

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
WASHINGTON, D.C. 20549

FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

RIBBON COMMUNICATIONS INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

82-1669692
(I.R.S. Employer
Identification Number)

6500 Chase Oaks Boulevard, Suite 100
Plano, Texas 75023
(978) 614-8100

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Patrick W. Macken
Executive Vice President, Chief Legal Officer and Corporate Secretary
Ribbon Communications Inc.
6500 Chase Oaks Boulevard, Suite 100
Plano, Texas 75023
(978) 614-8100

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

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

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.

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company Emerging growth company

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 that specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

SUBJECT TO COMPLETION, DATED APRIL 4, 2023.

PROSPECTUS



\$250,000,000
Common Stock
Preferred Stock
Debt Securities
Warrants
Units
Depository Shares
Subscription Rights

55,000 Shares of Series A Preferred Stock
4,858,090 Warrants
4,858,090 Shares of Common Stock Issuable Upon Exercise of Warrants
Offered by the Selling Securityholders

We may offer and sell up to \$250,000,000 in the aggregate of the securities identified above from time to time in one or more offerings. This prospectus provides you with a general description of the securities.

This prospectus also relates to the offer and resale by the selling securityholders identified in this prospectus (the "Selling Securityholders") of up to an aggregate of 55,000 shares of Series A preferred stock (the "Series A Preferred Stock"), 4,858,090 warrants (the "PIPE Warrants") and 4,858,090 shares of common stock underlying the PIPE Warrants (the "Warrant Shares") issued to the Selling Securityholders in connection with the securities purchase agreement, dated as of March 28, 2023 (the "Preferred Securities Purchase Agreement"), by and among us and the Selling Securityholders (such transaction, the "Preferred Private Placement"). We will not receive any of the proceeds from the sale of the PIPE Warrants, Warrant Shares or Series A Preferred Stock by the Selling Securityholders, but we could receive up to approximately \$18.3 million upon exercise of outstanding PIPE Warrants registered hereunder.

Each time we offer and sell securities, we will provide a supplement to this prospectus that contains specific information about the offering and the amounts, prices and terms of the securities. The prospectus supplement may also add, update or change information contained in this prospectus with respect to that offering. This prospectus may also be used to offer and sell these securities for the account of persons other than us. You should carefully read this prospectus and the applicable prospectus supplement before you invest in any of our securities.

We and the Selling Securityholders (as hereinafter defined) may offer and sell the securities described in this prospectus and any prospectus supplement to or through one or more underwriters, dealers and agents, or directly to purchasers, or through a combination of these methods. If any underwriters, dealers or agents are involved in the sale of any of the securities, their names and any applicable purchase price, fee, commission or discount arrangement between or among them will be set forth, or will be calculable from the information set forth, in the applicable prospectus supplement. See the sections of this prospectus entitled "About this Prospectus" and "Plan of Distribution" for more information. No securities may be sold without delivery of this prospectus and the applicable prospectus supplement describing the method and terms of the offering of such securities.

Our Common Stock is listed on the Nasdaq Global Select Market under the symbol "RBBN." The last reported sale price of our Common Stock on April 3, 2023 was \$3.33 per share.

INVESTING IN OUR SECURITIES INVOLVES RISKS. SEE THE "RISK FACTORS" BEGINNING ON PAGE 7 OF THIS PROSPECTUS AND ANY SIMILAR SECTION CONTAINED IN THE APPLICABLE PROSPECTUS SUPPLEMENT OR ANY DOCUMENTS THAT ARE INCORPORATED BY REFERENCE INTO THIS PROSPECTUS BEFORE INVESTING IN OUR SECURITIES.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION (THE "SEC") NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR DETERMINED IF THIS PROSPECTUS IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

Prospectus dated _____, 2023

The information contained in this prospectus is not complete and may be changed. A registration statement relating to these securities has been filed with the Securities and Exchange Commission. We and the Selling Securityholders may not sell these securities until the Securities and Exchange Commission declares the registration statement effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the SEC using a “shelf” registration process. By using a shelf registration statement, we may offer and sell, either individually or in combination, in one or more offerings, up to a total dollar amount of \$250,000,000 of any combination of the securities described in this prospectus. In addition, the Selling Securityholders may from time to time sell up to and aggregate of 55,000 shares of the Series A Preferred Stock, 4,858,090 PIPE Warrants and 4,858,090 Warrant Shares.

This prospectus provides you only with a general description of the securities that we may offer. Each time that we or any Selling Securityholder offer and sell securities, we will provide a prospectus supplement to this prospectus that contains specific information about the securities being offered and sold and the specific terms of that offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. The prospectus supplement or free writing prospectus may also add, update or change information contained or incorporated by reference in this prospectus with respect to that offering. If there is any inconsistency between the information in this prospectus and the applicable prospectus supplement or free writing prospectus, you should rely on the prospectus supplement or free writing prospectus, as applicable. Before purchasing any securities, you should carefully read both this prospectus and the applicable prospectus supplement (and any applicable free writing prospectuses), together with the additional information described under the heading “Where You Can Find More Information.”

Neither we nor the Selling Securityholders have authorized anyone to provide you with any information or to make any representations other than those contained in, or incorporated by reference in, this prospectus, any applicable prospectus supplement or any free writing prospectuses prepared by or on behalf of us or to which we have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We will not make an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus and the applicable prospectus supplement is accurate only as of the date on its respective cover, that the information appearing in any applicable free writing prospectus is accurate only as of the date of that free writing prospectus, and that any information incorporated by reference is accurate only as of the date of the document incorporated by reference, unless we indicate otherwise. Our business, financial condition, results of operations and prospects may have changed since those dates.

This prospectus incorporates by reference, and any prospectus supplement or free writing prospectus may contain and incorporate by reference, market data and industry statistics and forecasts that are based on independent industry publications and other publicly available information. Although we believe these sources are reliable, we do not guarantee the accuracy or completeness of this information and we have not independently verified this information. In addition, the market and industry data and forecasts that may be included or incorporated by reference in this prospectus, any prospectus supplement or any applicable free writing prospectus may involve estimates, assumptions and other risks and uncertainties and are subject to change based on various factors, including those discussed under the heading “Risk Factors” contained in this prospectus, the applicable prospectus supplement and any applicable free writing prospectus, and under similar headings in other documents that are incorporated by reference into this prospectus. Accordingly, investors should not place undue reliance on this information.

Unless the context otherwise requires, references in this prospectus to “Ribbon,” the “Company,” “we,” “our” or “us” refer to Ribbon Communications Inc. and its subsidiaries.

Solely for convenience, tradenames referred to in this prospectus appear without the ® and ™ symbols, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights, or that the applicable owner will not assert its rights, to these tradenames.

All references to “this prospectus” refer to this prospectus and any applicable prospectus supplement, including the documents incorporated by reference herein and therein, unless the context otherwise requires.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus is part of the registration statement on Form S-3 filed with the SEC under the Securities Act of 1933, as amended (the “Securities Act”), and does not contain all the information set forth in the registration statement. Whenever a reference is made in this prospectus to any of our contracts, agreements or other documents, the reference may not be complete and you should refer to the exhibits that are a part of the registration statement or the exhibits to the reports or other documents incorporated herein by reference for a copy of such contract, agreement or other document.

We are currently subject to the reporting requirements of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and in accordance therewith file periodic reports, proxy statements and other information with the SEC. Our SEC filings are available to you on the SEC’s website at <http://www.sec.gov> and in the “Investor Relations” section of our website at www.ribboncommunications.com. Our website and the information contained on that site, or connected to that site, are not incorporated into and are not a part of this prospectus.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to “incorporate by reference” information from other documents that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus. Information in this prospectus supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus, while information that we file later with the SEC will automatically update and supersede the information in this prospectus. We incorporate by reference into this prospectus and the registration statement of which this prospectus is a part the information or documents listed below that we have filed with the SEC (other than any filings or portions of such reports that are not deemed “filed” under the Exchange Act in accordance with the Exchange Act and applicable SEC rules, including current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits furnished on such form that are related to such items unless such Form 8-K expressly provides to the contrary):

- [Our Annual Report on Form 10-K for the year ended December 31, 2022 filed with the SEC on March 31, 2023;](#)
- Our Current Reports on Form 8-K filed with the SEC on [January 13, 2023](#) and [March 30, 2023](#); and
- [The description of our common stock contained in Exhibit 4.1 to our Annual Report on Form 10-K for the year ended December 31, 2019, as filed with the SEC on February 28, 2020, including any amendment or report filed for the purpose of updating such description.](#)

We also incorporate by reference any future filings (other than any filings or portions of such reports that are not deemed “filed” under the Exchange Act in accordance with the Exchange Act and applicable SEC rules, including current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits furnished on such form that are related to such items unless such Form 8-K expressly provides to the contrary) made with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, including those made after the date of the initial filing of the registration statement of which this prospectus is a part and prior to the effectiveness of the registration statement, until we file a post-effective amendment that indicates the termination of the offering of the securities made by this prospectus, and such filings will become a part of this prospectus from the date that such documents are filed with the SEC. Information in such future filings updates and supplements the information provided in this prospectus. Any statements in any such future filings will automatically be deemed to modify and supersede any information in any document we previously filed with the SEC that is incorporated or deemed to be incorporated herein by reference to the extent that statements in the later filed document modify or replace such earlier statements.

We will furnish without charge to you, upon written or oral request, a copy of any or all of the documents incorporated by reference, including exhibits to these documents by writing or telephoning us at the following address or phone number below. You may also access this information on our website at

www.ribboncommunications.com by viewing the “SEC Filings” subsection of the “Financial Information” menu. No additional information is deemed to be part of or incorporated by reference into this prospectus.

Ribbon Communications Inc.
Attention: Corporate Secretary
6500 Chase Oaks Boulevard, Suite 100
Plano, Texas, 75023
(978) 614-8100

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, any applicable prospectus supplement and the documents incorporated by reference into this prospectus may contain forward-looking statements within the meaning of Section 27A of the Securities Act, and Section 21E of the Exchange Act, about us and our subsidiaries. These forward-looking statements are intended to be covered by the safe harbor for forward-looking statements provided by the Private Securities Litigation Reform Act of 1995. Forward-looking statements are not statements of historical fact, and can be identified by the use of forward-looking terminology such as “believes,” “expects,” “may,” “will,” “could,” “should,” “projects,” “plans,” “goal,” “targets,” “potential,” “estimates,” “pro forma,” “seeks,” “intends” or “anticipates” or the negative thereof or comparable terminology. Forward-looking statements include, but are not limited to, statements concerning our future expenses, results of operations and financial position, integration activities, capital structure, credit facility compliance, restructuring activities, expected impacts from the war in Ukraine and the financial sanctions imposed in connection therewith, beliefs about our business strategy, availability of components for the manufacturing of our products, expected benefits from our acquisition of ECI Telecom Group Ltd. (“ECI”), ongoing litigation, plans and objectives of management for future operations and manufacturing. Forward-looking statements are based on our current expectations and assumptions regarding our business, the economy and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are unknown and/or difficult to predict and that may cause our actual results, performance or achievements to be materially different from those expressed or implied by the forward-looking statements. Such risks and uncertainties include, but are not limited to, supply chain disruptions resulting from component availability and/or geopolitical instabilities and disputes (including those related to the war in Ukraine); material litigation; failure to realize anticipated benefits of our acquisition of ECI; unpredictable fluctuations in quarterly revenue and operating results; the impact of fluctuations in interest rates; the impact of fluctuations of our EBITDA on compliance under our credit facility; material cybersecurity and data intrusion incidents, including any security breaches resulting in the theft, transfer, or unauthorized disclosure of customer, employee, or company information; our ability to comply with applicable domestic and foreign information security and privacy laws, regulations and technology platform rules or other obligations related to data privacy and security; failure to compete successfully against telecommunications equipment and networking companies; failure to grow our customer base or generate recurring business from our existing customers; credit risks; the timing of customer purchasing decisions and our recognition of revenues; macroeconomic conditions, including inflation; the impact of restructuring and cost-containment activities; our ability to adapt to rapid technological and market changes; our ability to generate positive returns on our research and development; our ability to protect our intellectual property rights and obtain necessary licenses; our ability to maintain partner, reseller, distribution and vendor support and supply relationships; the potential for defects in our products; risks related to the terms of our credit agreement; higher risks in international operations and markets; increases in tariffs, trade restrictions or taxes on our products; currency fluctuations; unanticipated adverse changes in legal, regulatory or tax laws; future accounting pronouncements or changes in our accounting policies; and/or failure or circumvention of our controls and procedures. We therefore caution you against relying on any of these forward-looking statements.

Additional important factors that could cause actual results to differ materially from those in these forward-looking statements are also discussed in Part I, Item 2, “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and Part I, Item 1A and Part II, Item 7A, “Risk Factors” and “Quantitative and Qualitative Disclosures About Market Risk,” respectively, of our Annual Report on Form 10-K for the year ended December 31, 2022.

You should read this prospectus and the documents incorporated by reference completely and with the understanding that our actual future results may be materially different from what we currently expect. Our business and operations are and will be subject to a variety of risks, uncertainties and other factors. Consequently, actual results and experience may materially differ from those contained in any forward-looking statements. Such risks, uncertainties and other factors that could cause actual results and experience to differ from those projected include, but are not limited to, the risk factors discussed under the heading “Risk Factors” contained in this prospectus, any applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus.

You should assume that the information appearing in this prospectus, any accompanying prospectus supplement or related free writing prospectus and any document incorporated herein by reference is accurate as of its date only. Because the risk factors referred to above could cause actual results or outcomes to differ materially from those expressed in any forward-looking statements made by us or on our behalf, you should not place undue reliance on any forward-looking statements. Further, any forward-looking statement speaks only as of the date on which it is made. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. Unless legally required, we do not undertake any obligation to release publicly any revisions to such forward-looking statements to reflect events or circumstances after the date of this prospectus or to reflect the occurrence of unanticipated events.

ABOUT RIBBON

Overview

We are a leading global provider of communications technology to service providers and enterprises. We provide a broad range of software and high-performance hardware products, network solutions, and services that enable the secure delivery of data and voice communications, and high-bandwidth networking and connectivity for residential consumers and for small, medium, and large enterprises and industry verticals such as finance, education, government, utilities, and transportation. Our mission is to create a recognized global technology leader providing cloud-centric solutions that enable the secure exchange of information, with unparalleled scale, performance, and elasticity. We are headquartered in Plano, Texas, and have a global presence, with research and development, sales and support locations in over thirty countries around the world.

Corporate Information

The Ribbon name was created by the merger of Sonus Networks, Inc. and GENBAND US LLC (“GENBAND”) in October 2017, with both companies specializing in secure high-performance Voice Over Internet Protocol technology and solutions. Prior to that, GENBAND had acquired assets of Nortel’s Carrier division in 2010, which included a world-class engineering and sales team, a broad deployment base of products and technology, and a recognized industry reputation and pedigree with customers around the world. Since our formation in 2017, we have completed several acquisitions, including our acquisition of ECI Telecom Group Ltd. in March 2020, to strengthen and expand our portfolio of product offerings to service providers and enterprises.

Our telephone number is (978) 614-8100, and our website address is www.ribboncommunications.com. Information contained on our website is not incorporated into this prospectus.

We make available free of charge through a link provided at such website our Annual Reports on Form 10-K, our Quarterly Reports on Form 10-Q, our Current Reports on Form 8-K and our other filings with the SEC, as well as any amendments to those reports and filings. These reports and filings are made available as soon as reasonably practicable after they are filed with or furnished to the SEC. See “*Where You Can Find More Information.*”

RISK FACTORS

Investment in any securities offered pursuant to this prospectus and the applicable prospectus supplement involves risks. You should carefully consider the risk factors included in our most recent Annual Report on Form 10-K and subsequent Quarterly Reports on Form 10-Q filed with the SEC, as such risk factors may be amended, supplemented or superseded from time to time by other reports we file with the SEC, including subsequent Annual Reports on Form 10-K and Quarterly Reports on Form 10-Q, and the risk factors described under the caption “Risk Factors” in any applicable prospectus supplement. See “Where You Can Find More Information” and “Incorporation of Certain Information by Reference.” If any of these risks actually occurs, our business, results of operations and financial condition could suffer. In that case, the trading price of our securities could decline, and you could lose all or part of your investment. Additional risks and uncertainties not currently known to us, or that we currently believe are immaterial, may also adversely affect our business, operating results and financial condition and the value of an investment in our securities. In addition, past financial performance may not be a reliable indicator of future performance, and historical trends should not be used to anticipate results or trends in future periods.

Risks Related to our Series A Preferred Stock, PIPE Warrants and this Offering by the Selling Securityholders

Our obligations to pay dividends or make distributions and, upon liquidation of the Company, liquidation payments in respect of the Series A Preferred Stock are subordinate to our obligations to make any principal and interest payments due and owing with respect to our outstanding debt.

Our obligations to pay dividends or make distributions and, upon liquidation of the Company, liquidation payments in respect of our Series A Preferred Stock is subordinate to our obligations to make any principal and interest payments due and owing with respect our outstanding debt. Accordingly, our outstanding debt has the effect of creating special risks for our Series A Preferred Stockholders that would not be present in a capital structure that did not include such securities.

As a holder of Series A Preferred Stock, you will have limited voting rights.

Holders of Series A Preferred Stock will have no voting rights with respect to matters that generally require the approval of voting shareholders. Holders of Series A Preferred Stock will have the right to vote, subject to certain exceptions, with respect to any amendment of our Restated Certificate of Incorporation (including the Certificate of Designation (as defined herein)), any issue of Capital Stock (as defined in the Certificate of Designation), any increase or decrease of the authorized number of shares of Series A Preferred Stock and any merger or consolidation of the Company, and shall not be entitled to vote on any other matter except to the extent required under the General Corporation Law of the State of Delaware.

Holders of our Series A Preferred Stock will bear dividend risk. We may not have sufficient funds to pay dividends on the Series A Preferred Stock. In addition, contractual restrictions may prevent us from declaring or paying dividends.

Our ability to declare and pay dividends on the Series A Preferred Stock will depend on many factors, including the following:

- our financial condition, including the amount of cash we have on hand;
- the amount of cash, if any, generated by our operations and financing activities;
- our anticipated financing needs, including the amounts needed to service our indebtedness or other obligations;
- the degree to which we decide to reinvest any cash generated by our operations or financing activities to fund our future operations;
- the ability of our subsidiaries to distribute funds to us;
- regulatory restrictions on our ability to pay dividends, including under the Delaware General Corporation Law; and
- contractual restrictions on our ability to pay dividends.

You may receive less than the full amount of accrued dividends on your Series A Preferred Stock. In addition, if we fail to declare and pay accrued dividends on the Series A Preferred Stock in full, then the value or trading price, if any, of the Series A Preferred Stock will likely decline.

If the terms of our indebtedness restrict or prohibit us from paying dividends, then we may seek to refinance that indebtedness or seek a waiver that would permit the payment of dividends. However, we may be unable or may choose not to refinance the indebtedness or obtain a waiver.

Under the Delaware General Corporation Law, we may declare dividends on the Series A Preferred Stock only out of our “surplus” (which generally means our total assets less total liabilities, each measured at their fair market values, less statutory capital), or, if there is no surplus, out of our net profits for the current or the immediately preceding fiscal year. We may not have sufficient surplus or net profits to declare and pay dividends on the Series A Preferred Stock.

If we fail to declare and pay full dividends on the Series A Preferred Stock, then we will be prohibited from paying dividends on our common stock and any other junior securities, subject to limited exceptions. A reduction or elimination of dividends on our common stock may cause the trading price of our common stock to decline, which, in turn, will likely depress the value or trading price, if any, of the Series A Preferred Stock.

Our issuance of the Series A Preferred Stock may reduce the value of our common stock.

Our Series A Preferred Stock has a liquidation preference that is required to be paid prior to any payment on our common stock (including the Warrant Shares). The payment of the liquidation preferences could result in common stockholders (including the Warrant Shares) and holders of our PIPE Warrants not receiving any consideration if we were to liquidate, dissolve or wind up, either voluntarily or involuntarily. The existence of the liquidation preferences may reduce the value of our common stock, make it harder for us to sell shares of our common stock in offerings in the future, or prevent or delay a change of control.

We may issue preferred stock in the future that ranks senior to or equally with the Series A Preferred Stock with respect to dividends and liquidation rights, which may adversely affect the rights of holders of the Series A Preferred Stock.

With the consent of the holders of at least two-thirds of the outstanding Series A Preferred Stock (and any other voting stock with similar voting rights), we may authorize and issue preferred stock that ranks senior to or equally with the Series A Preferred Stock with respect to the payment of dividends or the distribution of assets upon our liquidation, dissolution or winding up. If we issue any such preferred stock in the future, your rights as a holder of the Series A Preferred Stock will be diluted and the value or trading price, if any, of the Series A Preferred Stock may decline.

Our Series A Preferred Stock has rights, preferences, and privileges that are not held by, and are preferential to, the rights of holders of our common stock, which could adversely affect our liquidity and financial condition, and may result in the interests of holders of the Series A Preferred Stock differing from holders of our common stock.

The holders of Series A Preferred Stock have the right under the Certificate of Designation to receive a liquidation preference entitling them to be paid out of our assets available for distribution to stockholders before any payment may be made to holders of any other class or series of capital stock junior to the Series A Preferred Stock, subject to the rights of existing and future creditors, an amount equal to the stated value of their shares of Series A Preferred Stock plus all accrued and unpaid dividends.

The holders of the Series A Preferred Stock will be entitled to receive cumulative dividends, at a rate of 9.25% prior to the first anniversary of the Closing Date, 9.75% per annum on or after the first anniversary of the Closing Date but prior to the second anniversary of the Closing Date and 12.00% on or after the second anniversary of the Closing Date and thereafter, and in accordance with the terms of the Certificate of Designation. The dividends on each share of Series A Preferred Stock are to be paid in cash or in-kind through an increase in the stated value of such share, as set forth in the Certificate of Designation.

We may redeem shares of Series A Preferred Stock on or after the first anniversary of the Closing Date for cash at the redemption prices per share of Series A Preferred Stock of (i) 103% of the Liquidation Preference (as defined in the Certificate of Designation) if redeemed during the 12-month period beginning on March 30, 2023 to March 30, 2024 and (ii) 102% of the Liquidation Preference if redeemed on March 30, 2024 and thereafter. We are also required to redeem all shares of Series A Preferred Stock on the Maturity Date (as defined in the Certificate of Designation) at a purchase price per share of Series A Preferred Stock equal to the Mandatory Redemption Price (as defined in the Certificate of Designation), provided that such purchase can be made out of funds legally available therefor. In addition, upon certain change of control events, holders of shares of Series A Preferred Stock may require us to redeem all or part of such holder's shares of Series A Preferred Stock at a purchase price per share of Series A Preferred Stock, payable in cash, equal to the Change of Control Purchase Price (as defined in the Certificate of Designation), provided that such purchase can be made out of funds legally available therefor.

These dividend and share redemption obligations could adversely affect our liquidity and reduce the amount of cash available for working capital, capital expenditures, growth opportunities, acquisitions, and other general corporate purposes. Our obligations to the holders of Series A Preferred Stock could also limit our ability to obtain additional financing or increase our borrowing costs, which could have an adverse effect on our financial condition. The preferential rights could also result in divergent interests between the holders of our Series A Preferred Stock and holders of shares of our Common Stock.

The PIPE Warrants are speculative in nature and may not have any value.

The PIPE Warrants will have value only if price of our common stock exceeds the exercise price of the PIPE Warrant. There can be no assurance that the market price of our common stock will equal or exceed the exercise price of the PIPE Warrants. In the event that the price of our common stock does not exceed the exercise price of the PIPE Warrants, the PIPE Warrants will not have any value. Holders of the PIPE Warrants may exercise their right to acquire the shares of common stock and pay an exercise price of \$3.77 per share prior to four years from the date of issuance, after which date any unexercised PIPE Warrants will expire and have no further value.

Holders of the PIPE Warrants will have no rights as a common stockholder until they acquire our common stock.

Until holders of the PIPE Warrants acquire shares of our common stock upon exercise of the PIPE Warrants, the holders will have no rights with respect to the common stock underlying the PIPE Warrants. Upon exercise of the PIPE Warrants, the holder will be entitled to exercise the rights of a common stockholder as to our common stock only as to matters for which the record date occurs after the exercise.

The PIPE Warrants are exercisable for common stock, which would increase the number of shares eligible for future resale in the public market and result in dilution to stockholders.

The PIPE Warrants to purchase an aggregate of 4,858,090 shares of our common stock are immediately exercisable. Each such PIPE Warrant entitles the holder thereof to purchase one share of common stock at a price of \$3.77 per whole share, subject to adjustment. To the extent such PIPE Warrants are exercised, additional shares of common stock will be issued, which will result in dilution to the then existing holders of common stock and increase the number of shares eligible for resale in the public market. Sales of substantial numbers of such shares in the public market could adversely affect the market price of our common stock.

The market price of shares of our common stock may experience volatility, which could cause holders of the PIPE Warrants to incur substantial losses.

Volatility in the trading price of our common stock could significantly affect the value or trading price, if any, of the PIPE Warrants. This could result in significant volatility in the value or trading price, if any, of the PIPE Warrants. The PIPE Warrants will have value only if the price of our common stock exceeds the exercise price of the PIPE Warrant. There can be no assurance that the market price of our common stock will equal or exceed the exercise price of the PIPE Warrants. In the event that the price of our common stock does not exceed the exercise price of the PIPE Warrants, or if the price of our common stock falls below

the exercise price of the PIPE Warrants after a holder exercises its option, the PIPE Warrants will not have any value and the holders of our PIPE Warrants may incur substantial losses.

An active trading market for the Series A Preferred Stock and PIPE Warrants does not exist and may not develop.

The Series A Preferred Stock and PIPE Warrants have no established trading market and are not listed on any securities exchange, and we do not intend to list the Series A Preferred Stock and PIPE Warrants on any securities exchange. We cannot assure you that an active trading market in the Series A Preferred Stock or the PIPE Warrants will develop and, even if it develops, we cannot assure you that it will last. In either case, the trading prices of the Series A Preferred Stock and PIPE Warrants could be adversely affected and holders' ability to transfer shares of Series A Preferred Stock or PIPE Warrants will be limited.

The terms of the Series A Preferred Stock and PIPE Warrants impose additional challenges on our ability to raise capital.

The terms of the Series A Preferred Stock and the PIPE Warrants contain a number of restrictive covenants that may impose significant operating and financial restrictions on us while the Series A Preferred Stock and PIPE Warrants remain outstanding, unless the restrictions are waived by consent of at least 66 $\frac{2}{3}$ % of the then-issued and outstanding shares of Series A Preferred Stock, including, but not limited to, restrictions on our ability to pay dividends or make other distributions or repurchase or redeem our capital stock; issue additional equity ranking senior or pari passu to the Series A Preferred Stock; and enter into certain transactions, among other restrictions.

A breach of the covenants or restrictions under the agreements related to the sale of the Series A Preferred Stock and PIPE Warrants and related agreements governing our indebtedness could result in an event of default under such agreements. As a result of these restrictions, we may be limited in how we conduct our business, unable to finance our operations through additional debt or equity financings and/or unable to compete effectively or to take advantage of new business opportunities.

Further, while we could potentially receive up to an aggregate of \$18.3 million in gross proceeds from the exercise of the PIPE Warrants, no assurances can be made that the holders of such warrants will elect to exercise any or all of such warrants and, accordingly, no assurance that we will receive any proceeds from the exercise of the PIPE Warrants. We believe the likelihood that the holders will exercise the PIPE Warrants, and therefore the amount of cash proceeds that we would receive, is dependent upon the trading price of our common stock, which as of the date this filing was below the exercise price of \$3.77 for the PIPE Warrants. If the trading price for our common stock is less than the exercise price for the PIPE Warrants, we believe the holders of such warrants will be unlikely to exercise their warrants. Accordingly, we may not receive cash proceeds with respect to the PIPE Warrants, and we are restricted in our ability to conduct additional debt or equity financings.

We may issue debt and equity securities that are senior to our common stock as to distributions and in liquidation, which could negatively affect the value of our common stock.

In the future, we may increase our capital resources by entering into debt or debt-like financing or issuing debt or equity securities, which could include issuances of senior notes, subordinated notes or preferred stock. In the event of a liquidation of the Company, our lenders and holders of our debt or preferred securities would receive a distribution of our available assets before distributions to the holders of our common stock. Our decision to incur debt and issue other securities in future offerings will depend on market conditions and other factors beyond our control. We cannot predict or estimate the amount, timing or nature of our future offerings and debt financings. Future offerings could reduce the value of our common stock and dilute the interests of our stockholders.

Our management will have broad discretion as to the use of the proceeds from our public offerings, private placements, warrant exercises and loans and we may not use the proceeds in ways that increase the value of your investment.

You will be relying on the judgment of our management with regard to the use of these net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds

are being used appropriately. Our management will have broad discretion in the application of the net proceeds from public offerings, private placements, including the Preferred Private Placement, warrant exercises and loans and could spend the proceeds in ways that do not improve our results of operations or positively impact the price of our common shares. Our failure to apply these funds effectively could have a material adverse effect on our business and cause the price of our common stock to decline.

USE OF PROCEEDS

We intend to use the net proceeds from the sale of the securities as set forth in the applicable prospectus supplement.

We will not receive any proceeds from the sale of the PIPE Warrants, Warrant Shares or the Series A Preferred Stock by the Selling Securityholders. We could, however, receive up to approximately \$18.3 million upon exercise of outstanding PIPE Warrants registered hereunder. Any amounts we receive from such exercises will be used for working capital, capital expenditures and general corporate purposes.

SELLING SECURITYHOLDERS

The Selling Securityholders named below are offering for resale, from time to time, up to an aggregate of (i) 55,000 shares of Series A Preferred Stock, (ii) 4,858,090 Warrant Shares and (iii) 4,858,090 PIPE Warrants held by the Selling Securityholders. The tables below have been prepared based upon the information furnished to us by the Selling Securityholders as of March 28, 2023. The Selling Securityholders may have purchased, acquired, sold, transferred or otherwise disposed of some or all of their securities since the date on which the information in the following tables is presented.

The first table below sets forth information as of March 29, 2023, to our knowledge, the Selling Securityholders and other information regarding the beneficial ownership (as determined under Section 13(d) of the Exchange Act and the rules and regulations thereunder) of the shares of Series A Preferred Stock held by the Selling Securityholders. The second table below sets forth information as of March 29, 2023, to our knowledge, the Selling Securityholders and other information regarding the beneficial ownership (as determined under Section 13(d) of the Exchange Act and the rules and regulations thereunder) of the shares of common stock, Warrant Shares and PIPE Warrants held by the Selling Securityholders.

Selling Securityholders may sell some, all or none of the Series A Preferred Stock, Warrant Shares or PIPE Warrants offered by this prospectus. Because the number of securities the Selling Securityholders may offer and sell is not presently known, we cannot estimate the number of securities that will be held by the Selling Securityholders after completion of this offering. Each table, however, presents the maximum number of securities that the Selling Securityholders may offer pursuant to this prospectus and the number of securities that would be beneficially owned after the sale of the maximum number of securities by the Selling Securityholders. The percent of beneficial ownership for the selling stockholders is based on 169,195,442 shares of our common stock outstanding as of March 30, 2023.

Information about the Selling Securityholders may change over time. Any changed information will be set forth in an amendment to the registration statement or supplement to this prospectus, to the extent required by law.

Name of Selling Stockholder	Number of Shares of Series A Preferred Stock Owned Prior to Offering	Maximum Number of Shares of Series A Preferred Offered Hereby	Number of Shares of Series A Preferred Stock Owned After Offering ⁽¹⁾
JPMorgan Chase & Co. ⁽²⁾	5,000	5,000	—
Swarth Investments Ltd. ⁽³⁾	5,000	5,000	—
Client Accounts Managed by Neuberger Berman ⁽⁴⁾	20,618	20,618	—
Herald Investment Trust plc ⁽⁵⁾	2,000	2,000	—
Sidus Investment Partners, L.P. ⁽⁶⁾	800	800	—
Sidus Double Alpha Fund LTD ⁽⁷⁾	1,275	1,275	—
Sidus Double Alpha Fund L.P. ⁽⁸⁾	2,080	2,080	—
Manatuck Hill Scout Fund, L.P. ⁽⁹⁾	2,000	2,000	—
Jon D and Linda W Gruber Trust ⁽¹⁰⁾	500	500	—
Pacific Capital Management LLC ⁽¹¹⁾	3,000	3,000	—
Funicular Funds, LP ⁽¹²⁾	2,000	2,000	—
BRF Investments, LLC ⁽¹³⁾	4,073	4,073	—
Intrinsic Edge Capture LP ⁽¹⁴⁾	5,154	5,154	—
Boothbay Absolute Return Strategies, LP ⁽¹⁵⁾	1,000	1,000	—
OhSang Kwon ⁽¹⁶⁾	500	500	—

(1) Assumes the sale of all shares of Series A Preferred Stock offered pursuant to this prospectus.

- (2) Shares beneficially owned and offered hereby consist of 290 shares of Series A Preferred Stock held by JPMC Heritage Parent LLC and 4,710 shares of Series A Preferred Stock held by Heritage PE (OEP) III, L.P. JPMorgan Chase & Co. is the sole member of JPMorgan Chase Holdings LLC, which is the sole member of OEP Holdings LLC, which is the sole member of JPMC Heritage Parent LLC, which is the general partner of OEP General Partner III L.P., which is the general partner of Heritage PE (OEP) III, L.P. OEP II Partners Co-Invest, L.P. is subject to certain contractual agreements and statutory obligations to acquire and vote shares side-by-side with Heritage PE (OEP) III, L.P. By virtue of these agreements and obligations, JPMorgan Chase & Co. may be deemed to have or share beneficial ownership over the shares held directly by OEP II Partners Co-Invest, L.P. Notwithstanding the above, JPMorgan Chase does not directly or indirectly own any interest in OEP II Partners Co-Invest, L.P. J.P. Morgan Securities LLC, an affiliate of JPMorgan Chase & Co., is a registered broker-dealer. Rick W. Smith, an officer of JPMorgan Chase & Co., is a member of the Board of Directors of the Company. The principal address for JPMorgan Chase & Co. is 383 Madison Avenue, New York, New York 10179, and the principal address for JPMC Heritage Parent LLC and Heritage PE (OEP) III, L.P. is 277 Park Avenue, New York, New York 10172.
- (3) Shares beneficially owned and offered hereby consist of 5,000 shares of Series A Preferred Stock held by Swarth Investments Ltd. Shaul Shani, Founder and Chairman of the Swarth Group, is a member of the Board of Directors of the Company. Each of Nicholas Moss, Suzanne Hart and Georgios Antoniadis, each a director of Swarth Investments Ltd., may be deemed to have investment discretion over the shares of Series A Preferred Stock held by Swarth Investments Ltd, which investment discretion requires the approval of at least two of such directors. The principal address for Swarth Investments Ltd. is Newport House, 15 The Grange St Peter Port, Guernsey, GY1 4LA.
- (4) Shares beneficially owned and offered hereby consist of 20,618 shares of Series A Preferred Stock owned by client accounts managed by Neuberger Berman, which are funds and accounts managed or advised by Neuberger Berman Investment Advisers LLC (“NBIA”) (the “Neuberger Berman Selling Securityholders”). Neuberger Berman BD LLC is a registered broker-dealer and member of FINRA, and under common control with NBIA. The Neuberger Berman Selling Securityholders acquired the shares for investment purposes, and at the time of the acquisition of such shares, the Neuberger Berman Selling Securityholders did not have any agreements or understandings with any person to distribute such shares. Neuberger Berman Group LLC (“NBG”) and certain of its affiliates, including NBIA, have voting power and investment power over the shares. NBG and its affiliates do not, however, have any economic interest in the shares. The principal address for the above referenced entities is 1290 Avenue of the Americas, New York, New York 10104.
- (5) Shares beneficially owned and offered hereby consist of 2,000 shares of Series A Preferred Stock issued in the Preferred Private Placement to Herald Investment Management Limited for and on behalf of Herald Investment Trust plc. The Bank of New York Mellon is the registered holder of the 2,000 shares of Series A Preferred Stock owned by Herald Investment Trust plc. The principal address for Herald Investment Trust plc is 10-11 Charterhouse Square, Barbican, London, EC1M6EE.
- (6) Shares beneficially owned and offered hereby consist of 800 shares of Series A Preferred Stock held by Sidus Investment Partners, L.P. Michael Barone may be deemed to have investment discretion over the shares of Series A Preferred Stock held by Sidus Investment Partners, L.P. The principal address for Sidus Investment Partners, L.P. is 767 3rd Avenue, 15th Floor, New York, New York, 10017.
- (7) Shares beneficially owned and offered hereby consist of 1,275 shares of Series A Preferred Stock held by Sidus Double Alpha Fund LTD. Michael Barone may be deemed to have investment discretion over the shares of Series A Preferred Stock held by Sidus Double Alpha Fund LTD. The principal address for Sidus Double Alpha Fund LTD is 767 3rd Avenue, 15th Floor, New York, New York, 10017.
- (8) Shares beneficially owned and offered hereby consist of 2,080 shares of Series A Preferred Stock held by Sidus Double Alpha Fund L.P. Michael Barone may be deemed to have investment discretion over the shares of Series A Preferred Stock held by Sidus Double Alpha Fund L.P. The principal address for Sidus Double Alpha Fund L.P. is 767 3rd Avenue, 15th Floor, New York, New York, 10017.
- (9) Shares beneficially owned and offered hereby consist of 2,000 shares of Series A Preferred Stock held by Manatuck Hill Scout Fund, L.P. Mark Broach may be deemed to have investment discretion over the shares of Series A Preferred Stock held by Manatuck Hill Scout Fund, L.P. The principal address for Manatuck Hill Scout Fund, L.P. is 1465 Post Road East, Westport, Connecticut, 06880.

- (10) Shares beneficially owned and offered hereby consist of 500 shares of Series A Preferred Stock held by Jon D and Linda W Gruber Trust. Jon D Gruber may be deemed to have investment discretion over the shares of Series A Preferred Stock held by Jon D. and Linda W. Gruber Trust. The principal address for Jon D and Linda W Gruber Trust is 300 Tamal Plaza, Suite 215, Corte Madera, California, 94925.
- (11) Shares beneficially owned and offered hereby consist of 3,000 shares of Series A Preferred Stock held by Pacific Capital Management LLC. Jonathan Glaser may be deemed to have investment discretion over the shares of Series A Preferred Stock held by Pacific Capital Management LLC. The principal address for Pacific Capital Management LLC is 11601 Wilshire Boulevard, Suite 1925, Los Angeles, California, 90025.
- (12) Shares beneficially owned and offered hereby consist of 2,000 shares of Series A Preferred Stock held by Funicular Funds, LP. Jacob Ma-Weaver may be deemed to have investment discretion over the shares of Series A Preferred Stock held by Funicular Funds, LP. The principal address for Funicular Funds, LP is 2261 Market Street, #4307, San Francisco, California, 94114.
- (13) Shares beneficially owned and offered hereby consist of 4,073 shares of Series A Preferred Stock held by BRF Investments, LLC. Bryant Riley and Phillip J. Ahn may be deemed to have investment discretion over the shares of Series A Preferred Stock held by BRF Investments, LLC. The principal address for BRF Investments, LLC is 11100 Santa Monica Boulevard, Suite 800, Los Angeles, California 90025.
- (14) Shares beneficially owned and offered hereby consist of 5,154 shares of Series A Preferred Stock held by Intrinsic Edge Capture LP. Mark Coe may be deemed to have investment discretion over the shares of Series A Preferred Stock held by Intrinsic Edge Capture LP. The principal address for Intrinsic Edge Capture LP is 180 North LaSalle, Suite 1800, Chicago, IL 60601.
- (15) Shares beneficially owned and offered hereby consist of 1,000 shares of Series A Preferred Stock held by Boothbay Absolute Return Strategies, LP. Boothbay Fund Management LLC (“BFM”) manages Boothbay Absolute Return Strategies, LP, as a multi-manager vehicle. BFM allocates the capital of Boothbay Absolute Return Strategies, LP to various outside investment sub-advisors to be managed in accordance with an investment advisory agreement with the outside investment sub-advisor. Sidus Investment Management LLC, the outside investment sub-advisor to Boothbay Absolute Return Strategies, LP, shares voting power and investment power over the shares of Series A Preferred Stock. BFM and Sidus Investment Management LLC do not, however, have any economic interest in the shares. The principal address for the above referenced entities is 140 E 45th Street, 14th Floor, New York, New York 10017.
- (16) Shares beneficially owned and offered hereby consist of 500 shares of Series A Preferred Stock held by OhSang Kwon. The principal address for OhSang Kwon is 38 Warren Street, Apartment 5C, New York, New York 10007.

Name of Selling Shareholder	Number of Securities Beneficially Owned Prior to the Offering			Total ⁽²⁾	Voting % ⁽²⁾⁽³⁾	Number of PIPE Warrants Offered Hereby	Number of Warrant Shares Offered Hereby ⁽²⁾	Number of Common Shares Beneficially Owned After the Offering	Number of PIPE Warrants and Warrant Shares Beneficially Owned After the Offering	Voting % Remaining After the Offering ⁽³⁾
	Common Shares	Warrant Shares ⁽¹⁾	PIPE Warrants							
JPMorgan Chase & Co. ⁽⁴⁾	51,594,927	441,645	441,645	52,036,572	30.76%	441,645	441,645	51,594,927	—	30.49%
Swarth Investments Ltd. ⁽⁵⁾	27,435,739	441,645	441,645	27,877,384	16.48%	441,645	441,645	27,435,739	—	16.22%
Client Accounts Managed by Neuberger Berman ⁽⁶⁾	13,816,201	1,821,166	1,821,166	15,637,367	9.42%	1,821,166	1,821,166	13,816,201	—	8.17%
Herald Investment Trust plc ⁽⁷⁾	1,415,869	176,658	176,658	1,592,527	*	176,658	176,658	1,415,869	—	*
Sidus Investment Partners, L.P. ⁽⁸⁾	158,764	70,663	70,663	229,427	*	70,663	70,663	158,764	—	*
Sidus Double Alpha Fund LTD ⁽⁹⁾	259,025	112,619	112,619	371,644	*	112,619	112,619	259,025	—	*
Sidus Double Alpha Fund L.P. ⁽¹⁰⁾	505,742	183,725	183,725	689,467	*	183,725	183,725	505,742	—	*
Manatuck Hill Scout Fund, L.P. ⁽¹¹⁾	—	176,658	176,658	176,658	*	176,658	176,658	—	—	—
Jon D and Linda W Gruber Trust ⁽¹²⁾	63,000	44,164	44,164	107,164	*	44,164	44,164	63,000	—	*
Pacific Capital Management LLC ⁽¹³⁾	—	264,987	264,987	264,987	*	264,987	264,987	—	—	—
Funicular Funds, LP ⁽¹⁴⁾	—	176,658	176,658	176,658	*	176,658	176,658	—	—	—
BRF Investments, LLC ⁽¹⁵⁾	—	359,762	359,762	359,762	*	359,762	359,762	—	—	—
Intrinsic Edge Capture LP ⁽¹⁶⁾	1,310,717	455,247	455,247	1,765,964	1.04%	455,247	455,247	1,310,717	—	*
Boothbay Absolute Return Strategies, LP ⁽¹⁷⁾	246,469	88,329	88,329	334,798	*	88,329	88,329	246,469	—	*
OhSang Kwon ⁽¹⁸⁾	—	44,164	44,164	44,164	*	44,164	44,164	—	—	—

* Less than one percent

- (1) Represents the number of shares of common stock issuable upon the exercise of PIPE Warrants held by such Selling Securityholder.
- (2) For illustrative purposes of beneficial ownership, avoids double counting of the PIPE Warrants and the Warrant Shares underlying such PIPE Warrants.
- (3) For illustrative purposes of beneficial ownership, the voting percentage of each of the selling securityholders is calculated based on 169,195,442 shares of our common stock outstanding as of March 30, 2023, which amount does not include the number of PIPE Warrants or Warrant Shares owned by such selling securityholder.
- (4) Shares beneficially owned and offered hereby consist of 25,615 shares of common stock issuable upon the exercise of PIPE Warrants held by JPMC Heritage Parent LLC and 416,030 shares of common stock issuable upon the exercise of PIPE Warrants held by Heritage PE (OEP) III, L.P. JPMorgan Chase & Co. is the sole member of JPMC Heritage Parent LLC, which is the sole member of OEP Holdings LLC, which is the sole member of JPMC Heritage Parent LLC, which is the general partner of OEP General Partner III L.P., which is the general partner of Heritage PE (OEP) III, L.P. OEP II Partners Co-Invest, L.P. is subject to certain contractual agreements and statutory obligations to acquire and vote shares side-by-side with Heritage PE (OEP) III, L.P. By virtue of these agreements and obligations, JPMorgan Chase & Co. may be deemed to have or share beneficial ownership over the shares held

directly by OEP II Partners Co-Invest, L.P. Notwithstanding the above, JPMorgan Chase does not directly or indirectly own any interest in OEP II Partners Co-Invest, L.P. J.P. Morgan Securities LLC, an affiliate of JPMorgan Chase & Co., is a registered broker-dealer. Rick W. Smith, an officer of JPMorgan Chase & Co., is a member of the Board of Directors of the Company. The principal address for JPMorgan Chase & Co. is 383 Madison Avenue, New York, New York 10179, and the principal address for JPMC Heritage Parent LLC and Heritage PE (OEP) III, L.P. is 277 Park Avenue, New York, New York 10172.

- (5) Shares beneficially owned and offered hereby consist of 441,646 shares of common stock issuable upon the exercise of PIPE Warrants held by Swarth Investments Ltd. Shaul Shani, Founder and Chairman of the Swarth Group, is a member of the Board of Directors of the Company. Each of Nicholas Moss, Suzanne Hart and Georgios Antoniadis, each a director of Swarth Investments Ltd., may be deemed to have investment discretion over the shares of common stock held by Swarth Investments Ltd, which investment discretion requires the approval of at least two of such directors. The principal address for Swarth Investments Ltd. is Newport House, 15 The Grange St Peter Port, Guernsey, GY1 4LA.
- (6) Shares beneficially owned and offered hereby consist of 1,821,166 shares of common stock issuable upon the exercise of PIPE Warrants owned by client accounts managed by Neuberger Berman, which are funds and accounts managed or advised by Neuberger Berman Investment Advisers LLC (“NBIA”) (the “Neuberger Berman Selling Securityholders”). Neuberger Berman BD LLC is a registered broker-dealer and member of FINRA, and under common control with NBIA. The Neuberger Berman Selling Securityholders acquired the shares for investment purposes, and at the time of the acquisition of such shares, the Neuberger Berman Selling Securityholders did not have any agreements or understandings with any person to distribute such shares. Neuberger Berman Group LLC (“NBG”) and certain of its affiliates, including NBIA, have voting power and investment power over the shares. NBG and its affiliates do not, however, have any economic interest in the shares. The principal address for the above referenced entities is 1290 Avenue of the Americas, New York, New York 10104.
- (7) Shares beneficially owned and offered hereby consist of 176,658 shares of common stock issuable upon the exercise of PIPE Warrants issued in the Preferred Private Placement to Herald Investment Management Limited for and on behalf of Herald Investment Trust plc. The Bank of New York Mellon is the registered holder of the 176,658 shares of common stock issuable upon the exercise of PIPE Warrants owned by Herald Investment Trust plc. The principal address for Herald Investment Trust plc is 10-11 Charterhouse Square, Barbican, London, EC1M6EE.
- (8) Shares beneficially owned and offered hereby consist of 70,663 shares of common stock issuable upon the exercise of PIPE Warrants held by Sidus Investment Partners, L.P. Michael Barone may be deemed to have investment discretion over the shares of common stock held by Sidus Investment Partners, L.P. The principal address for Sidus Investment Partners, L.P. is 767 3rd Avenue, 15th Floor, New York, New York, 10017.
- (9) Shares beneficially owned and offered hereby consist of 112,619 shares of common stock issuable upon the exercise of PIPE Warrants held by Sidus Double Alpha Fund LTD. Michael Barone may be deemed to have investment discretion over the shares of common stock held by Sidus Double Alpha Fund LTD. The principal address for Sidus Double Alpha Fund LTD is 767 3rd Avenue, 15th Floor, New York, New York, 10017.
- (10) Shares beneficially owned and offered hereby consist of 183,725 shares of common stock issuable upon the exercise of PIPE Warrants held by Sidus Double Alpha Fund L.P. Michael Barone may be deemed to have investment discretion over the shares of common stock held by Sidus Double Alpha Fund L.P. The principal address for Sidus Double Alpha Fund L.P. is 767 3rd Avenue, 15th Floor, New York, New York, 10017.
- (11) Shares beneficially owned and offered hereby consist of 176,658 shares of common stock issuable upon the exercise of PIPE Warrants held by Manatuck Hill Scout Fund, L.P. Mark Broach may be deemed to have investment discretion over the shares of common stock held by Manatuck Hill Scout Fund, L.P. The principal address for Manatuck Hill Scout Fund, L.P. is 1465 Post Road East, Westport, Connecticut, 06880.
- (12) Shares beneficially owned and offered hereby consist of 44,164 shares of common stock issuable upon the exercise of PIPE Warrants held by Jon D and Linda W Gruber Trust. Jon D Gruber may be deemed

to have investment discretion over the shares of common stock held by Jon D. and Linda W. Gruber Trust. The principal address for Jon D and Linda W Gruber Trust is 300 Tamal Plaza, Suite 215, Corte Madera, California, 94925.

- (13) Shares beneficially owned and offered hereby consist of 264,987 shares of common stock issuable upon the exercise of PIPE Warrants held by Pacific Capital Management LLC. Jonathan Glaser may be deemed to have investment discretion over the shares of common stock held by Pacific Capital Management LLC. The principal address for Pacific Capital Management LLC is 11601 Wilshire Boulevard, Suite 1925, Los Angeles, California, 90025.
- (14) Shares beneficially owned and offered hereby consist of 176,658 shares of common stock issuable upon the exercise of PIPE Warrants held by Funicular Funds, LP. Jacob Ma-Weaver may be deemed to have investment discretion over the shares of common stock held by Funicular Funds, LP. The principal address for Funicular Funds, LP is 2261 Market Street, #4307, San Francisco, California, 94114.
- (15) Shares beneficially owned and offered hereby consist of 359,762 shares of common stock issuable upon the exercise of PIPE Warrants held by BRF Investments, LLC. Bryant Riley and Phillip J. Ahn may be deemed to have investment discretion over the shares of common stock held by BRF Investments, LLC. The principal address for BRF Investments, LLC is 11100 Santa Monica Boulevard, Suite 800, Los Angeles, California 90025.
- (16) Shares beneficially owned and offered hereby consist of 455,247 shares of common stock issuable upon the exercise of PIPE Warrants held by Intrinsic Edge Capture LP. Mark Coe may be deemed to have investment discretion over the shares of common stock held by Intrinsic Edge Capture LP. The principal address for Intrinsic Edge Capture LP is 180 North LaSalle, Suite 1800, Chicago, IL 60601.
- (17) Shares beneficially owned and offered hereby consist of 88,329 shares of common stock issuable upon the exercise of PIPE Warrants held by Boothbay Absolute Return Strategies, LP. Boothbay Fund Management LLC (“BFM”) manages Boothbay Absolute Return Strategies, LP, as a multi-manager vehicle. BFM allocates the capital of Boothbay Absolute Return Strategies, LP to various outside investment sub-advisors to be managed in accordance with an investment advisory agreement with the outside investment sub-advisor. Sidus Investment Management LLC, the outside investment sub-advisor to Boothbay Absolute Return Strategies, LP, shares voting power and investment power over the 88,329 shares of common stock issuable upon exercise of PIPE Warrants. BFM and Sidus Investment Management LLC do not, however, have any economic interest in the shares. The Series A Preferred Stock, PIPE Warrants and Warrant Shares received by Boothbay Absolute Return Strategies, LP in connection with the Preferred Private Placement will be held in the Sidus Investment Management LLC outside sub-advisor account, and will be under the discretionary management of Sidus Investment Management LLC pursuant to the investment advisory agreement with Sidus Investment Management LLC. The principal address for the above referenced entities is 140 E 45th Street, 14th Floor, New York, New York 10017.
- (18) Shares beneficially owned and offered hereby consist of 44,164 shares of common stock issuable upon the exercise of PIPE Warrants held by OhSang Kwon. The principal address for OhSang Kwon is 38 Warren Street, Apartment 5C, New York, New York 10007.

Except for the transactions referred to herein and in documents filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, none of the Selling Securityholders has, or within the last three years has had, any position, office or other material relationship (legal or otherwise) with us or any of our subsidiaries other than as a holder of our securities.

DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock and certain provisions of our Restated Certificate of Incorporation, as amended (the “Certificate of Incorporation”), and Amended and Restated By-Laws (the “By-laws”) are summaries and are qualified in their entirety by reference to the full text of our Certificate of Incorporation and By-laws.

Authorized Capital Stock

We are authorized to issue up to 240,000,000 shares of Common Stock, \$0.0001 par value per share, and 10,000,000 shares of preferred stock, \$0.01 par value per share, of which 63,250 shares are designated Series A Preferred Stock. As of March 30, 2023, there were 169,195,442 shares of our Common Stock issued and outstanding and 55,000 shares of our Series A Preferred Stock issued and outstanding.

Common Stock

Dividend Rights

Holders of our Common Stock are entitled to receive ratably any dividends that may be declared by our board of directors (the “Board”) out of legally available funds, subject to any preferential dividend rights of any outstanding preferred 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 the stockholders and do not have cumulative voting rights. Accordingly, holders of a majority of the shares voted can elect all of the directors then standing for election.

Liquidation Rights

Upon the liquidation, dissolution or winding up of the Company, the holders of our Common Stock are entitled to receive ratably assets available for distribution to our stockholders after the payment of all debts and other liabilities and subject to the prior rights of any outstanding preferred stock.

Other Rights

Other than as set forth in the First Amended and Restated Stockholders Agreement, dated as of March 3, 2020 (the “Stockholders Agreement”), by and among us, JPMC Heritage Parent LLC, Heritage PE (OEP) III, L.P. (together with JPMC Heritage Parent LLC, the “JPM Stockholders”), ECI Holding (Hungary) Kft and Swarth Investments Ltd (together with ECI Holding (Hungary) Kft, “Swarth”), holders of our Common Stock have no preemptive, subscription, redemption or conversion rights.

Preferred Stock

The Board is authorized without further stockholder approval to issue from time to time up to an aggregate of 10,000,000 shares of our preferred stock in one or more series. The Board has discretion to fix the designations, preferences, relative, participating, optional or other special rights, and the qualifications, limitations or restrictions, if any, of the shares of each series, including the dividend rights, dividend rates, conversion rights, voting rights, term of redemption including sinking fund provisions, redemption price or prices, liquidation preferences and the number of shares constituting any series or designations of any series without further vote or action by stockholders.

The purpose of authorizing the Board 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.

Series A Preferred Stock

Pursuant to the Preferred Securities Purchase Agreement, we issued 55,000 shares of the Series A Preferred Stock to the Selling Securityholders. We filed a Certificate of Designation (the "Certificate of Designation") designating the terms of the Series A Preferred Stock as follows.

Redemption

At any time or from time to time on or after the first anniversary of the Closing Date (as defined in the Certificate of Designation), the Company, at its option, may redeem the Series A Preferred Stock for cash, in whole or in part, at the redemption prices (expressed as percentages of the liquidation preference of the Series A Preferred Stock to be redeemed) set forth as follows plus accrued and unpaid interest, if any, to the Redemption Date (as defined in the Certificate of Designation). The redemption prices are: (i) 103%, on or after the first anniversary of the Closing Date (as defined in the Preferred Securities Purchase Agreement); and (ii) 102%, on or after the second anniversary of the Closing Date and thereafter. The Series A Preferred Stock is subject to mandatory redemption on September 30, 2025 at a purchase price per share of Series A Preferred Stock equal to the Liquidation Preference (as defined in the Certificate of Designation).

Dividends

The holders of the Series A Preferred Stock will be entitled to receive cumulative dividends, at a rate of 9.25% prior to the first anniversary of the Closing Date, 9.75% per annum on or after the first anniversary of the Closing Date but prior to the second anniversary of the Closing Date and 12.00% on or after the second anniversary of the Closing Date and thereafter, and in accordance with the terms of the Certificate of Designation.

Ranking

The Series A Preferred Stock ranks senior to the Common Stock and any other equity securities the Company may issue in the future with respect to payment of dividends and distribution of assets upon liquidation, dissolution, winding up or Change of Control Event (as defined in the Certificate of Designation).

Liquidation

Upon the occurrence of any Trigger Event (as defined in the Certificate of Designation), the holders of Series A Preferred Stock shall be entitled to cause us to immediately redeem all, but not less than all, of the outstanding shares of Series A Preferred Stock at the Liquidation Preference (as defined in the Certificate of Designation).

Conversion

In the event any redemption of the shares of the Series A Preferred Stock is prohibited on the Redemption Date by the express terms of the Credit Agreement, dated March 3, 2020, by and among us, Ribbon Communications Operating Company, Inc., the guarantors party thereto, the lenders party thereto, and Citizens Bank, N.A., as administrative agent for the lenders thereunder (as amended, the "Credit Agreement"), as in effect as of the Closing Date, then in lieu of such redemption and payment on such date, the redemption of such shares of Series A Preferred Stock shall occur on a date that is no later than 91 days after the date on which the principal amount of the loans under the Credit Agreement has been repaid; provided, if such shares of Series A Preferred Stock are, due to such express terms, not permitted to be repaid on the date of repayment of such loans, and all of the loans have been repaid in full, the shares of Series A Preferred Stock shall be automatically, and without further action or consideration by the holder, be converted into a promissory note in favor of the holders, obligating us or our successor in interest to pay an amount equal to the Liquidation Preference on a date no later than 91 days after the date on which the principal amount of the loans under the Credit Agreement has been repaid.

Voting Rights

The Certificate of Designation provides that the Series A Preferred Stock will have no voting rights other than the right to vote, subject to certain exceptions, with respect to any amendment of the Certificate

of Incorporation (including the Certificate of Designation), any issue of Capital Stock (as defined in the Certificate of Designation), any increase or decrease of the authorized number of shares of Series A Preferred Stock and any merger or consolidation of the Company, and shall not be entitled to vote on any other matter except to the extent required under the General Corporation Law of the State of Delaware.

Stockholder Rights

In connection with the ECI Acquisition, we entered into the Stockholders Agreement with the JPM Stockholders and Swarth. The Stockholders Agreement sets forth certain arrangements and contains various provisions relating to board size, board representation, standstill restrictions and transfer restrictions as further described therein, including the right of the JPM Stockholders and Swarth to each designate up to three directors for nomination to our Board, subject to the JPM Stockholders and Swarth maintaining certain levels of beneficial ownership of our common stock.

Registration Rights

In August 2022, we entered into a Securities Purchase Agreement (the “Securities Purchase Agreement”) with certain investors (the “Purchasers”), which provided for the sale and issuance in a private placement of 17,071,311 shares of our Common Stock (the “Private Placement”). Concurrently with the execution of the Securities Purchase Agreement, we entered into a Second Amended and Restated Registration Rights Agreement (the “Registration Rights Agreement”), pursuant to which we agreed to, among other things, file, within 30 days after the closing of the Private Placement, a registration statement with the SEC providing for the resale of the shares beneficially owned by the Purchasers, and to use reasonable best efforts to cause the registration statement to be declared effective by the SEC as soon as practicable after the filing. On September 14, 2022, we filed a registration statement providing for the resale of the shares beneficially owned by the Purchasers, and it was declared effective by the SEC on September 23, 2022.

In March 2023, we entered into the Preferred Securities Purchase Agreement in connection with the Preferred Private Placement, which provided for the sale and issuance of 55,000 shares of our Series A Preferred Stock and 4,858,090 Warrants to purchase 4,858,090 Warrant Shares. Pursuant to the Preferred Securities Purchase Agreement, we agreed to, among other things, file, within 30 days after the closing of the Preferred Private Placement, a registration statement with the SEC providing for the resale of the Series A Preferred Stock, Warrants and the Warrant Shares, and to use reasonable best efforts to cause the registration statement to be declared effective by the SEC as soon as practicable after the filing. This prospectus is part of that registration statement.

Delaware Law and Certificate of Incorporation and By-Law Provisions; Anti-Takeover Effects

Certain provisions in the Certificate of Incorporation and By-laws summarized below may be deemed to have an anti-takeover effect and may delay, deter or prevent a tender offer or takeover attempt that a stockholder might consider to be in its best interests, including attempts that might result in a premium being paid over the market price for the shares held by stockholders. These provisions are intended to enhance the likelihood of continuity and stability in the composition of the Board and in the policies formulated by the Board and to discourage certain types of transactions that may involve an actual or threatened change in control.

Removal of Directors; Vacancies

The Certificate of Incorporation and By-laws provide, subject to the Stockholders Agreement (for so long as such Stockholders Agreement is in effect):

- that directors may be removed from office at any time, (i) for cause by the affirmative vote of the holders of a majority of voting power of the shares of our stock entitled to vote for the election of directors, voting together as a single class, or (ii) without cause by (a) subject to clause (b), the affirmative vote of the holders of at least 66⅔% of the voting power of the shares of our stock entitled to vote for the election of directors, voting together as a single class or (b) in the event recommended by at least two-thirds of the total number of authorized directors, including the approval of a majority of the independent directors (as such term is defined in the Stockholders

Agreement), the affirmative vote of the holders of a majority of the voting power of the shares of our stock entitled to vote for the election of directors, voting as a single class; and

- that any vacancy on the Board, however occurring, including a vacancy resulting from an enlargement of the Board, may only be filled by the vote of a majority of the directors then in office.

The limitations on the removal of directors and filling of vacancies could have the effect of making it more difficult for a third party to acquire, or of discouraging a third party from acquiring, the Company.

Stockholder Action; Special Meetings of Stockholders; Advance Notice Requirements for Stockholder Proposals and Director Nominations; Supermajority Voting; Section 203 of the General Corporation Law of the State of Delaware (“DGCL”)

The Certificate of Incorporation and By-laws provide that:

- any action required or permitted to be taken by our stockholders may be taken only at a duly called annual or special meeting of stockholders and may not be taken by any consent in writing by such stockholders; and
- special meetings of the stockholders may only be called by a majority of the total number of authorized directors or (for so long as the Stockholders Agreement remains in effect) a majority of the independent directors (as such term is defined in the Stockholders Agreement).

The By-laws provide that, for nominations and other business to be “properly brought” at a meeting of stockholders, a stockholder of record at such time must have given timely notice to our Secretary and must comply with the other requirements set forth in the By-laws. These provisions could delay until the next stockholders’ meeting stockholder actions that are favored by the holders of a majority of our outstanding voting securities. These provisions may also discourage another person or entity from making a tender offer for our common stock, because the person or entity, even if it acquired a majority of our outstanding voting securities, 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.

The DGCL provides that an amendment to a corporation’s certificate of incorporation requires that (i) the Board adopt a resolution setting forth the proposed amendment and declaring its advisability and either call a special meeting of the stockholders entitled to vote in respect thereof for consideration of such amendment or direct that the amendment be considered at the next annual meeting of the stockholders (provided a meeting or vote is required pursuant to Section 242 of the DGCL) and (ii) the stockholders approve the amendment by a majority of outstanding shares entitled to vote. The Certificate of Incorporation provides that the affirmative vote of the holders of at least 66 2/3% of the voting power of our outstanding voting stock entitled to vote thereon (in addition to any separate class vote required by law or that may in the future be required pursuant to the terms of any outstanding preferred stock) is required to amend or repeal the provisions of Articles IV (to the extent it relates to the authority of the Board to issue shares of preferred stock in one or more series, the terms of which may be determined by the Board), V (Board), VII (Indemnification), IX (Business Combinations with Interested Stockholders), X (Certain Transactions), XI (Stockholder Action), XII (Exclusive Forum), XIII (Severability) or XIV (Amendments) of the Certificate of Incorporation, or to reduce the numbers of authorized shares of common stock or preferred stock.

The Certificate of Incorporation provides that, subject to any limitations imposed by the Certificate of Incorporation, the By-laws may be altered, amended, or repealed, or new By-laws may be adopted, by resolution of the Board duly adopted by a majority of the total number of directors then constituting the full Board, including (for so long as the Stockholders Agreement remains in effect) the approval of a majority of the independent directors (as such term is defined in the Stockholders Agreement). With respect to the power of holders of capital stock to adopt, amend and repeal the By-laws, notwithstanding any other provision of the By-laws or any provision that might otherwise permit a lesser vote or no vote, in addition to any vote of the holders of any class or series of capital stock required by the By-laws or by law, the affirmative vote of the holders of the voting power of at least 66 2/3% of the shares of our stock entitled to vote thereon, voting together as a single class, shall be required for any such alteration, amendment, repeal or adoption by the vote of the holders of any class or series of our capital stock.

Section 203 of the DGCL generally prohibits “business combinations”, including mergers, sales and leases of assets, issuances of securities and similar transactions by a corporation or a subsidiary with an interested stockholder who beneficially owns 15% or more of a corporation’s voting stock, within three years after the person or entity becomes an interested stockholder, unless: (i) the Board of the target corporation has approved, before the acquisition time, either the business combination or the transaction that resulted in the person becoming an interested stockholder, (ii) upon consummation of the transaction that resulted in the person becoming an interested stockholder, the person owns at least 85% of the corporation’s voting stock (excluding shares owned by directors who are officers and shares owned by employee stock plans in which participants do not have the right to determine confidentially whether shares will be tendered in a tender or exchange offer) or (iii) at or after the person or entity becomes an interested stockholder, the business combination is approved by the Board and authorized at a meeting of stockholders by the affirmative vote of at least 66 $\frac{2}{3}$ % of the outstanding voting stock not owned by the interested stockholder.

Section 203 of the DGCL permits a Delaware corporation to elect not to be governed by the provisions of Section 203. Pursuant to the Certificate of Incorporation, we have expressly elected not to be governed by the provisions of Section 203 of the DGCL. Instead, the Certificate of Incorporation provides that, notwithstanding any other provisions of the DGCL or Certificate of Incorporation, we shall not engage in any business combination with any interested stockholder for a period of three years following the time that such stockholder became an interested stockholder unless: (i) the Board has approved, before the acquisition time, either the business combination or the transaction that resulted in the person becoming an interested stockholder, (ii) upon consummation of the transaction that resulted in the person becoming an interested stockholder, the person owns at least 85% of the corporation’s voting stock at the time the transaction commenced (excluding for such purposes any shares owned by directors who are officers and shares owned by employee stock plans in which participants do not have the right to determine confidentially whether shares will be tendered in a tender or exchange offer) or (iii) at or after the person or entity becomes an interested stockholder, the business combination is approved by two-thirds of the total number of authorized directors, whether or not there exist any vacancies in previously authorized directorships, and by a majority of the independent directors (as defined in the Stockholders Agreement).

The foregoing restriction does not apply if (i) a stockholder becomes an interested stockholder inadvertently and (a) as soon as practicable divests itself of ownership of sufficient shares so that the stockholder ceases to be an interested stockholder; and (b) would not, at any time within the three-year period immediately prior to a business combination between us and such stockholder, have been an interested stockholder but for the inadvertent acquisition of ownership; or (ii) the business combination is proposed prior to the consummation or abandonment of and subsequent to the earlier of the public announcement or the notice of a proposed transaction which (a) constitutes one of the transactions described in clause (A), (B) or (C) below; (b) is with or by a person who either was not an interested stockholder during the previous three years or who became an interested stockholder with the approval of the Board; and (c) is approved or not opposed by a majority of the Board then in office (but not less than one) who were directors prior to any person becoming an interested stockholder during the previous three years or were recommended for election or elected to succeed such directors by a majority of such directors.

The proposed transactions referred to in the preceding paragraph are limited to (A) a merger or consolidation of the Company (except for a merger in respect of which, pursuant to Section 251(f) of the DGCL, no vote of the stockholders is required); (B) a sale, lease, exchange, mortgage, pledge, transfer or other disposition (in one transaction or a series of transactions), whether as part of a dissolution or otherwise, of our assets or of any of our direct or indirect majority-owned subsidiaries (other than to any direct or indirect wholly owned subsidiary or to us) having an aggregate market value equal to 50% or more of either that aggregate market value of all of our assets determined on a consolidated basis or the aggregate market value of all our outstanding stock; or (C) a proposed tender or exchange offer for 50% or more of our outstanding voting stock. We will give not less than 20 days’ notice to all interested stockholders prior to the consummation of any of the transactions described in clause (A) or (B) above.

Authorized but Unissued Shares

The authorized but unissued shares of our Common Stock and preferred stock are available for future issuance without stockholder approval, subject to any limitations imposed by Nasdaq listing standards. 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 capital stock and preferred stock could make more difficult or discourage an attempt to obtain control of the Company by means of a proxy contest, tender offer, merger or otherwise.

Choice of Forum

The 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 (i) any derivative action or proceeding brought on behalf of the Company, (ii) any action asserting a claim of breach of a fiduciary duty owed by any director, officer, other employee or stockholder of the Company to the us or our stockholders, (iii) 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 of the State of Delaware, or (iv) any action asserting a claim arising pursuant to any provision of the Certificate of Incorporation or the By-laws or governed by the internal affairs doctrine.

Limitation of Liability and Indemnification

The Certificate of Incorporation provides that our directors and officers are to be indemnified by us to the fullest extent permitted by Section 145 of the DGCL, against all expense, liability and loss (including attorneys' fees, judgements, fines, ERISA excise taxes or penalties and amounts paid in settlement) reasonably incurred or suffered by such person in connection with such action, suit or proceeding and any appeal therefrom, and such indemnification shall continue as to an indemnitee who has ceased to be a director, trustee, officer, employee or agent.

The By-laws provide that we shall indemnify, to the fullest extent permitted by applicable law, as the same exists or may be amended, any person who was or is made a party or is threatened to be made a party to or is otherwise involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of being or having been our director or officer; or while our director or officer, serving or having served at our request as a director, trustee, officer, employee or agent of another corporation or of a partnership, joint venture, trust or other enterprise, including service with respect to an employee benefit plan, against all expense, liability and loss (including attorneys' fees, judgments, fines, ERISA excise taxes or penalties and amounts paid in settlement) reasonably incurred or suffered by such indemnitee in connection therewith.

The By-laws further provide that the right to indemnification shall include the right to be paid by us the expenses (including attorneys' fees) incurred in defending any such proceeding in advance of its final disposition; provided, however, that, to the extent required by law, such advancement of expenses shall be made only upon our receipt of an undertaking, by or on behalf of such indemnitee, to repay all amounts so advanced if it shall ultimately be determined by final judicial decision from which there is no further right to appeal that such indemnitee is not entitled to be indemnified for such expenses under the By-laws or otherwise.

We may, to the extent authorized from time to time by the Board, grant rights to indemnification, and to the advancement of expenses, to any or our employees or agents to the fullest extent provided by the By-laws with respect to the indemnification and advancement of expenses of directors and officers of the expenses payable in advance.

We may, but shall not be obligated to, purchase and maintain insurance at its expense on behalf of any such person.

DESCRIPTION OF DEBT SECURITIES

The following description, together with the additional information we include in any applicable prospectus supplement or free writing prospectus, summarizes certain general terms and provisions of the debt securities that we may offer under this prospectus. When we offer to sell a particular series of debt securities, we will describe the specific terms of the series in a supplement to this prospectus. We will also indicate in the supplement to what extent the general terms and provisions described in this prospectus apply to a particular series of debt securities.

We may issue debt securities either separately, or together with, or upon the conversion or exercise of or in exchange for, other securities described in this prospectus. Debt securities may be our senior, senior subordinated or subordinated obligations and, unless otherwise specified in a supplement to this prospectus, the debt securities will be our direct, unsecured obligations and may be issued in one or more series.

The debt securities will be issued under an indenture between us and a third party to be identified therein, as trustee. We have summarized select portions of the indenture below. The summary is not complete. The form of the indenture has been filed as an exhibit to the registration statement and you should read the indenture for provisions that may be important to you. Capitalized terms used in the summary and not defined herein have the meanings specified in the indenture.

As used in this section only, “Ribbon,” “we,” “our” or “us” refer to Ribbon Communications Inc., excluding our subsidiaries, unless expressly stated or the context otherwise requires.

General

The terms of each series of debt securities will be established by or pursuant to a resolution of our board of directors and set forth or determined in the manner provided in a resolution of our board of directors, in an officer’s certificate or by a supplemental indenture. The particular terms of each series of debt securities will be described in a prospectus supplement relating to such series (including any pricing supplement or term sheet).

We can issue an unlimited amount of debt securities under the indenture that may be issued in one or more series with the same or various maturities, at par, at a premium, or at a discount. We will set forth in a prospectus supplement (including any pricing supplement or term sheet) relating to any series of debt securities being offered, the aggregate principal amount and the following terms of the debt securities, if applicable:

- the title and ranking of the debt securities (including the terms of any subordination provisions);
- the price or prices (expressed as a percentage of the principal amount) at which we will sell the debt securities;
- any limit on the aggregate principal amount of the debt securities;
- the date or dates on which the principal of the securities of the series is payable;
- the rate or rates (which may be fixed or variable) per annum or the method used to determine the rate or rates (including any commodity, commodity index, stock exchange index or financial index) at which the debt securities will bear interest, the date or dates from which interest will accrue, the date or dates on which interest will commence and be payable and any regular record date for the interest payable on any interest payment date;
- the place or places where principal of, and interest, if any, on the debt securities will be payable (and the method of such payment), where the securities of such series may be surrendered for registration of transfer or exchange, and where notices and demands to us in respect of the debt securities may be delivered;
- the period or periods within which, the price or prices at which and the terms and conditions upon which we may redeem the debt securities;
- any obligation we have to redeem or purchase the debt securities pursuant to any sinking fund or analogous provisions or at the option of a holder of debt securities and the period or periods within

- which, the price or prices at which and in the terms and conditions upon which securities of the series shall be redeemed or purchased, in whole or in part, pursuant to such obligation;
- the dates on which and the price or prices at which we will repurchase debt securities at the option of the holders of debt securities and other detailed terms and provisions of these repurchase obligations;
 - the denominations in which the debt securities will be issued, if other than denominations of \$1,000 and any integral multiple thereof;
 - whether the debt securities will be issued in the form of certificated debt securities or global debt securities;
 - the portion of principal amount of the debt securities payable upon declaration of acceleration of the maturity date, if other than the principal amount;
 - the currency of denomination of the debt securities, which may be United States Dollars or any foreign currency, and if such currency of denomination is a composite currency, the agency or organization, if any, responsible for overseeing such composite currency;
 - the designation of the currency, currencies or currency units in which payment of principal of, premium, if any, and interest on the debt securities will be made;
 - if payments of principal of, premium, if any, or interest on the debt securities will be made in one or more currencies or currency units other than that or those in which the debt securities are denominated, the manner in which the exchange rate with respect to these payments will be determined;
 - the manner in which the amounts of payment of principal of, premium, if any, or interest on the debt securities will be determined, if these amounts may be determined by reference to an index based on a currency or currencies or by reference to a commodity, commodity index, stock exchange index or financial index;
 - any provisions relating to any security provided for the debt securities;
 - any addition to, deletion of or change in the Events of Default (as defined below) described in this prospectus or in the indenture with respect to the debt securities and any change in the acceleration provisions described in this prospectus or in the indenture with respect to the debt securities;
 - any addition to, deletion of or change in the covenants described in this prospectus or in the indenture with respect to the debt securities;
 - any depositaries, interest rate calculation agents, exchange rate calculation agents or other agents with respect to the debt securities;
 - the provisions, if any, relating to conversion or exchange of any debt securities of such series, including if applicable, the conversion or exchange price and period, provisions as to whether conversion or exchange will be mandatory, the events requiring an adjustment of the conversion or exchange price and provisions affecting conversion or exchange;
 - any other terms of the debt securities, which may supplement, modify or delete any provision of the indenture as it applies to that series, including any terms that may be required under applicable law or regulations or advisable in connection with the marketing of the securities; and
 - whether any of our direct or indirect subsidiaries will guarantee the debt securities of that series, including the terms of subordination, if any, of such guarantees.

We may issue debt securities that provide for an amount less than their stated principal amount to be due and payable upon declaration of acceleration of their maturity pursuant to the terms of the indenture. We will provide you with information on the United States federal income tax considerations and other special considerations applicable to any of these debt securities in the applicable prospectus supplement.

If we denominate the purchase price of any of the debt securities in a foreign currency or currencies or a foreign currency unit or units, or if the principal of and any premium and interest on any series of debt

securities is payable in a foreign currency or currencies or a foreign currency unit or units, we will provide you with information on the restrictions, elections, general tax considerations, specific terms and other information with respect to that issue of debt securities and such foreign currency or currencies or foreign currency unit or units in the applicable prospectus supplement.

Transfer and Exchange

Each debt security will be represented by either one or more global securities registered in the name of The Depository Trust Company, or the Depository, or a nominee of the Depository (we will refer to any debt security represented by a global debt security as a “book-entry debt security”), or a certificate issued in definitive registered form (we will refer to any debt security represented by a certificated security as a “certificated debt security”) as set forth in the applicable prospectus supplement. Except as set forth under the heading “Global Debt Securities and Book-Entry System” below, book-entry debt securities will not be issuable in certificated form.

Certificated Debt Securities. You may transfer or exchange certificated debt securities at any office we maintain for this purpose in accordance with the terms of the indenture. No service charge will be made for any transfer or exchange of certificated debt securities, but we may require payment of a sum sufficient to cover any tax or other governmental charge payable in connection with a transfer or exchange.

You may effect the transfer of certificated debt securities and the right to receive the principal of, premium and interest on certificated debt securities only by surrendering the certificate representing those certificated debt securities and either reissuance by us or the trustee of the certificate to the new holder or the issuance by us or the trustee of a new certificate to the new holder.

Global Debt Securities and Book-Entry System. Each global debt security representing book-entry debt securities will be deposited with, or on behalf of, the Depository, and registered in the name of the Depository or a nominee of the Depository. Please see “Global Securities.”

Covenants

We will set forth in the applicable prospectus supplement any restrictive covenants applicable to any issue of debt securities.

No Protection in the Event of a Change of Control

Unless we state otherwise in the applicable prospectus supplement, the debt securities will not contain any provisions which may afford holders of the 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) which could adversely affect holders of debt securities.

Consolidation, Merger and Sale of Assets

We may not consolidate with or merge with or into, or convey, transfer or lease all or substantially all of our properties and assets to any person (a “successor person”) unless:

- we are the surviving corporation or the successor person (if other than Ribbon) is a corporation organized and validly existing under the laws of any U.S. domestic jurisdiction and expressly assumes our obligations on the debt securities and under the indenture; and
- immediately after giving effect to the transaction, no Default or Event of Default, shall have occurred and be continuing.

Notwithstanding the above, any of our subsidiaries may consolidate with, merge into or transfer all or part of its properties to us.

Events of Default

“Event of Default” means with respect to any series of debt securities, any of the following:

- default in the payment of any interest upon any debt security of that series when it becomes due and payable, and continuance of such default for a period of 30 days (unless the entire amount of the payment is deposited by us with the trustee or with a paying agent prior to the expiration of the 30-day period);

- default in the payment of principal of any security of that series at its maturity;
- default in the performance or breach of any other covenant or warranty by us in the indenture (other than a covenant or warranty that has been included in the indenture solely for the benefit of a series of debt securities other than that series), which default continues uncured for a period of 60 days after we receive written notice from the trustee or Ribbon and the trustee receive written notice from the holders of not less than 25% in principal amount of the outstanding debt securities of that series as provided in the indenture;
- certain voluntary or involuntary events of bankruptcy, insolvency or reorganization of Ribbon; and
- any other Event of Default provided with respect to debt securities of that series that is described in the applicable prospectus supplement.

No Event of Default with respect to a particular series of debt securities (except as to certain events of bankruptcy, insolvency or reorganization) necessarily constitutes an Event of Default with respect to any other series of debt securities. The occurrence of certain Events of Default or an acceleration under the indenture may constitute an event of default under certain indebtedness of ours or our subsidiary outstanding from time to time.

We will provide the trustee written notice of any Default or Event of Default within 30 days of becoming aware of the occurrence of such Default or Event of Default, which notice will describe in reasonable detail the status of such Default or Event of Default and what action we are taking or propose to take in respect thereof.

If an Event of Default with respect to debt securities of any series at the time outstanding occurs and is continuing, then the trustee or the holders of not less than 25% in principal amount of the outstanding debt securities of that series may, by a notice in writing to us (and to the trustee if given by the holders), declare to be due and payable immediately the principal of (or, if the debt securities of that series are discount securities, that portion of the principal amount as may be specified in the terms of that series) and accrued and unpaid interest, if any, on all debt securities of that series. In the case of an Event of Default resulting from certain events of bankruptcy, insolvency or reorganization, the principal (or such specified amount) of and accrued and unpaid interest, if any, on all outstanding debt securities will become and be immediately due and payable without any declaration or other act on the part of the trustee or any holder of outstanding debt securities. At any time after a declaration of acceleration with respect to debt securities of any series has been made, but before a judgment or decree for payment of the money due has been obtained by the trustee, the holders of a majority in principal amount of the outstanding debt securities of that series may rescind and annul the acceleration if all Events of Default, other than the non-payment of accelerated principal and interest, if any, with respect to debt securities of that series, have been cured or waived as provided in the indenture. We refer you to the prospectus supplement relating to any series of debt securities that are discount securities for the particular provisions relating to acceleration of a portion of the principal amount of such discount securities upon the occurrence of an Event of Default.

The indenture provides that the trustee may refuse to perform any duty or exercise any of its rights or powers under the indenture unless the trustee receives indemnity satisfactory to it against any cost, liability or expense which might be incurred by it in performing such duty or exercising such right or power. Subject to certain rights of the trustee, the holders of a majority in principal amount of the outstanding debt securities of any series will have the right to 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 the debt securities of that series.

No holder of any debt security of any series will have any right to institute any proceeding, judicial or otherwise, with respect to the indenture or for the appointment of a receiver or trustee, or for any remedy under the indenture, unless:

- that holder has previously given to the trustee written notice of a continuing Event of Default with respect to debt securities of that series; and
- the holders of not less than 25% in principal amount of the outstanding debt securities of that series have made written request, and offered indemnity or security satisfactory to the trustee, to the

trustee to institute the proceeding as trustee, and the trustee has not received from the holders of not less than a majority in principal amount of the outstanding debt securities of that series a direction inconsistent with that request and has failed to institute the proceeding within 60 days.

Notwithstanding any other provision in the indenture, the holder of any debt security will have an absolute and unconditional right to receive payment of the principal of, premium and any interest on that debt security on or after the due dates expressed in that debt security and to institute suit for the enforcement of payment.

The indenture requires us, within 120 days after the end of our fiscal year, to furnish to the trustee a statement as to compliance with the indenture. If a Default or Event of Default occurs and is continuing with respect to the securities of any series and if it is known to a responsible officer of the trustee, the trustee shall mail to each securityholder of the securities of that series notice of a Default or Event of Default within 90 days after it occurs or, if later, after a responsible officer of the trustee has knowledge of such Default or Event of Default. The indenture provides that the trustee may withhold notice to the holders of debt securities of any series of any Default or Event of Default (except in payment on any debt securities of that series) with respect to debt securities of that series if the trustee determines in good faith that withholding notice is in the interest of the holders of those debt securities.

Modification and Waiver

We and the trustee may modify, amend or supplement the indenture or the debt securities of any series without the consent of any holder of any debt security:

- to cure any ambiguity, defect or inconsistency;
- to comply with covenants in the indenture described above under the heading “Consolidation, Merger and Sale of Assets”;
- to provide for uncertificated securities in addition to or in place of certificated securities;
- to add guarantees with respect to debt securities of any series or secure debt securities of any series;
- to surrender any of our rights or powers under the indenture;
- to add covenants or Events of Default for the benefit of the holders of debt securities of any series;
- to comply with the applicable procedures of the applicable depository;
- to make any change that does not adversely affect the rights of any holder of debt securities;
- to provide for the issuance of and establish the form and terms and conditions of debt securities of any series as permitted by the indenture;
- to effect the appointment of a successor trustee with respect to the debt securities of any series and to add to or change any of the provisions of the indenture to provide for or facilitate administration by more than one trustee;
- to conform the terms of the indenture (insofar as it applies to any series of debt securities issued under the indenture) or the terms of the debt securities of any series issued under the indenture to the description thereof contained in any prospectus, prospectus supplement or similar offering document used in connection with the initial offering and sale of such debt securities to investors in a public or private offering; or
- to comply with requirements of the SEC in order to effect or maintain the qualification of the indenture under the Trust Indenture Act of 1939.

We may also modify and amend the indenture with the consent of the holders of at least a majority in principal amount of the outstanding debt securities of each series affected by the modifications or amendments. We may not make any modification or amendment without the consent of the holders of each affected debt security then outstanding if that amendment will:

- reduce the amount of debt securities whose holders must consent to an amendment, supplement or waiver;

- reduce the rate of or extend the time for payment of interest (including default interest) on any debt security;
- reduce the principal of or premium on or change the fixed maturity of any debt security or reduce the amount of, or postpone the date fixed for, the payment of any sinking fund or analogous obligation with respect to any series of debt securities;
- reduce the principal amount of discount securities payable upon acceleration of maturity;
- waive a default in the payment of the principal of, premium or interest on any debt security (except a rescission of acceleration of the debt securities of any series by the holders of at least a majority in aggregate principal amount of the then outstanding debt securities of that series and a waiver of the payment default that resulted from such acceleration);
- make the principal of or premium or interest on any debt security payable in currency other than that stated in the debt security;
- make any change to certain provisions of the indenture relating to, among other things, the right of holders of debt securities to receive payment of the principal of, premium and interest on those debt securities and to institute suit for the enforcement of any such payment and to waivers or amendments; or
- waive a redemption payment with respect to any debt security.

Except for certain specified provisions, the holders of at least a majority in principal amount of the outstanding debt securities of any series may, on behalf of the holders of all debt securities of that series, waive our compliance with provisions of the indenture. The holders of a majority in principal amount of the outstanding debt securities of any series may on behalf of the holders of all the debt securities of such series waive any past default under the indenture with respect to that series and its consequences, except a default in the payment of the principal of, premium or any interest on any debt security of that series; provided, however, that the holders of a majority in principal amount of the outstanding debt securities of any series may rescind an acceleration and its consequences, including any related payment default that resulted from the acceleration.

Defeasance of Debt Securities and Certain Covenants in Certain Circumstances

Legal Defeasance. The indenture provides that, unless otherwise provided by the terms of the applicable series of debt securities, we may be discharged from any and all obligations in respect of the debt securities of any series (subject to certain exceptions). We will be so discharged upon the irrevocable deposit with the trustee, in trust, of money and/or U.S. government obligations or, in the case of debt securities denominated in a single currency other than U.S. Dollars, government obligations of the government that issued or caused to be issued such currency, that, through the payment of interest and principal in accordance with their terms, will provide money or U.S. government obligations in an amount sufficient in the opinion of a nationally recognized firm of independent public accountants or investment bank to pay and discharge each installment of principal, premium and interest on and any mandatory sinking fund payments in respect of the debt securities of that series on the stated maturity of those payments in accordance with the terms of the indenture and those debt securities.

This discharge may occur only if, among other things, we have delivered to the trustee an opinion of counsel stating that we have received from, or there has been published by, the United States Internal Revenue Service a ruling or, since the date of execution of the indenture, there has been a change in the applicable United States federal income tax law, in either case to the effect that, and based thereon such opinion shall confirm that, the holders and beneficial owners of the debt securities of that series will not recognize income, gain or loss for United States federal income tax purposes as a result of the deposit, defeasance and discharge and will be subject to United States federal income tax on the same amounts and in the same manner and at the same times as would have been the case if the deposit, defeasance and discharge had not occurred.

Defeasance of Certain Covenants. The indenture provides that, unless otherwise provided by the terms of the applicable series of debt securities, upon compliance with certain conditions:

- we may omit to comply with the covenant described under the heading “Consolidation, Merger and Sale of Assets” and certain other covenants set forth in the indenture, as well as any additional covenants which may be set forth in the applicable prospectus supplement; and
- any omission to comply with those covenants will not constitute a Default or an Event of Default with respect to the debt securities of that series (“covenant defeasance”).

The conditions include:

- depositing with the trustee money and/or U.S. government obligations or, in the case of debt securities denominated in a single currency other than U.S. Dollars, government obligations of the government that issued or caused to be issued such currency, that, through the payment of interest and principal in accordance with their terms, will provide money in an amount sufficient in the opinion of a nationally recognized firm of independent public accountants or investment bank to pay and discharge each installment of principal of, premium and interest on and any mandatory sinking fund payments in respect of the debt securities of that series on the stated maturity of those payments in accordance with the terms of the indenture and those debt securities; and
- delivering to the trustee an opinion of counsel to the effect that we have received from, or there has been published by, the United States Internal Revenue Service a ruling or, since the date of execution of the indenture, there has been a change in the applicable United States federal income tax law, in either case to the effect that, and based thereon such opinion shall confirm that, the holders and beneficial owners of the debt securities of that series will not recognize income, gain or loss for United States federal income tax purposes as a result of the deposit and related covenant defeasance and will be subject to United States federal income tax on the same amounts and in the same manner and at the same times as would have been the case if the deposit and related covenant defeasance had not occurred.

No Personal Liability of Directors, Officers, Employees or Securityholders

None of our past, present or future directors, officers, employees or securityholders, as such, will have any liability for any of our obligations under the debt securities or the indenture or for any claim based on, or in respect or by reason of, such obligations or their creation. By accepting a debt security, each holder waives and releases all such liability.

This waiver and release is part of the consideration for the issue of the debt securities. However, this waiver and release may not be effective to waive liabilities under U.S. federal securities laws, and it is the view of the SEC that such a waiver is against public policy.

Governing Law

The indenture and the debt securities, including any claim or controversy arising out of or relating to the indenture or the debt securities, will be governed by the laws of the State of New York.

The indenture will provide that we, the trustee and the holders of the debt securities (by their acceptance of the debt securities) irrevocably waive, 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 the indenture, the debt securities or the transactions contemplated thereby.

The indenture will provide that any legal suit, action or proceeding arising out of or based upon the indenture or the transactions contemplated thereby may be instituted in the federal courts of the United States of America located in the City of New York or the courts of the State of New York in each case located in the City of New York, and we, the trustee and the holder of the debt securities (by their acceptance of the debt securities) irrevocably submit to the non-exclusive jurisdiction of such courts in any such suit, action or proceeding. The indenture will further provide that service of any process, summons, notice or document by mail (to the extent allowed under any applicable statute or rule of court) to such party’s address set forth in the indenture will be effective service of process for any suit, action or other proceeding brought in

any such court. The indenture will further provide that we, the trustee and the holders of the debt securities (by their acceptance of the debt securities) irrevocably and unconditionally waive any objection to the laying of venue of any suit, action or other proceeding in the courts specified above and irrevocably and unconditionally waive and agree not to plead or claim any such suit, action or other proceeding has been brought in an inconvenient forum.

DESCRIPTION OF WARRANTS

PIPE Warrants

Pursuant to the Preferred Securities Purchase Agreement, we issued an aggregate of 4,858,090 PIPE Warrants to the Selling Securityholders. The following summary of certain terms and provisions of the PIPE Warrants being offered by the Selling Securityholders hereby is not complete and is subject to, and qualified in its entirety by, the provisions of the warrant agreement between us and American Stock Transfer & Trust Company (the “Warrant Agent”), dated March 30, 2023 (the “Warrant Agreement”), and the form of warrant, both of which are filed as exhibits to our Form 8-K filed on March 30, 2023. Prospective investors should carefully review the terms and provisions set forth in the warrant agent agreement, including the annexes thereto, and the form of warrant.

Exercisability

The PIPE Warrants were originally issued on March 30, 2023 and are exercisable at any time up to the date that is four years after their original issuance (the “Expiration Date”). The PIPE Warrants are exercisable, at the option of the holder, in whole or in part, at any time or times on or before the Expiration Date by (i) delivering to the Warrant Agent, a duly executed exercise notice and (ii) (A) payment to the Warrant Agent of an amount equal to the applicable Exercise Price multiplied by the number of Warrant Shares as to which the PIPE Warrant is being exercised in cash by wire transfer of immediately available funds to an account designated in writing by the Warrant Agent or (B) by notifying us in writing that such PIPE Warrant is being exercised pursuant to a Cashless Exercise (as defined in the Warrant Agreement). The PIPE Warrants are exercisable for shares of Common Stock at an exercise price of \$3.77 (the “Exercise Price”), subject to customary adjustments for stock dividends, stock splits, recapitalizations and the like, and subject to price-based adjustment, on a weighted average basis, in the event of any issuance of Common Stock or securities convertible, exercisable or exchangeable for Common Stock, at a price below the then-applicable Exercise Price (subject to certain exceptions).

We and the Warrant Agent shall not effect the exercise of any portion of a PIPE Warrant, and the holder shall not have the right to exercise any portion of a PIPE Warrant, and any such exercise shall be null and void and treated as if never made, to the extent that as a result of, and after giving effect to, such exercise, the holder together with its affiliates and certain other persons specified in the Warrant Agreement collectively would beneficially own in excess of 9.99% of the number of shares of Common Stock outstanding immediately after giving effect to such exercise, subject to exclusions for certain of the Selling Securityholders.

Rights as a Securityholder

Except as otherwise provided in the PIPE Warrants or by virtue of such holder’s ownership of our common stock, the holder of a PIPE Warrant does not have the rights or privileges of a holder of our common stock, including any voting right, until the holder exercises the PIPE Warrant.

Governing Law

The PIPE Warrants and the Warrant Agreement are governed by New York law.

Potential Warrants

We may issue warrants for the purchase of shares of our common stock or preferred stock or of debt securities. We may issue warrants independently or together with other securities, and the warrants may be attached to or separate from any offered securities. Each series of warrants will be issued under a separate warrant agreement to be entered into between us and the investors or a warrant agent. The following summary of material provisions of the warrants and warrant agreements are subject to, and qualified in their entirety by reference to, all the provisions of the warrant agreement and warrant certificate applicable to a particular series of warrants. The terms of any warrants offered under a prospectus supplement may differ from the terms described below. We urge you to read the applicable prospectus supplement and any

related free writing prospectus, as well as the complete warrant agreements and warrant certificates that contain the terms of the warrants.

The particular terms of any issue of warrants will be described in the prospectus supplement relating to the issue. Those terms may include:

- the number of shares of common stock or preferred stock purchasable upon the exercise of warrants to purchase such shares and the price at which such number of shares may be purchased upon such exercise;
- the designation, stated value and terms (including, without limitation, liquidation, dividend, conversion and voting rights) of the series of preferred stock purchasable upon exercise of warrants to purchase preferred stock;
- the principal amount of debt securities that may be purchased upon exercise of a debt warrant and the exercise price for the warrants, which may be payable in cash, securities or other property;
- the date, if any, on and after which the warrants and the related debt securities, preferred stock or common stock will be separately transferable;
- the terms of any rights to redeem or call the warrants;
- the date on which the right to exercise the warrants will commence and the date on which the right will expire;
- United States federal income tax consequences applicable to the warrants; and
- any additional terms of the warrants, including terms, procedures, and limitations relating to the exchange, exercise and settlement of the warrants.

Holders of equity warrants will not be entitled to:

- vote, consent or receive dividends;
- receive notice as stockholders with respect to any meeting of stockholders for the election of our directors or any other matter; or
- exercise any rights as our stockholders.

Each warrant will entitle its holder to purchase the principal amount of debt securities or the number of shares of preferred stock or common stock at the exercise price set forth in, or calculable as set forth in, the applicable prospectus supplement. Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants at any time up to the specified time on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

A holder of warrant certificates may exchange them for new warrant certificates of different denominations, present them for registration of transfer and exercise them at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement. Until any warrants to purchase debt securities are exercised, the holder of the warrants will not have any rights of holders of the debt securities that can be purchased upon exercise, including any rights to receive payments of principal, premium or interest on the underlying debt securities or to enforce covenants in the applicable indenture. Until any warrants to purchase common stock or preferred stock are exercised, the holders of the warrants will not have any rights of holders of the underlying common stock or preferred stock, including any rights to receive dividends or payments upon any liquidation, dissolution or winding up on the common stock or preferred stock, if any.

DESCRIPTION OF UNITS

We may issue units consisting of any combination of the other types of securities offered under this prospectus in one or more series. We may evidence each series of units by unit certificates that we will issue under a separate agreement. We may enter into unit agreements with a unit agent. Each unit agent will be a bank or trust company that we select. We will indicate the name and address of the unit agent in the applicable prospectus supplement relating to a particular series of units.

The following description, together with the additional information included in any applicable prospectus supplement, summarizes the general features of the units that we may offer under this prospectus. You should read any prospectus supplement and any free writing prospectus that we may authorize to be provided to you related to the series of units being offered, as well as the complete unit agreements that contain the terms of the units. Specific unit agreements will contain additional important terms and provisions and we will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from another report that we file with the SEC, the form of each unit agreement relating to units offered under this prospectus.

If we offer any units, certain terms of that series of units will be described in the applicable prospectus supplement, including, without limitation, the following, as applicable:

- the designation and 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 provisions of the governing unit agreement;
- the price or prices at which such units will be issued;
- the applicable United States federal income tax considerations relating to the units;
- any provisions for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units; and
- any other terms of the units and of the securities comprising the units.

The provisions described in this section, as well as those described under “Description of Capital Stock,” “Description of Debt Securities” and “Description of Warrants” will apply to the securities included in each unit, to the extent relevant and as may be updated in any prospectus supplements.

DESCRIPTION OF DEPOSITARY SHARES

We may issue depositary shares representing fractional interests in shares of our preferred stock of any series. The following description sets forth certain general terms and provisions of the depositary shares to which any prospectus supplement may relate. The particular terms of the depositary shares to which any prospectus supplement may relate and the extent, if any, to which the general terms and provisions may apply to the depositary shares so offered will be described in the applicable prospectus supplement. To the extent that any particular terms of the depositary shares, deposit agreements and depositary receipts described in a prospectus supplement differ from any of the terms described below, the terms described below will be deemed to have been superseded by that prospectus supplement. You should read the applicable deposit agreement and depositary receipts for additional information before you decide whether to purchase any of our depositary shares.

In connection with the issuance of any depositary shares, we will enter into a deposit agreement with a bank or trust company, as depositary, which will be named in the applicable prospectus supplement. Depositary shares will be evidenced by depositary receipts issued pursuant to the related deposit agreement. Immediately following our issuance of our preferred stock represented by the depositary shares, we will deposit the shares of such preferred stock with the relevant depositary and will cause the depositary to issue, on our behalf, the related depositary receipts. Subject to the terms of the deposit agreement, each owner of a depositary receipt will be entitled, in proportion to the fractional interest in the share of preferred stock represented by the related depositary share, to all the rights, preferences and privileges of, and will be subject to all of the limitations and restrictions on, the preferred stock represented by the depositary receipt (including, if applicable, dividend, voting, conversion, exchange, redemption, sinking fund, subscription and liquidation rights). The applicable prospectus supplement will describe the terms of the depositary shares offered thereby.

DESCRIPTION OF OUR SUBSCRIPTION RIGHTS

As specified in any applicable prospectus supplement, we may issue subscription rights consisting of one or more debt securities, shares of preferred stock, shares of common stock or any combination of such securities.

GLOBAL SECURITIES

Book-Entry, Delivery and Form

Unless we indicate differently in any applicable prospectus supplement or free writing prospectus, the securities initially will be issued in book-entry form and represented by one or more global notes or global securities, or, collectively, global securities. The global securities will be deposited with, or on behalf of, The Depository Trust Company, New York, New York, as depository, or DTC, and registered in the name of Cede & Co., the nominee of DTC. Unless and until it is exchanged for individual certificates evidencing securities under the limited circumstances described below, a global security may not be transferred except as a whole by the depository to its nominee or by the nominee to the depository, or by the depository or its nominee to a successor depository or to a nominee of the successor depository.

DTC has advised us that it is:

- a limited-purpose trust company organized under the New York Banking Law;
- a “banking organization” within the meaning of the New York Banking Law;
- a member of the Federal Reserve System;
- a “clearing corporation” within the meaning of the New York Uniform Commercial Code; and
- a “clearing agency” registered pursuant to the provisions of Section 17A of the Exchange Act.

DTC holds securities that its participants deposit with DTC. DTC also facilitates the settlement among its participants of securities transactions, such as transfers and pledges, in deposited securities through electronic computerized book-entry changes in participants’ accounts, thereby eliminating the need for physical movement of securities certificates. “Direct participants” in DTC include securities brokers and dealers, including underwriters, banks, trust companies, clearing corporations and other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation, or DTCC. DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others, which we sometimes refer to as indirect participants, that clear through or maintain a custodial relationship with a direct participant, either directly or indirectly. The rules applicable to DTC and its participants are on file with the SEC.

Purchases of securities under the DTC system must be made by or through direct participants, which will receive a credit for the securities on DTC’s records. The ownership interest of the actual purchaser of a security, which we sometimes refer to as a beneficial owner, is in turn recorded on the direct and indirect participants’ records. Beneficial owners of securities will not receive written confirmation from DTC of their purchases. However, beneficial owners are expected to receive written confirmations providing details of their transactions, as well as periodic statements of their holdings, from the direct or indirect participants through which they purchased securities. Transfers of ownership interests in global securities are to be accomplished by entries made on the books of participants acting on behalf of beneficial owners. Beneficial owners will not receive certificates representing their ownership interests in the global securities, except under the limited circumstances described below.

To facilitate subsequent transfers, all global securities deposited by direct participants with DTC will be registered in the name of DTC’s partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of securities with DTC and their registration in the name of Cede & Co. or such other nominee will not change the beneficial ownership of the securities. DTC has no knowledge of the actual beneficial owners of the securities. DTC’s records reflect only the identity of the direct participants to whose accounts the securities are credited, which may or may not be the beneficial owners. The participants are responsible for keeping account of their holdings on behalf of their customers.

So long as the securities are in book-entry form, you will receive payments and may transfer securities only through the facilities of the depository and its direct and indirect participants. We will maintain an office or agency in the location specified in the prospectus supplement for the applicable securities, where notices and demands in respect of the securities and the indenture may be delivered to us and where certificated securities may be surrendered for payment, registration of transfer or exchange.

Conveyance of notices and other communications by DTC to direct participants, by direct participants to indirect participants and by direct participants and indirect participants to beneficial owners will be governed by arrangements among them, subject to any legal requirements in effect from time to time.

Redemption notices will be sent to DTC. If less than all of the securities of a particular series are being redeemed, DTC's practice is to determine by lot the amount of the interest of each direct participant in the securities of such series to be redeemed.

Neither DTC nor Cede & Co. (or such other DTC nominee) will consent or vote with respect to the securities. Under its usual procedures, DTC will mail an omnibus proxy to us as soon as possible after the record date. The omnibus proxy assigns the consenting or voting rights of Cede & Co. to those direct participants to whose accounts the securities of such series are credited on the record date, identified in a listing attached to the omnibus proxy.

So long as securities are in book-entry form, we will make payments on those securities to the depository or its nominee, as the registered owner of such securities, by wire transfer of immediately available funds. If securities are issued in definitive certificated form under the limited circumstances described below and unless if otherwise provided in the description of the applicable securities herein or in the applicable prospectus supplement, we will have the option of making payments by check mailed to the addresses of the persons entitled to payment or by wire transfer to bank accounts in the United States designated in writing to the applicable trustee or other designated party at least 15 days before the applicable payment date by the persons entitled to payment, unless a shorter period is satisfactory to the applicable trustee or other designated party.

Redemption proceeds, distributions and dividend payments on the securities will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit direct participants' accounts upon DTC's receipt of funds and corresponding detail information from us on the payment date in accordance with their respective holdings shown on DTC records. Payments by participants to beneficial owners will be governed by standing instructions and customary practices, as is the case with securities held for the account of customers in bearer form or registered in "street name." Those payments will be the responsibility of participants and not of DTC or us, subject to any statutory or regulatory requirements in effect from time to time. Payment of redemption proceeds, distributions and dividend payments to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC, is our responsibility, disbursement of payments to direct participants is the responsibility of DTC, and disbursement of payments to the beneficial owners is the responsibility of direct and indirect participants.

Except under the limited circumstances described below, purchasers of securities will not be entitled to have securities registered in their names and will not receive physical delivery of securities. Accordingly, each beneficial owner must rely on the procedures of DTC and its participants to exercise any rights under the securities and the indenture.

The laws of some jurisdictions may require that some purchasers of securities take physical delivery of securities in definitive form. Those laws may impair the ability to transfer or pledge beneficial interests in securities.

DTC may discontinue providing its services as securities depository with respect to the securities at any time by giving reasonable notice to us. Under such circumstances, in the event that a successor depository is not obtained, securities certificates are required to be printed and delivered.

As noted above, beneficial owners of a particular series of securities generally will not receive certificates representing their ownership interests in those securities. However, if:

- DTC notifies us that it is unwilling or unable to continue as a depository for the global security or securities representing such series of securities or if DTC ceases to be a clearing agency registered under the Exchange Act at a time when it is required to be registered and a successor depository is not appointed within 90 days of the notification to us or of our becoming aware of DTC's ceasing to be so registered, as the case may be;

- we determine, in our sole discretion, not to have such securities represented by one or more global securities; or
- an Event of Default has occurred and is continuing with respect to such series of securities, we will prepare and deliver certificates for such securities in exchange for beneficial interests in the global securities.

Any beneficial interest in a global security that is exchangeable under the circumstances described in the preceding sentence will be exchangeable for securities in definitive certificated form registered in the names that the depository directs. It is expected that these directions will be based upon directions received by the depository from its participants with respect to ownership of beneficial interests in the global securities.

We have obtained the information in this section and elsewhere in this prospectus concerning DTC and DTC's book-entry system from sources that are believed to be reliable, but we take no responsibility for the accuracy of this information.

Euroclear and Clearstream

If so provided in the applicable prospectus supplement, you may hold interests in a global security through Clearstream Banking S.A., which we refer to as "Clearstream," or Euroclear Bank S.A./N.V., as operator of the Euroclear System, which we refer to as "Euroclear," either directly if you are a participant in Clearstream or Euroclear or indirectly through organizations which are participants in Clearstream or Euroclear. Clearstream and Euroclear will hold interests on behalf of their respective participants through customers' securities accounts in the names of Clearstream and Euroclear, respectively, on the books of their respective U.S. depositories, which in turn will hold such interests in customers' securities accounts in such depositories' names on DTC's books.

Clearstream and Euroclear are securities clearance systems in Europe. Clearstream and Euroclear hold securities for their respective participating organizations and facilitate the clearance and settlement of securities transactions between those participants through electronic book-entry changes in their accounts, thereby eliminating the need for physical movement of certificates.

Payments, deliveries, transfers, exchanges, notices and other matters relating to beneficial interests in global securities owned through Euroclear or Clearstream must comply with the rules and procedures of those systems. Transactions between participants in Euroclear or Clearstream, on one hand, and other participants in DTC, on the other hand, are also subject to DTC's rules and procedures.

Investors will be able to make and receive through Euroclear and Clearstream payments, deliveries, transfers and other transactions involving any beneficial interests in global securities held through those systems only on days when those systems are open for business. Those systems may not be open for business on days when banks, brokers and other institutions are open for business in the United States.

Cross-market transfers between participants in DTC, on the one hand, and participants in Euroclear or Clearstream, on the other hand, will be effected through DTC in accordance with the DTC's rules on behalf of Euroclear or Clearstream, as the case may be, by their respective U.S. depositories; however, such cross-market transactions will require delivery of instructions to Euroclear or Clearstream, as the case may be, by the counterparty in such system in accordance with the rules and procedures and within the established deadlines (European time) of such system. Euroclear or Clearstream, as the case may be, will, if the transaction meets its settlement requirements, deliver instructions to its U.S. depository to take action to effect final settlement on its behalf by delivering or receiving interests in the global securities through DTC, and making or receiving payment in accordance with normal procedures for same-day fund settlement. Participants in Euroclear or Clearstream may not deliver instructions directly to their respective U.S. depositories.

Due to time zone differences, the securities accounts of a participant in Euroclear or Clearstream purchasing an interest in a global security from a direct participant in DTC will be credited, and any such crediting will be reported to the relevant participant in Euroclear or Clearstream, during the securities settlement processing day (which must be a business day for Euroclear or Clearstream) immediately following the settlement date of DTC. Cash received in Euroclear or Clearstream as a result of sales of interests in a

global security by or through a participant in Euroclear or Clearstream to a direct participant in DTC will be received with value on the settlement date of DTC but will be available in the relevant Euroclear or Clearstream cash account only as of the business day for Euroclear or Clearstream following DTC's settlement date.

Other

The information in this section of this prospectus concerning DTC, Clearstream, Euroclear and their respective book-entry systems has been obtained from sources that we believe to be reliable, but we do not take responsibility for this information. This information has been provided solely as a matter of convenience. The rules and procedures of DTC, Clearstream and Euroclear are solely within the control of those organizations and could change at any time. Neither we nor the trustee nor any agent of ours or of the trustee has any control over those entities and none of us takes any responsibility for their activities. You are urged to contact DTC, Clearstream and Euroclear or their respective participants directly to discuss those matters. In addition, although we expect that DTC, Clearstream and Euroclear will perform the foregoing procedures, none of them is under any obligation to perform or continue to perform such procedures and such procedures may be discontinued at any time. Neither we nor any agent of ours will have any responsibility for the performance or nonperformance by DTC, Clearstream and/or Euroclear or their respective participants of these or any other rules or procedures governing their respective operations.

PLAN OF DISTRIBUTION

We may sell the securities from time to time pursuant to underwritten public offerings, “at-the-market offerings,” negotiated transactions, block trades or a combination of these methods or through underwriters or dealers, through agents and/or directly to one or more purchasers. The securities may be distributed from time to time in one or more transactions:

- at a fixed price or prices, which may be changed;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices;
- in “at-the-market offerings” (as defined in Rule 415 under the Securities Act);
- at negotiated prices; or
- through any method permitted by applicable law and described in a prospectus supplement.

The Selling Securityholders may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of Preferred Stock, Warrant Shares or PIPE Warrants on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These dispositions may be at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices.

The Selling Securityholders may use any one or more of the following methods when disposing of shares or interests therein:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent, but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales effected after the date the registration statement of which this prospectus is a part is declared effective by the SEC;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted by applicable law and described in a prospectus supplement.

Each time that we or the Selling Securityholders sell securities covered by this prospectus, the applicable prospectus supplement or supplements will describe the method of distribution and set forth the terms and conditions of the offering of such securities, including the offering price of the securities and the proceeds to us or the Selling Securityholders, if applicable.

The Selling Securityholders may, from time to time, pledge or grant a security interest in some or all of the shares of our securities owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of our securities, from time to time, under this prospectus, or under an amendment or supplement to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending the list of Selling Securityholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus. The Selling Securityholders also may transfer the securities in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

In connection with the sale of our securities or interests therein, the Selling Securityholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the securities in the course of hedging the positions they assume. The Selling Securityholders may also sell securities short and deliver these securities to close out their short positions, or loan or pledge the securities to broker-dealers that in turn may sell these securities. The Selling Securityholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (supplemented or amended as necessary to reflect such transaction).

The aggregate proceeds to the Selling Securityholders from the sale of our securities offered by them, as applicable, will be the purchase price of the securities, as applicable, less discounts or commissions, if any. Each of the Selling Securityholders reserves the right to accept and, together with their agents from time to time, to reject, in whole or in part, any proposed purchase of securities to be made directly or through agents. We will not receive any of the proceeds from the offering by the Selling Securityholders. Upon any exercise of the PIPE Warrants by payment of cash, however, we will receive the exercise price of the PIPE Warrants.

The Selling Securityholders also may resell all or a portion of the securities in open market transactions in reliance upon Rule 144 under the Securities Act.

Offers to purchase the securities being offered by this prospectus may be solicited directly. Agents may also be designated to solicit offers to purchase the securities from time to time. Any agent involved in the offer or sale of our securities will be identified in a prospectus supplement.

If a dealer is utilized in the sale of the securities being offered by this prospectus, the securities will be sold to the dealer, as principal. The dealer may then resell the securities to the public at varying prices to be determined by the dealer at the time of resale.

If an underwriter is utilized in the sale of the securities being offered by this prospectus, an underwriting agreement will be executed with the underwriter at the time of sale and the name of any underwriter will be provided in the prospectus supplement that the underwriter will use to make resales of the securities to the public. In connection with the sale of the securities, we, the Selling Securityholders or the purchasers of securities for whom the underwriter may act as agent, may compensate the underwriter in the form of underwriting discounts or commissions. The underwriter may sell the securities to or through dealers, and those dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for which they may act as agent. Unless otherwise indicated in a prospectus supplement, an agent will be acting on a best efforts basis and a dealer will purchase securities as a principal, and may then resell the securities at varying prices to be determined by the dealer.

Any compensation paid to underwriters, dealers or agents in connection with the offering of the securities, and any discounts, concessions or commissions allowed by underwriters to participating dealers will be provided in the applicable prospectus supplement. Underwriters, dealers and agents participating in the distribution of the securities may be deemed to be underwriters within the meaning of the Securities Act, and any discounts and commissions received by them and any profit realized by them on resale of the securities may be deemed to be underwriting discounts and commissions. We or the Selling Securityholders may enter into agreements to indemnify underwriters, dealers and agents against civil liabilities, including liabilities under the Securities Act, or to contribute to payments they may be required to make in respect thereof and to reimburse those persons for certain expenses.

Any common stock will be listed on the Nasdaq Global Select Market, but any other securities may or may not be listed on a national securities exchange.

To facilitate the offering of securities, and to the extent permitted by and in accordance with Regulation M under the Exchange Act, certain persons participating in the offering may engage in transactions that stabilize, maintain or otherwise affect the price of the securities. This may include over-allotments or short sales of the securities, which involve the sale by persons participating in the offering of more securities than were sold to them. In these circumstances, these persons would cover such over-allotments

or short positions by making purchases in the open market or by exercising their over-allotment option, if any. In addition, these persons may stabilize or maintain the price of the securities by bidding for or purchasing securities in the open market or by imposing penalty bids, whereby selling concessions allowed to dealers participating in the offering may be reclaimed if securities sold by them are repurchased in connection with stabilization transactions. The effect of these transactions may be to stabilize or maintain the market price of the securities at a level above that which might otherwise prevail in the open market. These transactions may be discontinued at any time.

To the extent permitted by and in accordance with Regulation M under the Exchange Act, any underwriters who are qualified market makers on Nasdaq may engage in passive market making transactions in the securities on Nasdaq during the business day prior to the pricing of an offering, before the commencement of offers or sales of the securities. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded.

If indicated in the applicable prospectus supplement, underwriters or other persons acting as agents may be authorized to solicit offers by institutions or other suitable purchasers to purchase the securities at the public offering price set forth in the prospectus supplement, pursuant to delayed delivery contracts providing for payment and delivery on the date or dates stated in the prospectus supplement. These purchasers may include, among others, commercial and savings banks, insurance companies, pension funds, investment companies and educational and charitable institutions. Delayed delivery contracts will be subject to the condition that the purchase of the securities covered by the delayed delivery contracts will not at the time of delivery be prohibited under the laws of any jurisdiction in the United States to which the purchaser is subject. The underwriters and agents will not have any responsibility with respect to the validity or performance of these contracts.

We and the Selling Securityholders may engage in "at-the-market offerings" into an existing trading market in accordance with Rule 415(a)(4) under the Securities Act. In addition, we and the Selling Securityholders may enter into derivative transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement so indicates, in connection with those derivatives, the third parties may sell securities covered by this prospectus and the applicable prospectus supplement, including in short sale transactions. If so, the third party may use securities pledged by us or the Selling Securityholders or borrowed from us or the Selling Securityholders or others to settle those sales or to close out any related open borrowings of stock, and may use securities received from us in settlement of those derivatives to close out any related open borrowings of stock. The third party in such sale transactions will be an underwriter and, if not identified in this prospectus, will be named in the applicable prospectus supplement (or a post-effective amendment). In addition, we or the Selling Securityholders may otherwise loan or pledge securities to a financial institution or other third party that in turn may sell the securities short using this prospectus and an applicable prospectus supplement. Such financial institution or other third party may transfer its economic short position to investors in our securities or in connection with a concurrent offering of other securities.

The specific terms of any lock-up provisions in respect of any given offering will be described in the applicable prospectus supplement.

The underwriters, dealers and agents may engage in transactions with us or the Selling Securityholders, or perform services for us or the Selling Securityholders, in the ordinary course of business for which they receive compensation.

In order to comply with the securities laws of some states, if applicable, our securities may be sold in these jurisdictions only through registered or licensed brokers or dealers

No securities may be sold under this prospectus without delivery, in paper format or in electronic format, or both, of the applicable prospectus supplement describing the method and terms of the offering. We have agreed to indemnify the Selling Securityholders against liabilities, including liabilities under the Securities Act and state securities laws, relating to the registration of the shares offered by this prospectus.

We have agreed with the Selling Securityholders to use our reasonable best efforts to keep the registration statement of which this prospectus constitutes a part continuously effective until the date on which all of the shares of our securities owned by the Selling Securityholders covered by the registration statement have been sold under the registration statement in accordance with the plan and method of distribution disclosed in this prospectus or can be sold publicly under Rule 144 without volume limitations or manner of sale restrictions by the holders of the such shares of our securities.

LEGAL MATTERS

Troutman Pepper Hamilton Sanders LLP will pass upon certain legal matters relating to the issuance and sale of the securities offered hereby on behalf of Ribbon Communications Inc. Additional legal matters may be passed upon for us or any underwriters, dealers or agents by counsel that we will name in the applicable prospectus supplement.

EXPERTS

The financial statements of Ribbon Communications Inc. as of December 31, 2022 and 2021, and for each of the three years in the period ended December 31, 2022, incorporated by reference in this prospectus, and the effectiveness of Ribbon Communications Inc.'s internal control over financial reporting have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their reports. Such financial statements are incorporated by reference in reliance upon the reports of such firm given their authority as experts in accounting and auditing.



\$250,000,000
Common Stock
Preferred Stock
Debt Securities
Warrants
Units
Depositary Shares
Subscription Rights
55,000 Shares of Series A Preferred Stock
4,858,090 Warrants
4,858,090 Shares of Common Stock Issuable Upon Exercise of Warrants
Offered by the Selling Securityholders

Prospectus

, 2023

Neither we nor the Selling Securityholders have authorized any dealer, salesperson or other person to give any information or represent anything not contained in this prospectus. You must not rely on any unauthorized information. If anyone provides you with different or inconsistent information, you should not rely on it. This prospectus does not offer to sell any securities in any jurisdiction where it is unlawful. Neither the delivery of this prospectus, nor any sale made hereunder, shall create any implication that the information in this prospectus is correct after the date hereof.

PART II

INFORMATION NOT REQUIRED IN THE PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution

The following table sets forth an estimate of the fees and expenses payable by us in connection with the issuance and distribution of the shares of common stock being registered by this registration statement. All the amounts shown are estimates, except for the Securities and Exchange Commission, or SEC, registration fee.

	<u>Amount</u>	
SEC registration fee	\$35,629.32	
Accounting fees and expenses		(1)
The Nasdaq Global Select Market supplemental listing fee		(1)
Fees and expenses of the trustee		(1)
Printing expenses		(1)
Legal fees and expenses		(1)
Accounting fees and expenses		(1)
Blue Sky, qualification fees and expenses		(1)
Transfer agent fees and expenses		(1)
Miscellaneous		(1)
Total	\$	(1)

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

Item 15. Indemnification of Directors and Officers

We are governed by the General Corporation Law of the State of Delaware, or DGCL. Section 145 of the DGCL provides that a corporation may indemnify any person, including an officer or director, who was or is, or is threatened to be made, a party to any threatened, pending or completed legal action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of such corporation), by reason of the fact that such person was or is an officer, director, employee or agent of such corporation or is or was serving at the request of such corporation as a director, officer, employee or agent of another corporation or enterprise. The indemnity may include expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding, provided such officer, director, employee or agent acted in good faith and in a manner such person reasonably believed to be in, or not opposed to, the corporation's best interest and, for criminal proceedings, had no reasonable cause to believe that such person's conduct was unlawful. A Delaware corporation may indemnify any person, including an officer or director, who was or is, or is threatened to be made, a party to any threatened, pending or contemplated action or suit by or in the right of such corporation, under the same conditions, except that such indemnification is limited to expenses (including attorneys' fees) actually and reasonably incurred by such person, and except that no indemnification is permitted without judicial approval if such person is adjudged to be liable to such corporation. Where an officer or director of a corporation is successful, on the merits or otherwise, in the defense of any action, suit or proceeding referred to above, or any claim, issue or matter therein, the corporation must indemnify that person against the expenses (including attorneys' fees) which such officer or director actually and reasonably incurred in connection therewith.

Our Certificate of Incorporation provides that our directors and officers are to be indemnified by us to the fullest extent permitted by Section 145 of the DGCL, against all expense, liability and loss (including attorneys' fees, judgements, fines, ERISA excise taxes or penalties and amounts paid in settlement) reasonably incurred or suffered by such person in connection with such action, suit or proceeding and any appeal

therefrom, and such indemnification shall continue as to an indemnitee who has ceased to be a director, trustee, officer, employee or agent.

Our By-laws provide that we shall indemnify, to the fullest extent permitted by applicable law, as the same exists or may be amended, any person who was or is made a party or is threatened to be made a party to or is otherwise involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of being or having been a director or officer of the Company; or while a director or officer of the Company, serving or having served at our request as a director, trustee, officer, employee or agent of another corporation or of a partnership, joint venture, trust or other enterprise, including service with respect to an employee benefit plan, against all expense, liability and loss (including attorneys' fees, judgments, fines, ERISA excise taxes or penalties and amounts paid in settlement) reasonably incurred or suffered by such indemnitee in connection therewith.

Our By-laws further provide that the right to indemnification shall include the right to be paid by us the expenses (including attorneys' fees) incurred in defending any such proceeding in advance of its final disposition; provided, however, that, to the extent required by law, such advancement of expenses shall be made only upon our receipt of an undertaking, by or on behalf of such indemnitee, to repay all amounts so advanced if it shall ultimately be determined by final judicial decision from which there is no further right to appeal that such indemnitee is not entitled to be indemnified for such expenses under the By-laws or otherwise.

We may, but are not obligated to, purchase and maintain insurance at our expense on behalf of any such person.

Item 16. Exhibits

Exhibit	Description
1.1*	Form of Underwriting Agreement
2.1	Agreement and Plan of Merger, dated as of May 23, 2017, by and among Sonus Networks, Inc., Solstice Sapphire Investments, Inc., Solstice Sapphire, Inc., Green Sapphire Investments LLC, Green Sapphire LLC, GENBAND Holdings Company, GENBAND Inc. and GENBAND II, Inc. (incorporated by reference to Exhibit 2.1 to Amendment No. 3 to the Company's Registration Statement on Form S-4 filed on September 20, 2017 with the SEC).
2.2	Agreement and Plan of Merger, dated as of November 14, 2019, by and among Ribbon Communications Inc., Ribbon Communications Israel Ltd., Eclipse Communications Ltd., ECI Telecom Group Ltd. and ECI Holding (Hungary) Kft (incorporated by reference to Exhibit 2.1 of the Company's Current Report on Form 8-K filed on November 14, 2019 with the SEC).
3.1	Restated Certificate of Incorporation of Ribbon Communications Inc. (incorporated by reference to Exhibit 3.2 of the Company's Current Report on Form 8-K12B filed on October 30, 2017 with the SEC).
3.2	Certificate of Amendment of the Restated Certificate of Incorporation of Ribbon Communications Inc. (incorporated by reference to Exhibit 3.1 of the Company's Current Report on Form 8-K filed on November 28, 2017 with the SEC).
3.3	Amended and Restated By-Laws of Ribbon Communications Inc. (incorporated by reference to Exhibit 3.3 of the Company's Annual Report on Form 10-K filed on February 28, 2020 with the SEC).
3.4	Certificate of Designation of the Series A Preferred Stock of Ribbon Communications Inc. (incorporated by reference to Exhibit 3.1 of the Company's Current Report on Form 8-K filed on March 30, 2023 with the SEC).
4.1	Form of Warrant Agreement, dated March 30, 2023, by and between the Company and American Stock Transfer & Trust Company as Warrant Agent (incorporated by reference to Exhibit 10.3 of the Company's Current Report on Form 8-K filed on March 30, 2023 with the SEC).
4.2	Form of PIPE Warrant, dated March 30, 2023 (incorporated by reference to Exhibit 4.1 of the Company's Current Report on Form 8-K filed on March 30, 2023 with the SEC).
4.3*	Form of Specimen Common Stock Certificate of Ribbon Communications Inc.

Exhibit	Description
4.4*	Form of Specimen Preferred Stock Certificate of Ribbon Communications Inc.
4.5*	Form of Deposit Agreement.
4.6*	Form of Warrant.
4.7*	Form of Warrant Agreement.
4.8*	Form of Subscription Rights Agreement.
4.9*	Form of Unit Agreement, including Form of Unit Certificate.
4.10	Form of Indenture.
4.11*	Form of Note.
5.1	Opinion of Troutman Pepper Hamilton Sanders LLP.
10.1	First Amended and Restated Stockholders Agreement, dated as of March 3, 2020, by and among Ribbon Communications Inc., JPMC Heritage Parent LLC, Heritage PE (OEP) III, L.P. and ECI Holding (Hungary) Kft (incorporated by reference to Exhibit 10.1 of the Company's Current Report on Form 8-K filed on March 3, 2020 with the SEC).
10.2	Securities Purchase Agreement, dated as of August 12, 2022, by and among Ribbon Communications Inc. and the purchasers listed on the signature pages thereto (incorporated by reference to Exhibit 10.1 of the Company's Current Report on Form 8-K filed on August 12, 2022 with the SEC).
10.3	First Amended and Restated Registration Rights Agreement, dated as of March 3, 2020, by and among Ribbon Communications Inc., JPMC Heritage Parent LLC, Heritage PE (OEP) III, L.P. and ECI Holding (Hungary) Kft (incorporated by reference to Exhibit 10.2 of the Company's Current Report on Form 8-K filed on March 3, 2020 with the SEC).
10.4	Second Amended and Restated Registration Rights Agreement, dated as of August 12, 2022, by and among Ribbon Communications Inc. and certain stockholders that are parties thereto (incorporated by reference to Exhibit 10.2 of the Company's Current Report on Form 8-K filed on August 12, 2022 with the SEC).
10.5	Securities Purchase Agreement, dated as of March 28, 2023, by and among Ribbon Communications Inc. and the purchasers listed on the signature pages thereto (incorporated by reference to Exhibit 10.1 of the Company's Current Report on Form 8-K filed on March 30, 2023 with the SEC).
23.1	Consent of Troutman Pepper Hamilton Sanders LLP (included in Exhibit 5.1).
23.2	Consent of Independent Registered Public Accounting Firm Deloitte & Touche LLP.
24.1	Power of Attorney (included on the signature page hereto).
25.1**	Statement of Eligibility and Qualification on Form T-1 of the trustee under the Indenture pursuant to the Trust Indenture Act of 1939.
107	Filing Fee Table.

* To be filed, when appropriate, by amendment or as an exhibit to a document to be incorporated by reference herein in connection with an offering of the offered securities.

** To be filed in accordance with the requirements of Item 601(b)(25) of Regulation S-K.

Item 17. Undertakings

(a) The undersigned registrant hereby undertakes:

(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 of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the 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 the registration statement.

Notwithstanding the foregoing, any increase or decrease in the 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 SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 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 the registration statement or any material change to such information in the registration statement;

provided, however, that paragraphs (a)(1)(i), (a)(1)(ii), and (a)(1)(iii) above do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the SEC by the registrant pursuant to section 13 or section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is a part of the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, 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 that time shall be deemed to be the initial bona fide offering thereof.

(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 of 1933 to any purchaser:

(i) If the registrant is relying on 430B:

(A) Each prospectus filed by the registrant 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

(B) 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.

(ii) If the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. *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 first use, 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 date of first use.

(5) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the 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.

(6) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has 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 the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant 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, the registrant 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 it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

(7) 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 of 1939 in accordance with the rules and regulations prescribed by the SEC under Section 305(b)(2) of the Trust Indenture Act of 1939.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Plano, State of Texas, on April 4, 2023.

RIBBON COMMUNICATIONS INC.

By: /s/ Bruce McClelland

Bruce McClelland
President and Chief Executive Officer

POWER OF ATTORNEY

We, the undersigned officers and directors of Ribbon Communications Inc., hereby severally constitute and appoint Bruce McClelland, Miguel A. Lopez and Patrick W. Macken, our true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution in her or him for her or him and in her or his name, place and stead, and in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement, and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises, as full to all intents and purposes as she or he might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or her or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
<u>/s/ Bruce McClelland</u> Bruce McClelland	President, Chief Executive Officer and Director (<i>Principal Executive Officer</i>)	April 4, 2023
<u>/s/ Miguel A. Lopez</u> Miguel A. Lopez	Executive Vice President and Chief Financial Officer (<i>Principal Financial Officer</i>)	April 4, 2023
<u>/s/ Eric Marmurek</u> Eric Marmurek	Senior Vice President, Finance (<i>Principal Accounting Officer</i>)	April 4, 2023
<u>/s/ Shaul Shani</u> Shaul Shani	Director	April 4, 2023
<u>/s/ Mariano S. de Beer</u> Mariano S. de Beer	Director	April 4, 2023
<u>/s/ Stewart Ewing</u> Stewart Ewing	Director	April 4, 2023

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Bruns H. Grayson</u> Bruns H. Grayson	Director	April 4, 2023
<u>/s/ Beatriz V. Infante</u> Beatriz V. Infante	Director	April 4, 2023
<u>/s/ Scott Mair</u> Scott Mair	Director	April 4, 2023
<u>/s/ Rick W. Smith</u> Rick W. Smith	Director	April 4, 2023
<u>/s/ Tanya Tamone</u> Tanya Tamone	Director	April 4, 2023

RIBBON COMMUNICATIONS INC.

INDENTURE

Dated as of [·], 20[·]

[·]

Trustee

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RIBBON COMMUNICATIONS INC.

Reconciliation and tie between Trust Indenture Act of 1939 and

Indenture, dated as of [·], 20[·]

§ 310(a)(1)	7.10
(a)(2)	7.10
(a)(3)	Not Applicable
(a)(4)	Not Applicable
(a)(5)	7.10
(b)	7.10
§ 311(a)	7.11
(b)	7.11
(c)	Not Applicable
§ 312(a)	2.6
(b)	10.3
(c)	10.3
§ 313(a)	7.6
(b)(1)	7.6
(b)(2)	7.6
(c)(1)	7.6
(d)	7.6
§ 314(a)	4.2, 10.5
(b)	Not Applicable
(c)(1)	10.4
(c)(2)	10.4
(c)(3)	Not Applicable
(d)	Not Applicable
(e)	10.5
(f)	Not Applicable
§ 315(a)	7.1
(b)	7.5
(c)	7.1
(d)	7.1
(e)	6.14
§ 316(a)	2.10
(a)(1)(A)	6.12
(a)(1)(B)	6.13
(b)	6.8
§ 317(a)(1)	6.3
(a)(2)	6.4
(b)	2.5
§ 318(a)	10.1

Note: This reconciliation and tie shall not, for any purpose, be deemed to be part of the Indenture.

Indenture dated as of [·], 20[·] between Ribbon Communications Inc., a company incorporated under the laws of the State of Delaware (“*Company*”), and [·] (“*Trustee*”).

Each party agrees as follows for the benefit of the other party and for the equal and ratable benefit of the Holders of the Securities issued under this Indenture.

ARTICLE I.
DEFINITIONS AND INCORPORATION BY REFERENCE

Section 1.1. Definitions.

“*Additional Amounts*” means any additional amounts which are required hereby or by any Security, under circumstances specified herein or therein, to be paid by the Company in respect of certain taxes imposed on Holders specified herein or therein and which are owing to such Holders.

“*Affiliate*” of any specified person means any other person directly or indirectly controlling or controlled by or under common control with such specified person. For the purposes of this definition, “control” (including, with correlative meanings, the terms “controlled by” and “under common control with”), as used with respect to any person, shall mean the possession, directly or indirectly, of the power to direct or cause the direction of the management or policies of such person, whether through the ownership of voting securities or by agreement or otherwise.

“*Agent*” means any Registrar, Paying Agent or Notice Agent.

“*Board of Directors*” means the board of directors of the Company or any duly authorized committee thereof.

“*Board Resolution*” means a copy of a resolution certified by the Secretary or an Assistant Secretary of the Company to have been adopted by the Board of Directors or pursuant to authorization by the Board of Directors and to be in full force and effect on the date of the certificate and delivered to the Trustee.

“*Business Day*” means any day except a Saturday, Sunday or a legal holiday in The City of New York, New York (or in connection with any payment, the place of payment) on which banking institutions are authorized or required by law, regulation or executive order to close.

“*Capital Stock*” means any and all shares, interests, participations, rights or other equivalents (however designated) of corporate stock.

“*Company*” means the party named as such above until a successor replaces it and thereafter means the successor.

“*Company Order*” means a written order signed in the name of the Company by an Officer.

“*Corporate Trust Office*” means the office of the Trustee at which at any particular time its corporate trust business related to this Indenture shall be principally administered.

“*Default*” means any event which is, or after notice or passage of time or both would be, an Event of Default.

“*Depository*” means, with respect to the Securities of any Series issuable or issued in whole or in part in the form of one or more Global Securities, the person designated as Depository for such Series by the Company, which Depository shall be a clearing agency registered under the Exchange Act; and if at any time there is more than one such person, “Depository” as used with respect to the Securities of any Series shall mean the Depository with respect to the Securities of such Series.

“*Discount Security*” means any Security that provides for an amount less than the stated principal amount thereof to be due and payable upon declaration of acceleration of the maturity thereof pursuant to Section 6.2.

“*Dollars*” and “\$” means the currency of The United States of America.

“*Exchange Act*” means the Securities Exchange Act of 1934, as amended.

“*Foreign Currency*” means any currency or currency unit issued by a government other than the government of The United States of America.

“*Foreign Government Obligations*” means, with respect to Securities of any Series that are denominated in a Foreign Currency, direct obligations of, or obligations guaranteed by, the government that issued or caused to be issued such currency for the payment of which obligations its full faith and credit is pledged and which are not callable or redeemable at the option of the issuer thereof.

“*GAAP*” means accounting principles generally accepted in the United States of America set forth in the opinions and pronouncements of the Accounting Principles Board of the American Institute of Certified Public Accountants and statements and pronouncements of the Financial Accounting Standards Board or in such other statements by such other entity as have been approved by a significant segment of the accounting profession, which are in effect as of the date of determination.

“*Global Security*” or “*Global Securities*” means a Security or Securities, as the case may be, in the form established pursuant to Section 2.2 evidencing all or part of a Series of Securities, issued to the Depositary for such Series or its nominee, and registered in the name of such Depositary or nominee.

“*Holder*” or “*Securityholder*” means a person in whose name a Security is registered.

“*Indenture*” means this Indenture as amended or supplemented from time to time and shall include the form and terms of particular Series of Securities established as contemplated hereunder.

“*interest*” with respect to any Discount Security which by its terms bears interest only after Maturity, means interest payable after Maturity.

“*Maturity*,” when used with respect to any Security, means the date on which the principal of such Security becomes due and payable as therein or herein provided, whether at the Stated Maturity or by declaration of acceleration, call for redemption or otherwise.

“*Officer*” means the Chief Executive Officer, President, the Chief Financial Officer, the Treasurer or any Assistant Treasurer, the Secretary or any Assistant Secretary, and any Vice President of the Company.

“*Officer’s Certificate*” means a certificate signed by any Officer.

“*Opinion of Counsel*” means a written opinion of legal counsel who is acceptable to the Trustee. The counsel may be an employee of or counsel to the Company. The opinion may contain customary limitations, conditions and exceptions.

“*person*” means any individual, corporation, partnership, joint venture, association, limited liability company, joint-stock company, trust, unincorporated organization or government or any agency or political subdivision thereof.

“*principal*” of a Security means the principal of the Security plus, when appropriate, the premium, if any, on, and any Additional Amounts in respect of, the Security.

“*Responsible Officer*” means any officer of the Trustee in its Corporate Trust Office having responsibility for administration of this Indenture and also means, with respect to a particular corporate trust matter, any other officer to whom any corporate trust matter is referred because of his or her knowledge of and familiarity with a particular subject.

“*SEC*” means the Securities and Exchange Commission.

“*Securities*” means the debentures, notes or other debt instruments of the Company of any Series authenticated and delivered under this Indenture.

“Series” or “Series of Securities” means each series of debentures, notes or other debt instruments of the Company created pursuant to Sections 2.1 and 2.2 hereof.

“Stated Maturity” when used with respect to any Security, means the date specified in such Security as the fixed date on which the principal of such Security or interest is due and payable.

“Subsidiary” of any specified person means any corporation, association or other business entity of which more than 50% of the total voting power of shares of Capital Stock entitled (without regard to the occurrence of any contingency) to vote in the election of directors, managers or trustees thereof is at the time owned or controlled, directly or indirectly, by such person or one or more of the other Subsidiaries of that person or a combination thereof.

“TIA” means the Trust Indenture Act of 1939 (15 U.S. Code §§ 77aaa-77bbb) as in effect on the date of this Indenture; provided, however, that in the event the Trust Indenture Act of 1939 is amended after such date, “TIA” means, to the extent required by any such amendment, the Trust Indenture Act as so amended.

“Trustee” means the person named as the “Trustee” in the first paragraph of this instrument until a successor Trustee shall have become such pursuant to the applicable provisions of this Indenture, and thereafter “Trustee” shall mean or include each person who is then a Trustee hereunder, and if at any time there is more than one such person, “Trustee” as used with respect to the Securities of any Series shall mean the Trustee with respect to Securities of that Series.

“U.S. Government Obligations” means securities which are direct obligations of, or guaranteed by, The United States of America for the payment of which its full faith and credit is pledged and which are not callable or redeemable at the option of the issuer thereof, and shall also include a depository receipt issued by a bank or trust company as custodian with respect to any such U.S. Government Obligation or a specific payment of interest on or principal of any such U.S. Government Obligation held by such custodian for the account of the holder of a depository receipt, *provided* that (except as required by law) such custodian is not authorized to make any deduction from the amount payable to the holder of such depository receipt from any amount received by the custodian in respect of the U.S. Government Obligation evidenced by such depository receipt.

Section 1.2. Other Definitions.

TERM	DEFINED IN SECTION
“Bankruptcy Law”	6.1
“Custodian”	6.1
“Event of Default”	6.1
“Judgment Currency”	10.16
“Legal Holiday”	10.7
“mandatory sinking fund payment”	11.1
“New York Banking Day”	10.16
“Notice Agent”	2.4
“optional sinking fund payment”	11.1
“Paying Agent”	2.4
“Registrar”	2.4
“Required Currency”	10.16
“Specified Courts”	10.10
“successor person”	5.1

Section 1.3. Incorporation by Reference of Trust Indenture Act.

Whenever this Indenture refers to a provision of the TIA, the provision is incorporated by reference in and made a part of this Indenture. The following TIA terms used in this Indenture have the following meanings:

“*Commission*” means the SEC.

“*indenture securities*” means the Securities.

“*indenture security holder*” means a Securityholder.

“*indenture to be qualified*” means this Indenture.

“*indenture trustee*” or “*institutional trustee*” means the Trustee.

“*obligor*” on the indenture securities means the Company and any successor obligor upon the Securities.

All other terms used in this Indenture that are defined by the TIA, defined by TIA reference to another statute or defined by SEC rule under the TIA and not otherwise defined herein are used herein as so defined.

Section 1.4. Rules of Construction.

Unless the context otherwise requires:

- (a) a term has the meaning assigned to it;
- (b) an accounting term not otherwise defined has the meaning assigned to it in accordance with GAAP;
- (c) “*or*” is not exclusive;
- (d) words in the singular include the plural, and in the plural include the singular; and
- (e) provisions apply to successive events and transactions.

ARTICLE II.
THE SECURITIES

Section 2.1. Issuable in Series.

The aggregate principal amount of Securities that may be authenticated and delivered under this Indenture is unlimited. The Securities may be issued in one or more Series. All Securities of a Series shall be identical except as may be set forth or determined in the manner provided in a Board Resolution, a supplemental indenture or an Officer’s Certificate detailing the adoption of the terms thereof pursuant to authority granted under a Board Resolution. In the case of Securities of a Series to be issued from time to time, the Board Resolution, Officer’s Certificate or supplemental indenture detailing the adoption of the terms thereof pursuant to authority granted under a Board Resolution may provide for the method by which specified terms (such as interest rate, maturity date, record date or date from which interest shall accrue) are to be determined. Securities may differ between Series in respect of any matters, provided that all Series of Securities shall be equally and ratably entitled to the benefits of the Indenture.

Section 2.2. Establishment of Terms of Series of Securities.

At or prior to the issuance of any Securities within a Series, the following shall be established (as to the Series generally, in the case of Subsection 2.2.1 and either as to such Securities within the Series or as to the Series generally in the case of Subsections 2.2.2 through 2.2.23) by or pursuant to a Board Resolution, and set forth or determined in the manner provided in a Board Resolution, supplemental indenture hereto or Officer’s Certificate:

2.2.1. the title (which shall distinguish the Securities of that particular Series from the Securities of any other Series) and ranking (including the terms of any subordination provisions) of the Series;

2.2.2. the price or prices (expressed as a percentage of the principal amount thereof) at which the Securities of the Series will be issued;

2.2.3. any limit upon the aggregate principal amount of the Securities of the Series which may be authenticated and delivered under this Indenture (except for Securities authenticated and delivered upon registration of transfer of, or in exchange for, or in lieu of, other Securities of the Series pursuant to Section 2.7, 2.8, 2.11, 3.6 or 9.6);

2.2.4. the date or dates on which the principal of the Securities of the Series is payable;

2.2.5. the rate or rates (which may be fixed or variable) per annum or, if applicable, the method used to determine such rate or rates (including, but not limited to, any commodity, commodity index, stock exchange index or financial index) at which the Securities of the Series shall bear interest, if any, the date or dates from which such interest, if any, shall accrue, the date or dates on which such interest, if any, shall commence and be payable and any regular record date for the interest payable on any interest payment date;

2.2.6. the place or places where the principal of and interest, if any, on the Securities of the Series shall be payable, where the Securities of such Series may be surrendered for registration of transfer or exchange and where notices and demands to or upon the Company in respect of the Securities of such Series and this Indenture may be delivered, and the method of such payment, if by wire transfer, mail or other means;

2.2.7. if applicable, the period or periods within which, the price or prices at which and the terms and conditions upon which the Securities of the Series may be redeemed, in whole or in part, at the option of the Company;

2.2.8. the obligation, if any, of the Company to redeem or purchase the Securities of the Series pursuant to any sinking fund or analogous provisions or at the option of a Holder thereof and the period or periods within which, the price or prices at which and the terms and conditions upon which Securities of the Series shall be redeemed or purchased, in whole or in part, pursuant to such obligation;

2.2.9. the dates, if any, on which and the price or prices at which the Securities of the Series will be repurchased by the Company at the option of the Holders thereof and other detailed terms and provisions of such repurchase obligations;

2.2.10. if other than denominations of \$1,000 and any integral multiple thereof, the denominations in which the Securities of the Series shall be issuable;

2.2.11. the forms of the Securities of the Series and whether the Securities will be issuable as Global Securities;

2.2.12. if other than the principal amount thereof, the portion of the principal amount of the Securities of the Series that shall be payable upon declaration of acceleration of the maturity thereof pursuant to Section 6.2;

2.2.13. the currency of denomination of the Securities of the Series, which may be Dollars or any Foreign Currency, and if such currency of denomination is a composite currency, the agency or organization, if any, responsible for overseeing such composite currency;

2.2.14. the designation of the currency, currencies or currency units in which payment of the principal of and interest, if any, on the Securities of the Series will be made;

2.2.15. if payments of principal of or interest, if any, on the Securities of the Series are to be made in one or more currencies or currency units other than that or those in which such Securities are denominated, the manner in which the exchange rate with respect to such payments will be determined;

2.2.16. the manner in which the amounts of payment of principal of or interest, if any, on the Securities of the Series will be determined, if such amounts may be determined by reference to an index based on a currency or currencies or by reference to a commodity, commodity index, stock exchange index or financial index;

2.2.17. the provisions, if any, relating to any security provided for the Securities of the Series;

2.2.18. any addition to, deletion of or change in the Events of Default which applies to any Securities of the Series and any change in the right of the Trustee or the requisite Holders of such Securities to declare the principal amount thereof due and payable pursuant to Section 6.2;

2.2.19. any addition to, deletion of or change in the covenants set forth in Articles IV or V which applies to Securities of the Series;

2.2.20. any Depositaries, interest rate calculation agents, exchange rate calculation agents or other agents with respect to Securities of such Series if other than those appointed herein;

2.2.21. the provisions, if any, relating to conversion or exchange of any Securities of such Series, including if applicable, the conversion or exchange price, the conversion or exchange period, provisions as to whether conversion or exchange will be mandatory, at the option of the Holders thereof or at the option of the Company, the events requiring an adjustment of the conversion price or exchange price and provisions affecting conversion or exchange if such Series of Securities are redeemed;

2.2.22. any other terms of the Series (which may supplement, modify or delete any provision of this Indenture insofar as it applies to such Series), including any terms that may be required under applicable law or regulations or advisable in connection with the marketing of Securities of that Series; and

2.2.23. whether any of the Company's direct or indirect Subsidiaries will guarantee the Securities of that Series, including the terms of subordination, if any, of such guarantees.

All Securities of any one Series need not be issued at the same time and may be issued from time to time, consistent with the terms of this Indenture, if so provided by or pursuant to the Board Resolution, supplemental indenture hereto or Officer's Certificate referred to above.

Section 2.3. Execution and Authentication.

An Officer shall sign the Securities for the Company by manual or facsimile signature.

If an Officer whose signature is on a Security no longer holds that office at the time the Security is authenticated, the Security shall nevertheless be valid.

A Security shall not be valid until authenticated by the manual signature of the Trustee or an authenticating agent. The signature shall be conclusive evidence that the Security has been authenticated under this Indenture.

The Trustee shall at any time, and from time to time, authenticate Securities for original issue in the principal amount provided in the Board Resolution, supplemental indenture hereto or Officer's Certificate, upon receipt by the Trustee of a Company Order. Each Security shall be dated the date of its authentication.

The aggregate principal amount of Securities of any Series outstanding at any time may not exceed any limit upon the maximum principal amount for such Series set forth in the Board Resolution, supplemental indenture hereto or Officer's Certificate delivered pursuant to Section 2.2, except as provided in Section 2.8.

Prior to the issuance of Securities of any Series, the Trustee shall have received and (subject to Section 7.2) shall be fully protected in relying on: (a) the Board Resolution, supplemental indenture hereto or Officer's Certificate establishing the form of the Securities of that Series or of Securities within that Series and the terms of the Securities of that Series or of Securities within that Series, (b) an Officer's Certificate complying with Section 10.4, and (c) an Opinion of Counsel complying with Section 10.4.

The Trustee shall have the right to decline to authenticate and deliver any Securities of such Series: (a) if the Trustee, being advised by counsel, determines that such action may not be taken lawfully; or (b) if the Trustee in good faith by its board of directors or trustees, executive committee or a trust committee of directors and/or vice-presidents or a committee of Responsible Officers shall determine that such action would expose the Trustee to personal liability to Holders of any then outstanding Series of Securities.

The Trustee may appoint an authenticating agent acceptable to the Company to authenticate Securities. An authenticating agent may authenticate Securities whenever the Trustee may do so. Each reference in this Indenture to authentication by the Trustee includes authentication by such agent. An authenticating agent has the same rights as an Agent to deal with the Company or an Affiliate of the Company.

Section 2.4. Registrar and Paying Agent.

The Company shall maintain, with respect to each Series of Securities, at the place or places specified with respect to such Series pursuant to Section 2.2, an office or agency where Securities of such Series may be presented or surrendered for payment (“*Paying Agent*”), where Securities of such Series may be surrendered for registration of transfer or exchange (“*Registrar*”) and where notices and demands to or upon the Company in respect of the Securities of such Series and this Indenture may be delivered (“*Notice Agent*”). The Registrar shall keep a register with respect to each Series of Securities and to their transfer and exchange. The Company will give prompt written notice to the Trustee of the name and address, and any change in the name or address, of each Registrar, Paying Agent or Notice Agent. If at any time the Company shall fail to maintain any such required Registrar, Paying Agent or Notice Agent or shall fail to furnish the Trustee with the name and address thereof, such presentations, surrenders, notices and demands may be made or served at the Corporate Trust Office of the Trustee, and the Company hereby appoints the Trustee as its agent to receive all such presentations, surrenders, notices and demands; provided, however, that any appointment of the Trustee as the Notice Agent shall exclude the appointment of the Trustee or any office of the Trustee as an agent to receive the service of legal process on the Company.

The Company may also from time to time designate one or more co-registrars, additional paying agents or additional notice agents and may from time to time rescind such designations; provided, however, that no such designation or rescission shall in any manner relieve the Company of its obligations to maintain a Registrar, Paying Agent and Notice Agent in each place so specified pursuant to Section 2.2 for Securities of any Series for such purposes. The Company will give prompt written notice to the Trustee of any such designation or rescission and of any change in the name or address of any such co-registrar, additional paying agent or additional notice agent. The term “*Registrar*” includes any co-registrar; the term “*Paying Agent*” includes any additional paying agent; and the term “*Notice Agent*” includes any additional notice agent. The Company or any of its Affiliates may serve as Registrar or Paying Agent.

The Company hereby appoints the Trustee the initial Registrar, Paying Agent and Notice Agent for each Series unless another Registrar, Paying Agent or Notice Agent, as the case may be, is appointed prior to the time Securities of that Series are first issued.

Section 2.5. Paying Agent to Hold Money in Trust.

The Company shall require each Paying Agent other than the Trustee to agree in writing that the Paying Agent will hold in trust, for the benefit of Securityholders of any Series of Securities, or the Trustee, all money held by the Paying Agent for the payment of principal of or interest on the Series of Securities, and will notify the Trustee in writing of any default by the Company in making any such payment. While any such default continues, the Trustee may require a Paying Agent to pay all money held by it to the Trustee. The Company at any time may require a Paying Agent to pay all money held by it to the Trustee. Upon payment over to the Trustee, the Paying Agent (if other than the Company or a Subsidiary of the Company) shall have no further liability for the money. If the Company or a Subsidiary of the Company acts as Paying Agent, it shall segregate and hold in a separate trust fund for the benefit of Securityholders of any Series of Securities all money held by it as Paying Agent. Upon any bankruptcy, reorganization or similar proceeding with respect to the Company, the Trustee shall serve as Paying Agent for the Securities.

Section 2.6. Securityholder Lists.

The Trustee shall preserve in as current a form as is reasonably practicable the most recent list available to it of the names and addresses of Securityholders of each Series of Securities and shall otherwise comply with TIA § 312(a). If the Trustee is not the Registrar, the Company shall furnish to the Trustee at least ten days before each interest payment date and at such other times as the Trustee may request in writing a list, in such form and as of such date as the Trustee may reasonably require, of the names and addresses of Securityholders of each Series of Securities.

Section 2.7. Transfer and Exchange.

Where Securities of a Series are presented to the Registrar or a co-registrar with a request to register a transfer or to exchange them for an equal principal amount of Securities of the same Series, the Registrar shall register the transfer or make the exchange if its requirements for such transactions are met. To permit registrations of transfers and exchanges, the Trustee shall authenticate Securities at the Registrar's request. No service charge shall be made for any registration of transfer or exchange (except as otherwise expressly permitted herein), but the Company may require payment of a sum sufficient to cover any transfer tax or similar governmental charge payable in connection therewith (other than any such transfer tax or similar governmental charge payable upon exchanges pursuant to Sections 2.11, 3.6 or 9.6).

Neither the Company nor the Registrar shall be required (a) to issue, register the transfer of, or exchange Securities of any Series for the period beginning at the opening of business fifteen days immediately preceding the sending of a notice of redemption of Securities of that Series selected for redemption and ending at the close of business on the day such notice is sent, or (b) to register the transfer of or exchange Securities of any Series selected, called or being called for redemption as a whole or the portion being redeemed of any such Securities selected, called or being called for redemption in part.

Section 2.8. Mutilated, Destroyed, Lost and Stolen Securities.

If any mutilated Security is surrendered to the Trustee, the Company shall execute and the Trustee shall authenticate and deliver in exchange therefor a new Security of the same Series and of like tenor and principal amount and bearing a number not contemporaneously outstanding.

If there shall be delivered to the Company and the Trustee (i) evidence to their satisfaction of the destruction, loss or theft of any Security and (ii) such security or indemnity bond as may be required by each of them to hold itself and any of its agents harmless, then, in the absence of notice to the Company or the Trustee that such Security has been acquired by a bona fide purchaser, the Company shall execute and upon receipt of a Company Order the Trustee shall authenticate and make available for delivery, in lieu of any such destroyed, lost or stolen Security, a new Security of the same Series and of like tenor and principal amount and bearing a number not contemporaneously outstanding.

In case any such mutilated, destroyed, lost or stolen Security has become or is about to become due and payable, the Company in its discretion may, instead of issuing a new Security, pay such Security.

Upon the issuance of any new Security under this Section, the Company may require the payment of a sum sufficient to cover any tax or other governmental charge that may be imposed in relation thereto and any other expenses (including the fees and expenses of the Trustee) connected therewith.

Every new Security of any Series issued pursuant to this Section in lieu of any destroyed, lost or stolen Security shall constitute an original additional contractual obligation of the Company, whether or not the destroyed, lost or stolen Security shall be at any time enforceable by anyone, and shall be entitled to all the benefits of this Indenture equally and proportionately with any and all other Securities of that Series duly issued hereunder.

The provisions of this Section are exclusive and shall preclude (to the extent lawful) all other rights and remedies with respect to the replacement or payment of mutilated, destroyed, lost or stolen Securities.

Section 2.9. Outstanding Securities.

The Securities outstanding at any time are all the Securities authenticated by the Trustee except for those canceled by it, those delivered to it for cancellation, those reductions in the interest on a Global Security effected by the Trustee in accordance with the provisions hereof and those described in this Section as not outstanding.

If a Security is replaced pursuant to Section 2.8, it ceases to be outstanding until the Trustee receives proof satisfactory to it that the replaced Security is held by a bona fide purchaser.

If the Paying Agent (other than the Company, a Subsidiary of the Company or an Affiliate of the Company) holds on the Maturity of Securities of a Series money sufficient to pay such Securities payable on that date, then on and after that date such Securities of the Series cease to be outstanding and interest on them ceases to accrue.

The Company may purchase or otherwise acquire the Securities, whether by open market purchases, negotiated transactions or otherwise. A Security does not cease to be outstanding because the Company or an Affiliate of the Company holds the Security (but see Section 2.10 below).

In determining whether the Holders of the requisite principal amount of outstanding Securities have given any request, demand, authorization, direction, notice, consent or waiver hereunder, the principal amount of a Discount Security that shall be deemed to be outstanding for such purposes shall be the amount of the principal thereof that would be due and payable as of the date of such determination upon a declaration of acceleration of the Maturity thereof pursuant to Section 6.2.

Section 2.10. Treasury Securities.

In determining whether the Holders of the required principal amount of Securities of a Series have concurred in any request, demand, authorization, direction, notice, consent or waiver, Securities of a Series owned by the Company or any Affiliate of the Company shall be disregarded, except that for the purposes of determining whether the Trustee shall be protected in relying on any such request, demand, authorization, direction, notice, consent or waiver only Securities of a Series that a Responsible Officer of the Trustee knows are so owned shall be so disregarded.

Section 2.11. Temporary Securities.

Until definitive Securities are ready for delivery, the Company may prepare and the Trustee shall authenticate temporary Securities upon a Company Order. Temporary Securities shall be substantially in the form of definitive Securities but may have variations that the Company considers appropriate for temporary Securities. Without unreasonable delay, the Company shall prepare and the Trustee upon receipt of a Company Order shall authenticate definitive Securities of the same Series and date of maturity in exchange for temporary Securities. Until so exchanged, temporary securities shall have the same rights under this Indenture as the definitive Securities.

Section 2.12. Cancellation.

The Company at any time may deliver Securities to the Trustee for cancellation. The Registrar and the Paying Agent shall forward to the Trustee any Securities surrendered to them for registration of transfer, exchange or payment. The Trustee shall cancel all Securities surrendered for transfer, exchange, payment, replacement or cancellation and shall destroy such canceled Securities (subject to the record retention requirement of the Exchange Act and the Trustee) and deliver a certificate of such cancellation to the Company upon written request of the Company. The Company may not issue new Securities to replace Securities that it has paid or delivered to the Trustee for cancellation.

Section 2.13. Defaulted Interest.

If the Company defaults in a payment of interest on a Series of Securities, it shall pay the defaulted interest, plus, to the extent permitted by law, any interest payable on the defaulted interest, to the persons who are Securityholders of the Series on a subsequent special record date.

The Company shall fix the record date and payment date. At least 10 days before the special record date, the Company shall send to the Trustee and to each Securityholder of the Series a notice that states the special record date, the payment date and the amount of interest to be paid. The Company may pay defaulted interest in any other lawful manner.

Section 2.14. Global Securities.

2.14.1. Terms of Securities. A Board Resolution, a supplemental indenture hereto or an Officer's Certificate shall establish whether the Securities of a Series shall be issued in whole or in part in the form of one or more Global Securities and the Depositary for such Global Security or Securities.

2.14.2. Transfer and Exchange. Notwithstanding any provisions to the contrary contained in Section 2.7 of the Indenture and in addition thereto, any Global Security shall be exchangeable pursuant to Section 2.7 of the Indenture for Securities registered in the names of Holders other than the Depositary for such Security or its nominee only if (i) such Depositary notifies the Company that it is unwilling or unable to continue as Depositary for such Global Security or if at any time such Depositary ceases to be a clearing agency registered under the Exchange Act, and, in either case, the Company fails to appoint a successor Depositary registered as a clearing agency under the Exchange Act within 90 days of such event or (ii) the Company executes and delivers to the Trustee an Officer's Certificate to the effect that such Global Security shall be so exchangeable. Any Global Security that is exchangeable pursuant to the preceding sentence shall be exchangeable for Securities registered in such names as the Depositary shall direct in writing in an aggregate principal amount equal to the principal amount of the Global Security with like tenor and terms.

Except as provided in this Section 2.14.2, a Global Security may not be transferred except as a whole by the Depositary with respect to such Global Security to a nominee of such Depositary, by a nominee of such Depositary to such Depositary or another nominee of such Depositary or by the Depositary or any such nominee to a successor Depositary or a nominee of such a successor Depositary.

2.14.3. Legends. Any Global Security issued hereunder shall bear a legend in substantially the following form:

“THIS SECURITY IS A GLOBAL SECURITY WITHIN THE MEANING OF THE INDENTURE HEREINAFTER REFERRED TO AND IS REGISTERED IN THE NAME OF THE DEPOSITARY OR A NOMINEE OF THE DEPOSITARY. THIS SECURITY IS EXCHANGEABLE FOR SECURITIES REGISTERED IN THE NAME OF A PERSON OTHER THAN THE DEPOSITARY OR ITS NOMINEE ONLY IN THE LIMITED CIRCUMSTANCES DESCRIBED IN THE INDENTURE, AND MAY NOT BE TRANSFERRED EXCEPT AS A WHOLE BY THE DEPOSITARY TO A NOMINEE OF THE DEPOSITARY, BY A NOMINEE OF THE DEPOSITARY TO THE DEPOSITARY OR ANOTHER NOMINEE OF THE DEPOSITARY OR BY THE DEPOSITARY OR ANY SUCH NOMINEE TO A SUCCESSOR DEPOSITARY OR A NOMINEE OF SUCH A SUCCESSOR DEPOSITARY.”

In addition, so long as the Depositary Trust Company (“DTC”) is the Depositary, each Global Note registered in the name of DTC or its nominee shall bear a legend in substantially the following form:

“UNLESS THIS GLOBAL NOTE IS PRESENTED BY AN AUTHORIZED REPRESENTATIVE OF THE DEPOSITARY TRUST COMPANY, A NEW YORK CORPORATION (“DTC”), TO THE COMPANY OR ITS AGENT FOR REGISTRATION OF TRANSFER, EXCHANGE OR PAYMENT, AND ANY GLOBAL NOTE ISSUED IS REGISTERED IN THE NAME OF CEDE & CO. OR IN SUCH OTHER NAME AS IS REQUESTED BY AN AUTHORIZED REPRESENTATIVE OF DTC (AND ANY PAYMENT IS MADE TO CEDE & CO. OR TO SUCH OTHER ENTITY AS IS REQUESTED BY AN AUTHORIZED REPRESENTATIVE OF DTC), ANY TRANSFER, PLEDGE OR OTHER USE HEREOF FOR VALUE OR OTHERWISE BY OR TO ANY PERSON IS WRONGFUL INASMUCH AS THE REGISTERED OWNER HEREOF, CEDE & CO., HAS AN INTEREST HEREIN.”

2.14.4. Acts of Holders. The Depositary, as a Holder, may appoint agents and otherwise authorize participants to give or take any request, demand, authorization, direction, notice, consent, waiver or other action which a Holder is entitled to give or take under the Indenture.

2.14.5. Payments. Notwithstanding the other provisions of this Indenture, unless otherwise specified as contemplated by Section 2.2, payment of the principal of and interest, if any, on any Global Security shall be made to the Holder thereof.

2.14.6. Consents, Declaration and Directions. The Company, the Trustee and any Agent shall treat a person as the Holder of such principal amount of outstanding Securities of such Series represented by a Global Security as shall be specified in a written statement of the Depositary or by the applicable procedures of such Depositary with respect to such Global Security, for purposes of obtaining any consents, declarations, waivers or directions required to be given by the Holders pursuant to this Indenture.

Section 2.15. CUSIP Numbers.

The Company in issuing the Securities may use "CUSIP" numbers (if then generally in use), and, if so, the Trustee shall use "CUSIP" numbers in notices of redemption as a convenience to Holders; provided that any such notice may state that no representation is made as to the correctness of such numbers either as printed on the Securities or as contained in any notice of a redemption and that reliance may be placed only on the other elements of identification printed on the Securities, and any such redemption shall not be affected by any defect in or omission of such numbers.

ARTICLE III. REDEMPTION

Section 3.1. Notice to Trustee.

The Company may, with respect to any Series of Securities, reserve the right to redeem and pay the Series of Securities or may covenant to redeem and pay the Series of Securities or any part thereof prior to the Stated Maturity thereof at such time and on such terms as provided for in such Securities. If a Series of Securities is redeemable and the Company wants or is obligated to redeem prior to the Stated Maturity thereof all or part of the Series of Securities pursuant to the terms of such Securities, it shall notify the Trustee in writing of the redemption date and the principal amount of Series of Securities to be redeemed. The Company shall give the notice at least 15 days before the redemption date, unless a shorter period is satisfactory to the Trustee.

Section 3.2. Selection of Securities to be Redeemed.

Unless otherwise indicated for a particular Series by a Board Resolution, a supplemental indenture hereto or an Officer's Certificate, if less than all the Securities of a Series are to be redeemed, the Securities of the Series to be redeemed will be selected as follows: (a) if the Securities are in the form of Global Securities, in accordance with the procedures of the Depositary, (b) if the Securities are listed on any national securities exchange, in compliance with the requirements of the principal national securities exchange, if any, on which the Securities are listed, or (c) if not otherwise provided for under clause (a) or (b) in the manner that the Trustee deems fair and appropriate, including by lot or other method, unless otherwise required by law or applicable stock exchange requirements, subject, in the case of Global Securities, to the applicable rules and procedures of the Depositary. The Securities to be redeemed shall be selected from Securities of the Series outstanding not previously called for redemption. Portions of the principal of Securities of the Series that have denominations larger than \$1,000 may be selected for redemption. Securities of the Series and portions of them it selected for redemption shall be in amounts of \$1,000 or whole multiples of \$1,000 or, with respect to Securities of any Series issuable in other denominations pursuant to Section 2.2.10, the minimum principal denomination for each Series and the authorized integral multiples thereof. Provisions of this Indenture that apply to Securities of a Series called for redemption also apply to portions of Securities of that Series called for redemption.

Section 3.3. Notice of Redemption.

Unless otherwise indicated for a particular Series by Board Resolution, a supplemental indenture hereto or an Officer's Certificate, at least 15 days but not more than 60 days before a redemption date, the Company shall send or cause to be sent by first-class mail or electronically, in accordance with the procedures of the Depository, a notice of redemption to each Holder whose Securities are to be redeemed.

The notice shall identify the Securities of the Series to be redeemed and shall state:

(a) the redemption date;

(b) the redemption price;

(c) the name and address of the Paying Agent;

(d) if any Securities are being redeemed in part, the portion of the principal amount of such Securities to be redeemed and that, after the redemption date and upon surrender of such Security, a new Security or Securities in principal amount equal to the unredeemed portion of the original Security shall be issued in the name of the Holder thereof upon cancellation of the original Security;

(e) that Securities of the Series called for redemption must be surrendered to the Paying Agent to collect the redemption price;

(f) that interest on Securities of the Series called for redemption ceases to accrue on and after the redemption date unless the Company defaults in the deposit of the redemption price;

(g) the CUSIP number, if any; and

(h) any other information as may be required by the terms of the particular Series or the Securities of a Series being redeemed.

At the Company's request, the Trustee shall give the notice of redemption in the Company's name and at its expense, provided, however, that the Company has delivered to the Trustee, at least 10 days (unless a shorter time shall be acceptable to the Trustee) prior to the notice date, an Officer's Certificate requesting that the Trustee give such notice and setting forth the information to be stated in such notice.

Section 3.4. Effect of Notice of Redemption.

Once notice of redemption is sent as provided in Section 3.3, Securities of a Series called for redemption become due and payable on the redemption date and at the redemption price. Except as otherwise provided in the supplemental indenture, Board Resolution or Officer's Certificate for a Series, a notice of redemption may not be conditional. Upon surrender to the Paying Agent, such Securities shall be paid at the redemption price plus accrued interest to the redemption date.

Section 3.5. Deposit of Redemption Price.

On or before 11:00 a.m., New York City time, on the redemption date, the Company shall deposit with the Paying Agent money sufficient to pay the redemption price of and accrued interest, if any, on all Securities to be redeemed on that date.

Section 3.6. Securities Redeemed in Part.

Upon surrender of a Security that is redeemed in part, the Trustee shall authenticate for the Holder a new Security of the same Series and the same maturity equal in principal amount to the unredeemed portion of the Security surrendered.

ARTICLE IV.
COVENANTS

Section 4.1. Payment of Principal and Interest.

The Company covenants and agrees for the benefit of the Holders of each Series of Securities that it will duly and punctually pay the principal of and interest, if any, on the Securities of that Series in accordance with the terms of such Securities and this Indenture. On or before 11:00 a.m., New York City time, on the applicable payment date, the Company shall deposit with the Paying Agent money sufficient to pay the principal of and interest, if any, on the Securities of each Series in accordance with the terms of such Securities and this Indenture.

Section 4.2. SEC Reports.

To the extent any Securities of a Series are outstanding, the Company shall deliver to the Trustee within 15 days after it files them with the SEC copies of the annual reports and of the information, documents, and other reports (or copies of such portions of any of the foregoing as the SEC may by rules and regulations prescribe) which the Company is required to file with the SEC pursuant to Section 13 or 15(d) of the Exchange Act. The Company also shall comply with the other provisions of TIA § 314(a). Reports, information and documents filed with the SEC via the EDGAR system will be deemed to be delivered to the Trustee as of the time of such filing via EDGAR for purposes of this Section 4.2.

Delivery of reports, information and documents to the Trustee under this Section 4.2 are for informational purposes only and the Trustee's receipt of the foregoing shall not constitute constructive or actual notice of any information contained therein or determinable from information contained therein, including the Company's compliance with any of their covenants hereunder (as to which the Trustee is entitled to rely exclusively on Officer's Certificates).

Section 4.3. Compliance Certificate.

To the extent any Securities of a Series are outstanding, the Company shall deliver to the Trustee, within 120 days after the end of each fiscal year of the Company, an Officer's Certificate stating that a review of the activities of the Company and its Subsidiaries during the preceding fiscal year has been made under the supervision of the signing Officers with a view to determining whether the Company has kept, observed, performed and fulfilled its obligations under this Indenture, and further stating, as to each such Officer signing such certificate, that to the best of his/her knowledge the Company has kept, observed, performed and fulfilled each and every covenant contained in this Indenture and is not in default in the performance or observance of any of the terms, provisions and conditions hereof (or, if a Default or Event of Default shall have occurred, describing all such Defaults or Events of Default of which the Officer may have knowledge).

Section 4.4. Stay, Extension and Usury Laws.

The Company covenants (to the extent that it may lawfully do so) that it will not at any time insist upon, plead, or in any manner whatsoever claim or take the benefit or advantage of, any stay, extension or usury law wherever enacted, now or at any time hereafter in force, which may affect the covenants or the performance of this Indenture or the Securities; and the Company (to the extent it may lawfully do so) hereby expressly waives all benefit or advantage of any such law and covenants that it will not, by resort to any such law, hinder, delay or impede the execution of any power herein granted to the Trustee, but will suffer and permit the execution of every such power as though no such law has been enacted.

ARTICLE V.
SUCCESSORS

Section 5.1. When Company May Merge, Etc.

The Company shall not consolidate with or merge with or into, or convey, transfer or lease all or substantially all of its properties and assets to, any person (a “*successor person*”) unless:

- (a) the Company is the surviving corporation or the successor person (if other than the Company) is a corporation organized and validly existing under the laws of any U.S. domestic jurisdiction and expressly assumes the Company’s obligations on the Securities and under this Indenture; and
- (b) immediately after giving effect to the transaction, no Default or Event of Default, shall have occurred and be continuing.

The Company shall deliver to the Trustee prior to the consummation of the proposed transaction an Officer’s Certificate to the foregoing effect and an Opinion of Counsel stating that the proposed transaction and any supplemental indenture comply with this Indenture.

Notwithstanding the above, any Subsidiary of the Company may consolidate with, merge into or transfer all or part of its properties to the Company. Neither an Officer’s Certificate nor an Opinion of Counsel shall be required to be delivered in connection therewith.

Section 5.2. Successor Corporation Substituted.

Upon any consolidation or merger, or any sale, lease, conveyance or other disposition of all or substantially all of the assets of the Company in accordance with Section 5.1, the successor corporation formed by such consolidation or into or with which the Company is merged or to which such sale, lease, conveyance or other disposition is made shall succeed to, and be substituted for, and may exercise every right and power of, the Company under this Indenture with the same effect as if such successor person has been named as the Company herein; provided, however, that the predecessor Company in the case of a sale, conveyance or other disposition (other than a lease) shall be released from all obligations and covenants under this Indenture and the Securities.

ARTICLE VI.
DEFAULTS AND REMEDIES

Section 6.1. Events of Default.

“*Event of Default*,” wherever used herein with respect to Securities of any Series, means any one of the following events, unless in the establishing Board Resolution, supplemental indenture or Officer’s Certificate, it is provided that such Series shall not have the benefit of said Event of Default:

- (a) default in the payment of any interest on any Security of that Series when it becomes due and payable, and continuance of such default for a period of 30 days (unless the entire amount of such payment is deposited by the Company with the Trustee or with a Paying Agent prior to 11:00 a.m., New York City time, on the 30th day of such period); or
- (b) default in the payment of principal of any Security of that Series at its Maturity; or
- (c) default in the performance or breach of any covenant or warranty of the Company in this Indenture (other than defaults pursuant to paragraphs (a) or (b) above or pursuant to a covenant or warranty that has been included in this Indenture solely for the benefit of Series of Securities other than that Series), which default continues uncured for a period of 60 days after there has been given, by registered or certified mail, to the Company by the Trustee or to the Company and the Trustee by the Holders of at least 25% in principal amount of the outstanding Securities of that Series a written notice specifying such default or breach and requiring it to be remedied and stating that such notice is a “Notice of Default” hereunder; or

(d) the Company pursuant to or within the meaning of any Bankruptcy Law:

- (i) commences a voluntary case,
- (ii) consents to the entry of an order for relief against it in an involuntary case,
- (iii) consents to the appointment of a Custodian of it or for all or substantially all of its property,
- (iv) makes a general assignment for the benefit of its creditors, or
- (v) generally is unable to pay its debts as the same become due; or

(e) a court of competent jurisdiction enters an order or decree under any Bankruptcy Law that:

- (i) is for relief against the Company in an involuntary case,
- (ii) appoints a Custodian of the Company or for all or substantially all of its property, or
- (iii) orders the liquidation of the Company,

and the order or decree remains unstayed and in effect for 60 days; or

(f) any other Event of Default provided with respect to Securities of that Series, which is specified in a Board Resolution, a supplemental indenture hereto or an Officer's Certificate, in accordance with Section 2.2.18.

The term "*Bankruptcy Law*" means title 11, U.S. Code or any similar Federal or State law for the relief of debtors. The term "*Custodian*" means any receiver, trustee, assignee, liquidator or similar official under any Bankruptcy Law.

The Company will provide the Trustee written notice of any Default or Event of Default within 30 days of becoming aware of the occurrence of such Default or Event of Default, which notice will describe in reasonable detail the status of such Default or Event of Default and what action the Company is taking or proposes to take in respect thereof.

Section 6.2. Acceleration of Maturity; Rescission and Annulment.

If an Event of Default with respect to Securities of any Series at the time outstanding occurs and is continuing (other than an Event of Default referred to in Section 6.1(d) or (e)) then in every such case the Trustee or the Holders of not less than 25% in principal amount of the outstanding Securities of that Series may declare the principal amount (or, if any Securities of that Series are Discount Securities, such portion of the principal amount as may be specified in the terms of such Securities) of and accrued and unpaid interest, if any, on all of the Securities of that Series to be due and payable immediately, by a notice in writing to the Company (and to the Trustee if given by Holders), and upon any such declaration such principal amount (or specified amount) and accrued and unpaid interest, if any, shall become immediately due and payable. If an Event of Default specified in Section 6.1(d) or (e) shall occur, the principal amount (or specified amount) of and accrued and unpaid interest, if any, on all outstanding Securities shall *ipso facto* become and be immediately due and payable without any declaration or other act on the part of the Trustee or any Holder.

At any time after such a declaration of acceleration with respect to any Series has been made and before a judgment or decree for payment of the money due has been obtained by the Trustee as hereinafter in this Article provided, the Holders of a majority in principal amount of the outstanding Securities of that Series, by written notice to the Company and the Trustee, may rescind and annul such declaration and its consequences if all Events of Default with respect to Securities of that Series, other than the non-payment of the principal and interest, if any, of Securities of that Series which have become due solely by such declaration of acceleration, have been cured or waived as provided in Section 6.13.

No such rescission shall affect any subsequent Default or impair any right consequent thereon.

Section 6.3. Collection of Indebtedness and Suits for Enforcement by Trustee.

The Company covenants that if

- (a) default is made in the payment of any interest on any Security when such interest becomes due and payable and such default continues for a period of 30 days, or
- (b) default is made in the payment of principal of any Security at the Maturity thereof, or
- (c) default is made in the deposit of any sinking fund payment, if any, when and as due by the terms of a Security,

then, the Company will, upon demand of the Trustee, pay to it, for the benefit of the Holders of such Securities, the whole amount then due and payable on such Securities for principal and interest and, to the extent that payment of such interest shall be legally enforceable, interest on any overdue principal and any overdue interest at the rate or rates prescribed therefor in such Securities, and, in addition thereto, such further amount as shall be sufficient to cover the costs and expenses of collection, including the compensation, reasonable expenses, disbursements and advances of the Trustee, its agents and counsel.

If the Company fails to pay such amounts forthwith upon such demand, the Trustee, in its own name and as trustee of an express trust, may institute a judicial proceeding for the collection of the sums so due and unpaid, may prosecute such proceeding to judgment or final decree and may enforce the same against the Company or any other obligor upon such Securities and collect the moneys adjudged or deemed to be payable in the manner provided by law out of the property of the Company or any other obligor upon such Securities, wherever situated.

If an Event of Default with respect to any Securities of any Series occurs and is continuing, the Trustee may in its discretion proceed to protect and enforce its rights and the rights of the Holders of Securities of such Series by such appropriate judicial proceedings as the Trustee shall deem most effectual to protect and enforce any such rights, whether for the specific enforcement of any covenant or agreement in this Indenture or in aid of the exercise of any power granted herein, or to enforce any other proper remedy.

Section 6.4. Trustee May File Proofs of Claim.

In case of the pendency of any receivership, insolvency, liquidation, bankruptcy, reorganization, arrangement, adjustment, composition or other judicial proceeding relative to the Company or any other obligor upon the Securities or the property of the Company or of such other obligor or their creditors, the Trustee (irrespective of whether the principal of the Securities shall then be due and payable as therein expressed or by declaration or otherwise and irrespective of whether the Trustee shall have made any demand on the Company for the payment of overdue principal or interest) shall be entitled and empowered, by intervention in such proceeding or otherwise,

(a) to file and prove a claim for the whole amount of principal and interest owing and unpaid in respect of the Securities and to file such other papers or documents as may be necessary or advisable in order to have the claims of the Trustee (including any claim for the compensation, reasonable expenses, disbursements and advances of the Trustee, its agents and counsel) and of the Holders allowed in such judicial proceeding, and

(b) to collect and receive any moneys or other property payable or deliverable on any such claims and to distribute the same,

and any custodian, receiver, assignee, trustee, liquidator, sequestrator or other similar official in any such judicial proceeding is hereby authorized by each Holder to make such payments to the Trustee and, in the event that the Trustee shall consent to the making of such payments directly to the Holders, to pay to the Trustee any amount due it for the compensation, reasonable expenses, disbursements and advances of the Trustee, its agents and counsel, and any other amounts due the Trustee under Section 7.7.

Nothing herein contained shall be deemed to authorize the Trustee to authorize or consent to or accept or adopt on behalf of any Holder any plan of reorganization, arrangement, adjustment or composition affecting the Securities or the rights of any Holder thereof or to authorize the Trustee to vote in respect of the claim of any Holder in any such proceeding.

Section 6.5. Trustee May Enforce Claims Without Possession of Securities.

All rights of action and claims under this Indenture or the Securities may be prosecuted and enforced by the Trustee without the possession of any of the Securities or the production thereof in any proceeding relating thereto, and any such proceeding instituted by the Trustee shall be brought in its own name as trustee of an express trust, and any recovery of judgment shall, after provision for the payment of the compensation, reasonable expenses, disbursements and advances of the Trustee, its agents and counsel, be for the ratable benefit of the Holders of the Securities in respect of which such judgment has been recovered.

Section 6.6. Application of Money Collected.

Any money or property collected by the Trustee pursuant to this Article shall be applied in the following order, at the date or dates fixed by the Trustee and, in case of the distribution of such money or property on account of principal or interest, upon presentation of the Securities and the notation thereon of the payment if only partially paid and upon surrender thereof if fully paid:

First: To the payment of all amounts due the Trustee under Section 7.7; and

Second: To the payment of the amounts then due and unpaid for principal of and interest on the Securities in respect of which or for the benefit of which such money has been collected, ratably, without preference or priority of any kind, according to the amounts due and payable on such Securities for principal and interest, respectively; and

Third: To the Company.

Section 6.7. Limitation on Suits.

No Holder of any Security of any Series shall have any right to institute any proceeding, judicial or otherwise, with respect to this Indenture, or for the appointment of a receiver or trustee, or for any other remedy hereunder, unless

(a) such Holder has previously given written notice to the Trustee of a continuing Event of Default with respect to the Securities of that Series;

(b) the Holders of not less than 25% in principal amount of the outstanding Securities of that Series shall have made written request to the Trustee to institute proceedings in respect of such Event of Default in its own name as Trustee hereunder;

(c) such Holder or Holders have offered to the Trustee indemnity or security satisfactory to the Trustee against the costs, expenses and liabilities which might be incurred by the Trustee in compliance with such request;

(d) the Trustee for 60 days after its receipt of such notice, request and offer of indemnity has failed to institute any such proceeding; and

(e) no direction inconsistent with such written request has been given to the Trustee during such 60-day period by the Holders of a majority in principal amount of the outstanding Securities of that Series;

it being understood, intended and expressly covenanted by the Holder of every Security with every other Holder and the Trustee that no one or more of such Holders shall have any right in any manner whatever by virtue of, or by availing of, any provision of this Indenture to affect, disturb or prejudice the rights of any other of such Holders, or to obtain or to seek to obtain priority or preference over any other of such Holders or to enforce any right under this Indenture, except in the manner herein provided and for the equal and ratable benefit of all such Holders of the applicable Series.

Section 6.8. Unconditional Right of Holders to Receive Principal and Interest.

Notwithstanding any other provision in this Indenture, the Holder of any Security shall have the right, which is absolute and unconditional, to receive payment of the principal of and interest, if any, on such Security on the Maturity of such Security, including the Stated Maturity expressed in such Security (or, in the case of redemption, on the redemption date) and to institute suit for the enforcement of any such payment, and such rights shall not be impaired without the consent of such Holder.

Section 6.9. Restoration of Rights and Remedies.

If the Trustee or any Holder has instituted any proceeding to enforce any right or remedy under this Indenture and such proceeding has been discontinued or abandoned for any reason, or has been determined adversely to the Trustee or to such Holder, then and in every such case, subject to any determination in such proceeding, the Company, the Trustee and the Holders shall be restored severally and respectively to their former positions hereunder and thereafter all rights and remedies of the Trustee and the Holders shall continue as though no such proceeding had been instituted.

Section 6.10. Rights and Remedies Cumulative.

Except as otherwise provided with respect to the replacement or payment of mutilated, destroyed, lost or stolen Securities in Section 2.8, no right or remedy herein conferred upon or reserved to the Trustee or to the Holders is intended to be exclusive of any other right or remedy, and every right and remedy shall, to the extent permitted by law, be cumulative and in addition to every other right and remedy given hereunder or now or hereafter existing at law or in equity or otherwise. The assertion or employment of any right or remedy hereunder, or otherwise, shall not, to the extent permitted by law, prevent the concurrent assertion or employment of any other appropriate right or remedy.

Section 6.11. Delay or Omission Not Waiver.

No delay or omission of the Trustee or of any Holder of any Securities to exercise any right or remedy accruing upon any Event of Default shall impair any such right or remedy or constitute a waiver of any such Event of Default or an acquiescence therein. Every right and remedy given by this Article or by law to the Trustee or to the Holders may be exercised from time to time, and as often as may be deemed expedient, by the Trustee or by the Holders, as the case may be.

Section 6.12. Control by Holders.

The Holders of a majority in principal amount of the outstanding Securities of any Series shall have the right to 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 the Securities of such Series, provided that

- (a) such direction shall not be in conflict with any rule of law or with this Indenture,
- (b) the Trustee may take any other action deemed proper by the Trustee which is not inconsistent with such direction,

(c) subject to the provisions of Section 7.1, the Trustee shall have the right to decline to follow any such direction if the Trustee in good faith shall, by a Responsible Officer of the Trustee, determine that the proceeding so directed would involve the Trustee in personal liability, and

(d) prior to taking any action as directed under this Section 6.12, the Trustee shall be entitled to indemnity satisfactory to it against the costs, expenses and liabilities which might be incurred by it in compliance with such request or direction.

Section 6.13. Waiver of Past Defaults.

The Holders of not less than a majority in principal amount of the outstanding Securities of any Series may on behalf of the Holders of all the Securities of such Series, by written notice to the Trustee and the Company, waive any past Default hereunder with respect to such Series and its consequences, except a Default in the payment of the principal of or interest on any Security of such Series (provided, however, that the Holders of a majority in principal amount of the outstanding Securities of any Series may rescind an acceleration and its consequences, including any related payment default that resulted from such acceleration). Upon any such waiver, such Default shall cease to exist, and any Event of Default arising therefrom shall be deemed to have been cured, for every purpose of this Indenture; but no such waiver shall extend to any subsequent or other Default or impair any right consequent thereon.

Section 6.14. Undertaking for Costs.

All parties to this Indenture agree, and each Holder of any Security by his acceptance thereof shall be deemed to have agreed, that any court may in its discretion require, in any suit for the enforcement of any right or remedy under this Indenture, or in any suit against the Trustee for any action taken, suffered or omitted by it as Trustee, the filing by any party litigant in such suit of an undertaking to pay the costs of such suit, and that such court may in its discretion assess reasonable costs, including reasonable attorneys' fees, against any party litigant in such suit, having due regard to the merits and good faith of the claims or defenses made by such party litigant; but the provisions of this Section shall not apply to any suit instituted by the Company, to any suit instituted by the Trustee, to any suit instituted by any Holder, or group of Holders, holding in the aggregate more than 10% in principal amount of the outstanding Securities of any Series, or to any suit instituted by any Holder for the enforcement of the payment of the principal of or interest on any Security on or after the Maturity of such Security, including the Stated Maturity expressed in such Security (or, in the case of redemption, on the redemption date).

ARTICLE VII.
TRUSTEE

Section 7.1. Duties of Trustee.

(a) If an Event of Default has occurred and is continuing, the Trustee shall exercise the rights and powers vested in it by this Indenture and use the same degree of care and skill in their exercise as a prudent person would exercise or use under the circumstances in the conduct of such person's own affairs.

(b) Except during the continuance of an Event of Default:

(i) The Trustee need perform only those duties that are specifically set forth in this Indenture and no others.

(ii) In the absence of bad faith on its part, the Trustee may conclusively rely, as to the truth of the statements and the correctness of the opinions expressed therein, upon Officer's Certificates or Opinions of Counsel furnished to the Trustee and conforming to the requirements of this Indenture; however, in the case of any such Officer's Certificates or Opinions of Counsel which by any provisions hereof are specifically required to be furnished to the Trustee, the Trustee shall examine such Officer's Certificates and Opinions of Counsel to determine whether or not they conform to the form requirements of this Indenture.

(c) The Trustee may not be relieved from liability for its own negligent action, its own negligent failure to act or its own willful misconduct, except that:

(i) This paragraph does not limit the effect of paragraph (b) of this Section.

(ii) The Trustee shall not be liable for any error of judgment made in good faith by a Responsible Officer, unless it is proved that the Trustee was negligent in ascertaining the pertinent facts.

(iii) The Trustee shall not be liable with respect to any action taken, suffered or omitted to be taken by it with respect to Securities of any Series in good faith in accordance with the direction of the Holders of a majority in principal amount of the outstanding Securities of such Series relating to the time, method and place of conducting any proceeding for any remedy available to the Trustee, or exercising any trust or power conferred upon the Trustee, under this Indenture with respect to the Securities of such Series in accordance with Section 6.12.

(d) Every provision of this Indenture that in any way relates to the Trustee is subject to paragraph (a), (b) and (c) of this Section.

(e) The Trustee may refuse to perform any duty or exercise any right or power unless it receives indemnity satisfactory to it against the costs, expenses and liabilities which might be incurred by it in performing such duty or exercising such right or power.

(f) The Trustee shall not be liable for interest on any money received by it except as the Trustee may agree in writing with the Company. Money held in trust by the Trustee need not be segregated from other funds except to the extent required by law.

(g) No provision of this Indenture shall require the Trustee to risk its own funds or otherwise incur any financial liability in the performance of any of its duties, or in the exercise of any of its rights or powers, if adequate indemnity against such risk is not assured to the Trustee in its satisfaction.

(h) The Paying Agent, the Registrar and any authenticating agent shall be entitled to the protections and immunities as are set forth in paragraphs (e), (f) and (g) of this Section and in Section 7.2, each with respect to the Trustee.

Section 7.2. Rights of Trustee.

(a) The Trustee may rely on and shall be protected in acting or refraining from acting upon any document (whether in its original or facsimile form) believed by it to be genuine and to have been signed or presented by the proper person. The Trustee need not investigate any fact or matter stated in the document.

(b) Before the Trustee acts or refrains from acting, it may require an Officer's Certificate or an Opinion of Counsel or both. The Trustee shall not be liable for any action it takes or omits to take in good faith in reliance on such Officer's Certificate or Opinion of Counsel.

(c) The Trustee may act through agents and shall not be responsible for the misconduct or negligence of any agent appointed with due care. No Depository shall be deemed an agent of the Trustee and the Trustee shall not be responsible for any act or omission by any Depository.

(d) The Trustee shall not be liable for any action it takes or omits to take in good faith which it believes to be authorized or within its rights or powers, provided that the Trustee's conduct does not constitute willful misconduct or negligence.

(e) The Trustee may consult with counsel and the advice of such counsel or any Opinion of Counsel shall be full and complete authorization and protection in respect of any action taken, suffered or omitted by it hereunder without willful misconduct or negligence, and in reliance thereon.

(f) The Trustee shall be under no obligation to exercise any of the rights or powers vested in it by this Indenture at the request or direction of any of the Holders of Securities unless such Holders shall have offered to the Trustee security or indemnity satisfactory to it against the costs, expenses and liabilities which might be incurred by it in compliance with such request or direction.

(g) The Trustee shall not be bound to make any investigation into the facts or matters stated in any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, bond, debenture, note, other evidence of indebtedness or other paper or document, but the Trustee, in its discretion, may make such further inquiry or investigation into such facts or matters as it may see fit.

(h) The Trustee shall not be deemed to have notice of any Default or Event of Default unless a Responsible Officer of the Trustee has actual knowledge thereof or unless written notice of any event which is in fact such a default is received by the Trustee at the Corporate Trust Office of the Trustee, and such notice references the Securities generally or the Securities of a particular Series and this Indenture.

(i) In no event shall the Trustee be liable to any person for special, punitive, indirect, consequential or incidental loss or damage of any kind whatsoever (including but not limited to lost profits), even if the Trustee has been advised of the likelihood of such loss or damage.

(j) The permissive right of the Trustee to take the actions permitted by this Indenture shall not be construed as an obligation or duty to do so.

Section 7.3. Individual Rights of Trustee.

The Trustee in its individual or any other capacity may become the owner or pledgee of Securities and may otherwise deal with the Company or an Affiliate of the Company with the same rights it would have if it were not Trustee. Any Agent may do the same with like rights. The Trustee is also subject to Sections 7.10 and 7.11.

Section 7.4. Trustee's Disclaimer.

The Trustee makes no representation as to the validity or adequacy of this Indenture or the Securities, it shall not be accountable for the Company's use of the proceeds from the Securities, and it shall not be responsible for any statement in the Securities other than its authentication.

Section 7.5. Notice of Defaults.

If a Default or Event of Default occurs and is continuing with respect to the Securities of any Series and if it is known to a Responsible Officer of the Trustee, the Trustee shall send to each Securityholder of the Securities of that Series notice of a Default or Event of Default within 90 days after it occurs or, if later, after a Responsible Officer of the Trustee has knowledge of such Default or Event of Default. Except in the case of a Default or Event of Default in payment of principal of or interest on any Security of any Series, the Trustee may withhold the notice if and so long as its corporate trust committee or a committee of its Responsible Officers in good faith determines that withholding the notice is in the interests of Securityholders of that Series.

Section 7.6. Reports by Trustee to Holders.

Within 60 days after each anniversary of the date of this Indenture, the Trustee shall transmit by mail to all Securityholders, as their names and addresses appear on the register kept by the Registrar, a brief report dated as of such anniversary date, in accordance with, and to the extent required under, TIA § 313.

A copy of each report at the time of its mailing to Securityholders of any Series shall be filed with the SEC and each national securities exchange on which the Securities of that Series are listed. The Company shall promptly notify the Trustee in writing when Securities of any Series are listed on any national securities exchange.

Section 7.7. Compensation and Indemnity.

The Company shall pay to the Trustee from time to time compensation for its services as the Company and the Trustee shall from time to time agree upon in writing. The Trustee's compensation shall not be limited by any law on compensation of a trustee of an express trust. The Company shall reimburse the Trustee upon request for all reasonable out of pocket expenses incurred by it. Such expenses shall include the reasonable compensation and expenses of the Trustee's agents and counsel.

The Company shall indemnify each of the Trustee and any predecessor Trustee (including for the cost of defending itself) against any cost, expense or liability, including taxes (other than taxes based upon, measured by or determined by the income of the Trustee) incurred by it except as set forth in the next paragraph in the performance of its duties under this Indenture as Trustee or Agent. The Trustee shall notify the Company promptly of any claim for which it may seek indemnity. Failure by the Trustee to so notify the Company shall not relieve the Company of its obligations hereunder, unless and to the extent that the Company is materially prejudiced thereby. The Company shall defend the claim and the Trustee shall cooperate in the defense. The Trustee may have one separate counsel and the Company shall pay the reasonable fees and expenses of such counsel. The Company need not pay for any settlement made without its consent, which consent will not be unreasonably withheld. This indemnification shall apply to officers, directors, employees, shareholders and agents of the Trustee.

The Company need not reimburse any expense or indemnify against any loss or liability incurred by the Trustee or by any officer, director, employee, shareholder or agent of the Trustee through willful misconduct or negligence.

To secure the Company's payment obligations in this Section, the Trustee shall have a lien prior to the Securities of any Series on all money or property held or collected by the Trustee, except that held in trust to pay principal of and interest on particular Securities of that Series.

When the Trustee incurs expenses or renders services after an Event of Default specified in Section 6.1(d) or (e) occurs, the expenses and the compensation for the services are intended to constitute expenses of administration under any Bankruptcy Law.

The provisions of this Section shall survive the termination of this Indenture.

Section 7.8. Replacement of Trustee.

A resignation or removal of the Trustee and appointment of a successor Trustee shall become effective only upon the successor Trustee's acceptance of appointment as provided in this Section.

The Trustee may resign with respect to the Securities of one or more Series by so notifying the Company at least 30 days prior to the date of the proposed resignation. The Holders of a majority in principal amount of the Securities of any Series may remove the Trustee with respect to that Series by so notifying the Trustee and the Company. The Company may remove the Trustee with respect to Securities of one or more Series if:

- (a) the Trustee fails to comply with Section 7.10;
- (b) the Trustee is adjudged a bankrupt or an insolvent or an order for relief is entered with respect to the Trustee under any Bankruptcy Law;
- (c) a Custodian or public officer takes charge of the Trustee or its property; or
- (d) the Trustee becomes incapable of acting.

If the Trustee resigns or is removed or if a vacancy exists in the office of Trustee for any reason, the Company shall promptly appoint a successor Trustee. Within one year after the successor Trustee takes office, the Holders of a majority in principal amount of the then outstanding Securities may appoint a successor Trustee to replace the successor Trustee appointed by the Company.

If a successor Trustee with respect to the Securities of any one or more Series does not take office within 60 days after the retiring Trustee resigns or is removed, the retiring Trustee, the Company or the Holders of at least a majority in principal amount of the Securities of the applicable Series may petition any court of competent jurisdiction for the appointment of a successor Trustee.

A successor Trustee shall deliver a written acceptance of its appointment to the retiring Trustee and to the Company. Immediately after that, the retiring Trustee shall transfer all property held by it as Trustee to the successor Trustee subject to the lien provided for in Section 7.7, the resignation or removal of the retiring Trustee shall become effective, and the successor Trustee shall have all the rights, powers and duties of the Trustee with respect to each Series of Securities for which it is acting as Trustee under this Indenture. A successor Trustee shall mail a notice of its succession to each Securityholder of each such Series. Notwithstanding replacement of the Trustee pursuant to this Section 7.8, the Company's obligations under Section 7.7 hereof shall continue for the benefit of the retiring Trustee with respect to expenses and liabilities incurred by it for actions taken or omitted to be taken in accordance with its rights, powers and duties under this Indenture prior to such replacement.

Section 7.9. Successor Trustee by Merger, Etc.

If the Trustee consolidates with, merges or converts into, or transfers all or substantially all of its corporate trust business to, another corporation, the successor corporation without any further act shall be the successor Trustee, subject to Section 7.10.

Section 7.10. Eligibility; Disqualification.

This Indenture shall always have a Trustee who satisfies the requirements of TIA § 310(a)(1), (2) and (5). The Trustee shall always have a combined capital and surplus of at least \$25,000,000 as set forth in its most recent published annual report of condition. The Trustee shall comply with TIA § 310(b).

Section 7.11. Preferential Collection of Claims Against Company.

The Trustee is subject to TIA § 311(a), excluding any creditor relationship listed in TIA § 311(b). A Trustee who has resigned or been removed shall be subject to TIA § 311(a) to the extent indicated.

ARTICLE VIII.
SATISFACTION AND DISCHARGE; DEFEASANCE

Section 8.1. Satisfaction and Discharge of Indenture.

This Indenture shall upon Company Order be discharged with respect to the Securities of any Series and cease to be of further effect as to all Securities of such Series (except as hereinafter provided in this Section 8.1), and the Trustee, at the expense of the Company, shall execute instruments acknowledging satisfaction and discharge of this Indenture, when

(a) either

(i) all Securities of such Series theretofore authenticated and delivered (other than Securities that have been destroyed, lost or stolen and that have been replaced or paid) have been delivered to the Trustee for cancellation; or

(ii) all such Securities of such Series not theretofore delivered to the Trustee for cancellation

- (1) have become due and payable by reason of sending a notice of redemption or otherwise, or
- (2) will become due and payable at their Stated Maturity within one year, or
- (3) have been called for redemption or are to be called for redemption within one year under arrangements satisfactory to the Trustee for the giving of notice of redemption by the Trustee in the name, and at the expense, of the Company, or
- (4) are deemed paid and discharged pursuant to Section 8.3, as applicable;

and the Company, in the case of (1), (2) or (3) above, shall have irrevocably deposited or caused to be deposited with the Trustee as trust funds in trust an amount of money or U.S. Government Obligations, which amount shall be sufficient for the purpose of paying and discharging each installment of principal (including mandatory sinking fund or analogous payments) of and interest on all the Securities of such Series on the dates such installments of principal or interest are due;

(b) the Company has paid or caused to be paid all other sums payable hereunder by the Company; and

(c) the Company shall have delivered to the Trustee an Officer's Certificate and an Opinion of Counsel, each stating that all conditions precedent provided for relating to the satisfaction and discharge contemplated by this Section have been complied with.

Notwithstanding the satisfaction and discharge of this Indenture, the obligations of the Company to the Trustee under Section 7.7, and, if money shall have been deposited with the Trustee pursuant to clause (a) of this Section, the provisions of Sections 2.4, 2.7, 2.8, 8.2 and 8.5 shall survive.

Section 8.2. Application of Trust Funds; Indemnification.

(a) Subject to the provisions of Section 8.5, all money and U.S. Government Obligations or Foreign Government Obligations deposited with the Trustee pursuant to Section 8.1, 8.3 or 8.4 and all money received by the Trustee in respect of U.S. Government Obligations or Foreign Government Obligations deposited with the Trustee pursuant to Section 8.1, 8.3 or 8.4, shall be held in trust and applied by it, in accordance with the provisions of the Securities and this Indenture, to the payment, either directly or through any Paying Agent (including the Company acting as its own Paying Agent) as the Trustee may determine, to the persons entitled thereto, of the principal and interest for whose payment such money has been deposited with or received by the Trustee or to make mandatory sinking fund payments or analogous payments as contemplated by Sections 8.1, 8.3 or 8.4.

(b) The Company shall pay and shall indemnify the Trustee against any tax, fee or other charge imposed on or assessed against U.S. Government Obligations or Foreign Government Obligations deposited pursuant to Sections 8.1, 8.3 or 8.4 or the interest and principal received in respect of such obligations other than any payable by or on behalf of Holders.

(c) The Trustee shall deliver or pay to the Company from time to time upon Company Order any U.S. Government Obligations or Foreign Government Obligations or money held by it as provided in Sections 8.3 or 8.4 which, in the opinion of a nationally recognized firm of independent certified public accountants or investment bank expressed in a written certification thereof delivered to the Trustee, are then in excess of the amount thereof which then would have been required to be deposited for the purpose for which such U.S. Government Obligations or Foreign Government Obligations or money were deposited or received. This provision shall not authorize the sale by the Trustee of any U.S. Government Obligations or Foreign Government Obligations held under this Indenture.

Section 8.3. Legal Defeasance of Securities of any Series.

Unless this Section 8.3 is otherwise specified, pursuant to Section 2.2, to be inapplicable to Securities of any Series, the Company shall be deemed to have paid and discharged the entire indebtedness on all the outstanding Securities of any Series on the 91st day after the date of the deposit referred to in subparagraph (d) hereof, and the provisions of this Indenture, as it relates to such outstanding Securities of such Series, shall no longer be in effect (and the Trustee, at the expense of the Company, shall, upon receipt of a Company Order, execute instruments acknowledging the same), except as to:

(a) the rights of Holders of Securities of such Series to receive, from the trust funds described in subparagraph (d) hereof, (i) payment of the principal of and each installment of principal of and interest on the outstanding Securities of such Series on the Maturity of such principal or installment of principal or interest and (ii) the benefit of any mandatory sinking fund payments applicable to the Securities of such Series on the day on which such payments are due and payable in accordance with the terms of this Indenture and the Securities of such Series;

(b) the provisions of Sections 2.4, 2.5, 2.7, 2.8, 7.7, 8.2, 8.3, 8.5 and 8.6; and

(c) the rights, powers, trusts and immunities of the Trustee hereunder and the Company's obligations in connection therewith;

provided that, the following conditions shall have been satisfied:

(d) the Company shall have irrevocably deposited or caused to be deposited (except as provided in Section 8.2(c)) with the Trustee as trust funds specifically pledged as security for and dedicated solely to the benefit of the Holders of such Securities (i) in the case of Securities of such Series denominated in Dollars, cash in Dollars and/or U.S. Government Obligations, or (ii) in the case of Securities of such Series denominated in a Foreign Currency (other than a composite currency), money and/or Foreign Government Obligations, which through the payment of interest and principal in respect thereof in accordance with their terms, will provide (and without reinvestment and assuming no tax liability will be imposed on such Trustee), not later than one day before the due date of any payment of money, an amount in cash, sufficient, in the opinion of a nationally recognized firm of independent public accountants or investment bank expressed in a written certification thereof delivered to the Trustee, to pay and discharge each installment of principal of and interest, on and any mandatory sinking fund payments in respect of all the Securities of such Series on the dates such installments of principal or interest and such sinking fund payments are due;

(e) such deposit will not result in a breach or violation of, or constitute a default under, this Indenture or any other agreement or instrument to which the Company is a party or by which it is bound;

(f) no Default or Event of Default with respect to the Securities of such Series shall have occurred and be continuing on the date of such deposit or during the period ending on the 91st day after such date;

(g) the Company shall have delivered to the Trustee an Officer's Certificate and an Opinion of Counsel to the effect that (i) the Company has received from, or there has been published by, the Internal Revenue Service a ruling, or (ii) since the date of execution of this Indenture, there has been a change in the applicable Federal income tax law, in either case to the effect that, and based thereon such Opinion of Counsel shall confirm that, the Holders of the Securities of such Series will not recognize income, gain or loss for Federal income tax purposes as a result of such deposit, defeasance and discharge and will be subject to Federal income tax on the same amount and in the same manner and at the same times as would have been the case if such deposit, defeasance and discharge had not occurred;

(h) the Company shall have delivered to the Trustee an Officer's Certificate stating that the deposit was not made by the Company with the intent of defeating, hindering, delaying or defrauding any other creditors of the Company; and

(i) the Company shall have delivered to the Trustee an Officer's Certificate and an Opinion of Counsel, each stating that all conditions precedent provided for relating to the defeasance contemplated by this Section have been complied with.

Section 8.4. Covenant Defeasance.

Unless this Section 8.4 is otherwise specified pursuant to Section 2.2 to be inapplicable to Securities of any Series, the Company may omit to comply with respect to the Securities of any Series with any term, provision or condition set forth under Sections 4.2, 4.3, 4.4 and 5.1 and, unless otherwise specified therein, any additional covenants specified in a supplemental indenture for such Series of Securities or a Board Resolution or an Officer's Certificate delivered pursuant to Section 2.2 (and the failure to comply with any such covenants shall not constitute a Default or Event of Default with respect to such Series under Section 6.1) and the occurrence of any event specified in a supplemental indenture for such Series of Securities or a Board Resolution or an Officer's Certificate delivered pursuant to Section 2.2 and designated as an Event of Default shall not constitute a Default or Event of Default hereunder, with respect to the Securities of such Series, but, except as specified above, the remainder of this Indenture and such Securities will be unaffected thereby; provided that the following conditions shall have been satisfied:

(a) with reference to this Section 8.4, the Company has irrevocably deposited or caused to be irrevocably deposited (except as provided in Section 8.2(c)) with the Trustee as trust funds in trust for the purpose of making the following payments specifically pledged as security for, and dedicated solely to, the benefit of the Holders of such Securities (i) in the case of Securities of such Series denominated in Dollars, cash in Dollars and/or U.S. Government Obligations, or (ii) in the case of Securities of such Series denominated in a Foreign Currency (other than a composite currency), money and/or Foreign Government Obligations, which through the payment of interest and principal in respect thereof in accordance with their terms, will provide (and without reinvestment and assuming no tax liability will be imposed on such Trustee), not later than one day before the due date of any payment of money, an amount in cash, sufficient, in the opinion of a nationally recognized firm of independent certified public accountants or investment bank expressed in a written certification thereof delivered to the Trustee, to pay and discharge each installment of principal (including mandatory sinking fund or analogous payments) of and interest on all the Securities of such Series on the dates such installments of principal or interest are due;

(b) such deposit will not result in a breach or violation of, or constitute a default under, this Indenture or any other agreement or instrument to which the Company is a party or by which it is bound;

(c) no Default or Event of Default with respect to the Securities of such Series shall have occurred and be continuing on the date of such deposit;

(d) the Company shall have delivered to the Trustee an Officers' Certificate and an Opinion of Counsel to the effect that the Holders of the Securities of such Series will not recognize income, gain or loss for Federal income tax purposes as a result of such deposit and covenant defeasance and will be subject to Federal income tax on the same amount and in the same manner and at the same times as would have been the case if such deposit and covenant defeasance had not occurred;

(e) The Company shall have delivered to the Trustee an Officer's Certificate stating the deposit was not made by the Company with the intent of defeating, hindering, delaying or defrauding any other creditors of the Company; and

(f) The Company shall have delivered to the Trustee an Officer's Certificate and an Opinion of Counsel, each stating that all conditions precedent herein provided for relating to the covenant defeasance contemplated by this Section have been complied with.

Section 8.5. Repayment to Company.

Subject to applicable abandoned property law, the Trustee and the Paying Agent shall pay to the Company upon request any money held by them for the payment of principal and interest that remains unclaimed for two years. After that, Securityholders entitled to the money must look to the Company for payment as general creditors unless an applicable abandoned property law designates another person.

Section 8.6. Reinstatement.

If the Trustee or the Paying Agent is unable to apply any money deposited with respect to Securities of any Series in accordance with Section 8.1 by reason of any legal proceeding or by reason of any order or judgment of any court or governmental authority enjoining, restraining or otherwise prohibiting such application, the obligations of the Company under this Indenture with respect to the Securities of such Series and under the Securities of such Series shall be revived and reinstated as though no deposit had occurred pursuant to Section 8.1 until such time as the Trustee or the Paying Agent is permitted to apply all such money in accordance with Section 8.1; provided, however, that if the Company has made any payment of principal of or interest on or any Additional Amounts with respect to any Securities because of the reinstatement of its obligations, the Company shall be subrogated to the rights of the Holders of such Securities to receive such payment from the money or U.S. Government Obligations held by the Trustee or Paying Agent after payment in full to the Holders.

ARTICLE IX.
AMENDMENTS AND WAIVERS

Section 9.1. Without Consent of Holders.

The Company and the Trustee may amend or supplement this Indenture or the Securities of one or more Series without the consent of any Securityholder:

- (a) to cure any ambiguity, defect or inconsistency;
- (b) to comply with Article V;
- (c) to provide for uncertificated Securities in addition to or in place of certificated Securities;
- (d) to add guarantees with respect to Securities of any Series or secure Securities of any Series;
- (e) to surrender any of the Company's rights or powers under this Indenture;
- (f) to add covenants or events of default for the benefit of the holders of Securities of any Series;
- (g) to comply with the applicable procedures of the applicable depository;
- (h) to make any change that does not adversely affect the rights of any Securityholder;
- (i) to provide for the issuance of and establish the form and terms and conditions of Securities of any Series as permitted by this Indenture;
- (j) to evidence and provide for the acceptance of appointment hereunder by a successor Trustee with respect to the Securities of one or more Series and to add to or change any of the provisions of this Indenture as shall be necessary to provide for or facilitate the administration of the trusts hereunder by more than one Trustee; or
- (k) to comply with requirements of the SEC in order to effect or maintain the qualification of this Indenture under the TIA.

Section 9.2. With Consent of Holders.

The Company and the Trustee may enter into a supplemental indenture with the written consent of the Holders of at least a majority in principal amount of the outstanding Securities of each Series affected by such supplemental indenture (including consents obtained in connection with a tender offer or exchange offer for the Securities of such Series), for the purpose of adding any provisions to or changing in any manner or eliminating any of the provisions of this Indenture or of any supplemental indenture or of modifying in any manner the rights of the Securityholders of each such Series. Except as provided in Section 6.13, the Holders of at least a majority in principal amount of the outstanding Securities of any Series by notice to the Trustee (including consents obtained in connection with a tender offer or exchange offer for the Securities of such Series) may waive compliance by the Company with any provision of this Indenture or the Securities with respect to such Series.

It shall not be necessary for the consent of the Holders of Securities under this Section 9.2 to approve the particular form of any proposed supplemental indenture or waiver, but it shall be sufficient if such consent approves the substance thereof. After a supplemental indenture or waiver under this section becomes effective, the Company shall send to the Holders of Securities affected thereby, a notice briefly describing the supplemental indenture or waiver. Any failure by the Company to send such notice, or any defect therein, shall not, however, in any way impair or affect the validity of any such supplemental indenture or waiver.

Section 9.3. Limitations.

Without the consent of each Securityholder affected, an amendment or waiver may not:

- (a) reduce the principal amount of Securities whose Holders must consent to an amendment, supplement or waiver;
- (b) reduce the rate of or extend the time for payment of interest (including default interest) on any Security;
- (c) reduce the principal or change the Stated Maturity of any Security or reduce the amount of, or postpone the date fixed for, the payment of any sinking fund or analogous obligation;
- (d) reduce the principal amount of Discount Securities payable upon acceleration of the maturity thereof;
- (e) waive a Default or Event of Default in the payment of the principal of or interest, if any, on any Security (except a rescission of acceleration of the Securities of any Series by the Holders of at least a majority in principal amount of the outstanding Securities of such Series and a waiver of the payment default that resulted from such acceleration);
- (f) make the principal of or interest, if any, on any Security payable in any currency other than that stated in the Security;
- (g) make any change in Sections 6.8, 6.13 or 9.3 (this sentence); or
- (h) waive a redemption payment with respect to any Security, provided that such redemption is made at the Company's option.

Section 9.4. Compliance with Trust Indenture Act.

Every amendment to this Indenture or the Securities of one or more Series shall be set forth in a supplemental indenture hereto that complies with the TIA as then in effect.

Section 9.5. Revocation and Effect of Consents.

Until an amendment is set forth in a supplemental indenture or a waiver becomes effective, a consent to it by a Holder of a Security is a continuing consent by the Holder and every subsequent Holder of a Security or portion of a Security that evidences the same debt as the consenting Holder's Security, even if notation of the consent is not made on any Security. However, any such Holder or subsequent Holder may revoke the consent as to his Security or portion of a Security if the Trustee receives the notice of revocation before the date of the supplemental indenture or the date the waiver becomes effective.

Any amendment or waiver once effective shall bind every Securityholder of each Series affected by such amendment or waiver unless it is of the type described in any of clauses (a) through (h) of Section 9.3. In that case, the amendment or waiver shall bind each Holder of a Security who has consented to it and every subsequent Holder of a Security or portion of a Security that evidences the same debt as the consenting Holder's Security.

The Company may, but shall not be obligated to, fix a record date for the purpose of determining the Holders entitled to give their consent or take any other action described above or required or permitted to be taken pursuant to this Indenture. If a record date is fixed, then notwithstanding the second immediately preceding paragraph, those Persons who were Holders at such record date (or their duly designated proxies), and only those persons, shall be entitled to give such consent or to revoke any consent previously given or take any such action, whether or not such Persons continue to be Holders after such record date. No such consent shall be valid or effective for more than 120 days after such record date.

Section 9.6. Notation on or Exchange of Securities.

The Company or the Trustee may place an appropriate notation about an amendment or waiver on any Security of any Series thereafter authenticated. The Company in exchange for Securities of that Series may issue and the Trustee shall authenticate upon receipt of a Company Order in accordance with Section 2.3 new Securities of that Series that reflect the amendment or waiver.

Section 9.7. Trustee Protected.

In executing, or accepting the additional trusts created by, any supplemental indenture permitted by this Article or the modifications thereby of the trusts created by this Indenture, the Trustee shall be entitled to receive, and (subject to Section 7.1) shall be fully protected in relying upon, an Officer's Certificate or an Opinion of Counsel or both complying with Section 10.4. The Trustee shall sign all supplemental indentures upon delivery of such an Officer's Certificate or Opinion of Counsel or both, except that the Trustee need not sign any supplemental indenture that adversely affects its rights, duties, liabilities or immunities under this Indenture.

ARTICLE X.
MISCELLANEOUS

Section 10.1. Trust Indenture Act Controls.

If any provision of this Indenture limits, qualifies, or conflicts with another provision which is required or deemed to be included in this Indenture by the TIA, such required or deemed provision shall control.

Section 10.2. Notices.

Any notice or communication by the Company or the Trustee to the other, or by a Holder to the Company or the Trustee, is duly given if in writing and delivered in person or mailed by first-class mail (registered or certified, return receipt requested), facsimile transmission, email or overnight air courier guaranteeing next day delivery, to the others' address:

if to the Company:

Ribbon Communications Inc.
6500 Chase Oaks Boulevard, Suite 100
Plano, Texas 75023
Attention: Patrick W. Macken
Telephone: (978) 614-8100

with a copy to:

Troutman Pepper Hamilton Sanders LLP
600 Peachtree Street, N.E., Suite 3000
Atlanta, Georgia 30308
Attention: David W. Ghegan
Telephone: (404) 885-3139

if to the Trustee:

[·]
Attention: [·]
Telephone: [·]

with a copy to:

[·]
Attention: [·]
Telephone: [·]

The Company or the Trustee by notice to the other may designate additional or different addresses for subsequent notices or communications.

Any notice or communication to a Securityholder shall be sent electronically or by first-class mail to his, her or its address shown on the register kept by the Registrar, in accordance with the procedures of the Depositary. Failure to send a notice or communication to a Securityholder of any Series or any defect in it shall not affect its sufficiency with respect to other Securityholders of that or any other Series.

If a notice or communication is sent or published in the manner provided above, within the time prescribed, it is duly given, whether or not the Securityholder receives it.

If the Company sends a notice or communication to Securityholders, it shall send a copy to the Trustee and each Agent at the same time.

Notwithstanding any other provision of this Indenture or any Security, where this Indenture or any Security provides for notice of any event (including any notice of redemption) to a Holder of a Global Security (whether by mail or otherwise), such notice shall be sufficiently given to the Depositary for such Security (or its designee) pursuant to the customary procedures of such Depositary.

Section 10.3. Communication by Holders with Other Holders.

Securityholders of any Series may communicate pursuant to TIA § 312(b) with other Securityholders of that Series or any other Series with respect to their rights under this Indenture or the Securities of that Series or all Series. The Company, the Trustee, the Registrar and anyone else shall have the protection of TIA § 312(c).

Section 10.4. Certificate and Opinion as to Conditions Precedent.

Upon any request or application by the Company to the Trustee to take any action under this Indenture, the Company shall furnish to the Trustee:

(a) an Officer's Certificate stating that, in the opinion of the signers, all conditions precedent, if any, provided for in this Indenture relating to the proposed action have been complied with; and

(b) an Opinion of Counsel stating that, in the opinion of such counsel, all such conditions precedent have been complied with.

Section 10.5. Statements Required in Certificate or Opinion.

Each certificate or opinion with respect to compliance with a condition or covenant provided for in this Indenture (other than a certificate provided pursuant to TIA § 314(a)(4)) shall comply with the provisions of TIA § 314(e) and shall include:

(a) a statement that the person making such certificate or opinion has read such covenant or condition;

(b) a brief statement as to the nature and scope of the examination or investigation upon which the statements or opinions contained in such certificate or opinion are based;

(c) a statement that, in the opinion of such person, he has made such examination or investigation as is necessary to enable him to express an informed opinion as to whether or not such covenant or condition has been complied with; and

(d) a statement as to whether or not, in the opinion of such person, such condition or covenant has been complied with.

Section 10.6. Rules by Trustee and Agents.

The Trustee may make reasonable rules for action by or a meeting of Securityholders of one or more Series. Any Agent may make reasonable rules and set reasonable requirements for its functions.

Section 10.7. Legal Holidays.

A “*Legal Holiday*” is any day that is not a Business Day. If a payment date is a Legal Holiday at a place of payment, payment may be made at that place on the next succeeding day that is not a Legal Holiday, and no interest shall accrue for the intervening period.

Section 10.8. No Recourse Against Others.

A director, officer, employee or stockholder (past or present), as such, of the Company shall not have any liability for any obligations of the Company under the Securities or the Indenture or for any claim based on, in respect of or by reason of such obligations or their creation. Each Securityholder by accepting a Security waives and releases all such liability. The waiver and release are part of the consideration for the issue of the Securities.

Section 10.9. Counterparts.

This Indenture may be executed in any number of counterparts and by the parties hereto in separate counterparts, each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same agreement. The exchange of copies of this Indenture and of signature pages by facsimile or PDF transmission shall constitute effective execution and delivery of this Indenture as to the parties hereto and may be used in lieu of the original Indenture for all purposes. Signatures of the parties hereto transmitted by facsimile or PDF shall be deemed to be their original signatures for all purposes.

Section 10.10. Governing Law; Waiver of Jury Trial; Consent to Jurisdiction.

THIS INDENTURE AND THE SECURITIES, INCLUDING ANY CLAIM OR CONTROVERSY ARISING OUT OF OR RELATING TO THE INDENTURE OR THE SECURITIES, SHALL BE GOVERNED BY THE LAWS OF THE STATE OF NEW YORK.

THE COMPANY, THE TRUSTEE AND THE HOLDERS (BY THEIR ACCEPTANCE OF THE SECURITIES) EACH HEREBY IRREVOCABLY WAIVE, 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 INDENTURE, THE NOTES OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY.

Any legal suit, action or proceeding arising out of or based upon this Indenture or the transactions contemplated hereby may be instituted in the federal courts of the United States of America located in the City of New York or the courts of the State of New York in each case located in the City of New York (collectively, the “*Specified Courts*”), and each party irrevocably submits to the non exclusive jurisdiction of such courts in any such suit, action or proceeding. Service of any process, summons, notice or document by mail (to the extent allowed under any applicable statute or rule of court) to such party’s address set forth above shall be effective service of process for any suit, action or other proceeding brought in any such court. The Company, the Trustee and the Holders (by their acceptance of the Securities) each hereby irrevocably and unconditionally waive any objection to the laying of venue of any suit, action or other proceeding in the Specified Courts and irrevocably and unconditionally waive and agree not to plead or claim any such suit, action or other proceeding has been brought in an inconvenient forum.

Section 10.11. No Adverse Interpretation of Other Agreements.

This Indenture may not be used to interpret another indenture, loan or debt agreement of the Company or a Subsidiary of the Company. Any such indenture, loan or debt agreement may not be used to interpret this Indenture.

Section 10.12. Successors.

All agreements of the Company in this Indenture and the Securities shall bind its successor. All agreements of the Trustee in this Indenture shall bind its successor.

Section 10.13. Severability.

In case any provision in this Indenture or in the Securities shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

Section 10.14. Table of Contents, Headings, Etc.

The Table of Contents, Cross Reference Table, and headings of the Articles and Sections of this Indenture have been inserted for convenience of reference only, are not to be considered a part hereof, and shall in no way modify or restrict any of the terms or provisions hereof.

Section 10.15. Securities in a Foreign Currency.

Unless otherwise specified in a Board Resolution, a supplemental indenture hereto or an Officer’s Certificate delivered pursuant to Section 2.2 of this Indenture with respect to a particular Series of Securities, whenever for purposes of this Indenture any action may be taken by the Holders of a specified percentage in aggregate principal amount of Securities of all Series or all Series affected by a particular action at the time outstanding and, at such time, there are outstanding Securities of any Series which are denominated in more than one currency, then the principal amount of Securities of such Series which shall be deemed to be outstanding for the purpose of taking such action shall be determined by converting any such other currency into a currency that is designated upon issuance of any particular Series of Securities. Unless otherwise specified in a Board Resolution, a supplemental indenture hereto or an Officer’s Certificate delivered pursuant to Section 2.2 of this Indenture with respect to a particular Series of Securities, such conversion shall be at the spot rate for the purchase of the designated currency as published in The Financial Times in the “Currency Rates” section (or, if The Financial Times is no longer published, or if such information is no longer available in The Financial Times, such source as may be selected in good faith by the Company) on any date of determination. The provisions of this paragraph shall apply in determining the equivalent principal amount in respect of Securities of a Series denominated in currency other than Dollars in connection with any action taken by Holders of Securities pursuant to the terms of this Indenture.

All decisions and determinations provided for in the preceding paragraph shall, in the absence of manifest error, to the extent permitted by law, be conclusive for all purposes and irrevocably binding upon the Trustee and all Holders.

Section 10.16. Judgment Currency.

The Company agrees, to the fullest extent that it may effectively do so under applicable law, that (a) if for the purpose of obtaining judgment in any court it is necessary to convert the sum due in respect of the principal of or interest or other amount on the Securities of any Series (the “*Required Currency*”) into a currency in which a judgment will be rendered (the “*Judgment Currency*”), the rate of exchange used shall be the rate at which in accordance with normal banking procedures the Trustee could purchase in The City of New York the Required Currency with the Judgment Currency on the day on which final unappealable judgment is entered, unless such day is not a New York Banking Day, then the rate of exchange used shall be the rate at which in accordance with normal banking procedures the Trustee could purchase in The City of New York the Required Currency with the Judgment Currency on the New York Banking Day preceding the day on which final unappealable judgment is entered and (b) its obligations under this Indenture to make payments in the Required Currency (i) shall not be discharged or satisfied by any tender, any recovery pursuant to any judgment (whether or not entered in accordance with subsection (a)), in any currency other than the Required Currency, except to the extent that such tender or recovery shall result in the actual receipt, by the payee, of the full amount of the Required Currency expressed to be payable in respect of such payments, (ii) shall be enforceable as an alternative or additional cause of action for the purpose of recovering in the Required Currency the amount, if any, by which such actual receipt shall fall short of the full amount of the Required Currency so expressed to be payable, and (iii) shall not be affected by judgment being obtained for any other sum due under this Indenture. For purposes of the foregoing, “*New York Banking Day*” means any day except a Saturday, Sunday or a legal holiday in The City of New York on which banking institutions are authorized or required by law, regulation or executive order to close.

Section 10.17. Force Majeure.

In no event shall the Trustee be responsible or liable for any failure or delay in the performance of its obligations hereunder arising out of or caused by, directly or indirectly, forces beyond its control, including, without limitation, strikes, work stoppages, accidents, acts of war or terrorism, civil or military disturbances, nuclear or natural catastrophes or acts of God, and interruptions, loss or malfunctions of utilities, communications or computer (software and hardware) services, it being understood that the Trustee shall use reasonable best efforts which are consistent with accepted practices in the banking industry to resume performance as soon as practicable under the circumstances.

Section 10.18. U.S.A. Patriot Act.

The parties hereto acknowledge that in accordance with Section 326 of the U.S.A. Patriot Act, the Trustee is required to obtain, verify, and record information that identifies each person or legal entity that establishes a relationship or opens an account with the Trustee. The parties to this Indenture agree that they will provide the Trustee with such information as it may request in order for the Trustee to satisfy the requirements of the U.S.A. Patriot Act.

ARTICLE XI.
SINKING FUNDS

Section 11.1. Applicability of Article.

The provisions of this Article shall be applicable to any sinking fund for the retirement of the Securities of a Series if so provided by the terms of such Securities pursuant to Section 2.2 and except as otherwise permitted or required by any form of Security of such Series issued pursuant to this Indenture.

The minimum amount of any sinking fund payment provided for by the terms of the Securities of any Series is herein referred to as a “*mandatory sinking fund payment*” and any other amount provided for by the terms of Securities of such Series is herein referred to as an “*optional sinking fund payment*.” If provided for by the terms of Securities of any Series, the cash amount of any sinking fund payment may be subject to reduction as provided in Section 11.2. Each sinking fund payment shall be applied to the redemption of Securities of any Series as provided for by the terms of the Securities of such Series.

Section 11.2. Satisfaction of Sinking Fund Payments with Securities.

The Company may, in satisfaction of all or any part of any sinking fund payment with respect to the Securities of any Series to be made pursuant to the terms of such Securities (1) deliver outstanding Securities of such Series to which such sinking fund payment is applicable (other than any of such Securities previously called for mandatory sinking fund redemption) and (2) apply as credit Securities of such Series to which such sinking fund payment is applicable and which have been repurchased by the Company or redeemed either at the election of the Company pursuant to the terms of such Series of Securities (except pursuant to any mandatory sinking fund) or through the application of permitted optional sinking fund payments or other optional redemptions pursuant to the terms of such Securities, provided that such Securities have not been previously so credited. Such Securities shall be received by the Trustee, together with an Officer's Certificate with respect thereto, not later than 15 days prior to the date on which the Trustee begins the process of selecting Securities for redemption, and shall be credited for such purpose by the Trustee at the price specified in such Securities for redemption through operation of the sinking fund and the amount of such sinking fund payment shall be reduced accordingly. If as a result of the delivery or credit of Securities in lieu of cash payments pursuant to this Section 11.2, the principal amount of Securities of such Series to be redeemed in order to exhaust the aforesaid cash payment shall be less than \$100,000, the Trustee need not call Securities of such Series for redemption, except upon receipt of a Company Order that such action be taken, and such cash payment shall be held by the Trustee or a Paying Agent and applied to the next succeeding sinking fund payment, provided, however, that the Trustee or such Paying Agent shall from time to time upon receipt of a Company Order pay over and deliver to the Company any cash payment so being held by the Trustee or such Paying Agent upon delivery by the Company to the Trustee of Securities of that Series purchased by the Company having an unpaid principal amount equal to the cash payment required to be released to the Company.

Section 11.3. Redemption of Securities for Sinking Fund.

Not less than 45 days (unless otherwise indicated in the Board Resolution, supplemental indenture hereto or Officer's Certificate in respect of a particular Series of Securities) prior to each sinking fund payment date for any Series of Securities, the Company will deliver to the Trustee an Officer's Certificate specifying the amount of the next ensuing mandatory sinking fund payment for that Series pursuant to the terms of that Series, the portion thereof, if any, which is to be satisfied by payment of cash and the portion thereof, if any, which is to be satisfied by delivering and crediting of Securities of that Series pursuant to Section 11.2, and the optional amount, if any, to be added in cash to the next ensuing mandatory sinking fund payment, and the Company shall thereupon be obligated to pay the amount therein specified. Not less than 30 days (unless otherwise indicated in the Board Resolution, Officer's Certificate or supplemental indenture in respect of a particular Series of Securities) before each such sinking fund payment date the Securities to be redeemed upon such sinking fund payment date will be selected in the manner specified in Section 3.2 and the Company shall send or cause to be sent a notice of the redemption thereof to be given in the name of and at the expense of the Company in the manner provided in and in accordance with Section 3.3. Such notice having been duly given, the redemption of such Securities shall be made upon the terms and in the manner stated in Sections 3.4, 3.5 and 3.6.

IN WITNESS WHEREOF, the parties hereto have caused this Indenture to be duly executed as of the day and year first above written.

RIBBON COMMUNICATIONS INC.

By: _____
Name:
Its:

[·], as Trustee

By: _____
Name:
Its:

Troutman Pepper Hamilton Sanders LLP
Troutman Pepper Building, 1001 Haxall Point
Richmond, VA 23219

troutman.com



April 4, 2023

Ribbon Communications Inc.
6500 Chase Oaks Boulevard
Plano, Texas 75023

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

Ladies and Gentlemen:

We have acted as counsel to Ribbon Communications Inc., a Delaware corporation (the "**Company**"), in connection with the filing by the Company of a registration statement on Form S-3 (the "**Registration Statement**"), including the prospectus that is part of the Registration Statement (the "**Prospectus**"), with the Securities and Exchange Commission (the "**Commission**") under the Securities Act of 1933, as amended (the "**Securities Act**"), relating to:

- (a) the Company's issuance and sale, from time to time on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of up to \$250 million of the following securities (the "**Primary Securities**"): (i) shares of the Company's common stock, \$0.0001 par value per share (the "**Common Stock**"), (ii) shares of one or more series of the Company's preferred stock, \$0.01 par value per share (the "**Preferred Stock**"), (iii) depositary shares representing fractional interests in shares of the Preferred Stock evidenced by depositary receipts (the "**Depositary Shares**"), (iv) warrants (the "**Warrants**") of the Company to purchase Securities (as defined below) other than Warrants, (v) rights to purchase shares of Common Stock and/or any of the Securities (other than Rights) of the Company (the "**Rights**"), (vi) units of the Company comprised of two or more of the Securities (other than Units), in any combination, which may or may not be separable from one another (the "**Units**") and (vii) Debt securities, in one more series, of the Company (the "**Debt Securities**"); and
- (b) the proposed resale of up to an aggregate of (i) 55,000 shares of series A preferred stock, \$0.01 par value per share (the "**Series A Preferred Stock**"), (ii) 4,858,090 warrants to purchase shares of Common Stock (the "**PIPE Warrants**") and (iii) 4,858,090 shares of Common Stock underlying the PIPE Warrants (the "**Warrant Shares**" and collectively with the Series A Preferred Stock and the PIPE Warrants, the "**Resale Securities**") that were issued in a private placement pursuant to a Securities Purchase Agreement, dated March 28, 2023, by and among the Company and the purchasers identified therein. The Resale Securities and the Primary Securities are collectively referred to herein as the "**Securities**").

The Securities will be offered in amounts, at prices and on terms to be determined in light of market conditions at the time of sale and to be set forth in supplements (each a "**Prospectus Supplement**") to the Prospectus contained in the Registration Statement.

Each series of Preferred Stock is to be issued under the Charter Documents (defined below) and a certificate of designation (the "**Certificate of Designation**") to be filed with the Secretary of State of the State of Delaware. The Depositary Shares are to be issued pursuant to one or more deposit agreements between the Company and a bank or trust company, as depositary (each, a "**Depositary Agreement**"). The Warrants are to be issued pursuant to one or more warrant agreements between the Company and a warrant agent (the "**Warrant Agreement**"). The Rights are to be issued under one or more rights agreements between the Company and an agent or other party therein (the "**Rights Agreement**"). The Units are to be issued pursuant to one or more unit agreements between the Company and a unit agent or other party therein (the "**Unit Agreement**"). The Debt Securities are to be issued pursuant to an indenture between the Company and a trustee to be named in such Indenture, a form of which is included as Exhibit 4.6 to the Registration Statement (the "**Applicable Indenture**").

For purposes of the opinions we express below, we have examined the originals or copies, certified or otherwise identified, of (i) the restated certificate of incorporation and the amended and restated bylaws of the Company, each as amended and/or restated to date (the “**Charter Documents**”); (ii) the Registration Statement and all exhibits thereto, (iii) resolutions of the Board of Directors of the Company (the “**Board**”) with respect to the Registration Statement and the offering and sale of the Securities, (iv) the specimen Common Stock certificate of the Company, (v) certain corporate records of the Company, including minute books of the Company, certificates of public officials, and of representatives of the Company, (vi) the Certificate of Designation for the Series A Preferred Stock (the “**Series A Certificate of Designation**”) included as Exhibit 3.4 to the Registration Statement, (vii) the Warrant Agreement, dated as of March 30, 2023, in the form filed as Exhibit 10.4 to the Company’s Form 8-K filed on March 30, 2023 (the “**PIPE Warrant Agreement**”), including the form of PIPE Warrant included as Exhibit 4.2 to the Registration Statement, and (viii) certain statutes and other instruments and documents as we considered appropriate for purposes of the opinions hereafter expressed.

In connection with rendering the opinions set forth below, we have assumed that (i) all information contained in all documents reviewed is true and correct, (ii) all signatures on all documents examined are genuine and provided by natural persons with legal capacity and authority to execute such documents, (iii) all documents submitted as originals are authentic and all documents submitted as copies conform to the originals of those documents, (iv) the Registration Statement, and any amendments thereto (including post-effective amendments), will have become effective and will not have been terminated or rescinded, (v) a Prospectus Supplement will have been prepared and filed with the Commission describing any Securities that are offered, (vi) all Securities will be issued and/or sold in compliance with applicable federal and state securities laws and in the manner specified in the Registration Statement and the applicable Prospectus Supplement or term sheet, (vii) the Debt Securities, and the instruments pursuant to which they are duly authorized and established, will have been specifically authorized for issuance by the Board or an authorized committee thereof (the “**Company Authorizing Resolutions**”), (viii) the terms of the Securities and of their respective issuance and sale will have been duly authorized and established in conformity with the applicable Charter Documents, Certificate of Designation, Depositary Agreement, Warrant Agreement, Rights Agreement, Unit Agreement and the Applicable Indenture, as the case may be, (ix) each of the Securities will have been duly executed and countersigned, (x) the Board will have determined that the consideration to be received for any Common Stock to be issued is adequate, (xi) the Company will have received the consideration provided for in the Company Authorizing Resolutions and any applicable purchase, underwriting or similar agreement and as contemplated by any applicable Prospectus Supplement, (xii) the Certificate of Designation, Depositary Agreement, Warrant Agreement, Rights Agreement, Unit Agreement and Applicable Indenture will be duly authorized, executed and delivered by the parties thereto, (xiii) each person signing the Certificate of Designation, Depositary Agreement, Warrant Agreement, Rights Agreement, Unit Agreement and Applicable Indenture, as applicable, will have the legal capacity and authority to do so, (xiv) with respect to the Common Stock and Preferred Stock offered, there will be sufficient shares of Common Stock or Preferred Stock authorized under the Charter Documents and not otherwise reserved for issuance, (xv) a definitive purchase, underwriting or similar agreement with respect to any Securities offered thereby will have been duly authorized and validly executed and delivered by the Company and the other parties thereto, and (xvi) any Securities issuable upon conversion, exchange, redemption or exercise of any Securities being offered will have been duly and validly authorized, created and, if appropriate, reserved for issuance upon such conversion, exchange, redemption or exercise.

We have also assumed that (i) the Company will continue to be validly existing and in good standing under the laws of Delaware, and will have all requisite power and authority to enable it to execute, deliver and perform its obligations under the Securities and the related documents, (ii) the Securities will be established so as not to, and such execution, delivery and performance thereof (including the documents establishing them) will not, violate, conflict with or constitute a default under any applicable laws, rules or regulations to which the Company is subject, (iii) such execution, delivery and performance do not and will not constitute a breach, conflict, default or violation of (a) the Company’s Charter Documents, or any agreement or other instrument to which the Company or its properties are subject, (b) any judicial or regulatory order or decree of any governmental authority or (c) any consent, approval, license, authorization or validation of, or filing, recording or registration with, any governmental authority, (iv) the Securities will not bear interest at a rate that is usurious under the laws of the jurisdiction governing the creation thereof and will not provide for the compounding of interest if prohibited by applicable law, and (v) the choice of New York law in the Applicable Indenture is legal, valid, binding and enforceable under the laws of all applicable jurisdictions.

We are, in this opinion, opining only on the General Corporation Law of the State of Delaware (the “*DGCL*”), and with respect to the opinions set forth in paragraphs 2 through 5 below, the internal laws of the state of New York. We are not opining as to the applicability thereto, or the effect thereon, of the laws of any other jurisdiction or, in the case of Delaware, any other laws, or as to matters of municipal law or the laws of any local agencies within any states (including “blue sky” or other state securities laws).

The opinions herein below are subject to, and qualified and limited by the effects of: (i) bankruptcy, fraudulent conveyance or fraudulent transfer, insolvency, reorganization, moratorium, liquidation, conservatorship and similar laws, and limitations imposed under judicial decisions related to or affecting creditors’ rights and remedies generally, (ii) general equitable principles, regardless of whether the issue of enforceability is considered in a proceeding in equity or at law, and principles limiting the availability of the remedy of specific performance, (iii) concepts of good faith, fair dealing and reasonableness, and (iv) the possible unenforceability under certain circumstances of provisions providing for indemnification or contribution that is contrary to public policy. We also express no opinion concerning the enforceability of the waiver of rights or defenses contained in the documents establishing the Securities.

Based upon and subject to the foregoing, and in reliance thereon, and subject to the assumptions, comments, qualifications, limitations and exceptions set forth herein, we are of the opinion that:

1. When an issuance of Common Stock has been duly authorized by all necessary corporate action of the Company, upon issuance, delivery and payment therefor in an amount not less than the par value thereof in the manner contemplated by the applicable Prospectus Supplement and by such corporate action, and in total amounts and numbers of shares that do not exceed the respective total amounts and number of shares (a) available under the restated certificate of incorporation, and (b) authorized by the Board in connection with the offering contemplated by the applicable Prospectus Supplement, such shares of Common Stock will be validly issued, fully paid and nonassessable. In rendering the foregoing opinion, we have assumed that the Company will comply with all applicable notice requirements regarding uncertificated shares provided in the *DGCL*.

2. When a series of Preferred Stock has been duly established in accordance with the terms of the Company’s Charter Documents and authorized by all necessary corporate action of the Company, upon issuance, delivery and payment therefor in an amount not less than the par value thereof in the manner contemplated by the applicable Prospectus Supplement and by such corporate action, and in total amounts and numbers of shares that do not exceed the respective total amounts and numbers of shares (a) available under the Charter Documents, and (b) authorized by the board of directors in connection with the offering contemplated by the applicable Prospectus Supplement, such shares of such series of Preferred Stock will be validly issued, fully paid and nonassessable. In rendering the foregoing opinion, we have assumed that the Company will comply with all applicable notice requirements regarding uncertificated shares provided in the *DGCL*.

3. When a series of Preferred Stock underlying Depositary Shares (the “*Underlying Preferred Stock*”) has been duly established in accordance with the terms of the Company’s Charter Documents and authorized by all necessary corporate action of the Company, upon issuance, delivery and payment therefor in an amount not less than the par value thereof in the manner contemplated by the applicable Prospectus Supplement and by such corporate action, and in total amounts and numbers of shares that do not exceed the respective total amounts and numbers of shares (a) available under the Charter Documents, and (b) authorized by the board of directors in connection with the offering contemplated by the applicable Prospectus Supplement, such shares of such series of Underlying Preferred Stock will be validly issued, fully paid and nonassessable. In rendering the foregoing opinion, we have assumed that the Company will comply with all applicable notice requirements regarding uncertificated shares provided in the DGCL.

4. When an applicable Depositary Agreement has been duly authorized, executed and delivered by each of the Company and the depository, when the shares of Underlying Preferred Stock have been deposited with the depository under the Depositary Agreement, and when the depository receipts representing the Depositary Shares have been duly executed, countersigned, registered and delivered to the purchasers thereof upon payment of the agreed-upon consideration therefor in the manner contemplated by the applicable Prospectus Supplement and by such corporate action (assuming the Underlying Preferred Stock has been duly authorized and reserved for issuance by all necessary corporate action), and in total amounts and numbers of shares that do not exceed the total amount and number of shares authorized by the board of directors in connection with the offering contemplated by the applicable Prospectus Supplement, such Depositary Shares will be validly issued, fully paid and nonassessable. In rendering the foregoing opinion, we have assumed that the Company will comply with all applicable notice requirements regarding uncertificated shares provided in the DGCL.

5. When the applicable Warrant Agreement has been duly authorized, executed and delivered by all necessary corporate action of the Company, and when the specific terms of a particular issuance of Warrants have been duly established in accordance with the terms of the applicable Warrant Agreement and authorized by all necessary corporate action of the Company, and such Warrants have been duly executed, authenticated, issued and delivered against payment therefor in accordance with the terms of the applicable Warrant Agreement, and in the manner contemplated by the applicable Prospectus Supplement and by such corporate action (assuming the securities issuable upon exercise of such Warrants have been duly authorized and reserved for issuance by all necessary corporate action), such Warrants will be the legally valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

6. When the applicable Rights Agreement has been duly authorized, executed and delivered by all necessary corporate action of the Company, and when the specific terms of a particular issuance of Rights have been duly established in accordance with the terms of the applicable Rights Agreement and authorized by all necessary corporate action of the Company, and such Rights have been duly executed, authenticated, issued and delivered against payment therefor in accordance with the terms of the applicable Rights Agreement and in the manner contemplated by the applicable Prospectus Supplement and by such corporate action (assuming the securities issuable upon exercise of such Rights have been duly authorized and reserved for issuance by all necessary corporate action), such Rights will be the legally valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

7. When the applicable Unit Agreement has been duly authorized, executed and delivered by all necessary corporate action of the Company, and when the specific terms of a particular issuance of Units have been duly established in accordance with the terms of the applicable Units Agreement and authorized by all necessary corporate action of the Company, and such Units have been duly executed, authenticated, issued and delivered against payment therefor in accordance with the terms of the applicable warrant agreement and in the manner contemplated by the Prospectus Supplement and by such corporate action (assuming the securities issuable upon exercise of such Units have been duly authorized and reserved for issuance by all necessary corporate action), such Units will be the legally valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

8. When the Applicable Indenture has been duly authorized, executed and delivered by all necessary corporate action of the Company, and when the specific terms of a particular series of Debt Securities have been duly established in accordance with the terms of the Applicable Indenture and authorized by all necessary corporate action of the Company, and such Debt Securities have been duly executed, authenticated, issued and delivered against payment therefor in accordance with the terms of the Applicable Indenture and in the manner contemplated by the applicable Prospectus Supplement and by such corporate action, such Debt Securities will be the legally valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

9. The Series A Preferred Stock and the PIPE Warrants have been duly authorized and are legally issued, fully paid and non-assessable. The Warrant Shares, when issued and paid for in accordance with the terms of the PIPE Warrants and the Warrant Agreement, will be duly authorized, legally issued, fully paid and non-assessable.

This opinion is to be used only in connection with the offer and sale of the Securities while the Registration Statement is in effect.

Please note that we are opining only as to matters expressly set forth herein, and no opinion should be inferred as to any other matters. This opinion is based upon currently existing statutes, rules, regulations and judicial decisions, and, following the effective date of the Registration Statement, we disclaim any obligation to advise you of any change in any of these sources of law or subsequent legal or factual developments which might affect any matters or opinions set forth herein.

We hereby consent to the filing of this opinion with the Commission as an exhibit to the Registration Statement in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act and to the use of our name therein and in the related prospectus and any Prospectus Supplement under the caption "Legal Matters." In giving such consent, we do not hereby 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 of the Commission.

Very truly yours,

/s/ Troutman Pepper Hamilton Sanders LLP

Troutman Pepper Hamilton Sanders LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement on Form S-3 of our reports dated March 31, 2023, relating to the financial statements of Ribbon Communications Inc. and the effectiveness of Ribbon Communications Inc.'s internal control over financial reporting, appearing in the Annual Report on Form 10-K of Ribbon Communications Inc. for the year ended December 31, 2022. We also consent to the reference to us under the heading "Experts" in such Registration Statement.

/s/ Deloitte & Touche LLP

Dallas, Texas

April 4, 2023

Calculation of Filing Fee Table

Form S-3

(Form Type)

Ribbon Communications Inc.

(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities

Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee	Carry Forward Form Type	Carry Forward File Number	Filing Fee	In Connection	Previously Paid
										Initial	with Unsold	Securities
Newly Registered Securities												
Fees to Be Paid	Equity	Common Stock, par value \$0.0001	457(o)	-	-	-	-	-	-	-	-	-
	Equity	Preferred Stock, par value \$0.01	457(o)	-	-	-	-	-	-	-	-	-
	Debt	Debt Securities	457(o)	-	-	-	-	-	-	-	-	-
	Other	Warrants	457(o)	-	-	-	-	-	-	-	-	-
	Other	Units	457(o)	-	-	-	-	-	-	-	-	-
	Other	Depositary Shares	457(o)	-	-	-	-	-	-	-	-	-
	Other	Subscription Rights	457(o)	-	-	-	-	-	-	-	-	-
	Unallocated (Universal) Shelf	Unallocated (Universal) Shelf	457(o)	(1)	(2)	\$250,000,000 ⁽³⁾	0.00011020	\$27,550.00 ⁽⁴⁾				
	Equity	Preferred Stock, par value \$0.01	457(o)	55,000	\$1,000	\$55,000,000	0.00011020	\$6,061.00				
	Equity	Common Stock, par value \$0.0001, issuable upon exercise of Warrants	457(i)	-	-	-	-	-	-	-	-	-
	Other	Warrants	457(i)	4,858,090	\$3.77	\$18,314,999 ⁽⁵⁾	0.00011020	\$2,018.32				
Fees Previously Paid	-	-	-	-	-	-	-	-	-	-	-	-
Carry Forward Securities												
Carry Forward Securities	-	-	-	-	-	-	-	-	-	-	-	-
	Total Offering Amounts					\$323,314,999		<u>\$35,629.32</u>				
	Total Fees Previously Paid							<u>-</u>				
	Total Fee Offsets							<u>-</u>				
	Net Fee Due							<u>\$35,629.32</u>				

(1) The amount to be registered consists of up to \$250,000,000 of an indeterminate amount of common stock, preferred stock, debt securities, warrants, units and/or subscription rights. 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 (the "Securities Act").

(3) The proposed maximum aggregate offering price has been estimated for the sole purpose of computing the registration fee pursuant to Rule 457(o) under the Securities Act and is exclusive of accrued interest, distributions and dividends, if any.

(4) Pursuant to Rule 457(o) under the Securities Act, the registration fee is calculated on the maximum offering price of all securities listed, and the table does not specify information by each class about the amount to be registered.

(5) The proposed maximum aggregate offering price has been estimated for the sole purpose of computing the registration fee pursuant to Rule 457(i) under the Securities Act. This estimate is based on the exercise price of \$3.77.