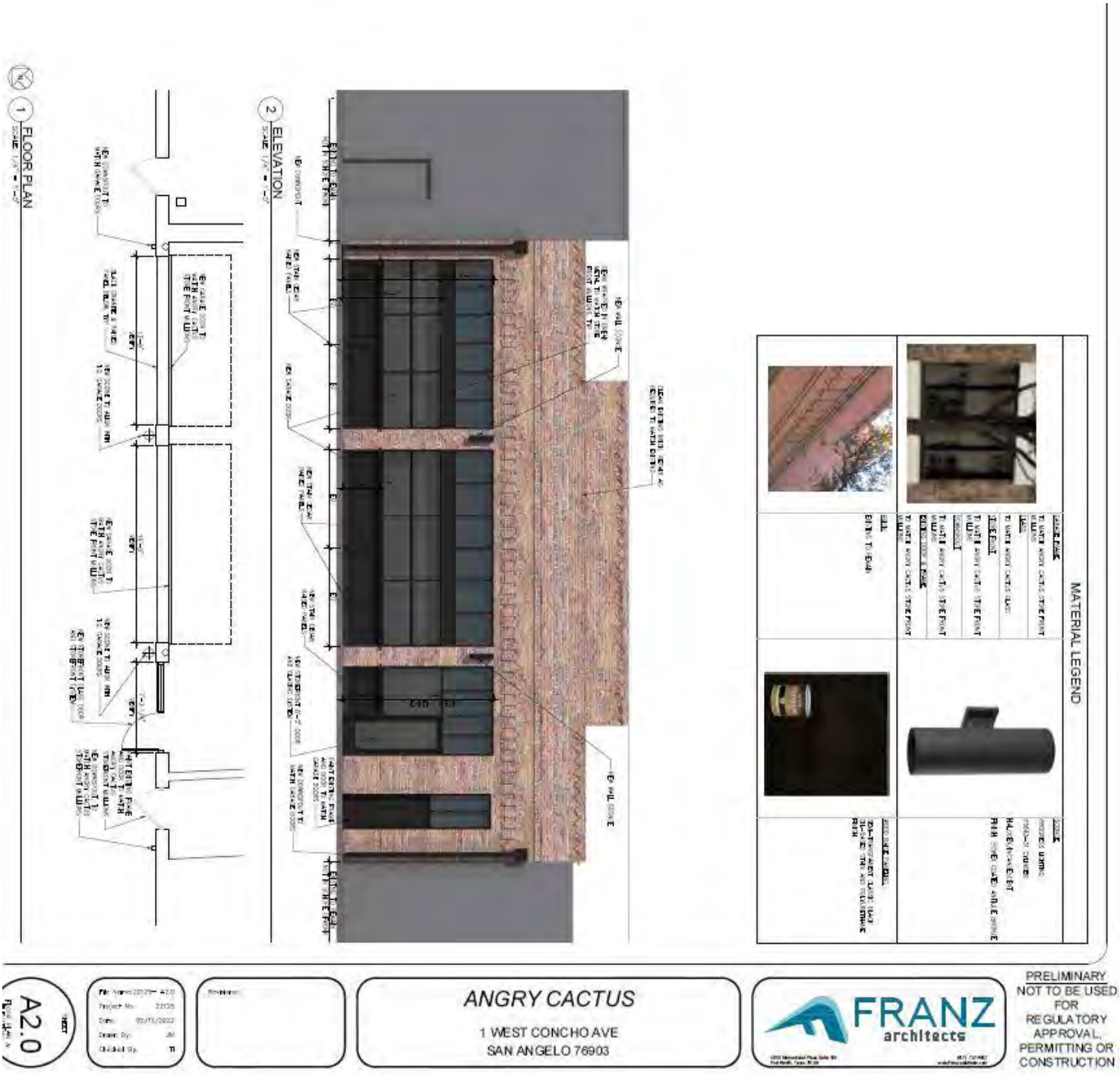
1 W. CONCHO AVENUE SOUTH ELEVATION

1 W. CONCHO AVENUE EAST ELEVATION

CORNER VIEW OF 1 W. CONCHO AVENUE

LOOKING SOUTH AT 1 AND 5 W. CONCHO AVENUE

New renderings with proposed materials and colors



New renderings with proposed materials and colors

MATERIAL LEGEND

GARAGE FRAME

TO MATCH ANGRY CACTUS STORE FRONT MULLIONS

GLASS

TO MATCH ANGRY CACTUS GLASS

STORE FRONT

TO MATCH ANGRY CACTUS STORE FRONT MULLIONS

DOWNSPOUT

TO MATCH ANGRY CACTUS STORE FRONT MULLIONS

EXISTING DOOR & FRAME

TO MATCH ANGRY CACTUS STORE FRONT MULLIONS

SCONCE

PROGRESS LIGHTING

P5642–31 CYLINDER

HALOGEN/INCANDESCENT

FINISH: POWER COATED ANTIQUE BRONZE

BRICK

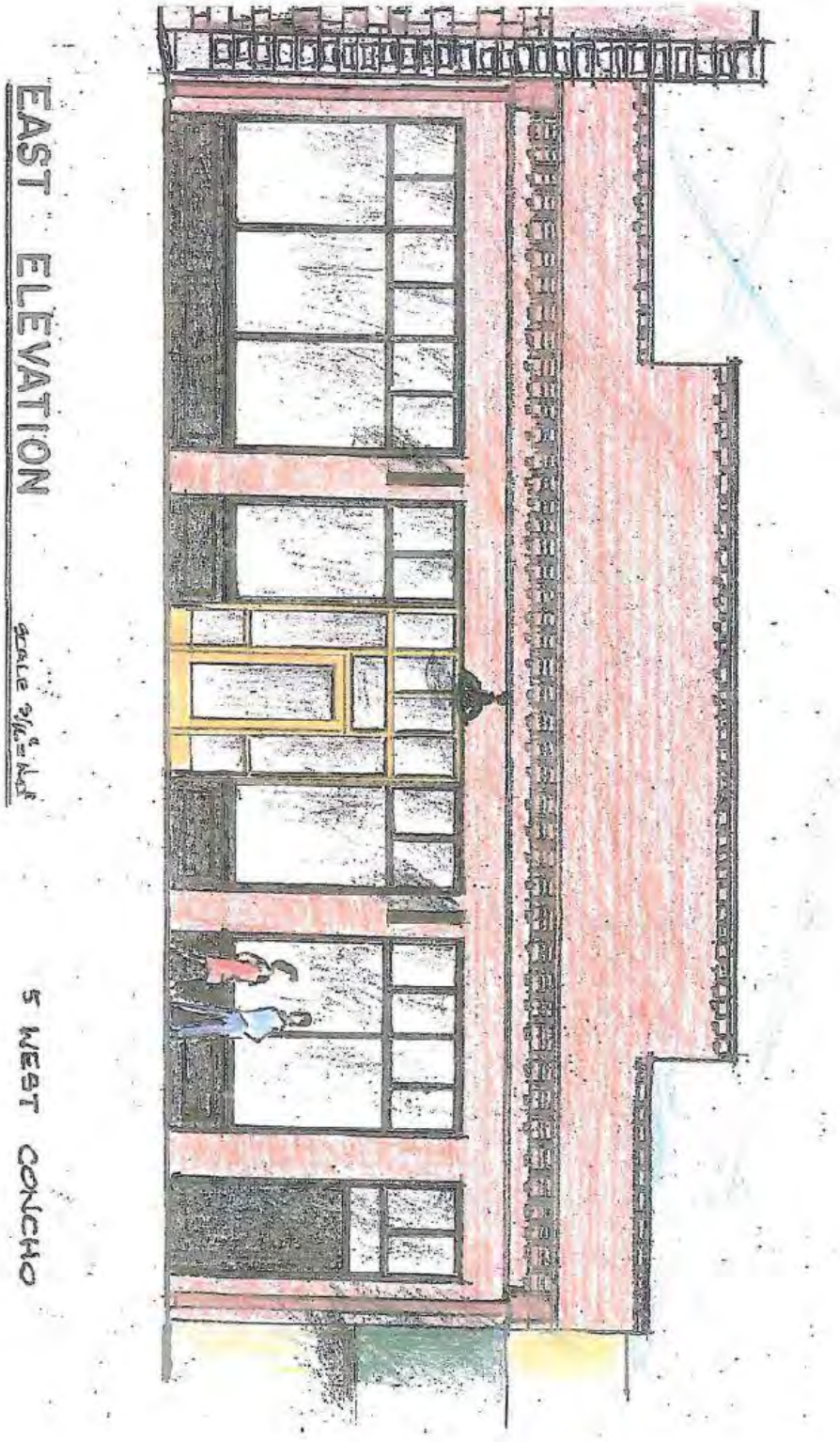
EXISTING TO REMAIN

WOOD RAISE PANELING

SEMI–TRANSPARENT CLASSIC BLACK OIL–BASED STAIN AND POLYURETHANE FINISH

2 ELEVATION
SCALE: 1/4" = 1'–0"

Previous approved renderings for 5 W. Concho Ave. (RCC19-13)



1 W. Concho Avenue (RCC14-13 approval)

Effective January 3, 2017

City of San Angelo, Texas – Planning Division
52 West College Avenue

Application for River Corridor Review

Section 1: Basic Information

Name of Applicant(s): Jamie Massey

☐ Owner ■ Representative (Notarized Affidavit Required)

4055 International Plaza, Suite 100	Fort Worth	TX	76109
Mailing Address	City	State	Zip Code

817-737-9922	jmassey@franzarchitects.com
Contact Phone Number	Contact E-mail Address

1 W Concho Ave	San Angelo	TX	76903
Subject Property Address	City	State	Zip Code

Acres: 0.343, Lot: 21 & N 49' 5 1/2" OF THE E 100' OF LOT, Blk: B, Subd: SAN ANGELO ADDITION

Legal Description (*can be found on property tax statement or at www.tomgreencad.com*)

Zoning: Central Business (CBD)/Downtown Overlay Zone

Section 2: Site Specific Details

Proposed Work:

☐ New construction in the Corridor over 1200 square feet.
■ Remodeling the exterior of an existing building in the Corridor.
☐ Moving of an existing building to a lot within the Corridor.
☐ Signs over 50 square feet in the Corridor.
☐ Request for subdivision approval of any kind within the Corridor.
☐ Illuminated sign in the Corridor (any size)

Specific details of request: *use separate attachment if necessary* Proposing revising (3) existing fenestrations: (2) of the (3) will be storefront glazing system at the top, glass garage door at eye level, and stained cedar raised panels at the bottom. The third fenestration is also a glazing system, a glass door and stain cedar raised panels at the bottom. We are proposing 2 wall light sconces between the garage doors. We are replacing the downspouts with new. The brick will be cleaned but is existing to remain. All new finishes will be to match Angry Cactus.

Section 2 continued: Site Specific Details

Explain why and how you think the proposed work is necessary and/or consistent with the character of the River Corridor:

The existing facade has no glass and boarded up with plywood. The single garage door is not in working conditions. Windows and a glass entry door is desired for a functional restaurant. The proposed work is consistent with the character of the River Corridor because we are matching an existing building and the brick on the facade will be existing to remain. The light fixture accents and glass windows will make the area more walkable.

Section 3: Applicant(s) Acknowledgement
(By checking the boxes you indicate that you understand below regulations)

- ☑ On administrative applications, the Director makes the final decision, appeals may be directed to the Design and Historic Review Committee.
- ☑ On other applications the Design and Historic Review Committee makes the final decision, appeals may be directed to the City Council.
- ☑ Approval of this request does not constitute approval of permits, site plans, or other processes that require separate approval.
- ☑ Any changes to the design made after this approval may require a second approval by the Manager and/or the Commission.
- ☑ The decision of the Commission may be appealed to the City Council.
- ☑ Proposed construction into a public right-of-way may require additional approvals.
- ☑ Buildings on historical landmarks or district also require a Certificate of Appropriateness.

I/We the undersigned acknowledge that the information provided above is true and correct.

Jamie Massey
Signature of licensee or authorized representative

4/27/22
Date

Jamie Massey
Printed name of licensee or authorized representative

Franz Architects
Name of business/Entity of representative

FOR OFFICE USE ONLY:

☐ **Description/photograph of site** ☐ **Sketches, plans, sketches of work** ☐ **Sample(s) of materials to be used**

☐ **Verified Complete** ☐ **Verified Incomplete**

Case No.: RCC_____--_____ Related Case No.: _____--_____ Date Related case will be heard: _____

Nonrefundable fee: $_____ Receipt #: _____ Date paid: _____/_____/_____

Reviewed/Accepted by: _____ Date: _____/_____/_____

Attachments:

Aerial photo, Future Land Use Plan Map, and Zoning Map
Applicant renderings and plans for solar array

STAFF REPORT

Design & Historic Review Commission: May 19, 2022

APPLICATION TYPE:	CASE:
Certificate of Appropriateness	CA22-03: 207 S. Park St.

SUMMARY:

A request for approval of a Certificate of Appropriateness for the installation of a 76-panel, roof-mounted, photovoltaic solar system, for the property located at 207 S. Park St., being 0.688 acres.

LOCATION:	LEGAL DESCRIPTION:
207 S Park St, San Angelo, TX, 76901, USA	Lot: 1 - 3 & E50'OF LTS 10 - 12, Blk: 50, Subd: ANGELO HEIGHTS ADDITION

SM DISTRICT / NEIGHBORHOOD:	ZONE DISTRICT:	VISION PLAN:	SIZE:
Council District 5 – *Karen Hesse Smith* Neighborhood: *Santa Rita*	RS-1	Neighborhood	0.688 acres

NOTIFICATIONS:

N/A

THOROUGHFARE PLAN

Abilene Street: Local Road 50’ ROW required (60’ Existing), 40’ pavement required (29’ Existing)

Alexander Street: Local Road, 50’ ROW required (60’ Existing), 40’ pavement required (28’ Existing)

STAFF RECOMMENDATION:

Staff recommends partial **approval** of CA22-03: 207 S. Park St. for a request to install roof-mounted solar panels to a historic structure.

PROPERTY OWNER/PETITIONER:

Property Owner: *David Harvey*
Petitioner: *Shelby Guenther* (*Fastrac Energy Services)*

STAFF CONTACT:

Kyle Warren
Planner
(325) 657-4210, Extension 1546
kyle.warren@cosatx.us

Certificate of Appropriateness: The subject property is part of the Fort Concho Historic Landmark approved by City Council on July 5, 1994 through a Historic Overlay Zone (Z94-07). All exterior new construction within a historic landmark or district shall require approval of a Certificate of Appropriateness. In considering this application, the Design and Historic Review Commission shall be guided by any specific design guidelines that may apply and, where applicable, the following from The Secretary of the Interior's Standards for the Rehabilitation of Historic Buildings.

1. ***Every reasonable effort shall be made to adapt the property in a manner which requires minimal alteration of the building, structure, object, or site and its environment.***

   The installation of a roof-mounted solar array that can be seen will drastically alter the historic structure on the property. This project cannot be done in any less intensive manner, other than opting away from a roof-mounted solar array for a ground solar array.

2. ***The distinguishing original qualities or character of a building, structure, object, or site and its environment shall not be destroyed. The removal or alteration of any historic material or distinctive architectural features should be avoided when possible***

   The solar array will drastically alter the historic character of the structure by introducing a non-period specific feature to the roof. There is no way the building can maintain its original quality by the introduction of this roof-mounted array as the roofline will be permanently altered in character and quality.

3. ***All buildings, structures, objects, and sites shall be recognized as products of their own time. Alterations that have no historical basis and which seek to create an earlier appearance shall be discouraged.***

   The solar panel is a contemporary addition to non-historic homes that can bring environmental financial benefits. This addition, however, is not period appropriate and would greatly diminish the historical significance.

4. ***Changes which may have taken place in the course of time are evidence of the history and development of a building, structure, object, or site and its environment. These changes may have acquired significance in their own right, and this significance shall be recognized and respected.***

   This home was deemed significant enough for the owner to seek for it to be designated historic by the Historical Commission. The desire to install roof-mounted solar panels in view goes directly against the intentions for the building that were solidified with the granting of a Historic Building designation.

5. ***Distinctive stylistic features or examples of skilled craftsmanship which characterize a building, structure, object, or site shall be kept where possible.***

   There are no historical stylistic applications of roof-mounted solar panels that would also happen to be period specific for the structure in question. Furthermore, the roofline to this building is a key feature to its historical significance.

6. ***Deteriorated architectural features shall be repaired rather than replaced, wherever possible. In the event replacement is necessary, the new material should reflect the material being replaced in composition, design, color, texture, and other visual qualities. Repair or replacement of missing architectural features should be based on accurate duplications of features, substantiated by historical, physical, or pictorial evidence rather than on conjectural designs or the availability of different architectural elements from other buildings or structures.***

The proposal is seeking to install a modern efficiency tool at the expense of the integrity of the roofline on this historically designated home. The installation of the roof-mounted solar array will permanently alter the sightline to the roof on the historic home for the panels that can be seen. Furthermore, there is no indication that the deterioration of the roof will be altered in any significant way by the installation of the solar array.

7. ***The surface cleaning of structures shall be undertaken with the gentlest means possible. Sandblasting and other cleaning methods that will damage the historic building materials should not be undertaken.***

   There are no indications to require surface cleaning of any surfaces in any way, shape, or form.

8. ***Every reasonable effort shall be made to protect and preserve archaeological resources affected by, or adjacent to, any project.***

   There are no indications to install that archaeological resources will be affected or involved in any way, shape, or form.

9. ***Contemporary design for alterations and additions to existing properties shall not be discouraged when such alterations and additions do not destroy significant historical, architectural, or cultural material, and such design is compatible with the size, scale, color, material, and character of the property, neighborhood, or environment.***

   The proposal to install modern roof-mounted solar panels to this historic home, that can be seen, does not satisfy the requirements found in this review for a Certificate of Appropriateness. There is no intention to modify the solar panels to be fit as period-specific or to deter from a contemporary form whatsoever.

10. ***Wherever possible, new additions or alterations to buildings, structures, objects, or sites shall be done in such a manner that if such additions or alterations were to be removed in the future, the essential form and integrity of the building, structure, object, or site would be unimpaired.***

    The installation of a roof-mounted solar panel structure will leave repairable damage to the roof of this historic home. The damages will be able to be repaired at the time of removal of the solar panels. The main concern is with the alteration the permanent obstruction to the sight line on the roofline of this historic home for the existing panels that can be seen.

Recommendation:

Staff's recommendation is for the Design and Historic Review Commission to partially **approve** the request for a Certificate of Appropriateness for the installation of a roof-mounted solar array at the subject property 207 S. Park St., being 0.688 acres. Following three (3) conditions:

1. That the approved solar panels be mostly if not completely out of sight at street level.

2. That the approved solar panels meet all obligations of the DHRC.

3. That the owner obtain all appropriate building permits for the solar panels.

Attachments:

Aerial photo, Future Land Use Plan Map, and Zoning Map
Applicant renderings and plans for solar array

CA22-03: Satellite Imagery

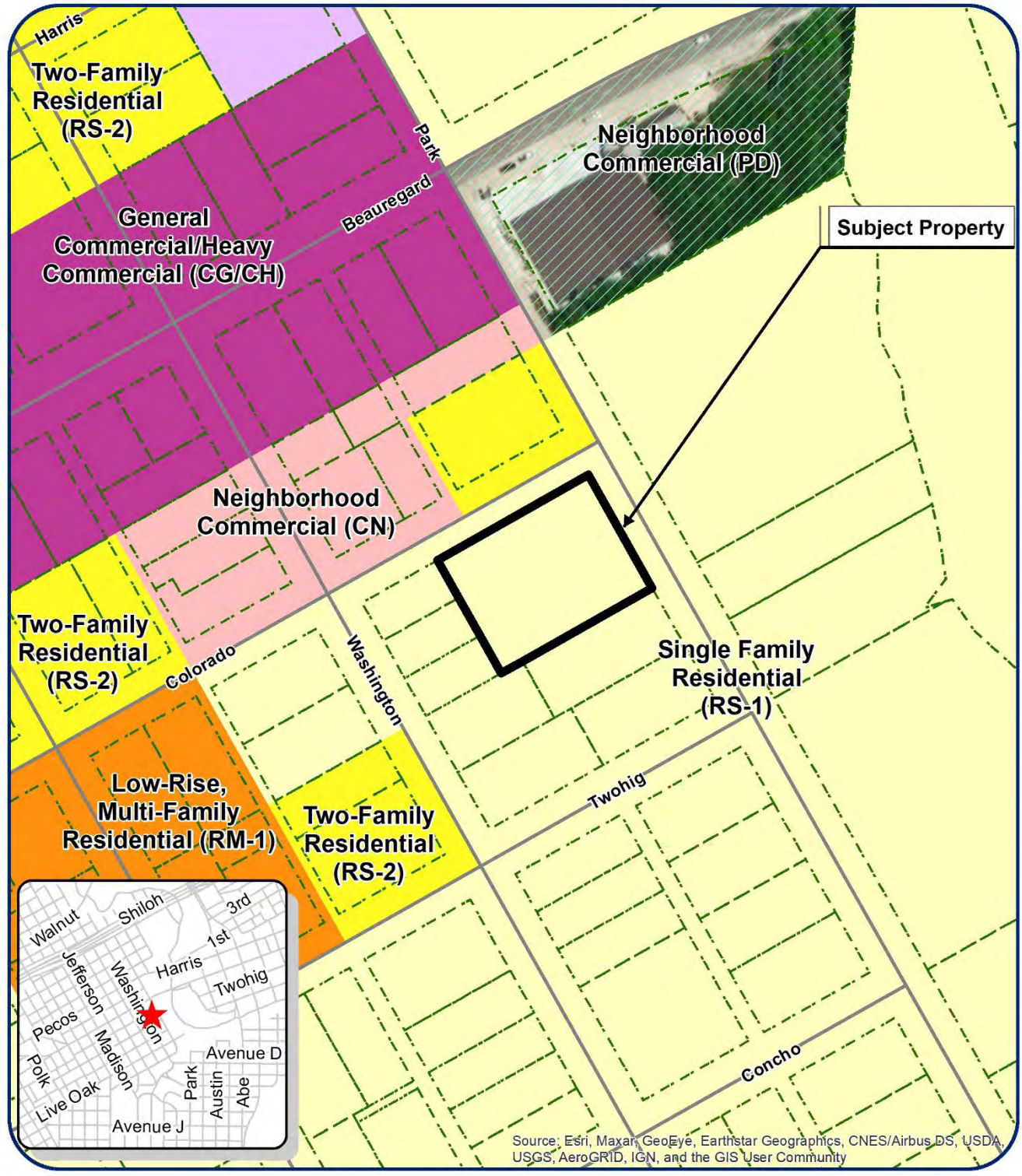
207 S. Park St.

Council District 5 - Karen Hesse Smith
Neighborhood: Santa Rita
Scale:1 " approx. = 125 ft

Legend

Subject Properties:
Current Zone District: **RS-1**
Requested Zone District: **N/A**
Vision Plan: **Neighborhood**

N



CA22-03:Zone Districts

207 S. Park St.

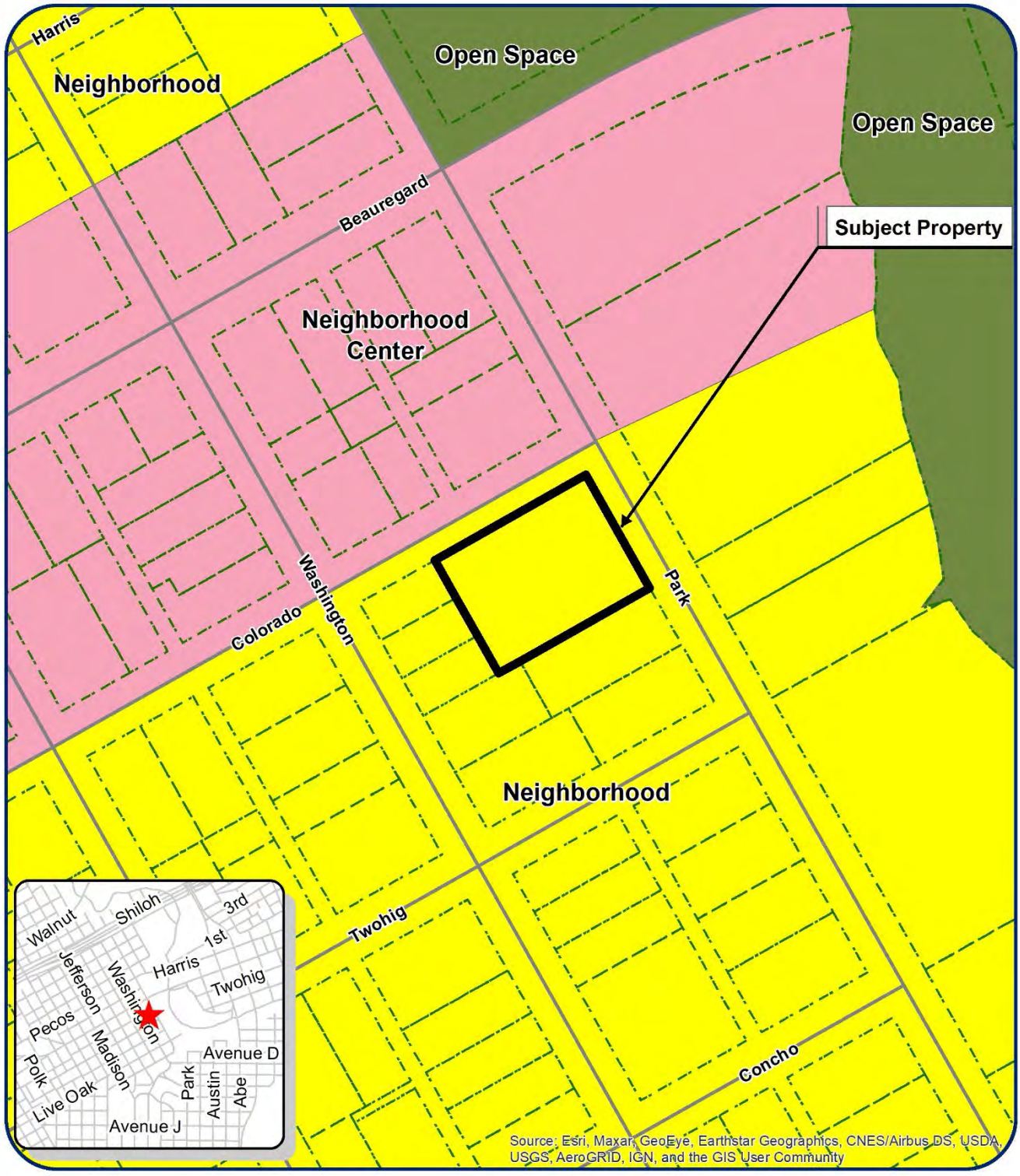
Council District 5 - Karen Hesse Smith
Neighborhood: Santa Rita
Scale:1 " approx. = 146 ft

Legend

Subject Properties:
Current Zone District: **RS-1**
Requested Zone District: **N/A**
Vision Plan: **Neighborhood**

N

THE CITY OF SAN ANGELO TEXAS



CA22-03:Zone Districts

207 S. Park St.

Council District 5 - Karen Hesse Smith
Neighborhood: Santa Rita
Scale:1 " approx. = 146 ft

Legend

Subject Properties:
Current Zone District: **RS-1**
Requested Zone District: **N/A**
Vision Plan: **Neighborhood**

N

THE CITY OF SAN ANGELO TEXAS

SPEC SHEET
DN4™ 120
Solar for Innovators
Residential | Commercial
Designed & Engineered in Silicon Valley
370W | 365W | 360W
30 Year Warranty
3X IEC Standards
RETC Top Performer
Linear Performance Warranty
Electrical Specifications
Mechanical Properties
Temperature Coefficients
Test Operating Conditions
Packaging Configuration
I-V Curve
Certifications
CUSTOMER INFORMATION
NAME:DAVID HARVEY
ESID:10204049744306110
ADDRESS:207 S PARK ST, SAN ANGELO, TX 76901
31 456593 -100 450870
APN: 011-100-0-005-000-100
AHJ:TX-CITY OF SAN ANGELO
UTILITY:AEP
PRN NUMBER:FES-44792
LICENSE NUMBER:TECL 340338
ILLUMINEi
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MODULE SPEC SHEET
DRAFTED BY: V. KRISH
QC'ED BY:R.REVANTH
PAPER SIZE:17"X11"
SCALE:AS NOTED
REV:A
DATE:2/15/2022
SS-01

SPEC SHEET

Single Phase Inverter with HD-Wave Technology

for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US /
SE7600H-US / SE10000H-US / SE11400H-US

INVERTERS

Optimized installation with HD-Wave technology

- Specifically designed to work with power optimizers
- Record-breaking 99% weighted efficiency
- Quick and easy inverter commissioning directly from a smartphone using the SolarEdge SetApp
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014 and 2017, per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Small, lightweight, and easy to install both outdoors or indoors
- Built-in module-level monitoring
- Optional: Faster installations with built-in consumption metering (1% accuracy) and production revenue grade metering (0.5% accuracy, ANSI C12.20)

solaredge.com

solaredge

Single Phase Inverter with HD-Wave Technology for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/
SE7600H-US / SE10000H-US / SE11400H-US

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US
APPLICABLE TO INVERTERS WITH PART NUMBER	SExxxxH-xxxxBxx4						
OUTPUT							
Rated AC Power Output	3000 @ 208V 3300 @ 208V 5000 @ 240V	3800 @ 208V 3800 @ 240V 5000 @ 240V	5000 @ 208V 5000 @ 240V 6000 @ 240V	6000 @ 208V 6000 @ 240V 7600 @ 240V	7600 @ 208V 7600 @ 240V	10000 @ 208V 10000 @ 240V	11400 @ 208V 11400 @ 240V 12000 @ 240V
Maximum AC Power Output	3300	3800	5000	6000	7600	10000	11400
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓
AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)				✓		✓	✓
AC Frequency (Nominal)	59.3 - 60 - 60.5 (with HI country setting 57 - 60 - 60.5)						
Maximum Continuous Output Current @208V	16	16	24	25	32	42	47.5
Maximum Continuous Output Current @240V	12.5	16	21	25	-	42	48
GFDI Threshold	1						
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes						
INPUT							
Maximum DC Power @240V	4650	5900	7750	9300	11800	15500	17650
Maximum DC Power @208V	4650	5900	7750	9300	11800	15500	17650
Transformer-less, Ungrounded	Yes						
Maximum Input Voltage	480						
Nominal DC Input Voltage	380						
Maximum Input Current @240V	9.5	10.5	13.5	16.5	20	27	30.5
Maximum Input Current @208V	-	9	13	15.5	-	27	30.5
Reverse Polarity Protection	Yes						
Ground-Fault Isolation Detection	600kΩ Sensitivity						
Maximum Inverter Efficiency	99				99.2		
CEC Weighted Efficiency	99				99		
Nighttime Power Consumption	< 2.5						

Rapid shutdown upon AC grid disconnect, complies with NEC 2014 and 2017 690.12, Automatic rapid shutdown upon detection of a ground fault, if system is equipped with a ground fault protection system.

FASTRAC ENERGY SERVICES

LICENSE NUMBER:TECL 349338

NABCEP CERTIFIED
PV Installation Professional
Timothy Coats
00351748

CUSTOMER INFORMATION

NAME:DAVID HARVEY

ESID:10204049744306110

ADDRESS:207 S PARK ST, SAN ANGELO, TX 76901

31.456593,-100.450870

APN: 011-100-0-005-000-100

AHJ:TX-CITY OF SAN ANGELO

UTILITY:AEP

PRN NUMBER:FES-44792

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INVERTER SPEC SHEET

DRAFTED BY: V. KRISH	PAPER SIZE:17"X11"
QC'ED BY:R.REVANTH	
SCALE:AS NOTED	REV:A
DATE:2/15/2022	SS-02

SPEC SHEET

Single Phase Inverter with HD-Wave Technology for North America

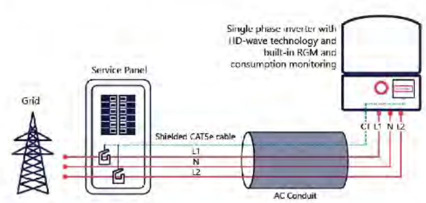
SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/
SE7600H-US / SE10000H-US / SE11400H-US

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
ADDITIONAL FEATURES								
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)							
Revenue Grade Metering, ANSI C12.20	Optional[1]							
Consumption Metering								
Inverter Commissioning	With the SetApp mobile application using Built-in Wi-Fi Access Point for Local Connection							
Rapid Shutdown - NEC 2014 and 2017 690.12	Automatic Rapid Shutdown upon AC Grid Disconnect							
STANDARD COMPLIANCE								
Safety	UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07							
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (HI)							
Emissions	FCC Part 15 Class B							
INSTALLATION SPECIFICATIONS								
AC Output Conduit Size / AWG Range	1" Maximum / 14-6 AWG					1" Maximum / 14-4 AWG		
DC Input Conduit Size / # of Strings / AWG Range	1" Maximum / 1-2 strings / 14-6 AWG					1" Maximum / 1-3 strings / 14-6 AWG		
Dimensions with Safety Switch (HxWxD)	17.7 x 14.6 x 6.8 / 450 x 370 x 174					21.3 x 14.6 x 7.3 / 540 x 370 x 185		in / mm
Weight with Safety Switch	22 / 10	25.1 / 11.4		26.2 / 11.9		38.8 / 17.6		lb / kg
Noise	< 25				<50			dBA
Cooling	Natural Convection							
Operating Temperature Range	-40 to +140 / -40 to +60[2]							°F / °C
Protection Rating	NEMA 4X (Inverter with Safety Switch)							

[1] Inverter with Revenue Grade Meter P/N: SExxxxH-US000BNC4; Inverter with Revenue Grade Production and Consumption Meter P/N: SExxxxH-US000BNI4. For consumption metering, current transformers should be ordered separately: SEACT0750-200NA-20 or SEACT0750-400NA-20. 20 units per box
[2] Full power up to at least 50°C / 122°F; for power de-rating information refer to: https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf

How to Enable Consumption Monitoring

By simply wiring current transformers through the inverter's existing AC conduits and connecting them to the service panel, homeowners will gain full insight into their household energy usage helping them to avoid high electricity bills



RoHS

FASTRAC ENERGY SERVICES
LICENSE NUMBER:TECL 349338

NABCEP CERTIFIED
PV Installation Professional
Timothy Coats

CUSTOMER INFORMATION

NAME:DAVID HARVEY
ESID:10204049744306110
ADDRESS:207 S PARK ST, SAN ANGELO, TX 76901
31.456593,-100.450870
APN: 011-100-0-005-000-100
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Because quality matters

INVERTER SPEC SHEET

DRAFTED BY: V.KRISH QC'ED BY:R.REVANTH	PAPER SIZE:17"X11"
SCALE:AS NOTED	REV:A
DATE:2/15/2022	SS-03

SPEC SHEET

Power Optimizer
For North America
P370 / P400 / P401 / P485 / P505

POWER OPTIMIZER

PV power optimization at the module-level

- Specifically designed to work with SolarEdge inverters
- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch losses, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Fast installation with a single bolt
- Next generation maintenance with module-level monitoring
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- Module-level voltage shutdown for installer and firefighter safety

solaredge.com

solaredge

/ Power Optimizer
For North America
P370 / P400 / P401 / P485 / P505

Optimizer model (typical module compatibility)	P370 (for higher-power 60 and 72-cell modules)	P400 (for 72 & 96-cell modules)	P401 (for high power 60 and 72 cell modules)	P485 (for high-voltage modules)	P505 (for higher current modules)	
INPUT						
Rated Input DC Power[1]	370	400		485	505	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	60	80	60	125	83	Vdc
MPPT Operating Range	8 - 60	8 - 80	8-60	12.5 - 105	12.5 - 83	Vdc
Maximum Short Circuit Current (Isc)	11	10.1	11.75	11	14	Adc
Maximum Efficiency	99.5					%
Weighted Efficiency	98.8					%
Overvoltage Category	II					
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREDGE INVERTER)						
Maximum Output Current	15					Adc
Maximum Output Voltage	60			85		Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREDGE INVERTER OR SOLAREDGE INVERTER OFF)						
Safety Output Voltage per Power Optimizer	1 ± 0.1					Vdc
STANDARD COMPLIANCE						
Photovoltaic Rapid Shutdown System	NEC 2014, 2017[2] & 2020			NEC 2014 & 2020	NEC 2014, 2017[2] & 2020	
EMC	FCC Part 15 Class B, IEC61000-6-2, IEC61000-6-3					
Safety	IEC62109-1 (class II safety), UL1741					
Material	UL94 V-0, UV Resistant					
RoHS	Yes					
INSTALLATION SPECIFICATIONS						
Maximum Allowed System Voltage	1000					Vdc
Compatible inverters	All SolarEdge Single Phase and Three Phase inverters					
Dimensions (W x L x H)	129 x 153 x 27.5 / 5.1 x 6 x 1.1	129 x 153 x 33.5 / 5.1 x 6 x 1.3	129 x 153 x 29.5 / 5.1 x 6 x 1.16	129 x 159 x 33.5 / 5.1 x 6.3 x 1.3	129 x 162 x 59 / 5.1 x 6.4 x 2.3	mm / in
Weight (including cables)	655 / 1.4	750 / 1.7	655 / 1.4	845 / 1.9	1064 / 2.3	gr / lb
Input Connector	MC4[3]			Single or dual MC4[3][4]	MC4[3]	
Input Wire Length	0.16 / 0.52, 0.9 / 2.95[4]	0.16 / 0.52	0.16 / 0.52, 0.9 / 2.95[4]	0.16 / 0.52	0.16 / 0.52	m / ft
Output Wire Type / Connector	Double Insulated / MC4					
Output Wire Length	1.2 / 3.9					m / ft
Operating Temperature Range[5]	-40 to +85 / -40 to +185					°C / °F
Protection Rating	IP68 / NEMA6P					
Relative Humidity	0 - 100					%

(1) Rated power of the module at STC will not exceed the optimizer Rated Input DC Power. Modules with up to +5% power tolerance are allowed
(2) NEC 2017 requires max input voltage be not more than 80V
(3) For other connector types please contact SolarEdge
(4) For dual version for parallel connection of two modules use P485-4NMDMRM. In the case of an odd number of PV modules in one string, installing one P485 dual version power optimizer connected to one PV module. When connecting a single module seal the unused input connectors with the supplied pair of seals
(5) For ambient temperature above +85°C / +185°F power de-rating is applied. Refer to Power Optimizers Temperature De-Rating Technical Note for more details

PV System Design Using a SolarEdge Inverter[6][7]		Single Phase HD-Wave	Single phase	Three Phase for 208V grid	Three Phase for 277/480V grid	
Minimum String Length (Power Optimizers)	P370, P400, P401	8		10	18	
	P485, P505	6		8	14	
Maximum String Length (Power Optimizers)		25		25	50	
Maximum Nominal Power per String		5700[8] (6000 with SE7600-US - SE11400-US)	5250[8]	6000[9]	12750[10]	W
Parallel Strings of Different Lengths or Orientations		Yes				

(6) For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf
(7) It is not allowed to mix P485/P505 with P370/P400/P401 in one string
(8) If the inverter's rated AC power ≤ maximum nominal power per string, then the maximum power per string will be able to reach up to the inverter's maximum input DC power. Refer to: https://www.solaredge.com/sites/default/files/se-power-optimizer-single-string-design-application-note.pdf
(9) For 208V grid: it is allowed to install up to 7,200W per string when the maximum power difference between each string is 1,000W
(10) For 277/480V grid: it is allowed to install up to 15,000W per string when the maximum power difference between each string is 2,000W

Intertek RoHS

FASTRAC ENERGY SERVICES
LICENSE NUMBER:TECL 349338

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Timothy Coats
082611-60

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UTILITY:AEP
PRN NUMBER:FES-44792

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OPTIMIZER SPEC SHEET

DRAFTED BY: V.KRISH QC'ED BY:R.REVANTH	PAPER SIZE:17"X11"
SCALE:AS NOTED	REV:A
DATE:2/15/2022	SS-04

SPEC SHEET

We support PV systems
Formerly Everest Solar Systems

Splice Foot XL

Patent Pending

TECHNICAL SHEET

Item Number	Description	Part Number
1	Splice Foot XL	4000162 | Splice Foot XL Kit, Mill
2	K2 FlexFlash Butyl	
3	M5 x 60 lag screws	
4	T-Bolt & Hex Nut Set	

Technical Data

	Splice Foot XL
Roof Type	Composition shingle
Material	Aluminum with stainless steel hardware
Finish	Mill
Roof Connection	M5 x 60 lag screws
Code Compliance	UL 2703
Compatibility	CrossRail 44-X, 48-X, 48-XL, 80

k2-systems.com

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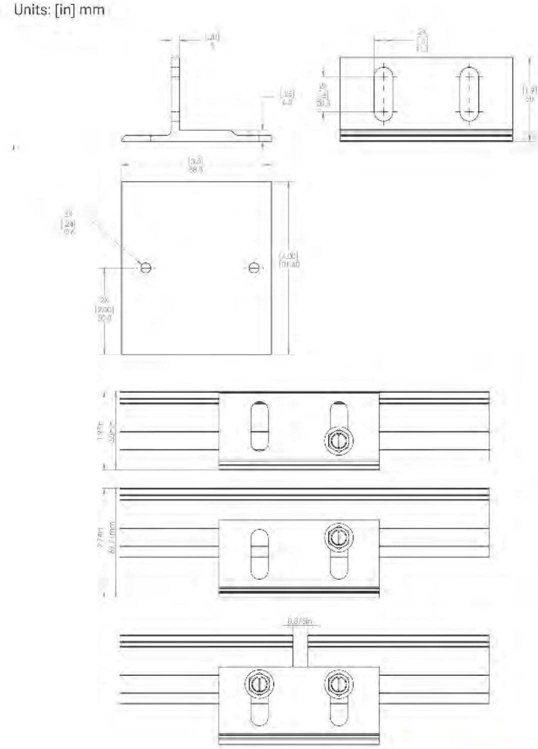
Units: [in] mm



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MOUNT SPEC SHEET

DRAFTED BY: V.KRISH QC'ED BY:R.REVANTH	PAPER SIZE:17"X11"
SCALE:AS NOTED	REV:A
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SPEC SHEET
SOLARMOUNT
UNIRAC
SOLARMOUNT defined the standard in solar racking. Features are designed to get installers off the roof faster. Our grounding & bonding process eliminates copper wire and grounding straps to reduce costs. Systems can be configured with standard or light rail to meet your design requirements at the lowest cost possible. The superior aesthetics package provides a streamlined clean edge for enhanced curb appeal, with no special brackets required for installation.
END CAPS
FRONT TRIM
Now Featuring:
THE NEW FACE OF SOLAR RACKING
Superior Aesthetics Package
LOSE ALL OF THE COPPER & LUGS
SMALL IS THE NEW BIG THING
ENHANCED DESIGN & LAYOUT TOOLS
FAST INSTALLATION. SUPERIOR AESTHETICS
OPTIMIZED COMPONENTS • VERSATILITY • DESIGN TOOLS • QUALITY PROVIDER
SOLARMOUNT
UNIRAC
OPTIMIZED COMPONENTS
INTEGRATED BONDING & PRE-ASSEMBLED PARTS
INTEGRATED BONDING MIDCLAMP
INTEGRATED BONDING SPLICE BAR
INTEGRATED BONDING L-FOOT w/ T-BOLT
INTEGRATED BONDING MICROINVERTER MOUNT w/ WIRE MANAGEMENT
VERSATILITY
ONE PRODUCT - MANY APPLICATIONS
AUTOMATED DESIGN TOOL
DESIGN PLATFORM AT YOUR SERVICE
LISTED
UL2703
MECHANICAL LOADING
SYSTEM/FIRE CLASSIFICATION
UNIRAC CUSTOMER SERVICE MEANS THE HIGHEST LEVEL OF PRODUCT SUPPORT
UNMATCHED EXPERIENCE
CERTIFIED QUALITY
ENGINEERING EXCELLENCE
BANKABLE WARRANTY
DESIGN TOOLS
PERMIT INFORMATION
TECHNICAL SUPPORT
CERTIFIED QUALITY PROVIDER
BANKABLE WARRANTY
PROTECT YOUR REPUTATION WITH QUALITY RACKING SOLUTIONS BACKED BY ENGINEERING EXCELLENCE AND A SUPERIOR SUPPLY CHAIN
FASTRAC
ENERGY SERVICES
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RAIL SPEC SHEET
DRAFTED BY: V.KRISH
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PAPER SIZE:17"X11"
SCALE:AS NOTED
REV:A
DATE:2/15/2022
SS-08

BOM

DAVID HARVEY- FASTRAC ATX

27.360KW		OUT	IN
MODULES	APTOS SOLAR DNA-120-MF26-360W	76	
INVERTER	SOLAREDGE	(2)SE-10000H-US	
	GSM	1/INVERTER	
OPTIMIZERS	SOLAREDGE	SOLAREDGE P401 POWER OPTIMIZER	76	
		MICRO T-BOLTS		
RAIL	UNIRAC LIGHT/IRXR10	168" UNIRAC LIGHT/IRONRIDGE 168" XR10	54.6	
	UNIRAC LIGHT/IRXR10	240/246" UNIRAC LIGHT /204" IRONRIDGE XR10		
		SPLICES	20	
ROOF SELANT	GEOCEL			
LAG BOLTS				
FLASHINGS	FLASH/BLOCK/FLANGE			
L-FEET		W/RAIL BOLTS		
K2 SPLICE FOOT XL			199	
UNIRAC TILT KIT			0	
RT-E		WITH (5)DECK SCREWS,HEX BOLT,FLANGE NUTS		
PROTEA BRACKETS	RAIL BOLTS,SCREWS	ONE RAIL BOLT PER BRACKET, 4 SELF TAPPING SCREWS EACH		
S5!				
GROUNG LUGS				
END CLAMPS				138
MID CLAMP				86
SOLAR DECK				
ATTIC FAN				
SENSE KIT				
STANDOFF				

FASTRAC ENERGY SERVICES

LICENSE NUMBER:TECL 349338

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BOM

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DAVID HARVEY - 27.360kW DC, 20.000kW AC

SHEET CATALOG

INDEX NO.	DESCRIPTION
T-01	COVER PAGE
S-01	MOUNTING DETAIL
S-02	MOUNTING DETAIL
E-01	SINGLE LINE DIAGRAM
PL-01	WARNING PLACARDS
SS	SPEC SHEET(S)
BOM	BILL OF MATERIAL

SCOPE OF WORK

GENERAL SYSTEM INFORMATION:
SYSTEM SIZE:
27360W DC, 20000W AC
MODULES:
(76)APTOS SOLAR DNA-120-MF26-360W
INVERTER:
(2)SOLAREDGE TECHNOLOGIES
SE10000H-US(240V)
OPTIMIZER:
(76)SOLAREDGE P401 POWER OPTIMIZER

APPLICABLE CODES

- ELECTRIC CODE:NEC 2020
- FIRE CODE:IFC 2015
- RESIDENTIAL CODE: IRC 2015

GENERAL NOTES

1.MODULES ARE LISTED UNDER UL 1703 AND CONFORM TO THE STANDARDS.
2.INVERTERS ARE LISTED UNDER UL 1741 AND CONFORM TO THE STANDARDS.
3.DRAWINGS ARE DIAGRAMMATIC, INDICATING GENERAL ARRANGEMENT OF THE PV SYSTEM AND THE ACTUAL SITE CONDITION MIGHT VARY.
4.WORKING CLEARANCES AROUND THE NEW PV ELECTRICAL EQUIPMENT WILL BE MAINTAINED IN ACCORDANCE WITH NEC 110.26.
5.ALL GROUND WIRING CONNECTED TO THE MAIN SERVICE GROUNDING IN MAIN SERVICE PANEL/ SERVICE EQUIPMENT.
6.ALL CONDUCTORS SHALL BE 600V, 75°C STANDARD COPPER UNLESS OTHERWISE NOTED.
7.WHEN REQUIRED, A LADDER SHALL BE IN PLACE FOR INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS.
8.THE SYSTEM WILL NOT BE INTERCONNECTED BY THE CONTRACTOR UNTIL APPROVAL FROM THE LOCAL JURISDICTION AND/OR THE UTILITY.
9.ROOF ACCESS POINT SHALL BE LOCATED IN AREAS THAT DO NOT REQUIRE THE PLACEMENT OF GROUND LADDERS OVER OPENINGS SUCH AS WINDOWS OR DOORS, AND LOCATED AT STRONG POINTS OF BUILDING CONSTRUCTION WHERE THE ACCESS POINT DOES NOT CONFLICT WITH OVERHEAD OBSTRUCTIONS SUCH AS TREES, WIRES OR SIGNS.
10.PV ARRAY COMBINER/JUNCTION BOX PROVIDES TRANSITION FROM ARRAY WIRING TO CONDUIT WIRING

SITE PLAN LAYOUT

ENGINEERING SCOPE OF WORK

1. ILLUMINE INDUSTRIES INC. HAS ONLY PROVIDED DRAFTING SERVICES FOR THE PERMIT DRAWINGS. NO ACTUAL ENGINEERING WORK, ENGINEERING REVIEW OR ENGINEERING APPROVAL HAS BEEN CONDUCTED BY ILLUMINE INDUSTRIES INC UNLESS NOTED OTHERWISE.
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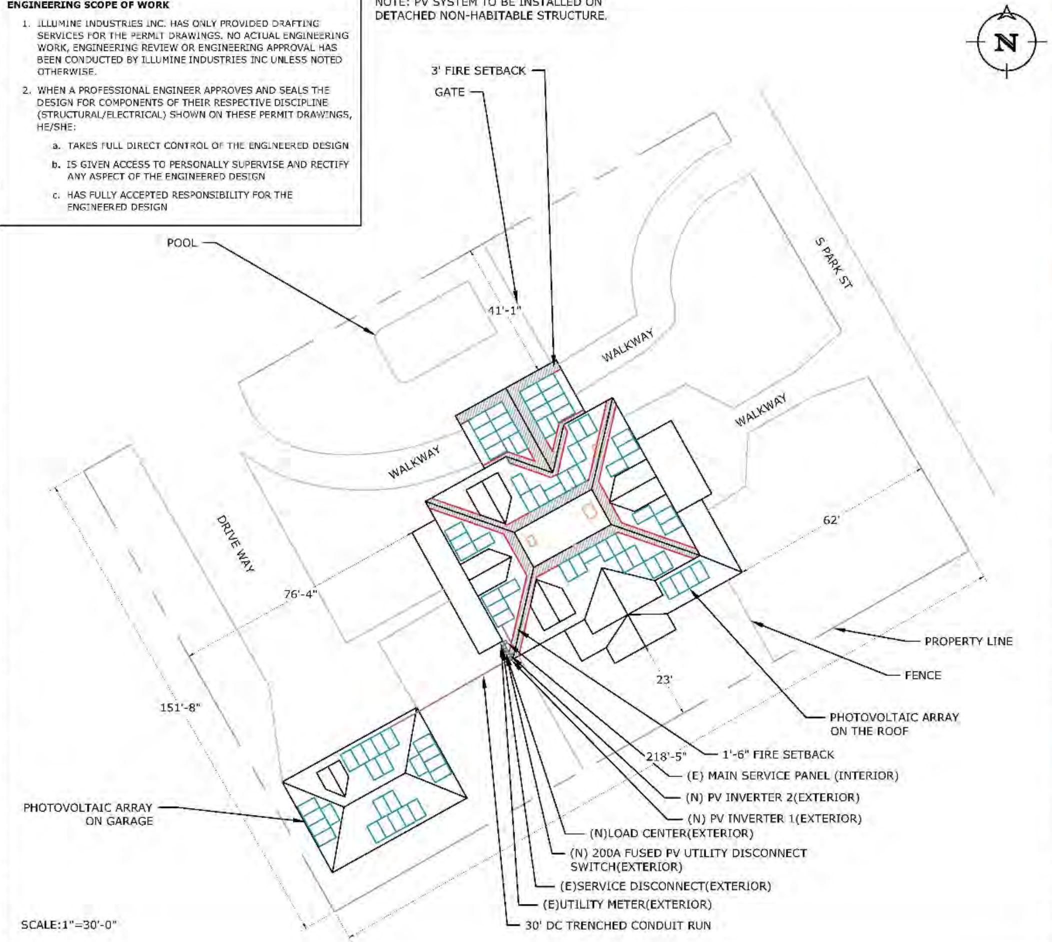
   a. TAKES FULL DIRECT CONTROL OF THE ENGINEERED DESIGN
   b. IS GIVEN ACCESS TO PERSONALLY SUPERVISE AND RECTIFY ANY ASPECT OF THE ENGINEERED DESIGN
   c. HAS FULLY ACCEPTED RESPONSIBILITY FOR THE ENGINEERED DESIGN

NOTE: PV SYSTEM TO BE INSTALLED ON DETACHED NON-HABITABLE STRUCTURE.



SCALE:1"=30'-0"

VICINITY MAP

FASTRAC ENERGY SERVICES
LICENSE NUMBER:TECL 349338

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COVER PAGE

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DATE:2/15/2022	T-01

INSTALLATION NOTES

1. STRUCTURAL ROOF MEMBER LOCATIONS ARE ESTIMATED AND SHOULD BE LOCATED AND VERIFIED BY THE CONTRACTOR WHEN LAG BOLT PENETRATION OR MECHANICAL ATTACHMENT TO THE STRUCTURE IS REQUIRED.
2. ROOFTOP PENETRATIONS FOR SOLAR RACKING WILL BE COMPLETED AND SEALED WITH APPROVED SEALANT PER CODE BY A LICENSED CONTRACTOR.
3. LAGS MUST HAVE A MINIMUM 2.5" THREAD EMBEDMENT INTO THE STRUCTURAL MEMBER.
4. ALL PV RACKING ATTACHMENTS SHALL BE STAGGERED BY ROW BETWEEN THE ROOF FRAMING MEMBERS AS NECESSARY.
5. ROOF MOUNTED STANDARD RAIL REQUIRES ONE THERMAL EXPANSION GAP FOR EVERY RUN OF RAIL GREATER THAN 40'.
6. ALL CONDUITS ON THE ROOF SHALL BE MINIMUM 1-1/2" ABOVE THE ROOF SURFACE (INCLUDING CABLES UNDERNEATH MODULES AND RACKING) SHALL NOT OBSTRUCT ANY PLUMBING, MECHANICAL OR BUILDING ROOF VENTS.

ROOF ACCESS PATHWAYS AND SETBACKS: IFC 605.11.1.2.1 SIZE OF SOLAR PHOTOVOLTAIC ARRAY.

EACH PHOTOVOLTAIC ARRAY SHALL BE LIMITED TO 150 FEET (45 720 MM) BY 150 FEET (45 720 MM), MULTIPLE ARRAYS SHALL BE SEPARATED BY A 3-FOOT-WIDE (914 MM) CLEAR ACCESS PATHWAY.

IFC 605.11.1.2.2 HIP ROOF LAYOUTS.

PANELS AND MODULES INSTALLED ON GROUP R-3 BUILDINGS WITH HIP ROOF LAYOUTS SHALL BE LOCATED IN A MANNER THAT PROVIDES A 3-FOOT-WIDE (914 MM) CLEAR ACCESS PATHWAY FROM THE EAVE TO THE RIDGE ON EACH ROOF SLOPE WHERE PANELS AND MODULES ARE LOCATED. THE ACCESS PATHWAY SHALL BE AT A LOCATION ON THE BUILDING CAPABLE OF SUPPORTING THE FIRE FIGHTERS ACCESSING THE ROOF.

IFC 605.11.1.2.3 SINGLE RIDGE ROOFS.

PANELS AND MODULES INSTALLED ON GROUP R-3 BUILDINGS WITH A SINGLE RIDGE SHALL BE LOCATED IN A MANNER THAT PROVIDES TWO, 3-FOOT-WIDE (914 MM) ACCESS PATHWAYS FROM THE EAVE TO THE RIDGE ON EACH ROOF SLOPE WHERE PANELS AND MODULES ARE LOCATED.

IFC 605.11.1.2.4 ROOFS WITH HIPS AND VALLEYS. PANELS AND MODULES INSTALLED ON GROUP R-3 BUILDINGS WITH ROOF HIPS AND VALLEYS SHALL NOT BE LOCATED CLOSER THAN 18 INCHES (457 MM) TO A HIP OR A VALLEY WHERE PANELS/MODULES ARE TO BE PLACED ON BOTH SIDES OF A HIP OR VALLEY. WHERE PANELS ARE TO BE LOCATED ON ONLY ONE SIDE OF A HIP OR VALLEY THAT IS OF EQUAL LENGTH, THE PANELS SHALL BE PERMITTED TO BE PLACED DIRECTLY ADJACENT TO THE HIP OR VALLEY.

IFC 605.11.1.2.5 ALLOWANCE FOR SMOKE VENTILATION OPERATIONS. PANELS OR MODULES INSTALLED ON GROUP R-3 BUILDINGS SHALL BE LOCATED NOT LESS THAN 3 FEET (914 MM) FROM THE RIDGE IN ORDER TO ALLOW FOR FIRE DEPARTMENT SMOKE VENTILATION OPERATIONS.

SITE INFORMATION - WIND SPEED: 115 MPH AND SNOW LOAD: 5 PSF

SR. NO	AZIMUTH	PITCH	NO. OF MODULES	ARRAY AREA (SQ. FT.)	ROOF TYPE	ATTACHMENT	ROOF EXPOSURE	FRAME TYPE	FRAME SIZE	FRAME SPACING	MAX RAIL SPAN	OVER HANG
MP-01	60°	36°	8	157.0	COMPOSITION SHINGLE	K2 SPLICE FOOT XL	ATTIC	RAFTERS	2 X 6	2'-0"	4'-0"	1'-6"
MP-02	330°	36°	9	176.6	COMPOSITION SHINGLE	K2 SPLICE FOOT XL	ATTIC	RAFTERS	2 X 6	2'-0"	4'-0"	1'-6"
MP-03	60°	36°	6	117.8	COMPOSITION SHINGLE	K2 SPLICE FOOT XL	ATTIC	RAFTERS	2 X 6	2'-0"	4'-0"	1'-6"
MP-04	150°	36°	9	176.6	COMPOSITION SHINGLE	K2 SPLICE FOOT XL	ATTIC	RAFTERS	2 X 6	2'-0"	4'-0"	1'-6"
MP-05	150°	36°	4	78.5	COMPOSITION SHINGLE	K2 SPLICE FOOT XL	ATTIC	RAFTERS	2 X 6	2'-0"	4'-0"	1'-6"
MP-06	60°	36°	5	98.1	COMPOSITION SHINGLE	K2 SPLICE FOOT XL	ATTIC	RAFTERS	2 X 6	2'-0"	4'-0"	1'-6"
MP-07	150°	36°	7	137.4	COMPOSITION SHINGLE	K2 SPLICE FOOT XL	ATTIC	RAFTERS	2 X 6	2'-0"	4'-0"	1'-6"
MP-08	240°	36°	5	98.1	COMPOSITION SHINGLE	K2 SPLICE FOOT XL	ATTIC	RAFTERS	2 X 6	2'-0"	4'-0"	1'-6"
MP-09	330°	36°	7	137.4	COMPOSITION SHINGLE	K2 SPLICE FOOT XL	ATTIC	RAFTERS	2 X 6	2'-0"	4'-0"	1'-6"
MP-10	240°	36°	8	157.0	COMPOSITION SHINGLE	K2 SPLICE FOOT XL	ATTIC	RAFTERS	2 X 6	2'-0"	4'-0"	1'-6"
MP-11	240°	36°	8	157.0	COMPOSITION SHINGLE	K2 SPLICE FOOT XL	ATTIC	RAFTERS	2 X 6	2'-0"	4'-0"	1'-6"

SCALE:3/32" = 1'-0"

AERIAL VIEW

FASTRAC ENERGY SERVICES

LICENSE NUMBER:TECL 349338

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AHJ:TX-CITY OF SAN ANGELO

UTILITY:AEP

PRN NUMBER:FES-44792

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MOUNTING DETAIL

DRAFTED BY: V.KRISHI QC'ED BY: R.REVANTH	PAPER SIZE: 17"X11"
SCALE:AS NOTED	REV:A
DATE:2/15/2022	S-01

DEAD LOAD CALCULATIONS

BOM	QUANTITY	LBS/UNIT	TOTAL WEIGHT (LBS)
MODULES	76	45.2	3435.20
MID-CLAMP	84	0.170	14.28
END-CLAMP	136	0.300	40.80
RAIL LENGTH	546	0.790	431.34
SPLICE BAR	20	0.650	13.00
K2 SPLICE FOOT XL	197	1.45	285.65
TOTAL WEIGHT OF THE SYSTEM (LBS)			4220.27
TOTAL ARRAY AREA ON THE ROOF (SQ. FT.)			1491.60
WEIGHT PER SQ. FT.(LBS)			2.83
WEIGHT PER PENETRATION (LBS)			21.42

ATTACHMENT DETAIL-K2 SPLICE FOOT XL

SCALE:NTS

MODULES DATA

APTOS SOLAR DNA-120-MF26-360W	
MODULE DIMS	69.1"x40.9"x1.4"
LAG SCREWS	STAINLESS STEEL 5/16" LAG SCREW 3.5

MID-CLAMP AND END-CLAMP ANATOMY

ROOF FRAMING DETAILS

GROUNDING DETAILS

RAIL TO RAIL

GROUND CONDUTOR ASSEMBLY

EQUIPMENT GROUND CONDUCTOR

LAY IN EQUIPMENT GROUND CONDUCTOR AND TORQUE BOLT TO 7FT-LB / 10 N-M.

SCALE: NTS

SELF-DRILLING SCREW

UNIRAC RAIL

INTERNAL SPLICE

SCALE: NTS

FASTRAC ENERGY SERVICES

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Timothy Gaede

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STRUCTURAL DETAIL

DRAFTED BY: V.KRISH	PAPER SIZE:17"X11"
QCED BY:R.REVANTH	
SCALE:AS NOTED	REV:A
DATE:2/15/2022	S-02

SINGLE LINE DIAGRAM: DC SYSTEM SIZE - 27360W, AC SYSTEM SIZE - 20000W

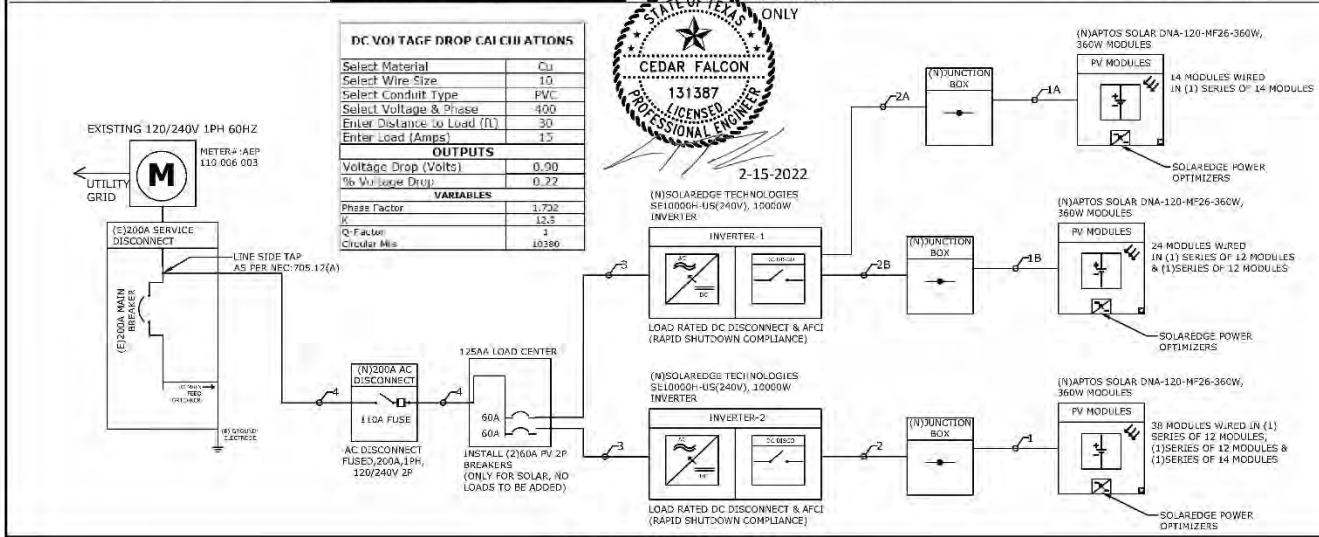
INVERTER-1 & 2 SPECIFICATIONS	
MODEL	SOLAREDGE TECHNOLOGIES SE10000H-US(240V)
POWER RATING	10000W
MAX OUTPUT CURRENT	42A
CEC WEIGHTED EFFICIENCY	99%
MAX INPUT CURRENT	27A
MAX DC VOLTAGE	480V

MODULE SPECIFICATION	
MODEL	APTOS SOLAR DNA-120-MF26-360W
MODULE POWER @ STC	360W
OPEN CIRCUIT VOLTAGE:**Voc**	40.6V
MAX POWER VOLTAGE:**Vmp**	33.8V
SHORT CIRCUIT CURRENT:**Isc**	11.24A
MAX POWER CURRENT:**Imp**	10.66A

OPTIMIZER CHARACTERISTICS	
MODEL	**P401**
MIN INPUT VOLTAGE	8 VDC
MAX INPUT VOLTAGE	60 VDC
MAX INPUT CURRENT	11.75 ADC
MAX OUTPUT CURRENT	15 ADC

SYSTEM CHARACTERISTICS		
DESCRIPTION	INVERTER 1	INVERTER 2
DC SYSTEM SIZE	13680 W	13680 W
MAX OPEN CIRCUIT VOLTAGE	400V	400V
OPERATING VOLTAGE	480V	480V
MAX SHORT CIRCUIT CURRENT	30.00A	30.00A
OPERATING CURRENT	27.90A	27.90A

DC VOLTAGE DROP CALCULATIONS	
Select Material	Cu
Select Wire Size	10
Select Conduit Type	PVC
Select Voltage & Phase	400
Enter Distance to Load (ft)	30
Enter Load (Amps)	15
OUTPUTS	
Voltage Drop (Volts)	0.90
% Voltage Drop	0.22
VARIABLES	
Phase Factor	1.732
K	12.9
Q Factor	1
Circular Mils	10380



STATE OF TEXAS
CEDAR FALCON
131387
LICENSED PROFESSIONAL ENGINEER
ELECTRICAL ONLY
2-15-2022

ELECTRICAL CALCULATIONS

DC WIRE SIZING CALCULATIONS BASED ON THE FOLLOWING EQUATIONS>>

- REQUIRED CONDUCTOR AMPACITY: 125% X Isc(A) X #OF PARALLEL STRINGS = MAX CURRENT PER 690.8(A)(1) X 125% = MAX CURRENT PER 690.8(B)(1)
- CORRECTED AMPACITY CALCULATIIONS: AMPACITY X TEMPERATURE DERATE FACTOR X COUDUIT FILL DERATE = DERATED CONDUCTOR AMPACITY PER 690.8(B)(2)
- DERATE CONDUCTOR AMPACITY CHECK: MAX CURRENT PER 690.8(A)(1) < DERATED CONDUCTOR AMPACITY

AC WIRE SIZING CALCULATIONS BASED ON THE FOLLOWING EQUATIONS>>

- REQUIRED CONDUCTOR AMPACITY: INVERTER OUTPUT CURRENT X #OF INVERTERS = MAX CURRENT PER 690.8(A)(3) X 125% = MAX CURRENT PER 690.8(B)(1)
- CORRECTED AMPACITY CALCULATIONS: AMPACITY X TEMPERATURE DERATE FACTOR X CONDUIT FILL DERATE = DERATED CONDUCTOR AMPACITY PER 690.8(B)(2)
- DERATED CONDUCTOR AMPACITY CHECK: MAX CURRENT PER 690.8(A)(3) < DERATED CONDUCTOR AMPACITY

DC WIRE CALCULATIONS:- MATERIAL:COPPER & TEMPERATURE RATING:90°C

TAG ID	REQUIRED CONDUCTOR AMPACITY											CORRECTED AMPACITY CALCULATION							DERATED CONDUCTOR AMPACITY CHECK		
1,1A&1B	1	X	15	X	1	=	15	X	1.25	=	18.75A	40	X	0.58	X	1	=	23.20A	18.75A	<	23.20A
2	1	X	15	X	1	=	15	X	1.25	=	18.75A	40	X	0.71	X	0.8	=	22.72A	18.75A	<	22.72A
2A	1	X	15	X	1	=	15	X	1.25	=	18.75A	40	X	0.71	X	1	=	28.40A	18.75A	<	28.40A
2B	1	X	15	X	1	=	15	X	1.25	=	18.75A	40	X	0.71	X	0.8	=	22.72A	18.75A	<	22.72A

AC WIRE CALCULATIONS:- MATERIAL:COPPER & TEMPERATURE RATING:90°C

TAG ID	REQUIRED CONDUCTOR AMPACITY										CORRECTED AMPACITY CALCULATION								DERATED CONDUCTOR AMPACITY CHECK		
3	42	X	1	=	42.00	X	1.25	=	52.50A	75	X	0.87	X	1	=	65.25A	52.50A	<	65.25A
4	84	X	1	=	84.00	X	1.25	=	105.00A	145	X	0.87	X	1	=	126.15A	105.00A	<	126.15A

ELECTRICAL NOTES

1. CONDUCTORS EXPOSED TO SUNLIGHT S=ALL BE LISTED AS SUNLIGHT RESISTANT PER NEC 310.10(D).
2. CONDUCTORS EXOPSED TO WET LOCATIONS SHALL BE SUITABLE FOR USE IN WET LOCATIONS PER NEC 310.10(C).
3. MAXIMUM DC/AC VOLTAGE DROP SHALL BE NO MORE THAN 2%.
4. ALL CONDUCTORS SHALL BE IN CONDUIT UNLESS OTHERWISE NOTED.
5. BREAKER/FUSE SIZES PER NEC 240.
6. AC EQUIPMENT GROUNDING CONDUCTOR SIZED PER NEC 250.122.
7. AMBIENT TEMPERATURE CORRECTION FACTOR IS BASED ON NEC 690.31(A).
8. AMBIENT TEMPERATURE ADJUSTMENT FACTOR IS BASED ON NEC 310.15(B)(2).
9. MAX SYSTEM VOLTAGE CORRECTION IS PER NEC 690.7.
10. CONDUCTORS ARE SIZED PER NEC TABLE 310.15(B)(16).

FASTRAC ENERGY SERVICES
LICENSE NUMBER:TECL 349338

CERTIFIED
PV Installation Professional
Timothy Coats
032811-49

CUSTOMER INFORMATION

NAME:DAVID HARVEY

ESID:10204049744306110

ADDRESS:207 S PARK ST, SAN ANGELO, TX 76901

31.456593,-100.450870
APN: 011-100-0-005-000-100

AHJ:TX-CITY OF SAN ANGELO

UTILITY:AEP

PRN NUMBER:FES-44792

ILLUMINE i
Because quality matters

SINGLE LINE DIAGRAM

DRAFTED BY: V.KRISH QC'ED BY:R.REVANTH	PAPER SIZE:17"X11"
SCALE:AS NOTED	REV:A
DATE:2/15/2022	E-01

ELECTRICAL CALCULATIONS

ELECTRICAL ONLY

STATE OF TEXAS
CEDAR FALCON
131387
LICENSED
PROFESSIONAL ENGINEER

2-15-2022

CONDUIT SCHEDULE

TAG ID	CONDUIT SIZE	CONDUCTOR	NEUTRAL	GROUND
1	NONE	(6) 10AWG PV WIRE	NONE	(1) 6AWG BARE COPPER
1A	NONE	(2) 10AWG PV WIRE	NONE	(1) 6AWG BARE COPPER
1B	NONE	(4) 10AWG PV WIRE	NONE	(1) 6AWG BARE COPPER
2	3/4"EMT	(6) 10AWG THHN/THWN-2	NONE	(1) 8AWG THHN/THWN-2
2A	3/4"EMT	(2) 10AWG THHN/THWN-2	NONE	(1) 8AWG THHN/THWN-2
2B	1/4" SCH 40 PVC (BELOW GROUND) 1/2" SCH 80 PVC (ABOVE GROUND)	(4) 10AWG THHN/THWN-2	NONE	(1) 8AWG THHN/THWN-2
3	3/4"EMT	(2) 6 AWG THHN/THWN-2	(1) 6 AWG THHN/THWN-2	(1) 8AWG THHN/THWN-2
4	1 1/2"EMT	(2) 1 AWG THHN/THWN-2	(1) 1 AWG THHN/THWN-2	(1) 6AWG THHN/THWN-2

NOTE:
MAIN PANEL RATING:200A, MAIN BREAKER RATING:200A
LINE SIDE TAP: 100% ALLOWABLE BACKFEED IS =200A

OCPD CALCULATIONS:
INVERTER OVERCURRENT PROTECTION= INVERTER O/P I X CONTINUOUS LOAD(1.25)
=42x1.25x2=105.00A=>PV BREAKER = 110A
TOTAL REQUIRED PV BREAKER SIZE / FUSE SIZE=>110A PV BREAKER

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ELECTRICAL CALCULATIONS

DRAFTED BY: V.KRISH QC'ED BY:R.REVANTH	PAPER SIZE:17"X11"
SCALE:AS NOTED	REV:A
DATE:2/15/2022	E-02

WARNING PLACARD
WARNING
ELECTRIC SHOCK HAZARD
TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION
DC VOLTAGE IS ALWAYS PRESENT WHEN SOLAR MODULES ARE EXPOSED TO SUNLIGHT
LABEL LOCATION
AC DISCONNECT,POINT OF INTERCONNECTION
PER CODE: NEC 690.13
WARNING:PHOTOVOLTAIC POWER SOURCE
LABEL LOCATION
CONDUIT, COMBINER BOX
PER CODE: NEC690.31(D)(2)
PHOTOVOLTAIC AC DISCONNECT
LABEL LOCATION
DISCONNECT POINT OF INTERCONNECTION
PER CODE: NEC690.13(B)
SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN
TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY
LABEL LOCATION
AC DISCONNECT, DC DISCONNECT,
POINT OF INTERCONNECTION
PER CODE: NEC690.56(C)(1)(A)
INVERTER 1 & 2
MAXIMUM RATED OUTPUT CURRENT OF THE CHARGE CONTROLLER (IF INSTALLED)
15 A
MAXIMUM SYSTEM VOLTAGE(Voc)
480 V
MAXIMUM CIRCUIT CURRENT(Isc)
30 A
LABEL LOCATION
DC DISCONNECT
PER CODE: NEC690.53
PHOTOVOLTAIC SYSTEM AC DISCONNECT SWITCH
RATED AC OPERATING CURRENT 84.00 AMPS AC
AC NOMINAL OPERATING VOLTAGE 240 VAC
LABEL LOCATION
AC DISCONNECT , POINT OF INTERCONNECTION
PER CODE: NEC 690.54
WARNING
POWER SOURCE OUTPUT CONNECTION
DO NOT RELOCATE THIS OVER-CURRENT DEVICE
LABEL LOCATION
POINT OF INTERCONNECTION
PER CODE: NEC 705.12(B)(3)(2)
WARNING
DUAL POWER SOURCE SECOND SOURCE IS PHOTOVOLTAIC SYSTEM
LABEL LOCATION
POINT OF INTERCONNECTION
PER CODE: NEC705.12(C)
RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM
LABEL LOCATION
INVERTER
PER CODE: NEC 690.56(C)(3)
WARNING
RACEWAY IS ENERGIZED WHEN DISCONNECT IS IN THE OPEN POSITIONDONOT RELOCATE OR CUT
LABEL LOCATION
AC DISCONNECT
CAUTION:MULTIPLE SOURCES OF POWER
POWER TO THIS BUILDING IS ALSO SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECTS LOCATED AS SHOWN
(N) PV INVERTER 1(EXTERIOR)
(N) PV INVERTER 2(EXTERIOR)
(N)LOAD CENTER(EXTERIOR)
(N) 200A FUSED PV UTILITY DISCONNECT SWITCH(EXTERIOR)
(E) MAIN SERVICE PANEL(INTERIOR)
(E)UTILITY METER(EXTERIOR)
(E)SERVICE DISCONNECT(EXTERIOR)
SOLAR PHOTOVOLTAIC ARRAYS ON ROOF
207 S PARK ST, SAN ANGELO, TX 76901
N
LABEL LOCATION
SERVICE PANEL
PER CODE: NEC 705.10
ALL PLACARDS SHALL BE OF WEATHER PROOF CONSTRUCTION, BACKGROUND ON ALL PLACARDS SHALL BE RED WITH WHITE LETTERING U.O.N.
PLACARD SHALL BE MOUNTED DIRECTLY ON THE EXISTING UTILITY ELECTRICAL SERVICE.
FASTENERS APPROVED BY THE LOCAL JURISDICTION
STATE OF TEXAS
CEDAR FALCON
131387
LICENSED PROFESSIONAL ENGINEER
ELECTRICAL ONLY
2-15-2022
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311 456593 -100 450970
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ILLUMINEi
Because quality matters
WARNING PLACARDS
DRAFTED BY: V.KRISH
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PAPER SIZE:17"X11"
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DATE:2/15/2022
PL-01