City of Denton

Meeting Agenda

Historic Landmark Commission

City Hall
215 E. McKinney St.
Denton, Texas 76201
www.cityofdenton.com

Monday, June 9, 2025 | **5:30 PM** | **Development Service Center**

After determining that a quorum is present, the Historic Landmark Commission of the City of Denton, Texas will convene in a Regular Meeting on Monday, June 9, 2025, at 5:30 p.m. in Training Rooms 3, 4 and 5 at the Development Service Center, 401 N Elm Street, Denton, Texas, at which the following items will be considered:

1. PLEDGE OF ALLEGIANCE

A. U.S. Flag
B. Texas Flag

"Honor the Texas Flag – I pledge allegiance to thee, Texas, one state under God, one and indivisible."

2. PRESENTATIONS FROM MEMBERS OF THE PUBLIC

Citizens may complete one Request to Speak "Public Comment" card per night for the "Presentations from Members of the Public" portion of the meeting and submit it to City Staff. Presentations from Members of the Public time is reserved for citizen comments regarding items not listed on the agenda. No official action can be taken on these items. Presentations from Members of the Public is limited to five speakers per meeting with each speaker allowed a maximum of three (3) minutes.

3. ITEMS FOR CONSIDERATION

Interested citizens should arrive at the meeting prior to the scheduled start time. Public comment will be accepted only for those items identified to be "public meeting(s)".

A. HLC25-034 Consider approval of the May 12, 2025 minutes.

Attachments: May 12, 2025

B. HL25-0001 Hold a public meeting and determine whether the presented expenses resulted in a permanent improvement and/or restoration of a local historic landmark property located at 314 Marietta Street. The site is located on the east side of Marietta Street, between W Oak Street and Houston Place. (HL25-0001, 314 Marietta Street Historic Tax Exemption, Cameron Robertson)

Attachments: Exhibit 1 - Agenda Information Sheet
Exhibit 2 - Site Location Map
Exhibit 3 - Application for Historic Landmark Tax Exemption Authorization

C. COA25-0005 Hold a public meeting and consider an application for a Certificate of Appropriateness, in accordance with Section 2.9.2 of the Denton Development Code, to replace old solar panels and add additional solar panels on the roof of an existing residence located at 2224 Houston Place, within the West Oak Area Historic District. The site is located on the north side of Houston Place east of Thomas Street. (COA25-0005, 2224 Houston Place,

Cameron Robertson)

Attachments: Exhibit 1 - Agenda Information Sheet
Exhibit 2 - Site Location Map
Exhibit 3 - West Oak Area Historic District Map
Exhibit 4 - COA Application
Exhibit 5 - Project Details

D. HLC25-033 Hold a discussion and give staff direction regarding the list of potential future local landmarks.

Attachments: Exhibit 1 - Agenda Information Sheet
Exhibit 2 - Potential Future Local Landmarks Map

4. WORK SESSION

A. HLC25-029 Receive a report, hold a discussion, and give staff direction on the Historic Landmark Commission's request for local historic designation of eligible historic properties.

Attachments: Exhibit 1 - Agenda Information Sheet

B. HLC25-035 Hold a discussion regarding the Historic Landmark Commission Project Matrix.

Attachments: 2025 Matrix

5. CONCLUDING ITEMS

A. Under Section 551.042 of the Texas Open Meetings Act, respond to inquiries from the Historic Landmark Commission or the public with specific factual information or recitation of policy, or accept a proposal to place the matter on the agenda for an upcoming meeting AND Under Section 551.0415 of the Texas Open Meetings Act, provide reports about items of community interest regarding which no action will be taken, to include: expressions of thanks, congratulations, or condolence; information regarding holiday schedules; an honorary or salutary recognition of a public official, public employee, or other citizen; a reminder about an upcoming event organized or sponsored by the governing body; information regarding a social, ceremonial, or community event organized or sponsored by an entity other than the governing body that was attended or is scheduled to be attended by a member of the governing body or an official or employee of the municipality; or an announcement involving an imminent threat to the public health and safety of people in the municipality that has arisen after the posting of the agenda.

NOTE: The Historic Landmark Commission reserves the right to adjourn into a Closed Meeting on any item on its Open Meeting agenda consistent with Chapter 551 of the Texas Government Code, as amended, or as otherwise allowed by law.

CERTIFICATE

I certify that the above notice of meeting was posted on the official website (https://tx-denton.civicplus.com/242/Public-Meetings-Agendas) and bulletin board at City Hall, 215 E. McKinney Street, Denton, Texas, on June 6, 2025, in advance of the 72-hour posting deadline, as applicable, and in accordance with Chapter 551 of the Texas Government Code.

_____
OFFICE OF THE CITY SECRETARY

NOTE: THE CITY OF DENTON'S DESIGNATED PUBLIC MEETING FACILITIES ARE ACCESSIBLE IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT. THE CITY WILL PROVIDE ACCOMMODATION, SUCH AS SIGN LANGUAGE INTERPRETERS FOR THE HEARING IMPAIRED, IF REQUESTED AT LEAST 48 HOURS IN ADVANCE OF THE SCHEDULED MEETING. PLEASE CALL THE CITY SECRETARY'S OFFICE AT 940-349-8309 OR USE TELECOMMUNICATIONS DEVICES FOR THE DEAF (TDD) BY CALLING 1-800-RELAY-TX SO THAT REASONABLE ACCOMMODATION CAN BE ARRANGED.

File #: HLC25-034, **Version:** 1

AGENDA CAPTION

Consider approval of the May 12, 2025 minutes.

MINUTES
HISTORIC LANDMARK COMMISSSION
May 12, 2025

After determining that a quorum was present, the Historic Landmark Commission of the City of Denton, Texas convened in a Regular Meeting on Monday, May 12, 2025, at 5:31 p.m. at the Development Service Center, 401 N. Elm Street, Denton, Texas, at which the following items will be considered:

PRESENT: Chair Angie Stripling, Vice-Chair Shaun Treat, and Commissioners: Heather Gregory, Etan Tepperman, Patricia Sherman, and Linnie McAdams

REGULAR MEETING

1. PLEDGE OF ALLEGIANCE

A. U.S. Flag
B. Texas Flag

2. PRESENTATIONS FROM MEMBERS OF THE PUBLIC

Citizens may complete one Request to Speak "Public Comment" card per night for the "Presentations from Members of the Public" portion of the meeting and submit it to City Staff. Presentations from Members of the Public time is reserved for citizen comments regarding items not listed on the agenda. No official action can be taken on these items. Presentations from Members of the Public is limited to five speakers per meeting with each speaker allowed a maximum of three (3) minutes.

No presentations from members of the public.

3. ITEMS FOR INDIVIDUAL CONSIDERATION

A. HLC25-028: Consider approval of the April 14, 2025, minutes.

Commissioner Sherman moved to approve the minutes as presented. Motion seconded by Heathr Gregory. Motion carried.

AYES (6): Chair Angie Stripling, Vice-Chair Shaun Treat, and Commissioners: Heather Gregory, Etan Tepperman, Patricia Sherman, and Linnie McAdams
NAYS (0): None

4. WORK SESSION

A. HLC25-024: Receive a report, hold a discussion, and give staff direction on the Historic Landmark Commission's request for local historic designation of eligible historic properties.

Cameron Robertson, Historic Preservation Officer, presented the item.

B. HLC25-026: Hold a discussion regarding the Historic Landmark Commission Project Matrix.

Cameron Robertson, Historic Preservation Officer, presented the item.

C. HLC25-026: Hold a discussion regarding the formation of a Community Outreach Subcommittee.

Cameron Robertson, Historic Preservation Officer, presented the item.

5. CONCLUDING ITEMS

With no further business, the meeting was adjourned at 5:45 pm.

X _____

Angie Stripling
Historic Landmark Commission Chair

X _____

Kelly Robinson
Administrative Supervisor

Minutes Approved On: _____

File #: HL25-0001, **Version:** 1

AGENDA CAPTION

Hold a public meeting and determine whether the presented expenses resulted in a permanent improvement and/or restoration of a local historic landmark property located at 314 Marietta Street. The site is located on the east side of Marietta Street, between W Oak Street and Houston Place. (HL25-0001, 314 Marietta Street Historic Tax Exemption, Cameron Robertson)

AGENDA INFORMATION SHEET

DEPARTMENT: Department of Development Services

DCM: Cassey Ogden

DATE: June 9, 2025

SUBJECT

Hold a public meeting and determine whether the presented expenses resulted in a permanent improvement and/or restoration of a local historic landmark property located at 314 Marietta Street. The site is located on the east side of Marietta Street, between W Oak Street and Houston Place. (HL25-0001, 314 Marietta Street Historic Tax Exemption, Cameron Robertson)

BACKGROUND

The property is a local historic landmark located on the east side of Marietta Street, between W Oak Street and Houston Place. The applicants, Travis and Sara Rigsby, have completed improvements and restoration work to the residential property's interior and exterior facades, through structural reinforcement, restoration of period-accurate woodwork and finishes, installation of updated electrical, plumbing, and HVAC systems. Additionally, decorative elements of the original structure were repaired or replicated. The work completed by Key Residential, Ltd. and New Bandon, Ltd. DBA homeMADE Design is shown on the following page.

Continued on page 2

Services	**Payment**
Window Installation (Jeld-Wen AuraLast)	$24,815.17
Siding: Siding install labor and material Insulation: Ext 4”, attic 5.5”, gimage 3.5”, sound batt, poly seal labor and material Sheetrock: Sheetrock hanging and material – Action Gypsum Supply, MTS Drywall Trash Haul	$33,786.15
Plumbing: Turn key plumbing rough-in, stack-out, fixture setting material & labor	$22,761.71
City of Denton Building Permit: Residential alteration and addition	$4,214.68
Masonry: ACME brick and mortar, sand and lintels, and masonry labor	$12,104.46
Enhanced Home Design Package, including garage, patios, balcony, and discounted	$12,332.65
HVAC: Turn key package for Carrier 5 and 2 ton 90% gas furnace 15.5 seer ducts	$16,800.00
Framing: Frisco lumberyard material cost plus shipping; 84 lumberyard material cost plus shipping; Home Depot materials; framing labor; trash haul and dump fees; roofing material and labor	$115,131.30
Fireplace: Three fireplace inserts with labor	$13,000.00
Trimming Out: Priming base, casing, and paint package Driveway & Patios: Forming material and labor Sheetrock: Third Payment Flooring Finishes: Final Payment Plumbing: Final Payment Hand railing material and labor Landscape material and labor	$34,664.46
Bostrom Energy Check	$250.00
Electrical: 225 AMPS service single phase 120-240, electric panels (1) 225 disconnect, A/C, gas heaters, range/oven gas, gas water heater, dryer, washing machines, ceiling fans, exhaust fans, 4-way switches, 3-way switches, single pole switches, flush mount lights (vanities, floods, sconces), 6” lights, outlets, smoke detectors, and 240v outlet in garage	$39,535.00
DME underground electrical service	$3,776.00
TOTAL	**$333,171.58**

The applicant submitted invoices and a breakdown of pricing for the subject work, which is included in their application. Refer to Exhibit 3 - Application for Historic Landmark Tax Exemption Authorization.

Based on documentation, the improvements were completed in late 2023 and throughout 2024. The total expenses for the work was $333,171.58. The applicant provided staff supporting documentation confirming proof of payment for the completed improvements and restoration work.

Of the improvements made to the property, the trash haul fees, the Enhanced Home Design Package, roofing and framing labor, and fireplace inserts and labor in the amount of $61,173.33, do not meet the qualifying improvements and/or restoration projects for the City's tax exemption, as they do not pertain to the general maintenance and/or restoration of the historic property. Therefore, they do not contribute to the total expense amount for the work completed.

The remainder of the work that was completed at the expense amount of $271,998.25, qualifies the applicant for the City's tax exemption for historic preservation of an historic property.

CONSIDERATIONS:

1. Per the City's Code of Ordinances, Sec. 10-128 (c), Any property which is designated a historic site after the first day of January 2009 may be exempt from real property ad valorem taxes levied by the City of Denton to the extent of fifty (50) percent of the assessed value of the designated historic site if the property owner demonstrates to City qualifying expenses of ten thousand dollars ($10,000.00) or more for permanent improvements and/or for restoration of said property. The qualifying expenses are limited to two (2) years prior to designation as a historic site. The Historic Landmark Commission must determine whether the qualifying expenses result in a permanent improvement and/or restoration of said property as a condition of receiving the exemption. The exemption provided for herein shall apply for a maximum of ten (10) successive years, beginning with the first year the property is entitled to the exemption during the specified years and continuing and including each and every year of the nine (9) successive years thereafter during which the property is a designated historic site on the first day of January of those nine (9) successive years.

2. The subject property is designated as a Local Historic Landmark.

3. The applicant has spent a total of $333,171.58 for improvements and restoration related to interior and exterior facades, through structural reinforcement, restoration of period-accurate woodwork and finishes, installation of updated electrical, plumbing, and HVAC systems. Additionally, decorative elements of the original structure were repaired or replicated. However, the trash haul fees, the Enhanced Home Design Package, roofing and framing labor, and fireplace inserts and labor in the amount of $61,173.33 do not meet the qualifying improvements and/or restoration projects of the City's tax exemption. As such, the applicant has spent a total of $271,998.25 in qualifying improvements and/or restoration.

4. If the Historic Landmark Commission recommends a favorable determination that the expenses presented resulted in a permanent improvement and/or restoration of the landmarked property, staff will forward a draft Resolution to the City Council to consider approving the subject property as a designated Local Historic Landmark in need of tax relief.

5. If the City Council approves the Resolution, the applicant will then need to apply for the partial tax exemption with the chief appraiser of the Denton Central Appraisal District.

PREVIOUS ACTION/REVIEW

Certificate of Appropriateness:

- COA23-0007: The Historic Landmark Commission approved the application for the rehabilitation of the residence and construction of a rear addition on November 13, 2023.

Building Permit:

- #2312-0648: A building permit was issued on February 9, 2024, for a residential alteration and addition.

OPTIONS

1. Make a favorable finding of improvement and/or restoration
2. Deny
3. Continue the item

RECOMMENDATION

Staff recommends a **favorable** determination that the expenses presented, with the exception of the trash haul fees, the Enhanced Home Design Package, roofing and framing labor, and fireplace inserts and labor, resulted in a permanent improvement and/or restoration of the landmarked property located at 314 Marietta Street. With the exception of the trash haul fees, the Enhanced Home Design Package, roofing and framing labor, and fireplace inserts and labor, the applicant meets the minimum ten thousand dollars ($10,000.00) or more requirement stated in the City's Code of Ordinances, Sec. 10-128 (c).

EXHIBITS:

1. Agenda Information Sheet
2. Site Location Map
3. Application for Historic Landmark Tax Exemption Authorization

Respectfully submitted:
Tina Firgens, AICP
Deputy Director Development Services/
Planning Director

Prepared By:
Cameron Robertson, AICP
Historic Preservation Officer


Houston Place
Marietta Street
Jagoe Street
Jagoe Street
Jagoe Street
1914
1912
1908
1904
1911
1909
1905
1901
413
411
409
403
315
309
308
305
414
412
404
314
312
306
415
400
405
401
315
314
312
310
307
306
229

DEPARTMENT OF DEVELOPMENT SERVICES
Development Services Center – 401 N. Elm Street – Denton, Texas 76201 *voice:* (940) 349-8541
www.cityofdenton.com

City of Denton Historic Landmark Commission
Tax Exemption Application for Designated Historic Sites

Name of Owner: Travis Rigsby

Property Address: 314 Marietta Street

Telephone/Email: (972)-765 1339

Start/Completion Dates: _____

Brief Description of Completed Improvements and/or Restoration Work:

A comprehensive restoration that preserved its original architectural features while incorporating modern upgrades for comfort and functionality. Improvements included structural reinforcement, restoration of period-accurate woodwork and finishes, and the installation of updated electrical, plumbing, and HVAC systems. Decorative elements were carefully repaired or replicated, ensuring the home's historical integrity was maintained. An approximately 3,500-square-foot was added to the rear of the property, to complement the original structure.

Please also attach the following with your application:

1. Invoice and proof of payment for completed improvements and/or restoration work. (Please note all receipts for work completed must total a minimum of $10,000 in order to be considered for the Designated Historic Sites Tax Exemption.);
2. Provide a legal description of the property proposed for certification; and
3. If applicable, a Copy of a COA Approval Letter and/or an Issued Building Permit. All exterior renovations/repairs must have an approved Certificate of Appropriateness to qualify for the tax exemption.

By signing this application, I certify that the above information is correct and complete to the best of my knowledge and grant staff access to the indicated property to perform work related to this request. I agree to provide any additional information necessary for this application as requested by the Development Services Department or Historic Landmark Commission.

SIGNATURE: Travis Rigsby 5/8/25

Print or Type Name: Travis Rigsby

Known to me to be the person whose name is subscribed to the above and foregoing instrument, and acknowledged to me that they executed the same for the purposes and consideration expressed and in the capacity therein stated. Given under my hand and seal of office on this 8 day of MAY 2025.

(SEAL)

Notary Public Signature

HECTOR GRIMALDO
Notary Public, State of Texas
Comm. Expires 05-09-2028
Notary ID 134893579

DEPARTMENT OF DEVELOPMENT SERVICES
Development Services Center – 401 N. Elm Street – Denton, Texas 76201 *voice:* (940) 349-8541
www.cityofdenton.com

City of Denton Historic Landmark Commission
Tax Exemption Application for Designated Historic Sites

HISTORIC TAX EXEMPTION QUALIFYING IMPROVEMENTS AND/OR RESTORATION

Permanent renovation and repair of said property, shall include but not limited to the following items:

Exterior

- Protective treatment (paint, protective coverings or treatment, siding, and metal cladding)
- Structural members
- Foundations
- Exterior walls
- Roofs and drainage (roof drains, gutters, and downspouts)
- Decorative features (cornice, corbels, trim, and decorative features)
- Overhang extensions (canopies, and metal awnings)
- Stairways, decks, porches, or balconies
- Chimneys
- Handrails and guards
- Window, skylight, doors, and door frames

Interior

- Structural members
- Interior surfaces (paint and plaster)
- Stairs and walking surfaces
- Handrails and guards
- Interior doors

General

- Plumbing (re-piping, water heater, and sanitary sewer)
- Mechanical (furnace, heaters, and ventilation)
- Electrical (service and re-wiring)
- Fire safety (smoke detectors, carbon monoxide detectors)

ALL EXTERIOR RENOVATIONS/REPAIRS MUST HAVE AN APPROVED CERTIFICATE OF APPROPRIATENESS TO QUALIFY FOR THE TAX EXEMPTION.

Outlook

Paid Invoices

From Travis Rigsby <travisryanrigsby@gmail.com>
Date Wed 6/4/2025 5:11 PM
To Robertson, Cameron M. <Cameron.Robertson@cityofdenton.com>
Cc Sara Rigsby <saraakwan@gmail.com>

Cameron,

Please let me know if these documents will suffice. This was a construction loan that disbursed funds directly to our General Contractor. Many of the invoices were bundled together, so each draw included multiple payments. This approach helped minimize the number of inspections required for each draw request.

Travis Rigsby

Begin forwarded message:

From: "Travis Rigsby (Aspen)" <trigsby@aspenpower.com>
Date: June 4, 2025 at 5:01:24 PM GMT-5
To: Travis Rigsby <travisryanrigsby@gmail.com>
Subject: Invoices

<Outlook-pixptsun.png>

Travis Rigsby
Project Controls Manager
ASPEN POWER
d: 972-765-1339

<Paid Invoices 1.pdf>
<Paid Invoices 4.pdf>
<Paid Invoices 3.pdf>
<Paid Invoices 2.pdf>

Draw Ticket

As of Nov 27, 2024, 8:04 AM

built
Movement Mortgage

DETAILS

Draw Status	TRANSFERRED
Draw Number	Draw # 6
Request Date	May 8, 2024
Transfer Date	May 16, 2024
Loan ID	[redacted]
Loan Maturity Date	Dec 30, 2024
Loan Administrator	[redacted]
Borrower	Rigsby, Travis
Inspector	[redacted]
Address	314 Marietta Street, Denton, TX 76201
Lot # / Subdivision	--
Development Type	RESIDENTIAL
Product Type	None

TOTAL DRAW AMOUNT

$202,098.18

Original Request Amount	[redacted]
Disbursement Amount	$202,098.18

STATUS OF BUDGET AND FUNDS

Draw Funding Amount Net Retainage	$202,098.18
Draw Amount Incl. Retainage	$202,098.18
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

TRANSACTIONS

DISBURSE TO: Key Residential LTD	TYPE: CHECK	$193,798.18
DISBURSE TO:	TYPE: OTHER	$200.00
DISBURSE TO:	TYPE: CHECK	$8,100.00

[redacted]

Draw Ticket

As of Nov 27, 2024, 8:04 AM

built
Movement Mortgage

DETAILS

Draw Status	TRANSFERRED
Draw Number	Draw # 7
Request Date	Jun 4, 2024
Transfer Date	Jun 10, 2024
Loan ID	[redacted]
Loan Maturity Date	Dec 30, 2024
Loan Administrator	[redacted]
Borrower	Rigsby, Travis
Inspector	[redacted]
Address	314 Marietta Street, Denton, TX 76201
Lot # / Subdivision	--
Development Type	RESIDENTIAL
Product Type	None

TOTAL DRAW AMOUNT

$77,572.00

Original Request Amount	[redacted]
Disbursement Amount	$77,572.00

STATUS OF BUDGET AND FUNDS

Draw Funding Amount Net Retainage	$77,572.00
Draw Amount Incl. Retainage	$77,572.00
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

TRANSACTIONS

DISBURSE TO: Key Residential LTD	TYPE: CHECK	$73,621.00
DISBURSE TO:	TYPE: CHECK	$3,776.00
DISBURSE TO:	TYPE: OTHER	$175.00

[redacted]

Draw Ticket

As of Nov 27, 2024, 8:04 AM

built
Movement Mortgage

DETAILS

Draw Status	TRANSFERRED
Draw Number	Draw # 8
Request Date	Jul 18, 2024
Transfer Date	Jul 25, 2024
Loan ID	[redacted]
Loan Maturity Date	Dec 30, 2024
Loan Administrator	[redacted]
Borrower	Rigsby, Travis
Inspector	[redacted]
Address	314 Marietta Street, Denton, TX 76201
Lot # / Subdivision	--
Development Type	RESIDENTIAL
Product Type	None

TOTAL DRAW AMOUNT

$44,241.46

Original Request Amount	[redacted]
Disbursement Amount	$44,241.46

STATUS OF BUDGET AND FUNDS

Draw Funding Amount Net Retainage	$44,241.46
Draw Amount Incl. Retainage	$44,241.46
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

TRANSACTIONS

DISBURSE TO: Key Residential LTD	TYPE: CHECK	$40,583.46
DISBURSE TO:	TYPE: CHECK	$3,458.00
DISBURSE TO:	TYPE: OTHER	$200.00

[redacted]

Draw Ticket

As of Nov 27, 2024, 8:04 AM

built
Movement Mortgage

DETAILS

Draw Status	TRANSFERRED
Draw Number	Draw # 1
Request Date	Dec 6, 2023
Transfer Date	Dec 7, 2023
Loan ID	[redacted]
Loan Maturity Date	Dec 30, 2024
Loan Administrator	[redacted]
Borrower	Rigsby, Travis
Inspector	[redacted]
Address	314 Marietta Street, Denton, TX 76201
Lot # / Subdivision	--
Development Type	RESIDENTIAL
Product Type	None

TOTAL DRAW AMOUNT

$5,000.00

Original Request Amount	[redacted]
Disbursement Amount	$5,000.00

STATUS OF BUDGET AND FUNDS

Draw Funding Amount Net Retainage	$5,000.00
Draw Amount Incl. Retainage	$5,000.00
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

TRANSACTIONS

DISBURSE TO: TYPE: CHECK $5,000.00

[redacted]

Key Residential, Ltd
PO Box 2870
Grapevine TX 76099
(972) 755-3045

Contract Invoice

Invoice#: 13136

Date: 05/08/2024

License:

Billed To: Movement Mortgage
283 Constitution Drive
Suite 400
Virginia Beach VA 23462

Project: Rigsby Renovations
314 Marietta Street
Denton TX 76201

Due Date: 05/18/2024 **Terms:** **Order#**

Descrip	Amount
Window Invoice Lump sum for all windows - Jeld-Wen AuraLast	24,815.17

Notes:

*** *A 3% convenience fee will be applied for all credit card payments.*

Thank you for your prompt payment!

Non-Taxable Amount:	24,815.17
Taxable Amount:	0.00
Sales Tax:	0.00
Amount Due	**24,815.17**

Key Residential, Ltd
PO Box 2870
Grapevine TX 76099
(972) 755-3045

Contract Invoice

Invoice#: 13174

Date: 09/02/2024

License:

Billed To: Movement Mortgage
283 Constitution Drive
Suite 400
Virginia Beach VA 23462

Project: Rigsby Renovations
314 Marietta Street
Denton TX 76201

Due Date: 09/3/2024 **Terms:** **Order#**

Descrip	Amount
Siding Invoice Siding install labor and material	8,845.00
Insulation Invoice Ext 4", attic 5.5", gimage 3.5", sound batt, poly seal labor and material	13,155.94
Sheetrock Invoice Sheetrock hanging and material - Action Gypsum Supply, MTS Drywall	10,975.21
Trash Haul Invoice	810.00

Notes:

*** *A 3% convenience fee will be applied for all credit card payments.*

Thank you for your prompt payment!

Non-Taxable Amount:	33,786.15
Taxable Amount:	0.00
Sales Tax:	0.00
Amount Due	**33,786.15**

Key Residential, Ltd
PO Box 2870
Grapevine TX 76099
(972) 755-3045

Contract Invoice

Invoice#: 13139

Date: 05/08/2024

License:

Billed To: Movement Mortgage
283 Constitution Drive
Suite 400
Virginia Beach VA 23462

Project: Rigsby Renovations
314 Marietta Street
Denton TX 76201

Due Date: 05/18/2024 **Terms:** **Order#**

Descrip	Amount
Plumbing Invoice Turn key plumbing rough-In, stack-out, fixture setting material & labor	22,761.71

Notes:

*** *A 3% convenience fee will be applied for all credit card payments.*

Thank you for your prompt payment!

Non-Taxable Amount:	22,761.71
Taxable Amount:	0.00
Sales Tax:	0.00
Amount Due	**22,761.71**

Key Residential, Ltd
PO Box 2870
Grapevine TX 76099
(972) 755-3045

Contract Invoice

Invoice#: 13148

Date: 07/18/2024

License:

Billed To: Movement Mortgage
283 Constitution Drive
Suite 400
Virginia Beach VA 23462

Project: Rigsby Renovations
314 Marietta Street
Denton TX 76201

Due Date: 07/28/2024 **Terms:** **Order#**

Descrip	Amount
Masonry Invoice ACME Brick and Mortar Sand and Lintels Masonry Labor	12,104.46

Notes:

*** *A 3% convenience fee will be applied for all credit card payments.*

Thank you for your prompt payment!

Non-Taxable Amount:	12,104.46
Taxable Amount:	0.00
Sales Tax:	0.00
Amount Due	**12,104.46**

Invoice

 # INV-000163

Balance Due
$732.65

New Bandon, Ltd. DBA homeMADE Design
500 Oak Bluff Dr.
Cross Roads Texas 76227

Bill To
Travis Rigsby
2700 Dancing Flame Dr.
Denton
76201 TX

Invoice Date : 21 Nov 2023
Terms : Due on Receipt
Due Date : 21 Nov 2023

#	Item & Description	Qty	Rate	Discount	Amount
1	Enhanced Home Design Package	4,595.00 ft	2.50	10.00%	10,338.75
2	Enhanced Home Design Package Garage, patios, balcony, discounted	1,054.00 ft	2.50	60.00%	1,054.00

Sub Total	11,392.75
Denton County (8.25%)	939.90
Total	**$12,332.65**
Payment Made	(-) 11,600.00
Balance Due	**$732.65**

Notes

Thank you for the payment. You just made our day.

Invoices may be paid via:
* Credit Card via the homeMADE Design Payments Portal link
* Zelle payable to ar@newbandon.com
* Check payable to New Bandon, Ltd.

Terms & Conditions

Drafting services are taxable in Texas under section 94-143.

Invoice

 # INV-000163

Balance Due
$7,332.65

New Bandon, Ltd. DBA homeMADE Design
500 Oak Bluff Dr.
Cross Roads Texas 76227

Bill To
Travis Rigsby
2700 Dancing Flame Dr.
Denton
76201 TX

Invoice Date : 21 Nov 2023
Terms : Due on Receipt
Due Date : 21 Nov 2023

#	Item & Description	Qty	Rate	Discount	Amount
1	Enhanced Home Design Package	4,595.00 ft	2.50	10.00%	10,338.75
2	Enhanced Home Design Package Garage, patios, balcony, discounted	1,054.00 ft	2.50	60.00%	1,054.00

Sub Total	11,392.75
Denton County (8.25%)	939.90
Total	**$12,332.65**
Payment Made	(-) 5,000.00
Balance Due	**$7,332.65**

Notes

Thank you for the payment. You just made our day.

Invoices may be paid via:
* Credit Card via the homeMADE Design Payments Portal link
* Zelle payable to ar@newbandon.com
* Check payable to New Bandon, Ltd.

Terms & Conditions

Drafting services are taxable in Texas under section 94-143.

Key Residential, Ltd
PO Box 2870
Grapevine TX 76099
(972) 755-3045

Contract Invoice

Invoice#: 13144

Date: 06/04/2024

License:

Billed To: Movement Mortgage
283 Constitution Drive
Suite 400
Virginia Beach VA 23462

Project: Rigsby Renovations
314 Marietta Street
Denton TX 76201

Due Date: 06/14/2024 **Terms:** **Order#**

Descrip	Amount
HVAC Invoice Turn key package for Carrier 5 and 2 ton 90% gas furnace 15.5 seer ducts.	16,800.00

Notes:

**** A 3% convenience fee will be applied for all credit card payments.*

Thank you for your prompt payment!

Non-Taxable Amount:	16,800.00
Taxable Amount:	0.00
Sales Tax:	0.00
Amount Due	**16,800.00**

Key Residential, Ltd
PO Box 2870
Grapevine TX 76099
(972) 755-3045

Contract Invoice

Invoice#: 13138

Date: 05/08/2024

License:

Billed To: Movement Mortgage
283 Constitution Drive
Suite 400
Virginia Beach VA 23462

Project: Rigsby Renovations
314 Marietta Street
Denton TX 76201

Due Date: 05/18/2024 **Terms:** **Order#**

Descrip	Amount
Framing Invoice	115,131.30
Frisco lumberyard material cost plus shipping (24,678.06)	
84 lumberyard material cost plus shipping (41,010.69)	
Home Depot materials (11,415.80)	
Framing labor (29,366.00)	
Trash haul and dump fees (1,250.00)	
Roofing material (5,960.75)	
Roofing labor (1,450.00)	

Notes:

**** A 3% convenience fee will be applied for all credit card payments.*

Thank you for your prompt payment!

Non-Taxable Amount:	115,131.30
Taxable Amount:	0.00
Sales Tax:	0.00
Amount Due	**115,131.30**

Key Residential, Ltd
PO Box 2870
Grapevine TX 76099
(972) 755-3045

Contract Invoice

Invoice#: 13149

Date: 07/18/2024

License:

Billed To: Movement Mortgage
283 Constitution Drive
Suite 400
Virginia Beach VA 23462

Project: Rigsby Renovations
314 Marietta Street
Denton TX 76201

Due Date: 07/28/2024 **Terms:** **Order#**

Descrip	Amount
Fireplace Three Fireplace Inserts with Labor	13,000.00

Notes:

*** *A 3% convenience fee will be applied for all credit card payments.*

Thank you for your prompt payment!

Non-Taxable Amount:	13,000.00
Taxable Amount:	0.00
Sales Tax:	0.00
Amount Due	**13,000.00**

Key Residential, Ltd
PO Box 2870
Grapevine TX 76099
(972) 755-3045

Contract Invoice

Invoice#: 13162

Date: 11/26/2024

License:

Billed To: Movement Mortgage
283 Constitution Drive
Suite 400
Virginia Beach VA 23462

Project: Rigsby Renovations
314 Marietta Street
Denton TX 76201

Due Date: 11/30/2024 **Terms:** **Order#**

Descrip	Amount
Final Invoice	34,664.46
Trimming Out - Priming Base, Casing, & Paint Package (rest of payment) ($5,700.00)	
Driveway & Patios - Forming Material & Labor (rest of payment) ($133.00)	
Sheetrock - Third Payment ($4,350.00)	
Flooring Finishes - Final Payment ($10,455.00)	
Plumbing - Final Payment ($4,500.00)	
Hand Railing Material and Labor ($6,200.00)	
Landscape Material and Labor ($3,326.46)	

Notes:

**** A 3% convenience fee will be applied for all credit card payments.*

Thank you for your prompt payment!

Non-Taxable Amount:	34,664.46
Taxable Amount:	0.00
Sales Tax:	0.00
Amount Due	**34,664.46**

intuit quickbooks

Payment receipt

You paid $250.00

to BOSTROM ENERGY CHECK on 1/26/2024

Invoice no.	11823
Invoice amount	$250.00
Total	$250.00
Status	Paid
Payment method	[redacted]
Authorization ID	

Thank you

BOSTROM ENERGY CHECK

+1 2145853352

bostromenergy@yahoo.com

533 SHADOW OAKS CT., ROCKWALL, TX 75087

No additional transfer fees or taxes apply.

PDF_RECEIPT_MTL_FOOTER

Key Residential, Ltd
PO Box 2870
Grapevine TX 76099
(972) 755-3045

Contract Invoice

Invoice#: 13142

Date: 06/04/2024

License:

Billed To: Movement Mortgage
283 Constitution Drive
Suite 400
Virginia Beach VA 23462

Project: Rigsby Renovations
314 Marietta Street
Denton TX 76201

Due Date: 06/14/2024 **Terms:** **Order#**

Descrip	Amount
Electrical Invoice	39,535.00
225 AMPS Service single phase 120-240	
Electric panels (1) 225 Disconnect	
A/C's	
Gas heaters	
Range/Oven Gas	
Gas water heater	
Dryer	
Washing machines	
Ceiling fans	
Exhaust Fans	
4 way switches	
3 way switches	
Single pole switches	
Flush mount lights (vanities, floods, sconces)	
6" Lights	
Outlets	
Smoke Detectors	
240v Outlet in garage	

Notes:

**** A 3% convenience fee will be applied for all credit card payments.*

Thank you for your prompt payment!

Non-Taxable Amount:	39,535.00
Taxable Amount:	0.00
Sales Tax:	0.00
Amount Due	**39,535.00**

Key Residential, Ltd
PO Box 2870
Grapevine TX 76099
(972) 755-3045

Contract Invoice

Invoice#: 13143

Date: 06/04/2024

License:

Billed To: Movement Mortgage
283 Constitution Drive
Suite 400
Virginia Beach VA 23462

Project: Rigsby Renovations
314 Marietta Street
Denton TX 76201

Due Date: 06/14/2024 **Terms:** **Order#**

Descrip	Amount
DME Service DME underground electrical service.	3,776.00

Notes:

**** A 3% convenience fee will be applied for all credit card payments.*

Thank you for your prompt payment!

Non-Taxable Amount:	3,776.00
Taxable Amount:	0.00
Sales Tax:	0.00
Amount Due	**3,776.00**

CITY OF DENTON

BUILDING PERMIT

Development Services Center
401 N. Elm St.
Denton, Texas 76201
Phone (940) 349-8600

PERMIT NUMBER: 2312-0648	ISSUED DATE: **2/9/2024**
JOB ADDRESS: **314 MARIETTA ST**	
OWNER: Travis Rigsby 2700 Dancing Flame Drive Denton, TX 76201 PHONE: (972)765-1339	TENANT: , PHONE:
CONTRACTOR: Travis Rigsby 2700 Dancing Flame Drive Denton, TX 76201 PHONE: (972)765-1339	DESCRIPTION OF WORK: RESIDENTIAL ALTERATION AND ADDITION

ZONING:	LOT:	BLOCK:	SUBDIVISION:	LOT SIZE (SF):
R3	4	1	WEST OAK ADDITION	13000

USE OF BUILDING:	OCC TYPE:	OCC LOAD:	NO. UNITS:	NO. STORIES:	TYPE OF CONSTR.:
	R-3	0	0	2	V-B

FR SETBACK (FT)::	RR SETBACK (FT):	LT SIDE SETBACK:	RT SIDE SETBACK (FT):	GARAGE (SF):	BUILDING (SF):	REMODEL /TI (SF) :	PORCH (SF):	OTHER (SF):
20	10	5	5	545	4558	3258	409	3258

VALUATION:	SPRINKLER REQ'D:	PLANS APPR BY:	DATE APPROVED:	TOTAL (SF):
$603174.78		AR	2/9/2024	5512

FEES:

ADDITIONS / ALTERATIONS / FIRE	$325.00
BUILDING PERMIT SFR	$3,748.68
PLAN REVIEW ALTERATION	$141.00

TOTAL FEE $4,214.68 **TOTAL FEES PAID $4,214.68** **TOTAL DUE**

COMMENTS:

***SECTION 402.4 OF THE 2021 IECC REQUIRES A BLOWER DOOR TEST AND A DUCT BLASTER TEST AS WELL AS 100% OF LAMPS SHALL BE HIGH-EFFICACY LAMPS. ***

1) Engineered foundation provided.
2) Engineered wind bracing provided.
3) Smoke detectors required in bedroom and in immediate vicinity accessing bedroom. An approved carbon monoxide alarm shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms in dwelling units within which fuel-fired appliances are installed and in dwellings units that have attached garages.
4) Arc fault is required in all rooms except where GFCI is required.
5) Receptacle outlets shall be installed as specified in 210.52 through 210.63 of 2020 NEC
6) Addition to meet parameters of Energy Report submitted and provide an as-built report prior to final inspection as well as final testing form completed by an Energy rater.
7) One set of approved plans must be on job site at all times.
8) Proof of termite treatment must be provided prior to final.

Permits expire if work not commenced within 180 days or ceases more than 180 days. * The City of Denton is not responsible to review the applicability of plat covenants to this permit. Compliance with plat covenants is the sole responsibility of the applicant\owner.

**** Nothing herein shall relieve the applicant of the obligation to comply with all ordinance and regulatory requirements, including but not limited to requirements relating to the Historic Landmark Commission, of the City of Denton. The responsibility for conducting due diligence relating to limitations/restrictions attaching to the property which is the subject of this permit rests solely on the applicant***

CITY OF DENTON

Planning Division | Development Services
401 N Elm St., Denton, TX 76201 • (940) 349-8382

November 14, 2023

Travis and Sara Rigsby
2700 Dancing Flame Drive
Denton, TX 76201

RE: 314 Marietta Street – Rehabilitation of the Residence and Construction of Rear Addition (COA23-0007)

Dear Mr. and Mrs. Rigsby:

The Historic Landmark Commission at its meeting on Monday, November 13, 2023, approved your Certificate of Appropriateness (COA) application, on behalf of the City of Denton, to rehabilitate the existing residence and construct a new rear addition at 314 Marietta Street, within the West Oak Area Historic District (WOA). The key improvements include:

- Rehabilitation of the original residence, apart from the removal of the original sun porch and one, rear (east) exterior wall to construct a two-story addition with approximately 3,500 SF of garage and living space.
- Infill of window openings on the north and south facades, and addition of new door openings to provide access to the property.
- Preservation of the existing residence's wood facades. Any deteriorated siding will be replaced with new wooden tongue and groove siding to match. The proposed addition's façade will be a continuation of the original residence, using wooden tongue and groove siding and finished to match.
- Replacement of existing door and windows on the front and south façades of the current residence with 1940s era appropriate windows and leaded glass finishing's that reflect the 1940s tax photo.
- On the west (front) façade, a faux garage door would be installed in the existing garage opening of the original residence so those viewing the structure will understand the original purpose and layout of the structure. The existing concrete driveway would be removed.

Please note that the exterior alterations and proposed rear addition shall not deviate from the submitted plans (see Exhibit A) that were reviewed and approved by the Historic Landmark Commission. Any deviation will require a separate COA.

As a reminder, the approved COA is not a building permit. A building permit is required for any residential construction and/or alteration. Please submit a permit application by applying online or in person.

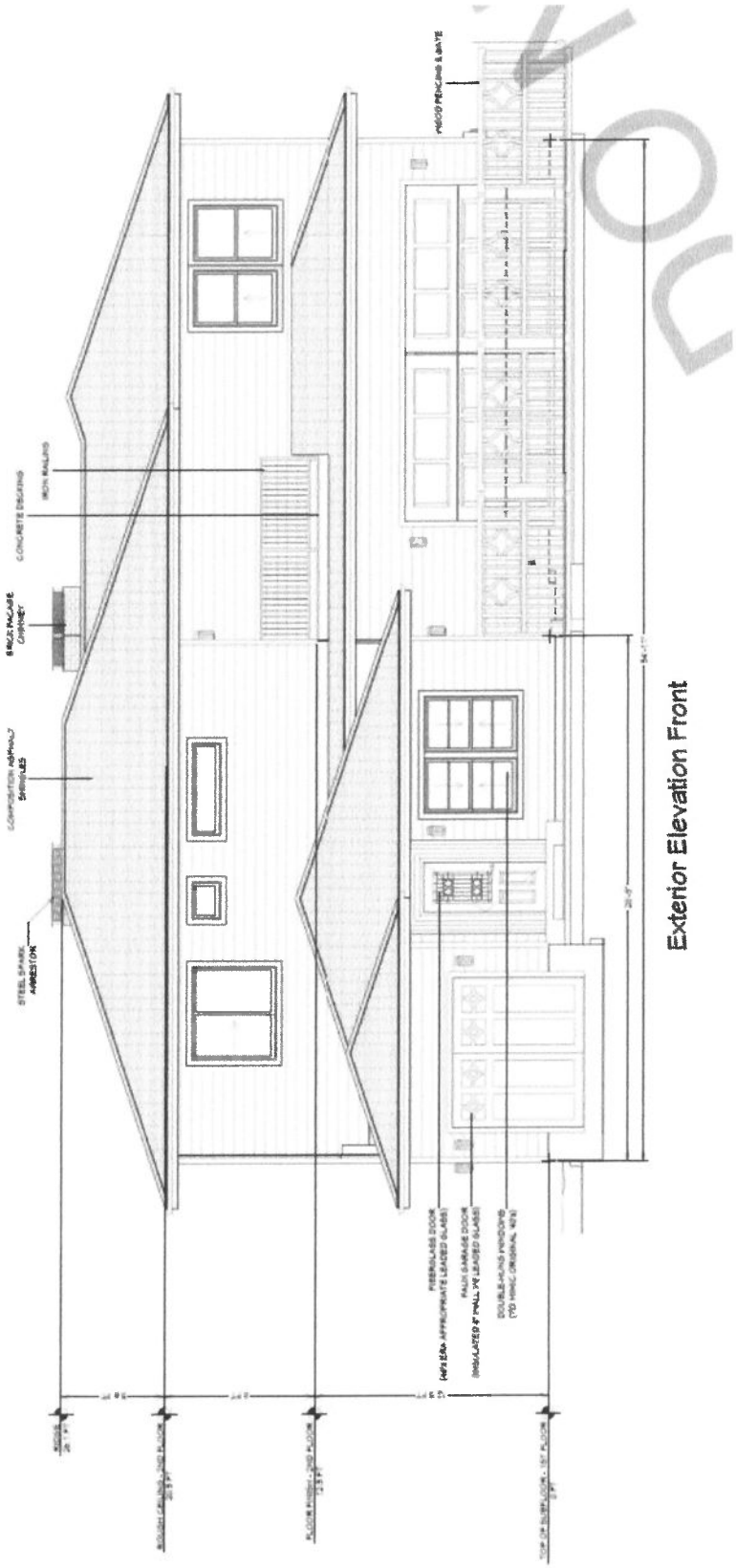
If you have any questions or require additional information, please contact me at (940) 349-8532 or via email at cameron.robertson@cityofdenton.com.

Sincerely,

Cameron Robertson

Cameron Robertson, AICP
Historic Preservation Officer

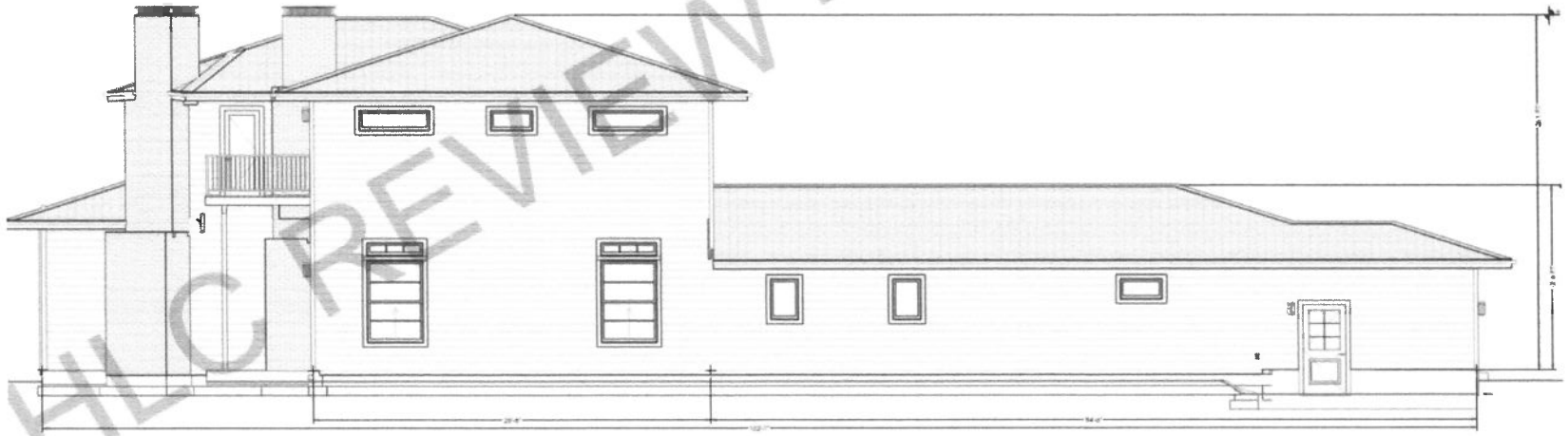
Exhibit A



Exterior Elevation Back

4

Exterior Elevation Right



Exterior Elevation Left

Property ID:

28954

Geographic ID:

SD0342A-000001-0000-0004-0000

Tax Office ID:

SD0342A-000001-0000-0004-

Type:

R

Legal Description:

WEST OAK ADDN BLK 1 LOT 4 25/4014 // E PUCHALSKI 996

File #: COA25-0005, **Version:** 1

AGENDA CAPTION

Hold a public meeting and consider an application for a Certificate of Appropriateness, in accordance with Section 2.9.2 of the Denton Development Code, to replace old solar panels and add additional solar panels on the roof of an existing residence located at 2224 Houston Place, within the West Oak Area Historic District. The site is located on the north side of Houston Place east of Thomas Street. (COA25-0005, 2224 Houston Place, Cameron Robertson)

AGENDA INFORMATION SHEET

DEPARTMENT: Department of Development Services

DCM: Cassey Ogden

DATE: June 9, 2025

SUBJECT

Hold a public meeting and consider an application for a Certificate of Appropriateness, in accordance with Section 2.9.2 of the Denton Development Code, to replace old solar panels and add additional solar panels on the roof of an existing residence located at 2224 Houston Place, within the West Oak Area Historic District. The site is located on the north side of Houston Place east of Thomas Street. (COA25-0005, 2224 Houston Place, Cameron Robertson)

BACKGROUND

The applicant, CMS Renewable Contractors, on behalf of the property owner is requesting a Certificate of Appropriateness (COA) for the installation of 50 solar panels on the roof of 2224 Houston Place, replacing the 36 solar panels that currently are placed on the residence. The current configuration and number of solar panels were previously approved by the Historic Landmark Commission on December 12, 2022 (COA22-0017).

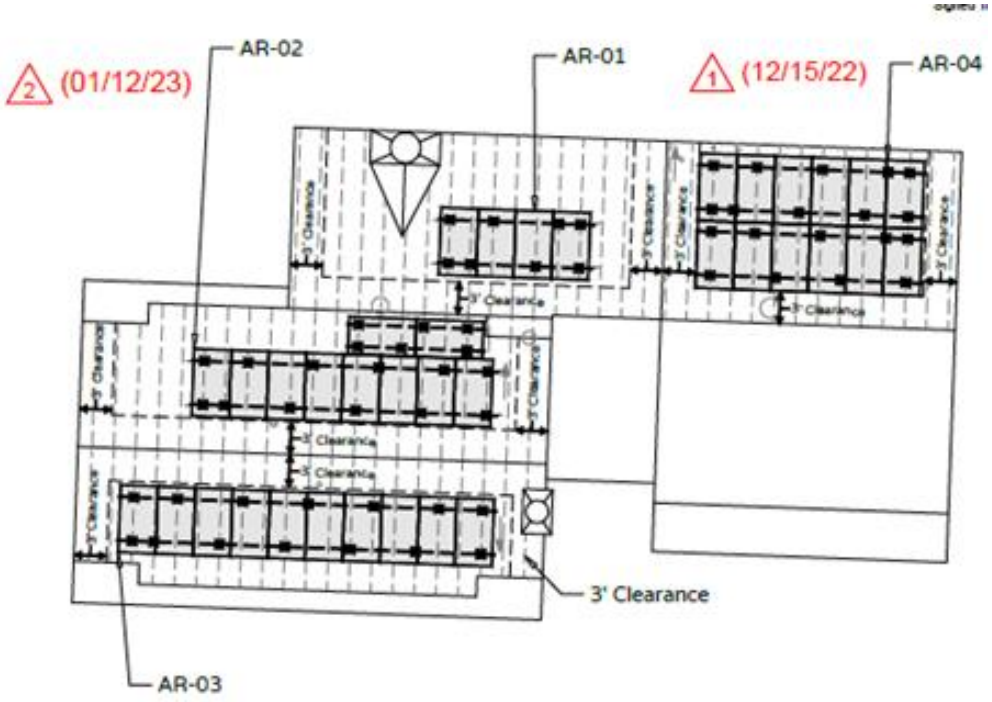


Figure 1: Existing Solar Panel Layout

The 50 proposed solar panels would be installed on the north and south sides of the second-story roof of the main residence, as well as the north side of the roof of the one-story, east wing of the residence. The reason for the replacement of the existing panels and the addition of 14 panels is that the current system is undersized for the property owner's existing energy usage and the energy costs have increased since their initial installation in 2023. Thus, the additional panels are needed to offset the consumption,

The panels outlined by a red border are the 14 additional panels requested as part of this COA. The remaining panels are the 36 existing panels that will be replaced.

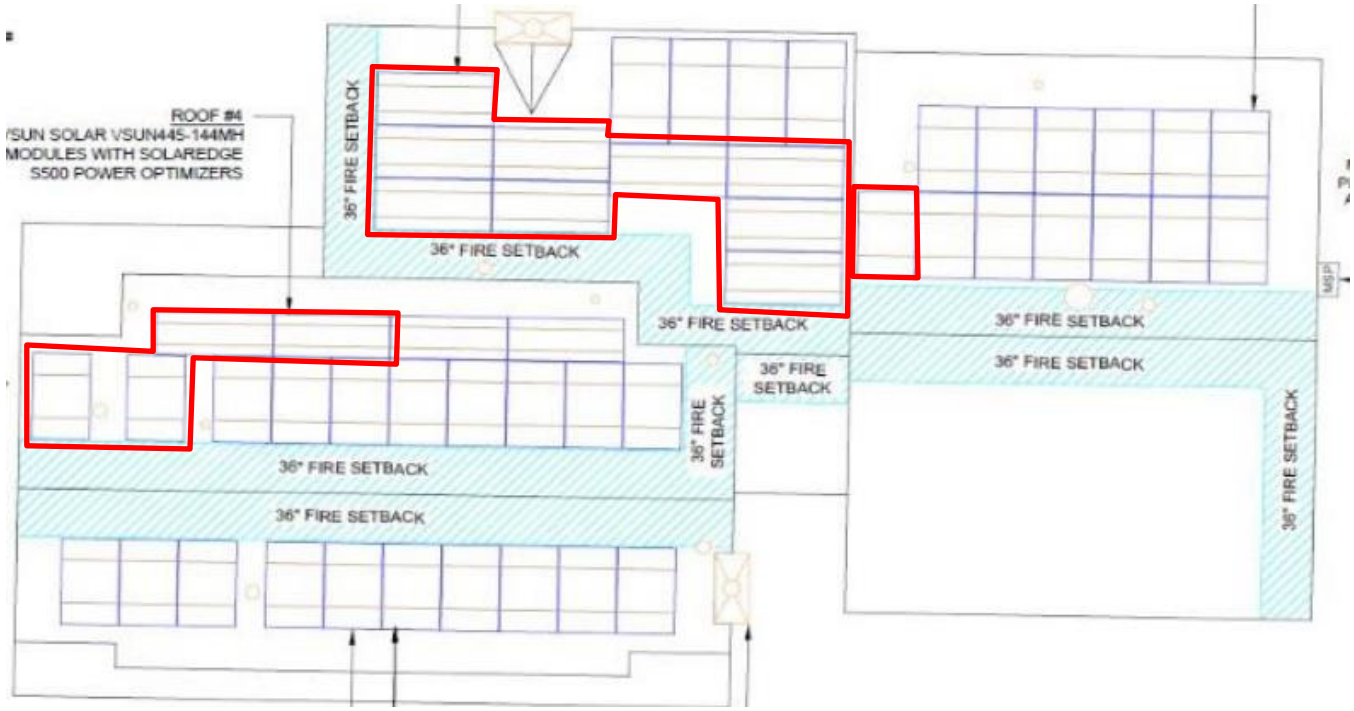


Figure 2: Proposed Solar Panel Layout

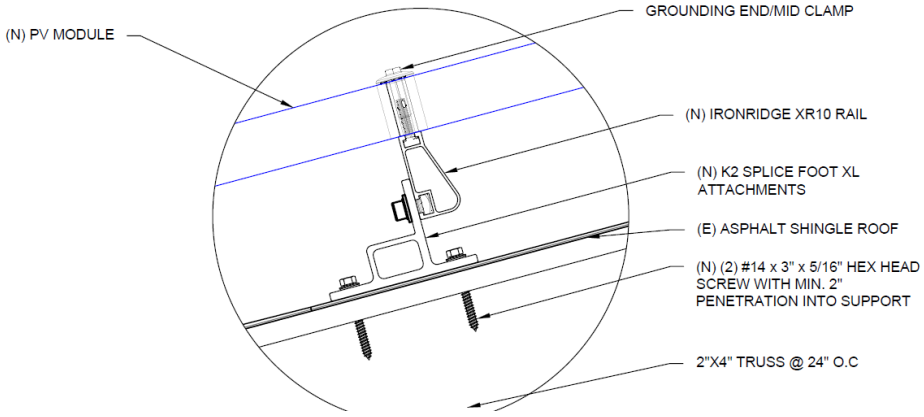


Figure 3: Solar Panel Detailing

The solar panels with their supporting equipment would rise a maximum of 8-inches from the roof surface. Refer to Exhibit 5 –Project Details for more detailed information about the proposed solar panel system.

The existing residence was constructed in 1940. The residence was built in the Colonial Revival Style and was once the home of Ernest S. Clifton, the former director of the English Department at the University of North Texas during the 1960s.

Section 4.9.3A of the DDC requires a COA for any exterior work on a building, structure or land within a Historic District:

> No person shall construct, reconstruct, alter, remodel, renovate, restore, demolish, raze, or maintain any building, structure or land with a Historic Landmark designation or a building, structure or land located in a locally designated Historic or Conservation District unless application is made for a Certificate of Appropriateness (COA) for said work and such a certificate is granted as provided in Subsection 2.9.2, and appropriate construction or demolition permits are obtained.

The HLC reviews COAs related to a historic building in terms of architectural compatibility, retention of significant architectural features, as well as compliance with The Secretary of Interior's Standards for the Treatment of Historic Properties. Additionally, the Denton Development Code (DDC) has other zoning regulations and design standards that are applicable with this application.

If the COA is approved by HLC, the next step for the applicant is to submit a permit application for the proposed solar panels. During the review of the permit application, staff will ensure that the dimensional and development standards of the DDC and the requirements of City Building Codes are met.

CONSIDERATIONS

Section 2.9.2 of the DDC specifies the HPO and the HLC shall review the proposed project for compliance with The Secretary of Interior's Standards for the Treatment of Historic Properties (The Standards), as well as any applicable guidelines adopted by the City and any guidelines provided in Subchapter 2.9, including the Secretary of Interior's Guidelines on Sustainability for Rehabilitating Historic Buildings for decisions related to renewable energy.

Section 4.9.6C of the DDC specifies the architectural requirements in the West Oak Area Historic District. Below is the relevant architectural requirement that applies to the subject application:

Roof Forms

a. **Skylights and Solar Panels**: The Historic Landmark Commission may allow skylights and solar panels on a building if their placement does not have an adverse effect on the architecture of a building or the district as a whole.
The proposed solar panels would be installed to be parallel to the roofline. The solar panels proposed for installation along the second-story roof and the north side, first-story roof, would not have an adverse effect on the architecture of the building nor the district. The solar panels would not be visible or would be minimally visible from the public right-of-way and would be placed on second-story and rear-facing slopes of the roof.

As previously stated, the proposed project is subject to review under the Standards for Rehabilitation. The Standards for Preservation, Restoration, and Reconstruction do not apply. Below are the Secretary of the Interior's Standards for Rehabilitation requirements.

Standards for Rehabilitation

Definition: *Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.*

1. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.

   The proposed solar panels will not destroy historic materials nor spatial relationships that characterize the property. The proposed solar panels would be differentiated from the historic property with new materials and would not adversely affect the district and the view of the residence from Houston Place.

2. New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

   The installation of the proposed solar panels, based on project details, would be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Additionally, the proposed project is subject to review under the Secretary of Interior's Guidelines on Sustainability for Rehabilitating Historic Buildings. These guidelines offer specific guidance on how to make historic buildings more sustainable in a manner that will preserve their historic character and that will meet The Secretary of the Interior's Standards for Rehabilitation. Recommendations related to solar technology are shown below:

- Considering on-site, solar technology only after implementing all appropriate treatments to improve energy efficiency of the building, which often have greater life-cycle cost benefit than on-site renewable energy.
- Analyzing whether solar technology can be used successfully and will benefit a historic building without compromising its character or the character of the site or the surrounding historic district.
- Installing a solar device in a compatible location on the site or on a non-historic building or addition where it will have minimal impact on the historic building and its site.
- Installing a solar device on the historic building only after other locations have been investigated and determined infeasible.
- Installing a low-profile solar device on the historic building so that it is not visible or only minimally visible from the public right-of-way: for example, on a flat roof and set back to take advantage of a parapet or other roof feature to screen solar panels from view; or on a secondary slope of a roof, out of view from the public right-of-way.
- Installing a solar device on the historic building in a manner that does not damage historic roofing material or negatively impact the building's historic character and is reversible.
- Installing solar roof panels horizontally -- flat or parallel to the roof—to reduce visibility

Based on the evaluation criteria stated above and an evaluation of the documentation submitted by the applicant, Staff believes that the installation of the proposed solar panels at 2224 Houston Place meets the Secretary of the Interior's Standards for Rehabilitation and Section 4.9.6C of the Denton Development Code.

PREVIOUS ACTION/REVIEW

- COA18-0004: Administratively Approved COA for window replacements.
- COA22-0017: The Historic Landmark Commission approved with conditions the installation of solar panels at the property, with the relocation of 12 proposed solar panels to the north side of the roof.

NEIGHBORHOOD MEETING
No neighborhood meeting was held.

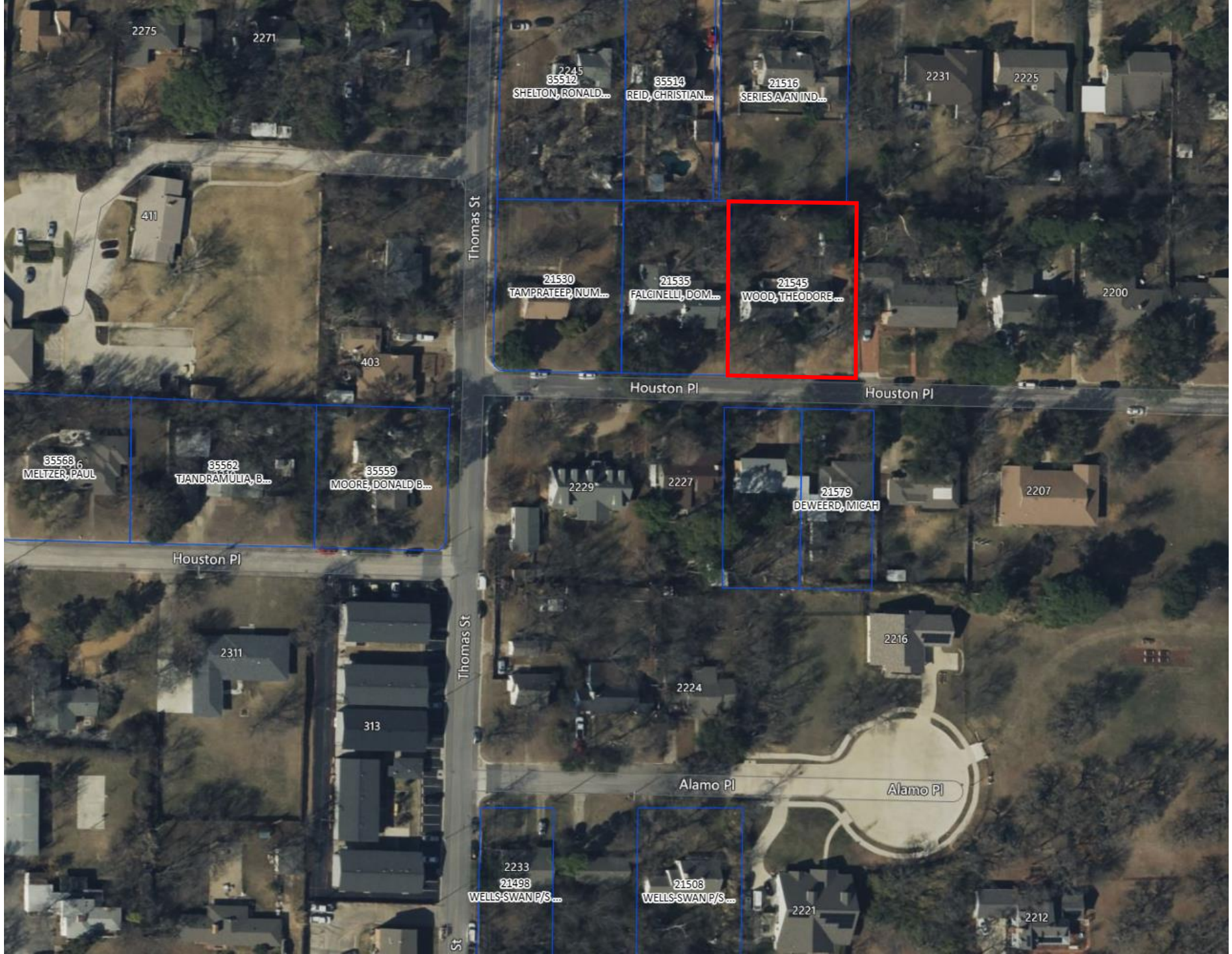
OPTIONS
1. Approval as submitted
2. Approval subject to conditions
3. Deny
4. Continue the item

RECOMMENDATION
Staff recommends **approval** of the Certificate of Appropriateness request to install solar panels at 2224 Houston Place, as the proposed project meets the Secretary of the Interior's Standards for Rehabilitation and Section 4.9.6C of the Denton Development Code.

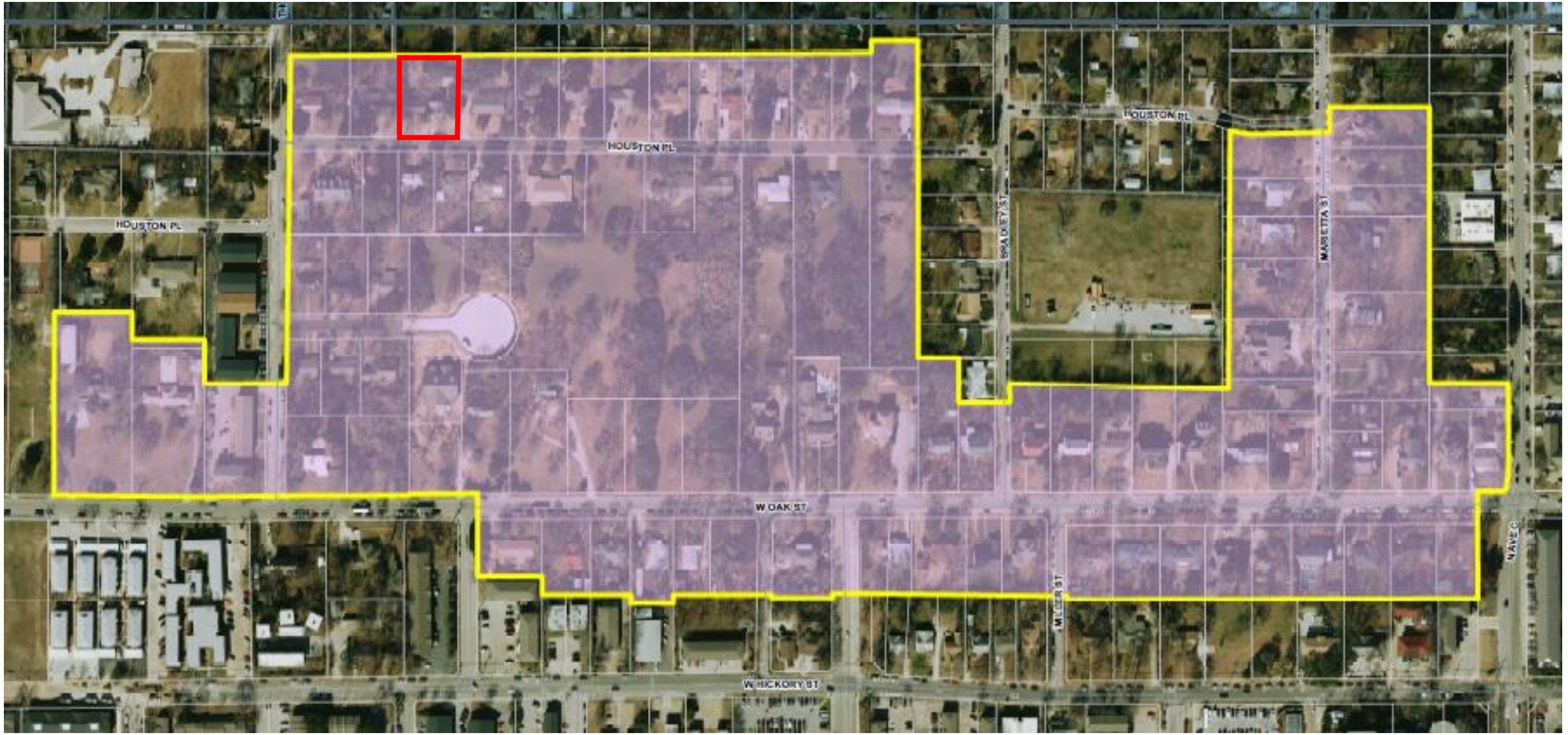
EXHIBITS:
1. Agenda Information Sheet
2. Site Location Map
3. West Oak Area Historic District Map
4. COA Application
5. Project Details
6. Solar Panel Discussion - HLC Agenda (April 10, 2023)

Respectfully submitted:
Tina Firgens, AICP
Deputy Director Development Services/
Planning Director

Prepared By:
Cameron Robertson, AICP
Historic Preservation Officer


2275
2271
2245
35512
SHELTON, RONALD...
35514
REID, CHRISTIAN...
21516
SERIES A AN IND...
2231
2225
411
Thomas St
21530
TAMPRATEEP, NUM...
21535
FALCINELLI, DOM...
21545
WOOD, THEODORE...
2200
403
Houston Pl
Houston Pl
35568
MELTZER, PAUL
35562
TJANDRAMULIA, B...
35559
MOORE, DONALD B...
2229
2227
21579
DEWEERD, MICAH
2207
Houston Pl
2311
Thomas St
2216
2224
313
Alamo Pl
Alamo Pl
2233
21498
WELLS-SWAN P/S...
21508
WELLS-SWAN P/S...
2221
2212

West Oak Area Historic District



CITY OF DENTON

Development Services – Planning Division

401 N. Elm St., Denton, TX 76201 (940) 349-8600

CERTIFICATE OF APPROPRIATENESS APPLICATION AND CHECKLIST

A Certificate of Appropriateness (COA) is required for all proposed in-kind replacement, new construction, relocation, addition, demolition, or other exterior alterations to a local, state, and national landmark, as well as any property within a local historic district. A COA is required before work may begin in all cases whether the project requires a building permit. If a building permit is required, it will **not** be issued prior to approval of a COA. This is authorized by **Denton Development Code Section 2.9.2.**

All applications for a COA shall be filed with the City of Denton's Planning Department, care of the Historic Preservation Officer. Preliminary review of a COA application will be processed by the Planning Department within 5 to 10 business days. A submittal of a complete application and checklist will facilitate a timely review. Additional information may be required by the Planning Department while the proposal is under review. COA Applications submitted within two weeks of a scheduled Historic Landmark Commission (HLC) meeting will be placed on the following HLC meeting agenda, to allow Staff time to review.

According to DDC Section 2.9.2B., certain applications may be administratively approved by the Historic Preservation Officer. Applications which must be considered by the HLC for approval will be placed on the next available HLC meeting agenda. The HLC typically meets on the second Monday of every month in the Development Services Center at 401 N Elm Street, Denton, Texas 76201.

The checklist is intended to assist in the preparation of a COA for review and describes generally what is needed to facilitate the review of a proposed Certificate of Appropriateness. The quality of the presentation of a COA request to the HLC is limited by the information provided with an application.

FAILURE OF THE APPLICANT TO PROVIDE REQUIRED INFORMATION WILL RESULT IN THE APPLICATION NOT BEING PROCESSED.

CITY OF DENTON

Development Services – Planning Division

401 N. Elm St., Denton, TX 76201 (940) 349-8600

HISTORIC PROPERTY INFORMATION:

Parcel(s) or Tax ID# (Required): _____

Historic Property Address: 2224 Houston Pl Denton, TX 76201 Total Acres 0.401010101010101

Proposed Work:

☐ Exterior Alteration ☐ In-Kind Replacement ☐ Relocation

☐ Demolition (in part or whole) ☐ Addition ☐ New Construction

☒ Other, Please Describe (*fence, lighting, solar panels, signs*): solar panels - removing defective system and installing a new one

APPLICANT/ PRIMARY CONTACT INFORMATION:

Name: Erin Cisneros Company Name: CMS Renewable LLC

Address: 2100 N State Hwy 360 STE 1004 City: Grand Prairie State: TX Zip: 75050

Phone: 940-765-9446 Cell Number: 940-765-9446

Email Address: erin@cmsrenewable.com

PROPERTY OWNER INFORMATION: ☐ **check if same as above**

Name: Theodore "Ted" Wood Company Name: _____

Address: 2224 Houston Pl City: Denton State: TX Zip: 76201

Phone: (972) 672-1381 Cell Number: (972) 672-1381

Email Address: tedwood711@gmail.com

Email Address: erin@cmsrenewable.com

CITY OF DENTON

Development Services – Planning Division

401 N. Elm St., Denton, TX 76201 (940) 349-8600

OWNERS AGENT/ REPRESENTATIVE INFORMATION: ☑ **check if not applicable**

Name:_____ Company Name: _____

Address:_____ City:_____ State: ___ Zip:_____

Phone:_____Cell Number:_____

Email Address: _____

By signing this application, I certify that the above information is correct and complete to the best of my knowledge and grant staff access to the indicated property to perform work related to this request. I agree to provide any additional information necessary for this application as requested by the Development Services Department or Historic Landmark Commission.

SIGNATURE: Erin Cisneros

Print or Type Name: Erin Cisneros - Owner of Solar Company

State of Texas | County of Tarrant

Known to me to be the person whose name is subscribed to the above and foregoing instrument and acknowledged to me that they executed the same for the purposes and consideration expressed and, in the capacity, therein stated. Given under my hand and seal of office on this 14 day of May 20 25.

Document Notarized using a Live Audio-Video Connection (SEAL)

NOTARY PUBLIC ★ STATE OF TEXAS ★
BRITTANY RENE COPELAND
ELECTRONIC NOTARY PUBLIC
STATE OF TEXAS
NOTARY ID: 133645929
COMISSION EXP: MARCH 15 2026

Notary Public Signature

CITY OF DENTON

Development Services – Planning Division

401 N. Elm St., Denton, TX 76201 (940) 349-8600

1 REQUIRED FOR ALL PROJECTS:

- ☐ 1.1 Denton Development Application
- ☒ 1.2 **Project Narrative**: Written proposal outlining the project. Describe the purpose of the Certificate of Appropriateness request and include specific information regarding the proposed alteration, materials, colors and any constraints or other relevant details related to the proposal.
- ☐ 1.3 Provide a copy of the City of Denton's Owner Authorization Form
- ☐ 1.4 **Photographs**: Images of the current conditions of all areas which would be affected by the proposal.
- ☒ 1.5 Provide a copy of the Certificate of Appropriateness
- ☐ 1.6 **Associated Fee(s):** as listed on the Development Review Fee Schedule.

N/A

Please refer to the checklists below to fulfill the additional requirements relevant to your proposed project request:

2 ADDITIONAL ITEMS REQUIRED FOR IN-KIND REPLACEMENT REQUESTS

- ☒ 2.1 Material Samples: A sample of the material to be used, including manufacturer specification sheets.

3 ADDITIONAL ITEMS REQUIRED FOR EXTERIOR ALTERATION AND ADDITION REQUESTS

- ☐ 3.1 Material Samples: A physical sample and/or photographs of the material to be used, including manufacturer specification sheets.
- ☐ 3.2 Site Plan: Copy of a site plan with relevant details including, but not limited to, the location of the proposed alteration, street names, sidewalk location and dimensions, building and lot dimensions, landscaping details, fire lane and driveway or parking dimensions and locations, as well as any unique topographical or natural features on the site. Every site plan must include a location map, a North arrow, and generally provide enough detail to clearly identify the site location and orientation. Site plans must be prepared at a scale that provides clearly legible details and dimensions.
- ☐ 3.3 Elevation Drawings: Illustrations of the façade and orientation of the front, rear, and side of all existing and proposed structures.
- ☐ 3.4 Architectural Drawings: Illustrations of the construction technique, floor plan, cross sections, or other relevant details of how a proposed alteration or addition will connect with the existing structure.

4 ADDITIONAL ITEMS REQUIRED FOR NEW CONSTRUCTION AND RELOCATION REQUESTS

- ☐ 4.1 I understand that all new construction, and some renovations, will require a building permit, which will not be issued prior to approval of a Certificate of Appropriateness.
- ☐ 4.2 Material Samples: A physical sample and/or photographs of the material to be used, including manufacturer specification sheets.
- ☐ 4.3 Site Plan: Copy of a site plan with relevant details including, but not limited to, the location of the proposed alteration, street names, sidewalk location and dimensions, building and lot dimensions, landscaping details, fire lane and driveway or parking dimensions and locations, as well as any unique topographical or natural features on the site. Every site plan must include a location map, a North arrow, and generally provide enough detail to clearly identify the site location and orientation. Site plans must be prepared at a scale that provides clearly legible details and dimensions.
- ☐ 4.4 Elevation Drawings: Illustrations of the façade and orientation of the front, rear, and side of all existing and proposed structures.
- ☐ 4.5 Architectural Drawings: Illustrations of the construction technique, floor plan, cross sections, or other relevant details of how a proposed alteration or addition will connect with the existing structure.

CITY OF DENTON

Development Services – Planning Division

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☐ 4.6 Survey: Professional illustration of the exact boundaries, position and extent of a parcel or a tract of land.

5 ADDITIONAL ITEMS REQUIRED FOR DEMOLITION REQUESTS

☐ 5.1 I understand that a demolition permit will be required prior to beginning demolition, which will not be issued prior to approval of a Certificate of Appropriateness.

☐ 5.2 Structural Report: Documentation outlining the structural condition, reasoning, and methods of demolition.

6 ADDITIONAL SUBMITTAL IF APPLICABLE

☐ 6.1 Those COAs that are not administratively reviewed by the Historic Preservation Officer (HPO), require a Notice of Public Meeting sign. The Historic Landmark Commission Notice of Public Meeting Requirements document is available beginning on **Page 7** of this document.

☐ a. The HPO will inform you upon preliminary review of the COA application if your proposed project requires HLC review.

I have read the submission requirements for the Certificate of Appropriateness and the associated checklists, application, and supporting documents, and verified that this submission has been prepared according to these instructions, and these packages have been reviewed for completeness and accuracy. I understand that failure to submit the information as noted above will result in the rejection of this Certificate of Appropriateness submission.

By signing below, I indicate that I have reviewed this checklist and all included materials for completeness and accuracy.

Erin Cisneros _____ 5/14/25 _____

Signature Date

Erin Cisneros

Print Name

PHOTOVOLTAIC ROOF MOUNT SYSTEM

50 MODULES-ROOF MOUNTED - 26.700 KW DC, 22.800 KW AC

2224 HOUSTON PL, DENTON, TX 76201

PROJECT DATA

PROJECT ADDRESS	2224 HOUSTON PL, DENTON, TX 76201
OWNER:	THEODORE WOOD
DESIGNER:	ESR
CONTRACTOR:	CMS RENEWABLE LLC 2100 N HWY 360 #1004, GRAND PRAIRIE, TX 75050, USA PHONE: +14694285563 EMAIL: edgar@cmsrenewable.com
LICENSE NO:	#35493
ELECTRICAL LICENSE NO:	#213982
METER ID:	# 10 791 086

SCOPE: **REPLACING DEFECTIVE EXISTING SYSTEM**:

OLD SYSTEM:

14.400 KW DC ROOF MOUNT
36 HANWHA Q CELLS: Q.PEAK DUO BLK ML-G10+ 400W PV MODULES WITH
01 SOLAREDGE SE11400H-US (240V) INVERTER AND
36 SOLAREDGE POWER OPTIMIZERS

NEW SYSTEM:

26.700 KW DC ROOF MOUNT
SOLAR PV SYSTEM WITH
50 VSUN SOLAR VSUN445-144MH 445W PV MODULES WITH
02 SOLAREDGE SE11400H-US (240V) INVERTERS AND
50 SOLAREDGE S500 POWER OPTIMIZERS

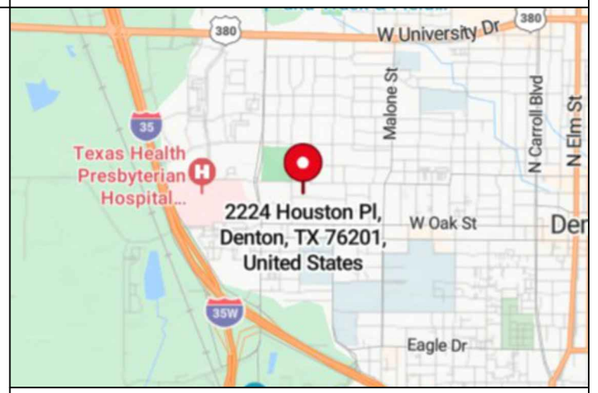
AUTHORITIES HAVING JURISDICTION:
BUILDING: CITY OF DENTON
ZONING: CITY OF DENTON
UTILITY: DENTON MUNICIPAL ELECTRIC

SHEET INDEX

GENERAL NOTES

1. ALL COMPONENTS ARE UL LISTED AND NEC CERTIFIED, WHERE WARRANTED.
2. THE SOLAR PV SYSTEM WILL BE INSTALLED IN ACCORDANCE WITH ARTICLE 690 OF THE NEC 2020.
3. THE UTILITY INTERCONNECTION APPLICATION MUST BE APPROVED AND PV SYSTEM INSPECTED PRIOR TO PARALLEL OPERATION.
4. ALL CONDUCTORS OF A CIRCUIT, INCLUDING THE EGC, MUST BE INSTALLED IN THE SAME RACEWAY, OR CABLE, OR OTHERWISE RUN WITH THE PV ARRAY CIRCUIT CONDUCTORS WHEN THEY LEAVE THE VICINITY OF THE PV ARRAY.
5. WHERE METALLIC CONDUIT CONTAINING DC CONDUCTORS IS USED INSIDE THE BUILDING, IT SHALL BE IDENTIFIED AS "CAUTION: SOLAR CIRCUIT" EVERY 10FT.
6. HEIGHT OF THE AC DISCONNECT SHALL NOT EXCEED 6'-7" PER NEC CODE 240.24.
7. A GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH NEC 2020 690.47 AND 250.50 THROUGH 60 AND 250-166 SHALL BE PROVIDED. PER NEC GROUNDING ELECTRODE SYSTEM OF EXISTING BUILDING MAY BE USED AND BONDED TO THE SERVICE ENTRANCE. IF EXISTING SYSTEM IS INACCESSIBLE OR INADEQUATE A SUPPLEMENTAL GROUNDING ELECTRODE WILL BE USED AT THE INVERTER LOCATION CONSISTING OF A UL LISTED 8 FT. GROUND ROD WITH ACORN CLAMP. GROUNDING ELECTRODE CONDUCTORS SHALL BE NO LESS THAN #8 AWG AND NO LARGER THAN #6 AWG COPPER AND BONDED TO THE EXISTING GROUNDING ELECTRODE TO PROVIDE FOR A COMPLETE SYSTEM.
8. PHOTOVOLTAIC MODULES ARE TO BE CONSIDERED NON-COMBUSTIBLE.
9. PHOTOVOLTAIC INSTALLATION WILL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS.
10. ALL WIRING MUST BE PROPERLY SUPPORTED BY DEVICES OR MECHANICAL MEANS DESIGNED AND LISTED FOR SUCH USE. WIRING MUST BE PERMANENTLY AND COMPLETELY HELD OFF THE ROOF SURFACE.
11. ALL SIGNAGE TO BE PLACED IN ACCORDANCE WITH THE LOCAL BUILDING CODE. IF EXPOSED TO SUNLIGHT, IT SHALL BE UV RESISTANT. ALL PLAQUES AND SIGNAGE WILL BE INSTALLED AS REQUIRED BY THE NEC AND AHJ.
12. INVERTER(S) USED IN UNGROUNDED SYSTEM SHALL BE UL 1741 LISTED.
13. THE INSTALLATION OF EQUIPMENT AND ALL ASSOCIATED WIRING AND INTERCONNECTION SHALL BE PERFORMED ONLY BY QUALIFIED PERSONS [NEC 690.4(C)]
14. ALL OUTDOOR EQUIPMENT SHALL BE NEMA 3R RATED (OR BETTER), INCLUDING ALL ROOF MOUNTED TRANSITION BOXES AND SWITCHES.
15. ALL EQUIPMENT SHALL BE PROPERLY GROUNDED AND BONDED IN ACCORDANCE WITH NEC ARTICLE 250.
16. SYSTEM GROUNDING SHALL BE IN ACCORDANCE WITH NEC 690.41.
17. PV SYSTEM CIRCUITS INSTALLED ON OR IN BUILDINGS SHALL INCLUDE A RAPID SHUTDOWN FUNCTION IN ACCORDANCE WITH NEC 690.12
18. DISCONNECTING MEANS SHALL BE LOCATED IN A VISIBLE, READILY ACCESSIBLE LOCATION WITHIN THE PV SYSTEM EQUIPMENT OR A MAXIMUM OF 10 FEET AWAY FROM THE SYSTEM [NEC 690.13(A)]
19. ALL WIRING METHODS SHALL BE IN ACCORDANCE WITH NEC 690.31
20. WORK CLEARANCES AROUND ELECTRICAL EQUIPMENT WILL BE MAINTAINED PER NEC 110.26(A)(1), 110.26(A)(2) AND 110.26(A)(3).
21. ROOFTOP MOUNTED PHOTOVOLTAIC PANELS AND MODULES SHALL BE TESTED, LISTED & IDENTIFIED IN ACCORDANCE WITH UL1703
22. ELECTRICAL CONTRACTOR TO PROVIDE CONDUIT EXPANSION JOINTS AND ANCHOR CONDUIT RUNS AS REQUIRED PER NEC.
23. IN ACCORDANCE WITH 2021 IFC 1205.5, 2018 IFC 1204.4, AND 2015 IFC 605.11.2 A CLEAR, BRUSH-FREE AREA OF 10 FEET(3048 MM) SHALL BE REQUIRED FOR GROUND-MOUNTED PHOTOVOLTAIC ARRAYS.
24. PANEL LAYOUT ORIENTATION IS SUBJECT TO CHANGE ON DESIGNED MOUNTING PLANES.

VICINITY MAP



HOUSE PHOTO

CODE REFERENCES

PROJECT TO COMPLY WITH THE FOLLOWING:

2020 NATIONAL ELECTRICAL CODE (NEC)
2021 INTERNATIONAL RESIDENTIAL CODE (IRC)
2021 INTERNATIONAL BUILDING CODE (IBC)
2021 INTERNATIONAL FIRE CODE (IFC)
2021 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)

CMS Renewable Contractors

CMS RENEWABLE LLC
2100 N HWY 360 #1004, GRAND PRAIRIE, TX 75050, USA
PHONE: +14694285563
EMAIL: edgar@cmsrenewable.com
LICENSE NO: #35493
ELECTRICAL LICENSE: #213982

REVISIONS

DESCRIPTION	DATE	REV
INITIAL	02/28/2025	

STATE OF TEXAS
Richard Pantel
142628
LICENSED
PROFESSIONAL ENGINEER

Reviewed and approved
Richard Pantel, P.E.
TX Lic. No. PE 142628
Firm F-24051
05/02/2025

PROJECT NAME & ADDRESS

THEODORE WOOD RESIDENCE
2224 HOUSTON PL, DENTON, TX 76201

DRAWN BY
ESR

SHEET NAME
COVER SHEET

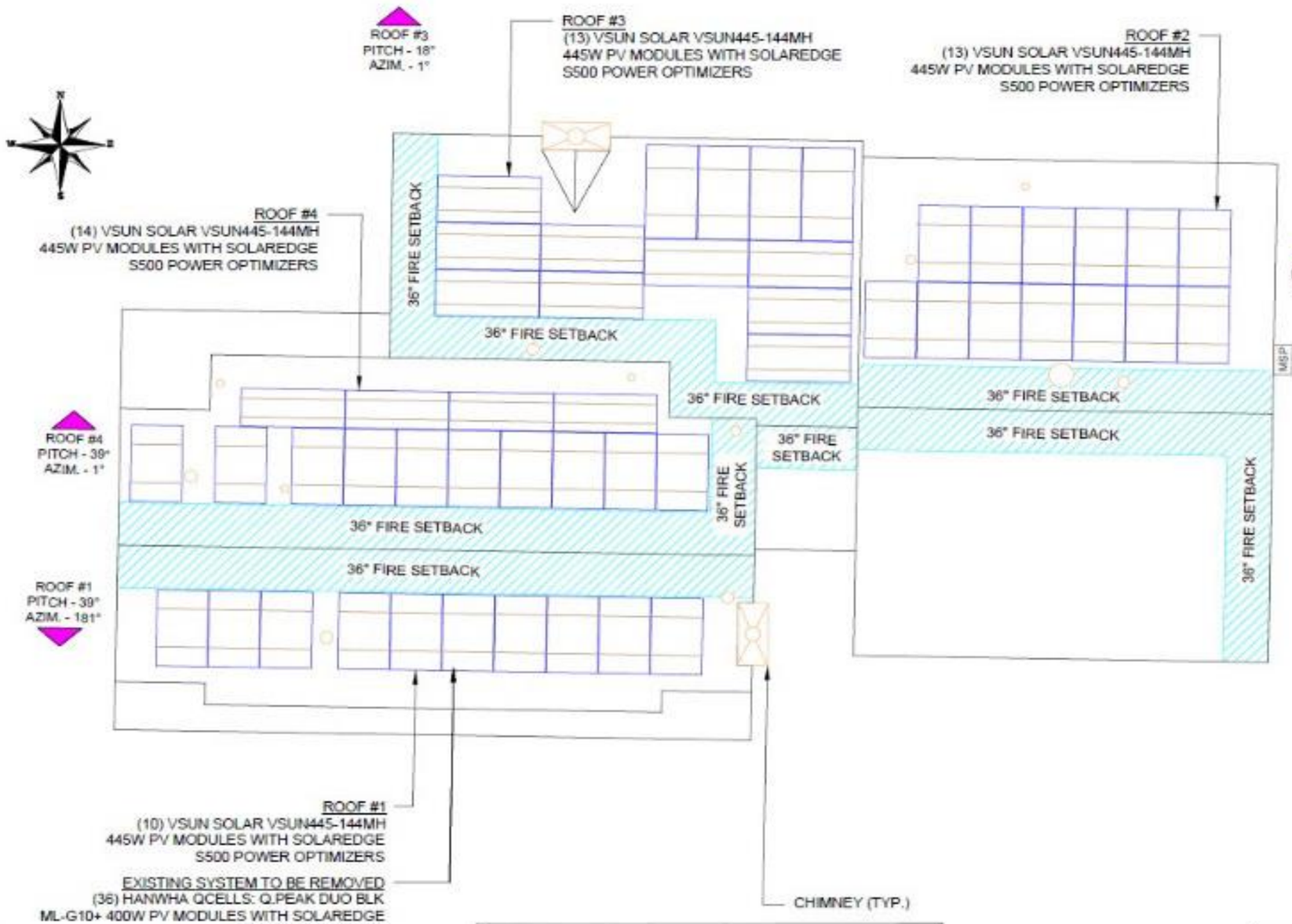
SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-1

MODULE TYPE, DIMENSIONS & WEIGHT

NUMBER OF MODULES = 50 MODULES
MODULE TYPE = VSUN SOLAR VSUN445-144MH 445W PV MODULES
MODULE WEIGHT = 52.47 LBS / 23.8KG.
MODULE DIMENSIONS = 82.99" x 41.26" = 23.78 SF

REPLACING DEFECTIVE EXISTING SYSTEM:
OLD SYSTEM: 14.400 KW DC ROOF MOUNT
(36) HANWHA QCELLS: Q.PEAK DUO BLK ML-G10+ 400W PV MODULES
(01) SOLAREDGE SE114000H-US (240V) INVERTER
(36) SOLAREDGE POWER OPTIMIZERS



ROOF DESCRIPTION

ROOF TYPE				ASPHALT SHINGLE	
ROOF	# OF MODULES	ROOF PITCH	AZIMUTH	TRUSS SIZE	TRUSS SPACING
#1	10	39°	181°	2"X4"	24"
#2	13	39°	1°	2"X4"	24"
#3	13	18°	1°	2"X4"	24"
#4	14	39°	1°	2"X4"	24"

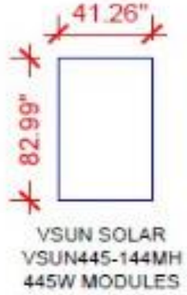
ARRAY AREA & ROOF AREA CALC'S

TOTAL PV ARRAY AREA (SQ. FT.)	TOTAL ROOF AREA (Sq. Ft.)	ROOF AREA COVERED BY ARRAY (%)
1189.00	2734.26	43

PANEL LEGEND

- NEW PV MODULE
- EXISTING PV MODULE WHICH IS REMOVABLE

NEW SYSTEM:
DC SYSTEM SIZE: 50 x 445 = 22.250 kW DC
AC SYSTEM SIZE: 02 x 11400W = 22.800KW AC
(50) VSUN SOLAR VSUN445-144MH 445W PV MODULES WITH
(02) SOLAREDGE SE11400H-US (240V) INVERTERS AND
(50) SOLAREDGE S500 POWER OPTIMIZERS



VSUN SOLAR
VSUN445-144MH
445W MODULES

LEGEND

MSP - MAIN SERVICE PANEL
- VENT, ATTIC FAN (ROOF OBSTRUCTION)
- ROOF ATTACHMENT
- TRUSS

1 ROOF PLAN AND MODULES
PV-3 SCALE: 1/8" = 1'-0"

CMS Renewable Contractors
CMS RENEWABLE LLC
2100 N HWY 360 #1004, GRAND PRAIRIE, TX 75050, USA
PHONE: +14694285563
EMAIL: edgar@cmsrenewable.com
LICENSE NO: #65493
ELECTRICAL LICENSE: #212962

REVISIONS		
DESCRIPTION	DATE	REV
INITIAL	03/28/2024	

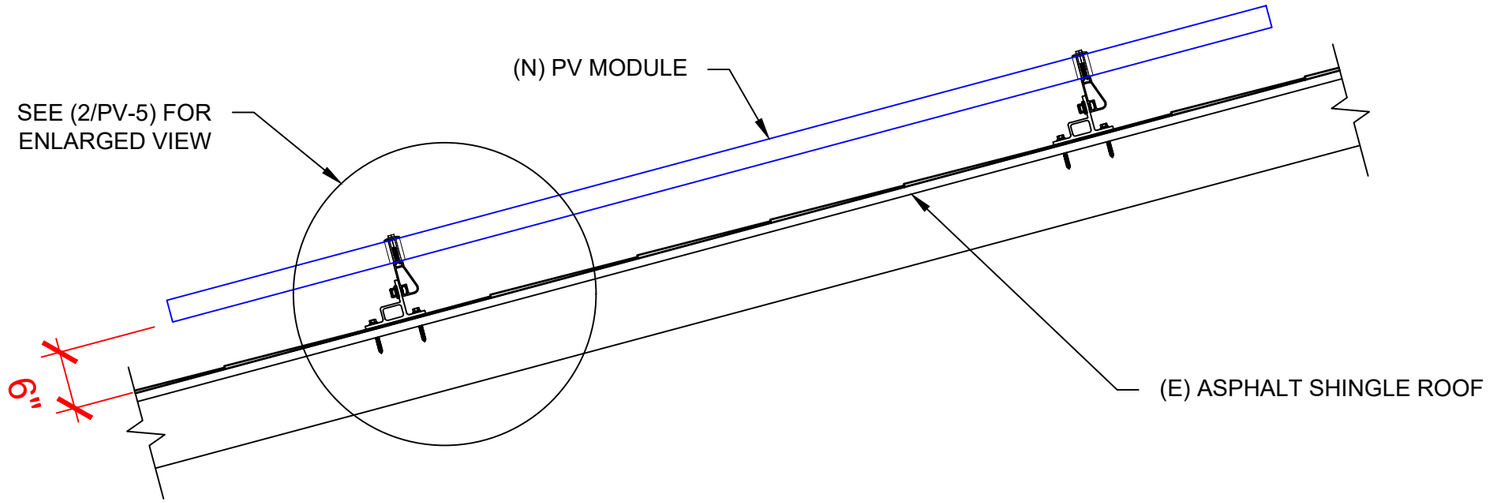
PROJECT NAME & ADDRESS
THEODORE WOOD RESIDENCE
2224 HOUSTON PL, DENTON, TX 76201

DRAWN BY
ESR

SHEET NAME
ROOF PLAN AND MODULES

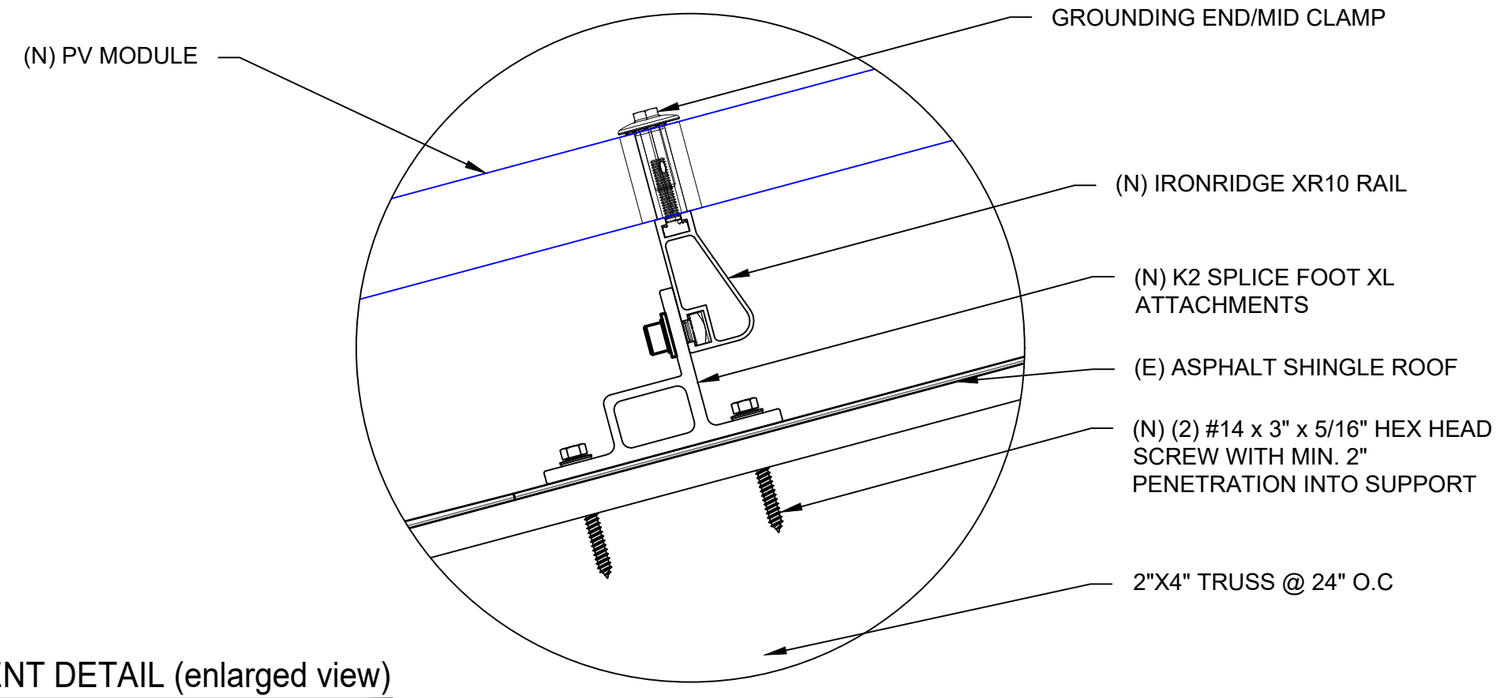
SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-3



1 | STRUCTURAL ATTACMENT (SIDE VIEW)

PV-5 | SCALE: N.T.S



2 | ATTACHMENT DETAIL (enlarged view)

PV-5 | SCALE: NTS

CMS Renewable Contractors

CMS RENEWABLE LLC
2100 N HWY 360 #1004, GRAND PRAIRIE, TX 75050, USA
PHONE: +14694285563
EMAIL: edgar@cmsrenewable.com
LICENSE NO: #35493
ELECTRICAL LICENSE: #213982

REVISIONS

DESCRIPTION	DATE	REV
INITIAL	02/28/2025	

PROJECT NAME & ADDRESS

THEODORE WOOD RESIDENCE

2224 HOUSTON PL, DENTON, TX 76201

DRAWN BY

ESR

SHEET NAME

STRUCTURAL DETAIL

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-5

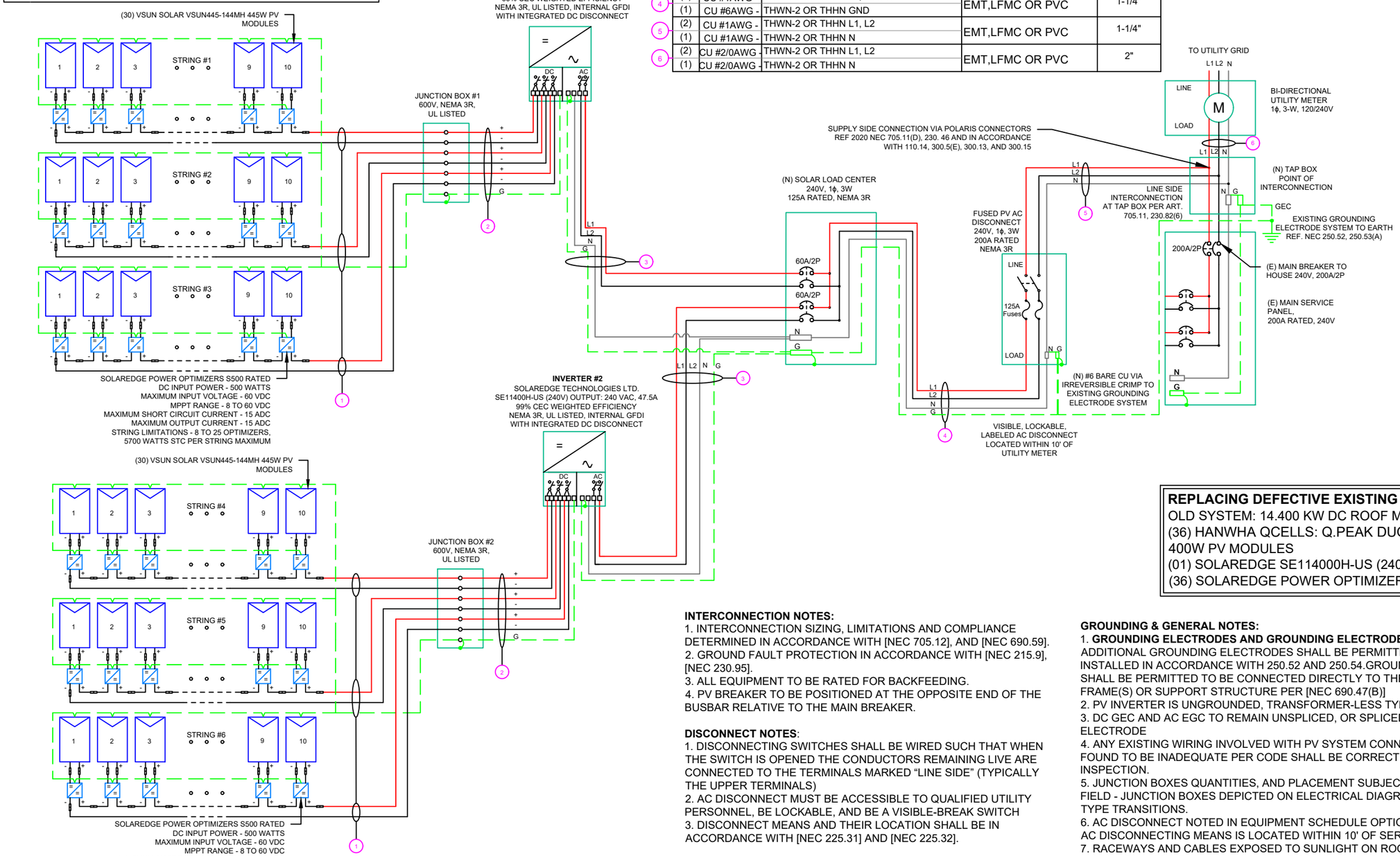
DC SYSTEM SIZE: 60 x 445W = 26.700KW DC
AC SYSTEM SIZE: 02 x 11400W = 22.800KW AC

(60) VSUN SOLAR VSUN445-144MH 445W PV MODULES WITH
(02) SOLAREDGE SE11400H-US (240V) INVERTERS AND
(60) SOLAREDGE S500 POWER OPTIMIZERS ARE
LOCATED UNDER EACH MODULE

(06) STRINGS 10 MODULES ARE CONNECTED IN SERIES

METER ID: # 10 791 086

	QTY	CONDUCTOR INFORMATION		CONDUIT TYPE	CONDUIT SIZE
1	(12)	CU#10AWG -	PV WIRE (POSITIVE & NEGATIVE)		
	(1)	CU #6AWG -	BARE COPPER IN FREE AIR	N/A	N/A
2	(12)	CU#10AWG -	THWN-2 (+, -) (EXTERIOR)	EMT/LFMC	3/4"
	(1)	CU #10AWG -	THWN-2 GND		
3	(2)	CU #6AWG -	THWN-2 OR THHN L1 &L2	EMT,LFMC OR PVC	3/4"
	(1)	CU #6AWG -	THWN-2 OR THHN N		
	(1)	CU #10AWG-	THWN-2 OR THHN GND		
4	(3)	CU #1AWG -	THWN-2 OR THHN L1, L2 & N	EMT,LFMC OR PVC	1-1/4"
	(1)	CU #6AWG -	THWN-2 OR THHN GND		
5	(2)	CU #1AWG -	THWN-2 OR THHN L1, L2	EMT,LFMC OR PVC	1-1/4"
	(1)	CU #1AWG -	THWN-2 OR THHN N		
6	(2)	CU #2/0AWG -	THWN-2 OR THHN L1, L2	EMT,LFMC OR PVC	2"
	(1)	CU #2/0AWG -	THWN-2 OR THHN N		



REPLACING DEFECTIVE EXISTING SYSTEM:
OLD SYSTEM: 14.400 KW DC ROOF MOUNT
(36) HANWHA QCELLS: Q.PEAK DUO BLK ML-G10+ 400W PV MODULES
(01) SOLAREDGE SE114000H-US (240V) INVERTER
(36) SOLAREDGE POWER OPTIMIZERS

INTERCONNECTION NOTES:
1. INTERCONNECTION SIZING, LIMITATIONS AND COMPLIANCE DETERMINED IN ACCORDANCE WITH [NEC 705.12], AND [NEC 690.59].
2. GROUND FAULT PROTECTION IN ACCORDANCE WITH [NEC 215.9], [NEC 230.95].
3. ALL EQUIPMENT TO BE RATED FOR BACKFEEDING.
4. PV BREAKER TO BE POSITIONED AT THE OPPOSITE END OF THE BUSBAR RELATIVE TO THE MAIN BREAKER.

DISCONNECT NOTES:
1. DISCONNECTING SWITCHES SHALL BE WIRED SUCH THAT WHEN THE SWITCH IS OPENED THE CONDUCTORS REMAINING LIVE ARE CONNECTED TO THE TERMINALS MARKED “LINE SIDE” (TYPICALLY THE UPPER TERMINALS)
2. AC DISCONNECT MUST BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH
3. DISCONNECT MEANS AND THEIR LOCATION SHALL BE IN ACCORDANCE WITH [NEC 225.31] AND [NEC 225.32].

RACKING NOTE:
1. BOND EVERY OTHER RAIL WITH #6 BARE COPPER

INSTALLER / ELECTRICIAN NOTE:
EC IS TO MEASURE VOLTAGE BEFORE STARTING WORK.
IF RESULT IS ANY OTHER VOLTAGE MEASURED THAN 120/240V IS OBSERVED, DO NOT PROCEED. CONTACT ENGINEER.

GROUNDING & GENERAL NOTES:
1. **GROUNDING ELECTRODES AND GROUNDING ELECTRODE CONDUCTORS.** ADDITIONAL GROUNDING ELECTRODES SHALL BE PERMITTED TO BE INSTALLED IN ACCORDANCE WITH 250.52 AND 250.54.GROUNDING ELECTRODES SHALL BE PERMITTED TO BE CONNECTED DIRECTLY TO THE PV MODULE FRAME(S) OR SUPPORT STRUCTURE PER [NEC 690.47(B)]
2. PV INVERTER IS UNGROUNDED, TRANSFORMER-LESS TYPE.
3. DC GEC AND AC EGC TO REMAIN UNSPLICED, OR SPLICED TO EXISTING ELECTRODE
4. ANY EXISTING WIRING INVOLVED WITH PV SYSTEM CONNECTION THAT IS FOUND TO BE INADEQUATE PER CODE SHALL BE CORRECTED PRIOR TO FINAL INSPECTION.
5. JUNCTION BOXES QUANTITIES, AND PLACEMENT SUBJECT TO CHANGE IN THE FIELD - JUNCTION BOXES DEPICTED ON ELECTRICAL DIAGRAM REPRESENT WIRE TYPE TRANSITIONS.
6. AC DISCONNECT NOTED IN EQUIPMENT SCHEDULE OPTIONAL IF OTHER AC DISCONNECTING MEANS IS LOCATED WITHIN 10' OF SERVICE DISCONNECT.
7. RACEWAYS AND CABLES EXPOSED TO SUNLIGHT ON ROOFTOPS SHOULD BE INSTALLED MORE THAN 7/8" ABOVE THE ROOF USING CONDUIT SUPPORTS.
8. ALL NEW SERVICE INSTALLATIONS AND REPLACEMENTS REQUIRE A SURGE-PROTECTIVE DEVICE (SPD) IN ACCORDANCE WITH [NEC 230.67]. THE SPD SHALL BE TYPE 1 OR TYPE 2 AND IS REQUIRED TO BE AN INTEGRAL PART OF THE SERVICE EQUIPMENT OR LOCATED IMMEDIATELY ADJACENT THERETO.

1 ELECTRICAL LINE DIAGRAM
PV-6 SCALE: NTS

CMS Renewable Contractors
CMS RENEWABLE LLC
2100 N HWY 360 #1004, GRAND PRAIRIE, TX 75050, USA
PHONE: +14694285563
EMAIL: edgar@cmsrenewable.com
LICENSE NO: #35493
ELECTRICAL LICENSE: #213982

REVISIONS

DESCRIPTION	DATE	REV
INITIAL	02/28/2025	

STATE OF TEXAS
Richard Pantel
142628
LICENSED
PROFESSIONAL ENGINEER

Reviewed and approved
Richard Pantel, P.E.
TX Lic. No. PE 142628
Firm F-24051
05/02/2025

PROJECT NAME & ADDRESS
THEODORE WOOD RESIDENCE
2224 HOUSTON PL, DENTON, TX 76201

DRAWN BY
ESR

SHEET NAME
THREE LINE DIAGRAM

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-6

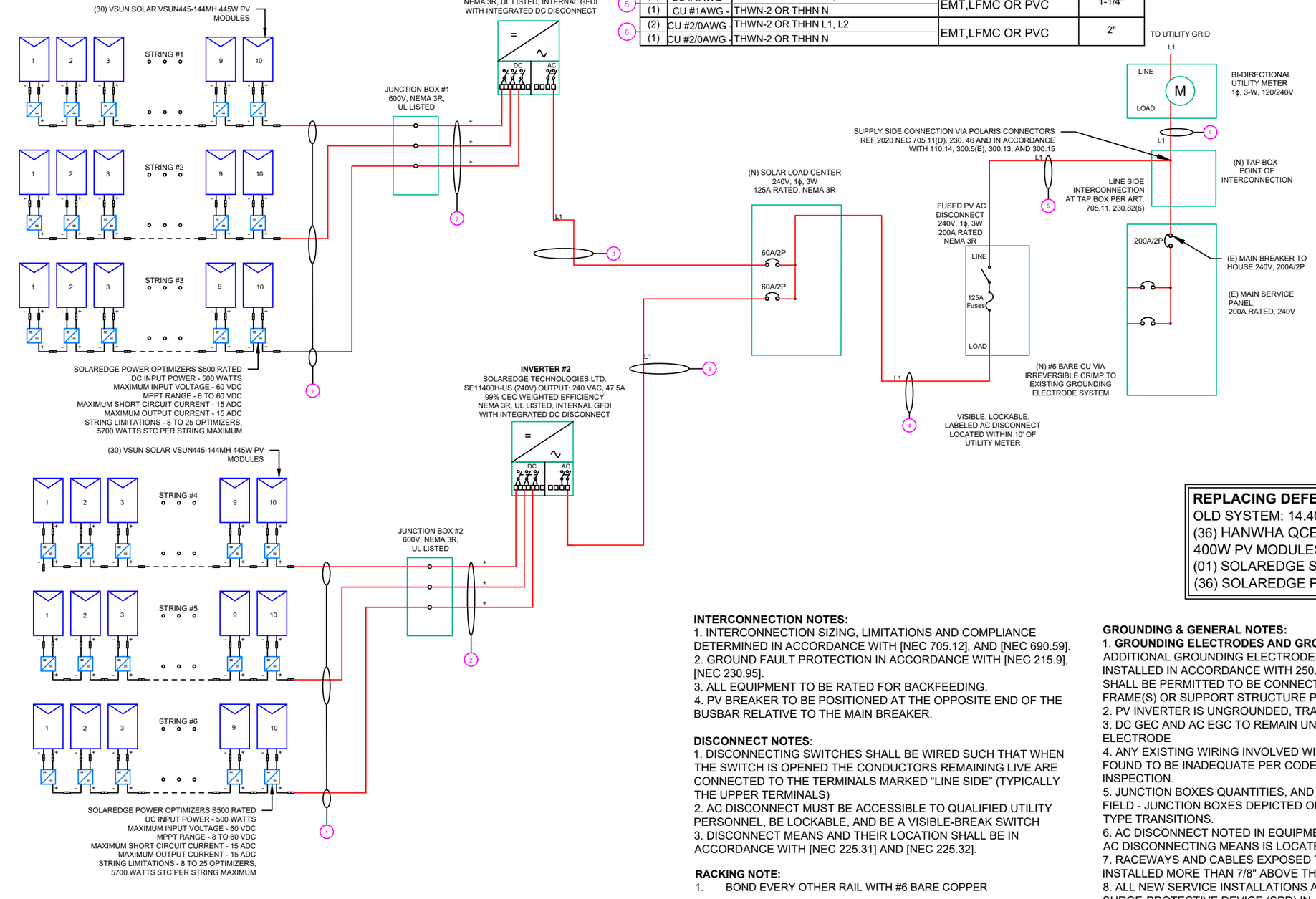
DC SYSTEM SIZE: 60 x 445W = 26.700KW DC
AC SYSTEM SIZE: 02 x 11400W = 22.800KW AC

(60) VSUN SOLAR VSUN445-144MH 445W PV MODULES WITH
(02) SOLAREDGE SE11400H-US (240V) INVERTERS AND
(60) SOLAREDGE S500 POWER OPTIMIZERS ARE
LOCATED UNDER EACH MODULE

(06) STRINGS 10 MODULES ARE CONNECTED IN SERIES

METER ID: # 10 791 086

	QTY	CONDUCTOR INFORMATION		CONDUIT TYPE	CONDUIT SIZE
1	(12)	CU#10AWG -	PV WIRE (POSITIVE & NEGATIVE)	N/A	N/A
	(1)	CU #6AWG -	BARE COPPER IN FREE AIR		
2	(12)	CU#10AWG -	THWN-2 (+, -) (EXTERIOR)	EMT/LFMC	3/4"
	(1)	CU #10AWG -	THWN-2 GND		
3	(2)	CU #6AWG -	THWN-2 OR THHN L1 &L2	EMT,LFMC OR PVC	3/4"
	(1)	CU #6AWG -	THWN-2 OR THHN N		
	(1)	CU #10AWG-	THWN-2 OR THHN GND		
4	(3)	CU #1AWG -	THWN-2 OR THHN L1, L2 & N	EMT,LFMC OR PVC	1-1/4"
	(1)	CU #6AWG -	THWN-2 OR THHN GND		
5	(2)	CU #1AWG -	THWN-2 OR THHN L1, L2	EMT,LFMC OR PVC	1-1/4"
	(1)	CU #1AWG -	THWN-2 OR THHN N		
6	(2)	CU #2/0AWG -	THWN-2 OR THHN L1, L2	EMT,LFMC OR PVC	2"
	(1)	CU #2/0AWG -	THWN-2 OR THHN N		



REPLACING DEFECTIVE EXISTING SYSTEM:
OLD SYSTEM: 14.400 KW DC ROOF MOUNT
(36) HANWHA QCELLS: Q.PEAK DUO BLK ML-G10+ 400W PV MODULES
(01) SOLAREDGE SE114000H-US (240V) INVERTER
(36) SOLAREDGE POWER OPTIMIZERS

INTERCONNECTION NOTES:
1. INTERCONNECTION SIZING, LIMITATIONS AND COMPLIANCE DETERMINED IN ACCORDANCE WITH [NEC 705.12], AND [NEC 690.59].
2. GROUND FAULT PROTECTION IN ACCORDANCE WITH [NEC 215.9], [NEC 230.95].
3. ALL EQUIPMENT TO BE RATED FOR BACKFEEDING.
4. PV BREAKER TO BE POSITIONED AT THE OPPOSITE END OF THE BUSBAR RELATIVE TO THE MAIN BREAKER.

DISCONNECT NOTES:
1. DISCONNECTING SWITCHES SHALL BE WIRED SUCH THAT WHEN THE SWITCH IS OPENED THE CONDUCTORS REMAINING LIVE ARE CONNECTED TO THE TERMINALS MARKED "LINE SIDE" (TYPICALLY THE UPPER TERMINALS)
2. AC DISCONNECT MUST BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH
3. DISCONNECT MEANS AND THEIR LOCATION SHALL BE IN ACCORDANCE WITH [NEC 225.31] AND [NEC 225.32].

RACKING NOTE:
1. BOND EVERY OTHER RAIL WITH #6 BARE COPPER

INSTALLER / ELECTRICIAN NOTE:
EC IS TO MEASURE VOLTAGE BEFORE STARTING WORK.
IF RESULT IS ANY OTHER VOLTAGE MEASURED THAN 120/240V IS OBSERVED, DO NOT PROCEED. CONTACT ENGINEER.

GROUNDING & GENERAL NOTES:
1. **GROUNDING ELECTRODES AND GROUNDING ELECTRODE CONDUCTORS.** ADDITIONAL GROUNDING ELECTRODES SHALL BE PERMITTED TO BE INSTALLED IN ACCORDANCE WITH 250.52 AND 250.54.GROUNDING ELECTRODES SHALL BE PERMITTED TO BE CONNECTED DIRECTLY TO THE PV MODULE FRAME(S) OR SUPPORT STRUCTURE PER [NEC 690.47(B)]
2. PV INVERTER IS UNGROUNDED, TRANSFORMER-LESS TYPE.
3. DC GEC AND AC EGC TO REMAIN UNSPLICED, OR SPLICED TO EXISTING ELECTRODE
4. ANY EXISTING WIRING INVOLVED WITH PV SYSTEM CONNECTION THAT IS FOUND TO BE INADEQUATE PER CODE SHALL BE CORRECTED PRIOR TO FINAL INSPECTION.
5. JUNCTION BOXES QUANTITIES, AND PLACEMENT SUBJECT TO CHANGE IN THE FIELD - JUNCTION BOXES DEPICTED ON ELECTRICAL DIAGRAM REPRESENT WIRE TYPE TRANSITIONS.
6. AC DISCONNECT NOTED IN EQUIPMENT SCHEDULE OPTIONAL IF OTHER AC DISCONNECTING MEANS IS LOCATED WITHIN 10' OF SERVICE DISCONNECT.
7. RACEWAYS AND CABLES EXPOSED TO SUNLIGHT ON ROOFTOPS SHOULD BE INSTALLED MORE THAN 7/8" ABOVE THE ROOF USING CONDUIT SUPPORTS.
8. ALL NEW SERVICE INSTALLATIONS AND REPLACEMENTS REQUIRE A SURGE-PROTECTIVE DEVICE (SPD) IN ACCORDANCE WITH [NEC 230.67]. THE SPD SHALL BE TYPE 1 OR TYPE 2 AND IS REQUIRED TO BE AN INTEGRAL PART OF THE SERVICE EQUIPMENT OR LOCATED IMMEDIATELY ADJACENT THERETO.

1 ELECTRICAL LINE DIAGRAM
PV-6.1 SCALE: NTS

CMS Renewable Contractors
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EMAIL: edgar@cmsrenewable.com
LICENSE NO: #35493
ELECTRICAL LICENSE: #213982

REVISIONS

DESCRIPTION	DATE	REV
INITIAL	02/28/2025	

STATE OF TEXAS
Richard Pantel
142628
LICENSED
PROFESSIONAL ENGINEER

Reviewed and approved
Richard Pantel, P.E.
TX Lic. No. PE 142628
Firm F-24051
05/02/2025

PROJECT NAME & ADDRESS

THEODORE WOOD RESIDENCE
2224 HOUSTON PL, DENTON, TX 76201

DRAWN BY
ESR

SHEET NAME
SINGLE LINE DIAGRAM

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-6.1

INVERTER SPECIFICATIONS	
MANUFACTURER / MODEL #	SOLAREDGE SE11400H-US (240V) INVERTER
NOMINAL AC POWER	11.400KW
NOMINAL OUTPUT VOLTAGE	240 VAC
NOMINAL OUTPUT CURRENT	47.5A

SOLAR MODULE SPECIFICATIONS	
MANUFACTURER / MODEL #	VSUN SOLAR VSUN445-144MH 445W MODULE
VMP	41.20V
IMP	10.81A
VOC	49.80V
ISC	11.42A
TEMP. COEFF. VOC	-0.286%/°C
MODULE DIMENSION	82.99"L x 41.26"W x 1.38"D (In Inch)

AMBIENT TEMPERATURE SPECS	
RECORD LOW TEMP	-10°C
AMBIENT TEMP (HIGH TEMP 2%)	40°C
MODULE TEMPERATURE COEFFICIENT OF Voc	-0.286%/°C

PERCENT OF VALUES	NUMBER OF CURRENT CARRYING CONDUCTORS IN EMT
.80	4-6
.70	7-9
.50	10-20

DC FEEDER CALCULATIONS

CIRCUIT ORIGIN	CIRCIUT DESTINATION	VOLTAGE (V)	FULL LOAD AMPS "FLA" (A)	FLA*1.25 (A)	OCPD SIZE (A)	GROUND SIZE	CONDUCTOR SIZE	75°C AMPACITY (A)	AMPACITY CHECK #1	AMBIENT TEMP. (°C)	TOTAL CC CONDUCTORS IN RACEWAY	90°C AMPACITY (A)	DERATION FACTOR FOR AMBIENT TEMPERATURE NEC 310.15(B)(2)(a)	DERATION FACTOR FOR CONDUCTORS PER RACEWAY NEC 310.15(B)(3)(a)	90°C AMPACITY DERATED (A)	AMPACITY CHECK #2	FEEDER LENGTH (FEET)	CONDUCTOR RESISTANCE (OHM/KFT)	VOLTAGE DROP AT FLA (%)	CONDUIT SIZE	CONDUIT FILL (%)
STRING 1	JUNCTION BOX #1	400	15.00	18.75	20	BARE COPPER #6 AWG	CU #10 AWG	35	PASS	40	2	40	0.91	1	36.4	PASS	34	1.24	0.316	N/A	#N/A
STRING 2	JUNCTION BOX #1	400	15.00	18.75	20	BARE COPPER #6 AWG	CU #10 AWG	35	PASS	40	2	40	0.91	1	36.4	PASS	38	1.24	0.353	N/A	#N/A
STRING 3	JUNCTION BOX #1	400	15.00	18.75	20	BARE COPPER #6 AWG	CU #10 AWG	35	PASS	40	2	40	0.91	1	36.4	PASS	39	1.24	0.363	N/A	#N/A
JUNCTION BOX #1	INVERTER #1	400	15.00	18.75	20	CU #10 AWG	CU #10 AWG	35	PASS	40	6	40	0.91	0.8	29.12	PASS	30	1.24	0.279	3/4" EMT	27.71107
STRING 4	JUNCTION BOX #2	400	15.00	18.75	20	BARE COPPER #6 AWG	CU #10 AWG	35	PASS	40	2	40	0.91	1	36.4	PASS	61	1.24	0.567	N/A	#N/A
STRING 5	JUNCTION BOX #2	400	15.00	18.75	20	BARE COPPER #6 AWG	CU #10 AWG	35	PASS	40	2	40	0.91	1	36.4	PASS	35	1.24	0.326	N/A	#N/A
STRING 6	JUNCTION BOX #2	400	15.00	18.75	20	BARE COPPER #6 AWG	CU #10 AWG	35	PASS	40	2	40	0.91	1	36.4	PASS	33	1.24	0.307	N/A	#N/A
JUNCTION BOX #2	INVERTER #2	400	15.00	18.75	20	CU #10 AWG	CU #10 AWG	35	PASS	40	6	40	0.91	0.8	29.12	PASS	30	1.24	0.279	3/4" EMT	27.71107

String 1 Voltage Drop	0.595
String 2 Voltage Drop	0.632
String 3 Voltage Drop	0.642
String 4 Voltage Drop	0.846
String 5 Voltage Drop	0.605
String 6 Voltage Drop	0.586

AC FEEDER CALCULATIONS

CIRCUIT ORIGIN	CIRCIUT DESTINATION	VOLTAGE (V)	FULL LOAD AMPS "FLA" (A)	FLA*1.25 (A)	OCPD SIZE (A)	NEUTRAL SIZE	GROUND SIZE	CONDUCTOR SIZE	75°C AMPACITY (A)	AMPACITY CHECK #1	AMBIENT TEMP. (°C)	TOTAL CC CONDUCTORS IN RACEWAY	90°C AMPACITY (A)	DERATION FACTOR FOR AMBIENT TEMPERATURE NEC 310.15(B)(2)(a)	DERATION FACTOR FOR CONDUCTORS PER RACEWAY NEC 310.15(B)(3)(a)	90°C AMPACITY DERATED (A)	AMPACITY CHECK #2	FEEDER LENGTH (FEET)	CONDUCTOR RESISTANCE (OHM/KFT)	VOLTAGE DROP AT FLA (%)	CONDUIT SIZE	CONDUIT FILL (%)
INVERTER#1	SOLAR LOAD CENTER	240	47.5	59.375	60	CU #6 AWG	CU #10 AWG	CU #6 AWG	65	PASS	40	2	75	0.91	1	68.25	PASS	5	0.491	0.097	3/4" EMT	32.4953
INVERTER#2	SOLAR LOAD CENTER	240	47.5	59.375	60	CU #6 AWG	CU #10 AWG	CU #6 AWG	65	PASS	40	2	75	0.91	1	68.25	PASS	5	0.491	0.097	3/4" EMT	32.4953
SOLAR LOAD CENTER	AC DISCONNECT	240	95	118.75	125	CU #1 AWG	CU #6 AWG	CU #1 AWG	130	PASS	40	2	145	0.91	1	131.95	PASS	5	0.154	0.061	1 1/4" EMT	34.7126
AC DISCONNECT	POI	240	95	118.75	125	CU #1 AWG	N/A	CU #1 AWG	130	PASS	40	2	145	0.91	1	131.95	PASS	5	0.154	0.061	1 1/4" EMT	31.3235

CUMULATIVE VOLTAGE DROP	0.316

ELECTRICAL NOTES

1. ALL EQUIPMENT TO BE LISTED BY UL OR OTHER NRTL, AND LABELED FOR ITS APPLICATION.
2. ALL CONDUCTORS SHALL BE COPPER, RATED FOR 600 V AND 90 DEGREE C WET ENVIRONMENT.
3. WIRING, CONDUIT, AND RACEWAYS MOUNTED ON ROOFTOPS SHALL BE ROUTED DIRECTLY TO, AND LOCATED AS CLOSE AS POSSIBLE TO THE NEAREST RIDGE, HIP, OR VALLEY.
4. WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26.
5. DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS. CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS AND ACCESSORIES TO FULFILL APPLICABLE CODES AND STANDARDS.
6. WHERE SIZES OF JUNCTION BOXES, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY.
7. ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.
8. MODULE GROUNDING CLIPS TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER THE GROUNDING CLIP MANUFACTURER'S INSTRUCTION.
9. MODULE SUPPORT RAIL TO BE BONDED TO CONTINUOUS COPPER G.E.C. VIA WEEB LUG OR ILSCO GBL-4DBT LAY-IN LUG.
10. TEMPERATURE RATINGS OF ALL CONDUCTORS, TERMINATIONS, BREAKERS, OR OTHER DEVICES ASSOCIATED WITH THE SOLAR PV SYSTEM SHALL BE RATED FOR AT LEAST 75 DEGREE C.
11. CONDUIT INSTALLED AT MINIMUM DISTANCE OF 7/8 INCHES ABOVE ROOF .....NEC 310.15(B)(3)(C)

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Richard Pantel
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LICENSED
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Firm F-24051
05/02/2025

PROJECT NAME & ADDRESS

THEODORE WOOD RESIDENCE

2224 HOUSTON PL, DENTON, TX 76201

DRAWN BY
ESR

SHEET NAME
WIRING CALCULATIONS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-7

CAUTION:
AUTHORIZED SOLAR PERSONNEL ONLY!

LABEL-1:
LABEL LOCATION:
AC DISCONNECT

⚠ WARNING

ELECTRICAL SHOCK HAZARD

TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

LABEL- 2:
LABEL LOCATION:
AC DISCONNECT
COMBINER
MAIN SERVICE PANEL
SUBPANEL
MAIN SERVICE DISCONNECT
CODE REF: NEC 690.13(B)

⚠WARNING **DUAL POWER SOURCE SECOND SOURCE IS PHOTOVOLTAIC SYSTEM**

LABEL- 3:
LABEL LOCATION:
UTILITY METER
MAIN SERVICE PANEL
SUBPANEL
CODE REF: NEC 705.12(C) & NEC 690.59

⚠ WARNING

TURN OFF PHOTOVOLTAIC AC DISCONNECT PRIOR TO WORKING INSIDE PANEL

LABEL- 4:
LABEL LOCATION:
MAIN SERVICE PANEL
SUBPANEL
MAIN SERVICE DISCONNECT
COMBINER
CODE REF: NEC 110.27(C) & OSHA 1910.145 (f) (7)

⚠ WARNING

POWER SOURCE OUTPUT CONNECTION. DO NOT RELOCATE THIS OVERCURRENT DEVICE

LABEL- 5:
LABEL LOCATION:
MAIN SERVICE PANEL (ONLY IF SOLAR IS BACK-FED)
SUBPANEL (ONLY IF SOLAR IS BACK-FED)
CODE REF: NEC 705.12(B)(3)(2)

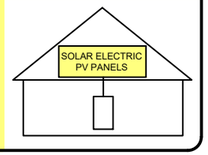
⚠ WARNING

THIS EQUIPMENT FED BY MULTIPLE SOURCES. TOTAL RATING OF ALL OVERCURRENT DEVICES EXCLUDING MAIN SUPPLY OVERCURRENT DEVICE SHALL NOT EXCEED AMPACITY OF BUSBAR.

LABEL- 6:
LABEL LOCATION:
MAIN SERVICE PANEL (ONLY IF SOLAR IS BACK-FED)
SUBPANEL (ONLY IF SOLAR IS BACK-FED)
CODE REF: NEC 705.12(B)(3)(2)

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- 7:
LABEL LOCATION:
AC DISCONNECT
CODE REF:NEC 690.56(C)

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

LABEL- 8:
LABEL LOCATION:
AC DISCONNECT
CODE REF: NEC 690.56(C)(2)

PHOTOVOLTAIC

AC DISCONNECT

LABEL- 9:
LABEL LOCATION:
AC DISCONNECT
CODE REF: NEC 690.13(B)

PV/ESS AC DISCONNECT

NOMINAL OPERATING AC VOLATGE	240 V
RATED AC OUTPUT CURRENT	95.00 A

LABEL- 10:
LABEL LOCATION:
MAIN SERVICE PANEL
SUBPANEL
AC DISCONNECT
CODE REF: NEC 690.54

MAIN PHOTOVOLTAIC SYSTEM DISCONNECT

LABEL- 11:
LABEL LOCATION:
MAIN SERVICE DISCONNECT (ONLY IF MAIN SERVICE DISCONNECT IS PRESENT)
CODE REF: NEC 690.13(B)

INVERTER #1 AC DISCONNECT

NOMINAL OPERATING AC VOLTAGE	240 V
RATED AC OUTPUT CURRENT	47.50 A

LABEL- 12:
LABEL LOCATION:
INVERTER
CODE REF: NEC 690.54

MAXIMUM VOLTAGE	480 V
MAXIMUM CIRCUIT CURRENT	30.50 A
MAXIMUM RATED OUTPUT CURRENT OF THE CHARGE CONTROLLER OR DC-TO-DC CONVERTER (IF INSTALLED)	

LABEL- 13:
LABEL LOCATION:
INVERTER
CODE REF: NEC 690.53

INVERTER #2 AC DISCONNECT

NOMINAL OPERATING AC VOLTAGE	240 V
RATED AC OUTPUT CURRENT	47.50 A

LABEL- 14:
LABEL LOCATION:
INVERTER
CODE REF: NEC 690.54

MAXIMUM VOLTAGE	480 V
MAXIMUM CIRCUIT CURRENT	30.50 A
MAXIMUM RATED OUTPUT CURRENT OF THE CHARGE CONTROLLER OR DC-TO-DC CONVERTER (IF INSTALLED)	

LABEL- 15:
LABEL LOCATION:
INVERTER
CODE REF: NEC 690.53

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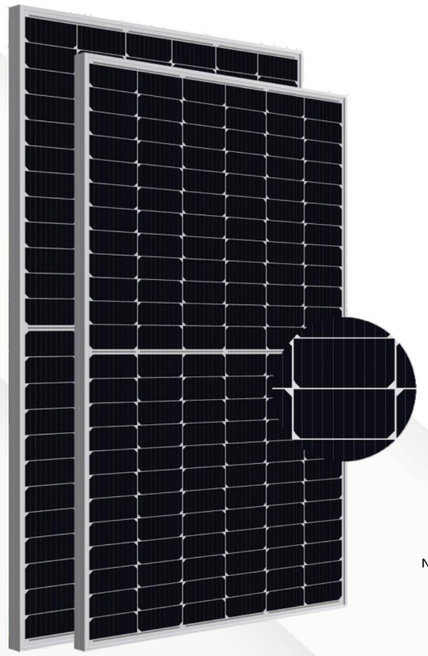
DRAWN BY
ESR

SHEET NAME
LABELS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-8

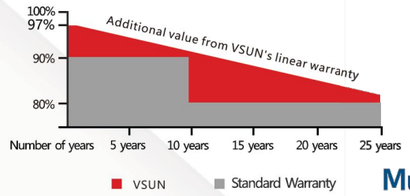


20.37%
Module efficiency

12years
Material & Workmanship warranty

450W
Highest power output

25years
Linear power output warranty



Munich RE

VSUN450-144MH

- 166mm Mono-PERC Cell
- Half-cell technology
- Lower LCOE and BOS
- MBB technology
- Lower risk of micro-crack
- Lower risk of hot spot
- Higher output power
- Positive tolerance offer
- Better shading tolerance

VSUN, a BNEF Tier-1 PV module manufactuer. Invested by Fuji Solar, VSUN is a Japanese solar module solutions provider.

Innovative & Smart – VSUN has been committed to providing greener, cleaner, and more intelligent renewable energy solutions. It is focusing on the new energy market and the development of customized and high-efficiency products.

Electrical Characteristics at Standard Test Conditions(STC)

Module Type	VSUN450-144MH	VSUN445-144MH	VSUN440-144MH	VSUN435-144MH
Maximum Power - Pmax (W)	450	445	440	435
Open Circuit Voltage - Voc (V)	50	49.8	49.6	49.4
Short Circuit Current - Isc (A)	11.5	11.42	11.34	11.26
Maximum Power Voltage - Vmpp (V)	41.4	41.2	41	40.8
Maximum Power Current - Impp (A)	10.87	10.81	10.74	10.67
Module Efficiency	20.37%	20.14%	19.92%	19.69%

Standard Test Conditions (STC): irradiance 1,000 W/m²; AM 1,5; module temperature 25℃. Pmax Sorting : 0~5W. Measuring Tolerance: ±3%.
Remark: Electrical data do not refer to a single module and they are not part of the offer. They only serve for comparison among different module types.

Electrical Characteristics at Normal Operating Cell Temperature(NOCT)

Module Type	VSUN450-144MH	VSUN445-144MH	VSUN440-144MH	VSUN435-144MH
Maximum Power - Pmax (W)	333.8	330.4	326.6	322.2
Open Circuit Voltage - Voc (V)	46.3	46.2	46	46.1
Short Circuit Current - Isc (A)	9.3	9.24	9.17	9.08
Maximum Power Voltage - Vmpp (V)	38.2	38	37.9	37.7
Maximum Power Current - Impp (A)	8.75	8.69	8.62	8.56

Normal Operating Cell Temperature((NOCT) : irradiance 800W/m2; wind speed 1 m/s ; ambient temperature 20/℃. Measuring Tolerance: ±3%.

Temperature Characteristics

NOCT	45℃ (±2℃)
Voltage Temperature Coefficient	-0.286%/℃
Current Temperature Coefficient	+0.057%/℃
Power Temperature Coefficient	-0.37%/℃

Maximum Ratings

Maximum System Voltage [V]	1500
Series Fuse Rating [A]	20

Material Characteristics

Dimensions	2108×1048×35mm (L×W×H)
Weight	23.8kg
Frame	Anodized aluminum profile
Front Glass	White toughened safety glass, 3.2 mm
Cell Encapsulation	EVA (Ethylene-Vinyl-Acetate)
Back Sheet	Composite film
Cells	12×12 pieces monocrystalline solar cells series strings
Junction Box	IP≧67, 3 diodes
Cable&Connector	Potrait: 500 mm (cable length can be customized) , 1×4 mm2, compatible with MC4

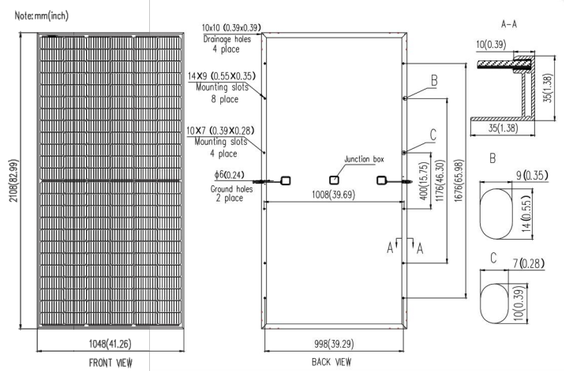
Packaging

Dimensions(L×W×H)	2140×1105×1182mm
Container20'	150
Container40'	660
Container40'HC	715

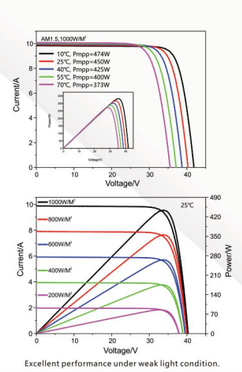
System Design

Temperature Range	-40 °C to + 85 °C
Withstanding Hail	Maximum diameter of 25 mm with impact speed of 23 m·s-1
Maximum Surface Load	5,400 Pa
Application class	class A

Dimensions



IV-Curves



Excellent performance under weak light condition.

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DRAWN BY
ESR

SHEET NAME
MODULE DATASHEET

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-11

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, NEC 2017 and NEC 2020 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-XXXXXBXX4							
OUTPUT								
Rated AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
Maximum AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓	Vac
AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)	-	✓	-	✓	-	-	✓	Vac
AC Frequency (Nominal)	59.3 - 60 - 60.5[1]							Hz
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5	A
Maximum Continuous Output Current @208V	-	16	-	24	-	-	48.5	A
Power Factor	1, Adjustable - 0.85 to 0.85							
GFDI Threshold	1							A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes							
INPUT								
Maximum DC Power @240V	4650	5900	7750	9300	11800	15500	17650	W
Maximum DC Power @208V	-	5100	-	7750	-	-	15500	W
Transformer-less, Ungrounded	Yes							
Maximum Input Voltage	480							Vdc
Nominal DC Input Voltage	380				400			Vdc
Maximum Input Current @240V[2]	8.5	10.5	13.5	16.5	20	27	30.5	Adc
Maximum Input Current @208V[2]	-	9	-	13.5	-	-	27	Adc
Max. Input Short Circuit Current	45							Adc
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600kΩ Sensitivity							
Maximum Inverter Efficiency	99	99.2						%
CEC Weighted Efficiency	99						99 @ 240V 98.5 @ 208V	%
Nighttime Power Consumption	< 2.5							W

(1) For other regional settings please contact SolarEdge support
(2) A higher current source may be used; the inverter will limit its input current to the values stated

Single Phase Inverter with HD-Wave Technology

for North America

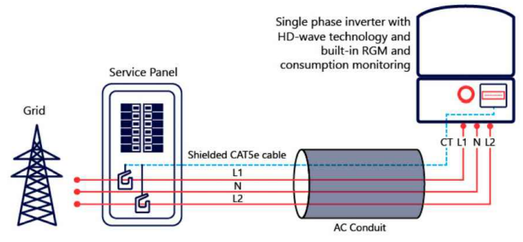
SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/
SE7600H-US / SE10000H-US / SE11400H-US

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[3]							
Consumption metering								
Inverter Commissioning	With the SetApp mobile application using Built-in Wi-Fi Access Point for Local Connection							
Rapid Shutdown - NEC 2014, NEC 2017 and NEC 2020, 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[4]							°F / °C
Protection Rating	NEMA 4X (Inverter with Safety Switch)							

(3) Inverter with Revenue Grade Meter P/N: SExxxxH-US000BNC4; Inverter with Revenue Grade Production and Consumption Meter P/N: SExxxxH-US000BN4 . For consumption metering, current transformers should be ordered separately: SEACT0750-200NA-20 or SEACT0750-400NA-20, 20 units per box
(4) 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

CMS Renewable Contractors

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REVISIONS

DESCRIPTION	DATE	REV
INITIAL	02/28/2025	

PROJECT NAME & ADDRESS

THEODORE WOOD RESIDENCE

2224 HOUSTON PL, DENTON, TX 76201

DRAWN BY

ESR

SHEET NAME

INVERTER DATASHEET

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-12

AUTHORIZATION TO MARK

This authorizes the application of the Certification Mark(s) shown below to the models described in the Product(s) Covered section when made in accordance with the conditions set forth in the Certification Agreement and Listing Report. This authorization also applies to multiple listee model(s) identified on the correlation page of the Listing Report.

This document is the property of Intertek Testing Services and is not transferable. The certification mark(s) may be applied only at the location of the Party Authorized To Apply Mark.

Applicant:	SolarEdge Technologies Ltd	**Manufacturer:**	Jabil Circuit (Guangzhou) LTD
Address:	1 Ha'Mada St. Herzeliya 4673335	**Address:**	DEV EAST DISTRICT 128 JUN CHENG RD GUANGZHOU GUANGDONG 510530
Country:	Israel	**Country:**	China

Party Authorized To Apply Mark: Same as Manufacturer
Report Issuing Office: Intertek Testing Services NA, Inc., Cortland, NY

Control Number: ***4004590*** **Authorized by:**

for L. Matthew Snyder, Certification Manager

This document supersedes all previous Authorizations to Mark for the noted Report Number.

Intertek Testing Services NA Inc.
545 East Algonquin Road, Arlington Heights, IL 60005
Telephone 800-345-3851 or 847-439-5667 Fax 312-283-1672

AUTHORIZATION TO MARK

Standard(s):	Inverters, Converters, Controllers and Interconnection System Equipment for use with Distributed Energy Resources [UL 1741:2021 Ed.3] Grid Support Utility Interactive Equipment - Supplement SA to UL 1741:2021 Ed.3 - Inverters, Converters, Controllers and Interconnection System Equipment for use with Distributed Energy Resources [UL 1741:2021 Ed.3 (Supplement SA)] Grid Support Utility Interactive Inverters and Converters Based Upon IEEE 1547:2018 & IEEE 1547.1:2020 - Supplement SB to UL 1741:2021 Ed.3 - Inverters, Converters, Controllers and Interconnection System Equipment for use with Distributed Energy Resources [UL 1741:2021 Ed.3 (Supplement SB)] Power Conversion Equipment [CSA C22.2#107.1:2016 Ed.4] Interconnection of Distributed Energy Resources and Electricity Supply Systems [CSA C22.3#9:2020 Ed.2] Photovoltaic (PV) DC Arc-Fault Circuit Protection [UL 1699B:2018 Ed.1+R:18May2021] Photovoltaic Rapid Shutdown Systems (R2022) [CSA C22.2#330:2017 Ed.1]
Product:	Grid support Utility Interactive Inverter - Non Isolated Photovoltaic Inverter with MPPT function and Rapid shut down Function and Arc Fault Protection and Stand alone application.
Brand Name:	SolarEdge
Models:	SE3000H-US, SE3800H-US, SE5000H-US, SE5700H-US, SE6000H-US, SE7600H-US, SE10000H-US and SE11400H-US.

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REVISIONS

DESCRIPTION	DATE	REV
INITIAL	02/28/2025	

PROJECT NAME & ADDRESS

THEODORE WOOD RESIDENCE
2224 HOUSTON PL, DENTON, TX 76201

DRAWN BY
ESR

SHEET NAME
INVERTER CERTIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-13

Power Optimizer

For Residential Installations

S440 / S500 / S500B / S650B

POWER OPTIMIZER

Enabling PV power optimization at the module level

- Specifically designed to work with SolarEdge residential inverters
- Detects abnormal PV connector behavior, preventing potential safety issues*
- Module-level voltage shutdown for installer and firefighter safety
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch loss, from manufacturing tolerance to partial shading
- Faster installations with simplified cable management and easy assembly using a single bolt
- Flexible system design for maximum space utilization
- Compatible with bifacial PV modules

* Functionality subject to inverter model and firmware version

solaredge.com

solaredge

CE RoHS

/ Power Optimizer

For Residential Installations

S440 / S500 / S500B / S650B

	S440	S500	S500B	S650B	UNIT
INPUT					
Rated Input DC Power(1)	440(2)	500(3)		650	W
Absolute Maximum Input Voltage (Voc)	60		125	85	Vdc
MPPT Operating Range	8 – 60		12.5 – 105	12.5 – 85	Vdc
Maximum Short Circuit Current (Isc) of Connected PV Module	14.5(2)	15			Adc
Maximum Efficiency	99.5				%
Weighted Efficiency	98.6				%
Overvoltage Category	II				
OUTPUT DURING OPERATION					
Maximum Output Current	15				Adc
Maximum Output Voltage	60		80		Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM INVERTER OR INVERTER OFF)					
Safety Output Voltage per Power Optimizer	1 ± 0.1				Vdc
STANDARD COMPLIANCE(4)					
EMC	FCC Part 15 Class B, IEC61000-6-2, IEC61000-6-3, CISPR11, EN-55011				
Safety	IEC62109-1 (class II safety), UL1741				
Material	UL94 V-0, UV Resistant				
RoHS	Yes				
Fire Safety	VDE-AR-E 2100-712:2018-12				
INSTALLATION SPECIFICATIONS					
Maximum Allowed System Voltage	1000				Vdc
Dimensions (W x L x H)	129 x 155 x 30		129 x 165 x 45		mm
Weight	720		790		gr
Input Connector	MC4(5)				
Input Wire Length	0.1				m
Output Connector	MC4				
Output Wire Length	(+) 2.3, (-) 0.10				m
Operating Temperature Range(6)	-40 to +85				°C
Protection Rating	IP68				
Relative Humidity	0 – 100				%

(1) Rated power of the module at STC will not exceed the Power Optimizer Rated Input DC Power. Modules with up to +5% power tolerance are allowed.
(2) For installations after April 1st, 2024, the Rated Input DC Power for S440 is 490W, and the Maximum Isc of Connected PV Module is 15A.
(3) For installations after April 1st, 2024, the Rated Input DC Power for S500 and S500B is 550W.
(4) For details about CE compliance, see Declaration of Conformity – CE.
(5) For other connector types please contact SolarEdge.
(6) Power derating is applied for ambient temperatures above +85°C for S440 and S500, and for ambient temperatures above +75°C for S500B. Refer to the Power Optimizers Temperature Derating technical note for details.

PV System Design Using a SolarEdge Inverter(7)		SolarEdge Home Wave Inverter Single Phase	SolarEdge Home Short String Inverter Three Phase	Three Phase for 230/400V Grid	Three Phase for 277/480V Grid	
Minimum String Length (Power Optimizers)	S440, S500	8	9	16	18	
	S500B, S650B	6	8	14		
Maximum String Length (Power Optimizers)		25	20	50		
Maximum Continuous Power per String		5700	5625	11,250	12,750	W
Maximum Allowed Connected Power per String(8) (In multiple string designs, the maximum is permitted only when the difference in connected power between strings is 2,000W or less)		6800(9)	See(8)	13,500	15,000	W
Parallel Strings of Different Lengths or Orientations		Yes				

(7) It is not allowed to mix S-series and P-series Power Optimizers in new installations in the same string.
(8) If the inverter's rated AC power ≤ the maximum continuous power per string, then the maximum connected power per string will be able to reach up to the inverter's maximum input DC power. Refer to the Single String Design Guidelines application note for details.
(9) For inverters with a rated AC power ≥ 8000W that are connected to at least two strings.

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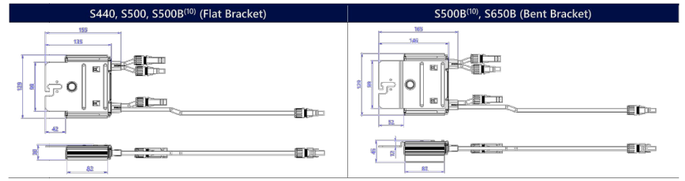
CE RoHS

/ Power Optimizer

For Residential Installations

S440 / S500 / S500B / S650B



(10) S500B has either a flat bracket or a bent bracket. S500B-1GM4MRM has a flat bracket, and S500B-1GM4MBM has a bent bracket.

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REVISIONS

DESCRIPTION	DATE	REV
INITIAL	02/28/2025	

PROJECT NAME & ADDRESS

THEODORE WOOD RESIDENCE

2224 HOUSTON PL, DENTON, TX 76201

DRAWN BY

ESR

SHEET NAME

OPTIMIZER DATASHEET

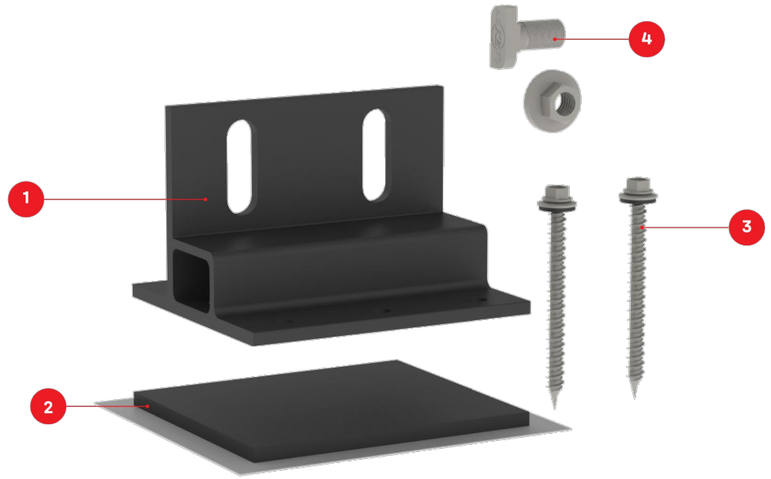
SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-14

TECHNICAL DATA



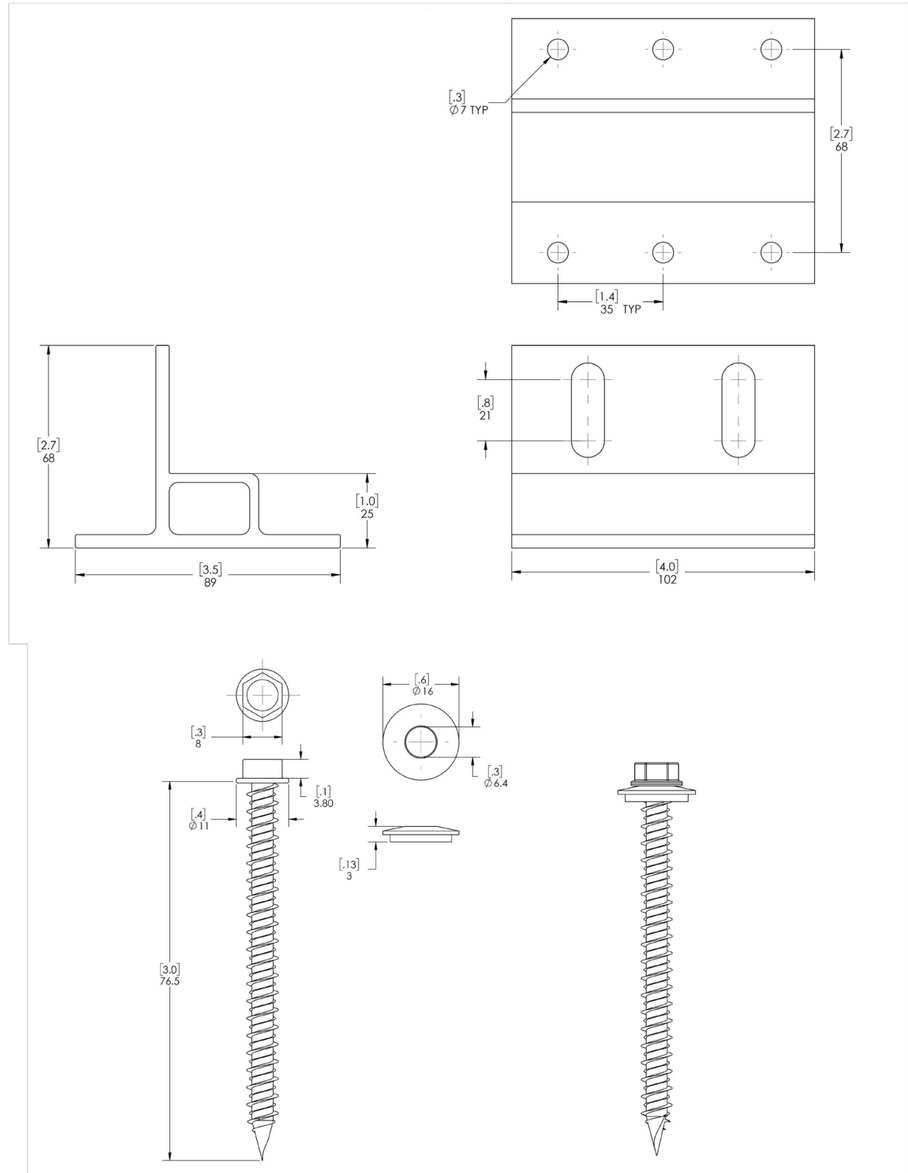
Splice Foot XL

Item Number	Description	Part Number
1	Splice Foot XL	4000165 | Splice Foot XL #14 Kit, Dark 4000300 | Splice Foot XL #14 Kit, Mill
2	K2 EverSeal	
3	#14 × 3in x 5/16in Hex Head Screw	
4	T-Bolt & Hex Nut Set	

	Splice Foot XL
Roof Type	Composition shingle, EPDM, TPO, Bitumen, Asphalt
Material	Aluminum with stainless steel hardware
Finish	Mill
Roof Connection	#14 × 3in x 5/16in Hex Head Screw
Code Compliance	UL 2703
Compatibility	CrossRail 44-X, 48-X, 48-XL, 80

TECHNICAL DATA

Units: [in] mm



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THEODORE WOOD RESIDENCE
2224 HOUSTON PL, DENTON, TX 76201

DRAWN BY
ESR

SHEET NAME
ATTACHMENT DATASHEET

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-15

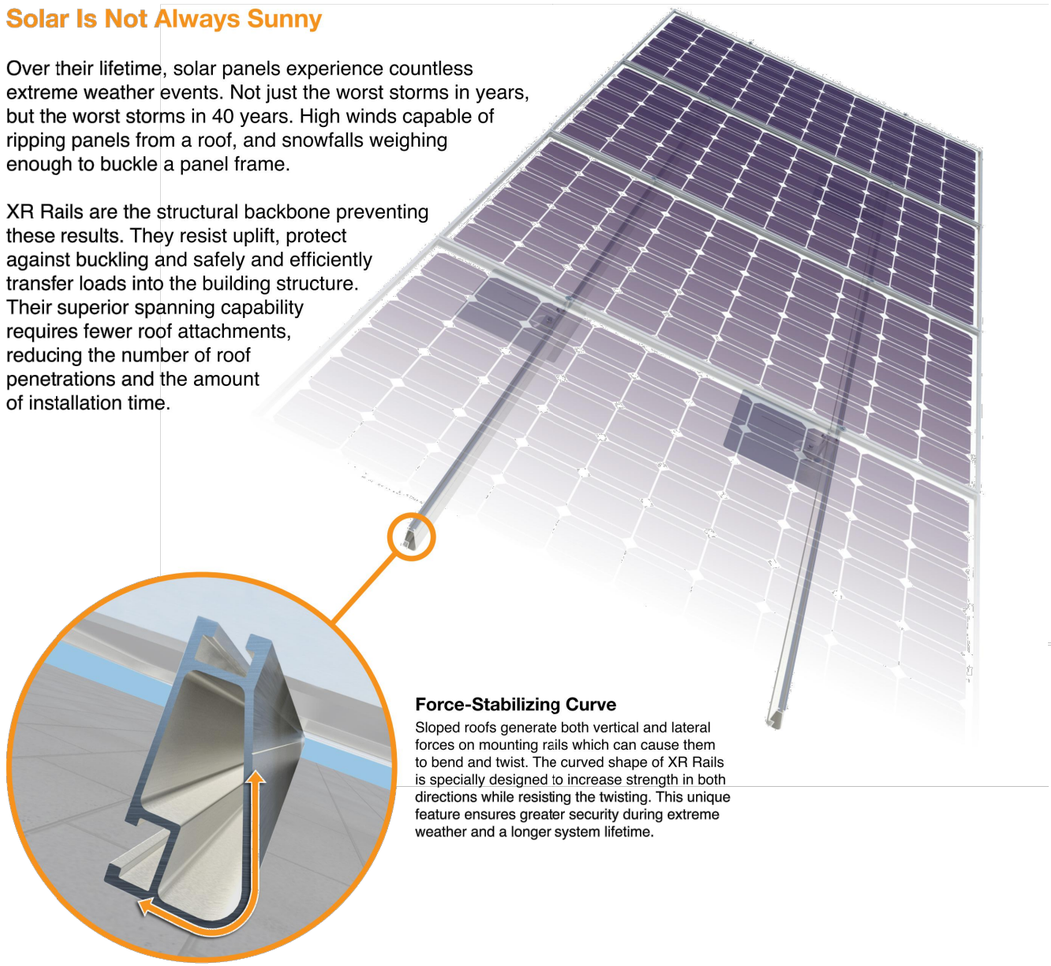
IRONRIDGE

XR Rail Family

Solar Is Not Always Sunny

Over their lifetime, solar panels experience countless extreme weather events. Not just the worst storms in years, but the worst storms in 40 years. High winds capable of ripping panels from a roof, and snowfalls weighing enough to buckle a panel frame.

XR Rails are the structural backbone preventing these results. They resist uplift, protect against buckling and safely and efficiently transfer loads into the building structure. Their superior spanning capability requires fewer roof attachments, reducing the number of roof penetrations and the amount of installation time.



Force-Stabilizing Curve

Sloped roofs generate both vertical and lateral forces on mounting rails which can cause them to bend and twist. The curved shape of XR Rails is specially designed to increase strength in both directions while resisting the twisting. This unique feature ensures greater security during extreme weather and a longer system lifetime.

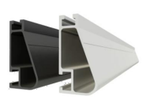
Compatible with Flat & Pitched Roofs

XR Rails are compatible with FlashFoot and other pitched roof attachments.

IronRidge offers a range of tilt leg options for flat roof mounting applications.

Corrosion-Resistant Materials

All XR Rails are made of 6000-series aluminum alloy, then protected with an anodized finish. Anodizing prevents surface and structural corrosion, while also providing a more attractive appearance.



Tech Brief

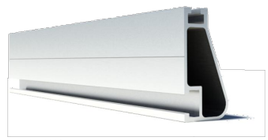
XR Rail Family

The XR Rail Family offers the strength of a curved rail in three targeted sizes. Each size supports specific design loads, while minimizing material costs. Depending on your location, there is an XR Rail to match.

XR10

XR10 is a sleek, low-profile mounting rail, designed for regions with light or no snow. It achieves spans up to 6 feet, while remaining light and economical.

- 6' spanning capability
- Moderate load capability
- Clear & black anodized finish
- Internal splices available



XR100

XR100 is the ultimate residential mounting rail. It supports a range of wind and snow conditions, while also maximizing spans up to 10 feet.

- 10' spanning capability
- Heavy load capability
- Clear & black anodized finish
- Internal splices available

XR1000

XR1000 is a heavyweight among solar mounting rails. It's built to handle extreme climates and spans up to 12 feet for commercial applications.

- 12' spanning capability
- Extreme load capability
- Clear anodized finish
- Internal splices available

Rail Selection

The table below was prepared in compliance with applicable engineering codes and standards.* Values are based on the following criteria: ASCE 7-16, Gable Roof Flush Mount, Roof Zones 1 & 2e, Exposure B, Roof Slope of 8 to 20 degrees and Mean Building Height of 30 ft. Visit IronRidge.com for detailed certification letters.

Load		Rail Span					
Snow (PSF)	Wind (MPH)	4'	5' 4"	6'	8'	10'	12'
None	90	XR10		XR100		XR1000	
	120						
	140						
	160						
20	90						
	120						
	140						
	160						
30	90						
	160						
40	90						
	160						
80	160						
120	160						

*Table is meant to be a simplified span chart for conveying general rail capabilities. Use approved certification letters for actual design guidance.

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REVISIONS

DESCRIPTION	DATE	REV
INITIAL	02/28/2025	

PROJECT NAME & ADDRESS

THEODORE WOOD RESIDENCE

2224 HOUSTON PL, DENTON, TX 76201

DRAWN BY

ESR

SHEET NAME

RACKING DATASHEET

SHEET SIZE

ANSI B
11" X 17"

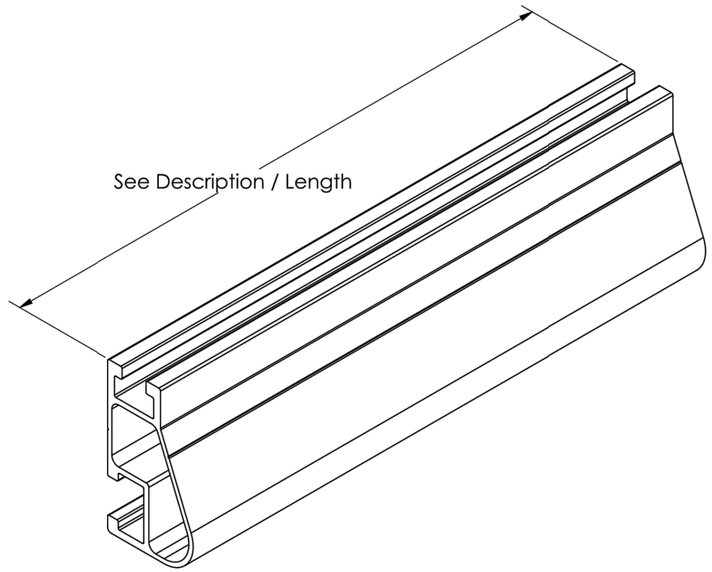
SHEET NUMBER

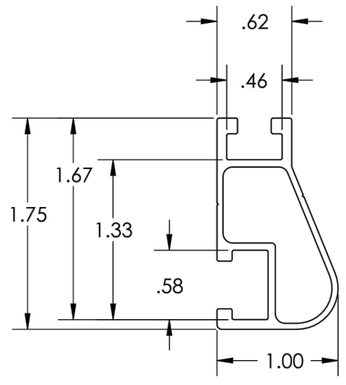
PV-16

Cut Sheet

IRONRIDGE

XR10® Rail





Rail Section Properties	
Property	Value
Total Cross-Sectional Area	0.363 in^2
Section Modulus (X-axis)	0.136 in^3
Moment of Inertia (X-axis)	0.124 in^4
Moment of Inertia (Y-axis)	0.032 in^4
Torsional Constant	0.076 in^3
Polar Moment of Inertia	0.033 in^4

Clear Part Number	Black Part Number	Description / Length	Material	Weight
XR-10-132A	XR-10-132B	XR10, Rail 132" (11 Feet)	6000-Series Aluminum	4.67 lbs.
XR-10-168A	XR-10-168B	XR10, Rail 168" (14 Feet)		5.95 lbs.
XR-10-204A	XR-10-204B	XR10, Rail 204" (17 Feet)		7.22 lbs.

v1.01

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SHEET NAME
RACKING DATASHEET

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-17

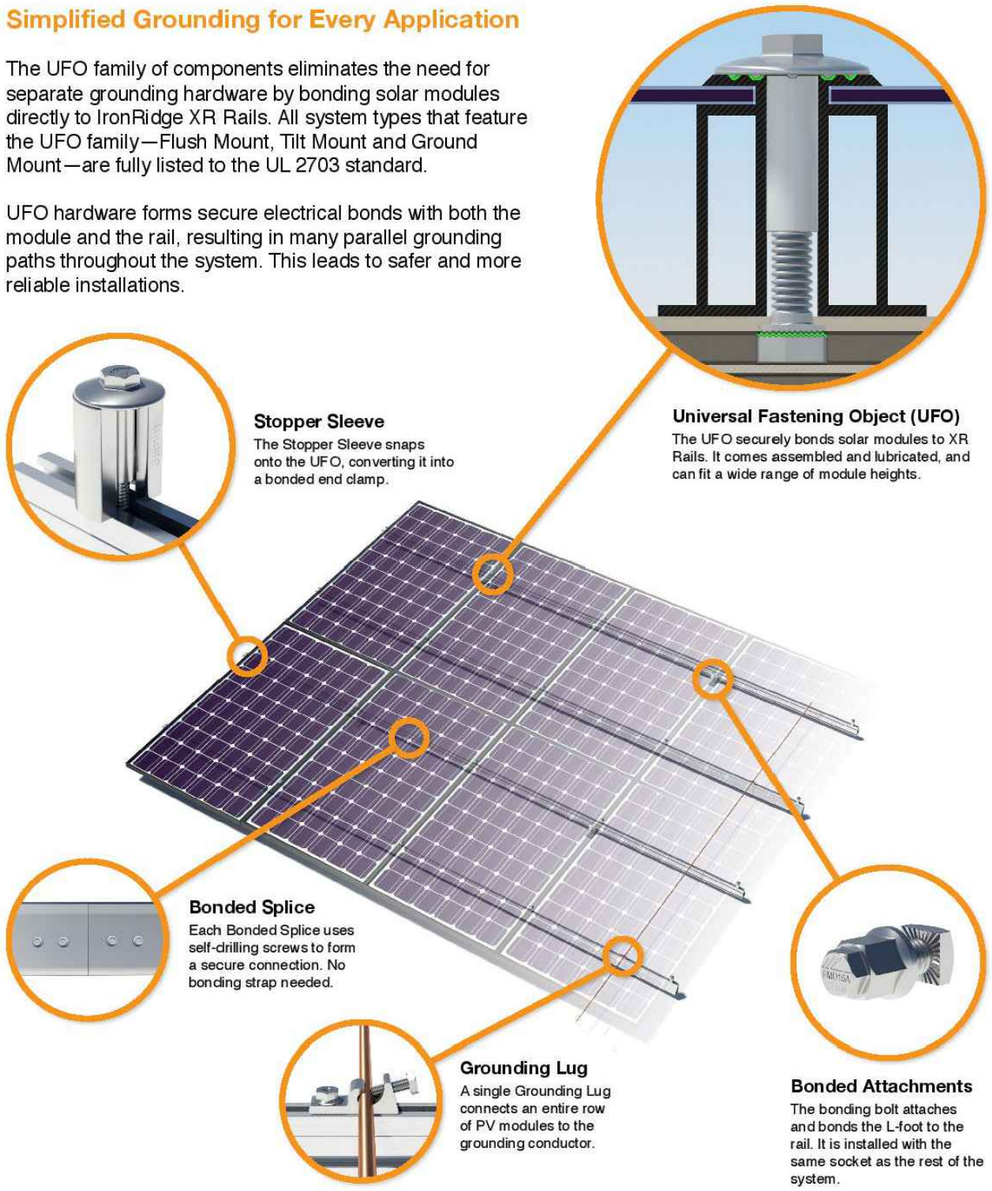
Tech Brief

UFO Family of Components

Simplified Grounding for Every Application

The UFO family of components eliminates the need for separate grounding hardware by bonding solar modules directly to IronRidge XR Rails. All system types that feature the UFO family—Flush Mount, Tilt Mount and Ground Mount—are fully listed to the UL 2703 standard.

UFO hardware forms secure electrical bonds with both the module and the rail, resulting in many parallel grounding paths throughout the system. This leads to safer and more reliable installations.



Stopper Sleeve
The Stopper Sleeve snaps onto the UFO, converting it into a bonded end clamp.

Universal Fastening Object (UFO)
The UFO securely bonds solar modules to XR Rails. It comes assembled and lubricated, and can fit a wide range of module heights.

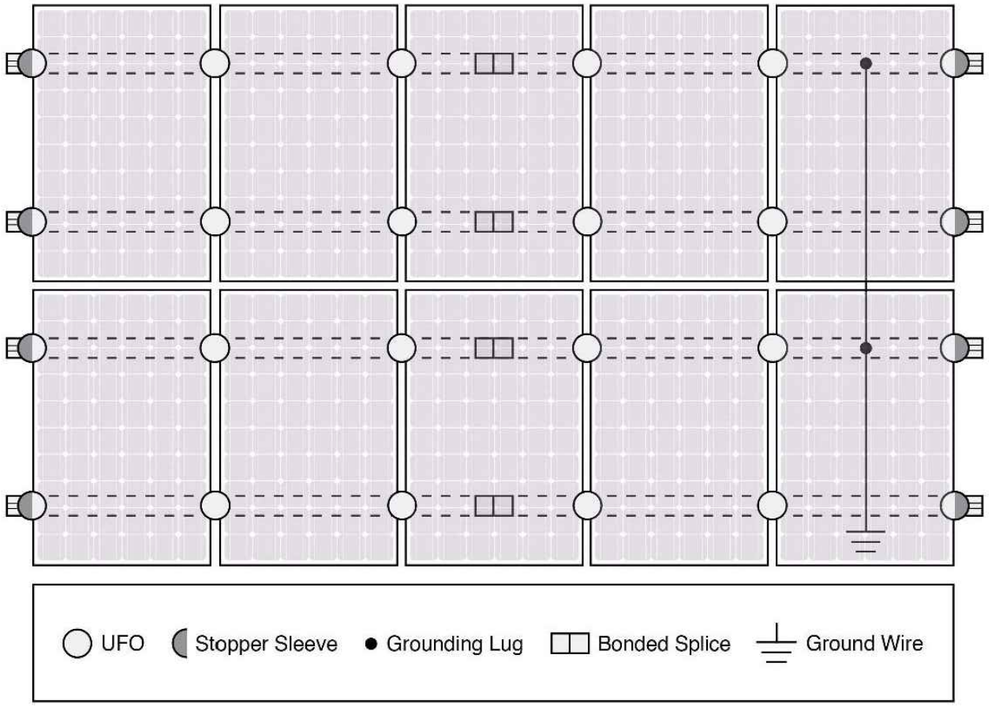
Bonded Splice
Each Bonded Splice uses self-drilling screws to form a secure connection. No bonding strap needed.

Grounding Lug
A single Grounding Lug connects an entire row of PV modules to the grounding conductor.

Bonded Attachments
The bonding bolt attaches and bonds the L-foot to the rail. It is installed with the same socket as the rest of the system.

Tech Brief

System Diagram



Approved Enphase microinverters can provide equipment grounding of IronRidge systems, eliminating the need for grounding lugs and field installed equipment ground conductors (EGC). A minimum of two microinverters mounted to the same rail and connected to the same Engage cable is required. Refer to installation manuals for additional details.

UL Certification

The IronRidge Flush Mount, Tilt Mount, and Ground Mount Systems have been listed to UL 2703 by Intertek Group plc.

UL 2703 is the standard for evaluating solar mounting systems. It ensures these devices will maintain strong electrical and mechanical connections over an extended period of time in extreme outdoor environments.

Go to IronRidge.com/UFO

Cross-System Compatibility			
Feature	**Flush Mount**	**Tilt Mount**	**Ground Mount**
XR Rails	✔	✔	XR1000 Only
UFO/Stopper	✔	✔	✔
Bonded Splice	✔	✔	N/A
Grounding Lugs	1 per Row	1 per Row	1 per Array
Microinverters & Power Optimizers	Enphase - M250-72, M250-60, M215-60, C250-72 Darfon - MIG240, MIG300, G320, G640 SolarEdge - P300, P320, P400, P405, P600, P700, P730		
Fire Rating	Class A	Class A	N/A
Modules	Tested or Evaluated with over 400 Framed Modules Refer to installation manuals for a detailed list.		

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ESR

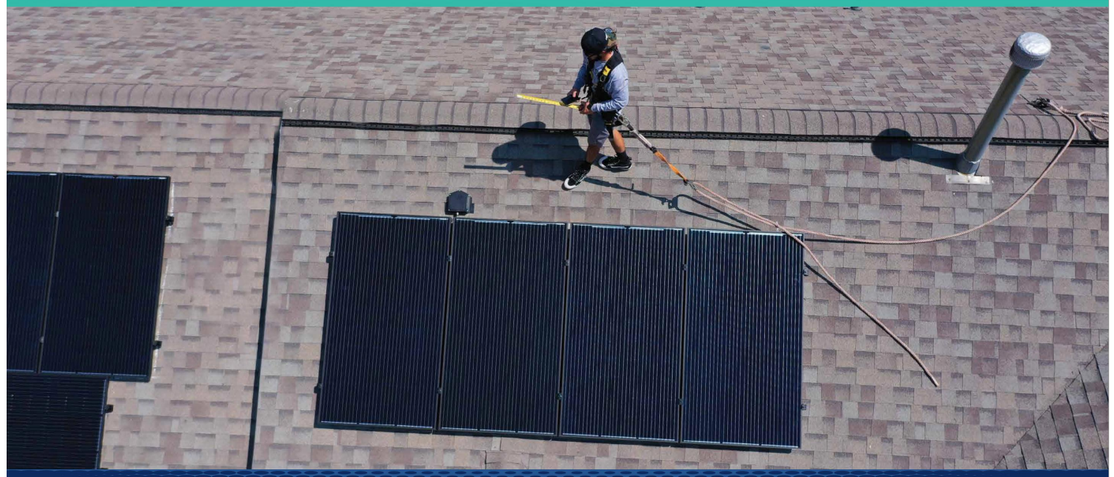
SHEET NAME
RACKING DATASHEET

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-18

EZ SOLAR
making solar simple.

JB-1.2



THE ULTIMATE ROOFTOP JUNCTION BOX

EZ Solar believes innovation is key to making Solar Simple! The most revolutionary junction box on the market just got better! Designed with the installer in mind, the **JB-1.2** makes installation fast and easy!

SIMPLE TO INSTALL

- Minimal Shingle Cutting
- Enter Through 3 Sidewalls
- Wider and Taller Sidewalls

HIGH QUALITY

- Made from advanced durable polycarbonate + superior components, UL1741, Nema 3R, CSA C22.2 No. 290
- 3 patented layers of water protection
- 2 Weep Holes for breathability

LOWER PRICE

- We believe that EVERYONE should have access to affordable renewable energy
- With the same great features as the JB-1, the JB-1.2 is now available with updates to make installation even easier.

MADE IN USA

Intertek 5019942

ezsolarproducts.com | info@ezsolarproducts.com | 385.202.4150

making solar simple.

EZ SOLAR
making solar simple.

JB-1.2, JB-1.XL
Specification Sheet
PV Junction Box for Composition/Asphalt Shingle Roofs

A. System Specifications and Ratings

- Maximum Voltage: 1,000 Volts
- Maximum Current: **JB-1.2:** 80 Amps; **JB-1.XL:** 120 Amps
- Allowable Wire: 14 AWG – 6 AWG
- Spacing: Please maintain a spacing of at least ½" between uninsulated live parts and fittings for conduit, armored cable, and uninsulated live parts of opposite polarity.
- Enclosure Rating: Type 3R
- Roof Slope Range: 2.5 – 12:12
- Max Side Wall Fitting Size: 1"
- Max Floor Pass-Through Fitting Size: 1"
- Ambient Operating Conditions: (-35°C) - (+75°C)
- Compliance:
  - **JB-1.2:** UL1741, CSA C22.2 No. 290; **JB-1.XL:** UL1741, CSA C22.2 No. 290
  - Approved wire connectors: must conform to UL1741, CSA C22.2 No. 290
- System Marking: **Interek Symbol and File #5019942**
- Periodic Re-inspections: If re-inspections yield loose components, loose fasteners, or any corrosion between components, components that are found to be affected are to be replaced immediately.

Intertek 5019942

Table 1: Typical Wire Size, Torque Loads and Ratings

	1 Conductor	2 Conductor	Torque				
			Type	NM	Inch Lbs	Voltage	Current
ABB ZS6 terminal block	10-24 awg	16-24 awg	Sol/Str	0.5-0.7	6.2-8.85	600V	30 amp
ABB ZS10 terminal block	6-24 awg	12-20 awg	Sol/Str	1.0-1.6	8.85-14.16	600V	40 amp
ABB ZS16 terminal block	4-24 awg	10-20 awg	Sol/Str	1.6-2.4	14.6-21.24	600V	60 amp
ABB M6/8 terminal block	8-22 awg		Sol/Str	.08-1	8.85	600V	50 amp
Ideal 452 Red WING-NUT Wire Connector	8-18 awg		Sol/Str	Self-Torque	Self-Torque	600V	
Ideal 451 Yellow WING-NUT Wire Connector	10-18 awg		Sol/Str	Self-Torque	Self-Torque	600V	
Ideal, In-Sure Push-In Connector	10-14 awg		Sol/Str	Self-Torque	Self-Torque	600V	
WAGO, 2204-1201	10-20 awg	16-24 awg	Sol/Str	Self-Torque	Self-Torque	600V	30 amp
WAGO, 221-612	10-20 awg	10-24 awg	Sol/Str	Self-Torque	Self-Torque	600V	30 amp
Dottie DRC75	6-12 awg		Sol/Str	Snap-In	Snap-In		
ESP NG-53	4-6 awg		Sol/Str		45	2000V	
	10-14 awg		Sol/Str		35		
ESP NG-717	4-6 awg		Sol/Str		45	2000V	
	10-14 awg		Sol/Str		35		
Brumall 4-5,3	4-6 awg		Sol/Str		45	2000V	
	10-14 awg		Sol/Str		35		

Table 2: Minimum wire-bending space for conductors through a wall opposite terminals in mm (inches)

Wire size, AWG or kcmil (mm2)	Wires per terminal (pole)							
	1		2		3		4 or More	
	mm	(inch)	mm	(inch)	mm	(inch)	mm	(inch)
14-10 (2.1-5.3)	Not Specified		-		-		-	
8 (8.4)	38.1	(1-1/2)	-		-		-	
6 (13.3)	50.8	(2)	-		-		-	

CMS Renewable Contractors

CMS RENEWABLE LLC
2100 N HWY 360 #1004, GRAND PRAIRIE, TX 75050, USA
PHONE: +14694285563
EMAIL: edgar@cmsrenewable.com
LICENSE NO: #35493
ELECTRICAL LICENSE: #213982

REVISIONS

DESCRIPTION	DATE	REV
INITIAL	02/28/2025	

PROJECT NAME & ADDRESS

THEODORE WOOD RESIDENCE
2224 HOUSTON PL, DENTON, TX 76201

DRAWN BY
ESR

SHEET NAME
JUNCTION BOX DATASHEET

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-19

File #: HLC25-033, **Version:** 1

AGENDA CAPTION

Hold a discussion and give staff direction regarding the list of potential future local landmarks.

AGENDA INFORMATION SHEET

DEPARTMENT: Department of Development Services

DCM: Cassey Ogden

DATE: June 9, 2025

SUBJECT

Hold a discussion and give staff direction regarding the list of potential future local landmarks.

BACKGROUND

On June 17, 2019, as part of the Denton 2019 Historic Preservation Plan, the City of Denton hosted a community workshop to showcase potential local landmarks, historic districts, and other initiatives through exhibits and exercises. More than 70 community residents and stakeholders attended the workshop.

As part of the workshop, participants were asked to identify which buildings or structures have the potential to be local landmarks based on their historical or architectural significance to the community. Below is a list of potential future local landmarks, in order of highest to lowest votes (see Exhibit 2) received from workshop attendees:

- 415 Chapel Drive (93.6%)
- 927 North Locust Street (88.6%)
- 709 West Congress Street (86.5%)
- 201 South Locust Street (85.4%)
- 319 East Prairie Street (79.5%)
- 709 Bolivar Street (64.4%)
- 719 West Sycamore Street (67.3%)
- 301 North Locust Street (59.6%)
- 2604 North Locust Street (59.5%)
- 1415 North Locust Street (59%)
- 1317 North Austin Street (59%)
- 105 East Hickory Street (57.7%)
- 1306 North Locust Street (56.8%)
- 602 Bernard Street (52%)
- 110 Friar Tuck Circle (48.9%)
- 116 Forest Drive (48%)
- 401 West Sycamore Street (48%)
- 1421 North Locust Street (47.7%)
- 800 North Loop 288 (47.7%)
- 921 Stuart Road (46.8%)
- 127 East Sherman Drive (46.8%)
- 222 South Elm Street (46.8%)

- 1203 Fulton Street (46%)
- 2226 North Locust Street (44.6%)
- 431 East Sherman Drive (44.6%)
- 1428 North Locust Street (43.2%)
- 2628 Jamestown Lane (42.5%)
- 301 South Locust Street (40.4%)
- 1712 Highland Park (37.5%)
- 206 Bernard Street (36.5%)
- 2108 Northwood Terrace (35.4%)
- 610 Bernard Street (33.3%)
- 2130 Northwood Terrace (33.3%)

Staff reviewed the list and determined, based on permit records, the following 11 properties have undergone some form of exterior modification(s), potentially affecting their historic architectural integrity.

- 301 North Locust Street
- 431 East Sherman Drive
- 1428 North Locust Street
- 1203 Fulton Street
- 110 Friar Tuck Circle
- 927 North Locust Street
- 709 West Congress Street
- 201 South Locust Street
- 319 East Prairie Street
- 709 Bolivar Street
- 222 South Elm Street

Staff seeks direction from the Historic Landmark Commission on whether to send letters of designation interest to all the property owners or to all properties that have not undergone any exterior modification(s) on behalf of the Commission, or to not send any letters to any of the properties listed.

OPTIONS

1. Send letters of designation interest to all properties on the list.
2. Send letters of designation interest to all properties that have not undergone any exterior modification(s).
3. Do not send any letters of designation interest to any of the properties.

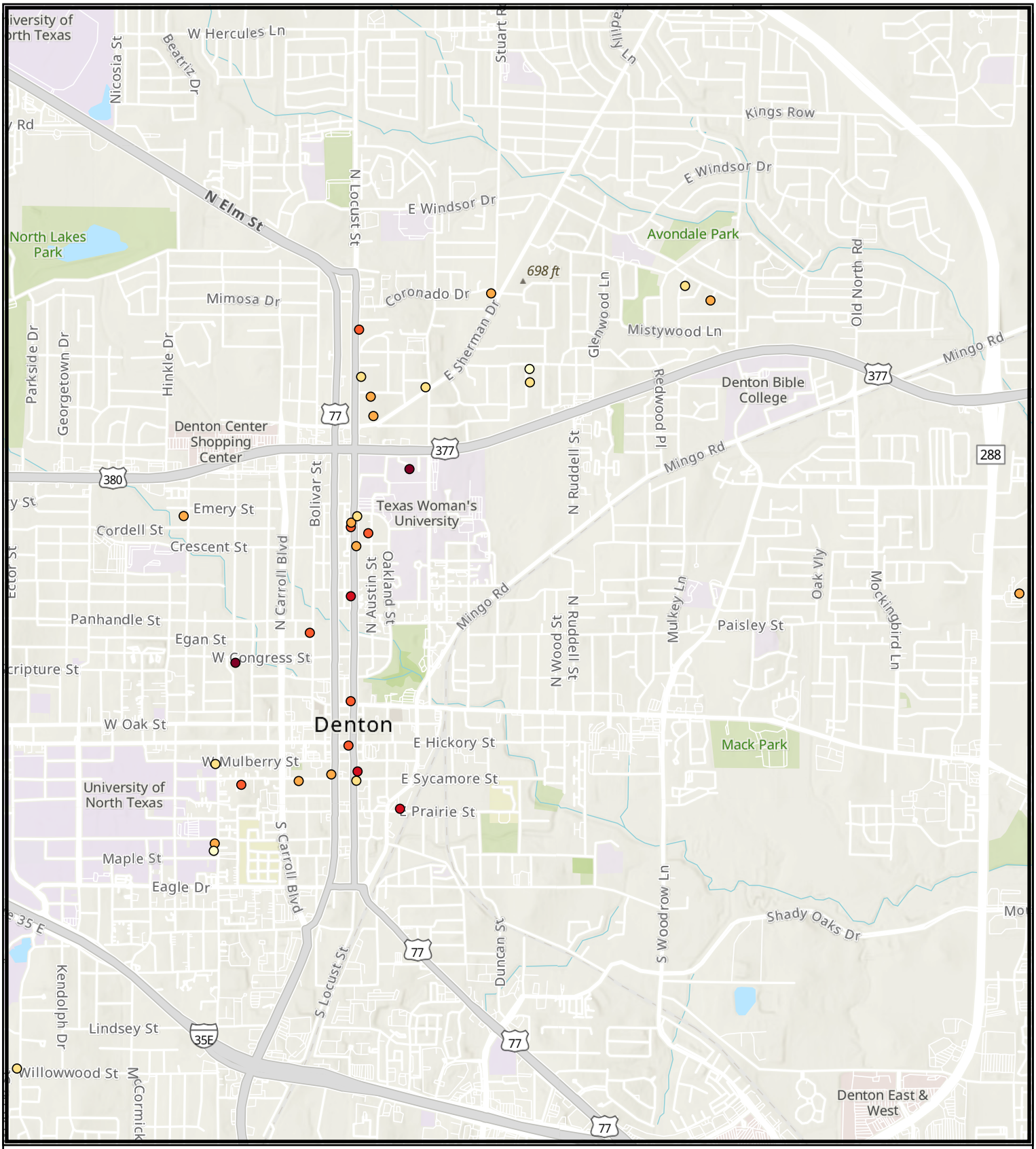
EXHIBITS

1. Agenda Information Sheet
2. Potential Future Local Landmarks Map

Respectfully submitted:
Tina Firgens, AICP
Deputy Director Development Services/
Planning Director

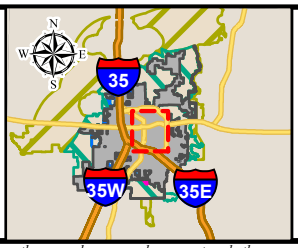
Prepared by:
Cameron Robertson, AICP
Historic Preservation Officer

Potential Future Local Landmarks



Property Priority Rankings

- 0-33.3% (2)
- 33.3%-45% (8)
- 45%-57% (11)
- 57%-72% (7)
- 72%-87% (3)
- 87%-93.6% (2)



0 2,000 Feet

CITY OF DENTON
Development Services - GIS
Date: 6/4/2025

File #: HLC25-029, **Version:** 1

AGENDA CAPTION

Receive a report, hold a discussion, and give staff direction on the Historic Landmark Commission's request for local historic designation of eligible historic properties.

City of Denton

City Hall
215 E. McKinney Street
Denton, Texas
www.cityofdenton.com

AGENDA INFORMATION SHEET

DEPARTMENT: Department of Development Services

DCM: Cassey Ogden

DATE: June 9, 2025

SUBJECT

Receive a report, hold a discussion, and give staff direction on the Historic Landmark Commission's request for local historic designation of eligible historic properties.

BACKGROUND

At the November 14, 2022, HLC meeting, staff started including a standing agenda item that pertains to the designation of local historic properties. Commissioners have the opportunity to bring forward one to two properties from Denton's Historically Eligible Structures map to discuss and vote on. A Commissioner proposing a property for local designation consideration will have a maximum of two-minutes to justify the need for designation of the property. Remaining Commissioners will then have a maximum of one minute each to provide feedback and indicate their support for the designation. Each proposed property will need a minimum of four Commissioner votes to pursue designation of the property. If the property receives four or more votes, the property will be added to an active designation list to be maintained by staff for the HLC. The HLC will have the opportunity to utilize the list to reach out to property owners to encourage the designation of their property or properties.

EXHIBITS

1. Agenda Information Sheet
2. Denton's Historically Eligible Structures Map

Respectfully submitted:
Tina Firgens, AICP
Deputy Director Development Services/
Planning Director

Prepared by:
Cameron Robertson, AICP
Historic Preservation Officer

File #: HLC25-035, **Version:** 1

AGENDA CAPTION

Hold a discussion regarding the Historic Landmark Commission Project Matrix.

2025

Historic Landmark Commission
Requests for Information

Request		Request Date	Status
Template/agenda to be utilized by HLC members at community meetings to discuss and educate historic property owners on designation, HLC/HPO processes, etc.	HLC	2/12/2024	On-going
Continue researching new or updated programming to incentive historic preservation	HPO	4/14/2025	On-going
Review local Historic District signage; larger discussion of beautification standards/expectations for local historic districts	HLC	1/13/2025	Discussion will occur in early Summer 2025
Items for Historic Landmark Commission Consideration			
Discuss 'Stop Work Order' fees for properties working without Certificates of Appropriateness	HPO	7/9/2024	Deters inappropriate work from taking place to historically recognized properties and fees collected can be utilized for preservation efforts. Strengthens the COA process.
Update the COA Process to include inspection dependent upon the scale of work taking place (i.e. new construction, demolition, addition)	HPO	7/9/2024	Further strengthen and clarify the COA process
Annual Update			

Prepare an annual study list of potential landmarks and districts.	HLC/HPO	2025 Work Plan Goal	Implemented; On-going from 2024
Broaden the tax-exemption eligibility criteria for improvements to historic buildings.	HLC/HPO	2025 Work Plan Goal	Discussion has started; on-going from 2024
Explore a program allowing for the partial or full property tax exemption from the City of Denton and other applicable taxing authorities for locally designated historic homes.	HLC/HPO	2025 Work Plan Goal	Discussion has started; on-going from 2024
Complete designation reports for landmarks and districts.	HLC/HPO	2025 Work Plan Goal	Implemented; On-going from 2024
Improve visibility and awareness of tax exemption program to increase participation.	HLC/HPO	2025 Work Plan Goal	New for 2025
Increase awareness and use of Federal Rehabilitation Tax Credit.	HLC/HPO	2025 Work Plan Goal	New for 2025
Include additional historic preservation information materials in the City of Denton website	HLC/HPO	2025 Work Plan Goal	New for 2025
Create a marketing plan to encourage additional Local Landmark designations.	HLC/HPO	2024 Work Plan Goal	On-going from 2024
Provide training to local realtors and bankers.	HLC/HPO	2024 Work Plan Goal	On-going from 2024

Future HLC Meetings:
Monday, July 14th

6/9/2025

Monday, August 11th
Monday, September 8th
Monday, October 13th
Monday, November 10th
Monday, December 8th