

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-3

REGISTRATION STATEMENT

UNDER

THE SECURITIES ACT OF 1933

CASA SYSTEMS, INC.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

75-3108867

(I.R.S. Employer Identification Number)

100 Old River Road

Andover, Massachusetts 01810

(978) 688-6706

(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

Edward Durkin

Interim Chief Executive Officer and Chief Financial Officer

100 Old River Road

Andover, Massachusetts 01810

(978) 688-6706

(Name, Address, Including Zip Code, and Telephone Number, Including Area Code, of Agent for Service)

Copy to:

John Mutkoski, Esq.

Kimberly Larie, Esq.

Goodwin Procter LLP

100 Northern Avenue

Boston, MA 02210

(617) 570-1000

Approximate date of commencement of proposed sale to the public: From time to time after this registration statement becomes effective.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box. ☐

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box. ☒

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a registration statement pursuant to General Instruction I.D or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box. ☐

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input checked="" type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. ☐

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the Registration Statement shall become effective on such date as the Commission acting pursuant to said Section 8(a), may determine.

EXPLANATORY NOTE

This registration statement contains two prospectuses:

- a base prospectus covering the offering, issuance and sale by us of up to \$100,000,000 in the aggregate of the securities identified below from time to time, subject to market conditions and prices, liquidity objectives and other investment considerations; and
- a sale agreement prospectus supplement covering the offering, issuance and sale by us of up to a maximum aggregate offering price of \$10,000,000 of our Common Stock, par value \$0.001 per share, or Common Stock, that may be issued and sold under an Equity Distribution Agreement entered into with Piper Sandler & Co. (the “Sale Agreement”).

The base prospectus immediately follows this explanatory note. The specific terms of any securities to be offered by us pursuant to the base prospectus other than the shares under the Sale Agreement will be specified in a prospectus supplement to the base prospectus. The specific terms of the securities to be issued and sold under the Sale Agreement are specified in the sale agreement prospectus supplement that immediately follows the base prospectus. The \$10,000,000 of Common Stock that may be offered, issued and sold under the Sale Agreement prospectus supplement is included in the \$100,000,000 of securities that may be offered, issued and sold by us under the base prospectus. Upon termination of the Sale Agreement, any portion of the \$10,000,000 included in the sale agreement prospectus supplement that is not sold pursuant to the Sale Agreement will be available for sale in other offerings pursuant to the base prospectus and a corresponding prospectus supplement, and if no shares are sold under the sale agreement prospectus supplement, the full \$100,000,000 of securities may be sold in other offerings by us pursuant to the base prospectus and a corresponding prospectus supplement.

The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and we are not soliciting offers to buy these securities in any jurisdiction where the offer or sale is not permitted.

Subject to completion, dated August 8, 2023

PROSPECTUS

\$100,000,000
CASA SYSTEMS, INC.

Debt Securities
Common Stock
Preferred Stock
Units
Warrants

We may offer and sell securities from time to time in one or more offerings of up to \$100,000,000 in aggregate offering price. This prospectus describes the general terms of these securities and the general manner in which these securities will be offered. We will provide the specific terms of these securities in supplements to this prospectus. The prospectus supplements will also describe the specific manner in which these securities will be offered and may also supplement, update or amend information contained in this document. You should read this prospectus and any applicable prospectus supplement before you invest.

We may offer these securities in amounts, at prices and on terms determined at the time of offering. The securities may be sold directly to you, through agents, or through underwriters and dealers. If agents, underwriters or dealers are used to sell the securities, we will name them and describe their compensation in a prospectus supplement.

Our Common Stock is listed on the Nasdaq Global Select Market under the symbol “CASA.”

Investing in these securities involves certain risks. See “[Risk Factors](#)” included in any accompanying prospectus supplement and in the documents incorporated by reference in this prospectus for a discussion of the factors you should carefully consider before deciding to purchase these securities.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is , 2023.

TABLE OF CONTENTS

ABOUT THIS PROSPECTUS	1
WHERE YOU CAN FIND MORE INFORMATION	2
INCORPORATION BY REFERENCE	3
RISK FACTORS	4
FORWARD-LOOKING STATEMENTS	5
PROSPECTUS SUMMARY	7
USE OF PROCEEDS	9
SECURITIES THAT MAY BE OFFERED	10
DESCRIPTION OF CAPITAL STOCK	20
PLAN OF DISTRIBUTION	33
LEGAL MATTERS	36
EXPERTS	36

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or the SEC, utilizing a “shelf” registration process. Under this shelf registration process, we may from time to time sell any combination of the securities described in this prospectus in one or more offerings for an aggregate initial offering price of up to \$100,000,000.

This prospectus provides you with a general description of the securities we may offer. Each time we sell securities, we will provide one or more prospectus supplements that will contain specific information about the terms of the offering. The prospectus supplement may also add, update or change information contained in this prospectus. This prospectus, together with any accompanying prospectus supplement, contains important information you should know before investing in our securities, including important information about us and the securities being offered. You should read both this prospectus and the accompanying prospectus supplement together with the additional information described under the heading “Where You Can Find More Information” beginning on page 2 of this prospectus.

You should rely only on the information contained in or incorporated by reference in this prospectus, any accompanying prospectus supplement or in any related free writing prospectus filed by us with the SEC. We have not authorized anyone to provide you with different or additional information. If anyone provides you with different, additional or inconsistent information, you should not rely on it. We do not take responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus and any accompanying prospectus supplement do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the securities described in this prospectus or such accompanying prospectus supplement or an offer to sell or the solicitation of an offer to buy such securities in any circumstances in which such offer or solicitation is unlawful. You should assume that the information appearing in this prospectus, any prospectus supplement, the documents incorporated by reference and any related free writing prospectus is accurate only as of their respective dates, regardless of the time of delivery of this prospectus, any applicable prospectus supplement or any sale of securities. Our business, financial condition, results of operations and prospects may have changed materially since those dates.

Unless the context otherwise indicates, references in this prospectus to “we,” “our” and “us” refer, collectively, to Casa Systems, Inc., a Delaware corporation, and, where appropriate, our subsidiaries.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at www.sec.gov. Copies of certain information filed by us with the SEC are also available on our website at www.casa-systems.com. Our website is not a part of this prospectus and is not incorporated by reference in this prospectus.

This prospectus is part of a registration statement on Form S-3 we filed with the SEC. This prospectus omits some information contained in the registration statement in accordance with SEC rules and regulations. You should review the information and exhibits in the registration statement for further information about us and our consolidated subsidiaries and the securities we are offering. Statements in this prospectus concerning any document we filed as an exhibit to the registration statement or that we otherwise filed with the SEC are not intended to be comprehensive and are qualified by reference to these filings. You should review the complete document to evaluate these statements.

INCORPORATION BY REFERENCE

The SEC allows us to incorporate by reference much of the information we file with the SEC, which means that we can disclose important information to you by referring you to those publicly available documents. The information that we incorporate by reference in this prospectus is considered to be part of this prospectus. Because we are incorporating by reference future filings with the SEC, this prospectus is continually updated and those future filings may modify or supersede some of the information included or incorporated in this prospectus. This means that you must look at all of the SEC filings that we incorporate by reference to determine if any of the statements in this prospectus or in any document previously incorporated by reference have been modified or superseded. This prospectus incorporates by reference the documents listed below and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act (in each case, other than those documents or the portions of those documents not deemed to be filed) between the date of the initial registration statement and the effectiveness of the registration statement and following the effectiveness of the registration statement until the offering of the securities under the registration statement is terminated or completed:

- Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2022, filed with the SEC on March 15, 2023;
- Quarterly Reports on Form 10-Q for the quarter ended March 31, 2023, filed with the SEC on [May 9, 2023](#), and for the quarter ended June 30, 2023, filed with the SEC on [August 8, 2023](#);
- [Definitive Proxy Statement](#) on Schedule 14A, filed with the SEC on April 6, 2023, with respect to those portions that are incorporated by reference in our Annual Report on Form 10-K for the fiscal year ended December 31, 2022;
- Current Reports on Form 8-K filed with the SEC on [April 13, 2023](#), [May 9, 2023](#), [May 18, 2023](#), [June 16, 2023](#), [June 21, 2023](#), and [July 13, 2023](#); and
- The description of our Common Stock contained in our Registration Statement on [Form 8-A](#) filed on December 12, 2017, including any amendments or reports filed for the purpose of updating such description.

You may request a copy of these filings, at no cost, by writing or telephoning us at the following address or telephone number:

100 Old River Road
Andover, Massachusetts 01810
(978) 688-6706

RISK FACTORS

Investing in our securities involves significant risks. Please see the risk factors under the heading “Risk Factors” in our most recent Annual Report on Form 10-K on file with the SEC, as revised or supplemented by Quarterly Reports on Form 10-Q subsequently filed with the SEC, each of which is incorporated by reference in this prospectus, along with any risk factors identified in a prospectus supplement. Before making an investment decision, you should carefully consider these risks as well as other information we include or incorporate by reference in this prospectus and any prospectus supplement. The risks and uncertainties we have described are not the only ones facing our company. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our business operations. The occurrence of any of these risks might cause you to lose all or part of your investment in the offered securities. Actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including the risks referenced below and described in the documents incorporated herein by reference. The discussion of risks includes or refers to forward-looking statements. You should read the explanation of the qualifications and limitations on such forward-looking statements discussed elsewhere in this prospectus.

FORWARD-LOOKING STATEMENTS

This prospectus and the information incorporated by reference in this prospectus include “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Exchange Act. All statements other than statements of historical fact contained in this prospectus, including statements regarding our future results of operations and financial position, business strategy and plans and objectives of management for future operations, are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.

In some cases, you can identify forward-looking statements by terms such as “may,” “might,” “should,” “expects,” “plans,” “anticipates,” “would,” “could,” “intends,” “target,” “projects,” “contemplates,” “believes,” “estimates,” “predicts,” “potential” or “continue” or the negative of these terms or other similar expressions. The forward-looking statements in this prospectus are only predictions. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. Accordingly, these statements involve estimates, assumptions, risks and uncertainties which could cause actual results to differ materially from those expressed in them. These forward-looking statements speak only as of the date of this prospectus and are subject to a number of risks, uncertainties and assumptions described in the “Risk Factors” section and elsewhere in this prospectus and such forward-looking statements are qualified in their entirety by reference to the factors discussed throughout this prospectus, and in particular those factors referenced in the section “Risk Factors.” Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Some of the key factors that could cause actual results to differ from our expectations include:

- our ability to fulfill our customers’ orders due to supply chain delays, access to key commodities or technologies or events that impact our manufacturers or their suppliers;
- our ability to anticipate technological shifts;
- our ability to generate positive returns on our research and development;
- changes in the rate at which communications service providers or CSPs, deploy and invest in ultra-broadband network capabilities;
- the lack of predictability of revenue due to lengthy sales cycles and the volatility in capital expenditure budgets of CSPs;
- our ability to return to operating profitability in the future;
- the sufficiency of our cash resources and needs for additional financing;
- our ability to comply with all covenants, agreements and conditions under our credit facility;
- our ability to further penetrate our existing customer base and obtain new customers;
- changes in our pricing policies, whether initiated by us or as a result of competition;
- the amount and timing of operating costs and capital expenditures related to the operation and expansion of our business;
- the actual or rumored timing and success of new product and service introductions by us or our competitors or any other change in the competitive landscape of our industry, including consolidation among our competitors or customers;

Table of Contents

- our ability to successfully expand our business domestically and internationally, including our ability to maintain the synergies we have realized from our acquisition of NetComm Wireless Limited, or NetComm;
- insolvency or credit difficulties confronting our customers, which could adversely affect their ability to purchase or pay for our products and services, or our key suppliers, which could disrupt our supply chain;
- future accounting pronouncements or changes in our accounting policies;
- stock-based compensation expense;
- our overall effective tax rate, including impacts caused by the relative proportion of foreign to U.S. income, the amount and timing of certain employee stock-based compensation transactions, changes in the valuation of our deferred tax assets and any new legislation or regulatory developments;
- increases or decreases in our expenses caused by fluctuations in interest rates and foreign currency exchange rates;
- impact of inflation and actions taken by central banks to counter inflation;
- the costs and possible outcomes of any contingent liabilities, as well as legal actions or proceedings against us;
- general economic conditions, both domestically and in foreign markets, including new macro-economic recession concerns, a potential economic downturn, banking industry liquidity concerns, or inflationary conditions;
- our ability to obtain and maintain intellectual property protection for our products; and
- our use of proceeds from our initial public offering.

Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events or otherwise.

PROSPECTUS SUMMARY

This summary highlights certain information about us, this offering and selected information contained elsewhere in this prospectus. This summary is not complete and does not contain all of the information that you should consider before deciding whether to invest in the securities covered by this prospectus. For a more complete understanding of the Company and this offering, we encourage you to read and consider carefully the more detailed information in this prospectus, any related prospectus supplement and any related free writing prospectus, including the information set forth in the section titled “Risk Factors” in this prospectus, any related prospectus supplement and any related free writing prospectus in their entirety before making an investment decision.

About the Company

With our physical, virtual and cloud-native 5G infrastructure and customer premise networking equipment solutions, we help our CSP customers transform and expand their public and private high-speed data and multi-service communications networks so they can meet the growing demand for bandwidth and new services. Our core and edge convergence technology enables CSPs and enterprises to cost-effectively and dynamically increase network speed, add bandwidth capacity and new services, reduce network complexity, and reduce operating and capital expenditures regardless of access technology.

We offer scalable solutions that can meet the evolving bandwidth needs of our customers and their subscribers. Our first installation in a service provider’s network frequently involves deploying our broadband products in only a portion of the provider’s network and, for our cable products, with only a fraction of the product’s full capacity enabled at the time of initial installation. Over time, our customers have generally expanded the use of our solutions to other areas of their networks to extend network coverage or increase network capacity.

Our solutions are commercially deployed in over 70 countries by more than 475 customers, including regional service providers as well as some of the world’s largest Tier 1 CSPs, serving millions of subscribers. Our principal customers include Verizon, Rogers, Videotron, T-Mobile, Charter Communications, AT&T, Bell Canada, Cable One, Mediacom, Windstream, and Lumen in North America; Televisa/IZZI Mexico, Megacable Mexico, Cablevision Argentina, Claro Brazil, America Móvil and Claro Colombia in Latin America; Liberty Global, Vodafone and DNA Oyj in Europe; and NBN, Jupiter Communications, Beijing Gehua CATV Networks, Softbank, Kbro, Guangdong Cable, TRUE and CNS in Asia-Pacific. We believe that our products are well suited to address industry trends and accordingly present us with a significant market opportunity across all access technologies. Historically, we have generated the significant majority of our revenue from the cable market with our converged cable access platform, or CCAP. However, since 2019 we have become more diversified as a result of our acquisition of NetComm and the introduction of solutions for wireless and fixed-line broadband networks, as well as the introduction of our cloud-native software solutions. We believe that this has expanded our total addressable market from approximately \$1.2 billion in 2019 to \$49.4 billion in 2023.

We expect to continue to generate revenue in the future from growth in the cable market and increased revenue from sales of both wireless and fixed-line broadband solutions to new and existing customers. We believe there is an opportunity for us to take new market share as fixed and wireless networks continue to converge and as we continue to grow our cloud-native software business.

NetComm Acquisition

On July 1, 2019, we acquired NetComm for cash consideration of approximately \$162.0 million Australian dollars, or AUD (\$112.7 million United States dollars, or USD, based on an exchange rate of USD \$0.70 per

AUD \$1.00 on July 1, 2019). This acquisition has enabled us to expand our customer base, enhance our global footprint, extend our product portfolio to the customer premise networking technology and further diversify our revenue sources.

Company information

We were incorporated under the laws of the State of Delaware on February 28, 2003. Our principal executive offices are located at 100 Old River Road, Andover, Massachusetts 01810, and our telephone number at that address is (978) 688-6706. Our website address is www.casa-systems.com. We do not incorporate the information on or accessible through our website into this prospectus, and you should not consider any information on, or that can be accessed through, our website as part of this prospectus. You should not rely on any such information in making your decision whether to purchase our Common Stock. Our Common Stock trades on The Nasdaq Global Select Market under the symbol “CASA.”

USE OF PROCEEDS

We intend to use the net proceeds from the sale of any securities offered under this prospectus for general corporate purposes unless otherwise indicated in the applicable prospectus supplement. General corporate purposes may include research and development expenditures, commercial expenditures, capital expenditures, working capital, the acquisition of companies or businesses and the repayment and refinancing of debt. We have not determined the amount of net proceeds to be used specifically for such purposes. As a result, management will retain broad discretion over the allocation of net proceeds. Pending the use of the net proceeds, we may invest the proceeds in interest-bearing, investment-grade securities, certificates of deposit or government securities. When we offer and sell the securities to which this prospectus relates, the prospectus supplement related to such offering will set forth our intended use of the proceeds, if any, received from the sale of such securities.

SECURITIES THAT MAY BE OFFERED

We may offer under this prospectus shares of our Common Stock and preferred stock, par value \$0.001, or Preferred Stock, various series of debt securities, warrants to purchase any of such securities and units comprised of one or more of the other securities that may be offered under this prospectus, either individually or in combination with other securities, with a total value of up to \$100,000,000 from time to time at prices and on terms to be determined at the time of any offering. This prospectus provides you with a general description of the securities we may offer. Each time we offer a type or series of securities under this prospectus, we will provide a prospectus supplement that will describe the specific amounts, prices and other important terms of the securities, including, to the extent applicable:

- designation or classification;
- aggregate principal amount or aggregate offering price;
- maturity;
- original issue discount;
- rates and times of payment of interest or dividends;
- redemption, conversion, exercise, exchange or sinking fund terms;
- ranking;
- restrictive covenants;
- voting or other rights;
- conversion or exchange prices or rates and, if applicable, any provisions for changes to or adjustments in the conversion or exchange prices or rates and in the securities or other property receivable upon conversion or exchange; and
- a discussion of material U.S. federal income tax considerations, if any.

This prospectus may not be used to offer or sell securities unless accompanied by an applicable prospectus supplement. The prospectus supplement and any related free writing prospectus that we may authorize to be provided to you may also add, update or change information contained in this prospectus or in documents we have incorporated by reference. However, no prospectus supplement or free writing prospectus will offer a security that is not registered and described in this prospectus at the time of the effectiveness of the registration statement of which this prospectus is a part.

The following descriptions are not complete and may not contain all the information you should consider before investing in any securities we may offer hereunder; they are summarized from, and qualified by reference to, our restated certificate of incorporation, amended and restated by-laws, as amended, and the other documents referred to in the descriptions, all of which are or will be publicly filed with the SEC, as applicable. See “Where You Can Find More Information.”

DESCRIPTION OF DEBT SECURITIES

We may offer debt securities which may be senior or subordinated. We refer to the senior debt securities and the subordinated debt securities collectively as debt securities. The following description summarizes the general terms and provisions of the debt securities. We will describe the specific terms of the debt securities and the extent, if any, to which the general provisions summarized below apply to any series of debt securities in the prospectus supplement relating to the series and any applicable free writing prospectus that we authorize to be delivered.

We may issue senior debt securities from time to time, in one or more series under a senior indenture to be entered into between us and a senior trustee to be named in a prospectus supplement, which we refer to as the senior trustee. We may issue subordinated debt securities from time to time, in one or more series under a subordinated indenture to be entered into between us and a subordinated trustee to be named in a prospectus supplement, which we refer to as the subordinated trustee. The forms of senior indenture and subordinated indenture are filed as exhibits to the registration statement of which this prospectus forms a part. Together, the senior indenture and the subordinated indenture are referred to as the indentures and, together, the senior trustee and the subordinated trustee are referred to as the trustees. This prospectus briefly outlines some of the provisions of the indentures. The following summary of the material provisions of the indentures is qualified in its entirety by the provisions of the indentures, including definitions of certain terms used in the indentures. Wherever we refer to particular sections or defined terms of the indentures, those sections or defined terms are incorporated by reference in this prospectus or the applicable prospectus supplement. You should review the indentures that are filed as exhibits to the registration statement of which this prospectus forms a part for additional information.

None of the indentures will limit the amount of debt securities that we may issue. The applicable indenture will provide that debt securities may be issued up to an aggregate principal amount authorized from time to time by us and may be payable in any currency or currency unit designated by us or in amounts determined by reference to an index.

General

The senior debt securities will constitute our unsecured and unsubordinated general obligations and will rank *pari passu* with our other unsecured and unsubordinated obligations. The subordinated debt securities will constitute our unsecured and subordinated general obligations and will be junior in right of payment to our senior indebtedness (including senior debt securities), as described under the heading “—Certain Terms of the Subordinated Debt Securities—Subordination.” The debt securities will be structurally subordinated to all existing and future indebtedness and other liabilities of our subsidiaries unless such subsidiaries expressly guarantee such debt securities.

The debt securities will be our unsecured obligations. Any secured debt or other secured obligations will be effectively senior to the debt securities to the extent of the value of the assets securing such debt or other obligations.

The applicable prospectus supplement and/or free writing prospectus will include any additional or different terms of the debt securities of any series being offered, including the following terms:

- the title and type of the debt securities;
- whether the debt securities will be senior or subordinated debt securities, and, with respect to debt securities issued under the subordinated indenture the terms on which they are subordinated;
- the aggregate principal amount of the debt securities;
- the price or prices at which we will sell the debt securities;
- the maturity date or dates of the debt securities and the right, if any, to extend such date or dates;

[Table of Contents](#)

- the rate or rates, if any, per year, at which the debt securities will bear interest, or the method of determining such rate or rates;
- the date or dates from which such interest will accrue, the interest payment dates on which such interest will be payable or the manner of determination of such interest payment dates and the related record dates;
- the right, if any, to extend the interest payment periods and the duration of that extension;
- the manner of paying principal and interest and the place or places where principal and interest will be payable;
- provisions for a sinking fund, purchase fund or other analogous fund, if any;
- any redemption dates, prices, obligations and restrictions on the debt securities;
- the currency, currencies or currency units in which the debt securities will be denominated and the currency, currencies or currency units in which principal and interest, if any, on the debt securities may be payable;
- any conversion or exchange features of the debt securities;
- whether and upon what terms the debt securities may be defeased;
- any events of default or covenants in addition to or in lieu of those set forth in the indenture;
- whether the debt securities will be issued in definitive or global form or in definitive form only upon satisfaction of certain conditions;
- whether the debt securities will be guaranteed as to payment or performance;
- any special tax implications of the debt securities; and
- any other material terms of the debt securities.

When we refer to “principal” in this section with reference to the debt securities, we are also referring to “premium, if any.”

We may from time to time, without notice to or the consent of the holders of any series of debt securities, create and issue further debt securities of any such series ranking equally with the debt securities of such series in all respects (or in all respects other than (1) the payment of interest accruing prior to the issue date of such further debt securities or (2) the first payment of interest following the issue date of such further debt securities). Such further debt securities may be consolidated and form a single series with the debt securities of such series and have the same terms as to status, redemption or otherwise as the debt securities of such series.

You may present debt securities for exchange and you may present debt securities for transfer in the manner, at the places and subject to the restrictions set forth in the debt securities and the applicable prospectus supplement. We will provide you those services without charge, although you may have to pay any tax or other governmental charge payable in connection with any exchange or transfer, as set forth in the indenture.

Debt securities may bear interest at a fixed rate or a floating rate. Debt securities bearing no interest or interest at a rate that at the time of issuance is below the prevailing market rate (original issue discount securities) may be sold at a discount below their stated principal amount. U.S. federal income tax considerations applicable to any such discounted debt securities or to certain debt securities issued at par which are treated as having been issued at a discount for U.S. federal income tax purposes will be described in the applicable prospectus supplement.

We may issue debt securities with the principal amount payable on any principal payment date, or the amount of interest payable on any interest payment date, to be determined by reference to one or more currency

exchange rates, securities or baskets of securities, commodity prices or indices. You may receive a payment of principal on any principal payment date, or a payment of interest on any interest payment date, that is greater than or less than the amount of principal or interest otherwise payable on such dates, depending on the value on such dates of the applicable currency, security or basket of securities, commodity or index. Information as to the methods for determining the amount of principal or interest payable on any date, the currencies, securities or baskets of securities, commodities or indices to which the amount payable on such date is linked and certain related tax considerations will be set forth in the applicable prospectus supplement.

Certain Terms of the Senior Debt Securities

Covenants. Unless we indicate otherwise in a prospectus supplement, the senior debt securities will not contain any financial or restrictive covenants, including covenants restricting either us or our subsidiaries from incurring, issuing, assuming or guaranteeing any indebtedness secured by a lien on any of our or our subsidiaries' property or capital stock, or restricting either us or our subsidiaries from entering into sale and leaseback transactions.

Consolidation, Merger and Sale of Assets. Unless we indicate otherwise in a prospectus supplement, we may not consolidate with or merge into any other person, in a transaction in which we are not the surviving corporation, or convey, transfer or lease our properties and assets substantially as an entirety to any person, in either case, unless:

- the successor entity, if any, is a U.S. corporation, limited liability company, partnership or trust (subject to certain exceptions provided for in the senior indenture);
- the successor entity assumes our obligations on the senior debt securities and under the senior indenture;
- immediately after giving effect to the transaction, no default or event of default shall have occurred and be continuing; and
- certain other conditions are met.

No Protection in the Event of a Change in Control. Unless we indicate otherwise in a prospectus supplement with respect to a particular series of senior debt securities, the senior debt securities will not contain any provisions that may afford holders of the senior debt securities protection in the event we have a change in control or in the event of a highly leveraged transaction (whether or not such transaction results in a change in control).

Events of Default. Unless we indicate otherwise in a prospectus supplement with respect to a particular series of senior debt securities, the following are events of default under the senior indenture for any series of senior debt securities:

- failure to pay interest on any senior debt securities of such series when due and payable, if that default continues for a period of 30 days (or such other period as may be specified for such series);
- failure to pay principal on the senior debt securities of such series when due and payable whether at maturity, upon redemption, by declaration or otherwise (and, if specified for such series, the continuance of such failure for a specified period);
- default in the performance of or breach of any of our covenants or agreements in the senior indenture applicable to senior debt securities of such series, other than a covenant breach which is specifically dealt with elsewhere in the senior indenture, and that default or breach continues for a period of 90 days after we receive written notice from the trustee or from the holders of 25% or more in aggregate principal amount of the senior debt securities of such series;
- certain events of bankruptcy or insolvency, whether or not voluntary; and

[Table of Contents](#)

- any other event of default provided for in such series of senior debt securities as may be specified in the applicable prospectus supplement.

The default by us under any other debt, including any other series of debt securities, is not a default under the senior indenture.

If an event of default other than an event of default specified in the fourth bullet point above occurs with respect to a series of senior debt securities and is continuing under the senior indenture, then, and in each such case, either the trustee or the holders of not less than 25% in aggregate principal amount of such series then outstanding under the senior indenture (each such series voting as a separate class) by written notice to us and to the trustee, if such notice is given by the holders, may, and the trustee at the request of such holders shall, declare the principal amount of and accrued interest on such series of senior debt securities to be immediately due and payable, and upon this declaration, the same shall become immediately due and payable.

If an event of default specified in the fourth bullet point above occurs and is continuing, the entire principal amount of and accrued interest on each series of senior debt securities then outstanding shall become immediately due and payable.

Unless otherwise specified in the prospectus supplement relating to a series of senior debt securities originally issued at a discount, the amount due upon acceleration shall include only the original issue price of the senior debt securities, the amount of original issue discount accrued to the date of acceleration and accrued interest, if any.

Upon certain conditions, declarations of acceleration may be rescinded and annulled and past defaults may be waived by the holders of a majority in aggregate principal amount of all the senior debt securities of such series affected by the default, each series voting as a separate class. Furthermore, subject to various provisions in the senior indenture, the holders of a majority in aggregate principal amount of a series of senior debt securities, by notice to the trustee, may waive an existing default or event of default with respect to such senior debt securities and its consequences, except a default in the payment of principal of or interest on such senior debt securities or in respect of a covenant or provision of the senior indenture which cannot be modified or amended without the consent of the holders of each such senior debt security. Upon any such waiver, such default shall cease to exist, and any event of default with respect to such senior debt securities shall be deemed to have been cured, for every purpose of the senior indenture; but no such waiver shall extend to any subsequent or other default or event of default or impair any right consequent thereto.

The holders of a majority in aggregate principal amount of a series of senior debt securities may direct the time, method and place of conducting any proceeding for any remedy available to the trustee or exercising any trust or power conferred on the trustee with respect to such senior debt securities. However, the trustee may refuse to follow any direction that conflicts with law or the senior indenture, that may involve the trustee in personal liability or that the trustee determines in good faith may be unduly prejudicial to the rights of holders of such series of senior debt securities not joining in the giving of such direction and may take any other action it deems proper that is not inconsistent with any such direction received from holders of such series of senior debt securities. A holder may not pursue any remedy with respect to the senior indenture or any series of senior debt securities unless:

- the holder gives the trustee written notice of a continuing event of default;
- the holders of at least 25% in aggregate principal amount of such series of senior debt securities make a written request to the trustee to pursue the remedy in respect of such event of default;
- the requesting holder or holders offer the trustee indemnity satisfactory to the trustee against any costs, liability or expense;
- the trustee does not comply with the request within 60 days after receipt of the request and the offer of indemnity; and

[Table of Contents](#)

- during such 60-day period, the holders of a majority in aggregate principal amount of such series of senior debt securities do not give the trustee a direction that is inconsistent with the request.

These limitations, however, do not apply to the right of any holder of a senior debt security to receive payment of the principal of and interest on such senior debt security in accordance with the terms of such debt security, or to bring suit for the enforcement of any such payment in accordance with the terms of such debt security, on or after the due date for the senior debt securities, which right shall not be impaired or affected without the consent of the holder.

The senior indenture requires certain of our officers to certify, on or before a fixed date in each year in which any senior debt security is outstanding, as to their knowledge of our compliance with all covenants, agreements and conditions under the senior indenture.

Satisfaction and Discharge. We can satisfy and discharge our obligations to holders of any series of debt securities if:

- we pay or cause to be paid, as and when due and payable, the principal of and any interest on all senior debt securities of such series outstanding under the senior indenture; or
- all senior debt securities of such series have become due and payable or will become due and payable within one year (or are to be called for redemption within one year) and we deposit in trust a combination of cash and U.S. government or U.S. government agency obligations that will generate enough cash to make interest, principal and any other payments on the debt securities of that series on their various due dates.

Under current U.S. federal income tax law, the deposit and our legal release from the debt securities would be treated as though we exchanged your debt securities for your share of the cash and debt securities or bonds deposited in trust. In that event, you could recognize a gain or loss on the debt securities you exchange. Purchasers of the debt securities should consult their own advisers with respect to the tax consequences to them of such deposit and discharge, including the applicability and effect of tax laws other than the U.S. federal income tax law.

Defeasance. Unless the applicable prospectus supplement provides otherwise, the following discussion of legal defeasance and discharge and covenant defeasance will apply to any series of debt securities issued under the indentures.

Legal Defeasance. We can legally release ourselves from any payment or other obligations on the debt securities of any series (called “legal defeasance”) if certain conditions are met, including the following:

- We deposit in trust for your benefit and the benefit of all other direct holders of the debt securities of the same series a combination of cash and U.S. government or U.S. government agency obligations that will generate enough cash to make interest, principal and any other payments on the debt securities of that series on their various due dates.
- There is a change in current U.S. federal income tax law or an IRS ruling that lets us make the above deposit without causing you to be taxed on the debt securities any differently than if we did not make the deposit and instead repaid the debt securities ourselves when due. Under current U.S. federal income tax law, the deposit and our legal release from the debt securities would be treated as though we exchanged your debt securities for your share of the cash and debt securities or bonds deposited in trust. In that event, you could recognize gain or loss on the debt securities you exchange.
- We deliver to the trustee a legal opinion of our counsel confirming the tax law change or ruling described above.

If we accomplish legal defeasance, as described above, you would have to rely solely on the trust deposit for repayment of the debt securities. You could not look to us for repayment in the event of any shortfall.

[Table of Contents](#)

Covenant Defeasance. Without any change of current U.S. federal tax law, we can make the same type of deposit described above and be released from some of the covenants in the debt securities (called “covenant defeasance”). In that event, you would lose the protection of those covenants but would gain the protection of having money and securities set aside in trust to repay the debt securities. In order to achieve covenant defeasance, we must do the following (among other things):

- We must deposit in trust for your benefit and the benefit of all other direct holders of the debt securities of the same series a combination of cash and U.S. government or U.S. government agency obligations that will generate enough cash to make interest, principal and any other payments on the debt securities of that series on their various due dates.
- We must deliver to the trustee a legal opinion of our counsel confirming that under current U.S. federal income tax law we may make the above deposit without causing you to be taxed on the debt securities any differently than if we did not make the deposit and instead repaid the debt securities ourselves when due.

If we accomplish covenant defeasance, you could still look to us for repayment of the debt securities if there were a shortfall in the trust deposit. In fact, if one of the events of default occurred (such as our bankruptcy) and the debt securities become immediately due and payable, there may be such a shortfall. Depending on the events causing the default, you may not be able to obtain payment of the shortfall.

Modification and Waiver. We and the trustee may amend or supplement the senior indenture or the senior debt securities without the consent of any holder:

- to convey, transfer, assign, mortgage or pledge any assets as security for the senior debt securities of one or more series;
- to evidence the succession of a corporation, limited liability company, partnership or trust to us, and the assumption by such successor of our covenants, agreements and obligations under the senior indenture or to otherwise comply with the covenant relating to mergers, consolidations and sales of assets;
- to comply with requirements of the SEC in order to effect or maintain the qualification of the senior indenture under the Trust Indenture Act of 1939, as amended;
- to add to our covenants such new covenants, restrictions, conditions or provisions for the protection of the holders, and to make the occurrence, or the occurrence and continuance, of a default in any such additional covenants, restrictions, conditions or provisions an event of default;
- to cure any ambiguity, defect or inconsistency in the senior indenture or in any supplemental indenture or to conform the senior indenture or the senior debt securities to the description of senior debt securities of such series set forth in this prospectus or any applicable prospectus supplement;
- to provide for or add guarantors with respect to the senior debt securities of any series;
- to establish the form or forms or terms of the senior debt securities as permitted by the senior indenture;
- to evidence and provide for the acceptance of appointment under the senior indenture by a successor trustee, or to make such changes as shall be necessary to provide for or facilitate the administration of the trusts in the senior indenture by more than one trustee;
- to add to, delete from or revise the conditions, limitations and restrictions on the authorized amount, terms, purposes of issue, authentication and delivery of any series of senior debt securities;
- to make any change to the senior debt securities of any series so long as no senior debt securities of such series are outstanding; or
- to make any change that does not adversely affect the rights of any holder in any material respect.

[Table of Contents](#)

Other amendments and modifications of the senior indenture or the senior debt securities issued may be made, and our compliance with any provision of the senior indenture with respect to any series of senior debt securities may be waived, with the consent of the holders of a majority of the aggregate principal amount of the outstanding senior debt securities of all series affected by the amendment or modification (voting together as a single class); provided, however, that each affected holder must consent to any modification, amendment or waiver that:

- extends the final maturity of any senior debt securities of such series;
- reduces the principal amount of any senior debt securities of such series;
- reduces the rate or extends the time of payment of interest on any senior debt securities of such series;
- reduces the amount payable upon the redemption of any senior debt securities of such series;
- changes the currency of payment of principal of or interest on any senior debt securities of such series;
- reduces the principal amount of original issue discount securities payable upon acceleration of maturity or the amount provable in bankruptcy;
- waives an uncured default in the payment of principal of or interest on the senior debt securities (except in the case of a rescission of acceleration as described above);
- changes the provisions relating to the waiver of past defaults or changes or impairs the right of holders to receive payment or to institute suit for the enforcement of any payment or conversion of any senior debt securities of such series on or after the due date therefor;
- modifies any of the provisions of these restrictions on amendments and modifications, except to increase any required percentage or to provide that certain other provisions cannot be modified or waived without the consent of the holder of each senior debt security of such series affected by the modification; or
- reduces the above-stated percentage of outstanding senior debt securities of such series whose holders must consent to a supplemental indenture or modifies or amends or waives certain provisions of or defaults under the senior indenture.

It shall not be necessary for the holders to approve the particular form of any proposed amendment, supplement or waiver, but it shall be sufficient if the holders' consent approves the substance thereof. After an amendment, supplement or waiver of the senior indenture in accordance with the provisions described in this section becomes effective, the trustee must give to the holders affected thereby certain notice briefly describing the amendment, supplement or waiver. Any failure by the trustee to give such notice, or any defect therein, shall not, however, in any way impair or affect the validity of any such amendment, supplemental indenture or waiver.

No Personal Liability of Incorporators, Stockholders, Officers, Directors. The senior indenture provides that no recourse shall be had under any obligation, covenant or agreement of ours in the senior indenture or any supplemental indenture, or in any of the senior debt securities or because of the creation of any indebtedness represented thereby, against any of our incorporators, stockholders, officers or directors, past, present or future, or of any predecessor or successor entity thereof under any law, statute or constitutional provision or by the enforcement of any assessment or by any legal or equitable proceeding or otherwise. Each holder, by accepting the senior debt securities, waives and releases all such liability.

Concerning the Trustee. The senior indenture provides that, except during the continuance of an event of default, the trustee will not be liable except for the performance of such duties as are specifically set forth in the senior indenture. If an event of default has occurred and is continuing, the trustee will exercise such rights and powers vested in it under the senior indenture and will use the same degree of care and skill in its exercise as a prudent person would exercise under the circumstances in the conduct of such person's own affairs.

[Table of Contents](#)

The senior indenture and the provisions of the Trust Indenture Act of 1939 incorporated by reference therein contain limitations on the rights of the trustee thereunder, should it become a creditor of ours or our subsidiaries, to obtain payment of claims in certain cases or to realize on certain property received by it in respect of any such claims, as security or otherwise. The trustee is permitted to engage in other transactions, provided that if it acquires any conflicting interest (as defined in the Trust Indenture Act), it must eliminate such conflict or resign.

We may have normal banking relationships with the senior trustee in the ordinary course of business.

Unclaimed Funds. All funds deposited with the trustee or any paying agent for the payment of principal, premium, interest or additional amounts in respect of the senior debt securities that remain unclaimed for two years after the date upon which such principal, premium or interest became due and payable will be repaid to us. Thereafter, any right of any holder of senior debt securities to such funds shall be enforceable only against us, and the trustee and paying agents will have no liability therefor.

Governing Law. The senior indenture and the senior debt securities will be governed by, and construed in accordance with, the internal laws of the State of New York.

Certain Terms of the Subordinated Debt Securities

Other than the terms of the subordinated indenture and subordinated debt securities relating to subordination or otherwise as described in the prospectus supplement relating to a particular series of subordinated debt securities, the terms of the subordinated indenture and subordinated debt securities are identical in all material respects to the terms of the senior indenture and senior debt securities.

Additional or different subordination terms may be specified in the prospectus supplement applicable to a particular series.

Subordination. The indebtedness evidenced by the subordinated debt securities is subordinate to the prior payment in full of all of our senior indebtedness, as defined in the subordinated indenture. During the continuance beyond any applicable grace period of any default in the payment of principal, premium, interest or any other payment due on any of our senior indebtedness, we may not make any payment of principal of or interest on the subordinated debt securities (except for certain sinking fund payments). In addition, upon any payment or distribution of our assets upon any dissolution, winding-up, liquidation or reorganization, the payment of the principal of and interest on the subordinated debt securities will be subordinated to the extent provided in the subordinated indenture in right of payment to the prior payment in full of all our senior indebtedness. Because of this subordination, if we dissolve or otherwise liquidate, holders of our subordinated debt securities may receive less, ratably, than holders of our senior indebtedness. The subordination provisions do not prevent the occurrence of an event of default under the subordinated indenture.

The term “senior indebtedness” of a person means with respect to such person the principal of, premium, if any, interest on, and any other payment due pursuant to any of the following, whether outstanding on the date of the subordinated indenture or incurred by that person in the future:

- all of the indebtedness of that person for money borrowed;
- all of the indebtedness of that person evidenced by notes, debentures, bonds or other securities sold by that person for money;
- all of the lease obligations that are capitalized on the books of that person in accordance with generally accepted accounting principles;
- all indebtedness of others of the kinds described in the first two bullet points above and all lease obligations of others of the kind described in the third bullet point above that the person, in any manner, assumes or guarantees or that the person in effect guarantees through an agreement to purchase, whether that agreement is contingent or otherwise; and

[Table of Contents](#)

- all renewals, extensions or refundings of indebtedness of the kinds described in the first, second or fourth bullet points above and all renewals or extensions of leases of the kinds described in the third or fourth bullet points above;

unless, in the case of any particular indebtedness, renewal, extension or refunding, the instrument creating or evidencing it or the assumption or guarantee relating to it expressly provides that such indebtedness, renewal, extension or refunding is not superior in right of payment to the subordinated debt securities. Our senior debt securities constitute senior indebtedness for purposes of the subordinated debt indenture.

DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock is intended as a summary only and therefore is not a complete description of our capital stock. This description is based upon, and is qualified by reference to, our amended and restated certificate of incorporation, our amended and restated by-laws, and applicable provisions of Delaware corporate law. You should read our amended and restated certificate of incorporation and our amended and restated by-laws, in each case, as amended and supplemented, which are filed as exhibits to the registration statement of which this prospectus forms a part, for the provisions that are important to you.

Our authorized capital stock consists of 500,000,000 shares of Common Stock and 5,000,000 shares of Preferred Stock. Our Common Stock is registered under Section 12(b) of the Exchange Act. As of June 30, 2023, we had 97,012,816 shares of Common Stock outstanding.

Common Stock

Voting Rights. Holders of our Common Stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders and do not have cumulative voting rights. Any matter other than the election of directors to be voted upon by the stockholders at any meeting at which a quorum is present shall be decided by the vote of the holders of shares of stock having a majority in voting power of the votes cast by the holders of all of the shares of stock present or represented at the meeting and voting affirmatively or negatively on the matter, except when a different vote is required by law, our amended and restated certificate of incorporation or our amended and restated by-laws. An election of directors by our stockholders shall be determined by a plurality of the votes cast by the stockholders entitled to vote on the election.

Dividends. Holders of Common Stock are entitled to receive proportionately any dividends as may be declared by our board of directors, subject to any preferential dividend rights of any series of Preferred Stock that we may designate and issue in the future.

Liquidation, Dissolution and Winding Up. In the event of our liquidation or dissolution, the holders of Common Stock are entitled to receive proportionately our net assets available for distribution to stockholders after the payment of all debts and other liabilities and subject to the prior rights of any outstanding Preferred Stock.

Other Rights. Holders of Common Stock have no preemptive, subscription, redemption or conversion rights and there are no sinking fund provisions applicable to our Common Stock. The rights, preferences and privileges of holders of Common Stock are subject to and may be adversely affected by the rights of the holders of shares of any series of Preferred Stock that we may designate and issue in the future.

All outstanding shares are fully paid and non-assessable. When we issue shares of Common Stock under this prospectus, the shares will fully be paid and non-assessable and will not have, or be subject to, any preemptive or similar rights.

Listing on The Nasdaq Global Select Market

Our Common Stock is listed on The Nasdaq Global Select Market under the symbol “CASA.”

Authorized but Unissued Shares

The authorized but unissued shares of Common Stock are available for future issuance without stockholder approval, subject to any limitations imposed by the Nasdaq Listing Rules. These additional shares may be used for a variety of corporate finance transactions, acquisitions and employee benefit plans. The existence of authorized but unissued and unreserved Common Stock could make it more difficult or discourage an attempt to obtain control of us by means of a proxy contest, tender offer, merger or otherwise.

Transfer Agent and Registrar

The transfer agent and registrar for our Common Stock is American Stock Transfer & Trust Company, LLC. The transfer agent and registrar's address is 6201 15th Avenue, Brooklyn, New York, 11219, and its telephone number is (781) 921-8300.

Preferred Stock

As of June 30, 2023, no shares of our Preferred Stock were outstanding. The specific terms of any series of Preferred Stock will be described in the prospectus supplement relating to that series of Preferred Stock. The terms of any series of Preferred Stock may differ from the terms described below. Certain provisions of the Preferred Stock described below and in any applicable prospectus supplement are not complete.

We are authorized to issue "blank check" Preferred Stock, which may be issued in one or more series upon authorization of our board of directors. Our board of directors is authorized to fix the designation of the series, the number of authorized shares of the series, dividend rights and terms, conversion rights, voting rights, redemption rights and terms, liquidation preferences and any other rights, powers, preferences and limitations applicable to each series of Preferred Stock. The authorized shares of our Preferred Stock are available for issuance without further action by our stockholders, unless such action is required by applicable law or the rules of any stock exchange on which our securities may be listed. If the approval of our stockholders is not required for the issuance of shares of our Preferred Stock, our board of directors may determine not to seek stockholder approval.

A series of our Preferred Stock could, depending on the terms of such series, impede the completion of a merger, tender offer or other takeover attempt. Our board of directors will make any determination to issue such shares based upon its judgment as to the best interests of our stockholders. Our directors, in so acting, could issue preferred stock having terms that could discourage an acquisition attempt through which an acquirer may be able to change the composition of our board of directors, including a tender offer or other transaction that some, or a majority, of our stockholders might believe to be in their best interests or in which stockholders might receive a premium for their stock over the then-current market price of the stock.

The Preferred Stock has the terms described below unless otherwise provided in the prospectus supplement relating to a particular series of Preferred Stock. You should read the prospectus supplement relating to the particular series of Preferred Stock being offered for specific terms, including:

- the designation and stated value per share of the Preferred Stock and the number of shares offered;
- the amount of liquidation preference per share;
- the price at which the Preferred Stock will be issued;
- the dividend rate, or method of calculation of dividends, the dates on which dividends will be payable, whether dividends will be cumulative or noncumulative and, if cumulative, the dates from which dividends will commence to accumulate;
- any redemption or sinking fund provisions;
- if other than the currency of the United States, the currency or currencies including composite currencies in which the Preferred Stock is denominated and/or in which payments will or may be payable;
- any conversion provisions;
- any special tax implications of the Preferred Stock; and
- any other rights, preferences, privileges, limitations and restrictions on the Preferred Stock.

[Table of Contents](#)

The Preferred Stock will, when issued, be fully paid and nonassessable. Unless otherwise specified in the prospectus supplement, each series of Preferred Stock will rank equally as to dividends and liquidation rights in all respects with each other series of Preferred Stock. The rights of holders of shares of each series of Preferred Stock will be subordinate to those of our general creditors.

Rank. Unless otherwise specified in the prospectus supplement, the Preferred Stock will, with respect to dividend rights and rights upon our liquidation, dissolution or winding up of our affairs, rank:

- senior to our Common Stock and to all equity securities ranking junior to such Preferred Stock with respect to dividend rights or rights upon our liquidation, dissolution or winding up of our affairs;
- on a parity with all equity securities issued by us, the terms of which specifically provide that such equity securities rank on a parity with the Preferred Stock with respect to dividend rights or rights upon our liquidation, dissolution or winding up of our affairs; and
- junior to all equity securities issued by us, the terms of which specifically provide that such equity securities rank senior to the Preferred Stock with respect to dividend rights or rights upon our liquidation, dissolution or winding up of our affairs.

The term “equity securities” does not include convertible debt securities.

Dividends. Holders of the Preferred Stock of each series will be entitled to receive, when, as and if declared by our board of directors, cash dividends at such rates and on such dates described in the prospectus supplement. Different series of Preferred Stock may be entitled to dividends at different rates or based on different methods of calculation. The dividend rate may be fixed or variable or both. Dividends will be payable to the holders of record as they appear on our stock books on record dates fixed by our board of directors, as specified in the applicable prospectus supplement.

Dividends on any series of Preferred Stock may be cumulative or noncumulative, as described in the applicable prospectus supplement. If our board of directors does not declare a dividend payable on a dividend payment date on any series of noncumulative Preferred Stock, then the holders of that noncumulative Preferred Stock will have no right to receive a dividend for that dividend payment date, and we will have no obligation to pay the dividend accrued for that period, whether or not dividends on that series are declared payable on any future dividend payment dates. Dividends on any series of cumulative Preferred Stock will accrue from the date we initially issue shares of such series or such other date specified in the applicable prospectus supplement.

No dividends may be declared or paid or funds set apart for the payment of any dividends on any parity securities unless full dividends have been paid or set apart for payment on the Preferred Stock. If full dividends are not paid, the Preferred Stock will share dividends pro rata with the parity securities.

No dividends may be declared or paid or funds set apart for the payment of dividends on any junior securities unless full dividends for all dividend periods terminating on or prior to the date of the declaration or payment will have been paid or declared and a sum sufficient for the payment set apart for payment on the Preferred Stock.

Liquidation Preference. Upon any voluntary or involuntary liquidation, dissolution or winding up of our affairs, then, before we make any distribution or payment to the holders of any Common Stock or any other class or series of our capital stock ranking junior to the Preferred Stock in the distribution of assets upon any liquidation, dissolution or winding up of our affairs, the holders of each series of Preferred Stock shall be entitled to receive out of assets legally available for distribution to stockholders, liquidating distributions in the amount of the liquidation preference per share set forth in the prospectus supplement, plus any accrued and unpaid dividends thereon. Such dividends will not include any accumulation in respect of unpaid noncumulative dividends for prior dividend periods. Unless otherwise specified in the prospectus supplement, after payment of

[Table of Contents](#)

the full amount of their liquidating distributions, the holders of Preferred Stock will have no right or claim to any of our remaining assets. Upon any such voluntary or involuntary liquidation, dissolution or winding up, if our available assets are insufficient to pay the amount of the liquidating distributions on all outstanding Preferred Stock and the corresponding amounts payable on all other classes or series of our capital stock ranking on parity with the Preferred Stock and all other such classes or series of shares of capital stock ranking on parity with the Preferred Stock in the distribution of assets, then the holders of the Preferred Stock and all other such classes or series of capital stock will share ratably in any such distribution of assets in proportion to the full liquidating distributions to which they would otherwise be entitled.

Upon any such liquidation, dissolution or winding up and if we have made liquidating distributions in full to all holders of Preferred Stock, we will distribute our remaining assets among the holders of any other classes or series of capital stock ranking junior to the Preferred Stock according to their respective rights and preferences and, in each case, according to their respective number of shares. For such purposes, our consolidation or merger with or into any other corporation, trust or entity, or the sale, lease or conveyance of all or substantially all of our property or assets will not be deemed to constitute a liquidation, dissolution or winding up of our affairs.

Redemption. If so provided in the applicable prospectus supplement, the Preferred Stock will be subject to mandatory redemption or redemption at our option, as a whole or in part, in each case upon the terms, at the times and at the redemption prices set forth in such prospectus supplement.

The prospectus supplement relating to a series of Preferred Stock that is subject to mandatory redemption will specify the number of shares of Preferred Stock that shall be redeemed by us in each year commencing after a date to be specified, at a redemption price per share to be specified, together with an amount equal to all accrued and unpaid dividends thereon to the date of redemption. Unless the shares have a cumulative dividend, such accrued dividends will not include any accumulation in respect of unpaid dividends for prior dividend periods. We may pay the redemption price in cash or other property, as specified in the applicable prospectus supplement. If the redemption price for Preferred Stock of any series is payable only from the net proceeds of the issuance of shares of our capital stock, the terms of such Preferred Stock may provide that, if no such shares of our capital stock shall have been issued or to the extent the net proceeds from any issuance are insufficient to pay in full the aggregate redemption price then due, such Preferred Stock shall automatically and mandatorily be converted into the applicable shares of our capital stock pursuant to conversion provisions specified in the applicable prospectus supplement.

Notwithstanding the foregoing, we will not redeem any Preferred Stock of a series unless:

- if that series of Preferred Stock has a cumulative dividend, we have declared and paid or contemporaneously declare and pay or set aside funds to pay full cumulative dividends on the Preferred Stock for all past dividend periods and the then current dividend period; or
- if such series of Preferred Stock does not have a cumulative dividend, we have declared and paid or contemporaneously declare and pay or set aside funds to pay full dividends for the then current dividend period.

In addition, we will not acquire any Preferred Stock of a series unless:

- if that series of Preferred Stock has a cumulative dividend, we have declared and paid or contemporaneously declare and pay or set aside funds to pay full cumulative dividends on all outstanding shares of such series of Preferred Stock for all past dividend periods and the then current dividend period; or
- if that series of Preferred Stock does not have a cumulative dividend, we have declared and paid or contemporaneously declare and pay or set aside funds to pay full dividends on the Preferred Stock of such series for the then current dividend period.

[Table of Contents](#)

However, at any time we may purchase or acquire Preferred Stock of that series (1) pursuant to a purchase or exchange offer made on the same terms to holders of all outstanding Preferred Stock of such series or (2) by conversion into or exchange for shares of our capital stock ranking junior to the Preferred Stock of such series as to dividends and upon liquidation.

If fewer than all of the outstanding shares of Preferred Stock of any series are to be redeemed, we will determine the number of shares that may be redeemed pro rata from the holders of record of such shares in proportion to the number of such shares held or for which redemption is requested by such holder or by any other equitable manner that we determine. Such determination will reflect adjustments to avoid redemption of fractional shares.

Unless otherwise specified in the prospectus supplement, we will mail notice of redemption at least 30 days but not more than 60 days before the redemption date to each holder of record of Preferred Stock to be redeemed at the address shown on our stock transfer books. Each notice shall state:

- the redemption date;
- the number of shares and series of Preferred Stock to be redeemed;
- the redemption price;
- the place or places where certificates for such Preferred Stock are to be surrendered for payment of the redemption price;
- that dividends on the shares to be redeemed will cease to accrue on such redemption date;
- the date on which the holder's conversion rights, if any, as to such shares shall terminate; and
- the specific number of shares to be redeemed from each such holder if fewer than all the shares of any series are to be redeemed.

If notice of redemption has been given and we have set aside the funds necessary for such redemption in trust for the benefit of the holders of any shares called for redemption, then from and after the redemption date, dividends will cease to accrue on such shares, and all rights of the holders of such shares will terminate, except the right to receive the redemption price.

Voting Rights. Holders of Preferred Stock will not have any voting rights, except as required by law or as indicated in the applicable prospectus supplement.

Unless otherwise provided for under the terms of any series of Preferred Stock, no consent or vote of the holders of shares of Preferred Stock or any series thereof shall be required for any amendment to our restated certificate of incorporation that would increase the number of authorized shares of Preferred Stock or the number of authorized shares of any series thereof or decrease the number of authorized shares of Preferred Stock or the number of authorized shares of any series thereof (but not below the number of authorized shares of Preferred Stock or such series, as the case may be, then outstanding).

Conversion Rights. The terms and conditions, if any, upon which any series of Preferred Stock is convertible into our Common Stock will be set forth in the applicable prospectus supplement relating thereto. Such terms will include the number of shares of Common Stock into which the shares of Preferred Stock are convertible, the conversion price, rate or manner of calculation thereof, the conversion period, provisions as to whether conversion will be at our option or at the option of the holders of the Preferred Stock, the events requiring an adjustment of the conversion price and provisions affecting conversion in the event of the redemption.

Transfer Agent and Registrar. The transfer agent and registrar for the Preferred Stock will be set forth in the applicable prospectus supplement.

Common Stock Registration Rights

Pursuant to the terms of that certain registration rights agreement, dated as of April 26, 2010, or, the 2010 registration rights agreement, certain of our stockholders are entitled to rights with respect to the registration of their shares under the Securities Act until the earliest of the seventh anniversary of our initial public offering, or until no registrable securities could remain outstanding. We refer to these shares collectively as registrable securities.

Demand Registration Rights. As of August 4, 2023, four holders of an aggregate of 33,874,480 shares of our Common Stock are entitled to demand registration rights. Under the terms of the 2010 registration rights agreement, we will be required, upon the written request of any holder to register at least 20% of the securities eligible for registration then outstanding and held by such holder, or such lesser percentage that would result in an aggregate offering price of at least \$5.0 million, to file a registration statement and use commercially reasonable efforts to effect the registration of all or a portion of these shares for public resale. We are required to effect only two registrations for each holder pursuant to this provision of the registration rights agreement.

Short-Form Registration Rights. Pursuant to the 2010 registration rights agreement, if we are eligible to file a registration statement on Form S-3, upon the written request of one or more holders to sell registrable securities at an aggregate price of at least \$5.0 million, we will be required to use our best efforts to effect a registration of such shares. We are not required to effect more than two registrations in any twelve-month period pursuant to this provision of the 2010 registration rights agreement. The right to have such shares registered on Form S-3 is further subject to other specified conditions and limitations.

Piggyback Registration Rights. Pursuant to the 2010 registration rights agreement, if we register any of our securities either for our own account or for the account of other security holders, as of August 4, 2023, the holders of 33,874,480 shares of our Common Stock are entitled to include their shares in the registration. Subject to certain exceptions contained in the registration rights agreement, we and the underwriters may limit the number of shares included in the underwritten offering to the number of shares which the managing underwriters determine advise us will not jeopardize the success of the offering.

Indemnification. Our 2010 registration rights agreement contains customary cross-indemnification provisions, under which we are obligated to indemnify holders of registrable securities in the event of material misstatements or omissions in the registration statement attributable to us, and they are obligated to indemnify us for material misstatements or omissions attributable to them.

Expiration of Registration Rights. The demand registration rights and short form registration rights granted under the 2010 registration rights agreement will terminate on the seventh anniversary of the completion of our initial public offering or at such time after such offering when no registrable securities remain outstanding.

Exchange Agreement and Superpriority Credit Agreement

On June 15, 2023, we entered into that certain exchange agreement, or the exchange agreement, with the lenders party thereto, or the participating lenders, representing approximately 98% of the outstanding term loan debt

[Table of Contents](#)

under our then-existing credit facility, and JPMorgan Chase Bank, N.A. Pursuant to the exchange agreement, we purchased and assumed 100% of each participating lender's portion of our outstanding term loan debt, or the purchased loan, in exchange for, among other things:

- Such participating lender receiving from us a term loan in an aggregate principal amount equal to 100% of the principal amount of such purchased loan of such participating lender, or the superpriority term loans, plus 3.0% original issue discount on the amount thereof after giving effect to a closing date prepayment referred to below which was payable in kind and added to the outstanding principal amount of the superpriority term loans.
- The issuance by us to the participating lenders (or their respective affiliates or designees), or reservation for issuance of, the participating lender warrants (as defined below), subject to the terms and conditions of the exchange agreement and the Warrant Agreement.
- On the closing of that certain superpriority credit agreement, dated as of June 15, 2023, by and between us, JPMorgan Chase Bank, N.A., as administrative agent, Delaware Trust Company, as collateral agent, and the participating lenders, or the superpriority credit agreement, the prepayment by us of the superpriority term loans in an aggregate principal amount equal to \$40,000,000.

Warrant Agreement

On June 15, 2023, we entered into the Warrant Agreement with American Stock Transfer & Trust Company, LLC, as warrant agent. Subject to the terms and conditions set forth therein, each participating lender (or its affiliates or designees) has received (or has the right to receive) warrants, or the participating lender warrants, with an exercise price of \$0.01 per share of Common Stock on a pro rata basis in accordance with the amount of the superpriority term loans held by such participating lender. The participating lender warrants issued or issuable pursuant to the Warrant Agreement vest in three tranches: the first tranche, which comprises an aggregate of 10% of the shares of our Common Stock issued and outstanding as of the closing of the superpriority credit agreement, or the closing date, is immediately exercisable upon issuance of the participating lender warrants; the second tranche, which comprises an aggregate of 5% of the shares of our Common Stock issued and outstanding as of the closing date, vests on January 1, 2024, provided that the superpriority term loans remain outstanding as of such date; and the third tranche, which comprises an aggregate of 4.99% of the shares of our Common Stock issued and outstanding as of the closing date, vests on January 1, 2025, provided the superpriority term loans remain outstanding as of such date. In the aggregate, the participating lender warrants are exercisable for 19,373,234 shares of our Common Stock, which represents 19.99% of the shares of our Common Stock that were issued and outstanding as of the closing date.

Warrant Share Registration Rights

In connection with the restructuring of our credit facility pursuant to the exchange agreement and the issuance of the participating lender warrants, we entered into a registration rights agreement, dated as of June 15, 2023, or the 2023 registration rights agreement, with the participating lenders that were issued participating lender warrants or a right to receive participating lender warrants. Pursuant to the terms of the 2023 registration rights agreement, such participating lenders are entitled to rights with respect to the registration of the shares issuable upon the exercise of their participating lender warrants under the Securities Act. For the purposes of this description, we refer to these shares collectively as warrant shares. The term participating lenders includes any permitted transferee, assignee or designee of the participating lenders who is a subsequent holder of the participating lender warrants, any registrable securities under the registration rights agreement or any rights to such participating lender warrants or registrable securities.

Demand Registration Rights.

As of August 4, 2023, one participating lender that holds warrants representing an aggregate of 2,522,201 warrants shares is entitled to demand registration rights. Within 30 days immediately following the

[Table of Contents](#)

written demand of any participating lender, we must effect the registration of any warrant shares not covered by an effective resale registration statement previously filed by us. Additionally, certain of the participating lenders have a right to be issued a participating lender warrant at their election, which we refer to as springing warrants. As of August 4, 2023, there are 4,943,060 warrant shares underlying springing warrants issuable to three participating lenders that have not yet been issued. Under the terms of the 2023 registration rights agreement, we will be required, upon the written request of any participating lender to effect the registration of all or a portion of the warrant shares underlying such springing warrants within 30 days of receipt of notice from such participating lenders that they have exercised their right to be issued a springing warrant, provided, however, that (a) we will not be obligated to file more than nine registration statements with respect to the warrant shares underlying the springing warrants, (b) we are not obligated to file more than three such registrations statements during any calendar year, (c) we are not obligated to file a registration statement registering less than an aggregate of 50,000 warrant shares and (d) each institutional lender that is a participating lender (including all of such lender's affiliated funds that may also be participating lenders) is not permitted to make more than one demand for registration of their warrant shares in any calendar year. Additionally, within 30 days immediately following the written demand of any participating lender, we must effect the registration of any warrant shares not covered by an effective resale registration statement previously filed by us.

Piggyback Registration Rights.

Pursuant to the 2023 registration rights agreement, if we register any of our securities either for our own account or for the account of other security holders, as of August 4, 2023, participating lenders that hold warrants or springing warrants representing an aggregate of 7,465,261 warrants shares are entitled to include their shares in the registration, provided however, that the managing underwriters may limit the number of warrant shares included in such underwritten offering to the number of shares that the managing underwriters advise us will not jeopardize the success of the offering, and provided further, that the participating lenders shall not be permitted to include the warrant shares in such registration statement unless all of the securities registered for our own account and any registrable securities being registered pursuant to the exercise of piggyback rights under the 2010 registration rights agreement have been included in such registration.

Anti-Takeover Effects of Delaware Law and Our Charter and By-laws

Delaware Law. We are subject to Section 203 of the Delaware General Corporation Law, or the DGCL. Subject to certain exceptions, Section 203 prevents a publicly held Delaware corporation from engaging in a "business combination" with any "interested stockholder" for three years following the date that the person became an interested stockholder, unless the interested stockholder attained such status with the approval of our board of directors or unless the business combination is approved in a prescribed manner. A "business combination" includes, among other things, a merger or consolidation involving us and the "interested stockholder" and the sale of more than 10% of our assets. In general, an "interested stockholder" is any entity or person beneficially owning 15% or more of our outstanding voting stock and any entity or person affiliated with or controlling or controlled by such entity or person.

Preferred Stock. Under the terms of our amended and restated certificate of incorporation, our board of directors is authorized to direct us to issue shares of Preferred Stock in one or more series without stockholder approval. Our board of directors has the discretion to determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of Preferred Stock. The purpose of authorizing our board of directors to issue Preferred Stock and determine its rights and preferences is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of Preferred Stock, while providing flexibility in connection with possible acquisitions, future financings and other corporate purposes, could have the effect of making it more difficult for a third party to acquire, or could discourage a third party from seeking to acquire, a majority of our outstanding voting stock.

Staggered Board; Removal of Directors. Our amended and restated certificate of incorporation and our amended and restated by-laws divide our board of directors into three classes with staggered three-year terms. In addition, a director may be removed only for cause and only by the affirmative vote of the holders of at least 75% of the votes that all our stockholders would be entitled to cast in an election of directors. Any vacancy on our board of directors, including a vacancy resulting from an enlargement of our board of directors, may be filled only by vote of a majority of our directors then in office. The classification of our board of directors and the limitations on the removal of directors and filling of vacancies could make it more difficult for a third party to acquire, or discourage a third party from seeking to acquire, control of our company.

Supermajority Voting. The DGCL provides generally that the affirmative vote of a majority of the shares entitled to vote on any matter is required to amend a corporation's certificate of incorporation or bylaws, unless a corporation's certificate of incorporation or bylaws, as the case may be, requires a greater percentage. Our amended and restated by-laws may be amended or repealed by a majority vote of our board of directors or the affirmative vote of the holders of at least 75% of the votes that all our stockholders would be entitled to cast in an election of directors. In addition, the affirmative vote of the holders of at least 75% of the votes which all our stockholders would be entitled to cast in an election of directors is required to amend, repeal, or adopt any provisions inconsistent with, any of the provisions of the Certificate of Incorporation described above.

Stockholder Action; Special Meeting of Stockholders; Advance Notice Requirements for Stockholder Proposals and Director Nominations. Our amended and restated certificate of incorporation provides that any action required or permitted to be taken by our stockholders must be effected at a duly called annual or special meeting of such stockholders and may not be effected by any consent in writing by such stockholders. Our amended and restated certificate of incorporation and our amended and restated by-laws also provide that, except as otherwise required by law, special meetings of our stockholders can only be called by our board of directors. In addition, our amended and restated by-laws establish an advance notice procedure for stockholder proposals to be brought before an annual meeting of stockholders, including proposed nominations of candidates for election to our board of directors. Stockholders at an annual meeting may only consider proposals or nominations specified in the notice of meeting or brought before the meeting by or at the direction of our board of directors, or by a stockholder of record on the record date for the meeting, who is entitled to vote at the meeting and who has delivered timely written notice in proper form to our secretary of the stockholder's intention to bring such business before the meeting. These provisions could have the effect of delaying until the next stockholder meeting stockholder actions that are favored by the holders of a majority of our outstanding voting securities. These provisions also could discourage a third party from making a tender offer for our Common Stock, because even if such third party acquired a majority of our outstanding voting stock, it would be able to take action as a stockholder, such as electing new directors or approving a merger, only at a duly called stockholders meeting and not by written consent.

Exclusive Forum Selection. Our amended and restated certificate of incorporation provides that unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall, to the fullest extent permitted by law, be the sole and exclusive forum for (1) any derivative action or proceeding brought on behalf of our company, (2) any action asserting a claim of breach of fiduciary duty owed by any director, officer or other employee or stockholder of our company to us or our stockholders, (3) any action asserting a claim arising pursuant to any provision of the DGCL or as to which the DGCL confers jurisdiction on the Court of Chancery or (4) any action asserting a claim governed by the internal affairs doctrine. This choice of forum provision will not apply to actions arising under the Exchange Act. Our amended and restated certificate of incorporation further provides that, unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States of America shall, to the fullest extent permitted by law, be the sole and exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act. Although our amended and restated certificate of incorporation contains the forum selection provision described above, there is uncertainty as to whether a court would enforce this provision or conclude that such provision applies to a particular claim or action.

DESCRIPTION OF UNITS

We may issue units comprised of one or more of the other securities that may be offered under this prospectus, in any combination. The following, together with the additional information we may include in the applicable prospectus supplement, summarizes the material terms and provisions of the units that we may offer under this prospectus. While the terms summarized below will apply generally to any units we may offer, we will describe the particular terms of any series of units in more detail in the applicable prospectus supplement.

Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately at any time, or at any time before a specified date.

Any applicable prospectus supplement will describe:

- the material terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- any material provisions relating to the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units;
- any special tax implications of the units; and
- any material provisions of the governing unit agreement that differ from those described above.

DESCRIPTION OF WARRANTS

We may issue warrants to purchase Common Stock, Preferred Stock or debt securities. We may offer warrants separately or together with one or more additional warrants, Common Stock, Preferred Stock or debt securities, or any combination of those securities in the form of units, as described in the applicable prospectus supplement. If we issue warrants as part of a unit, the accompanying prospectus supplement will specify whether those warrants may be separated from the other securities in the unit prior to the expiration date of the warrants. The applicable prospectus supplement will also describe the following terms of any warrants:

- the specific designation and aggregate number of, and the offering price at which we will issue, the warrants;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- the date on which the right to exercise the warrants will begin and the date on which that right will expire or, if you may not continuously exercise the warrants throughout that period, the specific date or dates on which you may exercise the warrants;
- whether the warrants are to be sold separately or with other securities as parts of units;
- whether the warrants will be issued in definitive or global form or in any combination of these forms, although, in any case, the form of a warrant included in a unit will correspond to the form of the unit and of any security included in that unit;
- any applicable material U.S. federal income tax consequences;
- the identity of the warrant agent for the warrants and of any other depositaries, execution or paying agents, transfer agents, registrars or other agents;
- the proposed listing, if any, of the warrants or any securities purchasable upon exercise of the warrants on any securities exchange;
- the designation and terms of any equity securities purchasable upon exercise of the warrants;
- the designation, aggregate principal amount, currency and terms of any debt securities that may be purchased upon exercise of the warrants;
- if applicable, the designation and terms of the Preferred Stock with which the warrants are issued and the number of warrants issued with each security;
- if applicable, the date from and after which any warrants issued as part of a unit and the related debt securities, Preferred Stock, or Common Stock will be separately transferable;
- the number of shares of Common Stock, Preferred Stock purchasable upon exercise of a warrant and the price at which those shares may be purchased;
- if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;
- information with respect to book-entry procedures, if any;
- the anti-dilution provisions of, and other provisions for changes to or adjustment in the exercise price of, the warrants, if any;
- any redemption or call provisions; and
- any additional terms of the warrants, including terms, procedures and limitations relating to the exchange or exercise of the warrants.

FORMS OF SECURITIES

Each debt security, unit and warrant will be represented either by a certificate issued in definitive form to a particular investor or by one or more global securities representing the entire issuance of securities. Unless the applicable prospectus supplement provides otherwise, certificated securities in definitive form and global securities will be issued in registered form. Definitive securities name you or your nominee as the owner of the security, and in order to transfer or exchange these securities or to receive payments other than interest or other interim payments, you or your nominee must physically deliver the securities to the trustee, registrar, paying agent or other agent, as applicable. Global securities name a depositary or its nominee as the owner of the debt securities, units or warrants represented by these global securities. The depositary maintains a computerized system that will reflect each investor's beneficial ownership of the securities through an account maintained by the investor with its broker/dealer, bank, trust company or other representative, as we explain more fully below.

Global Securities

We may issue the debt securities, units and warrants in the form of one or more fully registered global securities that will be deposited with a depositary or its nominee identified in the applicable prospectus supplement and registered in the name of that depositary or nominee. In those cases, one or more global securities will be issued in a denomination or aggregate denominations equal to the portion of the aggregate principal or face amount of the securities to be represented by global securities. Unless and until it is exchanged in whole for securities in definitive registered form, a global security may not be transferred except as a whole by and among the depositary for the global security, the nominees of the depositary or any successors of the depositary or those nominees.

If not described below, any specific terms of the depositary arrangement with respect to any securities to be represented by a global security will be described in the prospectus supplement relating to those securities. We anticipate that the following provisions will apply to all depositary arrangements.

Ownership of beneficial interests in a global security will be limited to persons, called participants, that have accounts with the depositary or persons that may hold interests through participants. Upon the issuance of a global security, the depositary will credit, on its book-entry registration and transfer system, the participants' accounts with the respective principal or face amounts of the securities beneficially owned by the participants. Any dealers, underwriters or agents participating in the distribution of the securities will designate the accounts to be credited. Ownership of beneficial interests in a global security will be shown on, and the transfer of ownership interests will be effected only through, records maintained by the depositary, with respect to interests of participants, and on the records of participants, with respect to interests of persons holding through participants. The laws of some states may require that some purchasers of securities take physical delivery of these securities in definitive form. These laws may impair your ability to own, transfer or pledge beneficial interests in global securities.

So long as the depositary, or its nominee, is the registered owner of a global security, that depositary or its nominee, as the case may be, will be considered the sole owner or holder of the securities represented by the global security for all purposes under the applicable indenture, warrant agreement or unit agreement. Except as described below, owners of beneficial interests in a global security will not be entitled to have the securities represented by the global security registered in their names, will not receive or be entitled to receive physical delivery of the securities in definitive form and will not be considered the owners or holders of the securities under the applicable indenture, deposit agreement, purchase contract, unit agreement or warrant agreement. Accordingly, each person owning a beneficial interest in a global security must rely on the procedures of the depositary for that global security and, if that person is not a participant, on the procedures of the participant through which the person owns its interest, to exercise any rights of a holder under the applicable indenture, warrant agreement or unit agreement. We understand that under existing industry practices, if we request any action of holders or if an owner of a beneficial interest in a global security desires to give or take any action that a holder is entitled to give or take under the applicable indenture, warrant agreement or unit agreement, the

[Table of Contents](#)

depository for the global security would authorize the participants holding the relevant beneficial interests to give or take that action, and the participants would authorize beneficial owners owning through them to give or take that action or would otherwise act upon the instructions of beneficial owners holding through them.

Principal, premium, if any, and interest payments on debt securities, and any payments to holders with respect to warrants or units, represented by a global security registered in the name of a depository or its nominee will be made to the depository or its nominee, as the case may be, as the registered owner of the global security. None of us, or any trustee, warrant agent, unit agent or other agent of ours, or any agent of any trustee, warrant agent, unit agent will have any responsibility or liability for any aspect of the records relating to payments made on account of beneficial ownership interests in the global security or for maintaining, supervising or reviewing any records relating to those beneficial ownership interests.

We expect that the depository for any of the securities represented by a global security, upon receipt of any payment to holders of principal, premium, interest or other distribution of underlying securities or other property on that registered global security, will immediately credit participants' accounts in amounts proportionate to their respective beneficial interests in that global security as shown on the records of the depository. We also expect that payments by participants to owners of beneficial interests in a global security held through participants will be governed by standing customer instructions and customary practices, as is now the case with the securities held for the accounts of customers or registered in "street name," and will be the responsibility of those participants.

If the depository for any of the securities represented by a global security is at any time unwilling or unable to continue as depository or ceases to be a clearing agency registered under the Exchange Act, and a successor depository registered as a clearing agency under the Exchange Act is not appointed by us within 90 days, we will issue securities in definitive form in exchange for the global security that had been held by the depository. Any securities issued in definitive form in exchange for a global security will be registered in the name or names that the depository gives to the relevant trustee, warrant agent, unit agent or other relevant agent of ours or theirs. It is expected that the depository's instructions will be based upon directions received by the depository from participants with respect to ownership of beneficial interests in the global security that had been held by the depository.

PLAN OF DISTRIBUTION

We may sell securities:

- through underwriters;
- through dealers;
- through agents;
- directly to purchasers; or
- through a combination of any of these methods of sale.

We may also sell equity securities covered by this registration statement in an “at the market offering” as defined in Rule 415 under the Securities Act. Such offering may be made into an existing trading market for such securities in transactions at other than a fixed price, either:

- on or through the facilities of the Nasdaq Global Select Market or any other securities exchange or quotation or trading service on which such securities may be listed, quoted or traded at the time of sale; and/or
- to or through a market maker other than on the Nasdaq Global Select Market or such other securities exchanges or quotation or trading services.

In addition, we may issue the securities as a dividend or distribution or in a subscription rights offering to our existing security holders. This prospectus may be used in connection with any offering of our securities through any of these methods or other methods described in the applicable prospectus supplement.

We may directly solicit offers to purchase securities, or agents may be designated to solicit such offers. We will, in the prospectus supplement relating to such offering, name any agent that could be viewed as an underwriter under the Securities Act, and describe any commissions that we must pay. Any such agent will be acting on a best efforts basis for the period of its appointment or, if indicated in the applicable prospectus supplement, on a firm commitment basis.

The distribution of the securities may be effected from time to time in one or more transactions:

- at a fixed price, or prices, which may be changed from time to time;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

Each prospectus supplement will describe the method of distribution of the securities and any applicable restrictions.

The prospectus supplement with respect to the securities of a particular series will describe the terms of the offering of the securities, including the following:

- the name of the agent or any underwriters;
- the public offering or purchase price and the proceeds we will receive from the sale of the securities;
- any discounts and commissions to be allowed or re-allowed or paid to the agent or underwriters;
- all other items constituting underwriting compensation;
- any discounts and commissions to be allowed or re-allowed or paid to dealers; and
- any exchanges on which the securities will be listed.

[Table of Contents](#)

If any underwriters or agents are utilized in the sale of the securities in respect of which this prospectus is delivered, we will enter into an underwriting agreement or other agreement with them at the time of sale to them, and we will set forth in the prospectus supplement relating to such offering the names of the underwriters or agents and the terms of the related agreement with them.

If a dealer is utilized in the sale of the securities in respect of which this prospectus is delivered, we will sell such securities to the dealer, as principal. The dealer may then resell such securities to the public at varying prices to be determined by such dealer at the time of resale.

If we offer securities in a subscription rights offering to our existing security holders, we may enter into a standby underwriting agreement with dealers, acting as standby underwriters. We may pay the standby underwriters a commitment fee for the securities they commit to purchase on a standby basis. If we do not enter into a standby underwriting arrangement, we may retain a dealer-manager to manage a subscription rights offering for us.

Remarketing firms, agents, underwriters, dealers and other persons may be entitled under agreements which they may enter into with us to indemnification by us against certain civil liabilities, including liabilities under the Securities Act, and may be customers of, engage in transactions with or perform services for us in the ordinary course of business.

If so indicated in the applicable prospectus supplement, we will authorize underwriters or other persons acting as our agents to solicit offers by certain institutions to purchase securities from us pursuant to delayed delivery contracts providing for payment and delivery on the date stated in the prospectus supplement. Each contract will be for an amount not less than, and the aggregate amount of securities sold pursuant to such contracts shall not be less nor more than, the respective amounts stated in the prospectus supplement. Institutions with whom the contracts, when authorized, may be made include commercial and savings banks, insurance companies, pension funds, investment companies, educational and charitable institutions and other institutions, but shall in all cases be subject to our approval. Delayed delivery contracts will not be subject to any conditions except that:

- the purchase by an institution of the securities covered under that contract shall not at the time of delivery be prohibited under the laws of the jurisdiction to which that institution is subject; and
- if the securities are also being sold to underwriters acting as principals for their own account, the underwriters shall have purchased such securities not sold for delayed delivery. The underwriters and other persons acting as our agents will not have any responsibility in respect of the validity or performance of delayed delivery contracts.

Certain agents, underwriters and dealers, and their associates and affiliates may be customers of, have borrowing relationships with, engage in other transactions with, and/or perform services, including investment banking services, for us or one or more of our respective affiliates in the ordinary course of business.

In order to facilitate the offering of the securities, any underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of the securities or any other securities the prices of which may be used to determine payments on such securities. Specifically, any underwriters may overallocate in connection with the offering, creating a short position for their own accounts. In addition, to cover overallocations or to stabilize the price of the securities or of any such other securities, the underwriters may bid for, and purchase, the securities or any such other securities in the open market. Finally, in any offering of the securities through a syndicate of underwriters, the underwriting syndicate may reclaim selling concessions allowed to an underwriter or a dealer for distributing the securities in the offering if the syndicate repurchases previously distributed securities in transactions to cover syndicate short positions, in stabilization transactions or otherwise. Any of these activities may stabilize or maintain the market price of the securities above independent market levels. Any such underwriters are not required to engage in these activities and may end any of these activities at any time.

[Table of Contents](#)

Under Rule 15c6-1 of the Exchange Act, trades in the secondary market generally are required to settle in two business days, unless the parties to any such trade expressly agree otherwise. The applicable prospectus supplement may provide that the original issue date for your securities may be more than two scheduled business days after the trade date for your securities. Accordingly, in such a case, if you wish to trade securities on any date prior to the second business day before the original issue date for your securities, you will be required, by virtue of the fact that your securities initially are expected to settle more than two scheduled business days after the trade date for your securities, to make alternative settlement arrangements to prevent a failed settlement.

The securities may be new issues of securities and may have no established trading market. The securities may or may not be listed on a national securities exchange. We can make no assurance as to the liquidity of or the existence of trading markets for any of the securities.

In compliance with the guidelines of the Financial Industry Regulatory Authority, or FINRA, the aggregate maximum discount, commission or agency fees or other items constituting underwriting compensation to be received by any FINRA member or independent broker-dealer will not exceed 8% of the proceeds from any offering pursuant to this prospectus and any applicable prospectus supplement.

LEGAL MATTERS

Unless the applicable prospectus supplement indicates otherwise, the validity of the securities in respect of which this prospectus is being delivered will be passed upon by Goodwin Procter LLP, Boston, Massachusetts.

EXPERTS

The consolidated financial statements of Casa Systems, Inc. appearing in Casa Systems, Inc.'s Annual Report (Form 10-K) for the year ended December 31, 2022, and the effectiveness of Casa Systems, Inc.'s internal control over financial reporting as of December 31, 2022, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in its reports thereon (which contains an explanatory paragraph describing conditions that raise substantial doubt about the Company's ability to continue as a going concern as described in Note 1 to the consolidated financial statements), which conclude, among other things, that Casa Systems, Inc. did not maintain effective internal control over financial reporting as of December 31, 2022, based on Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework), because of the effects of the material weaknesses described therein, included therein, and incorporated herein by reference. Such financial statements have been incorporated herein by reference in reliance upon such reports given on the authority of such firm as experts in accounting and auditing.

CASA SYSTEMS, INC.

\$100,000,000

**Debt Securities
Common Stock
Preferred Stock
Units
Warrants**

PROSPECTUS

, 2023

[Table of Contents](#)

The information in this preliminary prospectus supplement is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus supplement is not an offer to sell these securities and we are not soliciting offers to buy these securities in any jurisdiction where the offer or sale is not permitted.

Subject to completion, dated August 8, 2023

PROSPECTUS SUPPLEMENT

CASA SYSTEMS, INC.

Up to \$10,000,000

Common Stock

We have entered into an Equity Distribution Agreement, or the sale agreement, with Piper Sandler & Co., or Piper Sandler, dated August 8, 2023, relating to the sale of shares of our common stock, par value \$0.001 per share, or Common Stock, offered by this prospectus supplement and the accompanying prospectus. In accordance with the terms of the sale agreement, under this prospectus supplement we may offer and sell shares of our Common Stock having an aggregate offering price of up to \$10,000,000 from time to time through Piper Sandler, acting as our agent.

Our Common Stock is listed on The Nasdaq Global Select Market under the symbol “CASA.” On August 4, 2023, the closing sale price of our Common Stock on The Nasdaq Global Select Market was \$1.06 per share.

As of August 4, 2023, the aggregate market value of our outstanding Common Stock held by non-affiliates, or the public float, was \$33.7 million, which was calculated based on 31,827,058 shares of our outstanding Common Stock held by non-affiliates at a price of \$1.06 per share, the closing price of our Common Stock on such date. Pursuant to General Instruction I.B.6 of Form S-3, in no event will we sell shares pursuant to this Prospectus Supplement with a value of more than one-third of the aggregate market value of our Common Stock held by non-affiliates in any 12-month period, so long as the aggregate market value of our Common Stock held by non-affiliates is less than \$75.0 million. During the 12 calendar months prior to, and including, the date of this Prospectus Supplement, we have not sold any securities pursuant to General Instruction I.B.6 of Form S-3.

We are a smaller reporting company as defined under the federal securities laws and, as such, have elected to comply with certain reduced public company reporting requirements for this prospectus supplement and future filings. See “Prospectus Supplement Summary—Implications of Being a Smaller Reporting Company.”

Upon delivery of a placement notice, and subject to our instructions in that notice and the terms and conditions of the sale agreement, Piper Sandler may sell our Common Stock under this prospectus supplement and the accompanying prospectus by any method permitted by law that is deemed an “at the market offering” as defined in Rule 415(a)(4) promulgated under the Securities Act of 1933, as amended, or the Securities Act, including sales made directly on or through The Nasdaq Global Select Market, the existing trading market for our Common Stock. Piper Sandler is not required to sell any specific amount, but will act as our sales agent using commercially reasonable efforts consistent with its normal trading and sales practices. There is no arrangement for funds to be received in any escrow, trust or similar arrangement.

Piper Sandler will be entitled to compensation at a commission rate of 3.0% of the gross sales price per share sold under the sale agreement. See “Plan of Distribution” beginning on page S-19 for additional information regarding the compensation to be paid to Piper Sandler. In connection with the sale of our Common Stock on our behalf, Piper Sandler will be deemed to be an “underwriter” within the meaning of the Securities Act and the compensation of Piper Sandler will be deemed to be underwriting commissions or discounts. We have also agreed to provide indemnification and contribution to Piper Sandler with respect to certain liabilities, including liabilities under the Securities Act.

INVESTING IN OUR SECURITIES INVOLVES RISKS. SEE THE “RISK FACTORS” ON PAGE S-8 OF THIS PROSPECTUS SUPPLEMENT AND IN THE DOCUMENTS INCORPORATED BY REFERENCE IN THIS PROSPECTUS SUPPLEMENT CONCERNING FACTORS YOU SHOULD CONSIDER BEFORE INVESTING IN OUR COMMON STOCK.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed on the adequacy or accuracy of this prospectus supplement or the accompanying prospectus. Any representation to the contrary is a criminal offense.

Piper Sandler

The date of this prospectus supplement is , 2023.

TABLE OF CONTENTS

ABOUT THIS PROSPECTUS	S-1
CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS	S-3
PROSPECTUS SUPPLEMENT SUMMARY	S-5
RISK FACTORS	S-8
USE OF PROCEEDS	S-11
DILUTION	S-12
DIVIDEND POLICY	S-14
MATERIAL U.S. FEDERAL INCOME TAX CONSIDERATIONS FOR NON-U.S. HOLDERS	S-15
PLAN OF DISTRIBUTION	S-19
LEGAL MATTERS	S-20
EXPERTS	S-20
WHERE YOU CAN FIND MORE INFORMATION	S-20
INCORPORATION OF CERTAIN INFORMATION BY REFERENCE	S-21

ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement is part of a shelf registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or the SEC. Under the shelf registration process, we may offer shares of our Common Stock having an aggregate offering price of up to \$100,000,000. Under this prospectus supplement, we may from time to time sell shares of our Common Stock having an aggregate offering price of up to \$10,000,000 at prices and on terms to be determined by market conditions at the time of the offering. The \$10,000,000 of shares of our Common Stock that may be sold under this prospectus supplement are included in the \$100,000,000 of shares of Common Stock that may be sold under the registration statement.

This prospectus supplement and the accompanying prospectus relate to the offering of our Common Stock. Before buying any of the Common Stock that we are offering, we urge you to carefully read this prospectus supplement and the accompanying prospectus, together with the information incorporated by reference as described under the heading “Incorporation of Certain Information by Reference” in this prospectus supplement. These documents contain important information that you should consider when making your investment decision.

This document is in two parts. The first part is this prospectus supplement, which describes the specific terms of the Common Stock we are offering and also adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference herein or therein. The second part, the accompanying prospectus, provides more general information. Generally, when we refer to this prospectus, we are referring to both this prospectus supplement and the accompanying prospectus. To the extent there is a conflict between the information contained in this prospectus supplement and the information contained in the accompanying prospectus or any document incorporated by reference herein or therein filed prior to the date of this prospectus supplement, you should rely on the information in this prospectus supplement; provided that if any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document incorporated by reference in the accompanying prospectus—the statement in the document having the later date modifies or supersedes the earlier statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference herein or in the accompanying prospectus were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreement, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

You should rely only on the information contained in, or incorporated by reference in this prospectus supplement, the accompanying prospectus and in any free writing prospectus that we may authorize for use in connection with this offering. We have not, and Piper Sandler has not, authorized anyone to provide any information other than that contained or incorporated by reference in this prospectus supplement, in the accompanying prospectus or in any free writing prospectus prepared by or on behalf of us or to which we have referred you. We and Piper Sandler take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We are not, and Piper Sandler is not, making an offer to sell, or soliciting an offer to purchase, the securities offered by this prospectus supplement and the accompanying prospectus in any jurisdiction to or from any person to whom or from whom it is unlawful to make such offer or solicitation of an offer in such jurisdiction. The information contained in this prospectus supplement, the accompanying prospectus, the documents incorporated by reference herein or therein, and in any free writing prospectus prepared by or on behalf of us that we may authorize for use in connection with this filing is accurate only as of the date of those respective documents. Our business, financial condition, results of operations and prospectus may have changed since those dates. It is important for you to read and consider all information

[Table of Contents](#)

contained in this prospectus supplement, the accompanying prospectus, the documents incorporated by reference herein and therein, and any free writing prospectus prepared by or on behalf of us that we may authorize for use in connection with this offering, in their entirety, before making an investment decision. You should also read and consider the information in the documents to which we have referred you in the sections entitled “Where You Can Find More Information” and “Incorporation of Certain Information by Reference” in this prospectus supplement and in the accompanying prospectus.

We are offering to sell, and seeking offers to buy, shares of our Common Stock only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the accompanying prospectus and the offering of the Common Stock in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement and the accompanying prospectus must inform themselves about, and observe any restrictions relating to, the offering of the Common Stock and the distribution of this prospectus supplement and the accompanying prospectus outside the United States. This prospectus supplement and the accompanying prospectus do not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement and the accompanying prospectus by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

Unless otherwise stated, all references in this prospectus supplement and the accompanying prospectus to “we,” “us,” “our,” “Casa,” “the Company” and similar designations refer, collectively, to Casa Systems, Inc., a Delaware corporation, and its consolidated subsidiaries.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the information incorporated by reference in this prospectus include “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Exchange Act. All statements other than statements of historical fact contained in this prospectus, including statements regarding our future results of operations and financial position, business strategy and plans and objectives of management for future operations, are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.

In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “expects,” “intends,” “plans,” “anticipates,” “could,” “intends,” “target,” “projects,” “seeks,” “contemplates,” “believes,” “estimates,” “endeavor,” “predicts,” “potential” or “continue” or the negative of these terms or other similar expressions. The forward-looking statements in this prospectus are only predictions. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. Accordingly, these statements involve estimates, assumptions, risks and uncertainties which could cause actual results to differ materially from those expressed in them. These forward-looking statements speak only as of the date of this prospectus and are subject to a number of risks, uncertainties and assumptions described in the “Risk Factors” section and elsewhere in this prospectus and such forward-looking statements are qualified in their entirety by reference to the factors discussed throughout this prospectus, and in particular those factors referenced in the section “Risk Factors.” Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements.

This prospectus contains forward-looking statements that are based on our management’s belief and assumptions and on information currently available to our management. These statements relate to future events or our future financial performance, and involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed or implied by these forward-looking statements. Forward-looking statements include, but are not limited to, statements about:

- our ability to fulfill, on a timely basis or at all, our customers’ orders due to supply chain delays, access to key commodities or technologies or events that impact our manufacturers or their suppliers;
- our ability to anticipate technological shifts;
- our ability to generate positive returns on our research and development;
- changes in the rate of communications service providers’, or CSPs’, deployment of, and investment in, ultra-broadband network capabilities;
- the lack of predictability of revenue due to lengthy sales cycles and the volatility in capital expenditure budgets of CSPs;
- our ability to maintain and expand operating profit and net income;
- the sufficiency of our cash resources and needs for additional financing;
- our ability to further penetrate our existing customer base and obtain new customers;
- our ability to comply with all covenants, agreements and conditions under our credit facility
- changes in our pricing policies, whether initiated by us or as a result of competition;

[Table of Contents](#)

- the amount and timing of operating costs and capital expenditures related to the operation and expansion of our business;
- the actual or rumored timing and success of new product and service introductions by us or our competitors or any other change in the competitive landscape of our industry, including consolidation among our competitors or customers;
- our ability to successfully expand our business domestically and internationally, including our ability to maintain the synergies we have realized from our acquisition of NetComm Wireless Limited, or NetComm;
- insolvency or credit difficulties confronting our customers, which could adversely affect their ability to purchase or pay for our products and services, or confronting our key suppliers, which could disrupt our supply chain;
- future accounting pronouncements or changes in our accounting policies;
- stock-based compensation expense;
- our overall effective tax rate, including impacts caused by the relative proportion of foreign to U.S. income, the amount and timing of certain employee stock-based compensation transactions, changes in the valuation of our deferred tax assets and any new legislation or regulatory developments;
- increases or decreases in our expenses caused by fluctuations in foreign currency exchange rates;
- the costs and possible outcomes of any legal actions or proceedings against us;
- general economic conditions, both domestically and in foreign markets;
- our ability to obtain and maintain intellectual property protection for our products; and
- our use of proceeds from our initial public offering.

This prospectus and the documents incorporated by reference also contain estimates, projections and other information concerning our industry, our business and the markets for our solutions. Information that is based on estimates, forecasts, projections, market research or similar methodologies is inherently subject to uncertainties and actual events or circumstances may differ materially from events and circumstances reflected in this information. Unless otherwise expressly stated, we obtained this industry, business, market and other data from reports, research surveys, studies and similar data prepared by market research firms and other third parties, industry and general publications, government data and similar sources.

You should read this prospectus and the documents that we incorporate by reference in this prospectus completely and with the understanding that our actual future results may be materially different from what we expect. The forward-looking statements in this prospectus and the documents we incorporate by reference herein represent our views as of their respective dates. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we have no current intention of doing so except to the extent required by applicable law. You should, therefore, not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this prospectus

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information contained elsewhere in this prospectus supplement and the accompanying prospectus and in the documents we incorporate by reference. This summary does not contain all of the information you should consider before investing in our Common Stock. You should read this entire prospectus supplement and the accompanying prospectus carefully, especially the risks of investing in our Common Stock discussed under “Risk Factors” beginning on page S-8 of this prospectus supplement and in Part II, Item 1A “Risk Factors” of our most recent quarterly report on Form 10-Q filed with the SEC on August 8, 2023, which is incorporated by reference in this prospectus supplement, along with our consolidated financial statements and notes to those consolidated financial statements and the other information incorporated by reference in this prospectus supplement and the accompanying prospectus, before making an investment decision.

Corporate Overview

With our physical, virtual and cloud-native 5G infrastructure and customer premise networking equipment solutions, we help our CSP customers transform and expand their public and private high-speed data and multi-service communications networks so they can meet the growing demand for bandwidth and new services. Our core and edge convergence technology enables CSPs and enterprises to cost-effectively and dynamically increase network speed, add bandwidth capacity and new services, reduce network complexity, and reduce operating and capital expenditures regardless of access technology.

We offer scalable solutions that can meet the evolving bandwidth needs of our customers and their subscribers. Our first installation in a service provider’s network frequently involves deploying our broadband products in only a portion of the provider’s network and, for our cable products, with only a fraction of the product’s full capacity enabled at the time of initial installation. Over time, our customers have generally expanded the use of our solutions to other areas of their networks to extend network coverage or increase network capacity.

Our solutions are commercially deployed in over 70 countries by more than 475 customers, including regional service providers as well as some of the world’s largest Tier 1 CSPs, serving millions of subscribers. Our principal customers include Verizon, Rogers, Videotron, T-Mobile, Charter Communications, AT&T, Bell Canada, Cable One, Mediacom, Windstream, and Lumen in North America; Televisa/IZZI Mexico, Megacable Mexico, Cablevision Argentina, Claro Brazil, America Móvil and Claro Colombia in Latin America; Liberty Global, Vodafone and DNA Oyj in Europe; and NBN, Jupiter Communications, Beijing Gehua CATV Networks, Softbank, Kbro, Guangdong Cable, TRUE and CNS in Asia-Pacific. We believe that our products are well suited to address these trends and accordingly present us with a significant market opportunity across all access technologies.

Historically, we have generated the significant majority of our revenue from the cable market with our converged cable access platform, or CCAP. However, since 2019 we have become more diversified as a result of our acquisition of NetComm and the introduction of solutions for wireless and fixed-line broadband networks, as well as the introduction of our cloud-native software solutions. We believe that this has expanded our total addressable market from approximately \$1.2 billion in 2019 to \$49.4 billion in 2023.

We expect to continue to generate revenue in the future from growth in the cable market and increased revenue from sales of both wireless and fixed-line broadband solutions to new and existing customers. We believe there is an opportunity for us to take new market share as fixed and wireless networks continue to converge and as we continue to grow our cloud-native software business.

Company Information

We were incorporated under the laws of the State of Delaware on February 28, 2003. Our principal executive offices are located at 100 Old River Road, Andover, Massachusetts 01810, and our telephone number at that address is (978) 688-6706. Our website address is www.casa-systems.com. We do not incorporate the information on or accessible through our website into this prospectus, and you should not consider any information on, or that can be accessed through, our website as part of this prospectus. You should not rely on any such information in making your decision whether to purchase our Common Stock. Our Common Stock trades on The Nasdaq Global Select Market under the symbol “CASA.”

Implications of Being a Smaller Reporting Company

We qualify as a smaller reporting company as defined in the Exchange Act. We may take advantage of certain of the scaled disclosures available to smaller reporting companies and will be able to take advantage of these scaled disclosures for so long as our voting and non-voting Common Stock held by non-affiliates is less than \$250.0 million measured on the last business day of our second fiscal quarter, or our annual revenue is less than \$100.0 million during the most recently completed fiscal year and our voting and non-voting Common Stock held by non-affiliates is less than \$700.0 million measured on the last business day of our second fiscal quarter.

The Offering

Common stock offered by us	Shares of our Common Stock having an aggregate offering price of up to \$10,000,000.
Common stock to be outstanding after this offering	Up to 106,446,778 shares, assuming sales at a price of \$1.06 per share, which was the closing price of our Common Stock on The Nasdaq Global Select Market on August 4, 2023. The actual number of shares issued will vary depending on the sales price under this offering.
Manner of offering	“At the market” offering that may be made from time to time on The Nasdaq Global Select Market, the existing trading market for our Common Stock, through our agent, Piper Sandler. See the section entitled “Plan of Distribution” on page S-19 of this prospectus supplement.
Use of proceeds	Our management will retain broad discretion regarding the allocation and use of the net proceeds. We currently expect to use the net proceeds from the offering for working capital needs and other general corporate purposes. See “Use of Proceeds.”
Risk factors	You should read the “Risk Factors” section of this prospectus supplement beginning on page S-8 and in Part II, Item 1A “Risk Factors” of our most recent quarterly report on Form 10-Q filed with the SEC on August 8, 2023, which is incorporated by reference in this prospectus supplement, for a discussion of factors to consider before deciding to purchase shares of our Common Stock.
Nasdaq Global Select Market symbol	CASA

The number of shares of our Common Stock to be outstanding after this offering is based on 97,012,816 shares of our Common Stock outstanding as of June 30, 2023 and excludes:

- 7,218,697 shares of Common Stock issuable upon the exercise of warrants outstanding as of June 30, 2023, at an exercise price of \$0.01 per share, for which the vesting condition had been satisfied as of June 30, 2023;
- 7,211,477 shares of Common Stock issuable upon the exercise of warrants outstanding as of June 30, 2023, at an exercise price of \$0.01 per share, for which the vesting conditions have not yet been satisfied as of June 30, 2023;
- 4,943,060 shares of Common Stock issuable upon the exercise of warrants, at an exercise price of \$0.01, which warrants were not outstanding as of June 30, 2023, but which such holders have a right to receive at their election;
- 6,263,799 shares of Common Stock issuable upon the exercise of stock options outstanding as of June 30, 2023, at a weighted average exercise price of \$7.59 per share;
- 7,137,402 shares of Common Stock issuable upon the vesting and settlement of restricted stock units under our equity compensation plans as of June 30, 2023; and
- 3,606,139 shares of Common Stock available for future issuance under our equity compensation plans as of June 30, 2023.

Except as otherwise noted, the information in this prospectus supplement assumes no exercise of outstanding stock options or warrants described above.

RISK FACTORS

Investing in our Common Stock involves a high degree of risk. Before you decide to invest in our Common Stock, you should carefully consider the risks and uncertainties described below and in Part II, Item 1A “Risk Factors” of our most recent quarterly report on Form 10-Q filed with the SEC on August 8, 2023, together with all other information contained in this prospectus supplement, the accompanying prospectus and in our filings with the SEC that we have incorporated by reference in this prospectus supplement and the accompanying prospectus. If any of the following risks actually occurs, our business, financial condition or results of operations could be adversely affected, which, in turn, could have a negative impact on the price of our Common Stock. In these circumstances, the market price of our Common Stock could decline, and you may lose all or part of your investment.

Risks Related To Our Common Stock and This Offering

If you purchase shares of Common Stock in this offering, you may suffer immediate and substantial dilution of your investment.

The price per share of our Common Stock in this offering may exceed the net tangible book value per share of our Common Stock outstanding prior to this offering. Therefore, if you purchase shares of our Common Stock in this offering, you may pay a price per share that substantially exceeds our net tangible book value per share after this offering. To the extent shares are issued under outstanding options at exercise prices lower than the price of our Common Stock in this offering, you will incur further dilution. Assuming that an aggregate of 9,433,962 shares of our Common Stock are sold at a price of \$1.06 per share, the last reported sale price of our Common Stock on The Nasdaq Global Select Market on August 4, 2023, for aggregate proceeds to us of \$10.0 million after deducting commissions and estimated aggregate offering expenses payable by us, you will experience immediate dilution of \$1.95 per share, representing the difference between our as adjusted net tangible book value per share as of June 30, 2023 after giving effect to this offering and the assumed offering price. See the section entitled “Dilution” below for a more detailed illustration of the dilution you would incur if you participate in this offering.

We have broad discretion in the use of the net proceeds from this offering and may use them in ways that you and other stockholders may not approve.

We currently expect to use the net proceeds of this offering for working capital and other general corporate purposes. Our management will have broad discretion in the application of the net proceeds from this offering and could spend the proceeds in ways that do not improve our results of operations or enhance the value of our Common Stock. The failure by our management to apply these funds effectively could result in financial losses that could have a material adverse effect on our business, cause the price of our Common Stock to decline and delay the development of our product candidates. Pending their use, we may invest the net proceeds from this offering in a manner that does not produce income or that loses value. See “Use of Proceeds.”

You may experience future dilution as a result of future equity offerings.

To raise additional capital, we may in the future offer additional shares of our Common Stock or other securities convertible into or exchangeable for our Common Stock at prices that may not be the same as the price per share in this offering. We may sell shares or other securities in any other offering at a price per share that is less than the price per share paid by investors in this offering, and investors purchasing shares or other securities in the future could have rights superior to existing stockholders. The price per share at which we sell additional shares of our Common Stock, or securities convertible or exchangeable into Common Stock, in future transactions may be higher or lower than the price per share paid by investors in this offering.

We might not be able to utilize a significant portion of our net operating loss carryforwards and research and development tax credit carryforwards.

As of December 31, 2022, we had approximately \$0.769 million of federal net operating losses, or NOLs that can be carried forward indefinitely. As of December 31, 2022, we had approximately \$15.449 million of state NOLs. Of the state NOLs, some are indefinite life, but most are definite life with various expiration dates beginning in 2031. As of December 31, 2022, we had federal and state research and development tax credit carryforwards of \$0.366 million and \$12.830 million, respectively, which begin to expire in 2038 and 2031, respectively. Under current law, federal NOLs generated in taxable years ending after December 31, 2017, may be carried forward indefinitely, but the deductibility of such federal NOLs may be limited to 80% of our taxable income annually for tax years beginning after December 31, 2020. NOLs generated prior to December 31, 2017, however, have a 20-year carryforward period, but are not subject to the 80% limitation.

Under U.S. federal income tax law, a corporation's ability to utilize its NOLs to offset future taxable income may be significantly limited if it experiences an "ownership change" as defined in Section 382 of the Internal Revenue Code, as amended. In general, an ownership change will occur if there is a cumulative change in a corporation's ownership by "5 percent shareholders" that exceeds 50 percentage points over a rolling three-year period. A corporation that experiences an ownership change will generally be subject to an annual limitation on the use of its pre-ownership change NOLs equal to the value of the corporation immediately before the ownership change, multiplied by the long-term tax-exempt rate (subject to certain adjustments). Furthermore, our ability to utilize NOLs of companies that we have acquired or may acquire in the future may be subject to similar limitations. We may experience ownership changes in the future as a result of subsequent shifts in our stock ownership, including this offering, some of which may be outside of our control. There is also a risk that due to regulatory changes, such as suspensions on the use of NOLs by federal or state taxing authorities or other unforeseen reasons, our existing NOLs could expire or otherwise be unavailable to reduce future income tax liabilities. For these reasons, we may not be able to utilize a material portion of the NOLs reflected on our balance sheet, even if we attain profitability, which could potentially result in increased future tax liability to us and could adversely affect our operating results and financial condition.

Changes in tax law could adversely affect our business and financial condition.

The rules dealing with U.S. federal, state, and local income taxation are constantly under review by persons involved in the legislative process and by the U.S. Internal Revenue Service and the U.S. Treasury Department. Changes to tax laws (which changes may have retroactive application) could adversely affect us or holders of our Common Stock. In recent years, many such changes have been made and changes are likely to continue to occur in the future. Future changes in tax laws could have a material adverse effect on our business, cash flow, financial condition or results of operations. We urge investors to consult with their legal and tax advisers regarding the implications of changes in tax laws on an investment in our Common Stock.

The actual number of shares we will issue under the sale agreement, at any one time or in total, as well as the gross proceeds resulting from those sales, is uncertain.

Subject to certain limitations in the sale agreement and compliance with applicable law, we have the discretion to deliver a placement notice to Piper Sandler at any time throughout the term of the sale agreement. The number of shares that are sold by Piper Sandler after delivering a placement notice will fluctuate based on the market price of our Common Stock during the sales period and limits we set with Piper Sandler. Because the price per share of each share sold will fluctuate based on the market price of our Common Stock during the sales period, it is not possible at this stage to predict the number of shares, if any, that will be ultimately issued.

The Common Stock offered hereby will be sold in “at the market offerings,” and investors who buy shares at different times will likely pay different prices.

Investors who purchase shares in this offering at different times will likely pay different prices, and so may experience different outcomes in their investment results. We will have discretion, subject to market demand, to vary the timing, prices and numbers of shares sold, and there is no minimum or maximum sales price. Investors may experience a decline in the value of their shares as a result of share sales made at prices lower than the prices they paid.

USE OF PROCEEDS

We may issue and sell shares of our Common Stock having aggregate sales proceeds of up to \$10.0 million from time to time under this prospectus supplement. The amount of the net proceeds to us from this offering will depend upon the number of shares of our Common Stock sold and the price at which they are sold. There can be no assurance that we will be able to sell any shares under or fully utilize the sale agreement with Piper Sandler.

We currently expect to use the net proceeds from the offering for working capital needs and other general corporate purposes.

The expected use of net proceeds from this offering represents our intentions based upon our current plans and business conditions, which could change in the future as our plans and business conditions evolve. We have not determined the amounts we plan to spend on any of the areas listed above or the timing of these expenditures. The amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including the progress of our development, the status of and results from clinical trials and collaborations that we may enter into with third parties for our product candidates and any unforeseen cash needs, including the factors described under “Risk Factors” in this prospectus supplements and in the documents incorporated by reference herein. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering. We may find it necessary or advisable to use the net proceeds from this offering for other purposes, and we will have broad discretion in the application of net proceeds.

We do not expect that the net proceeds from this offering, together with our existing cash, cash equivalents and investments, will be sufficient to enable us to fund the completion of development of any of our product candidates.

Pending our use of the net proceeds from this offering, we intend to invest the net proceeds in a variety of capital preservation investments, including short-term, investment-grade, interest-bearing instruments and U.S. government securities.

DILUTION

If you invest in this offering, your ownership interest will be diluted immediately to the extent of the difference between the public offering price per share and the as-adjusted net tangible book value per share of our Common Stock after giving effect to this offering.

As of June 30, 2023, we had net tangible book value of approximately \$(104.1) million, or \$(1.07) per share of our Common Stock, based upon 97,012,816 shares of our Common Stock outstanding as of that date. Historical net tangible book value per share is equal to our total tangible assets, less total liabilities, divided by the number of outstanding shares of our Common Stock. Dilution in net tangible book value per share represents the difference between the amount per share paid by purchasers of shares of Common Stock in this offering and the net tangible book value per share of our Common Stock immediately after this offering.

After giving effect to the sale of our Common Stock pursuant to this prospectus supplement and accompanying prospectus in the aggregate amount of \$10.0 million at an assumed offering price of \$1.06 per share, the last reported sale price of our Common Stock on The Nasdaq Global Select Market on August 4, 2023, and after deducting commissions and estimated aggregate offering expenses payable by us, our net tangible book value as of June 30, 2023 would have been \$(94.8) million, or \$(0.89) per share of Common Stock. This represents an immediate increase in the net tangible book value of \$0.18 per share to our existing stockholders and an immediate dilution in net tangible book value of \$1.95 per share to new investors. The following table illustrates this per share dilution:

Assumed offering price per share	\$ 1.06
Net tangible book value per share as of June 30, 2023	\$(1.07)
Increase per share attributable to sale of shares of Common Stock in this offering	<u>\$ 0.18</u>
As adjusted net tangible book value per share after this offering	<u>\$(0.89)</u>
Dilution per share to new investors purchasing shares in this offering	<u>\$ 1.95</u>

The table above assumes for illustrative purposes that an aggregate of 9,433,962 shares of our Common Stock are sold pursuant to this prospectus supplement and the accompanying prospectus at a price of \$1.06 per share, the last reported sale price of our Common Stock on The Nasdaq Global Select Market on August 4, 2023, for aggregate gross proceeds of \$10.0 million. The shares sold in this offering, if any, will be sold from time to time at various prices. An increase of \$1.00 per share in the price at which the shares are sold from the assumed offering price to \$2.06 per share, assuming all of our Common Stock in the aggregate amount of \$10.0 million is sold at that price, would result in an adjusted net tangible book value per share after the offering of \$(0.93) per share and would increase the dilution in net tangible book value per share to new investors in this offering to \$2.99 per share, after deducting commissions and estimated aggregate offering expenses payable by us. A decrease of \$1.00 per share in the price at which the shares are sold from the assumed offering price to \$0.06 per share, assuming all of our Common Stock in the aggregate amount of \$10.0 million is sold at that price, would result in an adjusted net tangible book value per share after the offering of \$(0.36) per share and would decrease the dilution in net tangible book value per share to new investors in this offering to \$0.42 per share, after deducting commissions and estimated aggregate offering expenses payable by us. This information is supplied for illustrative purposes only.

The above discussion and table are based on 97,012,816 shares of our Common Stock outstanding as of June 30, 2023 and excludes the following:

- 7,218,697 shares of Common Stock issuable upon the exercise of warrants outstanding as of June 30, 2023, at an exercise price of \$0.01 per share, for which the vesting condition had been satisfied as of June 30, 2023;

[Table of Contents](#)

- 7,211,477 shares of Common Stock issuable upon the exercise of warrants outstanding as of June 30, 2023, at an exercise price of \$0.01 per share, for which the vesting conditions have not yet been satisfied as of June 30, 2023;
- 4,943,060 shares of Common Stock issuable upon the exercise of warrants, at an exercise price of \$0.01, which warrants were not outstanding as of June 30, 2023, but which such holders have a right to receive at their election;
- 6,263,799 shares of Common Stock issuable upon the exercise of stock options outstanding as of June 30, 2023, at a weighted average exercise price of \$7.59 per share;
- 7,137,402 shares of Common Stock issuable upon vesting of restricted stock units under our equity compensation plans as of June 30, 2023; and
- 3,606,139 shares of Common Stock available for future issuance under our equity compensation plans as of June 30, 2023.

DIVIDEND POLICY

We have previously declared or paid special cash dividends on our capital stock on five occasions prior to our initial public offering. We currently plan to retain all of our future earnings, if any, to finance the operation, development and growth of our business. We do not expect to pay any cash dividends on our Common Stock in the foreseeable future. Payment of future dividends, if any, will be at the discretion of our board of directors and will depend on our financial condition, results of operations, capital requirements, restrictions contained in current or future financing instruments, provisions of applicable law and other factors the board deems relevant. Our ability to pay dividends on our Common Stock may be restricted by the terms of any of our future indebtedness. Our credit facility contains covenants that limit our ability to pay dividends on our capital stock.

MATERIAL U.S. FEDERAL INCOME TAX CONSIDERATIONS FOR NON-U.S. HOLDERS

The following discussion is a summary of certain material U.S. federal income tax considerations applicable to non-U.S. holders (as defined below) with respect to their ownership and disposition of shares of our Common Stock issued pursuant to this offering. For purposes of this discussion, a non-U.S. holder means a beneficial owner of our Common Stock that is for U.S. federal income tax purposes:

- a non-resident alien individual;
- a corporation or any organization taxable as a corporation for U.S. federal income tax purposes that is created or organized in or under laws other than the laws of the United States, any state thereof, or the District of Columbia;
- an estate, the income of which is not subject to U.S. federal income tax on a net income basis; or
- a trust, the income of which is not subject to U.S. federal income tax on a net income basis and that (1) is not subject to the primary supervision of a court within the United States or over which no U.S. persons have authority to control all substantial decisions and (2) has not made an election to be treated as a U.S. person under applicable U.S. Treasury Regulations.

This discussion does not address the tax treatment of partnerships or other entities that are pass-through entities for U.S. federal income tax purposes or persons that hold their Common Stock through partnerships or other pass-through entities. A partner in a partnership or other pass-through entity that will hold our Common Stock should consult his, her or its tax advisor regarding the tax consequences of acquiring, holding and disposing of our Common Stock through a partnership or other pass-through entity, as applicable.

This discussion is based on current provisions of the Code, existing and proposed U.S. Treasury Regulations promulgated thereunder, current administrative rulings and judicial decisions, all as in effect as of the date of this prospectus and, all of which are subject to change or to differing interpretation, possibly with retroactive effect. Any such change or differing interpretation could alter the tax consequences to non-U.S. holders described in this prospectus. There can be no assurance that the Internal Revenue Service, which we refer to as the IRS, will not challenge one or more of the tax consequences described herein. We have not sought and will not seek any rulings from the IRS regarding the matters discussed below. We assume in this discussion that a non-U.S. holder holds shares of our Common Stock as a capital asset within the meaning of Section 1221 of the Code, generally property held for investment.

This discussion does not address all aspects of U.S. federal income taxation that may be relevant to a particular non-U.S. holder in light of that non-U.S. holder's individual circumstances nor does it address any U.S. state, local or non-U.S. taxes, the alternative minimum tax, the Medicare tax on net investment income, the rules regarding qualified small business stock within the meaning of Section 1202 of the Code, or any other aspect of any U.S. federal tax other than the income tax. This discussion also does not consider any specific facts or circumstances that may apply to a non-U.S. holder and does not address the special tax rules applicable to particular non-U.S. holders, such as:

- insurance companies;
- tax-exempt or governmental organizations;
- financial institutions;
- brokers or dealers in securities;
- regulated investment companies;
- pension plans;
- "controlled foreign corporations," "passive foreign investment companies," and corporations that accumulate earnings to avoid U.S. federal income tax;

[Table of Contents](#)

- “qualified foreign pension funds,” or entities wholly owned by a “qualified foreign pension fund”;
- persons deemed to sell our Common Stock under the constructive sale provisions of the Code;
- persons that hold our Common Stock as part of a straddle, hedge, conversion transaction, synthetic security or other integrated investment;
- partnerships or other entities or arrangements treated as partnerships for U.S. federal income tax purposes (and partners and investors therein);
- persons who hold or receive our Common Stock pursuant to the exercise of any employee stock option or otherwise as compensation; and
- certain U.S. expatriates.

This discussion is for general information only and is not tax advice. Accordingly, all prospective non-U.S. holders of our Common Stock should consult their tax advisors with respect to the U.S. federal, state, local and non-U.S. tax consequences of the purchase, ownership and disposition of our Common Stock.

Distributions on Our Common Stock

As described in the “Dividend Policy” section above, we do not anticipate paying any cash dividends on our capital stock in the foreseeable future. Distributions, if any, on our Common Stock will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. If a distribution exceeds our current and accumulated earnings and profits, the excess will be treated as a tax-free return of the non-U.S. holder’s investment, up to such holder’s tax basis in the Common Stock. Any remaining excess will be treated as capital gain, subject to the tax treatment described below in “—Gain on Sale or Other Taxable Disposition of Our Common Stock.” Any such distributions will also be subject to the discussions below under the sections titled “—Backup Withholding and Information Reporting” and “—Withholding and Information Reporting Requirements—FATCA.”

Subject to the discussion in the following two paragraphs in this section, dividends paid to a non-U.S. holder generally will be subject to withholding of U.S. federal income tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder’s country of residence. If we or the applicable withholding agent are unable to determine, at a time reasonably close to the date of payment of a distribution on our Common Stock, what portion, if any, of the distribution will constitute a dividend, then we or the applicable withholding agent may withhold U.S. federal income tax on the basis of assuming that the full amount of the distribution will be a dividend. If we or another withholding agent apply over-withholding, a non-U.S. holder may be entitled to a refund or credit of any excess tax withheld by timely filing an appropriate claim with the IRS.

Dividends that are treated as effectively connected with a trade or business conducted by a non-U.S. holder within the United States and, if an applicable income tax treaty so provides, that are attributable to a permanent establishment or a fixed base maintained by the non-U.S. holder within the United States, are generally exempt from the 30% withholding tax if the non-U.S. holder satisfies applicable certification and disclosure requirements. However, such U.S. effectively connected income, net of specified deductions and credits, is taxed at the same graduated U.S. federal income tax rates applicable to United States persons (as defined in the Code). Any U.S. effectively connected income received by a non-U.S. holder that is a corporation may also, under certain circumstances, be subject to an additional “branch profits tax” at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder’s country of residence.

A non-U.S. holder of our Common Stock who claims the benefit of an applicable income tax treaty between the United States and such holder’s country of residence generally will be required to provide a properly executed IRS Form W-8BEN or W-8BEN-E (or applicable successor form) to the applicable withholding agent and satisfy

[Table of Contents](#)

applicable certification and other requirements. Non-U.S. holders are urged to consult their own tax advisors regarding their entitlement to benefits under a relevant income tax treaty. A non-U.S. holder that is eligible for a reduced rate of U.S. withholding tax under an income tax treaty may obtain a refund or credit of any excess amounts withheld by timely filing a U.S. tax return with the IRS.

Gain on Sale or Other Taxable Disposition of Our Common Stock

Subject to the discussions below under “—Backup Withholding and Information Reporting” and “—Withholding and Information Reporting Requirements—FATCA,” a non-U.S. holder generally will not be subject to any U.S. federal income or withholding tax on any gain realized upon such holder’s sale or other taxable disposition of shares of our Common Stock unless:

- the gain is effectively connected with the non-U.S. holder’s conduct of a U.S. trade or business and, if an applicable income tax treaty so provides, is attributable to a permanent establishment or a fixed base maintained by such non-U.S. holder in the United States, in which case the non-U.S. holder generally will be taxed on a net income basis at the same graduated U.S. federal income tax rates applicable to United States persons (as defined in the Code) and, if the non-U.S. holder is a foreign corporation, the branch profits tax described above in “—Distributions on Our Common Stock” also may apply;
- the non-U.S. holder is a nonresident alien individual who is present in the United States for 183 days or more in the taxable year of the disposition and certain other conditions are met, in which case the non-U.S. holder will be subject to a 30% tax (or such lower rate as may be specified by an applicable income tax treaty between the United States and such holder’s country of residence) on the net gain derived from the disposition, which may be offset by certain U.S. source capital losses of the non-U.S. holder, if any (even though the individual is not considered a resident of the United States), provided that the non-U.S. holder has timely filed U.S. federal income tax returns with respect to such losses; or
- we are, or have been, at any time during the five-year period preceding such sale or other taxable disposition (or the non-U.S. holder’s holding period, if shorter) a “U.S. real property holding corporation,” as defined in the Code, unless our Common Stock is regularly traded on an established securities market and the non-U.S. holder holds no more than 5% of our outstanding Common Stock, directly or indirectly, actually or constructively, during the shorter of the 5-year period ending on the date of the disposition or the period that the non-U.S. holder held our Common Stock. If we are or were “U.S. real property holding corporation” during the relevant period and the foregoing 5% exception does not apply, the non-U.S. holder generally will be taxed on its net gain derived from the disposition at the graduated U.S. federal income tax rates applicable to United States persons (as defined in the Code). Generally, a corporation is a “U.S. real property holding corporation” only if the fair market value of its “U.S. real property interests,” as defined in the Code, equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests plus its other assets used or held for use in a trade or business. Although there can be no assurance, we do not believe that we are, or have been, a “U.S. real property holding corporation,” or that we are likely to become one in the future. No assurance can be provided that our Common Stock will be regularly traded on an established securities market for purposes of the rules described above.

Backup Withholding and Information Reporting

We (or the applicable paying agent) must report annually to the IRS and to each non-U.S. holder the gross amount of the distributions on our Common Stock paid to such holder and the tax withheld, if any, with respect to such distributions. Non-U.S. holders may have to comply with specific certification procedures to establish that the holder is not a United States person (as defined in the Code) in order to avoid backup withholding at the applicable rate with respect to dividends on our Common Stock. Generally, a non-U.S. holder will comply with such procedures if it provides a properly executed IRS Form W-8BEN or W-8BEN-E (or other applicable Form

[Table of Contents](#)

W-8) or otherwise meets documentary evidence requirements for establishing that it is a non-U.S. holder, or otherwise establishes an exemption. Dividends paid to non-U.S. holders subject to withholding of U.S. federal income tax, as described above in “—Distributions on Our Common Stock,” generally will be exempt from U.S. backup withholding. However, information returns are required to be filed with the IRS in connection with any dividends on our Common Stock paid to the Non-U.S. Holder, regardless of whether any tax was actually withheld

Information reporting and backup withholding will generally apply to the proceeds of a disposition of our Common Stock by a non-U.S. holder effected by or through the U.S. office of any broker, U.S. or foreign, unless the holder certifies its status as a non-U.S. holder and satisfies certain other requirements, or otherwise establishes an exemption. Generally, information reporting and backup withholding will not apply to a payment of disposition proceeds to a non-U.S. holder where the transaction is effected outside the United States through a non-U.S. office of a broker. However, for information reporting purposes, dispositions effected through a non-U.S. office of a broker with substantial U.S. ownership or operations generally will be treated in a manner similar to dispositions effected through a U.S. office of a broker.

Non-U.S. holders should consult their tax advisors regarding the application of the information reporting and backup withholding rules to them. Copies of information returns may be made available to the tax authorities of the country in which the non-U.S. holder resides or is incorporated under the provisions of a specific treaty or agreement. Any documentation provided to an applicable withholding agent may need to be updated in certain circumstances. Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules from a payment to a non-U.S. holder can be refunded or credited against the non-U.S. holder’s U.S. federal income tax liability, if any, provided that an appropriate claim is filed with the IRS in a timely manner.

Withholding and Information Reporting Requirements—FATCA

Provisions of the Code commonly referred to as the Foreign Account Tax Compliance Act, or FATCA, generally impose a U.S. federal withholding tax at a rate of 30% on payments of dividends on our Common Stock paid to a foreign entity unless (i) if the foreign entity is a “foreign financial institution,” such foreign entity undertakes certain due diligence, reporting, withholding, and certification obligations, (ii) if the foreign entity is not a “foreign financial institution,” such foreign entity identifies certain of its U.S. investors, if any, or (iii) the foreign entity is otherwise exempt under FATCA. Such withholding may also apply to gross proceeds from the sale or other disposition of our Common Stock, although under proposed U.S. Treasury Regulations, no withholding would apply to such gross proceeds. The preamble to the proposed regulations specifies that taxpayers (including withholding agents) are permitted to rely on the proposed regulations pending finalization. If withholding under FATCA is required on any payment related to our Common Stock, under certain circumstances, a non-U.S. holder may be eligible for refunds or credits of this withholding tax. An intergovernmental agreement between the United States and an applicable foreign country may modify the requirements described in this section. Non-U.S. holders should consult their tax advisors regarding the possible implications of FATCA on their investment in our Common Stock and the entities through which they hold our Common Stock, including, without limitation, the process and deadlines for meeting the applicable requirements to prevent the imposition of the 30% withholding tax under FATCA

The preceding discussion of material U.S. federal tax considerations is for general information only. It is not tax advice. Prospective investors should consult their tax advisors regarding the particular U.S. federal, state, local and non-U.S. tax consequences of purchasing, holding and disposing of our Common Stock, including the consequences of any proposed changes in applicable laws.

PLAN OF DISTRIBUTION

We have entered into an equity distribution agreement, or the sale agreement, with Piper Sandler & Co., or Piper Sandler, under which we may issue and sell shares of our Common Stock from time to time up to an aggregate offering price of \$10,000,000 through Piper Sandler acting as our sales agent. The summary of the material provisions of the sale agreement does not purport to be a complete statement of its terms and conditions. The sale agreement has been filed with the SEC as an exhibit to a report filed under the Exchange Act and incorporated by reference into this prospectus supplement.

Upon delivery of a placement notice, and subject to our instructions in that notice, and the terms and conditions of the sale agreement generally, Piper Sandler may sell our Common Stock by any method permitted by law deemed to be an “at the market offering” as defined by Rule 415(a)(4) promulgated under the Securities Act. The Common Stock will be distributed at the market prices prevailing on The Nasdaq Global Select Market at the time of the sale of such Common Stock.

We will pay Piper Sandler in cash, upon each sale of our Common Stock pursuant to the sale agreement, a commission in an amount equal to 3.0% of the aggregate gross sales price from each sale of our Common Stock. Because there is no minimum offering amount required as a condition to this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time. We have agreed to reimburse a portion of Piper Sandler expenses, including legal fees, in connection with this offering up to a maximum of \$125,000 in connection with the establishment of this at-the-market offering program. In accordance with FINRA Rule 5110 these reimbursed fees and expenses are deemed sales compensation to Piper Sandler in connection with this offering. We estimate that the total expenses for the offering, excluding compensation and expense reimbursement payable to Piper Sandler under the terms of the sale agreement, will be approximately \$0.4 million.

Settlement for sales of Common Stock will occur on the second full business day following the date on which any sales are made, or on some other date that is agreed upon by us and Piper Sandler in connection with a particular transaction, in return for payment of the net proceeds to us. There is no arrangement for funds to be received in an escrow, trust or similar arrangement. Sales of our Common Stock as contemplated in this prospectus supplement will be settled through the facilities of The Depository Trust Company or by such other means as we and Piper Sandler may agree upon.

Piper Sandler will act as sales agent on a commercially reasonable efforts basis consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of The Nasdaq Global Select Market. In connection with the sale of Common Stock on our behalf, Piper Sandler will be deemed to be an “underwriter” within the meaning of the Securities Act and the compensation of Piper Sandler will be deemed to be underwriting commissions or discounts. We have agreed to provide indemnification and contribution to Piper Sandler against certain civil liabilities, including liabilities under the Securities Act.

The offering of our Common Stock pursuant to the sale agreement will terminate as permitted therein. We or Piper Sandler may terminate the equity distribution agreement at any time with prior notice.

Piper Sandler and its affiliates may in the future provide various investment banking, commercial banking and other financial services for us and our affiliates, for which services they may in the future receive customary fees.

This prospectus supplement and the accompanying prospectus in electronic format may be made available on a website maintained by Piper Sandler and Piper Sandler may distribute this prospectus supplement and the accompanying prospectus electronically.

LEGAL MATTERS

The validity of the shares of Common Stock offered hereby will be passed upon for us by Goodwin Procter LLP, Boston, Massachusetts. Piper Sandler is being represented in connection with this offering by Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., New York, New York.

EXPERTS

The consolidated financial statements of Casa Systems, Inc. appearing in Casa Systems, Inc.'s Annual Report (Form 10-K) for the year ended December 31, 2022, and the effectiveness of Casa Systems, Inc.'s internal control over financial reporting as of December 31, 2022, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in its reports thereon (which contains an explanatory paragraph describing conditions that raise substantial doubt about the Company's ability to continue as a going concern as described in Note 1 to the consolidated financial statements), which conclude, among other things, that Casa Systems, Inc. did not maintain effective internal control over financial reporting as of December 31, 2022, based on Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework), because of the effects of the material weaknesses described therein, included therein, and incorporated herein by reference. Such financial statements have been incorporated herein by reference in reliance upon such reports given on the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at www.sec.gov. Copies of certain information filed by us with the SEC are also available on our website at www.casa-systems.com. Our website is not a part of this prospectus supplement and is not incorporated by reference in this prospectus supplement.

This prospectus supplement is part of a registration statement that we filed with the SEC. The registration statement contains more information than this prospectus supplement and the accompanying prospectus regarding us and the securities, including certain exhibits and schedules. You can obtain a copy of the registration statement from the SEC at the address listed above or from the SEC's internet site.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference in this prospectus supplement and the accompanying prospectus much of the information we file with the SEC, which means that we can disclose important information to you by referring you to those publicly available documents. The information that we incorporate by reference in this prospectus supplement and the accompanying prospectus is considered to be part of this prospectus supplement and the accompanying prospectus. Because we are incorporating by reference future filings with the SEC, this prospectus supplement and the accompanying prospectus is continually updated and those future filings may modify or supersede some of the information included or incorporated in this prospectus supplement and the accompanying prospectus. This means that you must look at all of the SEC filings that we incorporate by reference to determine if any of the statements in this prospectus supplement, the accompanying prospectus or in any document previously incorporated by reference have been modified or superseded. This prospectus supplement and the accompanying prospectus incorporate by reference the documents listed below (File No. 001-36310) and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act (in each case, other than those documents or the portions of those documents not deemed to be filed) until the offering of the securities under the registration statement is terminated or completed:

- Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2022, filed with the SEC on March 15, 2023;
- Quarterly Report on Form 10-Q for the quarter ended [June 30, 2023](#), filed with the SEC on [August 8, 2023](#);
- [Definitive Proxy Statement](#) on Schedule 14A, filed with the SEC on April 6, 2023, with respect to those portions that are incorporated by reference in our Annual Report on Form 10-K for the fiscal year ended December 31, 2022;
- Current Reports on Form 8-K filed with the SEC on [April 13, 2023](#), [May 9, 2023](#), [May 18, 2023](#), [June 16, 2023](#), [June 21, 2023](#), and [July 13, 2023](#); and
- The description of our Common Stock contained in our Registration Statement on [Form 8-A](#) filed on December 12, 2017, including any amendments or reports filed for the purpose of updating such description.

a copy of these filings, at no cost, by writing or telephoning us at the following address or phone number:

100 Old River Road
Andover, Massachusetts 01810
(978) 688-6706

In accordance with Rule 412 of the Securities Act, any statement contained in a document incorporated by reference herein shall be deemed modified or superseded to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement.

CASA SYSTEMS, INC.
Up to \$10,000,000
Common Stock

PROSPECTUS SUPPLEMENT

PIPER SANDLER
, 2023

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth the various expenses to be incurred in connection with the sale and distribution of the securities being registered.

SEC registration fee	\$ 11,020
Printing and engraving	*
Accounting services	*
Legal fees of registrant's counsel	*
Miscellaneous	*
Total	*

* These fees are calculated based on the number of issuances and the amount of securities offered and accordingly cannot be estimated at this time.

Item 15. Indemnification of Directors and Officers.

Section 145 of the DGCL authorizes a corporation to indemnify its directors and officers against liabilities arising out of actions, suits and proceedings to which they are made or threatened to be made a party by reason of the fact that they have served or are currently serving as a director or officer to a corporation. The indemnity may cover expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the director or officer in connection with any such action, suit or proceeding. Section 145 permits corporations to pay expenses (including attorneys' fees) incurred by directors and officers in advance of the final disposition of such action, suit or proceeding. In addition, Section 145 provides that a corporation has the power to purchase and maintain insurance on behalf of its directors and officers against any liability asserted against them and incurred by them in their capacity as a director or officer, or arising out of their status as such, whether or not the corporation would have the power to indemnify the director or officer against such liability under Section 145.

We have adopted provisions in our amended and restated certificate of incorporation and amended and restated by-laws that limit or eliminate the personal liability of our directors to the fullest extent permitted by the DGCL, as it now exists or may in the future be amended. Consequently, a director will not be personally liable to us or our stockholders for monetary damages or breach of fiduciary duty as a director, except for liability for:

- any breach of the director's duty of loyalty to us or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- any unlawful payments related to dividends or unlawful stock purchases, redemptions or other distributions; or
- any transaction from which the director derived an improper personal benefit.

These limitations of liability do not alter director liability under the federal securities laws and do not affect the availability of equitable remedies such as an injunction or rescission.

In addition, our amended and restated by-laws provide that:

- we will indemnify our directors, officers and, in the discretion of our board of directors, certain employees to the fullest extent permitted by the DGCL, as it now exists or may in the future be amended; and
- we will advance reasonable expenses, including attorneys' fees, to our directors and, in the discretion of our board of directors, to our officers and certain employees, in connection with legal proceedings relating to their service for or on behalf of us, subject to limited exceptions.

[Table of Contents](#)

We have entered into indemnification agreements with each of our directors and with certain of our executive officers. These agreements provide that we will indemnify each of our directors, certain of our executive officers and, at times, their affiliates to the fullest extent permitted by Delaware law. We will advance expenses, including attorneys' fees (but excluding judgments, fines and settlement amounts), to each indemnified director, executive officer or affiliate in connection with any proceeding in which indemnification is available and we will indemnify our directors and officers for any action or proceeding arising out of that person's services as a director or officer brought on behalf of us and/or in furtherance of our rights. Additionally, each of our directors may have certain rights to indemnification, advancement of expenses and/or insurance provided by their affiliates, which indemnification relates to and might apply to the same proceedings arising out of such director's services as a director referenced herein. Nonetheless, we have agreed in the indemnification agreements that our obligations to those same directors are primary and any obligation of the affiliates of those directors to advance expenses or to provide indemnification for the expenses or liabilities incurred by those directors are secondary.

We also maintain general liability insurance which covers certain liabilities of our directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers, including liabilities under the Securities Act.

Item 16. Exhibits.

The exhibits to this registration statement are listed in the Exhibit Index, which appears elsewhere herein and is incorporated herein by reference.

Item 17. Undertakings.

We hereby undertake:

(a)

- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) to include any prospectus required by Section 10(a)(3) of the Securities Act;
 - (ii) to reflect in the prospectus any facts or events arising after the effective date of this registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in this registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and
 - (iii) to include any material information with respect to the plan of distribution not previously disclosed in this registration statement or any material change to such information in this registration statement;

provided, however, that paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports we file with or furnish to the Commission pursuant to Section 13 or Section 15(d) of the Exchange Act, that are incorporated by reference in this registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of this registration statement.

- (2) That, for the purposes of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at the time shall be deemed to be the initial bona fide offering thereof.

Table of Contents

- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
- (4) That, for the purpose of determining liability under the Securities Act to any purchaser:
 - (i) each prospectus we file pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
 - (ii) each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii) or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof; *provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.
- (5) That, for the purpose of determining our liability under the Securities Act to any purchaser in the initial distribution of the securities, we undertake that in a primary offering of our securities pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, we will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:
 - (i) any of our preliminary prospectuses or prospectuses relating to the offering required to be filed pursuant to Rule 424;
 - (ii) any free writing prospectus relating to the offering prepared by us or on our behalf or used or referred to by us;
 - (iii) the portion of any other free writing prospectus relating to the offering containing material information about us or our securities provided by us or on our behalf; and
 - (iv) any other communication that is an offer in the offering made by us to the purchaser.
- (6) That, for purposes of determining any liability under the Securities Act:
 - (i) the information omitted from the form of prospectus filed as part of the registration statement in reliance upon Rule 430A and contained in the form of prospectus filed by us pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of the registration statement as of the time it was declared effective; and
 - (ii) each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (b) We hereby undertake that, for purposes of determining any liability under the Securities Act, each filing of our annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by

[Table of Contents](#)

reference in this registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

- (c) If applicable, we hereby undertake to supplement the prospectus, after the expiration of the subscription period, to set forth the results of the subscription offer, the transaction by the underwriters during the subscription period, the amount of unsubscribed securities to be purchased by the underwriters, and the terms of any subsequent reoffering thereof. If any public offering by the underwriters is to be made on terms differing from those set forth on the cover page of the prospectus, a post-effective amendment will be filed to set forth the terms of such offering.
- (d) We hereby undertake to file an application for the purpose of determining the eligibility of the trustee to act under subsection (a) of Section 310 of the Trust Indenture Act in accordance with the rules and regulations prescribed by the Commission under Section 305(b)(2) of the Trust Indenture Act.
- (e) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to each of our directors, officers and controlling persons pursuant to the indemnification provisions described herein, or otherwise, we have been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than our payment of expenses incurred or paid by any of our directors, officers or controlling persons in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, we will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by us is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

EXHIBIT INDEX

Exhibit No.	Description
1.1*	Form of Underwriting Agreement
1.2	Equity Distribution Agreement, dated August 8, 2023, by and between the Registrant and Piper Sandler & Co.
3.1	Restated Certificate of Incorporation of the Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K (File No. 001-38324) filed with the Securities and Exchange Commission on December 19, 2017)
3.2	By-laws of the Registrant (incorporated by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K (File No. 001-38324) filed with the Securities and Exchange Commission on December 19, 2017)
4.1	Form of Specimen Common Stock Certificate (incorporated by reference to Exhibit 4.1 to the Casa Systems, Inc. Registration Statement on Form S-1/A (File No. 333- 221658) filed with the Securities and Exchange Commission on December 4, 2017).
4.2	Registration Rights Agreement, dated April 26, 2010, between Casa Systems, Inc. and the investors party thereto (incorporated by reference to Exhibit 10.19 to the Casa Systems, Inc. Registration Statement on Form S-1 (File No. 333- 221658) filed with the Securities and Exchange Commission on November 17, 2017).
4.3	Warrant Agreement, dated June 15, 2023, by and between Casa Systems, Inc. and American Stock Transfer & Trust Company, LLC (incorporated by reference to Exhibit 10.4 of the Company's Current Report on Form 8-K/A (File No. 001-38324) filed with the SEC on June 21, 2023).
4.4	Registration Rights Agreement, dated June 15, 2023, by and among Casa Systems, Inc. and the parties named therein (incorporated by reference to Exhibit 10.5 of the Registrant's Current Report on Form 8-K/A (File No. 001-38324) filed with the SEC on June 21, 2023).
4.5*	Form of Certificate of Designation
4.6*	Form of Preferred Stock Certificate
4.7*	Form of Warrant Agreement and Warrant Certificate
4.8*	Form of Stock Purchase Agreement
4.9*	Form of Rights Agreement and Form of Rights Certificate
4.10*	Form of Unit Agreement and Unit Certificate
5.1	Opinion of Goodwin Procter LLP
5.2	Opinion of Goodwin Procter LLP relating to equity distribution agreement prospectus supplement
23.1	Consent of Ernst & Young LLP, independent registered public accounting firm for the Registrant
23.2	Consent of Goodwin Procter LLP (included in Exhibit 5.1)
23.3	Consent of Goodwin Procter LLP (included in Exhibit 5.2)
24.1	Power of Attorney (included in the signature pages to the registration statement)
107	Filing Fee Table

* To be filed, if applicable, by amendment or by a Current Report on Form 8-K and incorporated by reference herein.

Table of Contents

SIGNATURES

Pursuant to the requirements of the Securities Act, we certify that we have reasonable grounds to believe that we meet all of the requirements for filing on Form S-3 and have duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the town of Andover, Commonwealth of Massachusetts, on this 8th day of August, 2023.

CASA SYSTEMS, INC.

By: /s/ Michael Glickman

Michael Glickman
Chief Executive Officer and President

POWER OF ATTORNEY AND SIGNATURES

We, the undersigned officers and directors of Casa Systems, Inc., hereby severally constitute and appoint each of Michael Glickman and Edward Durkin, and each of them singly (with full power to each of them to act alone), as our true and lawful attorneys with full power to any of them, and each of them acting singly, to sign for us and in our names in the capacities indicated below the Registration Statement on Form S-3 filed herewith and any and all amendments (including post-effective amendments) to said Registration Statement, and any registration statement filed pursuant to Rule 462 under the Securities Act of 1933, as amended, in connection with said Registration Statement, and to file or cause to be filed the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, and generally to do all such things in our name and on our behalf in our capacities as officers and directors to enable Casa Systems, Inc. to comply with the provisions of the Securities Act of 1933, as amended, and all requirements of the Securities and Exchange Commission, hereby ratifying and confirming all that said attorneys, and each of them, or their substitute or substitutes, shall do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Michael Glickman Michael Glickman	Chief Executive Officer and Director (Principal Executive Officer)	August 8th, 2023
/s/ Edward Durkin Edward Durkin	Chief Financial Officer (Principal Financial Officer)	August 8th, 2023
/s/ Bruce R. Evans Bruce R. Evans	Chairman and Director	August 8th, 2023
 _____ Jerry Guo	Director	
/s/ Scott Bruckner Scott Bruckner	Director	August 8th, 2023
/s/ Susana D’Emic Susana D’Emic	Director	August 8th, 2023
/s/ Michael T. Hayashi Michael T. Hayashi	Director	August 8th, 2023

[Table of Contents](#)

Signature	Title	Date
<div>/s/ Daniel S. Mead</div> <div>_____</div> <div>Daniel S. Mead</div>	Director	August 8th, 2023
<div>/s/ Bill Styslinger</div> <div>_____</div> <div>Bill Styslinger</div>	Director	August 8th, 2023

CASA SYSTEMS, INC.

EQUITY DISTRIBUTION AGREEMENT

August 8, 2023

PIPER SANDLER & CO.
U.S. Bancorp Center
800 Nicollet Mall
Minneapolis, Minnesota 55402

Ladies and Gentlemen:

As further set forth in this agreement (this “**Agreement**”), Casa Systems, Inc., a company organized under the laws of Delaware (the “**Company**”), proposes to issue and sell from time to time through Piper Sandler & Co. (the “**Agent**”), as sales agent, the Company’s common stock, par value \$0.001 per share (the “**Common Stock**”) (such shares of Common Stock to be sold pursuant to this Agreement, the “**Shares**”) on terms set forth herein. Notwithstanding anything to the contrary contained herein, the parties hereto agree that compliance with the limitation set forth in Section 2 of this Agreement on the number of Shares issued and sold under this Agreement shall be the sole responsibility of the Company, and the Agent shall have no obligation in connection with such compliance.

The Company hereby confirms its agreement with the Agent with respect to the sale of the Shares.

1. Representations and Warranties of the Company.

(a) The Company represents and warrants to, and agrees with, the Agent that as of the date of this Agreement, each Representation Date (as defined in Section 3(o) below), each date on which a Placement Notice (as defined in Section 2(a)(i) below) is given (each, a “**Notice Date**”), each date on which Shares are sold hereunder (each, an “**Applicable Time**”), and each Settlement Date (as defined in Section 2(a)(vii) below) as follows:

(i) *Registration Statement and Prospectus.* The Company has filed or will file, in accordance with the provisions of the Securities Act of 1933, as amended, and the rules and regulations thereunder (collectively, the “**Securities Act**”), with the Securities and Exchange Commission (the “**Commission**”) a registration statement on Form S-3, including a base prospectus, relating to certain securities, including the Common Stock, to be issued from time to time by the Company, and which incorporates by reference documents that the Company has filed or will file in accordance with the provisions of the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder (collectively, the “**Exchange Act**”). The Company shall prepare a prospectus supplement to the base prospectus and include it as part of such registration statement specifically relating to the Shares (the “**Prospectus Supplement**”). The Company shall furnish to the

Agent, for use by Agent, copies of the prospectus included as part of such registration statement, as supplemented by the Prospectus Supplement, relating to the Shares. Except where the context otherwise requires, such registration statement, as amended when it becomes effective, including all documents filed as part thereof or incorporated by reference therein, and including any information contained in a Prospectus (as defined below) subsequently filed with the Commission pursuant to Rule 424(b) under the Securities Act or deemed to be a part of such registration statement pursuant to Rule 430B or 462(b) of the Securities Act, is herein called the “**Registration Statement**.” The base prospectus, including all documents incorporated therein by reference, included in the Registration Statement, as it may be supplemented by the Prospectus Supplement, in the form in which such prospectus and/or Prospectus Supplement have most recently been filed by the Company with the Commission pursuant to Rule 424(b) under the Securities Act, together with any “**issuer free writing prospectus**,” as defined in Rule 433 of the Securities Act (“**Rule 433**”), relating to the Shares, if any, that (i) is required to be filed with the Commission by the Company or (ii) is exempt from filing pursuant to Rule 433(d)(5)(i), in each case in the form filed or required to be filed with the Commission or, if not required to be filed, in the form retained in the Company’s records pursuant to Rule 433(g), is herein called the “**Prospectus**.” Any reference herein to the Registration Statement, the Prospectus or any amendment or supplement thereto shall be deemed to refer to and include the documents incorporated by reference therein, and any reference herein to the terms “amend,” “amendment” or “supplement” with respect to the Registration Statement or the Prospectus shall be deemed to refer to and include the filing after the execution hereof of any document with the Commission deemed to be incorporated by reference therein. For purposes of this Agreement, all references to the Registration Statement, the Prospectus or to any amendment or supplement thereto shall be deemed to include any copy filed with the Commission pursuant to the Electronic Data Gathering Analysis and Retrieval System (“**EDGAR**”). The Company’s obligations under this Agreement to furnish, provide, deliver or make available (and all other references of like import) copies of any filing, report or statement shall be deemed satisfied if the same is filed with the Commission through EDGAR or any successor system.

(ii) *Continuing Effectiveness of Registration Statement.* Prior to the delivery of the first Placement Notice, the Registration Statement has been declared effective by the Commission under the Securities Act. The Company has complied, to the Commission’s satisfaction, with all requests of the Commission for additional or supplemental information. No stop order suspending the effectiveness of the Registration Statement is in effect and no proceedings for such purpose have been instituted or are pending or, to the knowledge of the Company, contemplated or threatened by the Commission. The Company meets the requirements for use of Form S-3 under the Securities Act. The sale of the Shares hereunder meets the requirements or General Instruction I.B.1./I.B.6 of Form S-3, as applicable.

(iii) *No Material Misstatements or Omissions.* The Prospectus when filed complied or will comply, and as amended or supplemented, if applicable, will comply in all material respects with the Securities Act. Each of the Registration Statement, the Prospectus and any post-effective amendments or supplements thereto, at the time it became or will become effective or its date, as applicable, and as of each Settlement Date

(as defined in Section 2(a)(vii) below), complied or will comply in all material respects with the Securities Act, and as of each effective date and each Settlement Date, did not and will not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. The Prospectus, as amended or supplemented, as of its date, did not and, as of each of the Settlement Date, will not contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The representations and warranties set forth in the two immediately preceding sentences do not apply to statements in or omissions from the Registration Statement, or any post-effective amendment thereto, or the Prospectus, or any amendments or supplements thereto, made in reliance upon and in conformity with information relating to the Agent furnished to the Company in writing by the Agent expressly for use therein. There are no contracts or other documents required to be described in the Prospectus or to be filed as exhibits to the Registration Statement which have not been described or filed as required.

(iv) *Eligible Issuer.* The Company is not an “ineligible issuer” (as defined in Rule 405 under the Securities Act) as of the eligibility determination date for purposes of Rules 164 and 433 under the Securities Act with respect to the offering of the Shares contemplated by the Registration Statement; the parties hereto agree and understand that the content of any and all “road shows” (as defined in Rule 433 under the Securities Act) related to the offering of the Shares contemplated hereby is solely the property of the Company.

(v) *Financial Statements.* The historical financial statements (including the related notes and supporting schedules) to be included or incorporated by reference, in the Registration Statement, and the Prospectus comply as to form in all material respects with the requirements of Regulation S-X under the Securities Act (“**Regulation S-X**”) and present fairly the financial condition, results of operations and cash flows of the entities purported to be shown thereby at the dates and for the periods indicated and have been prepared in conformity with generally accepted accounting principles in the United States applied on a consistent basis throughout the periods involved. All disclosures contained in the Registration Statement and Prospectus regarding “non-GAAP financial measures” (as such term is defined by the rules and regulations of the Commission) comply with Regulation G of the Exchange Act and Item 10 of Regulation S-K of the Act, to the extent applicable. There are no financial statements (historical or pro forma) that are required to be included in the Registration Statement or the Prospectus that are not so included as required. The interactive data in eXtensible Business Reporting Language (“**XBRL**”) included or incorporated by reference in the Registration Statement and the Prospectus fairly present the information called for in all material respects and have been prepared in accordance with the Commission’s rules and guidelines applicable thereto.

(vi) *No Off-Balance Sheet Transactions.* There are no transactions, arrangements and other relationships between and/or among the Company, and/or, to the knowledge of the Company, any of its affiliates and any unconsolidated entity, including, but not limited to, any structural finance, special purpose or limited purpose entity (each, an “**Off-Balance Sheet Transaction**”) that could reasonably be

expected to affect materially the Company's liquidity or the availability of or requirements for its capital resources, including those Off Balance Sheet Transactions described in the Commission's Statement about Management's Discussion and Analysis of Financial Conditions and Results of Operations (Release Nos. 33-8056; 34-45321; FR-61), and are required to be described in the Prospectus, which have not been described as required.

(vii) *Auditor Independence.* Ernst & Young LLP, who has certified certain financial statements of the Company and its consolidated subsidiaries (together with the Company's subsidiaries listed on Schedule 4 hereto, the "**Subsidiaries**"), whose report appears in the Registration Statement and the Prospectus, are independent public accountants as required by the Securities Act and the Public Accounting Oversight Board.

(viii) *No Material Adverse Effect.* The Company and each of its Subsidiaries, have been duly organized, validly existing and in good standing under the laws of their respective jurisdictions of organization. The Company and each of its Subsidiaries are, and will be, duly licensed or qualified as a foreign corporation for transaction of business and in good standing under the laws of each other jurisdiction in which their respective ownership or lease of property or the conduct of their respective businesses requires such license or qualification, and have all corporate power and authority necessary to own or hold their respective properties and conduct their respective businesses, except where the failure to be so qualified or in good standing or have such power or authority would not, individually or in the aggregate, have a Material Adverse Effect. The Company has all corporate power and authority necessary to conduct its business as described in the Registration Statement and the Prospectus. "**Material Adverse Effect**" shall mean any material adverse change or effect, or any development involving a prospective material adverse change or effect, on or affecting (i) the business, earnings, assets, liabilities, prospects, condition (financial or otherwise), operations, general affairs, management, financial position, stockholders' equity or results of operations of the Company and the Subsidiaries taken as a whole, or (ii) the ability of the Company to perform its obligations under this Agreement, including the issuance and sale of the Shares, or to consummate the transactions contemplated in the Prospectus. The Company does not own or control, directly or indirectly, any corporation, association or other entity other than the subsidiaries listed in Exhibit 21.1 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2022 except for subsidiaries that in the aggregate would not constitute a "significant subsidiary" (as defined in Rule 405 under the Securities Act). With the exception of the Subsidiaries, none of the Company's subsidiaries is a "**significant subsidiary**" (as defined in Rule 405 under the Securities Act).

(ix) *Capitalization.* The Company has an authorized capitalization as set forth in each of the Registration Statement and the Prospectus, and all of the issued shares of the Company have been duly authorized and validly issued, are fully paid and non-assessable, conform in all material respects to the description thereof contained in the Registration Statement and the Prospectus and were not issued in violation of any preemptive right, resale right, right of first refusal or similar right. All of the Company's options, warrants and other rights to purchase or exchange any securities for shares of the Company's capital stock have been duly authorized and validly issued, and

conform in all material respects to the description thereof contained in the Registration Statement and the Prospectus. All of the issued shares of capital stock or other ownership interest of each subsidiary of the Company have been duly authorized and validly issued, are fully paid and non-assessable in accordance with applicable law in the jurisdiction in which such subsidiary is organized and (except, in the case of any foreign subsidiary, for directors' qualifying shares, if applicable) are owned directly or indirectly by the Company, free and clear of all liens, encumbrances, equities or claims, except for such liens, encumbrances, equities or claims as would not, individually or in the aggregate, result in a Material Adverse Effect.

(x) *Due Authorization, Valid Issuance and Non-Assessability of Shares.* The Shares to be issued and sold by the Company to the Agent hereunder have been duly authorized and, upon payment and delivery in accordance with this Agreement, will be validly issued, fully paid and non-assessable, will conform in all material respects to the description thereof contained in the Registration Statement and the Prospectus, will be issued in compliance with federal and state securities laws and will be free of statutory and contractual preemptive rights, rights of first refusal and similar rights that have not been validly waived or satisfied.

(xi) *Authority to Enter into this Agreement.* The Company has all requisite corporate power and authority to execute, deliver and perform its obligations under this Agreement. This Agreement has been duly and validly authorized, executed and delivered by the Company.

(xii) *Non-Contravention.* The issue and sale of the Shares, the execution, delivery and performance of this Agreement by the Company, the consummation of the transactions contemplated hereby and the application of the proceeds from the sale of the Shares as described under "Use of Proceeds" in the Registration Statement and the Prospectus will not (i) conflict with or result in a breach or violation of any of the terms or provisions of, impose any lien, charge or encumbrance upon any property or assets of the Company and its subsidiaries, or constitute a default under, any indenture, mortgage, deed of trust, loan agreement, license, lease or other agreement or instrument to which the Company or any of its subsidiaries is a party or by which the Company or any of its subsidiaries is bound or to which any of the property or assets of the Company or any of its subsidiaries is subject; (ii) result in any violation of the provisions of the articles of association, charter or by-laws (or similar organizational documents) of the Company or any of its subsidiaries; or (iii) result in any violation of any statute or any judgment, order, decree, rule or regulation of any court or governmental agency or body having jurisdiction over the Company or any of its subsidiaries or any of their properties or assets, except, with respect to clauses (i) and (iii), for such conflicts, breaches, violations, liens, charges, encumbrances or defaults that would not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect.

(xiii) *No Consent or Approval Required.* No consent, approval, authorization or order of, or filing, registration or qualification with, any court or governmental agency or body having jurisdiction over the Company or any of its

subsidiaries or any of their properties or assets is required for the issue and sale of the Shares, the execution, delivery and performance of this Agreement by the Company, the consummation of the transactions contemplated hereby, the application of the proceeds from the sale of the Shares as described under “Use of Proceeds” in the Registration Statement and the Prospectus, except for (i) the registration of the Shares under the Securities Act; (ii) such consents, approvals, authorizations, orders, filings, registrations or qualifications as may be required under the Exchange Act, and applicable state or foreign securities laws and/or the bylaws and rules of the Financial Industry Regulatory Authority (the “**FINRA**”) in connection with the sale of the Shares by the Agent; and (iii) the inclusion of the Shares on The Nasdaq Global Select Market (the “**Exchange**”).

(xiv) *Internal Controls*. The Company maintains a system of “internal controls over financial reporting” (as defined in Rule 13a-15(f) of the Exchange Act) sufficient to provide reasonable assurances regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States, including, but not limited to, internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management’s general or specific authorization, (ii) transactions are recorded as necessary to permit preparation of the Company’s financial statements in conformity with generally accepted accounting principles in the United States and to maintain accountability for its assets, (iii) access to the Company’s assets is permitted only in accordance with management’s general or specific authorization, and (iv) the recorded accountability for the Company’s assets is compared with existing assets at reasonable intervals and appropriate action is taken with respect to any differences. Except for the deficiencies the Company believes to be significant deficiencies or material weaknesses in internal control over financial reporting and that are disclosed or incorporated by reference in the public filings of the Company, the Registration Statement or the Prospectus, including deficiencies in the design or operation of internal control over financial reporting disclosed therein (which such significant deficiencies and material weaknesses, for the avoidance of doubt, remain unremediated as of June 30, 2023), as of the date of the most recent balance sheet of the Company and its consolidated subsidiaries audited by Ernst & Young LLP, (i) there have been no “significant deficiencies” or “material weaknesses” (each as defined by the Public Company Accounting Oversight Board) in the Company’s internal controls over financial reporting (other than with respect to significant deficiencies, as disclosed to the Agent) and (ii) there was not any fraud, whether or not material, that involves management or other employees of the Company and its subsidiaries who have a significant role in the Company’s internal controls; and since the end of the latest audited fiscal year, there has been no change in the Company’s internal control over financial reporting (whether or not remediated) that has materially affected, or is reasonably likely to materially affect, the Company’s internal control over financial reporting. The Company’s board of directors has, subject to the exceptions, cure periods and the phase in periods specified in the Exchange rules (“**Exchange Rules**”), validly appointed an audit committee to oversee internal accounting controls whose composition satisfies the applicable requirements of the Exchange Rules and the Company’s board of directors and/or the audit committee has adopted a charter that satisfies the requirements of the Exchange Rules.

(xv) *Disclosure Controls*. The Company maintains an effective system of “disclosure controls and procedures” (as defined in Rule 13a-15(e) of the Exchange Act) that complies with the requirements of the Exchange Act and that has been designed to ensure that information required to be disclosed by the Company in reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Commission’s rules and forms, including controls and procedures designed to ensure that such information is accumulated and communicated to the Company’s management as appropriate to allow timely decisions regarding required disclosure. The Company and its subsidiaries have carried out evaluations of the effectiveness of their disclosure controls and procedures as required by Rule 13a-15 of the Exchange Act.

(xvi) *Critical Accounting Policies*. The section entitled “Critical Accounting Policies” incorporated by reference in the Registration Statement and the Prospectus accurately describes in all material respects (i) the accounting policies that the Company believes are the most important in the portrayal of the Company’s financial condition and results of operations and that require management’s most difficult, subjective or complex judgments (“**Critical Accounting Policies**”); (ii) the judgments and uncertainties affecting the application of Critical Accounting Policies; and (iii) the likelihood that materially different amounts would be reported under different conditions or using different assumptions, and an explanation thereof.

(xvii) *Sarbanes-Oxley Compliance*. Other than with respect to significant deficiencies and material weaknesses disclosed in the public filings of the Company, Registration Statement or Prospectus or incorporated by reference in the Registration Statement and the Prospectus, there is no other failure on the part of the Company or, to the knowledge of the Company, any of the Company’s directors or officers, in their capacities as such, to comply with any provision of the Sarbanes-Oxley Act of 2002 and the rules and regulations promulgated in connection therewith that are applicable to the Company or its directors or officers in their capacities as directors or officers of the Company.

(xviii) *Exceptions*. Except as would not, in the aggregate, result in a Material Adverse Effect, since the date of the latest audited financial statements included in the Registration Statement and the Prospectus, and, except as disclosed in the Registration Statement and the Prospectus, neither the Company nor any of its Subsidiaries has (i) sustained any loss or interference with its business from fire, explosion, flood or other calamity, whether or not covered by insurance, or from any labor dispute or court or governmental action, order or decree, (ii) issued or granted any securities (other than pursuant to employee benefit plans, qualified stock option plans or other equity compensation plans or arrangements existing on the date hereof and disclosed in the Registration Statement and the Prospectus (the “**Specified Equity Plans**”)), (iii) incurred any material liability or obligation, direct or contingent, other than liabilities and obligations that were incurred in the ordinary course of business, (iv) entered into any material transaction not in the ordinary course of business, or (v) declared or paid any dividend on its share capital; and since such date, except as disclosed or incorporated by reference in the Registration Statement and the Prospectus, there has not been any change

in the share capital, long-term debt, net current assets or short-term debt of the Company or any of its subsidiaries or any adverse change, or any development involving a prospective adverse change, in or affecting the condition (financial or otherwise), results of operations, shareholders' equity, properties, management, business or prospects of the Company and its subsidiaries taken as a whole.

(xix) *Valid Title.* The Company and each of its Subsidiaries have good and marketable title in fee simple to all real property and good and marketable title to all personal property owned by them, that are material to the business of the Company, in each case free and clear of all liens, encumbrances and defects, except such liens, encumbrances and defects as do not materially affect the value of such property and do not materially interfere with the use made and proposed to be made of such property by the Company and its subsidiaries. All assets held under lease by the Company and its Subsidiaries, that are material to the business of the Company, are held by them under valid, subsisting and enforceable leases, with such exceptions as do not materially interfere with the use made and proposed to be made of such assets by the Company and its subsidiaries.

(xx) *Intellectual Property.* To the knowledge of the Company, the Company and each of its Subsidiaries owns, possesses, or can acquire on reasonable terms, all Intellectual Property necessary for the conduct of the Company's and its subsidiaries' business as now conducted and as proposed to be conducted, as described in the Registration Statement and the Prospectus. Furthermore (A) to the knowledge of the Company, there is no infringement, misappropriation or violation by third parties of any Intellectual Property owned by the Company; (B) to the knowledge of the Company, there is no pending or threatened, action, suit, proceeding or claim by others challenging the Company's or any of its subsidiaries' rights in or to any Intellectual Property owned by the Company; (C) the Intellectual Property owned by the Company and its subsidiaries, and to the knowledge of the Company, the Intellectual Property licensed to the Company and its subsidiaries, to the extent issued or granted, has not been adjudged invalid or unenforceable, in whole or in part, and to the knowledge of the Company, there is no pending threatened action, suit, proceeding or claim by others challenging the validity or scope of any such Intellectual Property; (D) to the knowledge of the Company, neither the Company nor its subsidiaries infringes, misappropriates or otherwise violates any Intellectual Property or other proprietary right of others, to the knowledge of the Company, there is no pending or threatened action, suit, proceeding or claim by others that the Company or any of its subsidiaries infringes, misappropriates or otherwise violates any Intellectual Property or other proprietary rights of others, neither the Company or any of its subsidiaries has received any written notice of such claim and the Company is unaware of any fact which would form a reasonable basis for any such claim; (E) to the Company's knowledge, no employee of the Company or any of its subsidiaries is in or has ever been in violation of any term of any employment contract, patent disclosure agreement, invention assignment agreement, non-competition agreement, non-solicitation agreement, nondisclosure agreement or any restrictive covenant to or with a former employer where the basis of such violation relates to (a) such employee's employment with the Company or any of its subsidiaries or (b) actions undertaken by the employee while employed with the Company or any of its subsidiaries; (F) there is no prior art or public or commercial

activity of which the Company is aware that may render any patent included in the Intellectual Property invalid or that would preclude the issuance of any patent on any patent application included in the Intellectual Property, which has not been timely disclosed, or is planned to be timely disclosed, to the U.S. Patent and Trademark Office or the relevant foreign patent authority where such disclosure is required, as the case may be; (G) to the Company's knowledge, the issued patents included in the Intellectual Property are valid and enforceable and the Company is unaware of any facts that would preclude the issuance of a valid and enforceable patent on any pending patent application included in the Intellectual Property other than that which arises during the ordinary course of patent prosecution; (H) the Company has taken reasonable steps necessary to secure the interests of the Company in the Intellectual Property purported to be owned by the Company from all employees, consultants, agents or contractors that developed (in whole or in part) such Intellectual Property; (I) to the Company's knowledge no government funding, facilities or resources of a university, college, other educational institution or research center was used in the development of any Intellectual Property that is owned or purported to be owned by the Company that would confer upon any governmental agency or body, university, college, other educational institution or research center any claim or right in or to any such Intellectual Property; and (J) to the Company's knowledge, none of the technology employed by the Company has been obtained or is being used by the Company in violation of the rights of any entity, which, in the case of each of the clauses (A) through (J) above, as would, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect on the Company and its subsidiaries. **"Intellectual Property"** shall mean all patents, patent applications, trade and service marks, trade and service mark registrations, trade names, copyrights, licenses, inventions, trade secrets, domain names, technology, know-how and other intellectual property in the United States and foreign jurisdictions. As used in this paragraph, **"knowledge"** means actual knowledge of Timothy Rodenberger and Edward Durkin.

(xxi) *Absence of Settlement Agreements or Undertakings.* Except as disclosed in the Registration Statement and the Prospectus, the Company is not a party to any corporate integrity agreements, monitoring agreements, consent decrees, settlement orders, or similar agreements with or imposed by any governmental authority.

(xxii) *Absence of Legal or Governmental Proceedings.* Except as disclosed in the Registration Statement and the Prospectus, there are no legal or governmental proceedings pending to which the Company or any of its subsidiaries is a party or of which any property or assets of the Company or any of its subsidiaries is the subject that, in each case, if determined adversely to the Company, would, in the aggregate, result in a Material Adverse Effect; and to the Company's knowledge, no such proceedings are threatened or contemplated by governmental authorities.

(xxiii) *Material Contracts.* There are no contracts or other documents required to be described in the Registration Statement or filed as exhibits to the Registration Statement that are not described and filed as required. The statements made in the Registration Statement and Prospectus, insofar as they purport to constitute summaries of the terms of the contracts and other documents described and filed, constitute accurate summaries of the terms of such contracts and documents in all material respects. Except as disclosed in the Registration Statement and the Prospectus, neither the Company

nor any of its Subsidiaries has knowledge that any other party to any such contract or other document has any intention not to render full performance as contemplated by the terms thereof.

(xxiv) *Insurance.* The Company and each of its subsidiaries have insurance covering their respective properties, operations, personnel and businesses, which insurance is in amounts and insures against such losses and risks as are commercially reasonable and ordinary and customary for comparable companies in the same or similar businesses they are engaged. Neither the Company nor any of its subsidiaries has received notice from any insurer or agent of such insurer that capital improvements or other expenditures are required or necessary to be made in order to continue such insurance. There are no material claims by the Company or any of its subsidiaries under any such policy or instrument as to which any insurance company is denying liability or defending under a reservation of rights clause; and neither the Company nor any such subsidiary has any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business at a cost that would not reasonably be expected to result in a Material Adverse Effect.

(xxv) *Related Party Disclosure.* No relationship, direct or indirect, exists between or among the Company, on the one hand, and the directors, officers, shareholders, customers or suppliers of the Company, on the other hand, that is required to be described in the Registration Statement or the Prospectus which is not so described.

(xxvi) *No Labor Dispute.* No labor disturbance by or dispute with the employees of the Company or any of its subsidiaries exists or, to the knowledge of the Company, is imminent that would reasonably be expected to result in a Material Adverse Effect.

(xxvii) *No Violation or Default.* Except as disclosed in the Registration Statement and the Prospectus, neither the Company nor any of its Subsidiaries is in violation of its articles of association, charter or by-laws (or similar organizational documents). Except as disclosed in the Registration Statement and the Prospectus, neither the Company nor any of its Subsidiaries (i) is in default, and no event has occurred that, with notice or lapse of time or both, would constitute such a default, in the due performance or observance of any term, covenant, condition or other obligation contained in any indenture, mortgage, deed of trust, loan agreement, license or other agreement or instrument to which it is a party or by which it is bound or to which any of its properties or assets is subject, or (ii) is in violation of any statute or any order, rule or regulation of any court or governmental agency or body having jurisdiction over it or its property or assets or has failed to obtain any license, permit, certificate, franchise or other governmental authorization or permit necessary to the ownership of its property or to the conduct of its business, except to the extent any such conflict, breach, violation or default would not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect.

(xxviii) *Environmental Laws.* Except as disclosed in the Registration Statement and the Prospectus, the Company and each of its subsidiaries (i) are, and at all times prior hereto were, in compliance with all applicable foreign, federal, state and local laws and regulations, relating to pollution, the protection of human health or safety, the environment, or natural resources, or to use, handling, storage, manufacturing, transportation, treatment, discharge, disposal or release of hazardous or toxic substances or wastes, pollutants or contaminants (“**Environmental Laws**”) applicable to such entity, which compliance includes, without limitation, obtaining, maintaining and complying with all permits and authorizations and approvals required by Environmental Laws to conduct their respective businesses, and (ii) have not received notice or otherwise have knowledge of any actual or alleged violation of Environmental Laws, except in each case, where such non-compliance with Environmental Laws, failure to receive required permits or other approvals, or liability would not, individually or in the aggregate, be reasonably expected to have a Material Adverse Effect on the Company and its subsidiaries, taken as a whole. Except as described in the Registration Statement and the Prospectus, (x) there are no proceedings that are pending, or to the Company’s knowledge, threatened, against the Company or any of its subsidiaries under Environmental Laws in which a governmental authority is also a party, other than such proceedings regarding which it is reasonably believed no monetary sanctions of \$100,000 or more will be imposed and (y) the Company and its subsidiaries are not aware of any issues regarding compliance with Environmental Laws concerning hazardous or toxic substances or wastes, pollutants or contaminants that could result in a Material Adverse Effect on the Company and its subsidiaries, taken as a whole.

(xxix) *Taxes.* The Company and each of its subsidiaries have filed all federal, state, local and foreign tax returns required to be filed through the date hereof, subject to permitted extensions (except in any case in which the failure so to file would not reasonably be expected to have a Material Adverse Effect, and have paid all taxes due (except for cases in which the failure to pay would not reasonably be expected to have a Material Adverse Effect), and no tax deficiency has been determined adversely to the Company or any of its subsidiaries, nor does the Company have any knowledge of any tax deficiencies that have been, or would reasonably be expected to be asserted against the Company, that would, in the aggregate, reasonably be expected to result in a Material Adverse Effect.

(xxx) *ERISA Compliance.* (i) Each “employee benefit plan” (within the meaning of Section 3(3) of the Employee Retirement Security Act of 1974, as amended (“**ERISA**”)) for which the Company or any member of its “Controlled Group” (defined as any organization which is a member of a controlled group of corporations within the meaning of Section 414 of the Internal Revenue Code of 1986, as amended (the “**Code**”)) would have any liability (each a “**Plan**”) has been maintained in compliance in all material respects with its terms and with the requirements of all applicable statutes, rules and regulations including ERISA and the Code; (ii) no prohibited transaction, within the meaning of Section 406 of ERISA or Section 4975 of the Code, has occurred with respect to any Plan excluding transactions effected pursuant to a statutory or administrative exemption; (iii) with respect to each Plan subject to Title IV of ERISA (A) no “reportable event” (within the meaning of Section 4043(c) of ERISA) has occurred or is reasonably

expected to occur that would result in a material loss to the Company, (B) no “accumulated funding deficiency” (within the meaning of Section 302 of ERISA or Section 412 of the Code), whether or not waived, has occurred or is reasonably expected to occur, (C) the fair market value of the assets under each Plan that is required to be funded exceeds the present value of all benefits accrued under such Plan (determined based on those assumptions used to fund such Plan), and (D) neither the Company or any member of its Controlled Group has incurred, or reasonably expects to incur, any liability under Title IV of ERISA (other than contributions to the Plan or premiums to the Pension Benefit Guaranty Corporation in the ordinary course and without default) in respect of a Plan (including a “multiemployer plan”, within the meaning of Section 4001(c)(3) of ERISA); and (iv) each Plan that is intended to be qualified under Section 401(a) of the Code is so qualified and nothing has occurred, to the Company’s knowledge, whether by action or by failure to act, which would cause the loss of such qualification.

(xxxi) *Accuracy of Statistical and Market Data.* The statistical and market-related data included in the Registration Statement and the Prospectus and the consolidated financial statements of the Company and its subsidiaries included or incorporated by reference in the Registration Statement and the Prospectus are based on or derived from sources that the Company believes to be reliable in all material respects.

(xxxii) *Not an Investment Company.* The Company is not, and as of the applicable Settlement Date and, after giving effect to the offer and sale of the Shares and the application of the proceeds therefrom as described under “Use of Proceeds” in the Registration Statement and the Prospectus, will not be, (i) an “investment company” or a company “controlled” by an “investment company” within the meaning of the Investment Company Act of 1940, as amended (the “**Investment Company Act**”), and the rules and regulations of the Commission thereunder, or (ii) a “business development company” (as defined in Section 2(a)(48) of the Investment Company Act).

(xxxiii) *Registration Rights.* Except as disclosed in the Registration Statement and the Prospectus, there are no contracts, agreements or understandings between the Company and any person granting such person the right to require the Company to file a registration statement under the Securities Act with respect to any securities of the Company owned or to be owned by such person. There are no contracts, agreements or understandings to require the Company to include any such securities in the securities proposed to be offered pursuant to this Agreement, except as have been waived.

(xxxiv) *No Other Brokers.* Neither the Company nor any of its subsidiaries is a party to any contract, agreement or understanding with any person (other than this Agreement) that would give rise to a valid claim against any of them or the Agent for a brokerage commission, finder’s fee or like payment in connection with the offering and sale of the Shares.

(xxxv) *No Integration.* The Company has not sold or issued any securities that would be integrated with the offering of the Shares contemplated by this Agreement pursuant to the Securities Act or the interpretations thereof by the Commission.

(xxxvi) *Absence of Stabilization or Manipulation.* The Company and its affiliates have not taken, directly or indirectly, any action designed to or that has constituted or that could reasonably be expected to cause or result in the stabilization or manipulation of the price of any security of the Company in connection with the offering of the Shares.

(xxxvii) *Exchange Act Registration and Listing of the Common Stock.* The shares of Common Stock are registered pursuant to Section 12(b) of the Exchange Act and listed on the Exchange; the Company has taken no action designed to, or reasonably likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act or delisting the Common Stock from the Exchange, nor has the Company received any notification that the Commission or Exchange is contemplating terminating such registration or listing.

(xxxviii) *Offering Material.* The Company has not distributed and prior to any Settlement Date, will not distribute any offering material in connection with any Placement (as defined in Section 2(a)(i) below), other than any Preliminary Prospectus, the Prospectus, and any Permitted Free Writing Prospectus to which the Agent has consented.

(xxxix) *Compliance with Labor Laws.* Neither the Company nor any subsidiary is in violation of or has received notice of any violation with respect to any federal or state law relating to discrimination in the hiring, promotion or pay of employees, nor any applicable federal or state wage and hour laws, nor any state law precluding the denial of credit due to the neighborhood in which a property is situated, the violation of any of which could result in a Material Adverse Effect.

(xl) *No Unlawful Payments.* Neither the Company nor any of its subsidiaries, nor, to the knowledge of the Company, any director, officer, agent, employee or other person associated with or acting on behalf of the Company or any of its subsidiaries, has (i) used any corporate funds for any unlawful contribution, gift, entertainment or other unlawful expense relating to political activity; (ii) made any direct or indirect unlawful payment to any foreign or domestic government official or employee from corporate funds; (iii) violated or is in violation of any provision of the U.S. Foreign Corrupt Practices Act of 1977, the Organization for Economic Co-operation and Development Convention on Bribery of Foreign Public Officials in International Business Transactions, and the rules and regulations thereunder and any other similar foreign or domestic law or regulation; or (iv) made any bribe, rebate, payoff, influence payment, kickback or other unlawful payment. The Company has instituted and maintains policies and procedures designed to ensure continued compliance with the laws and regulations referenced in clause (iii) of this paragraph.

(xli) *Anti-Money Laundering Compliance.* The operations of the Company and its subsidiaries are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all applicable jurisdictions, the rules and regulations thereunder and any applicable related or

similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the “**Money Laundering Laws**”) and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any of its subsidiaries with respect to the Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

(xlii) *OFAC*.

(A) Neither the Company nor any of its subsidiaries, nor any of their directors, officers or employees, nor, to the Company’s knowledge, any agent, affiliate or representative of the Company or its subsidiaries, is an individual or entity that is, or is owned or controlled by an individual or entity that is:

(1) the subject of any sanctions administered or enforced by the U.S. Department of Treasury’s Office of Foreign Assets Control, the United Nations Security Council, the European Union, His Majesty’s Treasury, or other relevant sanctions authority (collectively, “**Sanctions**”), nor

(2) located, organized or resident in a country or territory that is the subject of Sanctions (including, without limitation, Crimea, Cuba, Iran, North Korea and Syria).

(B) Neither the Company nor any of its subsidiaries will, directly or indirectly, use the proceeds of the offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other individual or entity:

(1) to fund or facilitate any activities or business of or with any individual or entity or in any country or territory that, at the time of such funding or facilitation, is the subject of Sanctions; or

(2) in any other manner that will result in a violation of Sanctions by any individual or entity (including any individual or entity participating in the offering, whether as underwriter, advisor, investor or otherwise).

(C) For the past five years, neither the Company nor any of its subsidiaries has knowingly engaged in, and is not now knowingly engaged in, any dealings or transactions with any individual or entity, or in any country or territory, that at the time of the dealing or transaction is or was the subject of Sanctions.

(xliii) *Not a Passive Foreign Investment Company*. Subject to the qualifications and assumptions set forth in the Registration Statement, the Company is not, and upon the sale of the Shares contemplated by this Agreement does not expect to become, a “passive foreign investment company” (as defined in Section 1297 of the Code, and the regulations promulgated thereunder).

(xliv) *No Taxes or Fees Due Upon Issuance.* Other than as disclosed in the Registration Statement and Prospectus, no stamp, issue, registration, documentary, transfer or other similar taxes and duties, including interest and penalties, are payable on or in connection with the issuance and sale of the Shares by the Company or the execution and delivery of this Agreement.

(xlv) *No Immunity.* Neither the Company nor any of its subsidiaries, nor any of their respective properties or assets, has any immunity from the jurisdiction of any court or from any legal process (whether through service or notice, attachment to prior judgment, attachment in aid of execution or otherwise) under the laws of any jurisdiction in which it is organized, headquartered or doing business.

(xlvi) *No Legal, Accounting or Tax Advice.* The Company has not relied upon the Agent or legal counsel for the Agent for any legal, tax or accounting advice in connection with the offering and sale of the Shares.

(xlvii) *Certificate as Representation and Warranty.* Any certificate signed by any officer of the Company and delivered to the Agent or the Agent's counsel in connection with the offering of the Shares shall be deemed a representation and warranty by the Company to the Agent as to the matters covered thereby.

(xlviii) *Cybersecurity.* The Company and its subsidiaries' information technology assets and equipment, computers, systems, networks, hardware, software, websites, applications, and databases (collectively, "**IT Systems**") are adequate for, and operate and perform in all material respects as required in connection with the operation of the business of the Company and its subsidiaries as currently conducted, free and clear of all material bugs, errors, defects, Trojan horses, time bombs, malware and other corruptants. The Company and its subsidiaries have implemented and maintained commercially reasonable physical, technical and administrative controls, policies, procedures, and safeguards to maintain and protect their material confidential information and the integrity, continuous operation, redundancy and security of all IT Systems and data, including "Personal Data," used in connection with their businesses. "**Personal Data**" means (i) a natural person's name, street address, telephone number, e-mail address, photograph, social security number or tax identification number, driver's license number, passport number, credit card number, bank information, or customer or account number; (ii) any information which would qualify as "personally identifying information" under the Federal Trade Commission Act, as amended; (iii) "personal data" as defined by GDPR (as defined below); (iv) any information which would qualify as "protected health information" under the Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act (collectively, "**HIPAA**"); and (v) any other piece of information that allows the identification of such natural person, or his or her family, or permits the collection or analysis of any data related to an identified person's health or sexual orientation. To the knowledge of the Company, there have been no breaches, violations, outages or unauthorized uses of or accesses to same, except for those that have been remedied without material cost or liability or the duty to notify any other person, nor any incidents under internal review or investigations relating to the same and neither the Company nor any of

its subsidiaries have been notified of, nor do they have any knowledge of, any event or condition that would reasonably be expected to result in, any security breach or other compromise to the IT Systems and Personal Data. The Company and its subsidiaries are presently in compliance with all applicable laws or statutes and all judgments, orders, rules and regulations of any court or arbitrator or governmental or regulatory authority, internal policies and contractual obligations relating to the privacy and security of IT Systems and Personal Data and to the protection of such IT Systems and Personal Data from unauthorized use, access, misappropriation or modification, except as would not, individually or in the aggregate, have a Material Adverse Effect.

(xlix) *Compliance with Data Privacy Laws.* The Company and its subsidiaries are, and at all times within the past three years were, in material compliance with all applicable state and federal data privacy and security laws and regulations, including without limitation HIPAA, and the Company and its subsidiaries have taken commercially reasonable actions to prepare to comply with, and have been within the past three years and currently are in compliance with, the European Union General Data Protection Regulation (“**GDPR**”) (EU 2016/679) (collectively, the “**Privacy Laws**”). To ensure compliance with the Privacy Laws, the Company and its subsidiaries have in place, comply with, and take appropriate steps reasonably designed to ensure compliance in all material respects with their policies and procedures relating to data privacy and security and the collection, storage, use, disclosure, handling, and analysis of Personal Data (the “**Policies**”). The Company and its subsidiaries have at all times during the past three years made all material disclosures to users or customers required by applicable laws and regulatory rules or requirements, and none of such disclosures made or contained in any Policy have, to the knowledge of the Company, been inaccurate or in violation of any applicable laws and regulatory rules or requirements in any material respect. The Company further certifies that neither it nor any subsidiary: (i) has received written notice of any actual or potential liability under or relating to, or actual or potential violation of, any of the Privacy Laws, and has no knowledge of any event or condition that would reasonably be expected to result in any such notice; (ii) is currently conducting or paying for, in whole or in part, any investigation, remediation, or other corrective action pursuant to any Privacy Law; or (iii) is a party to any order, decree, or agreement that imposes any obligation or liability under any Privacy Law.

(l) *eXtensible Business Reporting Language.* The interactive data in eXtensible Business Reporting Language included or incorporated by reference in the Registration Statement fairly presents the information called for in all material respects and has been prepared in accordance with the Commission’s rules and guidelines applicable thereto.

2. Purchase, Sale and Delivery of Shares.

(a) *At-the-Market Sales.* On the basis of the representations, warranties and agreements herein contained, but subject to the terms and conditions herein set forth, the Company agrees to issue and sell through the Agent as sales agent, and the Agent agrees to use its commercially reasonable efforts to sell for and on behalf of the Company, the Shares on the following terms and conditions; *provided, however*, that any obligation of the Agent to use such

commercially reasonable efforts shall be subject to the continuing accuracy of the representations and warranties of the Company herein, the performance by the Company of its covenants and obligations hereunder and the continuing satisfaction of the additional conditions specified in Section 4 of this Agreement. The Company acknowledges and agrees that (i) there can be no assurance that the Agent will be successful in selling Shares, and (ii) the Agent will incur no liability or obligation to the Company or any other person or entity if it does not sell Shares for any reason other than a failure by the Agent to use its commercially reasonable efforts consistent with its normal trading and sales practices to sell such Shares as required under this Section 2.

(i) Each time that the Company wishes to issue and sell the Shares hereunder (each, a “**Placement**”), it will notify the Agent by email notice (or other method mutually agreed to in writing by the parties) (a “**Placement Notice**”) containing the parameters in accordance with which it desires the Shares to be sold, which shall at a minimum include the number of shares of Shares to be issued, the time period during which sales are requested to be made, any limitation on the number of Shares that may be sold in any one Trading Day (as defined below) and any minimum price below which sales may not be made, a form of which containing such minimum sales parameters necessary is attached hereto as Schedule 1. The Placement Notice shall originate from any of the individuals from the Company set forth on Schedule 2 (with a copy to each of the other individuals from the Company listed on such schedule), and shall be addressed to each of the individuals from the Agent set forth on Schedule 2, as such Schedule 2 may be amended from time to time. The Placement Notice shall be effective upon receipt by the Agent unless and until (i) in accordance with the notice requirements set forth in Section 2(a)(iii) of this Agreement, the Agent declines to accept the terms contained therein for any reason, in its sole discretion, (ii) the entire amount of the Shares have been sold, (iii) the Company suspends or terminates the Placement Notice in accordance with the notice requirements set forth in Section 2(a)(iii) below, (iv) the Company issues a subsequent Placement Notice with parameters superseding those on the earlier dated Placement Notice, or (v) this Agreement has been terminated under the provisions of Section 7. The amount of any commission or other compensation to be paid by the Company to the Agent in connection with the sale of the Shares shall be calculated in accordance with the terms set forth in Section 2(a)(v) below. It is expressly acknowledged and agreed that neither the Company nor the Agent will have any obligation whatsoever with respect to a Placement or any Shares unless and until the Company delivers a Placement Notice to the Agent and the Agent does not decline such Placement Notice pursuant to the terms set forth above, and then only upon the terms specified therein and herein. In the event of a conflict between the terms of this Agreement and the terms of the Placement Notice, the terms of the Placement Notice will control. For the purposes hereof, “**Trading Day**” means any day on which the Company’s Common Stock is purchased and sold on the principal market on which the Common Stock is listed or quoted.

(ii) The Shares are to be sold by the Agent on a daily basis or otherwise as shall be agreed to by the Company and the Agent on any day that is a trading day for the Exchange (other than a day on which the Exchange is scheduled to close prior to its regular weekday closing time). The gross sales price of the Shares sold under this Section 2(a) shall be the market price for the Company’s Common Stock sold by the Agent under this Section 2(a) at the time of such sale.

(iii) Notwithstanding the foregoing, the Company may instruct the Agent by telephone (confirmed promptly by email) not to sell the Shares if such sales cannot be effected at or above the price designated by the Company in any such instruction. Furthermore, the Company shall not authorize the issuance and sale of, and the Agent shall not be obligated to use its commercially reasonable efforts to sell, any Share at a price lower than the minimum price therefor designated from time to time by the Company's Board of Directors or a duly authorized committee thereof and notified to the Agent in writing. In addition, the Company or the Agent may, upon notice to the other party hereto by telephone (confirmed promptly by email), suspend the offering of the Shares, whereupon the Agent shall so suspend the offering of Shares until further notice is provided to the other party to the contrary; *provided, however*, that such suspension or termination shall not affect or impair the parties' respective obligations with respect to the Shares sold hereunder prior to the giving of such notice. Notwithstanding any other provision of this Agreement, during any period in which the Company is in possession of material non-public information, the Company and the Agent agree that (i) no sale of Shares will take place, (ii) the Company shall not request the sale of any Shares, and (iii) the Agent shall not be obligated to sell or offer to sell any Shares.

(iv) Subject to the terms of the Placement Notice, the Agent may sell the Shares by any method permitted by law deemed to be an "at the market offering" as defined in Rule 415(a)(4) under the Securities Act, including sales made directly on or through the Exchange. Subject to the terms of any Placement Notice, the Agent may also sell Shares in negotiated transactions at market prices prevailing at the time of sale or at prices related to such prevailing market prices and/or any other method permitted by law, subject to the prior written consent of the Company.

(v) The compensation to the Agent for sales of the Shares, as an agent of the Company, shall be 3.0% of the gross sales price of the Shares sold pursuant to this Section 2(a), payable in cash (the "**Sales Commission**"); *provided that* the combined Sales Commission and reimbursement of the Agent for its out-of-pocket expenses pursuant to Section 3(g), including reasonable fees and disbursements of the Agent's counsel, shall not exceed 8.0% of the gross sales price of the Shares. The remaining proceeds, after further deduction for any transaction fees imposed by any governmental or self-regulatory organization in respect of such sales, and reimbursement of expenses that the Agent may be entitled to pursuant to Section 3(g), shall constitute the net proceeds to the Company for such Shares (the "**Net Proceeds**").

(vi) The Agent will provide written confirmation to the Company (including by email correspondence to each of the individuals of the Company set forth on Schedule 2), no later than the opening of the Trading Day immediately following the Trading Day on which it has made sales of Shares hereunder, setting forth the number of Shares sold on such day, the volume-weighted average price of the Shares sold, and the Net Proceeds payable to the Company.

(vii) All Shares sold pursuant to this Section 2(a) will be delivered by the Company to the Agent for the account of the Agent, against payment of the Net

Proceeds therefor, by wire transfer of same-day funds payable to the order of the Company at the offices of Piper Sandler & Co., U.S. Bancorp Center, 800 Nicollet Mall, Minneapolis, Minnesota 55402, or such other location as may be mutually acceptable, at 9:00 a.m. Central Time on the second full business day following the date on which such Shares are sold, or at such other time and date as the Agent and the Company determine pursuant to Rule 15c6-1(a) under the Exchange Act, each such time and date of delivery being herein referred to as a “**Settlement Date**.” If the Agent so elects, delivery of the Shares may be made by credit through full fast transfer to an account or accounts at The Depository Trust Company designated by the Agent. On each Settlement Date, the Agent will deliver the Net Proceeds in same day funds to an account designated by the Company on, or prior to, such Settlement Date. The Company agrees that if the Company, or its transfer agent (if applicable), defaults in its obligation to timely deliver duly authorized Shares on a Settlement Date, the Company agrees that in addition to and in no way limiting the rights and obligations set forth in Section 5 hereto, it will (i) hold the Agent harmless against any loss, claim, damage, or expense (including reasonable and documented legal fees and expenses), as incurred, arising out of or in connection with such default by the Company, (ii) reimburse the Agent for any losses incurred by the Agent attributable, directly or indirectly, to such default and (iii) pay to the Agent any commission or other compensation to which the Agent would otherwise have been entitled absent such default.

(b) *Maximum Amount.* Under no circumstances shall the aggregate number or aggregate value of the Shares sold pursuant to this Agreement exceed: (i) the aggregate number and aggregate dollar amount of shares of Common Stock available for issuance and sale under the then effective Registration Statement (including any limit set forth in General Instruction I.B.6 thereof, if applicable), (ii) the aggregate number of authorized but unissued shares of Common Stock that are available for issuance under the Company’s certificate of incorporation or certificate of designation or (iii) the aggregate number or aggregate dollar amount of shares of Common Stock for which the Company has filed any Prospectus Supplement in connection with the Shares (the lesser of (i), (ii) and (iii), the “**Maximum Amount**”).

(c) *No Association or Partnership.* Nothing herein contained shall constitute the Agent as an unincorporated association or partner with the Company.

(d) *Duration.* Under no circumstances shall any Shares be sold pursuant to this Agreement after the date which is three years after the Registration Statement is first declared effective by the Commission.

(e) *Market Transactions by Agent.* The Company acknowledges and agrees that the Agent has informed the Company that the Agent may, to the extent permitted under the Securities Act, the Exchange Act and this Agreement, purchase and sell shares of Common Stock for its own account while this Agreement is in effect, *provided, that* (i) no sale for its own account shall take place while a Placement Notice is in effect (except to the extent the Agent may engage in sales of Shares purchased or deemed purchased from the Company as a “riskless principal” or in a similar capacity) and (ii) the Company shall not be deemed to have authorized or consented to any such purchases or sales by the Agent. The Company consents to the Agent trading in the Common Stock for the account of any of its clients at the same time as sales of the Shares occur pursuant to this Agreement.

3. Covenants of the Company. The Company covenants and agrees with the Agent as follows:

(a) *Amendments to Registration Statement and Prospectus.* After the date of this Agreement and during any period in which a Prospectus relating to any Shares is required to be delivered by the Agent under the Securities Act (including in circumstances where such requirement may be satisfied pursuant to Rule 172 under the Securities Act), the Company agrees that it will: (i) notify the Agent promptly of the time when the Registration Statement has become effective and when any subsequent amendment to the Registration Statement, other than documents incorporated by reference or amendments not related to the Shares, has been filed with the Commission and/or has become effective or any subsequent supplement to the Prospectus related to the Shares has been filed and of any request by the Commission for any amendment or supplement to the Registration Statement (insofar as it relates to the transactions contemplated hereby) or Prospectus or for additional information; (ii) prepare and file with the Commission, promptly upon the Agent's request, any amendments or supplements to the Registration Statement or Prospectus that, in the Agent's reasonable opinion, may be necessary or advisable in connection with the sale of the Shares by the Agent (*provided, however*, that the failure of the Agent to make such request shall not relieve the Company of any obligation or liability hereunder, or affect the Agent's right to rely on the representations and warranties made by the Company in this Agreement); (iii) not file any amendment or supplement to the Registration Statement or Prospectus, other than documents incorporated by reference, relating to the Shares or a security convertible into the Shares unless a copy thereof has been submitted to the Agent within a reasonable period of time before the filing and the Agent has not reasonably objected thereto (*provided, however*, that (A) the failure of the Agent to make such objection shall not relieve the Company of any obligation or liability hereunder, or affect the Agent's right to rely on the representations and warranties made by the Company in this Agreement), (B) the Company has no obligation to provide the Agent any advance copy of such filing or to provide the Agent an opportunity to object to such filing if the filing does not name the Agent or does not relate to a Placement or other transaction contemplated hereunder, and (C) the only remedy that the Agent shall have with respect to the failure by the Company to provide the Agent with such copy or the filing of such amendment or supplement despite the Agent's objection shall be to cease making sales under this Agreement); (iv) furnish to the Agent at the time of filing thereof a copy of any document that upon filing is deemed to be incorporated by reference into the Registration Statement or Prospectus, except for those documents available via EDGAR or any successor system; and (v) cause each amendment or supplement to the Prospectus, other than documents incorporated by reference, to be filed with the Commission as required pursuant to the applicable paragraph of Rule 424(b) of the Securities Act. Notwithstanding the foregoing, in the alternative the Company may delay the filing of any amendment or supplement, if in the reasonable judgment of the Company, it is in the best interest of the Company, provided that the Company suspends or terminates any pending Placement Notice by written notice to the Agent.

(b) *Stop Order.* The Company will advise the Agent, promptly after it receives notice or obtains knowledge thereof, of the issuance or threatened issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement, of the suspension of the qualification of the Shares for offering or sale in any jurisdiction, or of the initiation or threatening of any proceeding for any such purpose, and it will promptly use its commercially reasonable efforts to prevent the issuance of any stop order or to obtain its withdrawal if such a stop order should be issued.

(c) *Continuing Amendments.* During any period in which a Prospectus relating to the Shares is required to be delivered by the Agent under the Securities Act with respect to any Placement or pending sale of the Shares, (including in circumstances where such requirement may be satisfied pursuant to Rule 172 under the Securities Act), the Company will comply with all requirements imposed upon it by the Securities Act, as from time to time in force, and to file on or before their respective due dates all reports (taking into account any extensions available under the Exchange Act) and any definitive proxy or information statements required to be filed by the Company with the Commission pursuant to Sections 13(a), 13(c), 14, 15(d) or any other provision of or under the Exchange Act. If during such period any event occurs as a result of which the Prospectus as then amended or supplemented would include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances then existing, not misleading, or if during such period it is necessary to amend or supplement the Registration Statement or Prospectus to comply with the Securities Act, the Company will promptly notify the Agent to suspend the offering of Shares during such period and the Company will promptly amend or supplement the Registration Statement or Prospectus (at the expense of the Company) so as to correct such statement or omission or effect such compliance (it being acknowledged that the Company may delay the filing of any amendment or supplement, if, in the reasonable judgment of the Company, it is in the best interest of the Company).

(d) *Qualification of the Shares.* The Company shall take or cause to be taken all necessary action to qualify the Shares for sale under the securities laws of such jurisdictions as the Agent reasonably designates and to continue such qualifications in effect so long as required for the distribution of the Shares, except that the Company shall not be required in connection therewith to qualify as a foreign corporation or to execute a general consent to service of process in any state. The Company shall promptly advise the Agent of the receipt by the Company of any notification with respect to the suspension of the qualification of the Shares for offer or sale in any jurisdiction or the initiation or threatening of any proceeding for such purpose.

(e) *Copies of Registration Statement and Prospectus.* The Company will furnish to the Agent and counsel for the Agent copies of the Registration Statement, the Prospectus and all amendments and supplements to such documents, in each case as soon as available and in such quantities as the Agent may from time to time reasonably request.

(f) *Section 11(a).* The Company will make generally available to its security holders as soon as practicable an earnings statement (which need not be audited) covering a 12-month period that shall satisfy the provisions of Section 11(a) of the Securities Act and Rule 158 promulgated thereunder; *provided* that the Company will be deemed to have furnished such statement to its security holders to the extent it is filed on EDGAR or any successor system.

(g) *Expenses.* The Company, whether or not the transactions contemplated hereunder are consummated or this Agreement is terminated, will pay or cause to be paid (i) all expenses (including stock or transfer taxes and stamp or similar duties allocated to the respective transferees) incurred in connection with the registration, issue, sale and delivery of the Shares, (ii) all expenses and fees (including, without limitation, fees and expenses of the Company's accountants and counsel) in connection with the preparation, printing, filing, delivery, and shipping of the Registration Statement (including the financial statements therein and all amendments, schedules, and exhibits thereto), the Shares, the Prospectus and any amendment thereof or supplement thereto, and the producing, word-processing, printing, delivery, and shipping of this Agreement and other underwriting documents or closing documents, including blue sky memoranda (covering the states and other applicable jurisdictions) and including the cost to furnish copies of each thereof to the Agent, (iii) all filing fees, (iv) the reasonable and documented fees and disbursements of the Agent's counsel incurred in connection with the qualification of the Shares for offering and sale by the Agent or by dealers under the securities or blue sky laws of the states and other jurisdictions which the Agent shall designate, (v) the fees and expenses of any transfer agent or registrar, (vi) the filing fees and reasonable and documented fees and disbursements of the Agent's counsel incident to any required review and approval by FINRA of the terms of the sale of the Shares, (vii) listing fees, if any, (viii) the cost and expenses of the Company relating to investor presentations or any "roadshow" undertaken in connection with marketing of the Shares, and (ix) all other reasonable and documented costs and expenses incident to the performance of its obligations hereunder that are not otherwise specifically provided for herein. In addition to (iv) and (vi) above, the Company shall reimburse the Agent for its out-of-pocket expenses, including reasonable and documented fees and disbursements of the Agent's counsel incurred by Agent in connection with this Agreement, the Registration Statement, the Prospectus, the Prospectus Supplement in an amount which, taken together with the fees and disbursements of Agent's counsel under clauses (iv) and (vi) of this paragraph, shall not exceed: A) \$125,000 in connection with the filing of the initial Prospectus Supplement pursuant to this Agreement, and (B) \$15,000 for each quarter subsequent to the quarter in which the initial Prospectus Supplement was filed.

(h) *Use of Proceeds.* The Company will apply the net proceeds from the sale of the Shares in the manner described in the Prospectus.

(i) *Restrictions on Future Sales.* During the term of this Agreement, for each period beginning on the third Trading Day immediately prior to the date on which any Placement Notice is delivered to the Agent hereunder and ending on the third Trading Day immediately following the earlier of (x) the Settlement Date with respect to all the Shares sold pursuant to such Placement Notice and (y) the termination or suspension by the Company of such Placement Notice, the Company will not, offer for sale, sell, contract to sell, pledge, grant any option for the sale of, enter into any transaction which is designed to, or might reasonably be expected to, result in the disposition of Common Stock (whether by actual disposition or effective economic disposition due to cash settlement or otherwise) by the Company or any affiliate, or otherwise issue or dispose of, directly or indirectly (or publicly disclose the intention to make any such offer, sale, pledge, grant, issuance or other disposition), any Common Stock or any securities convertible into or exchangeable for, or any options or rights to purchase or acquire, Common Stock, or permit the registration under the Securities Act of any Common Stock, such securities,

options or rights, except for: (i) the registration of the Shares and the sales through the Agent pursuant to this Agreement, (ii) sales of shares through any dividend reinvestment and stock purchase plan of the Company, (iii) sales of shares of restricted stock, restricted stock units and options granted pursuant to employee benefit plans existing as of the date hereof, and the Common Stock issuable upon the exercise of such outstanding options or vesting of such restricted stock units, (iv) the issuance of shares pursuant to the exercise of warrants (v) the filing of registration statements on Form S-8, (vi) sales of shares of Common Stock or securities convertible into or exchangeable for shares of Common Stock as consideration for mergers, acquisitions, other business combinations, joint ventures or strategic alliances, marketing or distribution arrangements, collaboration agreements, co-promotion agreements or intellectual property license agreements occurring after the date of this Agreement which are not for the primary purpose of capital raising, provided, that the aggregate number of shares of Common Stock issued pursuant to this clause (vi) shall not exceed 9.99% of the total number of outstanding shares of Common Stock as of the date of any such sales or issuances, (vii) modification of any outstanding options, warrants or any rights to purchase or acquire shares of Common Stock and (viii) the filing of one or more registration statements on Form S-3 or Form S-1, as applicable, pursuant to the Company's obligations pursuant to that certain Registration Rights Agreement, dated as of June 15, 2023, by and between the Company and the lenders thereto (the "**2023 Registration Rights Agreement**") with respect to the registration of shares of Common Stock issued or issuable upon the exercise of any warrants (including any rights thereto) held by the Lenders (as defined in the 2023 Registration Rights Agreement).

(j) *No Stabilization or Manipulation.* The Company has not taken and will not take, directly or indirectly, any action designed to, or which might reasonably be expected to cause or result in, or which constitutes: (i) the stabilization or manipulation of the price of the Common Stock or any other security of the Company to facilitate the sale or resale of the Shares, or (ii) a violation of Regulation M. The Company shall notify the Agent of any violation of Regulation M by the Company or any of its subsidiaries or any of their respective officers or directors promptly after the Company has received notice or obtained knowledge of any such violation. The Company shall not invest in futures contracts, options on futures contracts or options on commodities, unless the Company is exempt from the registration requirements of the Commodity Exchange Act, as amended (the "**Commodity Act**"), or otherwise complies with the Commodity Act. The Company will not engage in any activities bearing on the Commodity Act, unless such activities are exempt from the Commodity Act or otherwise comply with the Commodity Act.

(k) *No Other Broker.* The Company will not incur any liability for any finder's or broker's fee or agent's commission in connection with the execution and delivery of this Agreement, or the consummation of the transactions contemplated hereby.

(l) *Timely Securities Act and Exchange Act Reports.* During any prospectus delivery period, the Company will use its commercially reasonable efforts to file on a timely basis with the Commission such periodic and special reports as required by the Securities Act and the Exchange Act.

(m) *Internal Controls.* The Company and its subsidiaries will maintain such controls and other procedures, including without limitation, those required by Sections 302 and 906 of the Sarbanes-Oxley Act and the applicable regulations thereunder, that are designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Commission's rules and forms, including without limitation, controls and procedures designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Company's management, including its principal executive officer and its principal financial officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure, to ensure that material information relating to Company, including its subsidiaries, is made known to them by others within those entities.

(n) *Permitted Free Writing Prospectus.* The Company represents and agrees that, unless it obtains the prior written consent of the Agent, and the Agent severally represents and agrees that, unless it obtains the prior written consent of the Company, it has not made and will not make any offer relating to the Shares that would constitute an "issuer free writing prospectus," as defined in Rule 433 under the Securities Act, or that would otherwise constitute a "free writing prospectus," as defined in Rule 405 under the Securities Act, required to be filed with the Commission. Any such free writing prospectus consented to by the Company and the Agent is hereinafter referred to as a "**Permitted Free Writing Prospectus**." The Company represents that it has treated or agrees that it will treat each Permitted Free Writing Prospectus as an "issuer free writing prospectus," as defined in Rule 433, and has complied and will comply with the requirements of Rule 433 applicable to any Permitted Free Writing Prospectus, including timely Commission filing where required, legending and record keeping.

(o) *Representation Date and Opinions of Counsel.* On or prior to the date of the first Placement Notice, and thereafter during the term of this Agreement, each time the Company (A) files an amendment to the Registration Statement or Prospectus (other than relating solely to the offering of securities other than the Shares), (B) files an annual report on Form 10-K under the Exchange Act or files its quarterly reports on Form 10-Q under the Exchange Act (including any Form 10-K/A or Form 10-Q/A containing amended financial information or a material amendment to the previously filed annual report on Form 10-K or quarterly report on Form 10-Q); and (C) files a report on Form 8-K containing amended financial statements (other than an earnings release or other information "furnished" pursuant to Item 2.02 or 7.01 of Form 8-K) under the Exchange Act, (each of the dates in (A), (B) and (C) are referred to herein as a "**Representation Date**"), the Company shall cause:

(i) Goodwin Procter LLP, counsel for the Company, to furnish to the Agent the opinion and negative assurance letter of such counsel, dated as of such date and addressed to the Agent, in form and substance reasonably satisfactory to the Agent; provided however, in the case of any subsequent Representation Date with respect to which the Company is obligated to deliver an opinion pursuant to this Section 3(o) for which no waiver is applicable, such counsel shall furnish to the Agent only a negative assurance letter, dated as of such date and addressed to the Agent, in the form reasonably satisfactory to the Agent.

(ii) Wolf, Greenfield & Sacks, P.C., intellectual property counsel for the Company, to furnish to the Agent the opinion and negative assurance letter of such counsel, dated as of such date and addressed to the Agent, in form and substance reasonably satisfactory to the Agent; provided however, only a negative assurance letter of such counsel shall be required for each subsequent Representation Date.

Notwithstanding the foregoing, (i) the Company shall be required to furnish no more than one opinion pursuant to Section 3(o)(i) above per annual report on Form 10-K and quarterly report on Form 10-Q filed by the Company, provided, however, the foregoing limitation shall not apply in the event of a filing of any Form 10-K/A or Form 10-Q/A containing amended financial information or a material amendment to the previously filed annual report on Form 10-K or quarterly report on Form 10-Q and (ii) the requirement to provide a counsel opinions under this Section 3(o) shall be automatically waived for any Representation Date occurring at a time at which no Placement Notice is pending, which waiver shall continue until the date the Company delivers a Placement Notice to the Agent. Notwithstanding the foregoing, if the Company subsequently decides to sell Shares following a Representation Date when the Company relied on such waiver and did not provide the Agent with opinions under this Section 3(o), then before the Agent sells any Shares pursuant to Section 2(a), the Company shall cause the opinions (including the opinion pursuant to Section 3(o) if not delivered on the date of the prior Form 10-K), comfort letter, certificates and documents that would be delivered on a Representation Date to be delivered.

(p) *Representation Date and Comfort Letter.* Prior to the date of the first Placement Notice and thereafter during the term of this Agreement, on each Representation Date to which a waiver does not apply, the Company shall cause Ernst & Young LLP, or other independent accountants satisfactory to the Agent (the “**Accountants**”), to deliver to the Agent a letter, dated as of such date and addressed to the Agent, confirming that they are independent registered public accountants within the meaning of the Securities Act and are in compliance with the applicable requirements relating to the qualifications of accountants under Rule 2-01 of Regulation S-X of the Commission, and stating the conclusions and findings of said firm with respect to the financial information and other matters covered by its letter in form and substance satisfactory to the Agent of the same tenor as the first such letter received hereunder; *provided* that the Company shall be required to furnish no more than one comfort letter hereunder per annual report on Form 10-K and per quarterly report on Form 10-Q filed by the Company, provided, however, the foregoing limitation shall not apply in the event of a filing of any Form 10-K/A or Form 10-Q/A containing amended financial information or a material amendment to the previously filed annual report on Form 10-K or quarterly report on Form 10-Q.

(q) *Representation Date and Representation Certificate.* On or prior to the date of the First Placement Notice and thereafter during the term of this Agreement, on each Representation Date to which a waiver does not apply, the Company shall furnish to the Agent a certificate (the “**Representation Certificate**”), substantially in the form of Schedule 3 hereto and dated as of such date, addressed to the Agent and signed by the chief executive officer and by the chief financial officer of the Company.

(r) *Disclosure of Shares Sold.* The Company shall disclose in its quarterly reports on Form 10-Q and in its annual report on Form 10-K the number of the Shares sold through the Agent under this Agreement and the net proceeds to the Company with respect to sales of the Shares pursuant to this Agreement during the relevant quarter.

(s) *Continued Listing of Shares.* The Company shall use its commercially reasonable efforts to maintain the listing of the Common Stock on the Exchange.

(t) *Notice of Changes.* At any time prior to tendering a Placement Notice for a sale of Shares hereunder, the Company shall advise the Agent immediately after it shall have received notice or obtain knowledge thereof, of any information or fact that would alter or affect any opinion, certificate, letter and other document provided to the Agent pursuant to this Section 3.

(u) *Maximum Amount.* The Company will not instruct the Agent to sell or otherwise attempt to sell Shares pursuant to this Agreement in excess of the Maximum Amount.

(v) *CFO Certificate.* On or prior to the date of the First Placement Notice and thereafter during the term of this Agreement, on each Representation Date to which a waiver does not apply, if requested by the Agent, the Company shall furnish to the Agent a certificate, dated the date of such Representation Date and addressed to the Agent, of its chief financial officer with respect to certain financial data contained in the Prospectus, providing “management comfort” with respect to such information, in form and substance reasonably satisfactory to the Agent.

4. Conditions of Agent’s Obligations. The obligations of the Agent hereunder are subject to (i) the accuracy, as of the date of this Agreement, each Representation Date, each Notice Date, each Applicable Time, and each Settlement Date (in each case, as if made at such date) of and compliance with all representations, warranties and agreements of the Company contained herein, (ii) the performance by the Company of its obligations hereunder and (iii) the following additional conditions:

(a) *Continuing Amendments; No Stop Order.* If filing of the Prospectus, or any amendment or supplement thereto, or any Permitted Free Writing Prospectus, is required under the Securities Act, the Company shall have filed the Prospectus (or such amendment or supplement) or such Permitted Free Writing Prospectus with the Commission in the manner and within the time period so required (without reliance on Rule 424(b)(8) or Rule 164(b) under the Securities Act); the Registration Statement shall be effective; no stop order suspending the effectiveness of the Registration Statement or any part thereof, any registration statement filed pursuant to Rule 462(b) under the Securities Act, or any amendment thereof, nor suspending or preventing the use of the Prospectus shall have been issued; no proceedings for the issuance of such an order shall have been initiated or threatened; and any request of the Commission for additional information (to be included in the Registration Statement, the Prospectus or otherwise) shall have been complied with to the Agent’s reasonable satisfaction.

(b) *Absence of Certain Events.* None of the following events shall have occurred and be continuing: (i) receipt by the Company or any of its Subsidiaries of any request for additional information from the Commission or any other federal or state governmental

authority during the period of effectiveness of the Registration Statement, the response to which would require any post-effective amendments or supplements to the Registration Statement or the Prospectus that have not been made; (ii) the issuance by the Commission or any other federal or state governmental authority of any stop order suspending the effectiveness of the Registration Statement or the initiation of any proceedings for that purpose; (iii) receipt by the Company of any notification with respect to the suspension of the qualification or exemption from qualification of any of the Shares for sale in any jurisdiction or the initiation or threatening of any proceeding for such purpose; (iv) the occurrence of any event that makes any material statement made in the Registration Statement or the Prospectus or any material document incorporated or deemed to be incorporated therein by reference untrue in any material respect or that requires the making of any changes in the Registration Statement, related Prospectus or such documents so that, in the case of the Registration Statement, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein not misleading and, that in the case of the Prospectus, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading

(c) *No Material Misstatement or Omission.* The Agent shall not have advised the Company that the Registration Statement or any Prospectus, contains an untrue statement of fact which, in the Agent's reasonable opinion, is material, or omits to state a fact which, in the Agent's reasonable opinion, is material and is required to be stated therein or necessary to make the statements therein not misleading.

(d) *No Adverse Changes.* Except as contemplated in the Prospectus, subsequent to the respective dates as of which information is given in the Prospectus, neither the Company nor any of its Subsidiaries shall have incurred any material liabilities or obligations, direct or contingent, or entered into any material transactions, or declared or paid any dividends or made any distribution of any kind with respect to its capital stock; and there shall not have been any material change in the capital stock (other than a change in the number of outstanding shares of Common Stock due to the issuance of shares of Common Stock upon the exercise of outstanding options or warrants), or any material change in the short-term or long-term debt of the Company, or any issuance of options, warrants, convertible securities or other rights to purchase the capital stock of the Company or any of its subsidiaries, or any development involving a prospective Material Adverse Effect (whether or not arising in the ordinary course of business), or any loss by strike, fire, flood, earthquake, accident or other calamity, whether or not covered by insurance, incurred by the Company or any of its subsidiaries, the effect of which, in any such case described above, in the Agent's judgment, makes it impractical or inadvisable to offer or deliver the Shares on the terms and in the manner contemplated in the Prospectus.

(e) *No Rating Downgrade.* On or after each Applicable Time (i) no downgrading shall have occurred in the rating accorded any of the Company's securities by any "nationally recognized statistical organization," as that term is defined by the Commission for purposes of Rule 436(g)(2) under the Securities Act, and (ii) no such organization shall have publicly announced that it has under surveillance or review, with possible negative implications, its rating of any of the Company's securities.

(f) *Compliance with Certain Obligations.* The Company shall have performed each of its obligations under Section 3(o) – 3(q) and Section 3(v).

(g) *Opinion of Agent Counsel.* On each Representation Date to which a waiver does not apply, there shall have been furnished to the Agent the opinion and negative assurance letter of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., counsel for the Agent, dated as of such Representation Date and addressed to the Agent, in a form reasonably satisfactory to the Agent, and such counsel shall have received such papers and information as they request to enable them to pass upon such matters; provided however, the opinion of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. shall only be required prior to the first Placement Notice, and thereafter, only a negative assurance letter of such counsel shall be required for each subsequent Representation Date.

(h) *Representation Certificate.* On or prior to the first Placement Notice, the Agent shall have received the Representation Certificate in substantially the form attached hereto as Schedule 3.

(i) *No Objection by FINRA.* FINRA shall have raised no objection to the fairness and reasonableness of the underwriting terms and arrangements.

(j) *Timely Filing of Prospectus and Prospectus Supplement.* All filings with the Commission required by Rule 424 under the Securities Act to have been filed by the Settlement Date, as the case may be, shall have been made within the applicable time period prescribed for such filing by Rule 424 under the Securities Act.

(k) *Additional Documents and Certificates.* The Company shall have furnished to the Agent and the Agent's counsel such additional documents, certificates and evidence as they may have reasonably requested.

All opinions, certificates, letters and other documents described in this Section 4 will be in compliance with the provisions hereof only if they are satisfactory in form and substance to the Agent and the Agent's counsel (it being agreed that the form Representation Certificate attached to this Agreement is satisfactory). The Company will furnish the Agent with such conformed copies of such opinions, certificates, letters and other documents as the Agent shall reasonably request.

5. Indemnification and Contribution.

(a) *Company Indemnification.* The Company agrees to indemnify and hold harmless the Agent, its affiliates, directors, officers and employees, and each person, if any, who controls the Agent within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act against any losses, claims, damages or liabilities, joint or several, to which the Agent may become subject, under the Securities Act or otherwise (including in settlement of any litigation), insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon, in whole or in part:

-
- (i) an untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, including the Rule 430B Information (as defined below) and at any subsequent time pursuant to Rules 430A and 430B promulgated under the Securities Act, and any other information deemed to be part of the Registration Statement at the time of effectiveness, and at any subsequent time pursuant to the Securities Act or the Exchange Act, and the Prospectus, or any amendment or supplement thereto (including any documents filed under the Exchange Act and deemed to be incorporated by reference into the Prospectus), any Permitted Free Writing Prospectus, or any roadshow as defined in Rule 433(h) under the Securities Act (a “**road show**”), or an omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading
 - (ii) any material inaccuracy in the representations and warranties of the Company contained herein;
 - (iii) any investigation or proceeding by any governmental authority, commenced or threatened (whether or not the Agent is a target of a party to such investigation or proceeding);
 - (iv) any failure of the Company to perform its respective obligations hereunder or under law;

and will reimburse the Agent for any legal or other expenses reasonably incurred by it in connection with investigating or defending against such loss, claim, damage, liability or action; *provided, however*, that the Company shall not be liable in any such case to the extent that any such loss, claim, damage, liability or action arises out of or is based upon an untrue statement or alleged untrue statement or omission or alleged omission made in the Registration Statement, the Prospectus, or any such amendment or supplement, in reliance upon and in conformity with written information furnished to the Company by the Agent specifically for use in the preparation thereof. “**Rule 430B Information**,” as used herein, means information with respect to the Shares and the offering thereof permitted to be omitted from the Registration Statement when it becomes effective pursuant to Rule 430B.

In addition to its other obligations under this Section 5(a), the Company agrees that, as an interim measure during the pendency of any claim, action, investigation, inquiry or other proceeding arising out of or based upon any statement or omission, or any alleged statement or omission, described in this Section 5(a), it will reimburse the Agent on a monthly basis for all reasonable legal fees or other expenses incurred in connection with investigating or defending any such claim, action, investigation, inquiry or other proceeding, notwithstanding the absence of a judicial determination as to the propriety and enforceability of the Company’s obligation to reimburse the Agent for such expenses and the possibility that such payments might later be held to have been improper by a court of competent jurisdiction. Any such interim reimbursement payments which are not made to the Agent within 30 days of a request for reimbursement shall bear interest at the WSJ Prime Rate (as published from time to time by the Wall Street Journal).

(b) *Agent Indemnification.* The Agent will indemnify and hold harmless the Company each of its directors, each officer of the Company who signed the Registration Statement, and each person, if any, who controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act against any losses, claims, damages or liabilities to which such party may become subject, under the Securities Act or otherwise (including in settlement of any litigation, if such settlement is effected with the written consent of the Agent), but only insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon an untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, the Prospectus, any amendment or supplement thereto, or arise out of or are based upon the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, in each case to the extent, but only to the extent, that such untrue statement or alleged untrue statement or omission or alleged omission was made in conformity with written information furnished to the Company by the Agent specifically for use in the preparation thereof, it being understood and agreed that the only information furnished by the Agent for use in the Registration Statement or the Prospectus consists of the statements set forth in the fifth paragraph under the caption "Plan of Distribution" in the Prospectus, and will reimburse such party for any legal or other expenses reasonably incurred by such party in connection with investigating or defending against any such loss, claim, damage, liability or action.

(c) *Notice and Procedures.* Promptly after receipt by an indemnified party under subsection (a) or (b) above of notice of the commencement of any action, such indemnified party shall, if a claim in respect thereof is to be made against the indemnifying party under such subsection, notify the indemnifying party in writing of the commencement thereof; but the omission so to notify the indemnifying party shall not relieve the indemnifying party from any liability that it may have to any indemnified party except to the extent such indemnifying party has been materially prejudiced by such failure. In case any such action shall be brought against any indemnified party, and it shall notify the indemnifying party of the commencement thereof, the indemnifying party shall be entitled to participate in, and, to the extent that it shall wish, jointly with any other indemnifying party similarly notified, to assume the defense thereof, with counsel reasonably satisfactory to such indemnified party, and after notice from the indemnifying party to such indemnified party of the indemnifying party's election so to assume the defense thereof, the indemnifying party shall not be liable to such indemnified party under such subsection for any legal or other expenses subsequently incurred by such indemnified party in connection with the defense thereof other than reasonable costs of investigation; *provided, however*, that if, in the sole judgment of the Agent, it is advisable for the Agent to be represented by separate counsel, the Agent shall have the right to employ a single counsel to represent the Agent, in which event the reasonable fees and expenses of such separate counsel shall be borne by the indemnifying party or parties and reimbursed to the Agent as incurred (in accordance with the provisions of the second paragraph in subsection (a) above).

The indemnifying party under this Section 5 shall not be liable for any settlement of any proceeding effected without its written consent, but if settled with such consent or if there be a final judgment for the plaintiff, the indemnifying party agrees to indemnify the indemnified party against any loss, claim, damage, liability or expense by reason of such settlement or judgment. Notwithstanding the foregoing sentence, if at any time an indemnified party shall have requested an indemnifying party to reimburse the indemnified party for fees and expenses of counsel as contemplated by this Section 5, the indemnifying party agrees that it shall be liable for any settlement of any proceeding

effected without its written consent if (i) such settlement is entered into more than 30 days after receipt by such indemnifying party of the aforesaid request, (ii) such indemnifying party shall have received notice of the terms of such settlement at least 30 days prior to such settlement being entered into, and (iii) such indemnifying party shall not have reimbursed the indemnified party in accordance with such request prior to the date of such settlement. No indemnifying party shall, without the prior written consent of the indemnified party, effect any settlement, compromise or consent to the entry of judgment in any pending or threatened action, suit or proceeding in respect of which any indemnified party is or could have been a party and indemnity was or could have been sought hereunder by such indemnified party, unless such settlement, compromise or consent (a) includes an unconditional release of such indemnified party from all liability on claims that are the subject matter of such action, suit or proceeding and (b) does not include a statement as to or an admission of fault, culpability or a failure to act by or on behalf of any indemnified party.

(d) *Contribution; Limitations on Liability; Non-Exclusive Remedy.* If the indemnification provided for in this Section 5 is unavailable or insufficient to hold harmless an indemnified party under subsection (a) or (b) above, then each indemnifying party shall contribute to the amount paid or payable by such indemnified party as a result of the losses, claims, damages or liabilities referred to in subsection (a) or (b) above, (i) in such proportion as is appropriate to reflect the relative benefits received by the Company on the one hand and the Agent on the other from the offering of the Shares, or (ii) if the allocation provided by clause (i) above is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) above but also the relative fault of the Company on the one hand and the Agent on the other in connection with the statements or omissions that resulted in such losses, claims, damages or liabilities, as well as any other relevant equitable considerations. The relative benefits received by the Company on the one hand and the Agent on the other shall be deemed to be in the same proportion as the total net proceeds from the offering (before deducting expenses) received by the Company bear to the total commissions received by the Agent (before deducting expenses) from the sale of the Shares. The relative fault shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information supplied by the Company or the Agent, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such untrue statement or omission. The Company and the Agent agree that it would not be just and equitable if contributions pursuant to this subsection (d) were to be determined by pro rata allocation or by any other method of allocation which does not take account of the equitable considerations referred to in this subsection (d). The amount paid or payable by an indemnified party as a result of the losses, claims, damages or liabilities referred to in this subsection (d) shall be deemed to include any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending against any action or claim which is the subject of this subsection (d). Notwithstanding the provisions of this subsection (d), the Agent shall not be required to contribute any amount in excess of the commissions received by it under this Agreement. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation.

6. Representations and Agreements to Survive Delivery. All representations, warranties, and agreements of the Company herein or in certificates delivered pursuant hereto, including but not limited to the agreements of the Agent and the Company contained in Section 5 hereof, shall remain operative and in full force and effect regardless of any investigation made by or on behalf of the Agent or any controlling person thereof, or the Company or any of its officers, directors, or controlling persons, and shall survive delivery of, and payment for, the Shares to and by the Agent hereunder.

7. Termination of this Agreement.

(a) The Company shall have the right, by giving ten (10) days' written notice as hereinafter specified, to terminate the provisions of this Agreement relating to the solicitation of offers to purchase the Shares in its sole discretion at any time. Any such termination shall be without liability of any party to any other party except that (i) with respect to any pending sale, through the Agent for the Company, the obligations of the Company, including in respect of compensation of the Agent, shall remain in full force and effect notwithstanding the termination and (ii) the provisions of Section 3(g), Section 5 and Section 6 of this Agreement shall remain in full force and effect notwithstanding such termination. Upon termination of this Agreement, the Company shall not have any liability to the Agent for any discount, commission or other compensation with respect to any Shares not otherwise sold by the Agent under this Agreement

(b) The Agent shall have the right, by giving at least ten (10) days' written notice as hereinafter specified, to terminate the provisions of this Agreement relating to the solicitation of offers to purchase the Shares in its sole discretion at any time. Any such termination shall be without liability of any party to any other party except that the provisions of Section 3(g), Section 5 and Section 6 of this Agreement shall remain in full force and effect notwithstanding such termination.

(c) Unless earlier terminated pursuant to this Section 7, this Agreement shall automatically terminate upon the issuance and sale of all of the Shares through the Agent on the terms and subject to the conditions set forth herein, except that the provisions of Section 3(g), Section 5 and Section 6 of this Agreement shall remain in full force and effect notwithstanding such termination.

(d) This Agreement shall remain in full force and effect unless terminated pursuant to Sections 7(a), (b) or (c) above or otherwise by mutual agreement of the parties; provided that any such termination by mutual agreement shall in all cases be deemed to provide that Section 3(g), Section 5 and Section 6 shall remain in full force and effect.

(e) Any termination of this Agreement shall be effective on the date specified in such notice of termination; provided that such termination shall not be effective until the close of business on the date of receipt of such notice by the Agent or the Company, as the case may be. If such termination shall occur prior to the Settlement Date for any sale of the Shares, such sale shall settle in accordance with the provisions of Section 2(a)(vii) of this Agreement.

8. Default by the Company. If the Company shall fail at any Settlement Date to sell and deliver the number of Shares which it is obligated to sell hereunder, then this Agreement shall terminate without any liability on the part of the Agent or, except as provided in Section 3(g)

hereof, any non-defaulting party. No action taken pursuant to this Section shall relieve the Company from liability, if any, in respect of such default, and the Company shall (A) hold the Agent harmless against any loss, claim or damage arising from or as a result of such default by the Company and (B) pay the Agent any commission to which it would otherwise be entitled absent such default.

9. Notices. Except as otherwise provided herein, all communications under this Agreement shall be in writing and, if to the Agent, shall be delivered via overnight delivery services to (i) Piper Sandler & Co., U.S. Bancorp Center, 800 Nicollet Mall, Minneapolis, Minnesota 55402, Attention: Equity Capital Markets, with a copy to Piper Sandler General Counsel at 800 Nicollet Mall, Minneapolis, MN 55402 and LegalCapMarkets@psc.com, with a copy to Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., 919 Third Avenue, New York, NY 10022, Attention: Michael Maline, MDMaline@mintz.com; and (ii) the Company at 100 Old River Road, Andover, MA 01810, Attention: General Counsel, with a copy to (which shall not count as notice) Goodwin Procter LLP, 100 Northern Avenue, Boston, MA 02210, Attention: John Mutkoski; or in each case to such other address as the person to be notified may have requested in writing. Any party to this Agreement may change such address for notices by sending to the parties to this Agreement written notice of a new address for such purpose.

10. Persons Entitled to Benefit of Agreement. This Agreement shall inure to the benefit of and be binding upon the parties hereto and their respective successors and assigns and the controlling persons, officers and directors referred to in Section 5. Nothing in this Agreement is intended or shall be construed to give to any other person, firm or corporation any legal or equitable remedy or claim under or in respect of this Agreement or any provision herein contained. The term “successors and assigns” as herein used shall not include any purchaser, as such purchaser, of any of the Shares from the Agent.

11. Absence of Fiduciary Relationship. The Company, having been advised by counsel, acknowledges and agrees that: (a) the Agent has been retained solely to act as a sales agent in connection with the sale of the Shares and that no fiduciary, advisory or agency relationship between the Company (including any of the Company’s affiliates (including directors), equity holders, creditors, employees or agents, hereafter, “**Company Representatives**”), on the one hand, and the Agent on the other, has been created or will be created in respect of any of the transactions contemplated by this Agreement, irrespective of whether the Agent has advised or is advising the Company on other matters and irrespective of the use of the defined term “Agent;” (b) neither the Agent nor any of its affiliates (including directors), equity holders, creditors, employees or agents, hereafter, “**Agent Representatives**”) shall have any duty or obligation to the Company or any Company Representative except as set forth in this Agreement; (c) the price and other terms of any Placement executed pursuant to this Agreement, as well as the terms of this Agreement, are deemed acceptable to the Company and its counsel, following discussions and arms-length negotiations with the Agent; (d) the Company is capable of evaluating and understanding, and in fact has evaluated, understands and accepts the terms, risks and conditions of any Placement Notice to be executed pursuant to this Agreement, and any other transactions contemplated by this Agreement; (e) the Company has been advised that the Agent and the Agent Representatives are engaged in a broad range of transactions which may involve interests that differ from those of the Company and that the Agent and the Agent Representatives have no obligation to disclose any such interests and transactions to the Company by virtue of any

fiduciary, advisory or agency relationship, or otherwise; (f) the Company has been advised that the Agent is acting, in respect of any Placement and the transactions contemplated by this Agreement, solely for the benefit of the Agent, and not on behalf of the Company; and (g) the Company and the Company Representatives waive, to the fullest extent permitted by law, any claims that they may have against the Agent or any of the Agent Representatives for breach of fiduciary duty or alleged breach of fiduciary duty in respect of any Placement or any of the transactions contemplated by this Agreement and agree that the Agent and the Agent Representatives shall have no liability (whether direct or indirect, in contract, tort or otherwise) to the Company or any of the Company Representatives in respect of any person asserting any claim of breach of any fiduciary duty on behalf of or in right of the Company or any of the Company Representatives.

12. Recognition of the U.S. Special Resolution Regimes.

(a) In the event that any Underwriter that is a Covered Entity becomes subject to a proceeding under a U.S. Special Resolution Regime, the transfer from such Underwriter of this Agreement, and any interest and obligation in or under this Agreement, will be effective to the same extent as the transfer would be effective under the U.S. Special Resolution Regime if this Agreement, and any such interest and obligation, were governed by the laws of the United States or a state of the United States.

(b) In the event that any Underwriter that is a Covered Entity or a BHC Act Affiliate of such Underwriter becomes subject to a proceeding under a U.S. Special Resolution Regime, Default Rights under this Agreement that may be exercised against such Underwriter are permitted to be exercised to no greater extent than such Default Rights could be exercised under the U.S. Special Resolution Regime if this Agreement were governed by the laws of the United States or a state of the United States.

(c) As used in this section:

“**BHC Act Affiliate**” has the meaning assigned to the term “affiliate” in, and shall be interpreted in accordance with, 12 U.S.C. § 1841(k);

“**Covered Entity**” means any of the following: (i) a “covered entity” as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 252.82(b); (ii) a “covered bank” as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 47.3(b); or (iii) a “covered FSI” as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 382.2(b);

“**Default Right**” has the meaning assigned to that term in, and shall be interpreted in accordance with, 12 C.F.R. §§ 252.81, 47.2 or 382.1, as applicable; and

“**U.S. Special Resolution Regime**” means each of (i) the Federal Deposit Insurance Act and the regulations promulgated thereunder and (ii) Title II of the Dodd-Frank Wall Street Reform and Consumer Protection Act and the regulations promulgated thereunder.

13. Governing Law and Waiver of Jury Trial. This Agreement and any transaction contemplated by this Agreement and any claim, controversy or dispute arising under or related thereto shall be governed by and construed in accordance with the laws of the State of New York without regard to principles of conflict of laws that would results in the application of any other law than the laws of the State of New York. THE COMPANY (ON ITS OWN BEHALF AND ON BEHALF OF ITS STOCKHOLDERS AND AFFILIATES) HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY.

14. Submission to Jurisdiction, Etc. Each party hereby submits to the exclusive jurisdiction of the U.S. federal and New York state courts sitting in the Borough of Manhattan, City of New York, in any suit or proceeding arising out of or relating to this Agreement or the transactions contemplated hereby. The parties hereby irrevocably and unconditionally waive any objection to the laying of venue of any lawsuit, action or other proceeding in such courts, and hereby further irrevocably and unconditionally waive and agree not to plead or claim in any such court that any such lawsuit, action or other proceeding brought in any such court has been brought in an inconvenient forum.

15. Counterparts. This Agreement may be executed in counterparts, each of which shall be deemed an original, and all of which together shall constitute one and the same instrument. Counterparts may be delivered via facsimile or electronic transmission (including, without limitation, “pdf”, “tif”, “jpg” or any electronic signature complying with the U.S. federal ESIGN Act of 2000, e.g., DocuSign) and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

16. Construction. The section and exhibit headings herein are for convenience only and shall not affect the construction hereof. References herein to any law, statute, ordinance, code, regulation, rule or other requirement of any governmental authority shall be deemed to refer to such law, statute, ordinance, code, regulation, rule or other requirement of any governmental authority as amended, reenacted, supplemented or superseded in whole or in part and in effect from time to time and also to all rules and regulations promulgated thereunder. This Agreement constitutes the entire agreement of the parties to this Agreement and supersedes all prior written or oral and all contemporaneous oral agreements, understandings and negotiations with respect to the subject matter hereof. This Agreement may not be amended or modified unless agreed to in writing by all of the parties hereto, and no condition herein (express or implied) may be waived unless waived in writing by each party whom the condition is meant to benefit.

[Signature Pages Follow]

Please sign and return to the Company the enclosed duplicates of this letter whereupon this letter will become a binding agreement between the Company and the Agent in accordance with its terms.

Very truly yours,

CASA SYSTEMS, INC.

By: /s/ Michael Glickman

Name: Michael Glickman

Title: Chief Executive Officer

Confirmed as of the date first
above mentioned.

PIPER SANDLER & CO.

By: /s/ Connor Leahey
Name: Connor Leahey
Title: Director

SCHEDULE 1

FORM OF PLACEMENT NOTICE

No Facsimile and No Voicemail

From: Casa Systems, Inc.

To: Piper Sandler & Co.

Attention:

[●]

Date: [●], 20[●]

Subject: Equity Distribution Agreement – Placement Notice

Gentlemen:

Pursuant to the terms and subject to the conditions contained in the Equity Distribution Agreement between Casa Systems, Inc. (“**Company**”), and Piper Sandler & Co. (“**Agent**”) dated [●], 2023 (the “**Agreement**”), the Company hereby requests that Agent sell up to [●] shares of the Company’s common stock, par value \$0.001 per share, at a minimum market price of \$[●] per share. Sales should begin on the date of this Placement Notice and shall continue until [●] / [all shares are sold].

SCHEDULE 2
NOTICE PARTIES

Casa Systems, Inc.

Michael Glickman
[***]

Edward Durkin
[***]

Piper Sandler & Co.

Neil A. Riley
[***]

Connor Leahey
[***]

Connor N. Anderson
[***]

Tom Wright
[***]

Jay A. Hershey
[***]

SCHEDULE 3

**FORM OF REPRESENTATION CERTIFICATE
PURSUANT TO SECTION 3(Q) OF THE AGREEMENT**

SCHEDULE 4

SUBSIDIARIES



Goodwin Procter LLP
100 Northern Avenue
Boston, MA 02210

goodwinlaw.com
+1 617 570 1000

August 8, 2023

Casa Systems, Inc.
100 Old River Road
Andover, MA 01810

Re: Securities Being Registered under Registration Statement on Form S-3

We have acted as counsel to you in connection with your filing of a Registration Statement on Form S-3 (as amended or supplemented, the "Registration Statement") pursuant to the Securities Act of 1933, as amended (the "Securities Act"), relating to the offering by Casa Systems, Inc., a Delaware corporation (the "Company"), of up to \$100,000,000 of any combination of (i) the Company's common stock, par value \$0.001 per share (the "Common Stock"), (ii) the Company's preferred stock, par value \$0.001 per share ("Preferred Stock"), (iii) the Company's debt securities ("Debt Securities"), (iv) warrants to purchase Common Stock, Preferred Stock, Debt Securities or Units (as defined below) ("Warrants") and (v) units comprised of Common Stock, Preferred Stock, Debt Securities, Warrants and other securities in any combination ("Units"). The Registration Statement provides that the Securities may be offered separately or together, in separate series, in amounts, at prices and on terms to be set forth in one or more prospectus supplements (each a "Prospectus Supplement") to the prospectus contained in the Registration Statement.

We have reviewed such documents and made such examination of law as we have deemed appropriate to give the opinions set forth below. We have relied, without independent verification, on certificates of public officials and, as to matters of fact material to the opinions set forth below, on certificates of officers of the Company.

The opinions set forth below are limited to the Delaware General Corporation Law and the law of Massachusetts.

For purposes of the opinions set forth below, without limiting any other exceptions or qualifications set forth herein, we have assumed that (i) each of the Debt Securities, Warrants and Units, and the indentures, warrant agreements, unit agreements and other agreements governing Securities offered pursuant to the Registration Statement will be governed by the internal law of New York and (ii) after the issuance of any Securities offered pursuant to the Registration Statement, the total number of issued shares of Common Stock or Preferred Stock, as applicable, together with the total number of shares of such stock issuable upon the exercise, exchange, conversion or settlement, as the case may be, of any exercisable, exchangeable or convertible security (including without limitation any Unit), as the case may be, then outstanding, will not exceed the total number of authorized shares of Common Stock or Preferred Stock, as applicable, then available for issuance under the Company's Certificate of Incorporation as then in effect (the "Charter").

For purposes of the opinions set forth below, we refer to the following as the “Future Approval and Issuance” of Securities:

- with respect to any of the Securities, (a) the approval by the Company of the amount, terms and issuance of such Securities (the “Approval”) and (b) the issuance of such Securities in accordance with the Approval upon the receipt by the Company of the consideration (which, in the case of shares of Common Stock or Preferred Stock, is not less than the par value of such shares) to be paid in accordance with the Approval;
- with respect to Preferred Stock, (a) the establishment of the terms of such Preferred Stock by the Company in conformity with the Charter and applicable law and (b) the execution, acknowledgement and filing with the Delaware Secretary of State, and the effectiveness of, a certificate of designations to the Charter setting forth the terms of such Preferred Stock in accordance with the Charter and applicable law;
- with respect to Debt Securities, (a) the approval, execution and delivery of the indenture or a supplemental indenture relating to such Securities by the Company and the trustee and/or (b) the establishment of the terms of such Securities by the Company in conformity with the indenture or supplemental indenture and applicable law, and (c) the execution, authentication and issuance of such Securities in accordance with the indenture or supplemental indenture and applicable law; and
- with respect to Warrants or Units, (a) the approval, execution and delivery by the Company and any other parties thereto of any agreement under which such Securities are to be issued, and (b) the establishment of the terms of such Securities and the issuance of such Securities in conformity with those terms, the terms of any applicable agreement and applicable law.

Based upon the foregoing, and subject to the additional qualifications set forth below, we are of the opinion that:

1. Upon the Future Approval and Issuance of shares of Common Stock, such shares of Common Stock will be validly issued, fully paid and nonassessable.

2. Upon the Future Approval and Issuance of shares of Preferred Stock, such shares of Preferred Stock will be validly issued, fully paid and nonassessable.

3. Upon the Future Approval and Issuance of Debt Securities, such Debt Securities will be valid and binding obligations of the Company.
4. Upon the Future Approval and Issuance of Warrants, such Warrants will be valid and binding obligations of the Company.
5. Upon the Future Approval and Issuance of Units, such Units will be valid and binding obligations of the Company.

The opinions expressed above are subject to bankruptcy, insolvency, fraudulent transfer, reorganization, moratorium and other similar laws of general application affecting the rights and remedies of creditors and to general principles of equity.

This opinion letter and the opinions it contains shall be interpreted in accordance with the Core Opinion Principles as published in 74 Business Lawyer 815 (Summer 2019).

We hereby consent to the inclusion of this opinion as Exhibit 5.1 to the Registration Statement and to the references to our firm under the caption “Legal Matters” in the Registration Statement. In giving our consent, we do not admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations thereunder.

Very truly yours,

/s/ Goodwin Procter LLP
GOODWIN PROCTER LLP



Goodwin Procter LLP
100 Northern Avenue
Boston, MA 02210

goodwinlaw.com
+1 617 570 1000

August 8, 2023

Casa Systems, Inc.
100 Old River Road
Andover, MA 01810

Re: Securities Registered under Registration Statement on Form S-3

We have acted as counsel to you in connection with your filing of a Registration Statement on Form S-3 (as amended or supplemented, the “Registration Statement”) filed on August 8, 2023 with the Securities and Exchange Commission (the “Commission”) pursuant to the Securities Act of 1933, as amended (the “Securities Act”), relating to the registration of the offering by Casa Systems, Inc., a Delaware corporation (the “Company”) of up to \$100,000,000 of any combination of securities of the types specified therein. Reference is made to our opinion letter dated August 8, 2023 and included as Exhibit 5.1 to the Registration Statement. We are delivering this supplemental opinion letter in connection with the prospectus supplement (the “Prospectus Supplement”) filed on August 8, 2023 by the Company with the Commission pursuant to Rule 424 under the Securities Act. The Prospectus Supplement relates to the offering by the Company of up to \$10,000,000 of shares (the “Shares”) of the Company’s common stock, par value \$0.001 per share (“Common Stock”) covered by the Registration Statement. The Shares are being offered and sold by the sales agent named in, and pursuant to, the distribution agreement among the Company and such sales agent.

We have reviewed such documents and made such examination of law as we have deemed appropriate to give the opinion set forth below. We have relied, without independent verification, on certificates of public officials and, as to matters of fact material to the opinion set forth below, on certificates of officers of the Company.

For purposes of the opinion set forth below, we have assumed that the Shares are issued for a price per share equal to or greater than the minimum price authorized by the Company’s board of directors prior to the date hereof (the “Minimum Price”) and that no event occurs that causes the number of authorized shares of Common Stock available for issuance by the Company to be less than the number of then unissued Shares that may be issued for the Minimum Price.

For purposes of the opinion set forth below, we refer to the following as “Future Approval and Issuance”: (a) the approval by the Company’s board of directors (or a duly authorized committee of the board of directors) of the issuance of the Shares (the “Approval”) and (b) the issuance of the Shares in accordance with the Approval and the receipt by the Company of the consideration (which shall not be less than the par value of such Shares) to be paid in accordance with the Approval.



August 8, 2023

Page 2

The opinion set forth below is limited to the Delaware General Corporation Law.

Based on the foregoing, we are of the opinion that the Shares have been duly authorized and, upon Future Approval and Issuance, will be validly issued, fully paid and nonassessable.

This opinion letter and the opinions it contains shall be interpreted in accordance with the Core Opinion Principles as published in 74 *Business Lawyer* 815 (Summer 2019).

This opinion is being furnished to you for submission to the Commission as an exhibit to the Company's Current Report on Form 8-K relating to the Shares (the "Current Report"), which is incorporated by reference in the Registration Statement. We hereby consent to the filing of this opinion letter as an exhibit to the Current Report and its incorporation by reference and the reference to our firm in that report. In giving our consent, we do not admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations thereunder.

Very truly yours,

/s/ Goodwin Procter LLP

GOODWIN PROCTER LLP

Consent of Independent Registered Public Accounting Firm

We consent to the reference to our firm under the caption “Experts” in the Registration Statement (Form S-3) and related Prospectus of Casa Systems, Inc. for the registration of its debt securities, common stock, preferred stock, units and warrants and to the incorporation by reference therein of our reports dated March 15, 2023, with respect to the consolidated financial statements of Casa Systems, Inc., and the effectiveness of internal control over financial reporting of Casa Systems, Inc., included in its Annual Report (Form 10-K) for the year ended December 31, 2022, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Boston, Massachusetts
August 8, 2023

Calculation of Filing Fee Tables

Form S-3
(Form Type)

Casa Systems, Inc.
(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered and Carry Forward Securities

	Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered ⁽¹⁾	Proposed Maximum Offering Price Per Unit ⁽²⁾	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee	Carry Forward Form Type	Carry Forward File Number	Carry Forward Initial Effective Date	Filing Fee Previously Paid In Connection with Unsold Securities to be Carried Forward
Newly Registered Securities												
	Primary Offering of Securities:											
Fees to Be Paid	Equity	Common Stock, par value \$0.001 per share (3)	457(o)	—	—	—	—	—				
Fees to Be Paid	Equity	Preferred Stock (4)	457(o)	—	—	—	—	—				
Fees to Be Paid	Debt	Debt Securities (5)	457(o)	—	—	—	—	—				
Fees to Be Paid	Equity	Warrants (6)	457(o)	—	—	—	—	—				
Fees to Be Paid	Equity	Units (7)	457(o)	—	—	—	—	—				

	Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered ⁽¹⁾	Proposed Maximum Offering Price Per Unit ⁽²⁾	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee	Carry Forward Form Type	Carry Forward File Number	Carry Forward Initial Effective Date	Filing Fee Previously Paid In Connection with Unsold Securities to be Carried Forward
Fees to Be Paid	Unallocated (Universal) Shelf	(1)	457(o)	\$100,000,000	—	\$100,000,000	0.00011020	\$11,020				
Fees to Be Paid	Total Registration Fee:			\$100,000,000	N/A	\$100,000,000	—	\$11,020				
Carry Forward Securities												
Carry Forward Securities	—	—	—	—	—	—	—	—	—	—	—	—
	Total Offering Amounts					\$100,000,000		\$11,020				
	Total Fees Previously Paid								—			
	Total Fee Offsets								—			
	Net Fee Due							\$11,020				

- (1) The amount to be registered consists of up to \$100,000,000 of an indeterminate amount of common stock, preferred stock, debt securities, warrants and/or units. There is also being registered hereunder such currently indeterminate number of (i) shares of common stock or other securities of the registrant as may be issued upon conversion of, or in exchange for, convertible or exchangeable debt securities and/or preferred stock registered hereby, or (ii) shares of debt securities, common stock, preferred stock or units as may be issued upon exercise of warrants registered hereby, as the case may be, including under any applicable antidilution provisions. Any securities registered hereunder may be sold separately or together with other securities registered hereunder. Pursuant to Rule 416 under the Securities Act of 1933, as amended, this registration statement also covers any additional securities that may be offered or issued in connection with any stock split, stock dividend or pursuant to anti-dilution provisions of any of the securities. Separate consideration may or may not be received for securities that are issuable upon conversion, exercise or exchange of other securities.
- (2) The proposed maximum offering price per security will be determined from time to time by the registrant in connection with the issuance by the registrant of the securities registered hereunder and is not specified as to each class of security pursuant to General Instruction II.D. of Form S-3 under the Securities Act of 1933, as amended.
- (3) Including such indeterminate amount of common stock as may be issued from time to time at indeterminate prices or upon conversion of debt securities and/or preferred stock registered hereby, or upon exercise of warrants registered hereby, as the case may be.
- (4) Including such indeterminate amount of preferred stock as may be issued from time to time at indeterminate prices or upon conversion of debt securities and/or preferred stock registered hereby, or upon exercise of warrants registered hereby, as the case may be.
- (5) Including such indeterminate principal amount of debt securities as may be issued from time to time at indeterminate prices or upon exercise of warrants registered hereby, as the case may be.
- (6) Warrants may be sold separately or together with any of the securities registered hereby and may be exercisable for shares of common stock, preferred stock, debt securities, or units registered hereby. Because the warrants will provide a right only to purchase such securities offered hereunder, no additional registration fee is required.

-
- (7) Each unit will be issued under a unit agreement and will represent an interest in two or more securities registered pursuant to this registration statement, which may or may not be separable from one another. Because the units will provide a right only to purchase such securities offered hereunder, no additional registration fee is required.