



PLANNING & ZONING STAFF SUMMARY REPORT

MEETING DATE:
September 20, 2022

CASE # ETZ 2022-14

ACTING BOARD	ROSWELL-CHAVES COUNTY EXTRATERRITORIAL PLANNING AND ZONING COMMISSION
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ACTION REQUESTED:	Special Use Permit for a Community Solar Project in the C-1 Commercial District
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LAND OWNER & AGENT:	Walter and Cheryl Johnson a.k.a W.W. J Enterprises, Inc Louth Callan Renewables LLC d.b.a. 1804 E 2 nd St. Solar LLC
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LOCATION & LEGAL:	1804 E. 2 nd Street A part of the NW/4NE/4 and NE/4NW/4 of Section 3, T.11S, R.24E.
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ITEM SUMMARY	Mr. and Mrs. Johnson and 1804 E 2 nd Street Solar are proposing a 1.5 MW community solar facility on 8.55 acres of a 14.85 acres parcel of land located between 2 nd St. and Alameda Street.
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SUPPORTING DOCUMENTS	Staff Report, Application, Warranty Deed, Development Plan & 1804 E 2 nd Street Solar Information, Vicinity Map.
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SUMMARY BY: Louis Jaramillo –Planning & Zoning Director

STAFF'S REPORT

CASE # ETZ 2022-14

Mr. and Mrs. Johnson and 1804 E 2nd Street Solar are requesting a Special Use Permit for a 1.5 MW community solar facility on approximately 8.55 acres. The proposed solar facility would be located on the southernmost vacant portion of the 14.85-acre lot. This property is zoned C-1 Commercial District. The northern portion of the lot would continue to be using by the Johnson's commercial business Johnson Boring Inc.

This property received approval for a rezone in 2019 to Commercial (ETZ Case 2019-16) due to the operation of Johnson Boring Company on this site. Johnson Boring Company has continued to operate with the northern half of the lot. The southern part remains vacant and is no longer farmed by the Johnson family.

The City of Roswell recently approved a rezone to Industrial-Conditional Use for a Community Solar Facility, for the property just west of this proposed site, that would feed into the same line as this project. Staff has included some of the City's report in this packet for your review.

The property to the north and across 2nd Street is farm land, the properties to the south are vacant, the properties to the southwest are residential dwellings, all zoned R-S Residential District. The RV park to the west is zoned Commercial District. The property to the east is zoned Industrial District.

The proposed site plan indicates the facility would be access from E. 2nd Street at a new access point along US 285. This proposed access point would require NMDOT approval. The proposed site plan does not show access onto Alameda St. and therefore will not be permitted access onto Alameda St. except as allowed by the Chaves County Road Department Director.

1804 E 2nd St. Solar has provided a development plan showing the solar panels ground based. The solar facility would be fenced. (See Project Description for details.) The facility shall tie into the overhead electric line that runs along Alameda Street on the north side. Xcel Energy is unable to determine if they will be able to accept both 2.25-megawatt community solar facilities on their distribution line.

Article 25 of the Roswell-Chaves County Extraterritorial Zoning Ordinance No. 80-1 states that a Special Use Permit shall not be transferable from one property owner or location to another. Article 25 lists four considerations the Commission must determine dealing with public health and safety. It also states six reasons for granting a Special Use Permit and notes thirteen development restrictions or conditions the Commission may require as part of the approval such as screen fencing, additional setback requirements and size of the array farm, just to name a few. Finally, Article 25 gives reasons for revoking or terminating the Special Use Permit, such as but not limited to, failure to begin construction, the restrictions and conditions have not been met, or the use becomes detrimental to the public's health and safety.

Should the subject request receive favorable consideration, Staff recommends the following Conditions of Approval:

1. Failure to complete the construction of the community solar facility within ten years shall result in the Special Use Permit being terminated.
2. 1804 E 2nd St. Solar shall apply for any necessary building and electrical permits for construction of the community solar facility within one year of being awarded the solar project.
3. A twenty-four (24) feet wide hard pack, weather proof, service road shall be required within the facility along the perimeter of the solar panels with an adequate turn around areas at the midway point of the facility for fire truck and emergency vehicles accessibility.
4. 1804 E 2nd St. Solar shall utilize the existing electric transmission lines in the area.
5. 1804 E 2nd St. Solar shall provide a de-commissioning and restoration plan for this property.
6. All lighting used on-site shall be shielded from traffic, surrounding properties and shall comply with the NM Night Sky Act.
7. All solar panels and their foundations shall be setback from all adjacent property lines a minimum of fifty (50) feet.
8. Mr. and Mrs. Johnson shall have one year to transfer ownership of the tract used for the SUP into a corporation or LLC for which they shall be primary partners, trustees, or directors of the corporation or LLC.

Findings of Fact:

1. The proposed solar facility would be a low impact industrial use in a vacant area and would be an economic benefit to the community.
2. The proposed solar facility may conform with the requirements for approval as stated in Article 25 of the Roswell-Chaves County ETZ Ordinance 80-1.
3. Owner's within 100 feet of the proposed Special Use Permit have been notified by certified mail, per Section 2.5 of the Roswell-Chaves County Extraterritorial Zoning Ordinance No. 80-1. No protest letters have been received at the time of this writing.
4. Planning and Zoning Staff have advertised this meeting in the local Roswell Daily Record 15 days prior to today's public hearing per the Roswell-Chaves County Extraterritorial Zoning Ordinance No. 80-1.



CHAVES COUNTY/ETZ ZONING ORDINANCE

APPLICATION FOR A SPECIAL USE PERMIT

Case Number: ETZ Case 2022-14 Date Received: 7-19-22 Fee: \$ 300⁰⁰

Name of Property Owner: Walter Johnson Phone Number: (575) 317-4031

Mailing Address: 1710 E. 2nd St, Roswell, NM 88201

Name of Applicant: 1804 E. 2nd Street Solar, LLC

Mailing Address: 921 Thrall Ave Home Phone Number: _____

City, State, Zip: Suffield, CT 06078 Business Phone Number: (860) 814-4379

Applicant Status: Owner Agent Tenant Other *Leased by Louth Callan Renewables

Site Address: 1804 E. 2nd St, Roswell, NM 88201 ETZ Chaves County

Property Legal Description: S: 3 T: 11S R: 24E NE4NW4 E 340' S 1250' N 1300' M/L LESS W 100' E 340' S 193' N 233' 14.58 ACRES

(INCLUDES 13.20 ACRES OF WATER RIGHTS), BK 688 PG 1466 WD (CORR) UPN: 4-137-062-246-015-000000

Present Land Use: Personal & utility contracting business equipment storage / open land.

Intended Land Use: Ground mount solar array

Present Zoning: Commercial C-1 & Overlay Districts Size of Development in Acres: 6 acres

Reason for Request (Attach sheets if more space is needed): Due to location being within 2 miles of Roswell city limits, is under the ETZ zoning authority. This project would fall under the "community solar" guidelines, thus will require a SUP as it is not zoned as I-1 Industrial.

Copy of Deed Attached:

I ACKNOWLEDGE THAT I HAVE BEEN INFORMED OF THE DATES, TIMES, AND LOCATIONS OF THE PUBLIC MEETINGS WHICH I OR MY AGENT MUST ATTEND IN ORDER TO FULFILL THE REQUIREMENTS OF THIS APPLICATION.

DocuSigned by: Walter Johnson 7/18/2022

Owner's Signature 09F2FF69E6434D0... Date

LOUTH CALLAN RENEWABLES LETTERHEAD

July 19, 2022

Louis Jaramillo
Chaves County Planning and Zoning
#1 St. Mary's Place, Suite #170, Roswell, NM 88203
louis.jaramillo@chavescounty.gov

RE: SUBJECT

Dear Mr. Louis Jaramillo

Enclosed herewith please find copies of the following:

- Completed Special Use Permits
- Completed Building and Electric Permits
- Signed and stamped site plans and IX sets
- Lease Agreements
- Decommissioning Plans
- Statement of Purpose
- Owner's Deed (East Brasher only)

for our permitting application(s) for:

- 3720 East Brasher Rd, Roswell, NM 88203 – East Brasher Road Solar, LLC
- 1804 E. 2nd Street, Roswell, NM 88201 – 1804 E 2nd Street Solar, LLC

Louth Callan Renewables aims to acquire permits for two projects within Chaves County, NM for community solar sized ground-mount projects. These projects are located along East Brasher Road (3 MW AC) and 1804 E. 2nd Street (1.5 MW AC). At this stage within the permitting process, we are looking to receive feedback on the current state of our permit applications. All of the previously mentioned documents will be stored within a Dropbox for viewing.

Sincerely,

Justin Pau

Name of person submitting

Enclosures: A/S

cc: Marris Griebel Law, Ltd.
1000 Gold Ave. SW
Albuquerque, NM 87102

DECOMMISSIONING PLAN

1. Project Description

Louth Callan Renewables LLC is proposing to develop a solar energy farm in **[1804 E 2nd Street Solar]**. A solar array consists of photovoltaic panels that transform sunlight into usable energy. The facility will have approximately **3,456** panels transforming sunlight each day into usable energy that is fed into the regional electric grid. Annually the project will generate enough electricity to power over **246**. Estimated operational life of the project will be **25** years with option to extend.

The project consists of a **1.5 Megawatt ("MW")** solar array to generate power that will be sold under a long-term contract to **SPS/Xcel Energy** under the **Community Solar Program**. The **Community Solar Program** is being established to promote the construction of small scale renewable energy projects in **New Mexico**.

2. Construction

The solar energy farm will be located on a property that is currently **vacant land**. The ground-mounted solar panels will be located within a fenced area approximately **8.55 acres in size**. A gravel road will be constructed to access the solar panels within the fenced area. Each solar panel will rest on a galvanized steel and aluminum frame and will be located on a **ground screw**. Utility trenches will be excavated to install the underground electrical lines leading to each string of solar panels. Once the utilities are installed the utility trench will be filled and seeded to maintain a consistent native surface. Concrete slabs will be installed to hold the necessary inverters/transformers required to operate the solar array.

3. Decommissioning Process

This section sets out the details and different steps of decommissioning the solar farm.

a) Deconstruction: DC-Cabling

All inverter systems and electrical components of the PV-System will be switched off. In following all plug-in connectors and string cables will be disconnected. To remove the cables which are laid in the ground, all cable trenches will be opened. In the following all cables will be removed and separated. After the uninstalling of the wiring the materials will be deposited in accordance to the disposal regulations for metal waste which applies at the installation site at the time.

b) Deconstruction: PV-Modules

All PV-Modules would be removed and separated from mounting system and removed from the site. After removal the PV-Modules will be reused or recycled.

c) Deconstruction: Inverters / Transformers / Substation

After the uninstallation of the entire monitoring system (cabling + components) the inverter / transformer stations as well as the substation will be removed from the site. The concrete foundations will be removed and the holes will be filled with soil. The transformer stations will be removed and disposed in accordance with the disposal regulations for metal and concretewaste which apply at the installation site at the time.

d) Deconstruction: Mounting System

The mounting system will be removed completely. The deconstruction shall proceed as follows:

- I. module carrier system
- II. purlin profiles
- III. posts

The disposal of the materials will be done in accordance with the disposal regulations for metal waste which applies at the installation site at the time.

e) Deconstruction: AC- Cabling / Earthing

All AC-cables and combiner boxes will be disconnected and removed. To remove the cables which are laid in the ground, all cable trenches will be opened. In the following all cables and earth stripes will be removed and separated. The cable trenches will be back filled and paved again. After the uninstalling of the entire wiring the materials would be disposed in accordance to the disposal regulations for metal waste which applies at the installation site at the time.

f) Deconstruction: Fence and Alarm System

All parts of the fence as well as the alarm system will be removed. The disposal of the materials follows in accordance with the disposal regulations for metal waste which apply at the installation site at the time.

g) Ground Regulation

When the decommission works are completed the land will be returned to its original state.

All equipment and fixtures removed from the solar farm will either be reused, recycled, or disposed of at the time of decommissioning. Upon decommissioning of this solar farm, reuse of the solar panels will be the priority. If reuse is not feasible, the solar panels will be recycled in accordance with the PV CYCLE USA waste management scheme, or similar. Items that are not able to be reused or recycled will be disposed of in accordance with local rules and regulations.

4. Cost

Based on the value of recyclable materials that make up the solar farm, it is expected that the salvage cost will outweigh the labor cost to remove the materials and restore the site. We have researched the current price estimates for the disassembly & disposal of the solar equipment, site restoration, and value of salvageable materials and have made the following assumptions:

- Current labor costs have been approximated to be \$25 per hour for the state of New Mexico, according to the New Mexico Department of Workforce Solutions. We have assumed 2.5% inflation per annum over lifetime of the projects (25 years).

- PV modules have been assumed to have salvageable value that is 15% of the original cost.

Projected Cost of Decommissioning		
Labor Costs		
Item	Tasks	Estimated Current Labor Cost
1	Remove PV Modules	\$11,250.00
2	Remove Inverters	\$1,755.00
3	Remove Transformer	\$1,263.40
4	Dismantle and Remove Racking Frames	\$15,470.00
5	Dismantle and remove Racking Posts	\$5,587.68
6	Remove LV Wiring	\$2,482.20
7	Remove MV Wiring and equipment	\$4,576.80
8	Remove Fence	\$5,832.90
9	Remove Concrete	\$785.61
10	Remove Gravel	\$7,541.81
11	Re-seed	\$16,650.00
12	Transportation costs	\$4,910.03
Total Cost		\$78,105.73
Salvageable Parts and Materials		
Item	Parts / Materials	Estimated Current Salvageable Cost
1	PV Modules (15% of original amount)	\$105,390.72
2	Inverters / Transformers	\$1,452.50
3	Racking Frame	\$21,951.86
4	Racking Posts	\$8288.02
5	LV Wiring (aluminum/copper)	\$37,271.35
6	MV Wiring (aluminum)	\$298.08
7	Chain Link Fence	\$2,962.02
Total Salvage Value		\$177,614.55
Net Decommissioning Cost		-\$99,508.82

5. Force Majeure

An exception to these requirements will be allowed for a force majeure event, which is defined as any event or circumstance that wholly or partly prevents or delays the performance of any material obligation arising under the Project permits, but only to the extent:

- Such event is not within the reasonable control, directly or indirectly, of Louth Callan Renewables LLC (including without limitation event such as fire, earthquake, flood, tornado, hurricane, acts of God and natural disasters; war, civil strike or similar violence);
- Louth Callan Renewables LLC has taken all responsible precautions and measures to prevent or avoid such event or mitigate the effect of such event on Louth Callan Renewables LLC's ability to perform its obligations under the Project permits and which, by the exercise of due diligence, it has been unable to overcome; and

- Such event is not the direct or indirect result of the fault of negligence of Louth Callan Renewables LLC.

In the event of force majeure event, which results in the absence of electrical generation by one or more solar panels for 12 months, Louth Callan Renewables LLC will demonstrate to MDEP by the end of the 12 months of non-operation that the Project, or any single solar panel, will be substantially operational and producing electricity within 24 months of the force majeure event. If such a demonstration is not made to MDEP's satisfaction, the decommissioning of any single solar panel only (and no other part of the Project that is operational) or if the entire Project is not substantially operational and producing electricity, then decommissioning of the Project will be initiated 18 months after the force majeure event.

1804 E 2ND ST SOLAR

1.848 MWDC - 1.500 MWAC SOLAR PROJECT

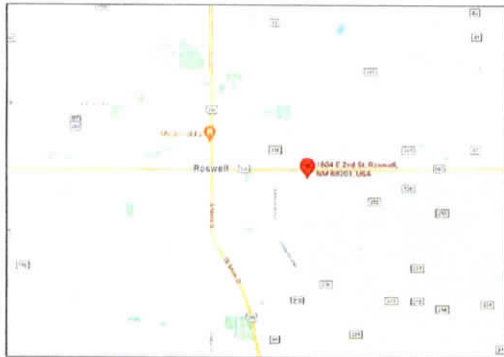
Louth Callan
RENEWABLES

[Signature]

ANGELA B. JANCOSKI
REGISTERED PROFESSIONAL ENGINEER
STATE OF NEW MEXICO
17420

1/1/2022

NO PORTION OF THIS SHEET OR THESE SHEETS MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT PERMISSION.



1 LOCATION MAP
G001 SCALE: NTS



2 AERIAL VIEW
G001 SCALE: NTS



3 SITE OVERVIEW
G001 SCALE: 1"=300'

SCOPE OF WORK:

THE PROPOSED PROJECT IS TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL SAFETY CODE (NEC) AND THE NATIONAL FIRE ALARM AND SIGNALING CODE (NFPA 72) AND THE NATIONAL ELECTRICAL SAFETY CODE (NEC) AND THE NATIONAL FIRE ALARM AND SIGNALING CODE (NFPA 72) AND THE NATIONAL ELECTRICAL SAFETY CODE (NEC) AND THE NATIONAL FIRE ALARM AND SIGNALING CODE (NFPA 72).

ENGINEERED AND DEVELOPED BY:



SHEET INDEX:

PROJECT DETAILS	
PROJECT OWNER	LOUTH CALLAN RENEWABLES
PROJECT ADDRESS	1804 E 2ND ST, ROSWELL, NM 88201
PROJECT LOCATION	33 382262-104 487080
TAX ID	4-127-302-200-071-030030
LANDOWNER	WALTER WILLIAM JOHNSON JR
PROJECT AREA	- 8.55 ACRES
ROW-TO-ROW SPACING	17.5 FT
FILE ROW SPACING	9.7 FT
ARRAY WIDTH	7.8 FT
SETBACKS	MIN 15 FT FROM PROJECT BOUNDARY
UTILITY	XCEL ENERGY

4 SCOPE OF WORK AND PROJECT DETAILS
G001 SCALE: NTS

SYSTEM SUMMARY	
DC MODULE MANUFACTURER	170A 20-45
DC MODULE TYPE	60 CELLS, 1/2" x 1/2" MONOCRYSTALLINE PER MONOLITHIC (PERMONO)
DC MODULE OUTPUT (W)	339W
TOTAL NO. OF DC MODULES	246
TOTAL NO. OF STRINGS	96
DC VOLTAGE PER STRING	36
MAX VOLTAGE PER PV ARRAY	3127
MAX VOLTAGE PER PV ARRAY	3127
INVERTER MANUFACTURER	SHOUP 3000-21515 MS
INVERTER TYPE	3 PHASE INVERTER (CFR 408.401-408.405)
INVERTER RATING (KW)	125 KW
EST. NO. OF INVERTERS	12
MPPT SYSTEM	80% RAMP TRACKER (EAST-WEST TRACKING)
ARRAY ELECTRICAL INTERCONNECT	800V/1500V 100 AMP OF RATED CURRENT (400V/1500V)
EST. NO. OF INTERCONNECTS	1500
EST. NO. OF INTERCONNECTS	1500
MAX. DC SYSTEM VOLTAGE	1500V
DC SYSTEM VOLTAGE	1500V @ INVERTER OUTPUT 100% AT 100% PFC



5 SHEET INDEX
G001 SCALE: NTS

LOUTH CALLAN RENEWABLES

1804 E 2ND ST SOLAR

1804 E 2ND ST, ROSWELL, NM 88201

DATE: 1/1/2022
DRAWN BY: MC
CHECKED BY: JLU

COVER SHEET

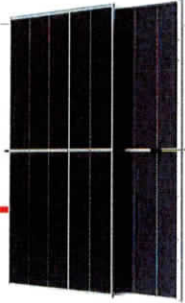
G001

Mono Multi Solutions

Preliminary

THE Vertex

BIFACIAL DUAL GLASS MONOCRYSTALLINE MODULE



550W
MAXIMUM POWER OUTPUT

21.0%
MAXIMUM EFFICIENCY

0~+5W
POSITIVE POWER TOLERANCE

PRODUCTS: TSM-DECI9MC (2018) | POWER RANGE: 530-550W



High customer value

- Lower LCOE (levelized Cost Of Energy), reduced BOS (Balance of System) cost, shorter payback time
- Lowest guaranteed first year and annual degradation; extended 30-year warranty
- Designed for compatibility with existing mainstream system components
- Higher return on investment



High power up to 550W

- Up to 21.0% module efficiency with high density interconnect technology
- Multi-junction technology for better light trapping effect, lower series resistance and improved current collection



High reliability

- Minimized micro-cracks with innovative non-destructive cutting technology
- Enhanced PID resistance through cell process and module material control
- Resistant to harsh environments such as salt, ammonia, sand, high temperature and high humidity areas
- Mechanical performance up to 5400 Pa positive load and 2400 Pa negative load
- Certified to fire class A



High energy yield

- Excellent IAM (Incident Angle Modifier) and low radiation performance validated by 3rd party certifications
- The unique design provides optimized energy production under inter-row shading conditions
- Lower temperature coefficient (-0.34%) and operating temperature
- Up to 25% additional power gain from back side depending on albedo

Features EVIDENCE of the benefits of the Vertex bifacial dual glass monocrystalline module are the following: The Vertex bifacial dual glass monocrystalline module is designed to provide superior performance in high-temperature, high-humidity, and high-salt environments. The Vertex bifacial dual glass monocrystalline module is designed to provide superior performance in high-temperature, high-humidity, and high-salt environments. The Vertex bifacial dual glass monocrystalline module is designed to provide superior performance in high-temperature, high-humidity, and high-salt environments.

Comprehensive Products and System Certifications

- ISO 14001:2015 Environmental Management System
- ISO 9001:2015 Quality Management System
- ISO 45001:2018 Occupational Health and Safety Management System
- IEC 61730:2016 Type 1 Type II Type III
- IEC 61215:2016 Class 1 Class 2 Class 3 Class 4 Class 5 Class 6 Class 7 Class 8 Class 9 Class 10 Class 11 Class 12 Class 13 Class 14 Class 15 Class 16 Class 17 Class 18 Class 19 Class 20 Class 21 Class 22 Class 23 Class 24 Class 25 Class 26 Class 27 Class 28 Class 29 Class 30 Class 31 Class 32 Class 33 Class 34 Class 35 Class 36 Class 37 Class 38 Class 39 Class 40 Class 41 Class 42 Class 43 Class 44 Class 45 Class 46 Class 47 Class 48 Class 49 Class 50 Class 51 Class 52 Class 53 Class 54 Class 55 Class 56 Class 57 Class 58 Class 59 Class 60 Class 61 Class 62 Class 63 Class 64 Class 65 Class 66 Class 67 Class 68 Class 69 Class 70 Class 71 Class 72 Class 73 Class 74 Class 75 Class 76 Class 77 Class 78 Class 79 Class 80 Class 81 Class 82 Class 83 Class 84 Class 85 Class 86 Class 87 Class 88 Class 89 Class 90 Class 91 Class 92 Class 93 Class 94 Class 95 Class 96 Class 97 Class 98 Class 99 Class 100

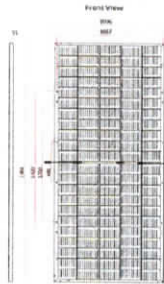
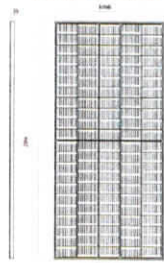


1 E300 MODULE DATASHEET SCALE: NTC

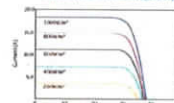


BIFACIAL DUAL GLASS MONOCRYSTALLINE MODULE

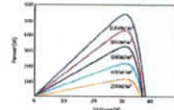
DIMENSIONS OF PV MODULE (mm)



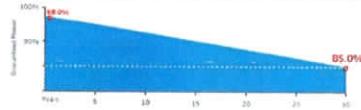
I-V CURVES OF PV MODULE (E60W)



P-V CURVES OF PV MODULE (E60W)



Trina Solar's Vertex Bifacial Dual Glass Performance Warranty



TESTING DATA (NTC)

Peak Power Watts (W) ¹	530	535	540	545	550
Power Tolerance-Pwr (W)			0~+5		
Maximum Power Voltage-V _{mp} (V)	31.0	31.2	31.4	31.6	31.8
Maximum Power Current-I _{mp} (A)	17.11	17.16	17.21	17.24	17.29
Open Circuit Voltage-V _{oc} (V)	37.3	37.5	37.7	37.9	38.1
Short Circuit Current-I _{sc} (A)	18.19	18.24	18.30	18.35	18.39
Module Efficiency η _m (%)	20.3	20.5	20.7	20.9	21.0

STC Irradiance: 1000W/m² Cell Temperature: 25°C Air Mass: 1.5
Temperature Coefficient: -0.34%

1. For bifacial modules with different power tolerance, the tolerance is 0%.

Total Equivalent power - P _{tot} (W)	567	573	578	583	589
Maximum Power Voltage-V _{mp} (V)	31.0	31.2	31.4	31.6	31.8
Maximum Power Current-I _{mp} (A)	18.31	18.36	18.41	18.45	18.50
Open Circuit Voltage-V _{oc} (V)	37.3	37.5	37.7	37.9	38.1
Short Circuit Current-I _{sc} (A)	19.40	19.52	19.56	19.63	19.68
Insolation (at 1000W/m ²)	10%				

TESTING DATA (EMPT)

Maximum Power-P _{max} (W)	407	411	415	420	423
Maximum Power Voltage-V _{mp} (V)	29.2	29.4	29.6	29.8	30.0
Maximum Power Current-I _{mp} (A)	13.93	13.97	14.02	14.07	14.10
Open Circuit Voltage-V _{oc} (V)	35.6	35.7	35.9	36.1	36.3
Short Circuit Current-I _{sc} (A)	14.64	14.68	14.72	14.77	14.80

AMT Irradiance: 800W/m² Ambient Temperature: 25°C Wind Speed: 6m/s

MECHANICAL DATA

Solar Cells	Monocrystalline
No. of cells	110 cells
Module Dimensions	2184 ± 0.95 × 95 mm (85.98 ± 0.15 × 3.74 inches)
Weight	32.6 kg (72.9 lb)
Front Glass	2.0 mm (0.08 inches), High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	POE/EVA
Back Glass	2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)
Frame	25mm (1.0 inches) Anodized Aluminum Alloy
J-Box	IP65 rated
Cables	Photovoltaic Technology Cable 4.0mm ² (0.026 inches ²), Port: 600/700mm (23.62/27.56 inches), Length: 2050/2550mm (80.71/100.00 inches)
Connector	MC4 EVO2 / 154*

*Place in the original container for specific information.

TEMPERATURE RATINGS

NPOT (Nominal Operating Temperature)	35°C (95°F)	Operational Temperature	-40~+65°C
Temperature Coefficient of P _{max}	-0.34%/°C	Maximum System Voltage	1500V DC (IEC)
Temperature Coefficient of V _{oc}	-0.25%/°C	Max Series Fuse Rating	40A
Temperature Coefficient of I _{sc}	0.04%/°C		

(Direct current Fuse in Combiner Box with fuse or more coverage is permitted warranty)

WARRANTY

12 year Product Workmanship Warranty	PACKAGING CONFIGURATION
30 year Power Warranty	Modules per box: 31 pieces
2% first year degradation	Modules per 40' container: 550 pieces
0.45% Annual Power Attenuation	

(Please refer to product warranty for details)

CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT
© 2020 Trina Solar Co. Ltd. All rights reserved. Specifications included in this datasheet are subject to change without notice.
Version number: TSM_EN_2020_P42 www.Trinasolar.com



NAME: [Signature]
TITLE: [Signature]
COMPANY: LOUTH CALLAN RENEWABLES
ADDRESS: [Signature]

LOUTH CALLAN RENEWABLES

1804 E 2ND ST
SOLAR

1804 E 2ND ST,
ROSWELL, NM 88201

PACKAGING CONFIGURATION
Modules per box: 31 pieces
Modules per 40' container: 550 pieces

MODULE DATASHEET

E300



100/125kW, 1500Vdc String Inverters for North America



CPS SCH100/125KTL-DO/US-600

The 100 & 125kW high power CPS three phase string inverters are designed for ground mount applications. The units are high performance, advanced and reliable inverters designed specifically for the North American environment and grid. High efficiency at 99.1% peak and 98.5% CEC, wide operating voltages, broad temperature ranges and a NEMA Type 4X enclosure enable this inverter platform to operate at high performance across many applications. The CPS 100/125kW products ship with the Standard or Centralized Wire-box, each fully integrated and separable with AC and DC disconnect switches. The Standard Wire-box includes touch safe fusing for up to 20 strings. The CPS FlexOM Gateway enables communication, controls and remote product upgrades.

Key Features

- NFPA 70, NEC 2014 and 2017 compliant
- Touch safe DC Fuse holders adds convenience and safety
- CPS FlexOM Gateway enables remote FW upgrades
- Integrated AC & DC disconnect switches
- 1 MPPT with 20 fused inputs for maximum flexibility
- Copper and Aluminum compatible AC connections
- NEMA Type 4X outdoor rated, tough tested enclosure
- Advanced Smart-Grid features (CA Rule 21 certified)
- IVA Headroom yields 100kW @ 0.9PF and 125kW @ 0.95PF
- Generous 1.87 and 1.5 DC/AC Inverter Load Ratios
- Separable wire-box design for fast service
- Standard 5 year warranty with extensions to 20 years



100/125KTL Standard Wire-box



100/125KTL Centralized Wire-box



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Chint Power System America

6800 Kist Center Parkway, Suite 211, Pleasanton, CA 94566
Tel: 855-584-1168 Mail: Americasales@chintpower.com Us: www.chintpower.com

1 MODULE DATASHEET
E300 SCALE: NTS



Datasheet

Model Name	CPS SCH100KTL-DO/US-600	CPS SCH125KTL-DO/US-600
DC Input		
Max. PV Power	187.5kW	
Max. DC Input Voltage	1500V	
Operating DC Input Voltage Range	800-1450Vdc	
Start-up DC Input Voltage / Power	900V / 250W	
Number of MPPT Trackers	1	
MPPT Voltage Range ¹	870-1300Vdc	
Max. PV Input Current (Isc x1.25)	275A	
Number of DC Inputs	20 PV source circuits, pos. & neg. feed (Standard Wire-box)	
DC Disconnection Type	1 PV output circuit, 1-2 terminations per pole, non-fused (Centralized Wire-box)	
DC Surge Protection	Load-rated DC switch	
AC Output	Type II MOV (with indicator/remote signaling), Up=2.5kV, In=20kA (8/20uS)	
Rated AC Output Power	100kW	125kW
Max. AC Output Power ²	100kVA (111kVA @ PF=0.9)	125kVA (132kVA @ PF=0.95)
Rated Output Voltage	600Vac	
Output Voltage Range ³	538-660Vac	
Grid Connection Type ⁴	3ø / PE / N (Neutral optional)	
Max. AC Output Current @600Vac	96.2/108.8A	120.3/127.6A
Rated Output Frequency	60Hz	
Output Frequency Range ⁵	57.6-62.4Hz	
Power Factor	>0.99 (±0.8 adjustable)	>0.96 (±0.8 adjustable)
Current THD	<3%	
Max. Fault Current Contribution (1-cycle RMS)	41.47A	
Max. OCPD Rating	200A	
AC Disconnection Type	Load-rated AC switch	
AC Surge Protection	Type II MOV (with indicator/remote signaling), Up=2.5kV, In=20kA (8/20uS)	
System	Transformerless	
Topology		
Max. Efficiency	99.1%	
CEC Efficiency	98.5%	
Stand-by / Night Consumption	<4W	
Environment		
Enclosure Protection Degree	NEMA Type 4X	
Cooling Method	Variable speed cooling fans	
Operating Temperature Range	-22°F to +140°F / -30°C to +100°C (derating from +113°F / +45°C)	
Non-Operating Temperature Range ⁶	-40°F to +158°F / -40°C to +70°C maximum	
Operating Humidity	0-100%	
Operating Altitude	800ft / 250m (no derating)	
Audible Noise	<65dBA@1m and 25°C	
Display and Communication	LED Indicators, WiFi + APP	
User Interface and Display	Modbus RS485	
Inverter Monitoring	CPS FlexOM Gateway (1 per 32 inverters)	
Site Level Monitoring	SunSpec/CPS	
Modbus Data Mapping	Standard / (with FlexOM Gateway)	
Remote Diagnostics / FW Upgrade Functions		
Mechanical		
Dimensions (WxHxD)	45.25x24.25x9.84in (1150x618x250mm) with Standard Wire-box 39.37x24.25x8.86in (1000x618x225mm) with Centralized Wire-box	
Weight	Inverter: 121lbs / 55kg; Wire-box: 55lbs / 25kg (Standard Wire-box); 33lbs / 15kg (Centralized Wire-box)	
Mounting / Installation Angle	15 - 90 degrees from horizontal (vertical or angled)	
AC Termination	M10 Stud Type Terminal [2-ø] (Wire range: 10AWG - 500kcmil CU/AL, Lugs not supplied) Screw Clamp Terminal Block [ø] (ø12 - 10AWG CU/AL)	
DC Termination	Screw Clamp Fuse Holder (Wire range: #12 - #6AWG CU) - Standard Wire-box Bulkhead M10 Stud (Wire range: #1AWG - 500kcmil CU/AL, [1 termination per pole]) #1AWG - 500kcmil CU/AL, [2 terminations per pole], Lugs not supplied - Centralized Wire-box	
Fused String Inputs	20A fuses provided (Fuse values of 15A or 20A acceptable)	
Safety		
Safety and EMC Standard	UL1741-SA-2018, CSA-C22.2 No.107.1-01, IEEE1547a-2014, FCC PART15	
Selectable Grid Standard	IEEE 1547a-2014, CA Rule 21, ISO-NE	
Smart-Grid Features	Volt-Ride-Thru, Freq-Ride-Thru, Ramp-Rate, Specified-PF, Volt-VAr, Freq-Watt, Volt-Watt	
Warranty		
Standard ⁷	5 years	
Extended Terms	10, 15 and 20 years	

¹ See user manual for further information regarding MPPT Voltage Range when operating at non unity PF
² Max. AC Apparent Power range will vary with MPPT voltage range and temperature range of 30°C to 40°C, 1.17 PF to 100% PF 2ø & 1.25kW PF 3ø
³ The "Output Voltage Range" and "Output Frequency Range" may differ according to the specific grid standard
⁴ 45 degree grounded. Other may be for some grounded
⁵ See user manual for further requirements regarding non-operating conditions
⁶ 5 year warranty effective for units purchased after October 1st, 2018

South Callan Renewables LLC
 152077
 SOUTH CALLAN RENEWABLES
 PROJECT: 1804 E 2ND ST SOLAR
 LOCATION: 1804 E 2ND ST, ROSWELL, NM 88201
 SHEET NO: 24x36
 DATE: 1/11/2021
 DRAWN BY: JMB
 CHECKED BY: JMB
 INVERTER DATASHEET
 SCALE: NTS
E301

APPENDIX B LEASE AREA

An indicative Lease Area(s) of 6 acres are highlighted below to serve as a starting point in determining the final system design and location. Acreage associated with the Lease Area for the Operations Period may increase or decrease based on final system design.



Notes:

1. This Exhibit may be replaced by a land survey and/or construction drawings of the Lease Area once received by the Tenant.
2. Any setback of the Lease Area from the Property's boundaries shall be the distance required by the applicable governmental authorities.
3. Width of access road shall be the width required by the applicable governmental authorities.
4. Any type, number, mounting positions, and locations of equipment are illustrative only. Actual types, number, mounting positions, and locations of equipment may vary from what is shown above.
5. Tenant will make best efforts to connect to the electrical grid and access the Facility for construction and maintenance via E. Alameda Street, provided, however, that such access shall comply with Applicable Law and all local and state approvals or requirements.

APPENDIX C
EASEMENT PARCELS

Notes:

1. This Exhibit may be replaced by a land survey and/or construction drawings of the Easement Area once received by the Tenant.
2. Any location of the easement improvements, signage, gates, boundaries, or access to public rights of way shall be the distance required by the applicable governmental authorities.
3. Width of access road shall be the width required by the applicable governmental authorities.

EXHIBIT E

MEMORANDUM OF LEASE

**MEMORANDUM OF LEASE
AND EASEMENTS**

This Memorandum of Lease is entered into on this day of **June 2021** by and between Walter W. Johnson Jr. & Cheryl L. Johnson, having a mailing address of 1710 E. 2nd Street, Roswell, NM 88201 (hereinafter referred to as "Landlord") and Louth Callan Renewables, LLC, a Connecticut limited liability company, having a mailing address of **921 Thrall Ave, Suffield CT 06078** (hereinafter referred to as "Tenant").

1. Landlord and Tenant entered into a certain Ground Lease ("Lease") on the day of , 2021, for the purpose of installing, operating and maintaining a solar-powered electric generation facility ("Generation Facility") and easements for access and servicing the facility. All of the foregoing are set forth in the Lease.

2. The Lease includes a Development Period effective from the date of the Lease and for 730 days with options to extend the Development Period. The initial lease term will be 25 years commencing on the effective date of written notification by Tenant to Landlord of the start of the Operations Period Commencement Date, with options for two (2) periods of five (5) years each to renew, and then a Decommissioning Period of up to 180 days.

3. The portion of the land within which the Lease Area where the Generation Facility and the supporting easements will be located is described in Exhibit 1 annexed hereto.

4. This Memorandum of Lease and Easements is not intended to amend or modify, and shall not be deemed or construed as amending or modifying, any of the terms, conditions or provisions of the Lease, all of which are hereby ratified and affirmed. In the event of a conflict between the provisions of this Memorandum and the provisions of the Lease, the provisions of the Lease shall control. The Lease shall be binding upon and inure to the benefit of the parties and their respective heirs, successors, and assigns, subject to the provisions of the Lease.

LANDLORD

By: 
Name: Walter W. Johnson Jr.

By: 
Name: Cheryl L. Johnson

TENANT

Louth Callan Renewables, LLC, a
Connecticut limited liability company

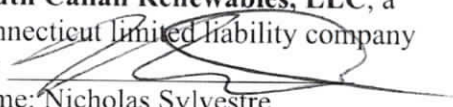
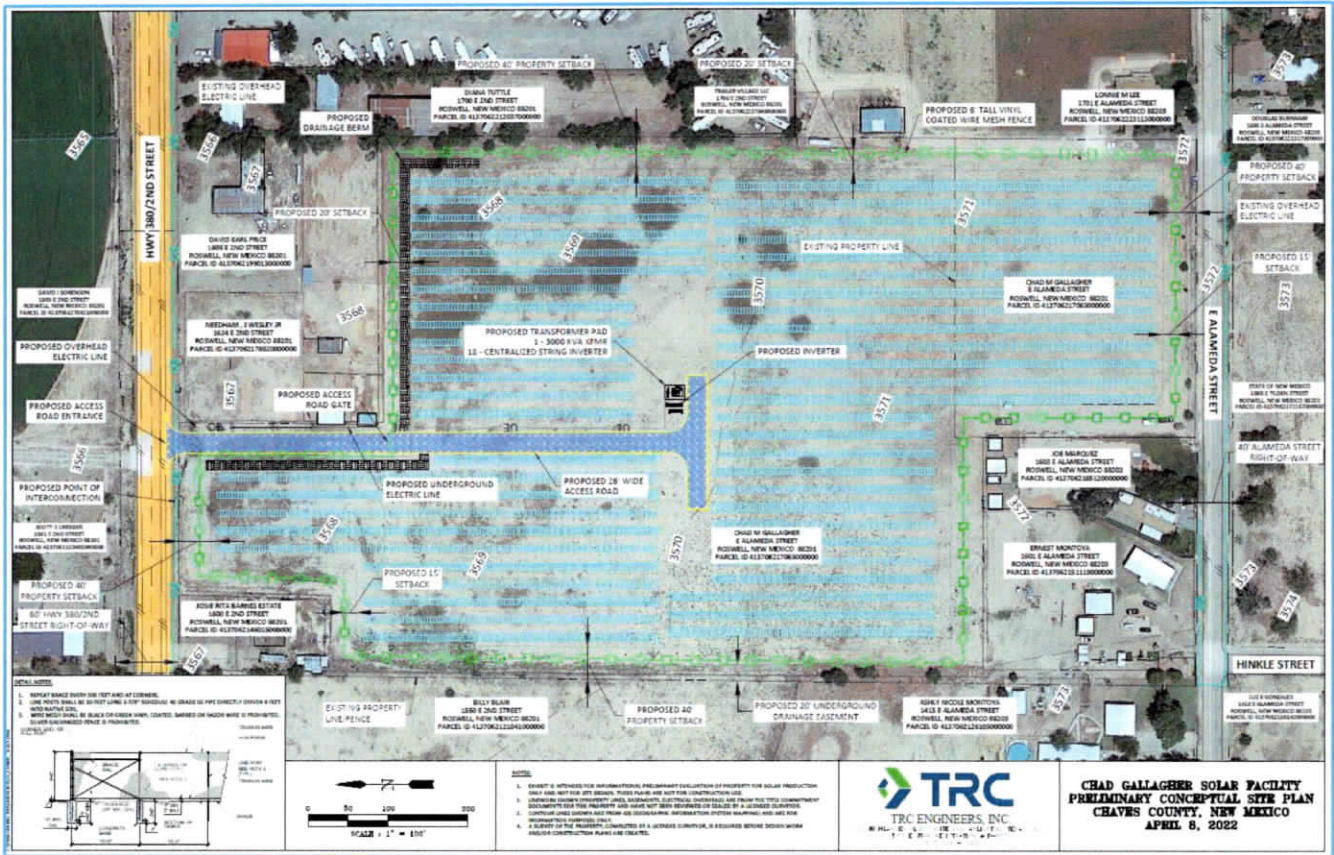
By: 
Name: Nicholas Sylvestre
Title: Managing Member/CEO

EXHIBIT B

STAFF SUMMARY FOR CASE: 22-020 ZOC & 22-021 CUP

REQUEST FOR ZONE CHANGE FROM RMS TO I-1 & CONDITIONAL USE PERMIT

PRELIMINARY SITE LAYOUT (See EXHIBIT G: *Preliminary Site Layout* for a larger version)



10. City of Roswell's Fire Marshall reviewed the project and has provided the following comments based on the 2015 IFC (International Fire Code):

- Maintain clear Brush Free Area;
- A minimum 10' clearance required between arrays;
- Create an additional access from Alameda Street or make the proposed Fire lane Access from Second Street through to Alameda Street;
- Fire Access Lane must be 26' wide;
- Per IFC 2015 503.2.3 "Access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be surfaced so as to provide all-weather driving capability." (Imposed loads shall be at least 75,000 pounds);
- Fire Marshall agrees with the proposed 40' setback from all property lines and a minimum of 20' between fence and solar arrays on all sides.

EXHIBIT B

STAFF SUMMARY FOR CASE: 22-020 ZOC & 22-021 CUP REQUEST FOR ZONE CHANGE FROM RMS TO I-1 & CONDITIONAL USE PERMIT

EXHIBIT K: Memo - PV Heat Island Effect
EXHIBIT L: Q CELLS Data Sheet
EXHIBIT M: SUNNY HIGHPOWER PEAK3 Data Sheet
EXHIBIT N: Equipment & Glare Summary
EXHIBIT O: Gallagher Solar Decommissioning Plan
EXHIBIT P: FEMA Map

17. EXHIBIT F: Draft Conditions of Approval is provided by Staff.

V. Findings of Fact (Conclusions of Law):

1. The lot under consideration for the proposed zone change from RMS to I-1 and the contiguous 12.9-acre lot zoned I-1 Light Industrial are both under consideration for a Conditional Use Permit for a Community Solar Facility. If used for Community Solar, the lot will generate a minimal amount of traffic, noise, and other activity once the solar panels and fencing are installed.
2. A notice of the time and place of the public hearing for this case was published in the Roswell Daily Record at least fifteen (15) days prior to the date of this hearing.
3. Notifications of the public hearing were mailed via certified mail with return receipt requested to property owners of record, as shown by the Chaves County Assessor Map, with lots or land within one-hundred (100) feet of the area under consideration, excluding public rights-of-way.
4. This agenda, which includes this case, has been posted at City Hall and on the City of Roswell's website for over seventy-two (72) hours as required by State of New Mexico law for a public hearing.
5. As of the time of this writing, the Planning & Zoning Office has received one (1) written protest, zero (0) verbal protests, and zero (1) in person inquiry.
6. City of Roswell Zoning Ordinance Article 3, Section 9 Zone Changes authorizes the Planning & Zoning Commission to hold public hearings for zone changes.
7. Zoning Ordinance Article 28: C-1 Neighborhood Commercial District requires a Special Use Permit for Public utility/services/television stations. Article 30: C-2 Community Commercial allows Public utility/Service/radio/TV/cable as a permitted use.

EXHIBIT F
FINAL CONDITIONS OF APPROVAL
ZONING CASES 22-020 ZOC & 22-021 CUP
APPLICANT: CVE NORTH AMERICA, INC
1612 E SECOND STREET

Note! These FINAL Conditions of Approval for Zoning Case 22-020 ZOC and 22-021 CUP include amendments, agreed upon by the project applicant, and made prior to approval by the City Council at the regular meeting held on July 14, 2022.

I. General Conditions

1. Approval of Zoning Case 22-021 CUP is contingent upon Roswell Planning & Zoning Commission's approval of the attendant Zone Change for Case 22-020 ZOC and Conditional Use Permit Case 22-021 CUP. Zoning Case 22-021 CUP hereby approves a 15.5 acre Community Solar Facility (Gallagher Solar Facility) for Applicant CVE North America, Inc., at property located at 1612 E Second Street and 1607 E Alameda Street in the City of Roswell, New Mexico. Property Legal Description - Subd: GALLAGHER SUMMARY REPLAT Lot: 2 Quarter: NW S: 3 T: 11S R: 24E BK:814 PG:1170 WDJT.
2. If approved by the Planning & Zoning Commission, Zoning Case 22-021- CUP provides for the development and operation of the Gallagher Solar Facility located at 1612 E Second Street and 1607 E Alameda Street, as a 2.70 MW Community Solar Facility for a period of 35 years or longer.
3. The owner and/or operator shall procure a City of Roswell Operational Permit and/or City Business License before commencing operations.
4. Prior to commencement of operations, the owner/operator of Gallagher Solar Facility shall submit required construction plans and documents to the City's Community Development Office for Staff Review and approval.
5. Prior to submitting the building permit application and plan sets, the owner and/or operator shall provide the agreement with the State of New Mexico approving this site for a Community Solar Facility per New Mexico's Community Solar Act was enacted in 2021 (Senate Bill 84) and codified by NMSA 1978, Chapter 62 Article 16B.
6. The Contractor for the Applicant shall secure building permits for all improvements for the Solar Facility through the City's Building Division and the Fire Marshal's office prior to the commencement of construction activities.

7. Zoning Cases 22-020 ZOC and 22-021 CUP shall be valid for 36 months from the effective date of said City Planning & Zoning approval, unless the applicant requests an extension of time and is granted by the Planning and Zoning Commission. Issuance of building permits for new construction, tenant improvements, and pursuit of construction will serve to vest the interest in 22-020 ZOC and 22-021 CUP.
8. Project Developer and Contractor(s) shall comply with all City requirements and permits during the construction period, including but not limited to hours of operation, noise mitigation, and fugitive dust control.
9. Development of the site shall not result in detrimental impacts to neighboring properties or public rights-of-way. Measures to control fugitive dust during and after construction shall be implemented during the construction period. Developer shall be required to enter into a Fugitive Dust Control Agreement prior to commencement of grading operations.
10. All plans, as shown, are considered “conceptual,” subject to revisions as called out by the conditions of this resolution. The plans shall not be stamp-approved until all conditions requesting revisions have been satisfied during the building plan check process. Any substantial changes to the plans, including changes shown on future building permit plans, deemed by Staff to not be within substantial conformance of this approval, will require an amendment to the approval of 22-021 CUP.
11. The project shall comply with all applicable codes, laws and regulations, regardless of whether they are listed in these conditions. This includes conformance with the requirements of the adopted I.E.B.C., or U.B.C., U.P.C., U.M.C., N.E.C., I.F.C, A.N.S.I, and I.E.C.C., including all requirements of the State of New Mexico, Roswell Police Department, the Roswell Fire Department and any requirements by any other agency having jurisdiction on the project.
12. The applicant shall defend, indemnify, and hold harmless the City of Roswell, its officials, officers, employees, and agents from and against any claim, action, or proceeding against the City, its officials, officers, employees or agents to attack, set aside, void or annul any project approval or condition of approval of the city concerning this project, including, but not limited to any approval, condition of approval, or mitigation measure imposed by the Planning & Zoning Commission and/or City Council. The City shall promptly notify the applicant of any claim, action, or proceeding concerning the project and the City shall cooperate fully in the defense of the matter. The City reserves the right, at its own option, to choose its own attorney to represent the City, its officials, officers, employees and agents in the defense of the City Attorney, within five days of the effective date of this approval.

13. All plan submittals and permits are the responsibility of the owner/developer. This includes plan submittals to the City of Roswell, the City of Roswell Fire Department/Fire Marshal, New Mexico Department of Transportation (NMDOT), or to other agencies for whom plan review and approval is required. At a minimum, the following plans are required:

- a) Full set of Civil Engineering Plans that include a site plan showing access for maintenance and fire protection access on both East 2nd Street and East Alameda. Said site plan shall include details for screen fencing and access gates.
- b) Drainage/Grading Plan & SWPPP shall be required. Said plans shall include the construction of a berm or dike along the north and east property lines to prevent flooding to the neighboring property.
- c) Stormwater Management Plan
- d) Driveway Improvements Plan
- e) Landscape and Vegetation Plan for irrigated and non-irrigated vegetation with specific plant types and planting areas
- f) Electrical plans
- g) NMDOT Access Permit(s) for access on US HWY 380 (Second Street)
 - 1) Developer shall confer with NMDOT Officials and develop a plan for maintenance of the existing drainage structure extending from south side of US HWY 380 to the north of US HWY 380 to ensure proper operation during a storm event.
- h) Other plans or details that may arise during plan review
- i) For this project in the rural area, the City Engineer is waiving the requirement for sidewalks on E 2nd Street as well as E Alameda fronting the property
- j) A Community Solar Project will not require sanitary sewer

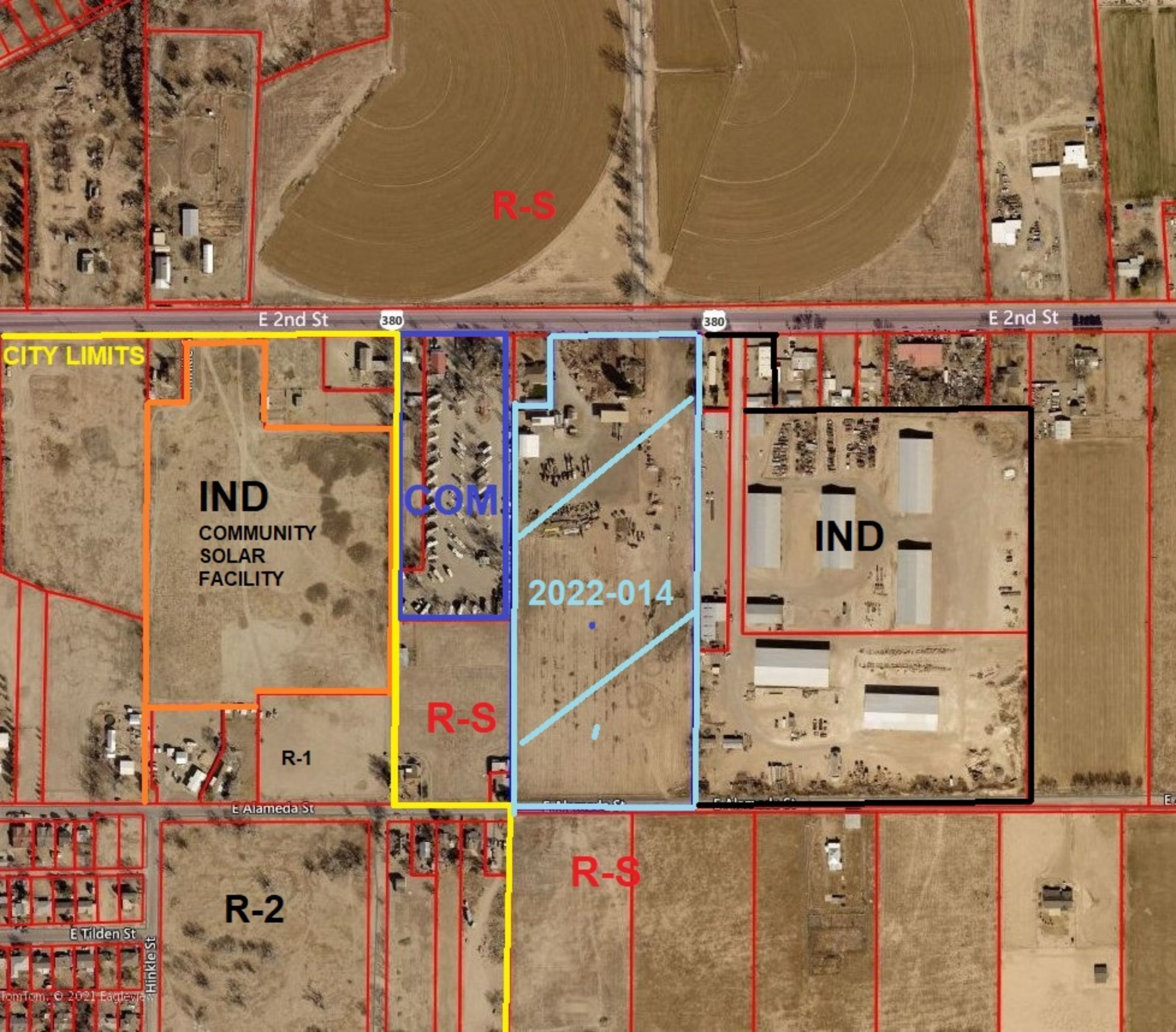
14. The applicant shall comply, if needed, with the following items (if needed) prior to issuance of building permits:

- a) Conditions of Approval
- b) Gallagher Solar Vegetation Maintenance Plan Agreement
- c) Memo - PV Heat Island Effect
- d) CVE North America Inc., Equipment & Glare Summary
- e) Gallagher Solar Decommissioning Plan

II. Site Specific Conditions of Approval:

1. Site shall provide an 8' tall screen fence made of either metal panel, CMU block, pre-cast concrete, or a combination thereof. Owner/Operator shall maintain and replace fence sections as needed during the duration of the project. Final design of fence shall be approved by the Planning & Zoning Division. Contractor shall apply for Building Permit through the Building Division.
2. Solar array and equipment shall not exceed 9' in height unless otherwise approved by the Community Development Director. An increase in the height of the Solar Array equipment will require a corresponding increase in the height of the screen fence.
3. A landscape buffer of native and drought tolerant vegetation and pollinator plants shall be installed and maintained monthly between the property line and fence on all sides. Landscape Plans shall be submitted to Planning & Zoning Division for review and approval *prior to installation*.
4. Trash and debris accumulating along the screen fence shall be removed promptly and regularly (monthly). Nuisance vegetation such as tumbleweeds shall be removed routinely and frequently (monthly during the Spring and Summer growing seasons, March through September).
5. Primary access to the site shall be from East Second Street / US HWY 380. Emergency access shall be provided from East Alameda Street. All keys to gates shall be provided to the Fire Department.
6. A 20' Brush Free Area for access and maintenance of the Solar Array, shall be maintained within the interior of the 40' setback from the property line. This Brush Free Area for maintenance purposes shall extend from the interior side of the screen fence to the solar array and equipment inside the fence.
7. Low growing (less than 12" in height) native vegetation and grasses will be allowed to grow inside the fenced area to assist with dust control. Said vegetation shall be maintained regularly pursuant to Condition 4 above.
8. All vegetation on site shall be properly maintained. While irrigation is not required for this project, vegetation may require watering by hand from time to time.
9. Fire Marshal requires a minimum of 10' clearance between arrays.

10. Fire Marshal requires the creation of an additional access from Alameda Street or make the proposed access from Second Street through all the way to Alameda Street with a 26' wide surface.
11. Per IFC 2015 503.2.3 "Access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be surfaced so as to provide all-weather driving capability." (Imposed loads shall be at least 75,000 pounds).
12. Site Plan shall require Fire Marshal approval prior to construction.
13. Pursuant to the instructions from the Planning & Zoning Commission, project applicant (CVE North America, Inc.) shall purchase and maintain a performance bond in an amount adequate to cover the cost of decommissioning and deconstruction of the site throughout the term of the lease (35 years) with the property owner. Said performance bond amounts to be approved by the Director of Community Development and shall include an acceleration clause for annual increases due to inflation.
14. In consideration of the proximity to residential uses in the area, that portion of the property subject to the Zone Change from RMS to I-1 (Lot 2 of the Gallagher Summary Replat), shall at the end of the lease term, or upon cessation of operations of the Solar Array for a period of 6 months or more, revert to its previous Zoning District (RMS). This reversion shall be effective immediately upon the developer obtaining a permit for decommissioning and demolition.



R-S

E 2nd St

380

380

E 2nd St

CITY LIMITS

IND
COMMUNITY
SOLAR
FACILITY

COM

2022-014

IND

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R-1

E Alameda St

R-S

R-2

E Tilden St

Hinkle St