

As filed with the Securities and Exchange Commission on December 29, 2017

Registration No. 333-

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

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

ASSEMBLY BIOSCIENCES, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of incorporation or organization)

20-8729264
(I.R.S. Employer Identification Number)

**11711 N. Meridian St., Suite 310
Carmel, Indiana 46032**

(Address of principal executive offices)

(317) 210-9311

(Registrant's telephone number, including area code)

Elizabeth H. Lacy
General Counsel, Vice President of Legal Operations and Corporate Secretary
Assembly Biosciences, Inc.
11711 N. Meridian St., Suite 310
Carmel, Indiana 46032
(317) 210-9311

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

With copies to:
Mitchell S. Bloom, Esq.
Maggie L. Wong, Esq.
Goodwin Procter LLP
100 Northern Avenue
Boston, Massachusetts 02210
(617) 570-1000

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

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

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

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

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

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

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

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

Large accelerated filer

Non-accelerated filer (Do not check if a smaller reporting company)

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 pursuant to Section 7(a)(2)(B) of the Securities Act.

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered ⁽¹⁾	Proposed Maximum Offering Price Per Unit ⁽²⁾	Proposed Maximum Aggregate Offering Price ⁽³⁾	Amount of Registration Fee ⁽⁴⁾
Common Stock ⁽⁵⁾				
Preferred Stock ⁽⁶⁾				
Debt Securities ⁽⁷⁾				
Warrants ⁽⁸⁾				
Units ⁽⁹⁾				
Total	<u>\$250,000,000</u>	<u>N.A.</u>	<u>\$250,000,000</u>	<u>\$ 31,125</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 and/or units. There is also being registered hereunder such currently indeterminate number of (i) shares of common stock or other securities of the registrant as may be issued upon conversion of, or in exchange for, convertible or exchangeable debt securities and/or preferred stock registered hereby, or (ii) shares of preferred stock, common stock, debt securities or units as may be issued upon exercise of warrants registered hereby, as the case may be. Any securities registered hereunder may be sold separately or as units with the other securities registered hereunder.
- (2) The proposed maximum aggregate offering price per unit 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) Estimated solely for purposes of computing the registration fee. No separate consideration will be received for (i) common stock or other securities of the registrant that may be issued upon conversion of, or in exchange for, convertible or exchangeable debt securities and/or preferred stock registered hereby, or (ii) preferred stock, common stock, debt securities or units that may be issued upon exercise of warrants registered hereby, as the case may be.
- (4) The registration fee has been calculated in accordance with Rule 457(o) under the Securities Act.
- (5) Including such indeterminate amount of common stock as may be issued from time to time at indeterminate prices or upon conversion of debt securities and/or preferred stock registered hereby, or upon exercise of warrants registered hereby, as the case may be.
- (6) Including such indeterminate amount of preferred stock as may be issued from time to time at indeterminate prices or upon conversion of debt securities and/or preferred stock registered hereby, or upon exercise of warrants registered hereby, as the case may be.
- (7) Including such indeterminate principal amount of debt securities as may be issued from time to time at indeterminate prices or upon exercise of warrants registered hereby, as the case may be.
- (8) Including such indeterminate number of warrants or other rights, including without limitation share purchase or subscription rights, as may be issued from time to time at indeterminate prices.
- (9) Each unit will be issued under a unit agreement and will represent an interest in two or more securities, which may or may not be separable from one another.

THE REGISTRANT HEREBY AMENDS THIS REGISTRATION STATEMENT ON SUCH DATE OR DATES AS MAY BE NECESSARY TO DELAY ITS EFFECTIVE DATE UNTIL THE REGISTRANT SHALL FILE A FURTHER AMENDMENT WHICH SPECIFICALLY STATES THAT THIS REGISTRATION STATEMENT SHALL THEREAFTER BECOME EFFECTIVE IN ACCORDANCE WITH SECTION 8(a) OF THE SECURITIES ACT OF 1933, AS AMENDED, OR UNTIL THE REGISTRATION STATEMENT SHALL BECOME EFFECTIVE ON SUCH DATE AS THE COMMISSION ACTING PURSUANT TO SAID SECTION 8(a), MAY DETERMINE.

EXPLANATORY NOTE

This registration statement contains:

- A base prospectus covering the offering, issuance and sale by us of up to \$250,000,000 in the aggregate of the securities identified above from time to time in one or more offerings; and
- A controlled equity offering prospectus covering the offering, issuance and sale by us of up to a maximum aggregate offering price of \$75,000,000 of our common stock that may be issued and sold under controlled equity offering sales agreements (the "Sales Agreements") entered into with each of Jefferies LLC and Cantor Fitzgerald & Co.

The base prospectus immediately follows this explanatory note. The specific terms of any securities to be offered pursuant to the base prospectus will be specified in a prospectus supplement to the base prospectus. The controlled equity offering prospectus immediately follows the base prospectus. The \$75,000,000 of common stock that may be offered, issued and sold by us under the controlled equity offering prospectus is included in the \$250,000,000 of securities that may be offered, issued and sold by us under the base prospectus. Upon termination of the Sales Agreements, any portion of the \$75,000,000 included in the controlled equity offering prospectus that is not sold pursuant to the Sales Agreements will be available for sale in other offerings pursuant to the base prospectus, and if no shares are sold under the Sales Agreements, the full \$75,000,000 of securities may be sold in other offerings pursuant to the base prospectus and a prospectus supplement.

The information in this preliminary prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell nor does it seek an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

**SUBJECT TO COMPLETION,
DATED DECEMBER 29, 2017**

PROSPECTUS

\$250,000,000



assembly
biosciences

Common Stock
Preferred Stock
Debt Securities
Warrants
Units

We may from time to time issue, in one or more series or classes, up to \$250,000,000 in aggregate principal amount of our common stock, preferred stock, debt securities, warrants and/or units. We may offer these securities separately or together in units. We will specify the terms of the securities being offered in one or more prospectus supplements, which may also supplement, update or amend information contained or incorporated by reference in this prospectus.

We may sell these securities to or through underwriters and also to other purchasers or through agents. We will set forth the names of any underwriters or agents, and any fees, conversions, or discount arrangements, in a prospectus supplement. We may not sell any securities under this prospectus without delivery of the applicable prospectus supplement.

You should read this document and any prospectus supplement or amendment, as well as the documents incorporated by reference herein or therein, carefully before you invest in our securities.

Our common stock is listed on The Nasdaq Capital Market under the symbol "ASMB." On December 27, 2017, the closing price for our common stock, as reported on The Nasdaq Capital Market, was \$45.03 per share. Our principal executive offices are located at 11711 N. Meridian St., Suite 310, Carmel, Indiana 46032.

Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading "Risk Factors" beginning on page 2 of this prospectus and under similar headings in any applicable prospectus supplement and in the other documents that are incorporated by reference herein and therein.

Neither the Securities and Exchange Commission 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.

The date of this Prospectus is _____, 2017.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission (the “SEC”) using a “shelf” registration process. Under this shelf registration process, we may from time to time sell any combination of the securities described in this prospectus in one or more offerings for an aggregate offering price of up to \$250,000,000.

This prospectus provides you with a general description of the securities we may offer. Each time we sell securities, we will provide one or more prospectus supplements that will contain specific information about the terms of the offering. The prospectus supplement may also supplement, update or change information contained or incorporated by reference in this prospectus. You should read both this prospectus and the accompanying prospectus supplement, together with the additional information described under the heading “Where You Can Find More Information” beginning on page [31](#) of this prospectus.

You should rely only on the information contained or incorporated by reference in this prospectus and the applicable prospectus supplement, along with the information in any related free writing prospectus filed by us with the SEC. We have not authorized anyone to provide you with different information. This prospectus and the accompanying prospectus supplement do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the securities described in the accompanying prospectus supplement or an offer to sell or the solicitation of an offer to buy such securities in any jurisdiction in which such offer or solicitation is not permitted. The information contained in this prospectus, any prospectus supplement, any related free writing prospectus and the documents incorporated by reference herein and therein is accurate only as of their respective dates, regardless of the time of delivery of any such document or the time of any sale of a security. Our business, financial condition, results of operations and prospects may have changed materially since those dates.

Unless the context otherwise indicates, references in this prospectus to “Assembly,” “we,” “our,” “us” and “the Company” refer, collectively, to Assembly Biosciences, Inc., a Delaware corporation, and its consolidated subsidiaries.

RISK FACTORS

Investing in our securities involves a high degree of risk. You should carefully consider the risks described in the documents incorporated by reference into this prospectus and any applicable prospectus supplement (including our most recent Annual Report on Form 10-K and our Quarterly Reports on Form 10-Q), as well as other information we include or incorporate by reference in this prospectus and any applicable prospectus supplement, before making an investment decision. The risks described in those documents are not the only ones we face, but those that we consider to be material. Our business, financial condition or results of operations could be materially adversely affected by the materialization of any of these risks. The trading price of our securities could decline due to the materialization of any of these risks, and you may lose all or part of your investment. This prospectus and the documents incorporated herein by reference also contain forward-looking statements that involve risks and uncertainties.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, any applicable prospectus supplement, any related free writing prospectus and the documents that we incorporate by reference herein and therein contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”) and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). Any statements about our expectations, beliefs, plans, objectives, assumptions or future events or performance are not historical facts and may be forward-looking. These statements are often, but are not always, made through the use of words or phrases such as “anticipate,” “believe,” “contemplate,” “continue,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “potential,” “predict,” “project,” “seek,” “should,” “target,” “will,” “would” and similar expressions, or the negative of these terms, or similar expressions. Accordingly, these statements involve estimates, assumptions and uncertainties that could cause actual results to differ materially from those expressed in them. Any forward-looking statements are qualified in their entirety by reference to the factors discussed throughout this prospectus, and in particular those factors referenced in the section “Risk Factors.”

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

- the initiation, timing, progress and results of clinical trials and nonclinical studies, and our research and development programs;
- the clinical and therapeutic potential of our product candidates;
- our unproven approach to therapeutic intervention;
- our plans to develop and commercialize our product candidates;
- the potential benefits of our existing collaborations and our ability to establish and maintain collaborations, including with Allergan Pharmaceuticals International Limited;
- our ability to obtain additional funding;
- the timing or likelihood of regulatory filings and approvals for our product candidates;
- the implementation of our business model, strategic plans for our business, product candidates and technology;
- our commercialization, marketing and manufacturing capabilities and strategy;
- the rate and degree of market acceptance and clinical utility of our products;
- our ability to retain and recruit key personnel;
- our ability to manage growth;

- our competitive position;
- our intellectual property position;
- developments and projections relating to our competitors and our industry; and
- our estimates regarding expenses, future revenue, capital requirements and needs for additional financing.

These forward-looking statements are neither promises nor guarantees of future performance. Due to a variety of risks and uncertainties, many of which are beyond our control, our actual results could differ materially from those indicated by these forward-looking statements, including, without limitation the risk factors and cautionary statements described in other documents that we file from time to time with the SEC, specifically under “Item 1A: Risk Factors” and elsewhere in our most recent Annual Report on Form 10-K for the year ended December 31, 2016 and in our most recent Quarterly Report on Form 10-Q for the period ended September 30, 2017 and the section of this prospectus and any applicable prospectus supplement titled “Risk Factors.”

The forward-looking statements in this prospectus and the documents incorporated herein by reference represent our views as of their respective dates. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we assume no obligation to update or revise any forward-looking statements except to the extent required by applicable law, including the securities laws of the United States and rules and regulations of the SEC. You should, therefore, not rely on these forward-looking statements as representing our views as of any date subsequent to the dates on which they were made.

OUR COMPANY

We are a clinical stage biotechnology company advancing two innovative platform programs: a new class of oral therapeutic candidates for the treatment of hepatitis B virus (HBV) infection and a novel class of oral synthetic live biotherapeutic candidates, which are designed to treat disorders associated with the microbiome.

Over 250 million people worldwide are chronically infected with HBV. Our HBV-cure program is pursuing multiple drug candidates that inhibit the HBV lifecycle and block the generation of covalently closed circular DNA (cccDNA), with the aim of increasing the current low cure rate for patients with HBV. We have discovered several novel Core protein Allosteric Modifiers (CpAMs), which are small molecules that directly target and allosterically modulate the HBV core (HBc) protein.

Our Microbiome program consists of a fully integrated platform that includes a disease targeted strain identification and selection process, methods for strain isolation and growth under current Good Manufacturing Practice (cGMP) conditions, and a patent pending delivery system that we call GEMICEL[®], which is designed to allow for targeted oral delivery of live biologic and conventional therapies to the lower gastrointestinal (GI) tract. Using our microbiome platform, we are developing product candidates for various disease indications, including ulcerative colitis, Crohn's disease, irritable bowel syndrome, non-alcoholic steatohepatitis (NASH), immun-oncology and Clostridium difficile infections (CDI), which we will develop either internally or in collaboration with partners.

We currently have corporate and administrative offices in Carmel, Indiana and research facilities in Groton, Connecticut and San Francisco, California.

Assembly Biosciences, Inc., formerly known as Ventrus BioSciences, Inc., was incorporated under the laws of the State of Delaware on October 7, 2005, originally under the name South Island BioSciences, Inc. On July 11, 2014, we merged with Assembly Pharmaceuticals, Inc., a private company (the "Merger"). In connection with the Merger, we changed our name from Ventrus Biosciences, Inc. to Assembly Biosciences, Inc. Our executive offices are located at 11711 N. Meridian Street, Suite 310, Carmel, Indiana 46032 and our telephone number is (317) 210-9311. Our corporate website address is www.assemblybio.com. We do not incorporate the information contained on, or accessible through, our website into this prospectus, and you should not consider it part of this prospectus.

We own various U.S. federal and foreign trademark applications, and unregistered trademarks, including our corporate name and our corporate logo. GEMICEL[®] is our trademark. This prospectus, any applicable prospectus supplement and the documents incorporated by reference herein may also contain trademarks and trade names that are the property of their respective owners.

RATIO OF EARNINGS TO FIXED CHARGES

Our ratio of earnings to fixed charges for each of the five most recently completed fiscal years and any required interim periods will each be specified in a prospectus supplement or in a document that we file with the SEC and incorporate by reference pertaining to the issuance, if any, by us of debt securities or preference securities in the future.

USE OF PROCEEDS

We intend to use the net proceeds from the sale of any securities offered under this prospectus for general corporate purposes unless otherwise indicated in the applicable prospectus supplement. General corporate purposes may include research and development costs, potential strategic acquisitions of complementary businesses, services or technologies, repayment and refinancing of debt, working capital and capital expenditures. We may temporarily invest the net proceeds in a variety of capital preservation instruments, including investment grade, interest bearing instruments and U.S. government securities, until they are used for their stated purpose. We have not determined the amount of net proceeds to be used specifically for such purposes. As a result, management will retain broad discretion over the allocation of net proceeds.

SECURITIES WE MAY OFFER

This prospectus contains summary descriptions of the securities we may offer from time to time. These summary descriptions are not meant to be complete descriptions of each security. The particular terms of any security will be described in the applicable prospectus supplement.

DESCRIPTION OF CAPITAL STOCK

The following description of our common stock and preferred stock, together with the additional information we include in any applicable prospectus supplements, summarizes the material terms and provisions of the common stock and preferred stock that we may offer under this prospectus. The following description of our capital stock does not purport to be complete and is subject to, and qualified in its entirety by, our Third Amended and Restated Certificate of Incorporation, as amended (our "Certificate of Incorporation") and our amended and restated bylaws (our "Bylaws"), which are exhibits to the registration statement of which this prospectus forms a part, and by applicable law (including Delaware law).

Authorized Capital Stock

Our authorized capital stock consists of 50,000,000 shares of common stock, par value \$0.001 per share, and 5,000,000 shares of preferred stock, par value \$0.001 per share. As of December 27, 2017, we had 20,130,724 shares of common stock outstanding and no shares of preferred stock outstanding.

Common Stock

The holders of our common stock are entitled to one vote per share on all matters to be voted on by the stockholders, and there are no cumulative voting rights.

The holders of common stock are entitled to receive ratable dividends, if any, payable in cash, in stock or otherwise if, as and when declared from time to time by our board of directors out of funds legally available therefor, subject to any preferential rights that may be applicable to any outstanding preferred stock. In the event of a liquidation, dissolution or winding up of our company, after payment in full of all outstanding debts and other liabilities, the holders of common stock are entitled to share ratably in all remaining assets, subject to prior distribution rights of preferred stock, if any, then outstanding. No shares of common stock have preemptive rights or other subscription rights to purchase additional shares of common stock. There are no redemption or sinking fund provisions applicable to the common stock. All outstanding shares of our common stock are fully paid and nonassessable, and the shares of common stock included in the registration statement of which this prospectus forms a part will be fully paid and nonassessable upon issuance. The rights, preferences and privileges of holders of our common stock will be subject to, and might be adversely affected by, the rights of holders of any preferred stock that we may issue in the future.

Listing

Our common stock is listed on The Nasdaq Capital Market under the symbol "ASMB." On December 27, 2017, the closing price for our common stock, as reported on The Nasdaq Capital Market, was \$45.03 per share.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is VStock Transfer, LLC, Inc. The transfer agent's address is 18 Lafayette Place, Woodmere, New York 11598 and its telephone number is (212) 828-8436.

Preferred Stock

Our board of directors is authorized to issue up to 5,000,000 shares of preferred stock in one or more series without stockholder approval. Our board of directors may determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of preferred stock.

The purpose of authorizing our board of directors to issue preferred stock in one or more series and determine the number of shares in the series and its rights and preferences is to eliminate delays associated with a stockholder vote on specific issuances. Examples of rights and preferences that the board of directors may fix are:

- dividend rights;
- dividend rates;
- conversion rights;
- voting rights;
- terms of redemption; and
- liquidation preferences.

The existence of authorized but unissued shares of preferred stock may enable our board of directors to render more difficult or to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise. For example, if in the due exercise of its fiduciary obligations, our board of directors were to determine that a takeover proposal is not in the best interests of us or our stockholders, our board of directors could cause shares of preferred stock to be issued without stockholder approval in one or more private offerings or other transactions that might dilute the voting or other rights of the proposed acquirer, stockholder or stockholder group. The rights of holders of our common stock described above will be subject to, and may be adversely affected by, the rights of any preferred stock that we may designate and issue in the future. The issuance of shares of preferred stock could decrease the amount of earnings and assets available for distribution to holders of shares of common stock. The issuance may also adversely affect the rights and powers, including voting rights, of these holders and may have the effect of delaying, deterring or preventing a change in control of us.

We will incorporate by reference as an exhibit to the registration statement of which this prospectus forms a part the form of any certificate of designation that describes the terms of the series of preferred stock we are offering. This description and the applicable prospectus supplement will include:

- the title and stated value;
- the number of shares authorized;
- the liquidation preference per share;
- the purchase price;
- the dividend rate, period and payment date, and method of calculation for dividends;
- whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate;
- the procedures for any auction and remarketing, if any;
- the provisions for a sinking fund, if any;
- the provisions for redemption or repurchase, if applicable, and any restrictions on our ability to exercise those redemption and repurchase rights;
- any listing of the preferred stock on any securities exchange or market;
- whether the preferred stock will be convertible into our common stock, and, if applicable, the conversion price, or how it will be calculated, and the conversion period;
- whether the preferred stock will be exchangeable into debt securities, and, if applicable, the exchange price, or how it will be calculated, and the exchange period;
- voting rights, if any, of the preferred stock;
- preemptive rights, if any;

- restrictions on transfer, sale or other assignment, if any;
- whether interests in the preferred stock will be represented by depositary shares;
- a discussion of any material U.S. federal income tax considerations applicable to the preferred stock;
- the relative ranking and preferences of the preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs;
- any limitations on issuance of any class or series of preferred stock ranking senior to or on a parity with the series of preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the preferred stock.

When we issue shares of preferred stock under this prospectus, the shares will fully be paid and nonassessable and will not have, or be subject to, any preemptive or similar rights.

Provisions of our Certificate of Incorporation and Bylaws and Delaware Anti-Takeover Law

Certain provisions of the Delaware General Corporation Law (the “DGCL”), our Certificate of Incorporation and our Bylaws could have the effect of delaying, deferring or discouraging another party from acquiring control of us. These provisions, which are summarized below, are expected to discourage certain types of coercive takeover practices and inadequate takeover bids and, as a consequence, they might also inhibit temporary fluctuations in the market price of our common stock that often result from actual or rumored hostile takeover attempts. These provisions are also designed in part to encourage anyone seeking to acquire control of us or considering unsolicited tender offers or other unilateral takeover proposals to first negotiate with our board of directors rather than pursue non-negotiated takeover attempts. These provisions might also have the effect of preventing changes in our management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders might otherwise deem to be in their best interests. However, we believe that the advantages gained by protecting our ability to negotiate with any unsolicited and potentially unfriendly acquirer outweigh the disadvantages of discouraging such proposals, including those priced above the then-current market value of our common stock, because, among other reasons, the negotiation of such proposals could improve their terms.

Delaware Anti-Takeover Law

We are subject to the provisions of Section 203 of the DGCL (“Section 203”). In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a “business combination” with an “interested stockholder” for a three-year period following the time that this stockholder becomes an interested stockholder, unless the business combination is approved in a prescribed manner. A “business combination” includes, among other things, a merger, asset or stock sale or other transaction resulting in a financial benefit to the interested stockholder. An “interested stockholder” is a person who, together with such person’s affiliates and associates, owns, or did own within three years prior to such determination, 15% or more of the corporation’s voting stock. Under Section 203, a business combination between a corporation and an interested stockholder is prohibited unless it satisfies one of the following conditions:

- before the stockholder became interested, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- upon consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding, for purposes of determining the voting stock outstanding, shares owned by persons who are directors and also officers, and employee stock plans, in some instances; or

- at or after the time the stockholder became interested, the business combination was approved by the board of directors of the corporation and authorized at an annual or special meeting of the stockholders by the affirmative vote of at least two-thirds of the outstanding voting stock that is not owned by the interested stockholder.

Charter Documents

Our Certificate of Incorporation and our Bylaws include a number of provisions that may have the effect of deterring hostile takeovers or delaying or preventing changes in control or management of our company. First, our Certificate of Incorporation and our Bylaws provide that all stockholder action must be effected at a duly called meeting of stockholders and not by a consent in writing. Further, our Bylaws limit who may call special meetings of the stockholders. Our Certificate of Incorporation does not include a provision for cumulative voting for directors. Under cumulative voting, a minority stockholder holding a sufficient percentage of a class of shares may be able to ensure the election of one or more directors. Our Bylaws provide that the number of directors on our board, which may range from three to nine directors, shall be exclusively fixed by our board, which has set the number of directors at eight. Newly created directorships resulting from any increase in our authorized number of directors and any vacancies in our board resulting from death, resignation, retirement, disqualification or other cause (including removal from office by a vote of the shareholders) will be filled by a majority of our board then in office. Finally, our Bylaws establish procedures, including advance notice procedures, with regard to the nomination of candidates for election as directors and stockholder proposals. These and other provisions of our Certificate of Incorporation, our Bylaws and Delaware law could discourage potential acquisition proposals and could delay or prevent a change in control or management of our company.

DESCRIPTION OF DEBT SECURITIES

The paragraphs below describe the general terms and provisions of the debt securities we may issue. When we offer to sell a particular series of debt securities, we will describe the specific terms of such series, including any additional covenants or changes to existing covenants relating to such series, in a prospectus supplement. The prospectus supplement will also indicate whether the general terms and provisions described in this prospectus apply to a particular series of debt securities. We urge you to read any prospectus supplement related to any series of debt securities we may offer under this prospectus, as well as the actual indenture containing the terms of the debt securities.

We may offer senior or subordinated debt securities. Each series of debt securities may have different terms. The senior debt securities will be issued under one or more senior indentures, dated as of a date prior to such issuance, between us and the trustee identified in the applicable prospectus supplement, as amended or supplemented from time to time. We will refer to any such indenture throughout this prospectus as the “senior indenture.” Any subordinated debt securities will be issued under one or more indentures, dated as of a date prior to such issuance, between us and the trustee identified in the applicable prospectus supplement, as amended or supplemented from time to time. We will refer to any such indenture throughout this prospectus as the “subordinated indenture.” We will refer to the trustee under the senior indenture or the subordinated indenture as the “trustee.” The senior indenture and the subordinated indenture are sometimes collectively referred to in this prospectus as the “indentures.” The indentures will be subject to and governed by the Trust Indenture Act of 1939, as amended (the “Trust Indenture Act”). We have included copies of the forms of the indentures as exhibits to our registration statement of which this prospectus forms a part.

If we issue debt securities at a discount from their principal amount, then, for purposes of calculating the aggregate offering price of the offered securities issued under this prospectus, we will include only the offering price of the debt securities and not the principal amount of the debt securities.

We have summarized below the material provisions of the indentures and the debt securities, or indicated which material provisions will be described in a prospectus supplement. The prospectus supplement relating to any particular securities offered will describe the specific terms of the securities, which may be in addition to or different from the general terms summarized in this prospectus. Because the summary in this prospectus and in any prospectus supplement does not contain all of the information that you may find useful, you should read the documents relating to the securities that are described in this prospectus or in any applicable prospectus supplement. Please read “Where You Can Find More Information” to find out how you can obtain a copy of those documents. Except as otherwise indicated, the terms of the indentures are identical. As used under this caption, the term “debt securities” includes the debt securities being offered by this prospectus and all other debt securities issued by us under the indentures.

General

The indentures:

- do not limit the amount of debt securities that we may issue;
- allow us to issue debt securities in one or more series;
- do not require us to issue all of the debt securities of a series at the same time;
- allow us to reopen a series to issue additional debt securities without the consent of the holders of the debt securities of such series; and
- provide that the debt securities will be unsecured, except as may be set forth in the applicable prospectus supplement.

Unless we give you different information in the applicable prospectus supplement, the senior debt securities will be unsubordinated obligations and will rank equally with all of our other unsecured and unsubordinated indebtedness. Payments on the subordinated debt securities will be subordinated to the prior payment in full of all of our senior indebtedness, as described under “— Subordination” and in the applicable prospectus supplement.

Each indenture provides that we may, but need not, designate more than one trustee under an indenture. Any trustee under an indenture may resign or be removed and a successor trustee may be appointed to act with respect to the series of debt securities administered by the resigning or removed trustee. If two or more persons are acting as trustee with respect to different series of debt securities, each trustee shall be a trustee of a trust under the applicable indenture separate and apart from the trust administered by any other trustee. Except as otherwise indicated in this prospectus, any action described in this prospectus to be taken by each trustee may be taken by each trustee with respect to, and only with respect to, the one or more series of debt securities for which it is trustee under the applicable indenture.

The prospectus supplement for each offering will provide the following terms, where applicable:

- the title of the debt securities and whether they are senior or subordinated;
- the aggregate principal amount of the debt securities being offered, the aggregate principal amount of the debt securities outstanding as of the most recent practicable date and any limit on their aggregate principal amount, including the aggregate principal amount of debt securities authorized;
- the price at which the debt securities will be issued, expressed as a percentage of the principal, and, if other than the principal amount thereof, the portion of the principal amount thereof payable upon declaration of acceleration of the maturity thereof or, if applicable, the portion of the principal amount of such debt securities that is convertible into common stock or other securities of ours or the method by which any such portion shall be determined;
- if convertible, the terms on which such debt securities are convertible, including the initial conversion price or rate and the conversion period and any applicable limitations on the ownership or transferability of common stock or other securities of ours received on conversion;
- the date or dates, or the method for determining the date or dates, on which the principal of the debt securities will be payable;
- the fixed or variable interest rate or rates of the debt securities, or the method by which the interest rate or rates is determined;
- the date or dates, or the method for determining the date or dates, from which interest will accrue;
- the dates on which interest will be payable;
- the record dates for interest payment dates, or the method by which such dates will be determined;
- the persons to whom interest will be payable;
- the basis upon which interest will be calculated if other than that of a 360-day year of twelve 30-day months;
- any make-whole amount, which is the amount in addition to principal and interest that is required to be paid to the holder of the debt security as a result of any optional redemption or accelerated payment of such debt security, or the method for determining the make-whole amount;
- the place or places where the principal of, and any premium or make-whole amount, and interest on, the debt securities will be payable;
- where the debt securities may be surrendered for registration of transfer or conversion or exchange;
- where notices or demands to or upon us in respect of the debt securities and the applicable indenture may be served;
- the times, prices and other terms and conditions upon which we may redeem the debt securities;
- any obligation we have to redeem, repay or purchase the debt securities pursuant to any sinking fund or analogous provision or at the option of holders of such securities, and the times and prices at which we must redeem, repay or purchase such securities as a result of such obligation;

- the currency or currencies in which the debt securities are denominated and payable if other than U.S. dollars, which may be a foreign currency or units of two or more foreign currencies or a composite currency or currencies and the terms and conditions relating thereto, and the manner of determining the equivalent of such foreign currency in United States dollars;
- whether the principal of, and any premium or make-whole amount, or interest on, the debt securities are to be payable, at our election or at the election of a holder, in a currency or currencies other than that in which such securities are denominated or stated to be payable, and other related terms and conditions;
- whether the amount of payments of principal of, and any premium or make-whole amount, or interest on, the debt securities may be determined according to an index, formula or other method and how such amounts will be determined;
- whether the debt securities will be in registered form, bearer form, or both, and (i) if in registered form, the person to whom any interest shall be payable, if other than the person in whose name such security is registered at the close of business on the regular record date for such interest, or (ii) if in bearer form, the manner in which, or the person to whom, any interest on such security shall be payable if otherwise than upon presentation and surrender upon maturity;
- any restrictions applicable to the offer, sale or delivery of debt securities in bearer form and the terms upon which such securities may be exchanged for securities in registered form and vice versa, if permitted by applicable laws and regulations;
- whether the debt securities are to be issuable initially in temporary global form and whether such securities are to be issuable in permanent global form with or without coupons and, if so, whether beneficial owners of interests in any such permanent global security may, or shall be required to, exchange their interests for other debt securities, and the manner in which interest shall be paid;
- the identity of the depositary for debt securities in registered form, if such series are to be issuable as a global security;
- the date as of which the debt securities in bearer form or in temporary global form shall be dated if other than the original issuance date of the first such security to be issued;
- the applicability, if any, of the defeasance and covenant defeasance provisions described in this prospectus or in the applicable indenture;
- whether and under what circumstances we will pay any additional amounts on the debt securities in respect of any tax, assessment or governmental charge and, if so, whether we will have the option to redeem such securities in lieu of making such a payment;
- whether and under what circumstances the debt securities being offered are convertible into common stock or other securities of ours, as the case may be, including the conversion price or rate and the manner or calculation thereof;
- the circumstances, if any, specified in the applicable prospectus supplement, under which beneficial owners of interests in the global security may obtain definitive debt securities and the manner in which payments on a permanent global debt security will be made if any debt securities are issuable in temporary or permanent global form;
- any provisions granting special rights to holders of the debt securities upon the occurrence of such events as specified in the applicable prospectus supplement;
- if the debt securities are to be issuable in definitive form only upon receipt of certain certificates or other documents or satisfaction of other conditions, then the form and/or terms of such certificates, documents or conditions;
- the name of the applicable trustee and the nature of any material relationship with us or any of our affiliates, and the percentage of the debt securities necessary to require the trustee to take action;

- any deletions from, modifications of or additions to our events of default or covenants with regard to the debt securities and any change in the right of any trustee or any of the holders to declare the principal amount of any of such securities due and payable;
- applicable CUSIP numbers; and
- any other terms of the debt securities not inconsistent with the provisions of the applicable indenture.

We may issue debt securities that provide for less than the entire principal amount thereof to be payable upon declaration of acceleration of the maturity of the debt securities. We refer to any such debt securities throughout this prospectus as “original issue discount securities.” The applicable prospectus supplement will describe the U.S. federal income tax consequences and other relevant considerations applicable to original issue discount securities.

We also may issue indexed debt securities. Payments of principal of, and premium and interest on, indexed debt securities are determined with reference to the rate of exchange between the currency or currency unit in which the debt security is denominated and any other currency or currency unit specified by us, to the relationship between two or more currencies or currency units or by other similar methods or formulas specified in the prospectus supplement.

Except as described under “— Merger, Consolidation or Sale of Assets” or as may be set forth in any prospectus supplement, the debt securities will not contain any provisions that would (i) limit our ability to incur indebtedness or (ii) afford holders of debt securities protection in the event of (a) a highly leveraged or similar transaction involving us or (b) a change of control or reorganization, restructuring, merger or similar transaction involving us that may adversely affect the holders of the debt securities. In the future, we may enter into transactions, such as the sale of all or substantially all of our assets or a merger or consolidation, that may have an adverse effect on our ability to service our indebtedness, including the debt securities, by, among other things, substantially reducing or eliminating our assets.

Our governing instruments do not define the term “substantially all” as it relates to the sale of assets. Additionally, Delaware case law interpreting the term “substantially all” relies upon the facts and circumstances of each particular case. Consequently, to determine whether a sale of “substantially all” of our assets has occurred, a holder of debt securities must review the financial and other information that we have disclosed to the public.

We will provide you with more information in the applicable prospectus supplement regarding any deletions, modifications or additions to the events of default or covenants that are described below, including any addition of a covenant or other provision providing event risk or similar protection.

Payment

Unless we give you different information in the applicable prospectus supplement, the principal of, and any premium or make-whole amount, and interest on, any series of the debt securities will be payable at the corporate trust office of the trustee. We will provide you with the address of the trustee in the applicable prospectus supplement. We may also pay interest by mailing a check to the address of the person entitled to it as it appears in the applicable register for the debt securities or by wire transfer of funds to that person at an account maintained within the United States.

All monies that we pay to a paying agent or a trustee for the payment of the principal of, and any premium or make-whole amount, or interest on, any debt security will be repaid to us if unclaimed at the end of two years after the obligation underlying payment becomes due and payable. After funds have been returned to us, the holder of the debt security may look only to us for payment, without payment of interest for the period which we hold the funds.

Denomination, Interest, Registration and Transfer

Unless otherwise described in the applicable prospectus supplement, the debt securities of any series will be issuable in denominations of \$1,000 and integral multiples of \$1,000.

Subject to the limitations imposed upon debt securities that are evidenced by a computerized entry in the records of a depository company rather than by physical delivery of a note, a holder of debt securities of any series may:

- exchange such debt securities for any authorized denomination of other debt securities of the same series and of a like aggregate principal amount and kind upon surrender of such debt securities at the corporate trust office of the applicable trustee or at the office of any transfer agent that we designate for such purpose; and
- surrender such debt securities for registration of transfer or exchange at the corporate trust office of the applicable trustee or at the office of any transfer agent that we designate for such purpose.

Every debt security surrendered for registration of transfer or exchange must be duly endorsed or accompanied by a written instrument of transfer satisfactory to the applicable trustee or transfer agent. Payment of a service charge will not be required for any registration of transfer or exchange of any debt securities, but we or the trustee may require payment of a sum sufficient to cover any tax or other governmental charge payable in connection therewith. If in addition to the applicable trustee, the applicable prospectus supplement refers to any transfer agent initially designated by us for any series of debt securities, we may at any time rescind the designation of any such transfer agent or approve a change in the location through which any such transfer agent acts, except that we will be required to maintain a transfer agent in each place of payment for such series. We may at any time designate additional transfer agents for any series of debt securities.

Neither we, nor any trustee, will be required to:

- issue, register the transfer of or exchange debt securities of any series during a period beginning at the opening of business 15 days before the day that the notice of redemption of any debt securities selected for redemption is mailed and ending at the close of business on the day of such mailing;
- register the transfer of or exchange any debt security, or portion thereof, so selected for redemption, in whole or in part, except the unredeemed portion of any debt security being redeemed in part; or
- issue, register the transfer of or exchange any debt security that has been surrendered for repayment at the option of the holder, except the portion, if any, of such debt security not to be so repaid.

Merger, Consolidation or Sale of Assets

The indentures provide that we may, without the consent of the holders of any outstanding debt securities, (i) consolidate with, (ii) sell, lease or convey all or substantially all of our assets to or (iii) merge with or into any other entity, provided that:

- either we are the continuing entity, or the successor entity, if other than us, assumes the obligations to (a) pay the principal of, and any premium or make-whole amount, and interest on, all of the debt securities and (b) duly perform and observe all of the covenants and conditions contained in each indenture;
- after giving effect to the transaction, there is no event of default under the indentures and no event which, after notice or the lapse of time, or both, would become such an event of default, occurs and continues; and
- an officers' certificate and legal opinion covering such conditions are delivered to each applicable trustee.

Covenants

Existence. Except as described under “— Merger, Consolidation or Sale of Assets,” the indentures require us to do or cause to be done all things necessary to preserve and keep in full force and effect our existence, rights and franchises. However, the indentures do not require us to preserve any right or franchise if we determine that any right or franchise is no longer desirable in the conduct of our business.

Payment of taxes and other claims. The indentures require us to pay, discharge or cause to be paid or discharged, before they become delinquent, (i) all taxes, assessments and governmental charges levied or imposed on us and (ii) all lawful claims for labor, materials and supplies which, if unpaid, might by law become a lien upon our property. However, we will not be required to pay, discharge or cause to be paid or discharged any such tax, assessment, charge or claim whose amount, applicability or validity is being contested in good faith by appropriate proceedings.

Provision of financial information. The indentures require us to (i) within 15 days of each of the respective dates by which we are required to file our annual reports, quarterly reports and other documents with the SEC, file with the trustee copies of the annual report, quarterly report and other documents that we file with the SEC under Section 13 or 15(d) of the Exchange Act, (ii) file with the trustee and the SEC any additional information, documents and reports regarding compliance by us with the conditions and covenants of the indentures, as required, (iii) within 30 days after the filing with the trustee, mail to all holders of debt securities, as their names and addresses appear in the applicable register for such debt securities, without cost to such holders, summaries of any documents and reports required to be filed by us pursuant to (i) and (ii) above, and (iv) supply, promptly upon written request and payment of the reasonable cost of duplication and delivery, copies of such documents to any prospective holder of debt securities.

Additional covenants. The applicable prospectus supplement will set forth any of our additional covenants relating to any series of debt securities.

Events of Default, Notice and Waiver

Unless the applicable prospectus supplement states otherwise, when we refer to “events of default” as defined in the indentures with respect to any series of debt securities, we mean:

- default in the payment of any installment of interest on such debt security continuing for 30 days;
- default in the payment of principal of, or any premium or make-whole amount on, such debt security at its stated maturity;
- default in making any sinking fund payment as required for such debt security;
- default in the performance or breach of any covenant or warranty in such debt security or in the indenture by us continuing for 60 days after written notice to us by the trustee or to us and the trustee by the holders of at least 25% in principal amount of the outstanding debt securities of that series as provided in the applicable indenture, but not of a covenant added to the indenture solely for the benefit of a series of debt securities issued thereunder other than such series;
- a default under any bond, debenture, note, mortgage, indenture or instrument instrument under which there may be issued or by which there may be secured or evidenced any indebtedness for money borrowed by us (or by any subsidiary, the repayment of which we have guaranteed or for which we are directly responsible or liable as obligor or guarantor) having an aggregate principal amount of at least \$30,000,000, which default shall have resulted in such indebtedness becoming or being declared due and payable prior to the date on which it would otherwise have become due and payable, without such indebtedness having been discharged, or such acceleration having been rescinded or annulled, within 30 days after notice specifying such default. Such notice shall be given to us by the trustee, or to us and the trustee by the holders of at least 10% in principal amount of the outstanding debt securities of that series. The written notice shall specify such default and require us to cause such indebtedness to be discharged or cause such acceleration to be rescinded or annulled and shall state that such notice is a “Notice of Default” under such indenture;

- bankruptcy, insolvency or reorganization, or court appointment of a receiver, liquidator or trustee of us; and
- any other event of default provided with respect to a particular series of debt securities.

If an event of default occurs and is continuing with respect to debt securities of any series outstanding, then the applicable trustee or the holders of 25% or more in principal amount of the debt securities of that series will have the right to declare the principal amount of all the debt securities of that series to be due and payable. If the debt securities of that series are original issue discount securities or indexed securities, then the applicable trustee or the holders of 25% or more in principal amount of the debt securities of that series will have the right to declare the portion of the principal amount as may be specified in the terms thereof to be due and payable. However, at any time after such a declaration of acceleration has been made, but before a judgment or decree for payment of the money due has been obtained by the applicable trustee, the holders of at least a majority in principal amount of outstanding debt securities of such series or of all debt securities then outstanding under the applicable indenture may rescind and annul such declaration and its consequences if:

- we have deposited with the applicable trustee all required payments of the principal, any premium or make-whole amount, interest and, to the extent permitted by law, interest on overdue installment of interest, plus applicable fees, expenses, disbursements and advances of the applicable trustee; and
- all events of default, other than the non-payment of accelerated principal, or a specified portion thereof, and any premium or make-whole amount, have been cured or waived.

The indentures also provide that the holders of at least a majority in principal amount of the outstanding debt securities of any series or of all debt securities then outstanding under the applicable indenture may, on behalf of all holders, waive any past default with respect to such series and its consequences, except a default:

- in the payment of the principal, any premium or make-whole amount, or interest;
- in respect of a covenant or provision contained in the applicable indenture that cannot be modified or amended without the consent of the holders of the outstanding debt security that is affected by the default; or
- in respect of a covenant or provision for the benefit or protection of the trustee, without its express written consent.

The indentures require each trustee to give notice to the holders of debt securities within 90 days of a default unless such default has been cured or waived. However, the trustee may withhold notice if specified persons of such trustee consider such withholding to be in the interest of the holders of debt securities. The trustee may not withhold notice of a default in the payment of principal, any premium or interest on any debt security of such series or in the payment of any sinking fund installment in respect of any debt security of such series.

The indentures provide that holders of debt securities of any series may not institute any proceedings, judicial or otherwise, with respect to such indenture or for any remedy under the indenture, unless the trustee fails to act for a period of 60 days after the trustee has received a written request to institute proceedings in respect of an event of default from the holders of 25% or more in principal amount of the outstanding debt securities of such series, as well as an offer of indemnity reasonably satisfactory to the trustee. However, this provision will not prevent any holder of debt securities from instituting suit for the enforcement of payment of the principal of, and any premium or make-whole amount, and interest on, such debt securities at the respective due dates thereof.

The indentures provide that, subject to provisions in each indenture relating to its duties in the case of a default, a trustee has no obligation to exercise any of its rights or powers at the request or direction of any holders of any series of debt securities then outstanding under the indenture, unless the holders have offered to the trustee reasonable security or indemnity. The holders of at least a majority in principal amount of the outstanding debt securities of any series or of all debt securities then outstanding under an

indenture shall have the right to direct the time, method and place of conducting any proceeding for any remedy available to the applicable trustee, or of exercising any trust or power conferred upon such trustee. However, a trustee may refuse to follow any direction which:

- is in conflict with any law or the applicable indenture;
- may involve the trustee in personal liability; or
- may be unduly prejudicial to the holders of debt securities of the series not joining the proceeding.

Within 120 days after the close of each fiscal year, we will be required to deliver to each trustee a certificate, signed by one of our several specified officers, stating whether or not such officer has knowledge of any default under the applicable indenture. If the officer has knowledge of any default, the notice must specify the nature and status of the default.

Modification of the Indentures

The indentures provide that modifications and amendments may be made only with the consent of the affected holders of a majority in principal amount of all outstanding debt securities issued under that indenture. However, no such modification or amendment may, without the consent of the holders of the debt securities affected by the modification or amendment:

- change the stated maturity of the principal of, or any premium or make-whole amount on, or any installment of principal of or interest on, any such debt security;
- reduce the principal amount of, the rate or amount of interest on, or any premium or make-whole amount payable on redemption of, any such debt security;
- reduce the amount of principal of an original issue discount security that would be due and payable upon declaration of acceleration of the maturity thereof or would be provable in bankruptcy, or adversely affect any right of repayment of the holder of any such debt security;
- change the place of payment or the coin or currency for payment of principal of, or any premium or make-whole amount, or interest on, any such debt security;
- impair the right to institute suit for the enforcement of any payment on or with respect to any such debt security on or after the stated maturity date or redemption date, if applicable;
- adversely affect the right to convert any such debt security, if convertible;
- reduce the percentage in principal amount of any outstanding debt securities necessary to modify or amend the applicable indenture with respect to any such debt security, to waive compliance with particular provisions thereof or defaults and consequences thereunder or to reduce the quorum or voting requirements set forth in the applicable indenture; and
- modify any of the foregoing provisions or any of the provisions relating to the waiver of particular past defaults or covenants, except to increase the required percentage to effect such action or to provide that some of the other provisions may not be modified or waived without the consent of the holder of any such debt security.

The holders of a majority in aggregate principal amount of the outstanding debt securities of each series may, on behalf of all holders of debt securities of that series, waive, insofar as that series is concerned, our compliance with material restrictive covenants of the applicable indenture.

We and the respective trustee may make modifications and amendments of an indenture without the consent of any holder of debt securities for any of the following purposes:

- to evidence the succession of another person to us as obligor under such indenture as permitted under an indenture;
- to add to our covenants for the benefit of the holders of all or any series of debt securities or to surrender any right or power conferred upon us in such indenture;
- to add events of default for the benefit of the holders of all or any series of debt securities;

- to add or change any provisions of an indenture (i) to change or eliminate restrictions on the payment of principal of, or premium or make-whole amount, or interest on, debt securities in bearer form or (ii) to permit or facilitate the issuance of debt securities in uncertificated form, provided that such action shall not adversely affect the interests of the holders of the debt securities of any series in any material respect;
- to change or eliminate any provisions of an indenture, provided that any such change or elimination shall become effective only when there are no debt securities outstanding of any series created prior thereto that are entitled to the benefit of such provision;
- to secure the debt securities;
- to establish the form or terms of debt securities of any series;
- to provide for the acceptance of appointment by a successor trustee or facilitate the administration of the trusts under an indenture by more than one trustee;
- to cure any ambiguity, defect or inconsistency in an indenture, provided that such action shall not adversely affect the interests of holders of debt securities of any series issued under such indenture;
- to supplement any of the provisions of an indenture to the extent necessary to permit or facilitate defeasance and discharge of any series of such debt securities, provided that any such action shall not adversely affect the interests of the holders of the outstanding debt securities of any series; and
- to make provisions with respect to a holder's rights of conversion with respect to any series of debt securities that is convertible pursuant an indenture.

Voting

The indentures provide that in determining whether the holders of the requisite principal amount of outstanding debt securities of a series have given any request, demand, authorization, direction, notice, consent or waiver under the indentures or whether a quorum is present at a meeting of holders of debt securities:

- the principal amount of an original issue discount security that shall be deemed to be outstanding shall be the amount of the principal thereof that would be due and payable as of the date of such determination upon declaration of acceleration of the maturity thereof;
- the principal amount of any debt security denominated in a foreign currency that shall be deemed outstanding shall be the U.S. dollar equivalent, determined on the issue date for such debt security, of the principal amount or, in the case of an original issue discount security, the U.S. dollar equivalent on the issue date of such debt security of the amount determined as provided in the preceding bullet point;
- the principal amount of an indexed security that shall be deemed outstanding shall be the principal face amount of such indexed security at original issuance, unless otherwise provided for such indexed security under such indenture; and
- debt securities owned by us or any other obligor upon the debt securities or by any affiliate of ours or of such other obligor shall be disregarded.

The indentures contain provisions for convening meetings of the holders of debt securities of a series. A meeting will be permitted to be called at any time by the applicable trustee, and also, upon request, by us or the holders of at least 25% in principal amount of the outstanding debt securities of such series, in any such case upon notice given as provided in such indenture. Except for any consent that must be given by the holder of each debt security affected by the modifications and amendments of an indenture described above, any resolution presented at a meeting or adjourned meeting duly reconvened at which a quorum is present may be adopted by the affirmative vote of the holders of a majority of the aggregate principal amount of the outstanding debt securities of that series represented at such meeting.

Notwithstanding the preceding paragraph, except as referred to above, any resolution relating to a request, demand, authorization, direction, notice, consent, waiver or other action that may be made, given or taken by the holders of a specified percentage, which is less than a majority of the aggregate principal amount of the outstanding debt securities of a series, may be adopted at a meeting or adjourned meeting duly reconvened at which a quorum is present by the affirmative vote of such specified percentage.

Any resolution passed or decision taken at any properly held meeting of holders of debt securities of any series will be binding on all holders of such series. The quorum at any meeting called to adopt a resolution, and at any reconvened meeting, will be persons holding or representing a majority in principal amount of the outstanding debt securities of a series. However, if any action is to be taken relating to a consent or waiver which may be given by the holders of at least a specified percentage in principal amount of the outstanding debt securities of a series, the persons holding such percentage will constitute a quorum.

Notwithstanding the foregoing provisions, the indentures provide that if any action is to be taken at a meeting with respect to any request, demand, authorization, direction, notice, consent, waiver or other action that such indenture expressly provides may be made, given or taken by the holders of a specified percentage in principal amount of all outstanding debt securities affected by such action, or of the holders of such series and one or more additional series:

- there shall be no minimum quorum requirement for such meeting; and
- the principal amount of the outstanding debt securities of such series that vote in favor of such request, demand, authorization, direction, notice, consent, waiver or other action shall be taken account in determining whether such request, demand, authorization, direction, notice, consent, waiver or other action has been made, given or taken under such indenture.

Subordination

Unless otherwise provided in the applicable prospectus supplement, subordinated debt securities will be subject to the following subordination provisions.

Upon any distribution to our creditors in a liquidation, dissolution or reorganization, the payment of the principal of and interest on any subordinated debt securities will be subordinated to the extent provided in the applicable indenture in right of payment to the prior payment in full of all senior debt. However, our obligation to make payments of the principal of and interest on such subordinated debt securities otherwise will not be affected. No payment of principal or interest will be permitted to be made on subordinated debt securities at any time if a default on senior debt exists that permits the holders of such senior debt to accelerate its maturity and the default is the subject of judicial proceedings or we receive notice of the default. After all senior debt is paid in full and until the subordinated debt securities are paid in full, holders of subordinated debt securities will be subrogated to the rights of holders of senior debt to the extent that distributions otherwise payable to holders of subordinated debt securities have been applied to the payment of senior debt. The subordinated indenture will not restrict the amount of senior debt or other indebtedness of ours. As a result of these subordination provisions, in the event of a distribution of assets upon insolvency, holders of subordinated debt securities may recover less, ratably, than our general creditors.

The term "senior debt" will be defined in the applicable indenture as the principal of and interest on, or substantially similar payments to be made by us in respect of, other outstanding indebtedness, whether outstanding at the date of execution of the applicable indenture or subsequently incurred, created or assumed. The prospectus supplement may include a description of additional terms implementing the subordination feature.

No restrictions will be included in any indenture relating to subordinated debt securities upon the creation of additional senior debt.

If this prospectus is being delivered in connection with the offering of a series of subordinated debt securities, the accompanying prospectus supplement or the information incorporated herein by reference will set forth the approximate amount of senior debt outstanding as of the end of our most recent fiscal quarter.

Discharge, Defeasance and Covenant Defeasance

Unless otherwise indicated in the applicable prospectus supplement, the indentures allow us to discharge our obligations to holders of any series of debt securities issued under any indenture when:

- either (i) all securities of such series have already been delivered to the applicable trustee for cancellation; or (ii) all securities of such series have not already been delivered to the applicable trustee for cancellation but (a) have become due and payable, (b) will become due and payable within one year or (c) if redeemable at our option, are to be redeemed within one year, and we have irrevocably deposited with the applicable trustee, in trust, funds in such currency or currencies, currency unit or units or composite currency or currencies in which such debt securities are payable, an amount sufficient to pay the entire indebtedness on such debt securities in respect of principal and any premium or make-whole amount, and interest to the date of such deposit if such debt securities have become due and payable or, if they have not, to the stated maturity or redemption date;
- we have paid or caused to be paid all other sums payable; and
- an officers' certificate and an opinion of counsel stating the conditions to discharging the debt securities have been satisfied have been delivered to the trustee.

Unless otherwise indicated in the applicable prospectus supplement, the indentures provide that, upon our irrevocable deposit with the applicable trustee, in trust, of an amount, in such currency or currencies, currency unit or units or composite currency or currencies in which such debt securities are payable at stated maturity, or government obligations, or both, applicable to such debt securities, which through the scheduled payment of principal and interest in accordance with their terms will provide money in an amount sufficient to pay the principal of, and any premium or make-whole amount, and interest on, such debt securities, and any mandatory sinking fund or analogous payments thereon, on the scheduled due dates therefor, the issuing company may elect either:

- to defease and be discharged from any and all obligations with respect to such debt securities; or
- to be released from its obligations with respect to such debt securities under the applicable indenture or, if provided in the applicable prospectus supplement, its obligations with respect to any other covenant, and any omission to comply with such obligations shall not constitute an event of default with respect to such debt securities.

Notwithstanding the above, we may not elect to defease and be discharged from the obligation to pay any additional amounts upon the occurrence of particular events of tax, assessment or governmental charge with respect to payments on such debt securities and the obligations to register the transfer or exchange of such debt securities, to replace temporary or mutilated, destroyed, lost or stolen debt securities, to maintain an office or agency in respect of such debt securities, or to hold monies for payment in trust.

The indentures only permit us to establish the trust described in the paragraph above if, among other things, we have delivered to the applicable trustee an opinion of counsel to the effect that the holders of such debt securities will not recognize income, gain or loss for United States federal income tax purposes as a result of such defeasance or covenant defeasance and will be subject to U.S. federal income tax on the same amounts, in the same manner and at the same times as would have been the case if such defeasance or covenant defeasance had not occurred. Such opinion of counsel, in the case of defeasance, will be required to refer to and be based upon a ruling received from or published by the Internal Revenue Service or a change in applicable U.S. federal income tax law occurring after the date of the indenture. In the event of such defeasance, the holders of such debt securities would be able to look only to such trust fund for payment of principal, any premium or make-whole amount, and interest.

When we use the term "government obligations," we mean securities that are:

- direct obligations of the United States or the government that issued the foreign currency in which the debt securities of a particular series are payable, for the payment of which its full faith and credit is pledged; or

- obligations of a person controlled or supervised by and acting as an agency or instrumentality of the United States or other government that issued the foreign currency in which the debt securities of such series are payable, the payment of which is unconditionally guaranteed as a full faith and credit obligation by the United States or such other government, 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 government obligation or a specific payment of interest on or principal of any such government obligation held by such custodian for the account of the holder of a depository receipt. However, 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 government obligation or the specific payment of interest on or principal of the government obligation evidenced by such depository receipt.

Unless otherwise provided in the applicable prospectus supplement, if after we have deposited funds and/or government obligations to effect defeasance or covenant defeasance with respect to debt securities of any series, (i) the holder of a debt security of such series is entitled to, and does, elect under the terms of the applicable indenture or the terms of such debt security to receive payment in a currency, currency unit or composite currency other than that in which such deposit has been made in respect of such debt security or (ii) a conversion event occurs in respect of the currency, currency unit or composite currency in which such deposit has been made, the indebtedness represented by such debt security will be deemed to have been, and will be, fully discharged and satisfied through the payment of the principal of, and premium or make-whole amount, and interest on, such debt security as they become due out of the proceeds yielded by converting the amount so deposited in respect of such debt security into the currency, currency unit or composite currency in which such debt security becomes payable as a result of such election or such cessation of usage based on the applicable market exchange rate.

When we use the term “conversion event,” we mean the cessation of use of:

- a currency, currency unit or composite currency both by the government of the country that issued such currency and for the settlement of transactions by a central bank or other public institutions of or within the international banking community;
- the European Currency Unit both within the European Monetary System and for the settlement of transactions by public institutions of or within the European Communities; or
- any currency unit or composite currency other than the European Currency Unit for the purposes for which it was established.

Unless otherwise provided in the applicable prospectus supplement, all payments of principal of, and any premium or make-whole amount, and interest on, any debt security that is payable in a foreign currency that ceases to be used by its government of issuance shall be made in U.S. dollars.

In the event that (i) we effect covenant defeasance with respect to any debt securities and (ii) those debt securities are declared due and payable because of the occurrence of any event of default, the amount in the currency, currency unit or composite currency in which such debt securities are payable, and government obligations on deposit with the applicable trustee, will be sufficient to pay amounts due on such debt securities at the time of their stated maturity but may not be sufficient to pay amounts due on such debt securities at the time of the acceleration resulting from such event of default. However, the issuing company would remain liable to make payments of any amounts due at the time of acceleration.

The applicable prospectus supplement may further describe the provisions, if any, permitting such defeasance or covenant defeasance, including any modifications to the provisions described above, with respect to the debt securities of or within a particular series.

Conversion Rights

The terms and conditions, if any, upon which the debt securities are convertible into common stock or other securities of ours will be set forth in the applicable prospectus supplement. The terms will include whether the debt securities are convertible into shares of common stock or other securities of ours, the conversion price, or manner of calculation thereof, the conversion period, provisions as to whether conversion will be at the issuing company's option or the option of the holders, the events requiring an adjustment of the conversion price and provisions affecting conversion in the event of the redemption of the debt securities and any restrictions on conversion.

Global Securities

The debt securities of a series may be issued in whole or in part in the form of one or more global securities that will be deposited with, or on behalf of, a depository identified in the applicable prospectus supplement relating to such series. Global securities, if any, issued in the United States are expected to be deposited with The Depository Trust Company ("DTC") as depository. We may issue global securities in either registered or bearer form and in either temporary or permanent form. We will describe the specific terms of the depository arrangement with respect to a series of debt securities in the applicable prospectus supplement relating to such series. We expect that unless the applicable prospectus supplement provides otherwise, the following provisions will apply to depository arrangements.

Once a global security is issued, the depository for such global security or its nominee will credit on its book-entry registration and transfer system the respective principal amounts of the individual debt securities represented by such global security to the accounts of participants that have accounts with such depository. Such accounts shall be designated by the underwriters, dealers or agents with respect to such debt securities or by us if we offer such debt securities directly. Ownership of beneficial interests in such global security will be limited to participants with the depository or persons that may hold interests through those participants.

We expect that, under procedures established by DTC, ownership of beneficial interests in any global security for which DTC is the depository will be shown on, and the transfer of that ownership will be effected only through, records maintained by DTC or its nominee, with respect to beneficial interests of participants with the depository, and records of participants, with respect to beneficial interests of persons who hold through participants with the depository. Neither we nor the trustee will have any responsibility or liability for any aspect of the records of DTC or for maintaining, supervising or reviewing any records of DTC or any of its participants relating to beneficial ownership interests in the debt securities. The laws of some states require that certain purchasers of securities take physical delivery of such securities in definitive form. Such limits and laws may impair the ability to own, pledge or transfer beneficial interest in a global security.

So long as the depository for a global security or its nominee is the registered owner of such global security, such depository or such nominee, as the case may be, will be considered the sole owner or holder of the debt securities represented by the global security for all purposes under the applicable indenture. Except as described below or in the applicable prospectus supplement, owners of beneficial interest in a global security will not be entitled to have any of the individual debt securities represented by such global security registered in their names, will not receive or be entitled to receive physical delivery of any such debt securities in definitive form and will not be considered the owners or holders thereof under the applicable indenture. Beneficial owners of debt securities evidenced by a global security will not be considered the owners or holders thereof under the applicable indenture for any purpose, including with respect to the giving of any direction, instructions or approvals to the trustee under the indenture. Accordingly, each person owning a beneficial interest in a global security with respect to which DTC is the depository must rely on the procedures of DTC and, if such person is not a participant with the depository, on the procedures of the participant through which such person owns its interests, to exercise any rights of a holder under the applicable indenture. We understand that, under existing industry practice, if DTC requests any action of holders or if an owner of a beneficial interest in a global security desires to give or take any action which a holder is entitled to give or take under the applicable indenture, DTC would authorize the participants holding the relevant beneficial interest to give or take such action, and such participants would authorize beneficial owners through such participants to give or take such actions or would otherwise act upon the instructions of beneficial owners holding through them.

Payments of principal of, and any premium or make-whole amount, and interest on, individual debt securities represented by a global security registered in the name of a depository or its nominee will be made to or at the direction of the depository or its nominee, as the case may be, as the registered owner of the global security under the applicable indenture. Under the terms of the applicable indenture, we and the trustee may treat the persons in whose name debt securities, including a global security, are registered as the owners thereof for the purpose of receiving such payments. Consequently, neither we nor the trustee have or will have any responsibility or liability for the payment of such amounts to beneficial owners of debt securities including principal, any premium or make-whole amount, or interest. We believe, however, that it is currently the policy of DTC to immediately credit the accounts of relevant participants with such payments, in amounts proportionate to their respective holdings of beneficial interests in the relevant global security as shown on the records of DTC or its nominee. We also expect that payments by participants to owners of beneficial interests in such global security held through such participants 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, and will be the responsibility of such participants. Redemption notices with respect to any debt securities represented by a global security will be sent to the depository or its nominee. If less than all of the debt securities of any series are to be redeemed, we expect the depository to determine the amount of the interest of each participant in such debt securities to be redeemed to be determined by lot. Neither we, the trustee, any paying agent nor the security registrar for such debt securities will have any responsibility or liability for any aspect of the records relating to or payments made on account of beneficial ownership interests in the global security for such debt securities or for maintaining any records with respect thereto.

Neither we nor the trustee will be liable for any delay by the holders of a global security or the depository in identifying the beneficial owners of debt securities, and we and the trustee may conclusively rely on, and will be protected in relying on, instructions from the holder of a global security or the depository for all purposes. The rules applicable to DTC and its participants are on file with the SEC.

If a depository for any debt securities is at any time unwilling, unable or ineligible to continue as depository and we do not appoint a successor depository within 90 days, we will issue individual debt securities in exchange for the global security representing such debt securities. In addition, we may at any time and at our sole discretion, subject to any limitations described in the applicable prospectus supplement relating to such debt securities, determine not to have any of such debt securities represented by one or more global securities and in such event will issue individual debt securities in exchange for the global security or securities representing such debt securities. Individual debt securities so issued will be issued in denominations of \$1,000 and integral multiples of \$1,000.

The debt securities of a series may also be issued in whole or in part in the form of one or more bearer global securities that will be deposited with a depository, or with a nominee for such depository, identified in the applicable prospectus supplement. Any such bearer global securities may be issued in temporary or permanent form. The specific terms and procedures, including the specific terms of the depository arrangement, with respect to any portion of a series of debt securities to be represented by one or more bearer global securities will be described in the applicable prospectus supplement.

No Recourse

There is no recourse under any obligation, covenant or agreement in the applicable indenture or with respect to any security against any of our or our successor's past, present or future stockholders, employees, officers or directors.

DESCRIPTION OF WARRANTS

The following description, together with the additional information we may include in any applicable prospectus supplements, summarizes the material terms and provisions of the warrants that we may offer under this prospectus and the related warrant agreements and warrant certificates. While the terms summarized below will apply generally to any warrants that we may offer, we will describe the particular terms of any series of warrants in more detail in a prospectus supplement. If we indicate in the prospectus supplement, the terms of any warrants offered under that prospectus supplement may differ from the terms described below. Specific warrant agreements will contain additional important terms and provisions and will be incorporated by reference as an exhibit to the registration statement of which this prospectus forms a part.

General

We may issue warrants for the purchase of common stock, preferred stock and/or debt securities in one or more series. We may issue warrants independently or together with common stock, preferred stock and/or debt securities, and the warrants may be attached to or separate from these securities.

We will evidence each series of warrants by warrant certificates that we will issue under a separate warrant agreement. We will enter into the warrant agreement with a warrant agent. We will indicate the name and address of the warrant agent in the applicable prospectus supplement relating to a particular series of warrants.

We will describe in the applicable prospectus supplement the terms of the series of warrants, including:

- the offering price and aggregate number of warrants offered;
- the currency for which the warrants may be purchased;
- if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;
- if applicable, the date on and after which the warrants and the related securities will be separately transferable;
- in the case of warrants to purchase debt securities, the principal amount of debt securities purchasable upon exercise of one warrant and the price at, and currency in which, this principal amount of debt securities may be purchased upon such exercise;
- in the case of warrants to purchase common stock or preferred stock, the number of shares of common stock or preferred stock, as the case may be, purchasable upon the exercise of one warrant and the price at which these shares may be purchased upon such exercise;
- the effect of any merger, consolidation, sale or other disposition of our business on the warrant agreement and the warrants;
- the terms of any rights to redeem or call the warrants;
- any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;
- the periods during which, and places at which, the warrants are exercisable;
- the manner of exercise;
- the dates on which the right to exercise the warrants will commence and expire;
- the manner in which the warrant agreement and warrants may be modified;
- the applicable U.S. federal income tax consequences of holding or exercising the warrants;
- the terms of the securities issuable upon exercise of the warrants; and
- any other specific terms, preferences, rights or limitations of or restrictions on the warrants.

DESCRIPTION OF UNITS

We may issue units comprised of shares of common stock, shares of preferred stock, debt securities and warrants in any combination. We may issue units in such amounts and in as many distinct series as we wish. This section outlines certain provisions of the units that we may issue. If we issue units, they will be issued under one or more unit agreements to be entered into between us and a bank or other financial institution, as unit agent. The information described in this section may not be complete in all respects and is qualified entirely by reference to the unit agreement with respect to the units of any particular series. The specific terms of any series of units offered will be described in a prospectus supplement. If so described in a particular supplement, the specific terms of any series of units may differ from the general description of terms presented below. We urge you to read any prospectus supplement related to any series of units we may offer, as well as the complete unit agreement and unit certificate that contain the terms of the units. If we issue units, forms of unit agreements and unit certificates relating to such units will be incorporated by reference as exhibits to the registration statement of which this prospectus forms a part.

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

- 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 U.S. 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.

Issuance in Series

We may issue units in such amounts and in any number of distinct series. This section summarizes terms of the units that apply generally to all series. Most of the financial and other specific terms of a particular series of units will be described in the applicable prospectus supplement.

Unit Agreements

We will issue the units under one or more unit agreements to be entered into between us and a bank or other financial institution, as unit agent. We may add, replace or terminate unit agents from time to time. We will identify the unit agreement under which each series of units will be issued and the unit agent under that agreement in the applicable prospectus supplement.

The following provisions will generally apply to all unit agreements unless otherwise stated in the applicable prospectus supplement:

Modification without Consent

We and the applicable unit agent may amend any unit or unit agreement without the consent of any holder:

- to cure any ambiguity, including modifying any provisions of the governing unit agreement that differ from those described below;

- to correct or supplement any defective or inconsistent provision; or
- to make any other change that we believe is necessary or desirable and will not adversely affect the interests of the affected holders in any material respect.

We do not need any approval to make changes that affect only units to be issued after the changes take effect. We may also make changes that do not adversely affect a particular unit in any material respect, even if they adversely affect other units in a material respect. In those cases, we do not need to obtain the approval of the holder of the unaffected unit; we need only obtain any required approvals from the holders of the affected units.

Modification with Consent

We may not amend any particular unit or a unit agreement with respect to any particular unit unless we obtain the consent of the holder of that unit, if the amendment would:

- impair any right of the holder to exercise or enforce any right under a security included in the unit if the terms of that security require the consent of the holder to any changes that would impair the exercise or enforcement of that right; or
- reduce the percentage of outstanding units or any series or class the consent of whose holders is required to amend that series or class, or the applicable unit agreement with respect to that series or class, as described below.

Any other change to a particular unit agreement and the units issued under that agreement would require the following approval:

- If the change affects only the units of a particular series issued under that agreement, the change must be approved by the holders of a majority of the outstanding units of that series; or
- If the change affects the units of more than one series issued under that agreement, it must be approved by the holders of a majority of all outstanding units of all series affected by the change, with the units of all the affected series voting together as one class for this purpose.

These provisions regarding changes with majority approval also apply to changes affecting any securities issued under a unit agreement, as the governing document.

In each case, the required approval must be given by written consent.

Unit Agreements Will Not Be Qualified under Trust Indenture Act

No unit agreement will be qualified as an indenture, and no unit agent will be required to qualify as a trustee, under the Trust Indenture Act. Therefore, holders of units issued under unit agreements will not have the protections of the Trust Indenture Act with respect to their units.

Mergers and Similar Transactions Permitted; No Restrictive Covenants or Events of Default

The unit agreements will not restrict our ability to merge or consolidate with, or sell our assets to, another corporation or other entity or to engage in any other transactions. If at any time we merge or consolidate with, or sell our assets substantially as an entirety to, another corporation or other entity, the successor entity will succeed to and assume our obligations under the unit agreements. We will then be relieved of any further obligation under these agreements.

The unit agreements will not include any restrictions on our ability to put liens on our assets, nor will they restrict our ability to sell our assets. The unit agreements also will not provide for any events of default or remedies upon the occurrence of any events of default.

Governing Law

The unit agreements and the units will be governed by Delaware law.

Form, Exchange and Transfer

Unless the accompanying prospectus supplement states otherwise, we will issue each unit in global form (i.e., book-entry) only. Units in book-entry form will be represented by a global security registered in the name of a depositary, which will be the holder of all the units represented by the global security. Those who own beneficial interests in a unit will do so through participants in the depositary's system, and the rights of these indirect owners will be governed solely by the applicable procedures of the depositary and its participants. We will describe book-entry securities, and other terms regarding the issuance and registration of the units in the applicable prospectus supplement.

Unless the accompanying prospectus supplement states otherwise, each unit and all securities comprising the unit will be issued in the same form.

If we issue any units in registered, non-global form, the following will apply to them.

The units will be issued in the denominations stated in the applicable prospectus supplement. Holders may exchange their units for units of smaller denominations or combined into fewer units of larger denominations, as long as the total amount is not changed.

- Holders may exchange or transfer their units at the office of the unit agent. Holders may also replace lost, stolen, destroyed or mutilated units at that office. We may appoint another entity to perform these functions or perform them ourselves.
- Holders will not be required to pay a service charge to transfer or exchange their units, but they may be required to pay for any tax or other governmental charge associated with the transfer or exchange. The transfer or exchange, and any replacement, will be made only if our transfer agent is satisfied with the holder's proof of legal ownership. The transfer agent may also require an indemnity before replacing any units.
- If we have the right to redeem, accelerate or settle any units before their maturity, and we exercise our right as to less than all those units or other securities, we may block the exchange or transfer of those units during the period beginning 15 days before the day we mail the notice of exercise and ending on the day of that mailing, in order to freeze the list of holders to prepare the mailing. We may also refuse to register transfers of or exchange any unit selected for early settlement, except that we will continue to permit transfers and exchanges of the unsettled portion of any unit being partially settled. We may also block the transfer or exchange of any unit in this manner if the unit includes securities that are or may be selected for early settlement.

Only the depositary will be entitled to transfer or exchange a unit in global form, since it will be the sole holder of the unit.

Payments and Notices

In making payments and giving notices with respect to our units, we will follow the procedures as described in the applicable prospectus supplement.

PLAN OF DISTRIBUTION

We may sell securities:

- through underwriters;
- through dealers;
- through agents;
- directly to purchasers; or
- through a combination of any of these methods or any other method permitted by law.

In addition, we may issue the securities as a dividend or distribution or in a subscription rights offering to our existing securityholders.

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

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

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

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

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

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

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

In connection with the offering of securities, we may grant to the underwriters an option to purchase additional securities with an additional underwriting commission, as may be set forth in the accompanying prospectus supplement. If we grant any such option, the terms of such option will be set forth in the prospectus supplement for such securities.

If a dealer is used in the sale of the securities in respect of which the prospectus is delivered, we will sell such securities to the dealer, as principal. The dealer, who may be deemed to be an “underwriter” as that term is defined in the Securities Act, may then resell such securities to the public at varying prices to be determined by such dealer at the time of resale.

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

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

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

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

Offered securities may also be offered and sold, if so indicated in the prospectus supplement, in connection with a remarketing upon their purchase, in accordance with a redemption or repayment pursuant to their terms, or otherwise, by one or more remarketing firms, acting as principals for their own accounts or as agents for us. Any remarketing firm will be identified and the terms of its agreement, if any, with us and its compensation will be described in the applicable prospectus supplement. Remarketing firms may be deemed to be underwriters in connection with their remarketing of offered securities.

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

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

We 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 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 borrowed from us 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 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.

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

All securities we may offer, other than common stock, will be new issues of securities and may have no established trading market. The securities may or may not be listed on a national securities exchange. We can make no assurance as to the liquidity of or the existence of trading markets for any of the securities.

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

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

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

The anticipated date of delivery of offered securities will be set forth in the applicable prospectus supplement relating to each offer.

LEGAL MATTERS

Unless otherwise indicated in the applicable prospectus supplement, certain legal matters in connection with this offering, including the validity of the securities offered by this prospectus and any supplement thereto, will be passed upon for us by Goodwin Procter LLP, Boston, Massachusetts.

EXPERTS

The consolidated financial statements of Assembly Biosciences, Inc. incorporated by reference in Assembly Biosciences, Inc.'s Annual Report (Form 10-K) for the years ended December 31, 2016 and 2015 and the effectiveness of Assembly Biosciences, Inc.'s internal control over financial reporting as of December 31, 2016 have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their reports thereon, included therein, and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such reports given on the authority of such firm as experts in accounting and auditing.

The consolidated statements of operations, stockholders' equity and cash flows of Assembly Biosciences, Inc. for the year ended December 31, 2014 have been audited by EisnerAmper LLP, independent registered public accounting firm, as stated in their report thereon which is incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance on the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the information requirements of the Exchange Act and, in accordance therewith, file annual, quarterly and special reports, proxy statements and other information with the SEC. You may read and copy any document we file at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. You may call the SEC at 1-800-SEC-0330 for further information on the operation of the Public Reference Room. These documents also may be accessed through the SEC's electronic data gathering, analysis and retrieval system (EDGAR) via electronic means, including the SEC's home page on the Internet (www.sec.gov).

We have the authority to designate and issue more than one class or series of stock having various preferences, conversion and other rights, voting powers, restrictions, limitations as to dividends, qualifications, and terms and conditions of redemption. See "Description of Capital Stock." We will furnish a full statement of the relative rights and preferences of each class or series of our stock which has been so designated and any restrictions on the ownership or transfer of our stock to any stockholder upon request and without charge. Written requests for such copies should be directed to Assembly Biosciences, Inc., 11711 N. Meridian St., Suite 310, Carmel, Indiana 46032, Attention: Corporate Secretary, or by telephone request to (317) 210-9311. Our website is located at www.assemblybio.com. Information contained on our website is not incorporated by reference in this prospectus and, therefore, is not part of this prospectus or any accompanying prospectus supplement.

INCORPORATION BY REFERENCE

The SEC allows us to incorporate by reference the information and reports we file with it, which means that we can disclose important information to you by referring you to these documents. The information incorporated by reference is an important part of this prospectus, and information that we file later with the SEC will automatically update and supersede the information already incorporated by reference. We are incorporating by reference the documents listed below, which we have already filed with the SEC, and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, including all filings made after the date of the filing and the date of the effectiveness of the registration statement of which this prospectus forms a part, except as to any portion of any future report or document that is not deemed filed under such provisions, until we sell all of the securities:

- Our Annual Report on Form 10-K for the year ended December 31, 2016, filed with the SEC on March 2, 2017;

- The information specifically incorporated by reference in our Annual Report on Form 10-K for the year ended December 31, 2016 from our definitive proxy statement on Schedule 14A (except for information contained therein that is furnished rather than filed), filed with the SEC on April 21, 2017;
- Our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2017, June 30, 2017 and September 30, 2017, filed with the SEC on May 8, 2017, August 9, 2017 and November 1, 2017, respectively;
- Our Current Reports on Form 8-K, filed with the SEC on January 10, 2017 (except for information contained therein that is furnished rather than filed), June 2, 2017 (as amended on June 14, 2017), October 12, 2017, November 6, 2017, December 12, 2017 and December 18, 2017; and
- The description of our common stock contained in our registration statement on Form 8-A (Registration No. 001-35005), filed with the SEC on December 10, 2010, including any amendments thereto or reports filed for the purpose of updating such description.

Upon request, we will provide, without charge, to each person, including any beneficial owner, to whom a copy of this prospectus is delivered, a copy of the documents incorporated by reference into this prospectus but not delivered with the prospectus. You may request a copy of these filings, and any exhibits we have specifically incorporated by reference as an exhibit in this prospectus, at no cost by writing or telephoning us at the following address:

Assembly Biosciences, Inc.
11711 N. Meridian St.
Suite 310, Carmel, Indiana 46032
Attention: Corporate Secretary
(317) 210-9311.

You may also access these documents, free of charge on the SEC's website at <http://www.sec.gov> or on our website at www.assemblybio.com. Information contained on our website is not incorporated by reference in this prospectus, and you should not consider any information on, or that can be accessed from, our website as part of this prospectus or any accompanying prospectus supplement.

This prospectus is part of a registration statement we filed with the SEC. We have incorporated exhibits into the registration statement. You should read the exhibits carefully for provisions that may be important to you.

You should rely only on the information contained or incorporated by reference in this prospectus or any prospectus supplement. We have not authorized anyone to provide you with different information. We are not making an offer of these securities in any state where the offer is not permitted. You should not assume that the information in this prospectus or in the documents incorporated by reference is accurate as of any date other than the date on the front of this prospectus or those documents.

\$250,000,000



Common Stock

Preferred Stock

Debt Securities

Warrants

Units

PROSPECTUS

, 2017

We have not 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.

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

SUBJECT TO COMPLETION, DATED DECEMBER 29, 2017

PROSPECTUS SUPPLEMENT



assembly
biosciences

Up to \$75,000,000 of Shares

Common Stock

We have entered into Controlled Equity OfferingSM Sales Agreements (the “Sales Agreements”) with each of Jefferies LLC (“Jefferies”) and Cantor Fitzgerald & Co. (“Cantor Fitzgerald”) relating to shares of our common stock, par value \$0.001 per share, offered by this prospectus supplement. In accordance with the terms of the Sales Agreements, we may offer and sell shares of our common stock having an aggregate offering price of up to \$75,000,000 from time to time through Jefferies or Cantor Fitzgerald, each acting as sales agent. Sales of the shares of common stock, if any, may be made on the Nasdaq Capital Market at market prices and such other sales as agreed upon by us and Jefferies or Cantor Fitzgerald, as the case may be.

Our common stock is listed on the Nasdaq Capital Market under the symbol “ASMB.” On December 27, 2017, the last reported sale price of our common stock on the Nasdaq Capital Market was \$45.03 per share.

Sales of our common stock, if any, under this prospectus supplement may be made in sales deemed to be an “at the market offering” as defined in Rule 415(a)(4) promulgated under the Securities Act of 1933, as amended (the “Securities Act”). Jefferies and Cantor Fitzgerald will act as sales agents on a best efforts basis and use commercially reasonable efforts to sell on our behalf all of the shares of common stock requested to be sold by us, consistent with their normal trading and sales practices, on mutually agreed terms between us and Jefferies and Cantor Fitzgerald. There is no arrangement for funds to be received in any escrow, trust or similar arrangement.

Jefferies and Cantor Fitzgerald will be entitled to compensation at a fixed commission rate of up to 3% of the gross sales price per share sold. In connection with the sale of our common stock on our behalf, Jefferies and Cantor Fitzgerald will be deemed to be “underwriters” within the meaning of the Securities Act, and the compensation of Jefferies and Cantor Fitzgerald will be deemed to be underwriting commissions or discounts.

Investing in our common stock involves a high degree of risk. See the information contained under “Risk Factors” beginning on page S-4 of this prospectus supplement, and under similar headings in the accompanying prospectus and the documents incorporated by reference herein and therein.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

Jefferies

Cantor Fitzgerald

The date of this prospectus supplement is

, 2017.

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ABOUT THIS PROSPECTUS SUPPLEMENT

This document contains two parts.

- The first part is this prospectus supplement, which describes the specific terms of this offering and also supplements and updates information contained in the accompanying prospectus and the documents incorporated by reference herein and therein.
- The second part is the accompanying prospectus filed with the Securities and Exchange Commission (the “SEC”) as part of a registration statement on Form S-3 initially filed on December 29, 2017, which provides more general information, some of which may not apply to this offering.

If the information contained in this prospectus supplement differs or varies from the information contained in the accompanying prospectus or in any document incorporated by reference herein or therein that was filed with the SEC before the date of this prospectus supplement, you should rely on the information set forth in this prospectus supplement. This prospectus supplement is deemed a prospectus supplement to the accompanying prospectus contained in the registration statement of which such prospectus forms a part. If any statement in one of these documents is inconsistent with a statement in another document having a later date (for example, a subsequently filed document deemed incorporated by reference in the accompanying prospectus), the statement in the document having the later date modifies or supersedes the earlier statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus supplement.

You should rely only on the information contained or incorporated by reference in this prospectus supplement and the accompanying prospectus. We have not, and the sales agents have not, authorized anyone to provide you with information that is in addition to or different from that contained or incorporated by reference in this prospectus supplement and the accompanying prospectus or contained in any permitted free writing prospectuses we have authorized for use in connection with this offering. We and the sales agents take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may provide.

We are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where such offers and sales are permitted. The information contained in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein is accurate only as of their respective dates, regardless of the time of delivery of any such document or the time of any sale of our common stock. Our business, financial condition, results of operations and prospects may have changed since those dates. It is important for you to read and consider all information contained or incorporated by reference in this prospectus supplement and the accompanying prospectus in making your investment decision. You should read both this prospectus supplement and the accompanying prospectus, as well as the documents incorporated by reference herein and therein, the additional information described under the section titled “Where You Can Find More Information” in this prospectus supplement and in the accompanying prospectus and any free writing prospectus that we have authorized for use in connection with this offering, before investing in our common stock.

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

Unless otherwise indicated or the context otherwise requires, references in this prospectus supplement, the accompanying prospectus and any free writing prospectus to “Assembly,” “we,” “our,” “us” and “the Company” refer, collectively, to Assembly Biosciences, Inc., a Delaware corporation, and its consolidated subsidiaries.

We use various trademarks and trade names in our business, including without limitation our corporate name and logo. All other trademarks or trade names referred to in this prospectus supplement

are the property of their respective owners. Solely for convenience, the trademarks and trade names in this prospectus supplement may be referred to without the ® and ™ symbols, but such references should not be construed as any indicator that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto. This prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein contain estimates, projections and other information concerning our industry, our business, and the markets for certain diseases, including data regarding the estimated size of those markets, and the incidence and prevalence of certain medical conditions. Information that is based on estimates, forecasts, projections, market research or similar methodologies is inherently subject to uncertainties and actual events or circumstances may differ materially from events and circumstances reflected in this information. Unless otherwise expressly stated, we obtained this industry, business, market and other data from reports, research surveys, studies and similar data prepared by market research firms and other third parties, industry, medical and general publications, government data and similar sources.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information about us and this offering and does not contain all of the information that you should consider before investing in our securities. Before investing in our common stock, you should carefully read the information contained and incorporated by reference in this prospectus supplement and the accompanying prospectus, including the sections titled “Risk Factors” and the financial statements and accompanying notes.

Our Company

We are a clinical stage biotechnology company advancing two innovative platform programs: a new class of oral therapeutic candidates for the treatment of hepatitis B virus (HBV) infection and a novel class of oral synthetic live biotherapeutic candidates, which are designed to treat disorders associated with the microbiome.

Over 250 million people worldwide are chronically infected with HBV. Our HBV-cure program is pursuing multiple drug candidates that inhibit the HBV lifecycle and block the generation of covalently closed circular DNA (cccDNA), with the aim of increasing the current low cure rate for patients with HBV. We have discovered several novel Core protein Allosteric Modifiers (CpAMs), which are small molecules that directly target and allosterically modulate the HBV core (HBc) protein. The lead product candidate from this program, ABI-H0731, was observed to be active in primary human hepatocytes and exhibited antiviral potency against all HBV genotypes tested (A, B, C and D) as well as nucleoside resistant mutants. ABI-H0731 has completed the Phase 1a portion of a Phase 1a/1b human clinical trial in New Zealand, and commenced the Phase 1b portion of the clinical trial in the second quarter of 2017 in New Zealand and other countries outside the United States. We expect topline interim data from the Phase 1b portion of the clinical trial in the first quarter of 2018 and full results in the first half of 2018. Assuming a successful Phase 1b monotherapy clinical trial, we expect to initiate a longer Phase 2a combination clinical trial in mid-2018 and have initial data in the second half of 2018. A larger Phase 2b combination clinical trial is anticipated for 2019. We have also successfully filed an Investigational New Drug application (IND) and have initiated an additional Phase 1a pharmacokinetic, safety and tolerability study of ABI-H0731 in the United States.

Our clinical strategy encompasses initial testing of CpAMs as a monotherapy, as required by regulatory agencies, to demonstrate their intrinsic antiviral activity and safety in healthy volunteers and patients. Thereafter, subsequent clinical trials in patients are anticipated to be in combination with other classes of HBV therapies. In the Phase 1a dose ranging portion of our Phase 1a/1b clinical trial of ABI-H0731 in New Zealand, we assessed the safety, tolerability and pharmacokinetics of ABI-H0731 in 48 healthy volunteers. In this clinical trial, single ascending doses between 100-1,000 mg per day were evaluated in addition to 7-day repeat dosing with 800 mg once daily as well as 800 mg twice daily. ABI-H0731 was reported to be well tolerated at all doses. No serious adverse events, no clinically significant adverse events, no withdrawals due to adverse events nor clinically significant changes in vital signs or electrocardiography findings were observed. Treatment emergent laboratory abnormalities were transient, minor and/or deemed not clinically significant. Treatment-related adverse events deemed by the clinical investigator to be possibly or probably related to the study drug included headaches and rashes, which were reported to be mild and transient and only observed at the highest doses. Pharmacokinetic data from the Phase 1a portion of the trial exhibited dose-dependent increases in plasma exposure levels, low subject-to-subject variability and a half-life supporting the potential for once daily dosing. ABI-H0731 was observed to be well absorbed and associated with plasma concentrations that we believe will be sufficient to suppress viral replication and cccDNA generation.

The Phase 1b portion of the clinical trial commenced in the second quarter of 2017 at sites outside the United States. The Phase 1b trial is intended to assess the safety, tolerability and pharmacokinetics, as well as antiviral efficacy of ABI-H0731 in patients with chronic HBV infection. We expect to commence a separate Phase 2a combination clinical trial in mid-2018 in combination with other approved therapies that will treat patients for several months. This Phase 2a clinical trial will assess safety over a prolonged treatment period and monitor surrogate markers of cccDNA. We expect to commence a larger Phase 2b combination clinical trial in 2019 that is intended to be registrational in nature and monitor both surrogate markers of cccDNA and sustained off-therapy antiviral responses in various patient populations.

We recently announced the selection of our second product candidate from this program, ABI-H2158, which is currently undergoing IND-enabling studies. ABI-H2158 is an internally discovered and developed drug product candidate. In preclinical studies, we observed increased potency of ABI-H2158 compared to ABI-H0731 while ABI-H2158 maintained a favorable pharmacokinetic profile. Pending the successful completion of IND enabling studies, this product candidate is expected to begin a Phase 1a human clinical trial in the second half of 2018. We anticipate the selection of a third CpAM product candidate from this program by the end of 2017 or the first quarter of 2018.

Our Microbiome program consists of a fully integrated platform that includes a disease targeted strain identification and selection process, methods for strain isolation and growth under current Good Manufacturing Practice (cGMP) conditions, and a patent pending delivery system that we call GEMICEL[®], which is designed to allow for targeted oral delivery of live biologic and conventional therapies to the lower gastrointestinal (GI) tract. In September 2017, we elected not to initiate a Phase 1b clinical trial of our initial product candidate, ABI-M101, in patients with *Clostridium difficile* infections (CDI) who have relapsed after two or three standard antibiotic regimens. We will continue to assess development activities with respect to ABI-M101 over the next twelve months. The Microbiome program is prioritizing efforts on optimizing our lead product candidates ABI-M201 (Ulcerative Colitis) and ABI-M301 (Crohn's Disease) in preparation for IND enabling studies. Using our microbiome platform, we are developing additional product candidates for other disease indications, including irritable bowel syndrome, non-alcoholic steatohepatitis, immuno-oncology and CDI, which indications we will develop either internally or in collaboration with partners.

On January 6, 2017, we entered into the Research, Development, Collaboration and License Agreement (the "Collaboration Agreement") with Allergan Pharmaceuticals International Limited ("Allergan") to develop and commercialize select microbiome gastrointestinal programs. Pursuant to the terms of the Collaboration Agreement, in connection with the closing of the transaction on February 10, 2017, Allergan paid us an upfront payment of \$50 million. Additionally, we are eligible to receive up to approximately \$630 million in payments related to seven development milestones and up to approximately \$2.15 billion in payments related to 12 commercial development and sales milestones in connection with the successful development and commercialization of licensed compounds for up to six different indications. We have agreed with Allergan to share development costs up to an aggregate of \$75 million through proof-of-concept (POC) studies on a $\frac{2}{3}$, $\frac{1}{3}$ basis, respectively, and Allergan has agreed to assume all post-POC development costs. Additionally, we have an option to co-promote the licensed programs in the United States and China, subject to certain conditions set forth in the Collaboration Agreement.

We currently have corporate and administrative offices in Carmel, Indiana and research facilities in Groton, Connecticut and San Francisco, California.

Corporate Information

Assembly Biosciences, Inc., formerly known as Ventrus BioSciences, Inc., was incorporated under the laws of the State of Delaware on October 7, 2005, originally under the name South Island BioSciences, Inc. Our executive offices are located at 11711 N. Meridian Street, Suite 310, Carmel, IN 46032 and our telephone number is (317) 210-9311. Our corporate website address is www.assemblybio.com. We do not incorporate the information contained on, or accessible through, our website in this prospectus supplement or the accompanying prospectus, and you should not consider it part of this prospectus supplement or the accompanying prospectus.

GEMICEL[®] is our trademark. This prospectus supplement, the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus may also contain trademarks and trade names that are the property of their respective owners.

THE OFFERING

Common stock offered by us	Shares of our common stock having an aggregate offering price of up to \$75,000,000
Common stock to be outstanding after this offering	Up to 21,592,829 shares (as more fully described in the notes following this table), assuming sales of 1,665,556 shares of our common stock in this offering at an offering price of \$45.03 per share, which was the last reported sale price of our common stock on the Nasdaq Capital Market on December 27, 2017. The actual number of shares issued will vary depending on the sales price under this offering.
Manner of offering	“At the market offering” that may be made from time to time through one or both of our sales agents, Jefferies LLC (“Jefferies”) and Cantor Fitzgerald & Co. (“Cantor Fitzgerald”). See “Plan of Distribution” on page S-11 of this prospectus supplement.
Use of Proceeds	Our management will retain broad discretion regarding the allocation and use of the net proceeds. We currently intend to use the net proceeds from this offering to fund clinical trials, nonclinical studies, research and development and for general corporate purposes. See “Use of Proceeds.”
Risk Factors	Investing in our securities involves risks. See “Risk Factors” on page S-4 of this prospectus supplement and under similar headings in the documents contained by reference herein, for a discussion of the factors you should carefully consider before deciding to invest in our common stock.
Nasdaq Capital Market symbol	“ASMB”

All information in this prospectus supplement relating to the number of shares of our common stock to be outstanding immediately after this offering is based on 19,927,273 shares of common stock outstanding, which is comprised of 17,385,773 shares of common stock outstanding as of September 30, 2017 and 2,541,500 shares of common stock issued in an underwritten offering that closed on November 6, 2017, and excludes:

- 4,859,680 shares of our common stock issuable upon exercise of stock options outstanding as of September 30, 2017 with a weighted-average exercise price of \$9.12 per share, of which 4,263,441 were granted under our equity incentive plans and 596,239 are outstanding under standalone nonqualified stock option agreements;
- 16,909 shares of common stock underlying warrants outstanding as of September 30, 2017, at a weighted-average exercise price of \$30.81 per share; and
- 1,221,231 shares of common stock available for future issuance under equity incentive plans as of September 30, 2017.

Unless otherwise stated, all information contained in this prospectus supplement reflects an assumed public offering price of \$45.03, which was the last reported sale price of our common stock on the Nasdaq Capital Market on December 27, 2017.

RISK FACTORS

Investing in our common stock involves a high degree of risk. Before making an investment decision, you should carefully consider the risks described below and in our Annual Report on Form 10-K for the year ended December 31, 2016 and our Quarterly Report on Form 10-Q for the period ended September 30, 2017, as well as any amendments thereto reflected in subsequent filings with the SEC, each of which are incorporated by reference in this prospectus supplement and the accompanying prospectus, and all of the other information into this prospectus supplement and the accompanying prospectus, including our financial statements and related notes incorporated by reference herein and therein. If any of these risks is realized, our business, financial condition, results of operations and prospects could be materially and adversely affected. In that event, the trading price of our common stock could decline and you could lose part or all of your investment. Additional risks and uncertainties that are not yet identified or that we currently believe to be immaterial may also materially harm our business, operating results and financial condition and could result in a complete loss of your investment.

Risks Related to This Offering and Our Common Stock

We have broad discretion in the use of the net proceeds from this offering and our existing cash and may not use them effectively.

Our management will have broad discretion in the application of the net proceeds from this offering, including for any of the purposes described in the section titled “Use of Proceeds,” as well as our existing cash, and you will be relying on the judgment of our management regarding such application. You will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. Our management might not apply the net proceeds or our existing cash in ways that ultimately increase the value of your investment. If we do not invest or apply the net proceeds from this offering or our existing cash in ways that enhance stockholder value, we may fail to achieve expected results, which could cause our stock price to decline. Pending their use, we may invest the net proceeds from this offering in short-term U.S. Treasury securities with insignificant rates of return. These investments may not yield a favorable return to our stockholders.

If you purchase our common stock in this offering, you will incur immediate and substantial dilution in the book value of your shares.

The offering price per share in this offering may exceed the net tangible book value per share of our common stock outstanding prior to this offering. Assuming that an aggregate of 1,665,556 shares of our common stock are sold at a price of \$45.03 per share, the last reported sale price of our common stock on the Nasdaq Capital Market on December 27, 2017, for aggregate gross proceeds of \$75.0 million, and after deducting commissions and estimated offering expenses payable by us, you will experience immediate dilution of \$38.42 per share, representing the difference between our as adjusted net tangible book value per share as of September 30, 2017 after giving effect to: (i) the issuance of 2,541,500 shares of common stock in an underwritten offering that closed on November 6, 2017 that resulted in net proceeds to us of \$64.8 million and (ii) this offering at the assumed offering price. The exercise of outstanding stock options and warrants will result in further dilution of your investment.

This dilution is due to the substantially lower price paid by some of our investors who purchased shares prior to this offering as compared to the price offered to the public in this offering and the exercise of stock options granted to our employees, directors and consultants. In addition, we have a significant number of stock options and warrants outstanding. The exercise of any of these outstanding options and warrants would result in additional dilution. As a result of the dilution to investors purchasing shares in this offering, investors may receive significantly less than the purchase price paid in this offering, if anything, in the event of our liquidation. Further, because we expect we will need to raise additional capital to fund our future activities, we may in the future sell substantial amounts of common stock or securities convertible into or exchangeable for common stock.

Future issuances of common stock or common stock-related securities, together with the exercise of outstanding options and warrants, if any, may result in further dilution. For a further description of the dilution that you will experience immediately after this offering, see the section titled “Dilution.”

Sales of a substantial number of shares of our common stock in the public market could cause our stock price to fall.

Sales of a substantial number of shares of our common stock in the public market or the perception that these sales might occur could depress the market price of our common stock and could impair our ability to raise capital through the sale of additional equity securities. We are unable to predict the effect that sales may have on the prevailing market price of our common stock. In addition, the sale of substantial amounts of our common stock could adversely impact its price. As of September 30, 2017 and giving effect to the issuance of 2,541,500 shares of common stock in an underwritten offering that closed on November 6, 2017, we had outstanding 19,927,273 shares of our common stock, options to purchase 4,859,680 shares of our common stock (of which 3,273,721 were exercisable as of that date) and warrants to purchase 16,909 shares of our common stock. The sale or the availability for sale of a large number of shares of our common stock in the public market could cause the price of our common stock to decline.

Because we have no current plans to pay cash dividends on our common stock for the foreseeable future, you may not receive any return on investment unless you sell your common stock for a price greater than that which you paid for it.

We intend to retain future earnings, if any, for future operations and expansion of our business and have no current plans to pay any cash dividends for the foreseeable future. The declaration, amount and payment of any future dividends on shares of common stock will be at the sole discretion of our Board of Directors. Our Board of Directors may take into account general and economic conditions, our financial condition and results of operations, our available cash and current and anticipated cash needs, capital requirements, contractual, legal, tax and regulatory restrictions, implications on the payment of dividends by us to our stockholders or by our subsidiaries to us and such other factors as our Board of Directors may deem relevant. In addition, our ability to pay dividends may be limited by covenants in connection with any indebtedness we or our subsidiaries incur. As a result, you may not receive any return on an investment in our common stock unless you sell our common stock for a price greater than that which you paid for it.

Our future ability to utilize our net operating loss carryforwards and certain other tax attributes may be limited.

As of December 31, 2016, we had potentially utilizable gross federal net operating loss carryforwards of approximately \$146.5 million, state net operating loss carry-forwards of approximately \$174.0 million and research and development credit carry forward of approximately \$4.0 million, all of which expire between 2027 and 2036. We have incurred substantial losses during our history and do not expect to become profitable in the near future and we may never achieve profitability. To the extent that we continue to generate taxable losses, unused losses will carry forward to offset future taxable income, if any, until such unused losses expire. Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an “ownership change,” generally defined as a greater than 50% change (by value) in its equity ownership over a three-year period, the corporation’s ability to use its pre-change net operating loss carryforwards (“NOLs”) and other pre-change tax attributes (such as research tax credits) to offset its post-change income or taxes may be limited. We may experience shifts in our stock ownership, including as a result of this offering, some of which are outside of our control. As a result, if we earn net taxable income, our ability to use our pre-change NOL carryforwards to offset U.S. federal taxable income may become subject to limitations, which could potentially result in increased future tax liability to us. In addition, at the state level, there may be periods during which the use of NOLs is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed.

The market price of our common stock may be adversely affected by market conditions affecting the stock markets in general, including price and trading fluctuations on the Nasdaq Capital Market.

Market conditions may result in volatility in the level of, and fluctuations in, market prices of stocks generally and, in turn, our common stock and sales of substantial amounts of our common stock in the market, in each case being unrelated or disproportionate to changes in our operating performance. Concerns over global stability and economic conditions in the United States and abroad have contributed to the extreme volatility of the markets which may have an effect on the market price of our common stock.

CAUTIONARY STATEMENT ON FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the information and documents incorporated by reference herein and therein, contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”), and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). Any statements about our expectations, beliefs, plans, objectives, assumptions or future events or performance are not historical facts and may be forward-looking. These statements are often, but are not always, made through the use of words or phrases such as “may,” “will,” “could,” “should,” “expects,” “intends,” “plans,” “anticipates,” “believes,” “estimates,” “predicts,” “projects,” “potential,” “continue” and similar expressions, or the negative of these terms, or similar expressions. Accordingly, these statements involve estimates, assumptions, risks and uncertainties that could cause actual results to differ materially from those expressed in them. Any forward-looking statements are qualified in their entirety by reference to the factors discussed throughout this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein, and in particular those factors referenced in the sections titled “Risk Factors.”

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

- the initiation, timing, progress and results of clinical trials and nonclinical studies, and our research and development programs;
- the clinical and therapeutic potential of our product candidates;
- our unproven approach to therapeutic intervention;
- our plans to develop and commercialize our product candidates;
- the potential benefits of our existing collaborations and our ability to establish and maintain collaborations, including with Allergan Pharmaceuticals International Limited;
- our ability to obtain additional funding;
- the timing or likelihood of regulatory filings and approvals for our product candidates;
- the implementation of our business model, strategic plans for our business, product candidates and technology;
- our commercialization, marketing and manufacturing capabilities and strategy;
- the rate and degree of market acceptance and clinical utility of our products;
- our ability to retain and recruit key personnel;
- our competitive position;
- our intellectual property position;
- developments and projections relating to our competitors and our industry; and
- our estimates regarding expenses, future revenue, capital requirements and needs for additional financing.

These forward-looking statements are neither promises nor guarantees of future performance. Due to a variety of risks and uncertainties, many of which are beyond our control, our actual results could differ materially from those indicated by these forward-looking statements, including, without limitation the risk factors and cautionary statements described in other documents that we file from time to time with the

SEC, specifically under “Item 1A: Risk Factors” and elsewhere in our most recent Annual Report on Form 10-K for the year ended December 31, 2016 and in our most recent Quarterly Report on Form 10-Q for the period ended September 30, 2017 and the section of this prospectus supplement and the accompanying prospectus titled “Risk Factors.”

The forward-looking statements in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference represent our views as of their respective dates. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we assume no obligation to update or revise any forward-looking statements except to the extent required by applicable law. You should, therefore, not rely on these forward-looking statements as representing our views as of any date subsequent to the dates on which they were made.

USE OF PROCEEDS

We may issue and sell shares of our common stock having aggregate sales proceeds of up to \$75.0 million from time to time. Because there is no minimum offering amount required as a condition to close this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time. There can be no assurance that we will sell any shares under or fully utilize our controlled equity sales agreements with each of Jefferies or Cantor Fitzgerald as a source of financing.

We currently intend to use the net proceeds of this offering to fund clinical trials, nonclinical studies, research and development and for general corporate purposes. The expected use of the net proceeds from this offering represents our intentions based upon our current plans and business conditions, which could change in the future as our plans and business conditions evolve. The amounts and timing of our actual expenditures depend on numerous factors, including the progress of our nonclinical development efforts, the ongoing status of and results from our clinical trials and other studies and any unforeseen cash needs. As a result, our management will have broad discretion in applying the net proceeds from this offering. Although we may use a portion of the net proceeds from this offering for the licensing or acquisition of, or the development of, additional product candidates, technologies, compounds, other assets or complementary businesses, we have no current understandings, agreements or commitments to do so. Pending application of the net proceeds as described above, we intend to invest the net proceeds in short-term U.S. Treasury securities with insignificant rates of return.

DILUTION

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

As of September 30, 2017 and giving effect to the issuance of 2,541,500 shares of common stock in an underwritten offering that closed on November 6, 2017 that resulted in net proceeds to us of \$64.8 million, we had net tangible book value of approximately \$70.3 million, or \$3.53 per share of our common stock, based upon 19,927,273 shares of our common stock outstanding as of that date. Historical net tangible book value per share is equal to our total tangible assets, less total liabilities, divided by the number of outstanding shares of our common stock. Dilution in net tangible book value per share represents the difference between the amount per share paid by purchasers of shares of common stock in this offering and the net tangible book value per share of our common stock immediately after this offering.

After giving effect to the sale of 1,665,556 shares of common stock in this offering at an assumed public offering price of \$45.03 per share, the last reported sale price of our common stock on the Nasdaq Capital Market on December 27, 2017, and after deducting underwriting discounts and commissions and estimated aggregate offering expenses payable by us and giving effect to the issuance of 2,541,500 shares of common stock in an underwritten offering that closed on November 6, 2017 that resulted in net proceeds to us of \$64.8 million, our as adjusted net tangible book value as of September 30, 2017 would have been approximately \$142.7 million, or approximately \$6.61 per share of common stock. This represents an immediate increase in as adjusted net tangible book value of \$3.08 per share to our existing stockholders and an immediate dilution of \$38.42 per share to investors participating in this offering at the public offering price.

Dilution per share to new investors is determined by subtracting net tangible book value per share after this offering from the public offering price per share paid by new investors. The following table illustrates this per share dilution to new investors:

Assumed public offering price per share	<u>\$45.03</u>
Historical net tangible book value per share as of September 30, 2017 giving effect to the issuance of 2,541,500 shares of common stock in an underwritten offering that closed on November 6, 2017	\$3.53
Increase in net tangible book value per share attributable to new investors	<u>3.08</u>
As adjusted net tangible book value per share after giving effect to this offering	<u>6.61</u>
Dilution per share to investors in this offering	<u>\$38.42</u>

The table above assumes for illustrative purposes that an aggregate of \$75.0 million in shares of our common stock are sold at a price of \$45.03 per share, the last reported sale price of our common stock on the Nasdaq Capital Market on December 27, 2017. The shares sold in this offering, if any, will be sold from time to time at various prices. An increase of \$1.00 per share in the price at which the shares are sold from the assumed offering price of \$45.03 per share shown in the table above, assuming all of our common stock in the aggregate amount of \$75.0 million is sold at that price, would increase our as adjusted net tangible book value per share after the offering to \$6.62 per share and would increase the dilution in net tangible book value per share to investors participating in this offering to \$39.41 per share, after deducting underwriting discounts and commissions and estimated aggregate offering expenses payable by us and giving effect to the issuance of 2,541,500 shares of common stock in an underwritten offering that closed on November 6, 2017 that resulted in net proceeds to us of \$64.8 million. A decrease of \$1.00 per share in the price at which the shares are sold from the assumed offering price of \$45.03 per share shown in the table above, assuming all of our common stock in the aggregate amount of \$75.0 million is sold at that price, would decrease our net tangible book value per share after the offering to \$6.60 per share and would decrease the dilution in net tangible book value per share to investors participating in this offering to \$37.43 per share, after deducting underwriting discounts and commissions and estimated aggregate offering expenses payable by us and giving effect to the issuance of 2,541,500 shares of common stock in an underwritten offering that closed on November 6, 2017 that resulted in net proceeds to us of \$64.8 million.

The information discussed above is illustrative only and will adjust based on the actual public offering price and other terms of this offering determined at pricing.

The table and discussion above is based on 19,927,273 shares of common stock outstanding, which is comprised of 17,385,773 shares of common stock outstanding as of September 30, 2017 and 2,541,500 shares of common stock issued in an underwritten offering that closed on November 6, 2017, and excludes:

- 4,859,680 shares of our common stock issuable upon exercise of stock options outstanding as of September 30, 2017 with a weighted-average exercise price of \$9.12 per share, of which 4,263,441 were granted under our equity incentive plans and 596,239 are outstanding under standalone nonqualified stock option agreements;
- 16,909 shares of common stock underlying warrants outstanding as of September 30, 2017, at a weighted-average exercise price of \$30.81 per share; and
- 1,221,231 shares of common stock available for future issuance under equity incentive plans.

To the extent that any options or warrants are exercised, new options are issued under our equity incentive plans, or we otherwise issue additional shares of common stock in the future (including shares issued in connection with acquisitions), there will be further dilution to new investors.

In addition, we may choose to raise additional capital due to market conditions or strategic considerations, even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

PLAN OF DISTRIBUTION

We have entered into Controlled Equity OfferingSM Sales Agreements, dated December 29, 2017 (the “Sales Agreements”), with each of Jefferies LLC (“Jefferies”) and Cantor Fitzgerald & Co. (“Cantor Fitzgerald”), under which we may offer and sell shares of our common stock having an aggregate gross sales price of up to \$75.0 million from time to time through one or both of Jefferies and Cantor Fitzgerald, acting as agents. Sales of the shares of common stock, if any, may be made on the Nasdaq Capital Market at market prices and such other sales as agreed upon by us and Jefferies or Cantor Fitzgerald. The Sales Agreements have been filed as an exhibit to our registration statement on Form S-3 of which this prospectus supplement forms a part.

Upon delivery of a placement notice and subject to the terms and conditions of the Sales Agreements, Jefferies and Cantor Fitzgerald may sell our common stock by any method permitted by law deemed to be an “at the market offering” as defined in Rule 415(a)(4) promulgated under the Securities Act. We may instruct Jefferies or Cantor Fitzgerald not to sell common stock if the sales cannot be effected at or above the price designated by us from time to time.

We will pay each of Jefferies and Cantor Fitzgerald commissions, in cash, for its services in acting as agent in the sale of our common stock. Jefferies and Cantor Fitzgerald will be entitled to compensation at a commission rate of up to 3% of the aggregate gross proceeds from each sale of our common stock under the respective Sales Agreement. Because there is no minimum offering amount required as a condition to close this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time. If so requested by Jefferies or Cantor Fitzgerald, and unless otherwise agreed, we will reimburse Jefferies and Cantor Fitzgerald for certain specified aggregate expenses, including the fees and disbursements of its legal counsel, in an amount not to exceed \$50,000. We estimate that the total expenses for the offering, excluding compensation and reimbursements payable to Jefferies and Cantor Fitzgerald under the terms of the Sales Agreements, will be approximately \$350,000.

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

Each of Jefferies and Cantor Fitzgerald will use its commercially reasonable efforts, consistent with its normal sales and trading practices and applicable state and federal laws, rules and regulations and the rules of the Nasdaq Capital Market, to solicit offers to purchase the common stock shares under the terms and subject to the conditions set forth in the Sales Agreements. In connection with the sale of the common stock on our behalf, Jefferies and Cantor Fitzgerald will be deemed to be an “underwriter” within the meaning of the Securities Act and the compensation of Jefferies and Cantor Fitzgerald will be deemed to be underwriting commissions or discounts. We or Jefferies or Cantor Fitzgerald may suspend the offering of shares of common stock under the respective Sales Agreement by notifying the other. We have agreed to provide indemnification and contribution to Jefferies and Cantor Fitzgerald against certain civil liabilities, including liabilities under the Securities Act.

The offering of our common stock pursuant to the Sales Agreements will terminate upon the termination of the Sales Agreements as permitted therein. We and Jefferies and Cantor Fitzgerald may each terminate the respective Sales Agreement at any time upon ten days’ prior notice.

Each of Jefferies and Cantor Fitzgerald and its respective affiliates may in the future provide various investment banking, commercial banking and other financial services for us and our affiliates, for which services they may in the future receive customary fees. To the extent required by Regulation M, Jefferies and Cantor Fitzgerald will not engage in any market making activities involving our common stock while the offering is ongoing under this prospectus supplement.

This prospectus supplement in electronic format may be made available on a website maintained by Jefferies and Cantor Fitzgerald, and Jefferies and Cantor Fitzgerald may distribute this prospectus supplement electronically.

LEGAL MATTERS

Certain legal matters in connection with the offering and the validity of the securities offered by this prospectus supplement will be passed upon for us by Goodwin Procter LLP, Boston, MA. Certain legal matters will be passed upon for the sales agents by Latham & Watkins LLP, Chicago, IL.

EXPERTS

The consolidated financial statements of Assembly Biosciences, Inc. incorporated by reference in Assembly Biosciences, Inc.'s Annual Report (Form 10-K) for the years ended December 31, 2016 and 2015 and the effectiveness of Assembly Biosciences, Inc.'s internal control over financial reporting as of December 31, 2016 have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their reports thereon, included therein, and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such reports given on the authority of such firm as experts in accounting and auditing.

The consolidated statements of operations, stockholders' equity, and cash flows of Assembly Biosciences, Inc. for the year ended December 31, 2014 have been audited by EisnerAmper LLP, independent registered public accounting firm, as stated in their report thereon which is incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance on the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the common stock offered by this prospectus supplement. This prospectus supplement, filed as part of the registration statement, does not contain all the information set forth in the registration statement and its exhibits and schedules, portions of which have been omitted as permitted by the rules and regulations of the SEC. For further information about us, we refer you to the registration statement and to its exhibits and schedules.

Statements contained in this prospectus supplement or the accompanying prospectus concerning the contents of any contract or any other document are not necessarily complete. If a contract or document has been filed as an exhibit to the registration statement, we refer you to the copy of the contract or document that has been filed. Each statement in this prospectus supplement or the accompanying prospectus relating to a contract or document filed as an exhibit is qualified in all respects by the filed exhibit. The reports and other information we file with the SEC can be read and copied at the SEC's Public Reference Room at 100 F Street, NE, Washington D.C. 20549. You may obtain information regarding the operation of the Public Reference Room by calling 1-(800) SEC-0330. The SEC also maintains a web site (<http://www.sec.gov>) that contains reports, proxy and information statements and other information regarding issuers like us that file electronically with the SEC.

We are subject to the reporting and information requirements of the Exchange Act and, as a result, we file periodic reports, proxy statements and other information with the SEC. These periodic reports, proxy statements and other information will be available for inspection and copying at the SEC's public reference room and the web site of the SEC referred to above. Copies of certain information filed by us with the SEC are also available on our website at www.assemblybio.com. Information contained on our website is not incorporated by reference in this prospectus supplement or the accompanying prospectus and, therefore, is not part of this prospectus supplement or the accompanying prospectus.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to incorporate by reference the information and reports we file with it, which means that we can disclose important information to you by referring you to these documents. The information incorporated by reference is an important part of this prospectus supplement and the accompanying prospectus, and information that we file later with the SEC will automatically update and supersede the information already incorporated by reference. We are incorporating by reference the documents listed below, which we have already filed with the SEC, and any future filings we make with the SEC under

Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, including all filings made after the date of the filing of this prospectus supplement, except as to any portion of any future report or document that is not deemed filed under such provisions, after the date of this prospectus supplement and prior to the termination of this offering:

- Our Annual Report on Form 10-K for the year ended December 31, 2016, filed with the SEC on March 2, 2017;
- The information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2016 from our definitive proxy statement on Schedule 14A (except for information contained therein that is furnished rather than filed), filed with the SEC on April 21, 2017;
- Our Quarterly Reports on Form 10-Q for the fiscal quarters ended March 31, 2017, June 30, 2017 and September 30, 2017, filed with the SEC on May 8, 2017, August 9, 2017 and November 1, 2017, respectively;
- Our Current Reports on Form 8-K filed with the SEC on January 10, 2017 (except for information contained therein that is furnished rather than filed), June 2, 2017 (as amended on June 14, 2017), October 12, 2017, November 6, 2017, December 12, 2017 and December 18, 2017; and
- The description of our common stock contained in our registration statement on Form 8-A (Registration No. 001-35005) filed with the SEC on December 10, 2010, including any amendments thereto or reports filed for the purpose of updating such description.

We incorporate by reference any future filings made with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act between the date of this prospectus supplement and the termination of the offering.

Notwithstanding the foregoing, unless specifically stated to the contrary, information that we furnish (and that is not deemed “filed” with the SEC) under Items 2.02 and 7.01 of any Current Report on Form 8-K, including the related exhibits under Item 9.01, is not incorporated by reference into this prospectus supplement, the accompanying prospectus or the registration statement of which this prospectus supplement and the accompanying prospectus are a part.

Any statement contained in a document that is incorporated by reference will be modified or superseded for all purposes to the extent that a statement contained in this prospectus supplement or the accompanying prospectus, or in any other document that is subsequently filed with the SEC and incorporated by reference into this prospectus supplement or the accompanying prospectus, modifies or is contrary to that previous statement. Any statement so modified or superseded will not be deemed a part of this prospectus supplement or the accompanying prospectus, except as so modified or superseded. Since information that we later file with the SEC will update and supersede previously incorporated information, you should look at all of the SEC filings that we incorporate by reference to determine if any of the statements in this prospectus supplement, the accompanying prospectus or in any documents previously incorporated by reference have been modified or superseded.

Upon request, we will provide, without charge, to each person, including any beneficial owner, to whom a copy of this prospectus is delivered, a copy of the documents incorporated by reference into this prospectus but not delivered with the prospectus. You may request a copy of these filings, and any exhibits we have specifically incorporated by reference as an exhibit in this prospectus, at no cost by writing or telephoning us at the following address:

Assembly Biosciences, Inc.
11711 N. Meridian Street, Suite 310
Carmel, Indiana 46032
Attention: Corporate Secretary
(317) 210-9311.

You may also access these documents, free of charge on the SEC’s website at <http://www.sec.gov> or on our website at www.assemblybio.com. Information contained on our website is not incorporated by reference in this prospectus, and you should not consider any information on, or that can be accessed from, our website as part of this prospectus or any accompanying prospectus supplement.

This prospectus supplement is part of a registration statement we filed with the SEC. We have incorporated exhibits into this registration statement. You should read the exhibits carefully for provisions that may be important to you.

You should rely only on the information contained or incorporated by reference in this prospectus or any prospectus supplement. We have not authorized anyone to provide you with different information. We are not making an offer of these securities in any state where the offer is not permitted. You should not assume that the information in this prospectus or in the documents incorporated by reference is accurate as of any date other than the date on the front of this prospectus or those documents.



Up to \$75,000,000

Common Stock

PROSPECTUS SUPPLEMENT

Jefferies

Cantor Fitzgerald

Part II — INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution

The expenses payable by Assembly Biosciences, Inc. (the “Registrant” or the “Company”) in connection with the issuance and distribution of the securities being registered (other than underwriting discounts and commissions, if any) are set forth below. Each item listed is estimated, except for the Securities and Exchange Commission (the “SEC”) registration fee.

Securities and Exchange Commission registration fee	\$31,125
FINRA filing fee	*
Legal fees and expenses	*
Accounting fees and expenses	*
Printing fees and expenses	*
Transfer agent and trustee fees	*
Miscellaneous	*
Total	\$31,125

* Estimated expenses not presently known

Item 15. Indemnification of Directors and Officers

Section 145 of the Delaware General Corporation Law (the “DGCL”), permits a corporation, under specified circumstances, to indemnify its directors, officers, employees or agents against expenses (including attorneys’ fees), judgments, fines and amounts paid in settlements actually and reasonably incurred by them in connection with any action, suit or proceeding brought by third parties by reason of the fact that they were or are directors, officers, employees or agents of the corporation, if such directors, officers, employees or agents acted in good faith and in a manner they reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action or proceeding, had no reason to believe their conduct was unlawful. In a derivative action, that is one by or in the right of the corporation, indemnification may be made only for expenses actually and reasonably incurred by directors, officers, employees or agents in connection with the defense or settlement of an action or suit, and only with respect to a matter as to which they will have acted in good faith and in a manner they reasonably believed to be in or not opposed to the best interests of the corporation, except that no indemnification will be made if such person will have been adjudged liable to the corporation, unless and only to the extent that the court in which the action or suit was brought will determine upon application that the defendant directors, officers, employees or agents are fairly and reasonably entitled to indemnity for such expenses despite such adjudication of liability.

Our Third Amended and Restated Certificate of Incorporation, as amended, provides that no director will be personally liable to our company or our stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (i) for any breach of the director’s duty of loyalty to our company or our stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the DGCL, or (iv) for any transaction from which the director derived any improper personal benefit. Our Amended and Restated Bylaws provide that we will generally indemnify our directors, officers, employees or agents to the fullest extent permitted by the law against all losses, claims, damages or similar events. We have obtained liability insurance for each director and officer for certain losses arising from claims or charges made against them while acting in their capacities as directors or officers of our company. Any underwriting agreement(s) that we may enter into may provide for indemnification by any underwriters of us, our directors, our officers who sign the registration statement and our controlling persons for some liabilities, including liabilities arising under the Securities Act.

Item 16. Exhibits

The following exhibits are filed as a part of this registration statement:

Exhibit No.	Description
1.1*	Form of Underwriting Agreement
1.2	Sales Agreement, dated December 29, 2017, by and between the Registrant and Jefferies LLC
1.3	Sales Agreement, dated December 29, 2017, by and between the Registrant and Cantor Fitzgerald & Co.
3.1	Third Amended and Restated Certificate of Incorporation of the Registrant (incorporated by reference to Exhibit 3.1 of the Registrant's Registration Statement on Form S-1/A (File No. 333-168224) filed on November 16, 2010) and amendment thereto (incorporated by reference to Exhibit 3.1 of the Registrant's Form 8-K filed on July 14, 2014)
3.2	Amended and Restated Bylaws of the Registrant (incorporated by reference to Exhibit 3.2 of the Registrant's Registration Statement on Form S-1 (File No. 333-168224) filed on July 20, 2010)
4.1	Specimen Common Stock Certificate (incorporated by reference to Exhibit 4.1 of the Registrant's Registration Statement on Form S-3 (File No. 333-208806) filed on December 30, 2015)
4.2	Form of indenture for senior debt securities and the related form of senior debt security
4.3	Form of indenture for subordinated debt securities and the related form of subordinated debt security
4.4*	Form of Certificate of Designations
4.5*	Form of Warrant Agreements
4.6*	Form of Unit Certificate
4.7*	Form of Preferred Stock Certificate
5.1	Opinion of Goodwin Procter LLP
5.2	Opinion of Goodwin Procter LLP
12.1*	Computation of Ratio of Earnings to Fixed Charges
23.1	Consent of Ernst & Young LLP
23.2	Consent of EisnerAmper LLP
23.3	Consent of Goodwin Procter LLP (included in Exhibit 5.1 hereto)
23.4	Consent of Goodwin Procter LLP (included in Exhibit 5.2 hereto)
24.1	Power of Attorney (included on the signature pages to this registration statement)
25.1**	Form T-1 Statement of Eligibility of Trustee for Senior Indenture under the Trust Indenture Act of 1939
25.2**	Form T-1 Statement of Eligibility of Trustee for Subordinated Indenture under the Trust Indenture Act of 1939

* To be filed if necessary by amendment or as an exhibit to a document to be incorporated or deemed to be incorporated by reference in this registration statement, including a Current Report on Form 8-K.

** To be filed by amendment pursuant to Section 305(b)(2) of the Trust Indenture Act of 1939.

Item 17. Undertakings

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 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 Securities and Exchange Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% 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) of this section 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 Securities and Exchange Commission 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 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) 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

(ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement

will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date;

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities:

The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser;

(6) 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;

(7) 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 Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933 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;

(8) That, for purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act of 1933 shall be deemed to be part of this registration statement as of the time it was declared effective;

(9) That, for the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof; and

(10) 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 Securities and Exchange Commission 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 Carmel, Indiana, on this 29th day of December, 2017.

ASSEMBLY BIOSCIENCES, INC.

By: /s/ Derek A. Small

 Derek A. Small
President and Chief Executive Officer

KNOW ALL BY THESE PRESENTS, that each person whose signature appears below hereby severally constitutes and appoints each of Derek A. Small and David J. Barrett, and each of them singly, as such person's true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for such person and in such person's name, place and stead, in any and all capacities, to sign any or all amendments (including, without limitation, post-effective amendments) to this registration statement (or any registration statement for the same offering that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933), and to file the same, with all exhibits thereto, and all documents in connection therewith, with the Securities and Exchange Commission, granting unto each said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as such person might or could do in person, hereby ratifying and confirming all that any said attorney-in-fact and agent, or any substitute or substitutes of any of them, 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
_____ /s/ Derek A. Small Derek A. Small	President, Chief Executive Officer and Director (Principal Executive Officer)	December 29, 2017
_____ /s/ David J. Barrett David J. Barrett	Chief Financial Officer and Chief Operating Officer (Principal Financial and Accounting Officer)	December 29, 2017
_____ /s/ Anthony E. Altig Anthony E. Altig	Director	December 29, 2017
_____ /s/ Mark Auerbach Mark Auerbach	Director	December 29, 2017
_____ /s/ Richard DiMarchi Richard DiMarchi	Director	December 29, 2017
_____ /s/ Myron Z. Holubiak Myron Z. Holubiak	Director	December 29, 2017
_____ /s/ Alan Lewis Alan Lewis	Director	December 29, 2017
_____ Susan Mahony	Director	
_____ /s/ William R. Ringo, Jr. William R. Ringo, Jr.	Director	December 29, 2017

Assembly Biosciences, Inc.
Up to \$75,000,000 of
Shares of Common Stock
(par value \$0.001 per share)

Controlled Equity OfferingSM

Sales Agreement

December 29, 2017

Jefferies LLC
520 Madison Avenue
New York, NY 10022

Ladies and Gentlemen:

Assembly Biosciences, Inc., a Delaware corporation (the "**Company**"), confirms its agreement (this "**Agreement**") with Jefferies LLC (the "**Agent**"), as follows:

1. **Issuance and Sale of Shares.** The Company agrees that, from time to time during the term of this Agreement, on the terms and subject to the conditions set forth herein, it may issue and sell through the Agent, up to \$75,000,000 of shares of common stock (the "**Placement Shares**") of the Company, par value \$0.001 per share (the "**Common Stock**"); *provided, however*, that in no event shall the Company issue or sell through the Agent such number or dollar amount of Placement Shares that would (a) exceed the number or dollar amount of shares of Common Stock registered on the effective Registration Statement (as defined below) pursuant to which the offering is being made, (b) exceed the number of authorized but unissued shares of Common Stock, (c) exceed the number or dollar amount of shares of Common Stock permitted to be sold under Form S-3 (including General Instruction I.B.6 thereof, if applicable) or (d) exceed the number or dollar amount of shares of Common Stock for which the Company has filed a Prospectus Supplement (as defined below) (the lesser of (a), (b), (c) and (d), the "**Maximum Amount**"). Notwithstanding anything to the contrary contained herein, the parties hereto agree that compliance with the limitations set forth in this **Section 1** on the amount of Placement Shares issued and sold under this Agreement shall be the sole responsibility of the Company and that the Agent shall have no obligation in connection with such compliance. The issuance and sale of Placement Shares through the Agent will be effected pursuant to the Registration Statement (as defined below) filed by the Company and which will be declared effective by the Securities and Exchange Commission (the "**Commission**"), although nothing in this Agreement shall be construed as requiring the Company to use the Registration Statement to issue Common Stock.

The Company has also entered into a sales agreement (the "**Alternative Sales Agreement**") of even date herewith with Cantor Fitzgerald & Co. (the "**Alternative Agent**") for the issuance and sale from time to time to or through the Alternative Agent of the Placement Shares on the terms set forth in the Alternative Sales Agreement. The Agent and the Alternative Agent are collectively referred to herein as the "**Agents**." This Agreement and the Alternative Sales Agreement are collectively referred to herein as the "**Sales Agreements**."

The Company has filed or will file, in accordance with the provisions of the Securities Act of 1933, as amended (the “**Securities Act**”), and the rules and regulations thereunder (the “**Securities Act Regulations**”), with the Commission a registration statement on Form S-3, including a base prospectus, relating to certain securities, including the Placement Shares to be issued from time to time by the Company, and which incorporates by reference documents that the Company has filed or will file in accordance with the provisions of the Securities Exchange Act of 1934, as amended (the “**Exchange Act**”), and the rules and regulations thereunder. The Company has prepared a prospectus or a prospectus supplement to the base prospectus included as part of the registration statement, which prospectus or prospectus supplement relates to the Placement Shares to be issued from time to time by the Company (the “**Prospectus Supplement**”). The Company will furnish to the Agent, for use by the Agent, copies of the prospectus included as part of such registration statement, as supplemented, by the Prospectus Supplement, relating to the Placement Shares to be issued from time to time by the Company. The Company may file one or more additional registration statements from time to time that will contain a base prospectus and related prospectus or prospectus supplement, if applicable (which shall be a Prospectus Supplement), with respect to the Placement Shares. Except where the context otherwise requires, such registration statement(s), including all documents filed as part thereof or incorporated by reference therein, and including any information contained in a Prospectus (as defined below) subsequently filed with the Commission pursuant to Rule 424(b) under the Securities Act Regulations or deemed to be a part of such registration statement pursuant to Rule 430B of the Securities Act Regulations, is herein called the “**Registration Statement**.” The base prospectus or base prospectuses, including all documents incorporated therein by reference, included in the Registration Statement, as it may be supplemented, if necessary, by the Prospectus Supplement, in the form in which such prospectus or prospectuses and/or Prospectus Supplement have most recently been filed by the Company with the Commission pursuant to Rule 424(b) under the Securities Act Regulations, together with the then issued Issuer Free Writing Prospectus(es) (as defined below), is herein called the “**Prospectus**.”

Any reference herein to the Registration Statement, any Prospectus Supplement, Prospectus or any Issuer Free Writing Prospectus shall be deemed to refer to and include the documents, if any, incorporated by reference therein (the “**Incorporated Documents**”), including, unless the context otherwise requires, the documents, if any, filed as exhibits to such Incorporated Documents. Any reference herein to the terms “amend,” “amendment” or “supplement” with respect to the Registration Statement, any Prospectus Supplement, the Prospectus or any Issuer Free Writing Prospectus shall be deemed to refer to and include the filing of any document under the Exchange Act on or after the most-recent effective date of the Registration Statement, or the date of the Prospectus Supplement, Prospectus or such Issuer Free Writing Prospectus, as the case may be, and incorporated therein by reference. For purposes of this Agreement, all references to the Registration Statement, the Prospectus or to any amendment or supplement thereto shall be deemed to include the most recent copy filed with the Commission pursuant to its Electronic Data Gathering Analysis and Retrieval system, or if applicable, the Interactive Data Electronic Application system when used by the Commission (collectively, “**EDGAR**”).

2. **Placements.** Each time that the Company, in its sole discretion, wishes to issue and sell Placement Shares hereunder (each, a “**Placement**”), it will notify the Agent by email notice (or other method mutually agreed to in writing by the parties) of the number of Placement Shares to be issued, the time period during which sales are requested to be made, any limitation on the number of Placement Shares that may be sold in any one day and any minimum price below which sales may not be made (a “**Placement Notice**”), the form of which is attached hereto as Schedule 1. The Placement Notice shall originate from any of the individuals from the Company set forth on Schedule 3 (with a copy to each of the other individuals from the Company listed on such schedule), and shall be addressed to each of the individuals from the Agent set forth on Schedule 3, as such Schedule 3 may be amended from time to time (including by email correspondence). The Placement Notice shall be effective unless and until (i) the Agent declines to accept the terms contained therein for any reason, in its sole discretion, which declination must occur within two (2) business days of the receipt of the Placement Notice, (ii) the entire amount of the Placement Shares thereunder have been sold, (iii) the Company suspends or terminates the Placement Notice or (iv) this Agreement has been terminated under the provisions of Section 12. The amount of any discount, commission or other compensation to be paid by the Company to the Agent in connection with the sale of the Placement Shares shall be calculated in accordance with the terms set forth in Schedule 2. It is expressly acknowledged and agreed that neither the Company nor the Agent will have any obligation whatsoever with respect to a Placement or any Placement Shares unless and until the Company delivers a Placement Notice to the Agent and the Agent does not decline such Placement Notice pursuant to the terms set forth above, and then only upon the terms specified therein and herein. In the event of a conflict between the terms of this Agreement and the terms of a Placement Notice, the terms of the Placement Notice will control; provided that in no event shall the sale of Placement Shares in accordance with such Placement Notice exceed the Maximum Amount.

3. **Sale of Placement Shares by the Agent.** Subject to the provisions of Section 5(a), the Agent, for the period specified in the Placement Notice, will use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of the Nasdaq Capital Market (the “**Exchange**”), to sell the Placement Shares up to the amount specified, and otherwise in accordance with the terms of such Placement Notice. The Agent will provide written confirmation to the Company no later than the opening of the Trading Day (as defined below) immediately following the Trading Day on which it has made sales of Placement Shares hereunder setting forth the number of Placement Shares sold on such day, the compensation payable by the Company to the Agent pursuant to Section 2 with respect to such sales, and the Net Proceeds (as defined below) payable to the Company, with an itemization of the deductions made by the Agent (as set forth in Section 5(b)) from the gross proceeds that it receives from such sales. Subject to the terms of the Placement Notice, the Agent may sell Placement Shares by any method permitted by law deemed to be an “at the market offering” as defined in Rule 415(a)(4) of the Securities Act Regulations, including sales made directly on or through the Exchange or any other existing trading market for the Common Stock, in negotiated transactions at market prices prevailing at the time of sale or at prices related to such prevailing market prices and/or any other method permitted by law. “**Trading Day**” means any day on which Common Stock is traded on the Exchange.

While a Placement Notice is in effect, neither the Agent nor any of its subsidiaries shall engage in (i) any short sale of any security of the Company, as defined in Regulation SHO or (ii) any market making bidding, stabilization or other trading activity with regard to the Common Stock or related derivative securities, in each case, if such activity would be prohibited under Regulation M or other anti-manipulation rules under the Securities Act.

4. Suspension of Sales.

(a) Suspension by Company or the Agent. The Company or the Agent may, upon notice to the other party in writing (including by email correspondence to each of the individuals of the other party set forth on Schedule 3, if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply) or by telephone (confirmed immediately by verifiable facsimile transmission or email correspondence to each of the individuals of the other party set forth on Schedule 3), suspend any sale of Placement Shares (a "**Suspension**"); *provided, however*, that such Suspension shall not affect or impair any party's obligations with respect to any Placement Shares sold hereunder prior to the receipt of such notice. While a Suspension is in effect any obligation under Sections 7(l), 7(m), and 7(n) with respect to the delivery of certificates, opinions, or comfort letters to the Agent, shall be waived. Each of the parties agrees that no such notice under this Section 4 shall be effective against any other party unless it is made to and acknowledged by one of the individuals named on Schedule 3 hereto, as such Schedule may be amended from time to time.

(b) Material Non-Public Information. Notwithstanding any other provision of this Agreement, the Company shall not offer or sell, or request the offer or sale of, any of the Placement Shares and, by notice to the Agent in writing (including by email correspondence to each of the individuals of the Agent set forth on Schedule 3 if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply) or by telephone (confirmed immediately by verifiable facsimile transmission or email correspondence to each of the individuals of the Agent set forth on Schedule 3), shall cancel any instructions then in effect for the offer or sale of any of the Placement Shares, and the Agent shall not be obligated to offer or sell any of the Placement Shares, during any period in which the Company is in possession of material non-public information.

5. Sale and Delivery to the Agent; Settlement.

(a) Sale of Placement Shares. On the basis of the representations and warranties herein contained and subject to the terms and conditions herein set forth, upon the Agent's acceptance of the terms of a Placement Notice, and unless the sale of the Placement Shares described therein has been declined, suspended, or otherwise terminated in accordance with the terms of this Agreement, the Agent, for the period specified in the Placement Notice, will use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable law and regulations to sell such Placement Shares up to the amount specified, and otherwise in accordance with the terms of such Placement Notice. The Company acknowledges and agrees that (i) there can be no assurance that the Agent will be successful in selling Placement Shares, (ii) the Agent will incur no liability or obligation to the Company or any other person or entity if it does not sell Placement Shares for any reason other than a failure by the Agent to use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable law and regulations to sell such Placement Shares as required under this Agreement and (iii) the Agent shall be under no obligation to purchase Placement Shares on a principal basis pursuant to this Agreement, except as otherwise agreed by the Agent and the Company.

(b) Settlement of Placement Shares. Unless otherwise specified in the applicable Placement Notice, settlement for sales of Placement Shares will occur on the second (2nd) Trading Day (or such earlier day as is industry practice for regular-way trading) following the date on which such sales are made (each, a “**Settlement Date**”). The Agent shall notify the Company of each sale of Placement Shares no later than the opening of the Trading Day immediately following the Trading Day on which it has made sales of Placement Shares hereunder. The amount of proceeds to be delivered to the Company on a Settlement Date against receipt of the Placement Shares sold (the “**Net Proceeds**”) will be equal to the aggregate sales price received by the Agent, after deduction for (i) the Agent’s commission, discount or other compensation for such sales payable by the Company pursuant to Section 2 hereof, and (ii) any transaction fees imposed by any governmental or self-regulatory organization in respect of such sales.

(c) Delivery of Placement Shares. On or before each Settlement Date, the Company will, or will cause its transfer agent to, electronically transfer the Placement Shares being sold by crediting the Agent’s or its designee’s account (provided the Agent shall have given the Company written notice of such designee at least one Trading Day prior to the Settlement Date) at The Depository Trust Company through its Deposit and Withdrawal at Custodian System or by such other means of delivery as may be mutually agreed upon by the parties hereto which in all cases shall be freely tradable, transferable, registered shares in good deliverable form. On each Settlement Date, the Agent will deliver the related Net Proceeds in same day funds to an account designated by the Company on, or prior to, the Settlement Date. The Company agrees that if the Company, or its transfer agent (if applicable), defaults in its obligation to deliver Placement Shares on a Settlement Date, the Company agrees that in addition to and in no way limiting the rights and obligations set forth in Section 10(a) hereto, the Company will (i) hold the Agent harmless against any loss, claim, damage, or expense (including reasonable legal fees and expenses), as incurred, arising out of or in connection with such default by the Company or its transfer agent (if applicable) and (ii) pay to the Agent any commission, discount, or other compensation to which it would otherwise have been entitled absent such default.

(d) One Agent. The Company agrees that any offer to sell Placement Shares, any solicitation of an offer to buy Placement Shares, or any sales of Placement Shares shall only be effected by or through only one of the Agents on any single given day and the Company shall in no event request that both the Agent and the Alternative Agent offer or sell Shares on the same day.

(e) Limitations on Offering Size. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares if, after giving effect to the sale of such Placement Shares, the aggregate gross sales proceeds of Placement Shares sold pursuant to the Sales Agreements would exceed the lesser of (A) together with all sales of Placement Shares under the Sales Agreements, the Maximum Amount, (B) the amount available for offer and sale under the currently effective Registration Statement and (C) the amount authorized from time to time to be issued and sold under the Sales Agreements by the Company’s board of directors, a duly authorized committee thereof or a duly authorized executive committee, and notified to the Agent in writing. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares pursuant to the Sales Agreements at a price lower than the minimum price authorized from time to time by the Company’s board of directors, a duly authorized committee thereof or a duly authorized executive committee. Further, under no circumstances shall the Company cause or permit the aggregate offering amount of Placement Shares sold pursuant to this Agreement to exceed the Maximum Amount.

6. Representations and Warranties of the Company. The Company represents and warrants to, and agrees with the Agent that as of the date of this Agreement and as of each Applicable Time (as defined below), unless such representation, warranty or agreement specifies a different time:

(a) Registration Statement and Prospectus. The Registration Statement has or will be filed with the Commission not earlier than three years prior to the date hereof and will be declared effective by the Commission under the Securities Act prior to the issuance of any Placement Notices by the Company; and no notice of objection of the Commission to the use of such registration statement or any post-effective amendment thereto pursuant to Rule 401(g)(2) under the Securities Act has been received by the Company. The Registration Statement and the offer and sale of Placement Shares as contemplated hereby meet the requirements of Rule 415 under the Securities Act and comply in all material respects with said Rule. No order suspending the effectiveness of the Registration Statement has been issued by the Commission, and no proceeding for that purpose or pursuant to Section 8A of the Securities Act against the Company or related to the offering of the Placement Shares has been initiated or threatened by the Commission; as of the applicable effective date of the Registration Statement and any post-effective amendment thereto, the Registration Statement and any such post-effective amendment complied and will comply in all material respects with the Securities Act, and did not and will not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein not misleading; and as of the date of the Prospectus and any amendment or supplement thereto and as of the Closing Date and as of the Additional Closing Date, as the case may be, the Prospectus complied and will comply in all material respects with the Securities Act and will not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided that the Company makes no representation or warranty with respect to any statements or omissions made in reliance upon and in conformity with information relating to the Agent furnished to the Company in writing by such Agent expressly for use in the Registration Statement and the Prospectus and any amendment or supplement thereto, it being understood and agreed that the only such information furnished by any Agent consists of the information described as such in Section 11(b) hereof. The Company has not distributed and, prior to the later to occur of each Settlement Date and completion of the distribution of the Placement Shares, will not distribute any offering material in connection with the offering or sale of the Placement Shares other than the Registration Statement and the Prospectus and any Issuer Free Writing Prospectus (as defined below) to which the Agent has consented.

(b) Incorporated Documents. The Incorporated Documents, when they were filed with the Commission conformed in all material respects to the requirements of the Exchange Act, and none of such documents contained any untrue statement of a material fact or omitted to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(c) Financial Statements. The financial statements (including the related notes thereto) of the Company and its consolidated subsidiaries included or incorporated by reference in the Registration Statement, the Prospectus and the Issuer Free Writing Prospectuses, if any, comply in all material respects with the applicable requirements of the Securities Act and the Exchange Act, as applicable, and present fairly the financial position of the Company and its consolidated subsidiaries as of the dates indicated and the results of their operations and the changes in their cash flows for the periods specified; such financial statements have been prepared in conformity with generally accepted accounting principles (“**GAAP**”) in the United States applied on a consistent basis throughout the periods covered thereby, and any supporting schedules included or incorporated by reference in the Registration Statement present fairly the information required to be stated therein; and the other financial information included or incorporated by reference in the Registration Statement and the Prospectus has been derived from the accounting records of the Company and its consolidated subsidiaries and presents fairly the information shown thereby.

(d) No Material Adverse Change. Since the date of the most recent financial statements of the Company included or incorporated by reference in the Registration Statement, the Prospectus and the Issuer Free Writing Prospectuses, if any, (i) there has not been any change in the capital stock (other than the issuance of shares of Common Stock upon exercise of stock options and warrants described as outstanding in, and the grant of options and awards under existing equity incentive plans described in, the Registration Statement, the Prospectus and the Issuer Free Writing Prospectuses, if any), short-term debt or long-term debt of the Company or any of its subsidiaries, or any dividend or distribution of any kind declared, set aside for payment, paid or made by the Company on any class of capital stock, or any material adverse change, or any development involving a prospective material adverse change, in or affecting the business, properties, management, financial position, stockholders’ equity or results of operations of the Company and its subsidiaries taken as a whole; (ii) neither the Company nor any of its subsidiaries has entered into any transaction or agreement (whether or not in the ordinary course of business) that is material to the Company and its subsidiaries taken as a whole or incurred any liability or obligation, direct or contingent, that is material to the Company and its subsidiaries taken as a whole; and (iii) neither the Company nor any of its subsidiaries has sustained any loss or interference with its business that is material to the Company and its subsidiaries taken as a whole and that is either from fire, explosion, flood or other calamity, whether or not covered by insurance, or from any labor disturbance or dispute or any action, order or decree of any court or arbitrator or governmental or regulatory authority, except in each case as otherwise disclosed in the Registration Statement, the Prospectus and the Issuer Free Writing Prospectuses, if any.

(e) Organization and Good Standing. The Company has been duly organized and is validly existing and in good standing under the laws of its respective jurisdiction of organization, is duly qualified to do business and is in good standing in each jurisdiction in which its respective ownership or lease of property or the conduct of their respective businesses requires such qualification, and has all power and authority necessary to own or hold its respective properties and to conduct the businesses in which it is engaged, except where the failure to be so qualified or in good standing or have such power or authority would not, individually or in the aggregate, have a material adverse effect on the condition (financial or otherwise), results of operations, business, properties or prospects of the Company and its subsidiaries taken as a whole or on the performance by the Company of its obligations under this Agreement (a “**Material Adverse Effect**”). The Company does not own or control, directly or indirectly, any corporation, association or other entity other than the subsidiaries listed in Schedule 4 to this Agreement. The subsidiaries listed in Schedule 4 to this Agreement are the only significant subsidiaries of the Company.

(f) Capitalization. The Company has an authorized capitalization as set forth in the Registration Statement and the Prospectus under the heading “Capitalization” and “Description of Capital Stock”; all the outstanding shares of capital stock of the Company have been duly and validly authorized and issued and are fully paid and non-assessable and are not subject to any pre-emptive or similar rights; except as described in or expressly contemplated by the Prospectus, there are no outstanding rights (including, without limitation, pre-emptive rights), warrants or options to acquire, or instruments convertible into or exchangeable for, any shares of capital stock or other equity interest in the Company or any of its subsidiaries, or any contract, commitment, agreement, understanding or arrangement of any kind relating to the issuance of any capital stock of the Company or any such subsidiary, any such convertible or exchangeable securities or any such rights, warrants or options; the capital stock of the Company conforms in all material respects to the description thereof contained in the Registration Statement and the Prospectus; and all the outstanding shares of capital stock or other equity interests of each subsidiary owned, directly or indirectly, by the Company have been duly and validly authorized and issued, are fully paid and non-assessable (except, in the case of any foreign subsidiary, for directors’ qualifying shares) and are owned directly or indirectly by the Company, free and clear of any lien, charge, encumbrance, security interest, restriction on voting or transfer or any other claim of any third party.

(g) Stock Options. With respect to the stock options (the “**Stock Options**”) granted pursuant to the stock-based compensation plans of the Company and its subsidiaries (the “**Company Stock Plans**”), (i) each Stock Option intended to qualify as an “incentive stock option” under Section 422 of the Internal Revenue Code of 1986, as amended (the “**Code**”) so qualifies, (ii) each grant of a Stock Option was duly authorized no later than the date on which the grant of such Stock Option was by its terms to be effective by all necessary corporate action, including, as applicable, approval by the board of directors of the Company (or a duly constituted and authorized committee thereof) and any required stockholder approval by the necessary number of votes or written consents, and the award agreement governing such grant (if any) was duly executed and delivered by each party thereto, (iii) each such grant was made in accordance with the terms of the Company Stock Plans and, to the extent applicable, the Exchange Act and the rules of the Nasdaq Capital Market (the “**Nasdaq Market**”) and any other exchange on which Company securities are traded, and (iv) each such grant was properly accounted for in accordance with GAAP in the financial statements (including the related notes) of the Company. Each Company Stock Plan is accurately described in all material respects in the Registration Statement and the Prospectus.

(h) Due Authorization. The Company has full right, power and authority to execute and deliver this Agreement and to perform its obligations hereunder; and all action required to be taken for the due and proper authorization, execution and delivery by it of this Agreement and the consummation by it of the transactions contemplated hereby has been duly and validly taken.

(i) Sales Agreement. This Agreement has been duly authorized, executed and delivered by the Company.

(j) Underwriter Agreements. Except for the Sales Agreements, the Company is not a party to any agreement with an agent or underwriter for any other “at the market” or continuous equity transaction.

(k) The Placement Shares. The Placement Shares, when issued and delivered pursuant to the terms approved by the board of directors of the Company or a duly authorized committee thereof, or a duly authorized executive committee, against payment therefor as provided herein, will be duly and validly authorized and issued and fully paid and nonassessable and will conform to the description thereof set forth in or incorporated into the Prospectus; and the issuance of the Placement Shares will not be subject to any preemptive or similar rights.

(l) Agent Purchases. The Company acknowledges and agrees that the Agent has informed the Company that the Agent may, to the extent permitted under the Securities Act and the Exchange Act, purchase and sell Common Stock for its own account while this Agreement is in effect, *provided*, that (i) no such purchase or sales shall take place while a Placement Notice is in effect (except to the extent such activity would not be prohibited under Regulation M or other anti-manipulation rules under the Securities Act) and (ii) the Company shall not be deemed to have authorized or consented to any such purchases or sales by the Agent.

(m) Listing. The Placement Shares will be approved for listing on the Nasdaq Capital Market prior to the sale of any Placement Shares.

(n) No Violation or Default. Neither the Company nor any of its subsidiaries is (i) in violation of its charter or bylaws or similar organizational documents; (ii) in default, and no event has occurred that, with notice or lapse of time or both, would constitute such a default, in the due performance or observance of any term, covenant or condition contained in any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which the Company or any of its subsidiaries is a party or by which the Company or any of its subsidiaries is bound or to which any property or asset of the Company or any of its subsidiaries is subject; or (iii) in violation of any law or statute or any judgment, order, rule or regulation of any court or arbitrator or governmental or regulatory authority, except, in the case of clauses (ii) and (iii) above, for any such default or violation that would not, individually or in the aggregate, have a Material Adverse Effect.

(o) No Conflicts. The execution, delivery and performance by the Company of this Agreement, the issuance and sale of the Placement Shares and the consummation by the Company of the transactions contemplated by this Agreement or the Prospectus will not (i) conflict with or result in a breach or violation of any of the terms or provisions of, or constitute a default under, result in the termination, modification or acceleration of, or result in the creation or imposition of any lien, charge or encumbrance upon any property, right or asset of the Company or any of its subsidiaries pursuant to, any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which the Company or any of its subsidiaries is a party or by which the Company or any of its subsidiaries is bound or to which any property, right or asset of the Company or any of its subsidiaries is subject; (ii) result in any violation of the provisions of the charter or bylaws or similar organizational documents of the Company or any of its subsidiaries or (iii) result in the violation of any law or statute or any judgment, order, rule or regulation of any court or arbitrator or governmental or regulatory authority, except, in the case of clauses (i) and (iii) above, for any such conflict, breach, violation, default, lien, charge or encumbrance that would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(p) No Consents Required. No consent, filing, approval, authorization, order, registration or qualification of or with any court or arbitrator or governmental or regulatory authority is required for the execution, delivery and performance by the Company of this Agreement, the issuance and sale of the Placement Shares and the consummation of the transactions contemplated by this Agreement, except for the registration of the Placement Shares under the Securities Act and such consents, approvals, authorizations, orders and registrations or qualifications as may be required by the Financial Industry Regulatory Authority, Inc. (“**FINRA**”) and under applicable state securities laws in connection with the purchase and distribution of the Placement Shares by the Agent.

(q) Legal Proceedings. Except as described in the Registration Statement and the Prospectus, there are no legal, governmental or regulatory investigations, actions, demands, claims, suits, arbitrations, inquiries or proceedings (“**Actions**”) pending to which the Company or any of its subsidiaries is a party or to which any property of the Company or any of its subsidiaries is the subject that, individually or in the aggregate, if determined adversely to the Company or any of its subsidiaries, could reasonably be expected to have a Material Adverse Effect; no such Actions are threatened or, to the knowledge of the Company, contemplated by any governmental or regulatory authority or threatened by others; and (i) there are no current or pending Actions that are required under the Securities Act to be described in the Registration Statement or the Prospectus that are not so described in the Registration Statement and the Prospectus and (ii) there are no statutes, regulations or contracts or other documents that are required under the Securities Act to be filed as exhibits to the Registration Statement or described in the Registration Statement or the Prospectus that are not so filed as exhibits to the Registration Statement or described in the Registration Statement and the Prospectus.

(r) Independent Accountants. Each of Ernst & Young LLP and EisnerAmper LLP, who have certified certain financial statements of the Company and its subsidiaries, is an independent registered public accounting firm with respect to the Company and its subsidiaries within the applicable rules and regulations adopted by the Commission and the Public Company Accounting Oversight Board (United States) and as required by the Securities Act.

(s) Title to Real and Personal Property. The Company and its subsidiaries have good and marketable title in fee simple to, or have valid rights to lease or otherwise use, all items of real and personal property that are material to the respective businesses of the Company and its subsidiaries, in each case free and clear of all liens, encumbrances, claims and defects and imperfections of title except those that (i) do not materially interfere with the use made and proposed to be made of such property by the Company and its subsidiaries or (ii) could not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect.

(t) Intellectual Property. Except as disclosed in the Registration Statement and the Prospectus, (i) the Company and its subsidiaries own or have the right to use all patents, patent applications, trademarks, service marks, trade names, trademark registrations, service mark registrations, domain names and other source indicators, copyrights and copyrightable works, know-how, trade secrets, systems, procedures, proprietary or confidential information and all other worldwide intellectual property, industrial property and proprietary rights (collectively, "**Intellectual Property**") used in the conduct of their respective businesses except to the extent that the failure to own, possess, license or otherwise hold adequate rights to use such Intellectual Property would not, individually or in the aggregate, have a Material Adverse Effect; (ii) to the Company's knowledge, the Company and its subsidiaries' conduct of their respective businesses does not currently, and will not, upon the commercialization of any product candidates described or referred to in the Registration Statement or the Prospectus, infringe, misappropriate or otherwise violate any Intellectual Property of any person; (iii) the Company and its subsidiaries have not received any written notice of any claim relating to Intellectual Property; and (iv) to the knowledge of the Company, the Intellectual Property of the Company and their subsidiaries is not being infringed, misappropriated or otherwise violated by any person. To the Company's knowledge: (i) there are no third parties who have rights to any Intellectual Property, except for customary reversionary rights of third-party licensors with respect to Intellectual Property that is disclosed in the Registration Statement and the Prospectus ("**Disclosure Documents**") as licensed to the Company or its subsidiaries; and (ii) there is no infringement by third parties of any Intellectual Property. There is no pending or to the Company's knowledge, threatened action, suit, proceeding or claim by others: (A) challenging the Company's rights in or to any Intellectual Property, and the Company is unaware of any facts which would form a reasonable basis for any such action, suit, proceeding or claim; (B) challenging the validity, enforceability or scope of any Intellectual Property, and the Company is unaware of any facts which would form a reasonable basis for any such action, suit, proceeding or claim; or (C) asserting that the Company or its subsidiaries infringe, misappropriate, or otherwise violate, or would, upon the commercialization of any product or service described in the Disclosure Documents as under development, infringe, misappropriate, or otherwise violate, any Intellectual Property rights of others, and the Company is unaware of any facts which would form a reasonable basis for any such action, suit, proceeding or claim. The Company and its subsidiaries have complied with the terms of each agreement pursuant to which Intellectual Property has been licensed to the Company or its subsidiaries, and all such agreements are in full force and effect. To the Company's knowledge, there are no material defects in any of the patents or patent applications included in the Intellectual Property. The Company and its subsidiaries have taken all reasonable steps to protect, maintain and safeguard their Intellectual Property Rights, including the execution of appropriate nondisclosure, confidentiality agreements and invention assignment agreements and invention assignments with their employees, and to the Company's knowledge, no employee of the Company is in or has been in violation of any term of any employment contract, patent disclosure agreement, invention assignment agreement, non-competition agreement, non-solicitation agreement, nondisclosure agreement, or any restrictive covenant to or with a former employer where the basis of such violation relates to such employee's employment with the Company. To the Company's knowledge, the duty of candor and good faith as required by the United States Patent and Trademark Office during the prosecution of the United States patents and patent applications included in the Company Intellectual Property have been complied with; and in all foreign offices having similar requirements, all such requirements have been complied with. The product candidates described in the Disclosure Documents as under development by the Company or its subsidiary fall within the scope of the claims of one or more patents or patent applications owned by, or exclusively licensed to, the Company or its subsidiary.

(u) Clinical Data and Regulatory Compliance. The nonclinical tests, clinical trials and other studies (collectively, “**studies**”) that are described in, or the results of which are referred to in, the Registration Statement or the Prospectus were and, if still pending, are being conducted in all material respects in accordance with the protocols, procedures and controls designed and approved for such studies and with standard medical and scientific research procedures; each description of the results of such studies is accurate and complete in all material respects and fairly presents the data derived from such studies, and the Company and its subsidiaries have no knowledge of any other studies the results of which are inconsistent with, or otherwise call into question, the results described or referred to in the Registration Statement or the Prospectus; the Company and its subsidiaries have made all such filings and obtained all such approvals as may be required by the Food and Drug Administration of the U.S. Department of Health and Human Services or from any other U.S. or foreign government or drug regulatory agency, or health care facility Institutional Review Board (collectively, the “**Regulatory Agencies**”); the Company and its subsidiaries have not received any notice of, or correspondence from, any Regulatory Agency requiring the termination or suspension of any clinical trials that are described or referred to in the Registration Statement or the Prospectus; and the Company and its subsidiaries have operated and currently are in compliance in all material respects with all applicable rules and regulations of the Regulatory Agencies.

(v) Compliance with Health Care Laws. The Company and its subsidiaries are, and at all times have been, in compliance in all material respects with all Health Care Laws. For purposes of this Agreement, “**Health Care Laws**” means: (i) the Federal Food, Drug, and Cosmetic Act and the regulations promulgated thereunder; (ii) all applicable federal, state, local and all applicable foreign health care related fraud and abuse laws, including, without limitation, the U.S. Anti-Kickback Statute (42 U.S.C. Section 1320a-7b(b)), the U.S. civil monetary penalties law (42 U.S.C. § 1320a-7a), the U.S. Civil False Claims Act (31 U.S.C. Section 3729 et seq.), the U.S. criminal false statements law (42 U.S.C. § 1320a-7b(a)), all applicable federal, state, local and all foreign criminal laws relating to health care fraud and abuse, including but not limited to 18 U.S.C. Sections 286 and 287, and the health care fraud criminal provisions under the U.S. Health Insurance Portability and Accountability Act of 1996 (“**HIPAA**”) (42 U.S.C. Section 1320d et seq.), the U.S. exclusion law (42 U.S.C. § 1320a-7), the statutes, regulations and directives of applicable government funded or sponsored healthcare programs, and the regulations promulgated pursuant to such statutes; (iii) the Standards for Privacy of Individually Identifiable Health Information, the Security Standards, and the Standards for Electronic Transactions and Code Sets promulgated under HIPAA, the Health Information Technology for Economic and Clinical Health Act (42 U.S.C. Section 17921 et seq.), and the regulations promulgated thereunder and any state or non-U.S. counterpart thereof or other law or regulation the purpose of which is to protect the privacy of individuals or prescribers; (iv) the U.S. Patient Protection and Affordable Care Act of 2010 (Public Law 111-148), as amended by the U.S. Health Care and Education Reconciliation Act of 2010 (Public Law 111-152), the regulations promulgated thereunder; (v) the U.S. Physician Payments Sunshine Act (42 U.S.C. § 1320a-7h), (vi) the U.S. Controlled Substances Act (21 U.S.C. Section 801 et seq.); and (vii) all other local, state, federal, national, supranational and foreign laws applicable to the Company and its subsidiaries. The Company and its subsidiaries have not received written notice of any claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any court or arbitrator or governmental or regulatory authority or third party alleging that any product operation or activity is in violation of any Health Care Laws nor is any such claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action threatened. The Company and its subsidiaries have filed, maintained or submitted all material reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Health Care Laws, and all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were complete and accurate on the date filed in all material respects (or were corrected or supplemented by a subsequent submission). The Company and its subsidiaries are not a party to any corporate integrity agreements, monitoring agreements, consent decrees, settlement orders, or similar agreements with or imposed by any governmental or regulatory authority. Additionally, neither the Company and its subsidiaries nor, to the best of its knowledge, any of their employees, officers or directors has been excluded, suspended or debarred from participation in any U.S. federal health care program or human clinical research or is subject to a governmental inquiry, investigation, proceeding, or other similar action that could reasonably be expected to result in debarment, suspension, or exclusion.

(w) No Undisclosed Relationships. No relationship, direct or indirect, exists between or among the Company or any of its subsidiaries, on the one hand, and the directors, officers, stockholders, customers, suppliers or other affiliates of the Company or any of its subsidiaries, on the other, that is required by the Securities Act to be described in each of the Registration Statement and the Prospectus and that is not so described in such documents.

(x) Investment Company Act. The Company is not and, after giving effect to the issuance and sale of the Placement Shares and the application of the proceeds thereof as described in the Registration Statement and the Prospectus, will not be an “investment company” or an entity “controlled” by an “investment company” within the meaning of the Investment Company Act of 1940, as amended, and the rules and regulations of the Commission thereunder (collectively, the “Investment Company Act”).

(y) Taxes. The Company and its subsidiaries have paid all federal, state, local and foreign taxes and filed all tax returns required to be paid or filed through the date hereof, to the extent that such taxes have become due and are not being contested in good faith, except where the failure to so file or pay would not have a Material Adverse Effect; and except as otherwise disclosed in each of the Registration Statement and the Prospectus, there is no tax deficiency that has been, or could reasonably be expected to be, asserted against the Company or any of its subsidiaries or any of their respective properties or assets which has had, or would have, individually or in the aggregate, a Material Adverse Effect.

(z) Stock Transfer Taxes. On each Settlement Date, all stock transfer or other taxes (other than income taxes) which are required to be paid in connection with the sale and transfer of the Placement Shares to be sold hereunder will be, or will have been, fully paid or provided for by the Company and all laws imposing such taxes will be or will have been fully complied with in all material respects.

(aa) Licenses and Permits. The Company and its subsidiaries possess all licenses, sub-licenses, certificates, permits and other authorizations issued by, and have made all declarations and filings with, the appropriate federal, state, local or foreign governmental or regulatory authorities that are necessary for the ownership or lease of their respective properties or the conduct of their respective businesses as described in each of the Registration Statement and the Prospectus, except where the failure to possess or make the same would not, individually or in the aggregate, have a Material Adverse Effect; and except as described in each of the Registration Statement and the Prospectus, neither the Company nor any of its subsidiaries has received notice of any revocation or modification of any such license, sub-license, certificate, permit or authorization or has any reason to believe that any such license, sub-license, certificate, permit or authorization will not be renewed in the ordinary course.

(bb) No Labor Disputes. No labor disturbance by or dispute with employees of the Company or any of its subsidiaries exists or, to the knowledge of the Company, is contemplated or threatened, and the Company is not aware of any existing or imminent labor disturbance by, or dispute with, the employees of any of its or its subsidiaries' principal suppliers, contractors or customers, except as would not have a Material Adverse Effect.

(cc) Certain Environmental Matters. (i) The Company and its subsidiaries (x) are in compliance with all, and have not violated any, applicable federal, state, local and foreign laws (including common law), rules, regulations, requirements, decisions, judgments, decrees, orders and other legally enforceable requirements relating to pollution or the protection of human health or safety, the environment, natural resources, hazardous or toxic substances or wastes, pollutants or contaminants (collectively, "**Environmental Laws**"); (y) have received and are in compliance with all, and have not violated any, permits, licenses, certificates or other authorizations or approvals required of them under any Environmental Laws to conduct their respective businesses; and (z) have not received notice of any actual or potential liability or obligation under or relating to, or any actual or potential violation of, any Environmental Laws, including for the investigation or remediation of any disposal or release of hazardous or toxic substances or wastes, pollutants or contaminants, and have no knowledge of any event or condition that would reasonably be expected to result in any such notice, and (ii) there are no costs or liabilities associated with Environmental Laws of or relating to the Company or its subsidiaries, except in the case of each of (i) and (ii) above, for any such matter as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect; and (iii) except as described in the Prospectus, (x) there is no proceeding that is pending, or that is known to be contemplated, against the Company or any of its subsidiaries under any Environmental Laws in which a governmental entity is also a party, other than such proceeding regarding which it is reasonably believed no monetary sanctions of \$100,000 or more will be imposed, (y) the Company and its subsidiaries are not aware of any facts or issues regarding compliance with Environmental Laws, or liabilities or other obligations under Environmental Laws or concerning hazardous or toxic substances or wastes, pollutants or contaminants, that could reasonably be expected to have a material effect on the capital expenditures, earnings or competitive position of the Company and its subsidiaries, and (z) none of the Company or its subsidiaries anticipates material capital expenditures relating to any Environmental Laws.

(dd) Hazardous Materials. There has been no storage, generation, transportation, use, handling, treatment, Release or threat of Release of Hazardous Materials by, relating to or caused by the Company or any of its subsidiaries for whose acts or omissions the Company and its subsidiaries are or could reasonably be expected to be liable) at, on, under or from any property or facility now or previously owned, operated or leased by the Company or its subsidiaries, or at, on, under or from any other property or facility, in violation of any Environmental Laws or in a manner or amount or to a location that could reasonably be expected to result in any liability under any Environmental Law, except for any violation or liability which would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. "Hazardous Materials" means any material, chemical, substance, waste, pollutant, contaminant, compound, mixture, or constituent thereof, in any form or amount, including petroleum (including crude oil or any fraction thereof) and petroleum products, natural gas liquids, asbestos and asbestos containing materials, naturally occurring radioactive materials, brine, and drilling mud, regulated or which can give rise to liability under any Environmental Law. "Release" means any spilling, leaking, seepage, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, disposing, depositing, dispersing, or migrating in, into or through the environment, or in, into from or through any building or structure.

(ee) Compliance with ERISA. (i) Each employee benefit plan, within the meaning of Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended ("ERISA"), for which the Company or any member of its "Controlled Group" (defined as any entity, whether or not incorporated, that is under common control with the Company within the meaning of Section 4001(a)(14) of ERISA or any entity that would be regarded as a single employer with the Company under Section 414(b),(c),(m) or (o) of the Code would have any liability (each, a "Plan") has been maintained in compliance with its terms and the requirements of any applicable statutes, orders, rules and regulations, including but not limited to ERISA and the Code; (ii) no prohibited transaction, within the meaning of Section 406 of ERISA or Section 4975 of the Code, has occurred with respect to any Plan, excluding transactions effected pursuant to a statutory or administrative exemption; (iii) for each Plan that is subject to the funding rules of Section 412 of the Code or Section 302 of ERISA, no Plan has failed (whether or not waived), or is reasonably expected to fail, to satisfy the minimum funding standards (within the meaning of Section 302 of ERISA or Section 412 of the Code) applicable to such Plan; (iv) no Plan is, or is reasonably expected to be, in "at risk status" (within the meaning of Section 303(i) of ERISA) and no Plan that is a "multiemployer plan" within the meaning of Section 4001(a)(3) of ERISA is in "endangered status" or "critical status" (within the meaning of Sections 304 and 305 of ERISA) (v) the fair market value of the assets of each Plan exceeds the present value of all benefits accrued under such Plan (determined based on those assumptions used to fund such Plan); (vi) no "reportable event" (within the meaning of Section 4043(c) of ERISA and the regulations promulgated thereunder) has occurred or is reasonably expected to occur; (vii) each Plan that is intended to be qualified under Section 401(a) of the Code is so qualified, and nothing has occurred, whether by action or by failure to act, which would cause the loss of such qualification; (viii) neither the Company nor any member of the Controlled Group has incurred, nor reasonably expects to incur, any liability under Title IV of ERISA (other than contributions to the Plan or premiums to the Pension Benefit Guarantee Corporation, in the ordinary course and without default) in respect of a Plan (including a "multiemployer plan" within the meaning of Section 4001(a)(3) of ERISA); and (ix) none of the following events has occurred or is reasonably likely to occur: (A) a material increase in the aggregate amount of contributions required to be made to all Plans by the Company or its Controlled Group affiliates in the current fiscal year of the Company and its Controlled Group affiliates compared to the amount of such contributions made in the Company's and its Controlled Group affiliates' most recently completed fiscal year; or (B) a material increase in the Company and its subsidiaries' "accumulated post-retirement benefit obligations" (within the meaning of Accounting Standards Codification Topic 715-60) compared to the amount of such obligations in the Company and its subsidiaries' most recently completed fiscal year, except in each case with respect to the events or conditions set forth in (i) through (ix) hereof, as would not, individually or in the aggregate, have a Material Adverse Effect.

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

(gg) Accounting Controls. The Company maintains a system of “internal control over financial reporting” (as defined in Rule 13a-15(f) of the Exchange Act) that comply with the requirements of the Exchange Act and have been designed by, or under the supervision of, its principal executive and principal financial officers, or persons performing similar functions, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP. The Company maintains internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management’s general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain asset accountability; (iii) access to assets is permitted only in accordance with management’s general or specific authorization; (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences and (v) interactive data in eXtensible Business Reporting Language included or incorporated by reference in the Registration Statement and the Prospectus fairly presents the information called for in all material respects and is prepared in accordance with the Commission’s rules and guidelines applicable thereto. Based on the Company’s most recent evaluation of its internal controls over financial reporting pursuant to Rule 13a-15(c) of the Exchange Act, except as disclosed in the Registration Statement and the Prospectus, there are no material weaknesses in the Company’s internal controls. The Company’s auditors and the Audit Committee of the Board of Directors of the Company have been advised of: (i) all significant deficiencies and material weaknesses in the design or operation of internal controls over financial reporting which have adversely affected or are reasonably likely to adversely affect the Company’s ability to record, process, summarize and report financial information; and (ii) any fraud, whether or not material, that involves management or other employees who have a significant role in the Company’s internal controls over financial reporting.

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

(ii) Insurance. The Company has insurance covering its respective properties, operations, personnel and businesses, including business interruption insurance, which insurance is in amounts and insures against such losses and risks as are adequate to protect the Company and its respective businesses; and the Company has not (i) received notice from any insurer or agent of such insurer that capital improvements or other expenditures are required or necessary to be made in order to continue such insurance or (ii) any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage at reasonable cost from similar insurers as may be necessary to continue its business.

(jj) No Unlawful Payments. Neither the Company nor any of its subsidiaries nor any director, officer or employee of the Company or any of its subsidiaries nor, to the knowledge of the Company, any agent, affiliate or other person associated with or acting on behalf of the Company or any of its subsidiaries has (i) used any corporate funds for any unlawful contribution, gift, entertainment or other unlawful expense relating to political activity; (ii) made or taken an act in furtherance of an offer, promise or authorization of any direct or indirect unlawful payment or benefit to any foreign or domestic government official or employee, including of any government-owned or controlled entity or of a public international organization, or any person acting in an official capacity for or on behalf of any of the foregoing, or any political party or party official or candidate for political office; (iii) violated or is in violation of any provision of the U.S. Foreign Corrupt Practices Act of 1977, as amended, or any applicable law or regulation implementing the OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions, or committed an offence under the Bribery Act 2010 of the United Kingdom or any other applicable anti-bribery or anti-corruption law; or (iv) made, offered, agreed, requested or taken an act in furtherance of any unlawful bribe or other unlawful benefit, including, without limitation, any rebate, payoff, influence payment, kickback or other unlawful or improper payment or benefit. The Company has instituted, maintains and enforces, and will continue to maintain and enforce policies and procedures designed to promote and ensure compliance with all applicable anti-bribery and anti-corruption laws.

(kk) Compliance with Anti-Money Laundering Laws. The operations of the Company and its subsidiaries are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements, including those of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the applicable money laundering statutes of all jurisdictions where the Company or any of its subsidiaries conducts business, the rules and regulations thereunder and any related or similar rules, regulations or guidelines issued, administered or enforced by any governmental or regulatory agency (collectively, the “Anti-Money Laundering Laws”) and no action, suit or proceeding by or before any court or governmental or regulatory agency, authority or body or any arbitrator involving the Company or any of its subsidiaries with respect to the Anti-Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

(ll) No Conflicts with Sanctions Laws. Neither the Company nor any of its subsidiaries, directors, officers, nor, to the knowledge of the Company, any employee, agent or affiliate of the Company or any of its subsidiaries is currently the subject or the target of any sanctions or designated on any prohibited party lists administered or enforced by the U.S. government, (including, without limitation, the Office of Foreign Assets Control of the U.S. Department of the Treasury (“OFAC”) or the U.S. Department of State and including, without limitation, designation on OFAC’s Specially Designated Nationals and Blocked Persons List or OFAC’s Foreign Sanctions Evaders List), the United Nations Security Council (“UNSC”), the European Union, Her Majesty’s Treasury (“HMT”) or other relevant sanctions authorities (collectively, “Sanctions”), nor is the Company or any of its subsidiaries located, organized or resident in a country or territory that is the subject or target of Sanctions, including, without limitation, Cuba, Iran, North Korea, Syria and Crimea, but not including Sudan as of January 17, 2017 (each, a “Sanctioned Country”); and the Company will not directly or indirectly use the proceeds of the offering of the Placement Shares hereunder, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other person or entity (i) to fund or facilitate any activities of or business with any person that, at the time of such funding or facilitation, is the subject or target of Sanctions, (ii) to fund or facilitate any activities of or business in any Sanctioned Country or (iii) in any other manner that will result in a violation by any person (including any person participating in the transaction, whether as underwriter, advisor, investor or otherwise) of Sanctions. For the past five years, the Company and its subsidiaries have not knowingly engaged in and are not now knowingly engaged in any dealings or transactions with any person that at the time of the dealing or transaction is or was the subject or the target of Sanctions or with any Sanctioned Country.

(mm) No Restrictions on Subsidiaries. No subsidiary of the Company is currently prohibited, directly or indirectly, under any agreement or other instrument to which it is a party or is subject, from paying any dividends to the Company, from making any other distribution on such subsidiary's capital stock or similar ownership interest, from repaying to the Company any loans or advances to such subsidiary from the Company or from transferring any of such subsidiary's properties or assets to the Company or any other subsidiary of the Company.

(nn) Off-Balance Sheet Arrangements. There are no transactions, arrangements and other relationships between and/or among the Company, and/or any of its affiliates and any unconsolidated entity, including, but not limited to, any structural finance, special purpose or limited purpose entity (each, an "**Off-Balance Sheet Transaction**") that could reasonably be expected to affect materially the Company's liquidity or the availability of or requirements for its capital resources, including those Off- Balance Sheet Transactions described in the Commission's Statement about Management's Discussion and Analysis of Financial Conditions and Results of Operations (Release Nos. 33-8056; 34-45321; FR-61), required to be described in the Prospectus which have not been described as required.

(oo) Broker/Dealer Relationships. Neither the Company nor any of its subsidiaries (i) is required to register as a "broker" or "dealer" in accordance with the provisions of the Exchange Act or (ii) directly or indirectly through one or more intermediaries, controls or is a "person associated with a member" or "associated person of a member" (within the meaning set forth in the FINRA Manual).

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

(qq) No Registration Rights. No person has the right to require the Company or any of its subsidiaries to register any securities for sale under the Securities Act by reason of the filing of the Registration Statement with the Commission or the issuance and sale of the Placement Shares.

(rr) No Stabilization. The Company has not taken, directly or indirectly, any action designed to or that could reasonably be expected to cause or result in any stabilization or manipulation of the price of the Placement Shares.

(ss) Margin Rules. Neither the issuance, sale and delivery of the Placement Shares nor the application of the proceeds thereof by the Company as described in each of the Registration Statement and the Prospectus will violate Regulation T, U or X of the Board of Governors of the Federal Reserve System or any other regulation of such Board of Governors.

(tt) Forward-Looking Statements. No forward-looking statement (within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act) included or incorporated by reference in any of the Registration Statement or the Prospectus has been made or reaffirmed without a reasonable basis or has been disclosed other than in good faith.

(uu) Statistical and Market Data. Nothing has come to the attention of the Company that has caused the Company to believe that the statistical and market-related data included or incorporated by reference in each of the Registration Statement and the Prospectus is not based on or derived from sources that are reliable and accurate in all material respects.

(vv) Sarbanes-Oxley Act. There is and has been no failure on the part of the Company or any of the Company's directors or officers, in their capacities as such, to comply with any provision of the Sarbanes-Oxley Act of 2002, as amended and the rules and regulations promulgated in connection therewith (the "Sarbanes-Oxley Act"), including Section 402 related to loans and Sections 302 and 906 related to certifications.

(ww) Status under the Securities Act. At the time of filing the Registration Statement and the Prospectus, the Company was not and is not an "ineligible issuer," as defined in Rule 405 under the Securities Act. The Company has paid the registration fee for this offering pursuant to Rule 456(b)(1) under the Securities Act or will pay such fee within the time period required by such rule (without giving effect to the proviso therein) and in any event prior to the Closing Date.

(xx) No Ratings. There are (and prior to the Closing Date, will be) no debt securities or preferred stock issued or guaranteed by the Company or any of its subsidiaries that are rated by a "nationally recognized statistical rating organization", as such term is defined under Section 3(a)(62) under the Exchange Act.

(yy) Market Capitalization. At the time the Registration Statement will be originally declared effective, and at the time the Company's most recent Annual Report on Form 10-K was filed with the Commission, the Company met or will meet the then applicable requirements for the use of Form S-3 under the Securities Act, including, but not limited to, General Instruction I.B.1 of Form S-3. The Company satisfies the pre-1992 eligibility requirements for the use of a registration statement on Form S-3 in connection with this offering (the pre-1992 eligibility requirements for the use of the registration statement on Form S-3 include (i) having a non-affiliate, public common equity float of at least \$150 million or a non-affiliate, public common equity float of at least \$100 million and annual trading volume of at least three million shares and (ii) having been subject to the Exchange Act reporting requirements for a period of 36 months). The aggregate market value of the outstanding voting and non-voting common equity (as defined in Securities Act Rule 405) of the Company held by persons other than affiliates of the Company (pursuant to Securities Act Rule 144, those that directly, or indirectly through one or more intermediaries, control, or are controlled by, or are under common control with, the Company) (the "Non-Affiliate Shares"), was equal to or greater than \$75 million (calculated by multiplying (x) the highest price at which the common equity of the Company closed on the Exchange within 60 days of the date of this Agreement times (y) the number of Non-Affiliate Shares). The Company is not a shell company (as defined in Rule 405 under the Securities Act) and has not been a shell company for at least 12 calendar months previously and if it has been a shell company at any time previously, has filed current Form 10 information (as defined in Instruction I.B.6 of Form S-3) with the Commission at least 12 calendar months previously reflecting its status as an entity that is not a shell company.

(zz) No Reliance. The Company has not relied upon the Agent or legal counsel for the Agent for any legal, tax, investment, accounting or regulatory advice in any jurisdiction.

Any certificate signed by an officer of the Company and delivered to the Agent or to counsel for the Agent pursuant to or in connection with this Agreement shall be deemed to be a representation and warranty by the Company, as applicable, to the Agent as to the matters set forth therein.

7. Covenants of the Company. The Company covenants and agrees with the Agent that:

(a) Registration Statement Amendments. After the date of this Agreement and during any period in which a Prospectus relating to any Placement Shares is required to be delivered by the Agent under the Securities Act (including in circumstances where such requirement may be satisfied pursuant to Rule 172 under the Securities Act or similar rule), (i) the Company will notify the Agent promptly of the time when any subsequent amendment to the Registration Statement, other than documents incorporated by reference, has been filed with the Commission and/or has become effective or any subsequent supplement to the Prospectus, other than documents incorporated by reference, has been filed and of any request by the Commission for any amendment or supplement to the Registration Statement or Prospectus or for additional information, (ii) the Company will prepare and file with the Commission, promptly upon the Agent's request, any amendments or supplements to the Registration Statement or Prospectus that, in the Agent's reasonable opinion, may be necessary or advisable in connection with the distribution of the Placement Shares by the Agent (*provided, however*, that the failure of the Agent to make such request shall not relieve the Company of any obligation or liability hereunder, or affect the Agent's right to rely on the representations and warranties made by the Company in this Agreement and *provided, further*, that the only remedy the Agent shall have with respect to the failure to make such filing shall be to cease making sales under this Agreement until such amendment or supplement is filed); (iii) the Company will not file any amendment or supplement to the Registration Statement or Prospectus (except for documents incorporated by reference) relating to the Placement Shares or a security convertible into the Placement Shares unless a copy thereof has been submitted to the Agent within a reasonable period of time before the filing and the Agent has not reasonably objected thereto in writing within two (2) Business Days (*provided, however*, that (A) the failure of the Agent to make such objection shall not relieve the Company of any obligation or liability hereunder, or affect the Agent's right to rely on the representations and warranties made by the Company in this Agreement, and (B) the Company has no obligation to provide the Agent any advance copy of such filing or to provide the Agent an opportunity to object to such filing, if such filing does not name the Agent and does not reference the transactions contemplated under this Agreement; and *provided, further*, that the only remedy the Agent shall have with respect to the failure by the Company to obtain such consent shall be to cease making sales under this Agreement) and the Company will furnish to the Agent at the time of filing thereof a copy of any document that upon filing is deemed to be incorporated by reference into the Registration Statement or Prospectus, except for those documents available via EDGAR; and (iv) the Company will cause each amendment or supplement to the Prospectus to be filed with the Commission as required pursuant to the applicable paragraph of Rule 424(b) of the Securities Act or, in the case of any document to be incorporated therein by reference, to be filed with the Commission as required pursuant to the Exchange Act, within the time period prescribed (the determination to file or not file any amendment or supplement with the Commission under this Section 7(a), based on the Company's reasonable opinion or reasonable objections, shall be made exclusively by the Company).

(b) Notice of Commission Stop Orders. The Company will advise the Agent, promptly after it receives notice or obtains knowledge thereof, of the issuance or threatened issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement, of the suspension of the qualification of the Placement Shares for offering or sale in any jurisdiction, or of the initiation or threatening of any proceeding for any such purpose; and it will promptly use its commercially reasonable efforts to prevent the issuance of any stop order or to obtain its withdrawal if such a stop order should be issued. The Company will advise the Agent promptly after it receives any request by the Commission for any amendments to the Registration Statement or any amendment or supplements to the Prospectus or any Issuer Free Writing Prospectus or for additional information related to the offering of the Placement Shares or for additional information related to the Registration Statement, the Prospectus or any Issuer Free Writing Prospectus.

(c) Delivery of Prospectus; Subsequent Changes. During any period in which a Prospectus relating to the Placement Shares is required to be delivered by the Agent under the Securities Act with respect to the offer and sale of the Placement Shares, (including in circumstances where such requirement may be satisfied pursuant to Rule 172 under the Securities Act or similar rule), the Company will comply in all material respects with all requirements imposed upon it by the Securities Act, as from time to time in force, and to file on or before their respective due dates all reports and any definitive proxy or information statements required to be filed by the Company with the Commission pursuant to Sections 13(a), 13(c), 14, 15(d) or any other provision of or under the Exchange Act. If the Company has omitted any information from the Registration Statement pursuant to Rule 430B under the Securities Act, it will use its best efforts to comply with the provisions of and make all requisite filings with the Commission pursuant to said Rule 430B and to notify the Agent promptly of all such filings. If during such period any event occurs as a result of which the Prospectus as then amended or supplemented would include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances then existing, not misleading, or if during such period it is necessary to amend or supplement the Registration Statement or Prospectus to comply with the Securities Act, the Company will promptly notify the Agent to suspend the offering of Placement Shares during such period and the Company will promptly amend or supplement the Registration Statement or Prospectus (at the expense of the Company) so as to correct such statement or omission or effect such compliance; *provided, however*, that the Company may delay any such amendment or supplement if, in the judgment of the Company, it is in the best interest of the Company to do so.

(d) Listing of Placement Shares. During any period in which the Prospectus relating to the Placement Shares is required to be delivered by the Agent under the Securities Act with respect to the offer and sale of the Placement Shares, the Company will use its reasonable best efforts to cause the Placement Shares to be listed on the Exchange.

(e) Delivery of Registration Statement and Prospectus. The Company will furnish to the Agent and its counsel (at the expense of the Company) copies of the Registration Statement, the Prospectus (including all Incorporated Documents) and all amendments and supplements to the Registration Statement or Prospectus that are filed with the Commission during any period in which a Prospectus relating to the Placement Shares is required to be delivered under the Securities Act (including all Incorporated Documents filed with the Commission during such period), in each case as soon as reasonably practicable and in such quantities as the Agent may from time to time reasonably request and, at the Agent's request, will also furnish copies of the Prospectus to each exchange or market on which sales of the Placement Shares may be made; *provided, however*, that the Company shall not be required to furnish any document (other than the Prospectus) to the Agent to the extent such document is available on EDGAR.

(f) Earnings Statement. To the extent not otherwise available on EDGAR, the Company will make generally available to its security holders as soon as practicable, but in any event not later than 15 months after the end of the Company's current fiscal quarter, an earnings statement covering a 12-month period that satisfies the provisions of Section 11(a) and Rule 158 of the Securities Act.

(g) Use of Proceeds. The Company will use the Net Proceeds as described in the Prospectus in the section entitled "Use of Proceeds."

(h) Notice of Other Sales. Without the prior written consent of the Agent, the Company will not, directly or indirectly, offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Stock (other than the Placement Shares offered pursuant to the Sales Agreements) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire, Common Stock during the period beginning on the fifth (5th) Trading Day immediately prior to the date on which any Placement Notice is delivered to the Agent hereunder and ending on the fifth (5th) Trading Day immediately following the final Settlement Date with respect to Placement Shares sold pursuant to such Placement Notice (or, if the Placement Notice has been terminated or suspended prior to the sale of all Placement Shares covered by a Placement Notice, the date of such suspension or termination); and will not directly or indirectly in any other "at the market" or continuous equity transaction offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Stock (other than the Placement Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire, Common Stock prior to the later of the termination of this Agreement and the sixtieth (60th) day immediately following the final Settlement Date with respect to Placement Shares sold pursuant to such Placement Notice; *provided, however*, that such restrictions will not apply in connection with the Company's issuance or sale of (i) Common Stock, options to purchase Common Stock, restricted stock unit awards or other equity awards to acquire Common Stock, or Common Stock issuable upon the exercise of options or settlement of restricted stock units or other equity awards, pursuant to any equity incentive or benefits plan, stock ownership plan or dividend reinvestment plan (but not Common Stock subject to a waiver to exceed plan limits in its dividend reinvestment plan) of the Company whether now in effect or hereafter implemented, (ii) Common Stock issuable upon conversion of securities or the exercise of warrants, options or other rights in effect or outstanding, and disclosed in filings by the Company available on EDGAR or otherwise in writing to the Agent and (iii) Common Stock or securities convertible into or exchangeable for shares of Common Stock as consideration for mergers, acquisitions, other business combinations or strategic alliances occurring after the date of this Agreement which are not issued for capital raising purposes.

(i) Change of Circumstances. The Company will, at any time during the pendency of a Placement Notice advise the Agent promptly after it shall have received notice or obtained knowledge thereof, of any information or fact that would alter or affect in any material respect any opinion, certificate, letter or other document required to be provided to the Agent pursuant to this Agreement.

(j) Due Diligence Cooperation. The Company will cooperate with any reasonable due diligence review conducted by the Agent or its representatives in connection with the transactions contemplated hereby, including, without limitation, providing information and making available documents and senior corporate officers, during regular business hours and at the Company's principal offices, as the Agent may reasonably request.

(k) Required Filings Relating to Placement of Placement Shares. To the extent that the filing of a prospectus supplement with the Commission with respect to the placement of Placement Shares becomes required under Rule 424(b) under the Securities Act, the Company agrees that on such dates as the Securities Act shall require, the Company will (i) file a prospectus supplement with the Commission under the applicable paragraph of Rule 424(b) under the Securities Act (each and every filing date under Rule 424(b), a "**Filing Date**"), which prospectus supplement will set forth, within the relevant period, the amount of Placement Shares sold through the Agent, the Net Proceeds to the Company and the compensation payable by the Company to the Agent with respect to such Placement Shares, and (ii) deliver such number of copies of each such prospectus supplement to each exchange or market on which such sales were effected as may be required by the rules or regulations of such exchange or market.

(l) Representation Dates; Certificate. (1) On or prior to the date of the first Placement Notice and (2) each time the Company:

(i) files the Prospectus relating to the Placement Shares or amends or supplements (other than a prospectus supplement relating solely to an offering of securities other than the Placement Shares) the Registration Statement or the Prospectus relating to the Placement Shares by means of a post-effective amendment, sticker, or supplement but not by means of incorporation of documents by reference into the Registration Statement or the Prospectus relating to the Placement Shares;

(ii) files an annual report on Form 10-K under the Exchange Act (including any Form 10-K/A containing amended financial information or a material amendment to the previously filed Form 10-K);

(iii) files its quarterly reports on Form 10-Q under the Exchange Act; or

(iv) files a current report on Form 8-K containing amended financial information (other than information “furnished” pursuant to Items 2.02 or 7.01 of Form 8-K or to provide disclosure pursuant to Item 8.01 of Form 8-K relating to the reclassification of certain properties as discontinued operations in accordance with Statement of Financial Accounting Standards No. 144) under the Exchange Act (each date of filing of one or more of the documents referred to in clauses (i) through (iv) shall be a “**Representation Date**”);

the Company shall furnish the Agent and the Alternative Agent (but in the case of clause (iv) above only if the Agent or the Alternative Agent reasonably determines that the information contained in such Form 8-K is material) with a certificate dated the Representation Date, in the form attached hereto as Exhibit 7(l). The requirement to provide a certificate under this Section 7(l) shall be automatically waived for any Representation Date occurring (1) at a time a Suspension is in effect, which waiver shall continue until the earlier to occur of the date the Company delivers instructions for the sale of Placement Shares hereunder (which for such calendar quarter shall be considered a Representation Date) and the next occurring Representation Date and (2) at a time at which no Placement Notice is pending hereunder or to the Alternative Sales Agent under the Alternative Sales Agreement, which waiver shall continue until the date the Company delivers a Placement Notice hereunder or to the Alternative Sales Agent under the Alternative Sales Agreement (which for such calendar quarter shall be considered a Representation Date), *provided* that a waiver under this clause (2) shall not apply for a Representation Date on which the Company files its annual report on Form 10-K. Notwithstanding the foregoing, if the Company subsequently decides to sell Placement Shares following a Representation Date when a Suspension was in effect and did not provide the Agent and the Alternative Agent with a certificate under this Section 7(l), then before the Company delivers the instructions for the sale of Placement Shares to the Agent or the Alternative Agent, or before the Agent or the Alternative Agent sells any Placement Shares pursuant to such instructions, the Company shall provide the Agent and the Alternative Agent with a certificate in conformity with this Section 7(l) dated as of the date that the instructions for the sale of Placement Shares are issued.

(m) Legal Opinion. (1) On or prior to the date of the first Placement Notice and (2) unless waived by the Agent, within five (5) Trading Days of each Representation Date with respect to which the Company is obligated to deliver a certificate pursuant to Section 7(l) for which no waiver is applicable and excluding the date of this Agreement, the Company shall cause to be furnished to the Agent and the Alternative Agent a written opinion of (A) Goodwin Procter LLP, as corporate counsel for the Company (“**Company Counsel**”), or other counsel reasonably satisfactory to the Agents; provided that the Company shall only be required to deliver a written opinion from Company Counsel pursuant to this section in connection with a Representation Date with respect to which the Company is obligated to deliver a certificate pursuant to Sections 7(l)(2)(i) through 7(l)(2)(iii), and (B) Goodwin Procter LLP, as intellectual property counsel for the Company (“**IP Counsel**”), or other counsel reasonably satisfactory to the Agents; provided that the Company shall only be required to deliver a written opinion from IP Counsel pursuant to this section in connection with a Representation Date with respect to which the Company is obligated to deliver a certificate pursuant to Section 7(l)(2)(i) through Section 7(l)(2)(iii), in each case in form and substance satisfactory to the Agent and its counsel and a written negative assurance letter of Company Counsel; *provided, however*, the Company shall be required to furnish to the Agents no more than one opinion and negative assurance letter from Company Counsel and one opinion from IP Counsel hereunder per calendar quarter and the Company shall not be required to furnish any such letter if the Company does not intend to deliver a Placement Notice in such calendar quarter until such time as the Company delivers its next Placement Notice; *provided, further*, that in lieu of such opinions for subsequent periodic filings under the Exchange Act, counsel may furnish the Agent and the Alternative Agent with a letter (a “**Reliance Letter**”) to the effect that the Agent and the Alternative Agent may rely on a prior opinion delivered under this Section 7(m) to the same extent as if it were dated the date of such letter (except that statements in such prior opinion shall be deemed to relate to the Registration Statement and the Prospectus as amended or supplemented as of the date of the Reliance Letter).

(n) Comfort Letter. (1) On or prior to the date of the first Placement Notice and (2) unless waived by the Agent, within five (5) Trading Days of each Representation Date with respect to which the Company is obligated to deliver a certificate in the form attached hereto as Exhibit 7(l) for which no waiver is applicable and excluding the date of this Agreement, the Company shall cause its independent registered public accounting firm to furnish the Agent and the Alternative Agent letters (the “**Comfort Letters**”), dated the date the Comfort Letter is delivered, which shall meet the requirements set forth in this Section 7(n); *provided*, that if requested by the Agent or the Alternative Agent the Company shall cause a Comfort Letter to be furnished to the Agents within ten (10) Trading Days of the date of occurrence of any material transaction or event requiring the filing of a Current Report on Form 8-K containing material financial information (including the restatement of the Company’s financial statements). The Comfort Letter from the Company’s independent registered public accounting firm shall be in a form and substance reasonably satisfactory to the Agents, (i) confirming that they are an independent registered public accounting firm within the meaning of the Securities Act and the PCAOB, (ii) stating, as of such date, the conclusions and findings of such firm with respect to the financial information and other matters ordinarily covered by accountants’ “comfort letters” to underwriters in connection with registered public offerings (the first such letter, the “**Initial Comfort Letter**”) and (iii) updating the Initial Comfort Letter with any information that would have been included in the Initial Comfort Letter had it been given on such date and modified as necessary to relate to the Registration Statement and the Prospectus, as amended and supplemented to the date of such letter.

(o) Market Activities; Compliance with Regulation M. The Company will not, directly or indirectly, (i) take any action designed to cause or result in, or that constitutes or might reasonably be expected to constitute, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of Common Stock (ii) sell, bid for or purchase Common Stock in violation of Regulation M, (iii) sell, bid for or purchase the Placement Shares to be issued and sold pursuant to the Sales Agreements or (iv) pay anyone any compensation for soliciting purchases of the Placement Shares to be issued and sold pursuant to the Sales Agreements other than the Agent or the Alternative Agent.

(p) Investment Company Act. The Company will conduct its affairs in such a manner so as to reasonably ensure that neither it nor any of its Subsidiaries will be or become, at any time prior to the termination of this Agreement, required to register as an “investment company,” as such term is defined in the Investment Company Act.

(q) No Offer to Sell. Other than an Issuer Free Writing Prospectus approved in advance by the Company and the Agent in its capacity as agent hereunder, neither the Agent nor the Company (including its agents and representatives, other than the Agent in its capacity as such) will make, use, prepare, authorize, approve or refer to any written communication (as defined in Rule 405 under the Securities Act), required to be filed with the Commission, that constitutes an offer to sell or solicitation of an offer to buy Placement Shares hereunder.

(r) Blue Sky and Other Qualifications. The Company will use its commercially reasonable efforts, in cooperation with the Agent, to qualify the Placement Shares for offering and sale, or to obtain an exemption for the Placement Shares to be offered and sold, under the applicable securities laws of such states and other jurisdictions (domestic or foreign) as the Agent may designate and to maintain such qualifications and exemptions in effect for so long as required for the distribution of the Placement Shares (but in no event for less than one year from the date of this Agreement); *provided, however*, that the Company shall not be obligated to file any general consent to service of process or to qualify as a foreign corporation or as a dealer in securities in any jurisdiction in which it is not so qualified or to subject itself to taxation in respect of doing business in any jurisdiction in which it is not otherwise so subject. In each jurisdiction in which the Placement Shares have been so qualified or exempt, the Company will file such statements and reports as may be required by the laws of such jurisdiction to continue such qualification or exemption, as the case may be, in effect for so long as required for the distribution of the Placement Shares (but in no event for less than one year from the date of this Agreement).

(s) Sarbanes-Oxley Act. The Company and the Subsidiaries will maintain and keep accurate books and records reflecting their assets and maintain internal accounting controls in a manner designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP and including those policies and procedures that (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Company, (ii) provide reasonable assurance that transactions are recorded as necessary to permit the preparation of the Company’s consolidated financial statements in accordance with GAAP, (iii) that receipts and expenditures of the Company are being made only in accordance with management’s and the Company’s directors’ authorization, and (iv) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company’s assets that could have a material effect on its financial statements. The Company and the Subsidiaries will maintain such controls and other procedures, including, without limitation, those required by Sections 302 and 906 of the Sarbanes-Oxley Act, and the applicable regulations thereunder that are designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Commission’s rules and forms, including, without limitation, controls and procedures designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Company’s management, including its principal executive officer and principal financial officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure and to ensure that material information relating to the Company or the Subsidiaries is made known to them by others within those entities, particularly during the period in which such periodic reports are being prepared.

(t) Secretary's Certificate; Further Documentation. On or prior to the date of the first Placement Notice, the Company shall deliver to the Agent a certificate of the Secretary of the Company and attested to by an executive officer of the Company, dated as of such date, certifying as to (i) the Certificate of Incorporation of the Company, (ii) the By-laws of the Company, (iii) the resolutions of the board of directors of the Company or a duly authorized committee of the board of directors of the Company authorizing the execution, delivery and performance of this Agreement and the issuance of the Placement Shares and (iv) the incumbency of the officers duly authorized to execute this Agreement and the other documents contemplated by this Agreement. Within five (5) Trading Days of each Representation Date, the Company shall have furnished to the Agent such further information, certificates and documents as the Agent may reasonably request.

8. Payment of Expenses. The Company will pay all expenses incident to the performance of its obligations under this Agreement, including (i) the preparation and filing of the Registration Statement, including any fees required by the Commission, and the printing or electronic delivery of the Prospectus as originally filed and of each amendment and supplement thereto, in such number as the Agent shall reasonably deem necessary, (ii) the printing and delivery to the Agent of the Sales Agreements and such other documents as may be required in connection with the offering, purchase, sale, issuance or delivery of the Placement Shares, (iii) the preparation, issuance and delivery of the certificates, if any, for the Placement Shares to the Agent, including any stock or other transfer taxes and any capital duties, stamp duties or other duties or taxes payable upon the sale, issuance or delivery of the Placement Shares to the Agent, (iv) the reasonable fees and expenses of the Company, including but not limited to the reasonable fees and expenses of the counsel, accountants and other advisors to the Company, (v) the reasonable fees and expenses of the Agent including but not limited to the fees and expenses of the counsel to the Agent, payable upon the execution of this Agreement, in an aggregate amount not to exceed \$50,000 to both Agents collectively, (vi) the qualification or exemption of the Placement Shares under state securities laws in accordance with the provisions of Section 7(r) hereof, including filing fees, but excluding fees of the Agent's counsel, (vii) the printing and delivery to the Agent of copies of any Permitted Issuer Free Writing Prospectus and the Prospectus and any amendments or supplements thereto in such number as the Agent shall reasonably deem necessary, (viii) the preparation, printing and delivery to the Agent of copies of the blue sky survey, (ix) the fees and expenses of the transfer agent and registrar for the Common Stock, (x) the filing and other fees incident to any review by FINRA of the terms of the sale of the Placement Shares including the fees of the Agent's counsel (subject to the cap, set forth in clause (v) above), and (xi) the fees and expenses incurred in connection with the listing of the Placement Shares on the Exchange.

9. Representations and Covenants of the Agent. The Agent represents and warrants that it is duly registered as a broker-dealer under FINRA, the Exchange Act and the applicable statutes and regulations of each state in which the Placement Shares will be offered and sold, except such states in which the Agent is exempt from registration or such registration is not otherwise required. The Agent shall continue, for the term of this Agreement, to be duly registered as a broker-dealer under FINRA, the Exchange Act and the applicable statutes and regulations of each state in which the Placement Shares will be offered and sold, except such states in which the Agent is exempt from registration or such registration is not otherwise required, during the term of this Agreement. The Agent will comply in all material respects with all applicable law and regulations in connection with the Placement Shares, including but not limited to Regulation M.

10. Conditions to the Agent's Obligations. The obligations of the Agent hereunder with respect to a Placement will be subject to the continuing accuracy and completeness of the representations and warranties made by the Company herein, to the due performance by the Company of its obligations hereunder, to the completion by the Agent of a due diligence review satisfactory to it in its reasonable judgment, and to the continuing satisfaction (or waiver by the Agent in its sole discretion) of the following additional conditions:

(a) Registration Statement Effective. The Registration Statement shall have become effective and shall be available for the (i) resale of all Placement Shares issued to the Agent and not yet sold by the Agent and (ii) sale of all Placement Shares contemplated to be issued by any Placement Notice.

(b) No Material Notices. None of the following events shall have occurred and be continuing: (i) receipt by the Company of any request for additional information from the Commission or any other federal or state Governmental Authority during the period of effectiveness of the Registration Statement, the response to which would require any post-effective amendments or supplements to the Registration Statement or the Prospectus if such post-effective amendments or supplements have not been made or become effective; (ii) the issuance by the Commission or any other federal or state Governmental Authority of any stop order suspending the effectiveness of the Registration Statement or the initiation of any proceedings for that purpose; (iii) receipt by the Company of any notification with respect to the suspension of the qualification or exemption from qualification of any of the Placement Shares for sale in any jurisdiction or the initiation or threatening of any proceeding for such purpose; or (iv) the occurrence of any event that makes any material statement made in the Registration Statement or the Prospectus or any material document incorporated or deemed to be incorporated therein by reference untrue in any material respect or that requires the making of any changes in the Registration Statement, the Prospectus or material incorporated documents so that, in the case of the Registration Statement, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein not misleading and, that in the case of the Prospectus, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

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

(d) Material Changes. Except as contemplated in the Prospectus, or disclosed in the Company's reports filed with the Commission, there shall not have been any material adverse change in the authorized capital stock of the Company or any Material Adverse Effect or any development that would reasonably be expected to cause a Material Adverse Effect, or a downgrading in or withdrawal of the rating assigned to any of the Company's securities (other than asset backed securities) by any rating organization or a public announcement by any rating organization that it has under surveillance or review its rating of any of the Company's securities (other than asset backed securities), the effect of which, in the case of any such action by a rating organization described above, in the reasonable judgment of the Agent (without relieving the Company of any obligation or liability it may otherwise have), is so material as to make it impracticable or inadvisable to proceed with the offering of the Placement Shares on the terms and in the manner contemplated in the Prospectus.

(e) Legal Opinions. The Agent and the Alternative Agent shall have received the opinion and negative assurance letter of Company Counsel and the opinion of IP Counsel, if applicable, required to be delivered pursuant to Section 7(m) on or before the date on which such delivery of such opinions and negative assurance letter, as applicable, are required pursuant to Section 7(m).

(f) Comfort Letter. The Agent and the Alternative Agent shall have received the Comfort Letter required to be delivered pursuant to Section 7(n) on or before the date on which such delivery of such Comfort Letter is required pursuant to Section 7(n).

(g) Representation Certificate. The Agent and the Alternative Agent shall have received the certificate required to be delivered pursuant to Section 7(l) on or before the date on which delivery of such certificate is required pursuant to Section 7(l).

(h) No Suspension. Trading in the Common Stock shall not have been suspended on the Exchange and the Common Stock shall not have been delisted from the Exchange.

(i) Other Materials. On each date on which the Company is required to deliver a certificate pursuant to Section 7(l), the Company shall have furnished to the Agent and the Alternative Agent such appropriate further information, opinions, certificates, letters and other documents as the Agent and the Alternative Agent may reasonably request. All such opinions, certificates, letters and other documents will be in compliance with the provisions hereof.

(j) Securities Act Filings Made. All filings with the Commission with respect to the Placement Shares required by Rule 424 under the Securities Act to have been filed prior to the issuance of any Placement Notice hereunder shall have been made within the applicable time period prescribed for such filing by Rule 424.

(k) Approval for Listing. The Placement Shares shall either have been (i) approved for listing on the Exchange, subject only to notice of issuance, or (ii) the Company shall have filed an application for listing of the Placement Shares on the Exchange at, or prior to, the issuance of any Placement Notice and, if required, the Exchange shall have reviewed such application and not provided any objections thereto.

(l) FINRA. If applicable, FINRA shall have raised no objection to the terms of this offering and the amount of compensation allowable or payable to the Agent as described in the Prospectus.

(m) No Termination Event. There shall not have occurred any event that would permit the Agent to terminate this Agreement pursuant to Section 12(a).

11. Indemnification and Contribution.

(a) Company Indemnification. The Company agrees to indemnify and hold harmless the Agent, its affiliates and their respective partners, members, directors, officers, employees and agents and each person, if any, who controls the Agent or any affiliate within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act as follows:

(i) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, joint or several, arising out of or based upon any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement (or any amendment thereto), or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein not misleading, or arising out of any untrue statement or alleged untrue statement of a material fact included in any related Issuer Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto), or the omission or alleged omission therefrom of a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading;

(ii) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, joint or several, to the extent of the aggregate amount paid in settlement of any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or of any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission; *provided* that (subject to Section 10(d) below) any such settlement is effected with the written consent of the Company, which consent shall not unreasonably be delayed or withheld; and

(iii) against any and all expense whatsoever, as incurred (including the fees and disbursements of counsel), reasonably incurred in investigating, preparing or defending against any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission (whether or not a party), to the extent that any such expense is not paid under (i) or (ii) above,

provided, however, that this indemnity agreement shall not apply to any loss, liability, claim, damage or expense to the extent arising out of (x) any untrue statement or omission or alleged untrue statement or omission made solely in reliance upon and in conformity with the Agent Information (as defined below) or (y) a breach of Agent's representations in Section 9 of this Agreement.

(b) Agent Indemnification. The Agent agrees to indemnify and hold harmless the Company and its directors and each officer of the Company who signed the Registration Statement, and each person, if any, who controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act against any and all loss, liability, claim, damage and expense described in the indemnity contained in Section 10(a), as incurred, but only with respect to untrue statements or omissions, or alleged untrue statements or omissions, made in the Registration Statement (or any amendments thereto), the Prospectus (or any amendment or supplement thereto) or any Issuer Free Writing Prospectus (or any amendment or supplement thereto) in reliance upon and in conformity with information relating to the Agent and furnished to the Company in writing by the Agent expressly for use therein or arising out of a breach of Agent's representations in Section 9 of this Agreement. The Company hereby acknowledges that the only information that the Agent has furnished to the Company expressly for use in the Registration Statement, the Prospectus or any Issuer Free Writing Prospectus (or any amendment or supplement thereto) are the statements set forth in the seventh and eighth paragraphs under the caption "Plan of Distribution" in the Prospectus (the "Agent Information").

(c) Procedure. Any party that proposes to assert the right to be indemnified under this Section 10 will, promptly after receipt of notice of commencement of any action against such party in respect of which a claim is to be made against an indemnifying party or parties under this Section 10, notify each such indemnifying party of the commencement of such action, enclosing a copy of all papers served, but the omission so to notify such indemnifying party will not relieve the indemnifying party from (i) any liability that it might have to any indemnified party otherwise than under this Section 10 and (ii) any liability that it may have to any indemnified party under the foregoing provision of this Section 10 unless, and only to the extent that, such omission results in the forfeiture of substantive rights or defenses by the indemnifying party. If any such action is brought against any indemnified party and it notifies the indemnifying party of its commencement, the indemnifying party will be entitled to participate in and, to the extent that it elects by delivering written notice to the indemnified party promptly after receiving notice of the commencement of the action from the indemnified party, jointly with any other indemnifying party similarly notified, to assume the defense of the action, with counsel reasonably satisfactory to the indemnified party, and after notice from the indemnifying party to the indemnified party of its election to assume the defense, the indemnifying party will not be liable to the indemnified party for any legal or other expenses except as provided below and except for the reasonable costs of investigation subsequently incurred by the indemnified party in connection with the defense. The indemnified party will have the right to employ its own counsel in any such action, but the fees, expenses and other charges of such counsel will be at the expense of such indemnified party unless (1) the employment of counsel by the indemnified party has been authorized in writing by the indemnifying party, (2) the indemnified party has reasonably concluded (based on advice of counsel) that there may be legal defenses available to it or other indemnified parties that are different from or in addition to those available to the indemnifying party, (3) a conflict or potential conflict exists (based on advice of counsel to the indemnified party) between the indemnified party and the indemnifying party (in which case the indemnifying party will not have the right to direct the defense of such action on behalf of the indemnified party) or (4) the indemnifying party has not in fact employed counsel to assume the defense of such action or counsel reasonably satisfactory to the indemnified party, in each case, within a reasonable time after receiving notice of the commencement of the action; in each of which cases the reasonable fees, disbursements and other charges of counsel will be at the expense of the indemnifying party or parties. It is understood that the indemnifying party or parties shall not, in connection with any proceeding or related proceedings in the same jurisdiction, be liable for the reasonable fees, disbursements and other charges of more than one separate firm (plus local counsel) admitted to practice in such jurisdiction at any one time for all such indemnified party or parties. All such fees, disbursements and other charges will be reimbursed by the indemnifying party promptly as they are incurred. An indemnifying party will not, in any event, be liable for any settlement of any action or claim effected without its written consent. No indemnifying party shall, without the prior written consent of each indemnified party, settle or compromise or consent to the entry of any judgment in any pending or threatened claim, action or proceeding relating to the matters contemplated by this Section 10 (whether or not any indemnified party is a party thereto), unless such settlement, compromise or consent (1) includes an unconditional release of each indemnified party, in form and substance reasonably satisfactory to such indemnified party, from all liability arising out of such litigation, investigation, proceeding or claim and (2) does not include a statement as to or an admission of fault, culpability or a failure to act by or on behalf of any indemnified party.

(d) Settlement Without Consent if Failure to Reimburse. If an indemnified party shall have requested an indemnifying party to reimburse the indemnified party for reasonable fees and expenses of counsel, such indemnifying party agrees that it shall be liable for any settlement of the nature contemplated by Section 10(a)(ii) effected without its written consent if (1) such settlement is entered into more than 45 days after receipt by such indemnifying party of the aforesaid request, (2) such indemnifying party shall have received notice of the terms of such settlement at least 30 days prior to such settlement being entered into and (3) such indemnifying party shall not have reimbursed such indemnified party in accordance with such request prior to the date of such settlement.

(e) Contribution. In order to provide for just and equitable contribution in circumstances in which the indemnification provided for in the foregoing paragraphs of this Section 10 is applicable in accordance with its terms but for any reason is held to be unavailable or insufficient from the Company or the Agent, the Company and the Agent will contribute to the total losses, claims, liabilities, expenses and damages (including any investigative, legal and other expenses reasonably incurred in connection with, and any amount paid in settlement of, any action, suit or proceeding or any claim asserted, but after deducting any contribution received by the Company from persons other than the Agent, such as persons who control the Company within the meaning of the Securities Act, officers of the Company who signed the Registration Statement and directors of the Company, who also may be liable for contribution) to which the Company and the Agent may be subject in such proportion as shall be appropriate to reflect the relative benefits received by the Company on the one hand and the Agent on the other hand. The relative benefits received by the Company on the one hand and the Agent on the other hand shall be deemed to be in the same proportion as the total net proceeds from the sale of the Placement Shares (before deducting expenses) received by the Company bear to the total compensation received by the Agent (before deducting expenses) from the sale of Placement Shares on behalf of the Company. If, but only if, the allocation provided by the foregoing sentence is not permitted by applicable law, the allocation of contribution shall be made in such proportion as is appropriate to reflect not only the relative benefits referred to in the foregoing sentence but also the relative fault of the Company, on the one hand, and the Agent, on the other hand, with respect to the statements or omission that resulted in such loss, claim, liability, expense or damage, or action in respect thereof, as well as any other relevant equitable considerations with respect to such offering. Such relative fault shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company or the Agent, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such statement or omission. The Company and the Agent agree that it would not be just and equitable if contributions pursuant to this Section 10(e) were to be determined by pro rata allocation or by any other method of allocation that does not take into account the equitable considerations referred to herein. The amount paid or payable by an indemnified party as a result of the loss, claim, liability, expense, or damage, or action in respect thereof, referred to above in this Section 10(e) shall be deemed to include, for the purpose of this Section 10(e), any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action or claim to the extent consistent with Section 10(c) hereof. Notwithstanding the foregoing provisions of this Section 10(e), the Agent shall not be required to contribute any amount in excess of the commissions received by it under this Agreement and no person found guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 10(e), any person who controls a party to this Agreement within the meaning of the Securities Act, and any officers, directors, partners, employees or agents of the Agent, will have the same rights to contribution as that party, and each director of the Company and each officer of the Company who signed the Registration Statement will have the same rights to contribution as the Company, subject in each case to the provisions hereof. Any party entitled to contribution, promptly after receipt of notice of commencement of any action against such party in respect of which a claim for contribution may be made under this Section 10(e), will notify any such party or parties from whom contribution may be sought, but the omission to so notify will not relieve that party or parties from whom contribution may be sought from any other obligation it or they may have under this Section 10(e) except to the extent that the failure to so notify such other party materially prejudiced the substantive rights or defenses of the party from whom contribution is sought. Except for a settlement entered into pursuant to the last sentence of Section 10(c) hereof, no party will be liable for contribution with respect to any action or claim settled without its written consent if such consent is required pursuant to Section 10(c) hereof.

12. Representations and Agreements to Survive Delivery. The indemnity and contribution agreements contained in Section 10 of this Agreement and all representations and warranties of the Company herein or in certificates delivered pursuant hereto shall survive, as of their respective dates, regardless of (i) any investigation made by or on behalf of the Agent, any controlling persons, or the Company (or any of their respective officers, directors or controlling persons), (ii) delivery and acceptance of the Placement Shares and payment therefor or (iii) any termination of this Agreement.

13. Termination.

(a) The Agent may terminate this Agreement, by notice to the Company, as hereinafter specified at any time (1) if there has been, since the time of execution of this Agreement or since the date as of which information is given in the Prospectus, any change, or any development or event involving a prospective change, in the condition, financial or otherwise, or in the business, properties, earnings, results of operations or prospects of the Company and its Subsidiaries considered as one enterprise, whether or not arising in the ordinary course of business, which individually or in the aggregate, in the sole judgment of the Agent is material and adverse and makes it impractical or inadvisable to market the Placement Shares or to enforce contracts for the sale of the Placement Shares, (2) if there has occurred any material adverse change in the financial markets in the United States or the international financial markets, any outbreak of hostilities or escalation thereof or other calamity or crisis or any change or development involving a prospective change in national or international political, financial or economic conditions, in each case the effect of which is such as to make it, in the judgment of the Agent, impracticable or inadvisable to market the Placement Shares or to enforce contracts for the sale of the Placement Shares, (3) if trading in the Common Stock has been suspended or limited by the Commission or the Exchange, or if trading generally on the Exchange has been suspended or limited, or minimum prices for trading have been fixed on the Exchange, (4) if any suspension of trading of any securities of the Company on any exchange or in the over-the-counter market shall have occurred and be continuing for at least ten (10) Trading Days, (5) if a major disruption of securities settlements or clearance services in the United States shall have occurred and be continuing, or (6) if a banking moratorium has been declared by either U.S. Federal or New York authorities. Any such termination shall be without liability of any party to any other party except that the provisions of Section 8 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination. If the Agent elects to terminate this Agreement as provided in this Section 13(a), the Agent shall provide the required notice as specified in Section 14 (Notices).

(b) The Company shall have the right, by giving ten (10) days' notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 8, Section 11, Section 12, Section 18 and Section 19 hereof shall remain in full force and effect notwithstanding such termination.

(c) The Agent shall have the right, by giving ten (10) days' notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 8, Section 11, Section 12, Section 18 and Section 19 hereof shall remain in full force and effect notwithstanding such termination.

(d) Unless earlier terminated pursuant to this Section 13, this Agreement shall automatically terminate upon the issuance and sale of all of the Placement Shares through the Agent on the terms and subject to the conditions set forth herein; provided that the provisions of Section 8, Section 11, Section 12, Section 18 and Section 19 hereof shall remain in full force and effect notwithstanding such termination.

(e) This Agreement shall remain in full force and effect unless terminated pursuant to Sections 13(a), (b), (c) or (d) above or otherwise by mutual agreement of the parties; *provided, however*, that any such termination by mutual agreement shall in all cases be deemed to provide that Section 8, Section 11, Section 12, Section 18 and Section 19 shall remain in full force and effect.

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

14. Notices. All notices or other communications required or permitted to be given by any party to any other party pursuant to the terms of this Agreement shall be in writing, unless otherwise specified, and if sent to the Agent, shall be delivered to:

Jefferies LLC
520 Madison Avenue
New York, NY 10022
Attention: General Counsel

with a copy to:

Latham & Watkins LLP
12670 High Bluff Drive
San Diego, CA 92130
Attention: Cheston Larson, Esq.
Facsimile: (858) 523-5450

and if to the Company, shall be delivered to:

Assembly Biosciences, Inc.
11711 N. Meridian Street, Suite 310
Carmel, Indiana 46032
Attention: Elizabeth H. Lacy
Facsimile: (317) 663-2462

with a copy to:

Goodwin Procter LLP
100 Northern Avenue
Boston, Massachusetts 02210
Attention: Mitchell S. Bloom, Esq.
Facsimile: (617) 321-4377

Each party to this Agreement may change such address for notices by sending to the parties to this Agreement written notice of a new address for such purpose. Each such notice or other communication shall be deemed given (i) when delivered personally or by verifiable facsimile transmission (with an original to follow) on or before 4:30 p.m., New York City time, on a Business Day or, if such day is not a Business Day, on the next succeeding Business Day, (ii) by Electronic Notice as set forth in the next paragraph, (iii) on the next Business Day after timely delivery to a nationally-recognized overnight courier or (iv) on the Business Day actually received if deposited in the U.S. mail (certified or registered mail, return receipt requested, postage prepaid). For purposes of this Agreement, "**Business Day**" shall mean any day on which the Exchange and commercial banks in the City of New York are open for business.

An electronic communication ("**Electronic Notice**") shall be deemed written notice for purposes of this Section 14 if sent to the electronic mail address specified by the receiving party under separate cover. Electronic Notice shall be deemed received at the time the party sending Electronic Notice receives verification of receipt by the receiving party. Any party receiving Electronic Notice may request and shall be entitled to receive the notice on paper, in a nonelectronic form ("**Nonelectronic Notice**") which shall be sent to the requesting party within ten (10) days of receipt of the written request for Nonelectronic Notice.

15. Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the Company and the Agent and their respective successors and the parties referred to in Section 11 hereof. References to any of the parties contained in this Agreement shall be deemed to include the successors and permitted assigns of such party. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and permitted assigns any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement. Neither party may assign its rights or obligations under this Agreement without the prior written consent of the other party; *provided, however*, that the Agent may assign its rights and obligations hereunder to an affiliate thereof without obtaining the Company's consent so long as such affiliate is a registered broker dealer and the Agent provides notice of such assignment to the Company.

16. Adjustments for Stock Splits. The parties acknowledge and agree that all share-related numbers contained in this Agreement shall be adjusted to take into account any stock split, stock dividend or similar event effected with respect to the Placement Shares.

17. Entire Agreement; Amendment; Severability; Waiver. This Agreement (including all schedules and exhibits attached hereto and Placement Notices issued pursuant hereto), together with that certain letter agreement between the Company and the Agent dated the date hereof, constitute the entire agreement and supersedes all other prior and contemporaneous agreements and undertakings, both written and oral, among the parties hereto with regard to the subject matter hereof. Neither this Agreement nor any term hereof may be amended except pursuant to a written instrument executed by the Company and the Agent. In the event that any one or more of the provisions contained herein, or the application thereof in any circumstance, is held invalid, illegal or unenforceable as written by a court of competent jurisdiction, then such provision shall be given full force and effect to the fullest possible extent that it is valid, legal and enforceable, and the remainder of the terms and provisions herein shall be construed as if such invalid, illegal or unenforceable term or provision was not contained herein, but only to the extent that giving effect to such provision and the remainder of the terms and provisions hereof shall be in accordance with the intent of the parties as reflected in this Agreement. No implied waiver by a party shall arise in the absence of a waiver in writing signed by such party. No failure or delay in exercising any right, power, or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any right, power, or privilege hereunder.

18. **GOVERNING LAW AND TIME; WAIVER OF JURY TRIAL.** THIS AGREEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO THE PRINCIPLES OF CONFLICTS OF LAWS. SPECIFIED TIMES OF DAY REFER TO NEW YORK CITY TIME. EACH PARTY HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY.

19. **CONSENT TO JURISDICTION.** EACH PARTY HEREBY IRREVOCABLY SUBMITS TO THE EXCLUSIVE JURISDICTION OF THE STATE AND FEDERAL COURTS SITTING IN THE CITY OF NEW YORK, BOROUGH OF MANHATTAN, FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION WITH ANY TRANSACTION CONTEMPLATED HEREBY, AND HEREBY IRREVOCABLY WAIVES, AND AGREES NOT TO ASSERT IN ANY SUIT, ACTION OR PROCEEDING, ANY CLAIM THAT IT IS NOT PERSONALLY SUBJECT TO THE JURISDICTION OF ANY SUCH COURT, THAT SUCH SUIT, ACTION OR PROCEEDING IS BROUGHT IN AN INCONVENIENT FORUM OR THAT THE VENUE OF SUCH SUIT, ACTION OR PROCEEDING IS IMPROPER. EACH PARTY HEREBY IRREVOCABLY WAIVES PERSONAL SERVICE OF PROCESS AND CONSENTS TO PROCESS BEING SERVED IN ANY SUCH SUIT, ACTION OR PROCEEDING BY MAILING A COPY THEREOF (CERTIFIED OR REGISTERED MAIL, RETURN RECEIPT REQUESTED) TO SUCH PARTY AT THE ADDRESS IN EFFECT FOR NOTICES TO IT UNDER THIS AGREEMENT AND AGREES THAT SUCH SERVICE SHALL CONSTITUTE GOOD AND SUFFICIENT SERVICE OF PROCESS AND NOTICE THEREOF. NOTHING CONTAINED HEREIN SHALL BE DEEMED TO LIMIT IN ANY WAY ANY RIGHT TO SERVE PROCESS IN ANY MANNER PERMITTED BY LAW.

20. **Counterparts.** This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Delivery of an executed Agreement by one party to the other may be made by facsimile or electronic transmission.

21. **Construction.** The section and exhibit headings herein are for convenience only and shall not affect the construction hereof. References herein to any law, statute, ordinance, code, regulation, rule or other requirement of any Governmental Authority shall be deemed to refer to such law, statute, ordinance, code, regulation, rule or other requirement of any Governmental Authority as amended, reenacted, supplemented or superseded in whole or in part and in effect from time to time and also to all rules and regulations promulgated thereunder.

22. Permitted Free Writing Prospectuses. The Company represents, warrants and agrees that, unless it obtains the prior written consent of the Agent (including by email correspondence to each of the individuals of such party set forth on Schedule 3, if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply), and the Agent represents, warrants and agrees that, unless it obtains the prior written consent of the Company (including by email correspondence to each of the individuals of such party set forth on Schedule 3, if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply), it has not made and will not make any offer relating to the Placement Shares that would constitute an Issuer Free Writing Prospectus, or that would otherwise constitute a “free writing prospectus,” as defined in Rule 405, required to be filed with the Commission. Any such free writing prospectus consented to by the Agent or by the Company, as the case may be, is hereinafter referred to as a “Permitted Free Writing Prospectus.” The Company represents and warrants that it has treated and agrees that it will treat each Permitted Free Writing Prospectus as an “issuer free writing prospectus,” as defined in Rule 433, and has complied and will comply with the requirements of Rule 433 applicable to any Permitted Free Writing Prospectus, including timely filing with the Commission where required, legending and record keeping. For the purposes of clarity, the parties hereto agree that all free writing prospectuses, if any, listed in Exhibit 22 hereto are Permitted Free Writing Prospectuses.

23. Absence of Fiduciary Relationship. The Company acknowledges and agrees that:

(a) the Agent is acting solely as agent in connection with the public offering of the Placement Shares and in connection with each transaction contemplated by this Agreement and the process leading to such transactions, and no fiduciary or advisory relationship between the Company or any of its respective affiliates, stockholders (or other equity holders), creditors or employees or any other party, on the one hand, and the Agent, on the other hand, has been or will be created in respect of any of the transactions contemplated by this Agreement, irrespective of whether or not the Agent has advised or is advising the Company on other matters, and the Agent has no obligation to the Company with respect to the transactions contemplated by this Agreement except the obligations expressly set forth in this Agreement;

(b) it is capable of evaluating and understanding, and understands and accepts, the terms, risks and conditions of the transactions contemplated by this Agreement;

(c) neither the Agent nor its affiliates have provided any legal, accounting, regulatory or tax advice with respect to the transactions contemplated by this Agreement and it has consulted its own legal, accounting, regulatory and tax advisors to the extent it has deemed appropriate;

(d) it is aware that the Agent and its affiliates are engaged in a broad range of transactions which may involve interests that differ from those of the Company and the Agent and its affiliates have no obligation to disclose such interests and transactions to the Company by virtue of any fiduciary, advisory or agency relationship or otherwise; and

(e) it waives, to the fullest extent permitted by law, any claims it may have against the Agent or its affiliates for breach of fiduciary duty or alleged breach of fiduciary duty in connection with the sale of Placement Shares under this Agreement and agrees that the Agent and its affiliates shall not have any liability (whether direct or indirect, in contract, tort or otherwise) to it in respect of such a fiduciary duty claim or to any person asserting a fiduciary duty claim on its behalf or in right of it or the Company, employees or creditors of Company, other than in respect of the Agent’s obligations under this Agreement and to keep information provided by the Company to the Agent and the Agent’s counsel confidential to the extent not otherwise publicly available.

24. Definitions. As used in this Agreement, the following terms have the respective meanings set forth below:

“Applicable Time” means (i) each Representation Date, (ii) the time of each sale of any Placement Shares pursuant to this Agreement and (iii) each Settlement Date.

“Governmental Authority” means (i) any federal, provincial, state, local, municipal, national or international government or governmental authority, regulatory or administrative agency, governmental commission, department, board, bureau, agency or instrumentality, court, tribunal, arbitrator or arbitral body (public or private); (ii) any self-regulatory organization; or (iii) any political subdivision of any of the foregoing.

“Issuer Free Writing Prospectus” means any “issuer free writing prospectus,” as defined in Rule 433, relating to the Placement Shares that (1) is required to be filed with the Commission by the Company, (2) is a “road show” that is a “written communication” within the meaning of Rule 433(d)(8)(i) whether or not required to be filed with the Commission, or (3) is exempt from filing pursuant to Rule 433(d)(5)(i) because it contains a description of the Placement Shares or of the offering that does not reflect the final terms, in each case in the form filed or required to be filed with the Commission or, if not required to be filed, in the form retained in the Company’s records pursuant to Rule 433(g) under the Securities Act Regulations.

“Rule 164,” “Rule 172,” “Rule 405,” “Rule 415,” “Rule 424,” “Rule 424(b),” “Rule 430B,” and **“Rule 433”** refer to such rules under the Securities Act Regulations.

All references in this Agreement to financial statements and schedules and other information that is “contained,” “included” or “stated” in the Registration Statement or the Prospectus (and all other references of like import) shall be deemed to mean and include all such financial statements and schedules and other information that is incorporated by reference in the Registration Statement or the Prospectus, as the case may be.

All references in this Agreement to the Registration Statement, the Prospectus or any amendment or supplement to any of the foregoing shall be deemed to include the copy filed with the Commission pursuant to EDGAR; all references in this Agreement to any Issuer Free Writing Prospectus (other than any Issuer Free Writing Prospectuses that, pursuant to Rule 433, are not required to be filed with the Commission) shall be deemed to include the copy thereof filed with the Commission pursuant to EDGAR; and all references in this Agreement to “supplements” to the Prospectus shall include, without limitation, any supplements, “wrappers” or similar materials prepared in connection with any offering, sale or private placement of any Placement Shares by the Agent outside of the United States.

[Signature Page Follows]

If the foregoing correctly sets forth the understanding between the Company and the Agent, please so indicate in the space provided below for that purpose, whereupon this letter shall constitute a binding agreement between the Company and the Agent.

Very truly yours,

ASSEMBLY BIOSCIENCES, INC.

By: /s/ Derek A. Small

Name: Derek A. Small

Title: Chief Executive Officer and President

ACCEPTED as of the date first-above written:

JEFFERIES LLC

By: /s/ Kevin Sheridan

Name: Kevin Sheridan

Title: Managing Director

SCHEDULE 1

Form of Placement Notice

From: Assembly Biosciences, Inc.

To: Jefferies LLC
Attention: [●]

Subject: Placement Notice

Date: [●], 20[●]

Ladies and Gentlemen:

Pursuant to the terms and subject to the conditions contained in the Sales Agreement between Assembly Biosciences, Inc., a Delaware corporation (the "**Company**"), and Jefferies LLC (the "**Agent**"), dated December 29, 2017, the Company hereby requests that the Agent sell up to [●] of the Company's common stock, par value \$0.001 per share, at a minimum market price of \$[●] per share, during the time period beginning [month, day, time] and ending [month, day, time].

Assembly Biosciences

[Name, Title]

cc: [other Assembly notice parties]

SCHEDULE 2

Compensation

The Company shall pay to the Agent in cash, upon each sale of Placement Shares pursuant to this Agreement, an amount equal to up to 3.0% of the aggregate gross proceeds from each sale of Placement Shares.

SCHEDULE 3

Notice Parties

The Company

Derek A. Small (derek@assemblybio.com)

David J. Barrett (dbarrett@assemblybio.com)

With copies to:

Michael Samar (msamar@assemblybio.com)

Diane Hague (dhague@assemblybio.com)

Elizabeth H. Lacy (elizabeth@assemblybio.com)

The Agent

Jack Fabbri (jfabbri@jefferies.com)

Tim Schnier (tschnier@jefferies.com)

SCHEDULE 4

Subsidiaries

Incorporated by reference to Exhibit 21 of the Company's most recently filed Annual Report on Form 10-K, as amended.

In addition to the above noted Subsidiaries, Assembly Biotechnology Development (Shanghai) Co., Ltd.

Exhibit 7(l)

Form of Representation Date Certificate

The undersigned, the duly qualified and elected [●], of Assembly Biosciences, Inc., a Delaware corporation (the "Company"), does hereby certify in such capacity and on behalf of the Company, pursuant to Section 7(l) of the Sales Agreement, dated December 29, 2017 (the "Sales Agreement"), between the Company and Jefferies LLC, that to the best of the knowledge of the undersigned:

(i) The representations and warranties of the Company in Section 6 of the Sales Agreement (A) to the extent such representations and warranties are subject to qualifications and exceptions contained therein relating to materiality or Material Adverse Effect, are true and correct on and as of the date hereof with the same force and effect as if expressly made on and as of the date hereof, except for those representations and warranties that speak solely as of a specific date and which were true and correct as of such date, and (B) to the extent such representations and warranties are not subject to qualifications or exceptions contained therein relating to materiality or Material Adverse Effect, are true and correct in all material respects as of the date hereof as if made on and as of the date hereof; *provided, however*, that such representations and warranties also shall be qualified by the disclosure included or incorporated by reference in the Registration Statement and Prospectus; and

(ii) The Company has complied with all agreements and satisfied all conditions on its part to be performed or satisfied pursuant to the Sales Agreement at or prior to the date hereof.

Capitalized terms used herein without definition shall have the meanings given to such terms in the Sales Agreement.

ASSEMBLY BIOSCIENCES, INC.

By: _____

Name: _____

Title: _____

Date: [●]

Exhibit 22

Permitted Free Writing Prospectus

None.

Assembly Biosciences, Inc.
Up to \$75,000,000 of
Shares of Common Stock
(par value \$0.001 per share)

Controlled Equity OfferingSM

Sales Agreement

December 29, 2017

Cantor Fitzgerald & Co.
499 Park Avenue
New York, NY 10022

Ladies and Gentlemen:

Assembly Biosciences, Inc., a Delaware corporation (the "**Company**"), confirms its agreement (this "**Agreement**") with Cantor Fitzgerald & Co. (the "**Agent**"), as follows:

1. **Issuance and Sale of Shares.** The Company agrees that, from time to time during the term of this Agreement, on the terms and subject to the conditions set forth herein, it may issue and sell through the Agent, up to \$75,000,000 of shares of common stock (the "**Placement Shares**") of the Company, par value \$0.001 per share (the "**Common Stock**"); *provided, however*, that in no event shall the Company issue or sell through the Agent such number or dollar amount of Placement Shares that would (a) exceed the number or dollar amount of shares of Common Stock registered on the effective Registration Statement (as defined below) pursuant to which the offering is being made, (b) exceed the number of authorized but unissued shares of Common Stock, (c) exceed the number or dollar amount of shares of Common Stock permitted to be sold under Form S-3 (including General Instruction I.B.6 thereof, if applicable) or (d) exceed the number or dollar amount of shares of Common Stock for which the Company has filed a Prospectus Supplement (as defined below) (the lesser of (a), (b), (c) and (d), the "**Maximum Amount**"). Notwithstanding anything to the contrary contained herein, the parties hereto agree that compliance with the limitations set forth in this **Section 1** on the amount of Placement Shares issued and sold under this Agreement shall be the sole responsibility of the Company and that the Agent shall have no obligation in connection with such compliance. The issuance and sale of Placement Shares through the Agent will be effected pursuant to the Registration Statement (as defined below) filed by the Company and which will be declared effective by the Securities and Exchange Commission (the "**Commission**"), although nothing in this Agreement shall be construed as requiring the Company to use the Registration Statement to issue Common Stock.

The Company has also entered into a sales agreement (the "**Alternative Sales Agreement**") of even date herewith with Jefferies LLC (the "**Alternative Agent**") for the issuance and sale from time to time to or through the Alternative Agent of the Placement Shares on the terms set forth in the Alternative Sales Agreement. The Agent and the Alternative Agent are collectively referred to herein as the "**Agents**." This Agreement and the Alternative Sales Agreement are collectively referred to herein as the "**Sales Agreements**."

The Company has filed or will file, in accordance with the provisions of the Securities Act of 1933, as amended (the “**Securities Act**”), and the rules and regulations thereunder (the “**Securities Act Regulations**”), with the Commission a registration statement on Form S-3, including a base prospectus, relating to certain securities, including the Placement Shares to be issued from time to time by the Company, and which incorporates by reference documents that the Company has filed or will file in accordance with the provisions of the Securities Exchange Act of 1934, as amended (the “**Exchange Act**”), and the rules and regulations thereunder. The Company has prepared a prospectus or a prospectus supplement to the base prospectus included as part of the registration statement, which prospectus or prospectus supplement relates to the Placement Shares to be issued from time to time by the Company (the “**Prospectus Supplement**”). The Company will furnish to the Agent, for use by the Agent, copies of the prospectus included as part of such registration statement, as supplemented, by the Prospectus Supplement, relating to the Placement Shares to be issued from time to time by the Company. The Company may file one or more additional registration statements from time to time that will contain a base prospectus and related prospectus or prospectus supplement, if applicable (which shall be a Prospectus Supplement), with respect to the Placement Shares. Except where the context otherwise requires, such registration statement(s), including all documents filed as part thereof or incorporated by reference therein, and including any information contained in a Prospectus (as defined below) subsequently filed with the Commission pursuant to Rule 424(b) under the Securities Act Regulations or deemed to be a part of such registration statement pursuant to Rule 430B of the Securities Act Regulations, is herein called the “**Registration Statement**.” The base prospectus or base prospectuses, including all documents incorporated therein by reference, included in the Registration Statement, as it may be supplemented, if necessary, by the Prospectus Supplement, in the form in which such prospectus or prospectuses and/or Prospectus Supplement have most recently been filed by the Company with the Commission pursuant to Rule 424(b) under the Securities Act Regulations, together with the then issued Issuer Free Writing Prospectus(es) (as defined below), is herein called the “**Prospectus**.”

Any reference herein to the Registration Statement, any Prospectus Supplement, Prospectus or any Issuer Free Writing Prospectus shall be deemed to refer to and include the documents, if any, incorporated by reference therein (the “**Incorporated Documents**”), including, unless the context otherwise requires, the documents, if any, filed as exhibits to such Incorporated Documents. Any reference herein to the terms “amend,” “amendment” or “supplement” with respect to the Registration Statement, any Prospectus Supplement, the Prospectus or any Issuer Free Writing Prospectus shall be deemed to refer to and include the filing of any document under the Exchange Act on or after the most-recent effective date of the Registration Statement, or the date of the Prospectus Supplement, Prospectus or such Issuer Free Writing Prospectus, as the case may be, and incorporated therein by reference. For purposes of this Agreement, all references to the Registration Statement, the Prospectus or to any amendment or supplement thereto shall be deemed to include the most recent copy filed with the Commission pursuant to its Electronic Data Gathering Analysis and Retrieval system, or if applicable, the Interactive Data Electronic Application system when used by the Commission (collectively, “**EDGAR**”).

2. **Placements.** Each time that the Company, in its sole discretion, wishes to issue and sell Placement Shares hereunder (each, a “**Placement**”), it will notify the Agent by email notice (or other method mutually agreed to in writing by the parties) of the number of Placement Shares to be issued, the time period during which sales are requested to be made, any limitation on the number of Placement Shares that may be sold in any one day and any minimum price below which sales may not be made (a “**Placement Notice**”), the form of which is attached hereto as Schedule 1. The Placement Notice shall originate from any of the individuals from the Company set forth on Schedule 3 (with a copy to each of the other individuals from the Company listed on such schedule), and shall be addressed to each of the individuals from the Agent set forth on Schedule 3, as such Schedule 3 may be amended from time to time (including by email correspondence). The Placement Notice shall be effective unless and until (i) the Agent declines to accept the terms contained therein for any reason, in its sole discretion, which declination must occur within two (2) business days of the receipt of the Placement Notice, (ii) the entire amount of the Placement Shares thereunder have been sold, (iii) the Company suspends or terminates the Placement Notice or (iv) this Agreement has been terminated under the provisions of Section 12. The amount of any discount, commission or other compensation to be paid by the Company to the Agent in connection with the sale of the Placement Shares shall be calculated in accordance with the terms set forth in Schedule 2. It is expressly acknowledged and agreed that neither the Company nor the Agent will have any obligation whatsoever with respect to a Placement or any Placement Shares unless and until the Company delivers a Placement Notice to the Agent and the Agent does not decline such Placement Notice pursuant to the terms set forth above, and then only upon the terms specified therein and herein. In the event of a conflict between the terms of this Agreement and the terms of a Placement Notice, the terms of the Placement Notice will control; provided that in no event shall the sale of Placement Shares in accordance with such Placement Notice exceed the Maximum Amount.

3. **Sale of Placement Shares by the Agent.** Subject to the provisions of Section 5(a), the Agent, for the period specified in the Placement Notice, will use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of the Nasdaq Capital Market (the “**Exchange**”), to sell the Placement Shares up to the amount specified, and otherwise in accordance with the terms of such Placement Notice. The Agent will provide written confirmation to the Company no later than the opening of the Trading Day (as defined below) immediately following the Trading Day on which it has made sales of Placement Shares hereunder setting forth the number of Placement Shares sold on such day, the compensation payable by the Company to the Agent pursuant to Section 2 with respect to such sales, and the Net Proceeds (as defined below) payable to the Company, with an itemization of the deductions made by the Agent (as set forth in Section 5(b)) from the gross proceeds that it receives from such sales. Subject to the terms of the Placement Notice, the Agent may sell Placement Shares by any method permitted by law deemed to be an “at the market offering” as defined in Rule 415(a)(4) of the Securities Act Regulations, including sales made directly on or through the Exchange or any other existing trading market for the Common Stock, in negotiated transactions at market prices prevailing at the time of sale or at prices related to such prevailing market prices and/or any other method permitted by law. “**Trading Day**” means any day on which Common Stock is traded on the Exchange.

While a Placement Notice is in effect, neither the Agent nor any of its subsidiaries shall engage in (i) any short sale of any security of the Company, as defined in Regulation SHO or (ii) any market making bidding, stabilization or other trading activity with regard to the Common Stock or related derivative securities, in each case, if such activity would be prohibited under Regulation M or other anti-manipulation rules under the Securities Act.

4. Suspension of Sales.

(a) Suspension by Company or the Agent. The Company or the Agent may, upon notice to the other party in writing (including by email correspondence to each of the individuals of the other party set forth on Schedule 3, if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply) or by telephone (confirmed immediately by verifiable facsimile transmission or email correspondence to each of the individuals of the other party set forth on Schedule 3), suspend any sale of Placement Shares (a "**Suspension**"); *provided, however*, that such Suspension shall not affect or impair any party's obligations with respect to any Placement Shares sold hereunder prior to the receipt of such notice. While a Suspension is in effect any obligation under Sections 7(l), 7(m), and 7(n) with respect to the delivery of certificates, opinions, or comfort letters to the Agent, shall be waived. Each of the parties agrees that no such notice under this Section 4 shall be effective against any other party unless it is made to and acknowledged by one of the individuals named on Schedule 3 hereto, as such Schedule may be amended from time to time.

(b) Material Non-Public Information. Notwithstanding any other provision of this Agreement, the Company shall not offer or sell, or request the offer or sale of, any of the Placement Shares and, by notice to the Agent in writing (including by email correspondence to each of the individuals of the Agent set forth on Schedule 3 if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply) or by telephone (confirmed immediately by verifiable facsimile transmission or email correspondence to each of the individuals of the Agent set forth on Schedule 3), shall cancel any instructions then in effect for the offer or sale of any of the Placement Shares, and the Agent shall not be obligated to offer or sell any of the Placement Shares, during any period in which the Company is in possession of material non-public information.

5. Sale and Delivery to the Agent; Settlement.

(a) Sale of Placement Shares. On the basis of the representations and warranties herein contained and subject to the terms and conditions herein set forth, upon the Agent's acceptance of the terms of a Placement Notice, and unless the sale of the Placement Shares described therein has been declined, suspended, or otherwise terminated in accordance with the terms of this Agreement, the Agent, for the period specified in the Placement Notice, will use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable law and regulations to sell such Placement Shares up to the amount specified, and otherwise in accordance with the terms of such Placement Notice. The Company acknowledges and agrees that (i) there can be no assurance that the Agent will be successful in selling Placement Shares, (ii) the Agent will incur no liability or obligation to the Company or any other person or entity if it does not sell Placement Shares for any reason other than a failure by the Agent to use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable law and regulations to sell such Placement Shares as required under this Agreement and (iii) the Agent shall be under no obligation to purchase Placement Shares on a principal basis pursuant to this Agreement, except as otherwise agreed by the Agent and the Company.

(b) Settlement of Placement Shares. Unless otherwise specified in the applicable Placement Notice, settlement for sales of Placement Shares will occur on the second (2nd) Trading Day (or such earlier day as is industry practice for regular-way trading) following the date on which such sales are made (each, a “**Settlement Date**”). The Agent shall notify the Company of each sale of Placement Shares no later than the opening of the Trading Day immediately following the Trading Day on which it has made sales of Placement Shares hereunder. The amount of proceeds to be delivered to the Company on a Settlement Date against receipt of the Placement Shares sold (the “**Net Proceeds**”) will be equal to the aggregate sales price received by the Agent, after deduction for (i) the Agent’s commission, discount or other compensation for such sales payable by the Company pursuant to Section 2 hereof, and (ii) any transaction fees imposed by any governmental or self-regulatory organization in respect of such sales.

(c) Delivery of Placement Shares. On or before each Settlement Date, the Company will, or will cause its transfer agent to, electronically transfer the Placement Shares being sold by crediting the Agent’s or its designee’s account (provided the Agent shall have given the Company written notice of such designee at least one Trading Day prior to the Settlement Date) at The Depository Trust Company through its Deposit and Withdrawal at Custodian System or by such other means of delivery as may be mutually agreed upon by the parties hereto which in all cases shall be freely tradable, transferable, registered shares in good deliverable form. On each Settlement Date, the Agent will deliver the related Net Proceeds in same day funds to an account designated by the Company on, or prior to, the Settlement Date. The Company agrees that if the Company, or its transfer agent (if applicable), defaults in its obligation to deliver Placement Shares on a Settlement Date, the Company agrees that in addition to and in no way limiting the rights and obligations set forth in Section 10(a) hereto, the Company will (i) hold the Agent harmless against any loss, claim, damage, or expense (including reasonable legal fees and expenses), as incurred, arising out of or in connection with such default by the Company or its transfer agent (if applicable) and (ii) pay to the Agent any commission, discount, or other compensation to which it would otherwise have been entitled absent such default.

(d) One Agent. The Company agrees that any offer to sell Placement Shares, any solicitation of an offer to buy Placement Shares, or any sales of Placement Shares shall only be effected by or through only one of the Agents on any single given day and the Company shall in no event request that both the Agent and the Alternative Agent offer or sell Shares on the same day.

(e) Limitations on Offering Size. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares if, after giving effect to the sale of such Placement Shares, the aggregate gross sales proceeds of Placement Shares sold pursuant to the Sales Agreements would exceed the lesser of (A) together with all sales of Placement Shares under the Sales Agreements, the Maximum Amount, (B) the amount available for offer and sale under the currently effective Registration Statement and (C) the amount authorized from time to time to be issued and sold under the Sales Agreements by the Company’s board of directors, a duly authorized committee thereof or a duly authorized executive committee, and notified to the Agent in writing. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares pursuant to the Sales Agreements at a price lower than the minimum price authorized from time to time by the Company’s board of directors, a duly authorized committee thereof or a duly authorized executive committee. Further, under no circumstances shall the Company cause or permit the aggregate offering amount of Placement Shares sold pursuant to this Agreement to exceed the Maximum Amount.

6. Representations and Warranties of the Company. The Company represents and warrants to, and agrees with the Agent that as of the date of this Agreement and as of each Applicable Time (as defined below), unless such representation, warranty or agreement specifies a different time:

(a) Registration Statement and Prospectus. The Registration Statement has or will be filed with the Commission not earlier than three years prior to the date hereof and will be declared effective by the Commission under the Securities Act prior to the issuance of any Placement Notices by the Company; and no notice of objection of the Commission to the use of such registration statement or any post-effective amendment thereto pursuant to Rule 401(g)(2) under the Securities Act has been received by the Company. The Registration Statement and the offer and sale of Placement Shares as contemplated hereby meet the requirements of Rule 415 under the Securities Act and comply in all material respects with said Rule. No order suspending the effectiveness of the Registration Statement has been issued by the Commission, and no proceeding for that purpose or pursuant to Section 8A of the Securities Act against the Company or related to the offering of the Placement Shares has been initiated or threatened by the Commission; as of the applicable effective date of the Registration Statement and any post-effective amendment thereto, the Registration Statement and any such post-effective amendment complied and will comply in all material respects with the Securities Act, and did not and will not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein not misleading; and as of the date of the Prospectus and any amendment or supplement thereto and as of the Closing Date and as of the Additional Closing Date, as the case may be, the Prospectus complied and will comply in all material respects with the Securities Act and will not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided that the Company makes no representation or warranty with respect to any statements or omissions made in reliance upon and in conformity with information relating to the Agent furnished to the Company in writing by such Agent expressly for use in the Registration Statement and the Prospectus and any amendment or supplement thereto, it being understood and agreed that the only such information furnished by any Agent consists of the information described as such in Section 11(b) hereof. The Company has not distributed and, prior to the later to occur of each Settlement Date and completion of the distribution of the Placement Shares, will not distribute any offering material in connection with the offering or sale of the Placement Shares other than the Registration Statement and the Prospectus and any Issuer Free Writing Prospectus (as defined below) to which the Agent has consented.

(b) Incorporated Documents. The Incorporated Documents, when they were filed with the Commission conformed in all material respects to the requirements of the Exchange Act, and none of such documents contained any untrue statement of a material fact or omitted to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(c) Financial Statements. The financial statements (including the related notes thereto) of the Company and its consolidated subsidiaries included or incorporated by reference in the Registration Statement, the Prospectus and the Issuer Free Writing Prospectuses, if any, comply in all material respects with the applicable requirements of the Securities Act and the Exchange Act, as applicable, and present fairly the financial position of the Company and its consolidated subsidiaries as of the dates indicated and the results of their operations and the changes in their cash flows for the periods specified; such financial statements have been prepared in conformity with generally accepted accounting principles (“**GAAP**”) in the United States applied on a consistent basis throughout the periods covered thereby, and any supporting schedules included or incorporated by reference in the Registration Statement present fairly the information required to be stated therein; and the other financial information included or incorporated by reference in the Registration Statement and the Prospectus has been derived from the accounting records of the Company and its consolidated subsidiaries and presents fairly the information shown thereby.

(d) No Material Adverse Change. Since the date of the most recent financial statements of the Company included or incorporated by reference in the Registration Statement, the Prospectus and the Issuer Free Writing Prospectuses, if any, (i) there has not been any change in the capital stock (other than the issuance of shares of Common Stock upon exercise of stock options and warrants described as outstanding in, and the grant of options and awards under existing equity incentive plans described in, the Registration Statement, the Prospectus and the Issuer Free Writing Prospectuses, if any), short-term debt or long-term debt of the Company or any of its subsidiaries, or any dividend or distribution of any kind declared, set aside for payment, paid or made by the Company on any class of capital stock, or any material adverse change, or any development involving a prospective material adverse change, in or affecting the business, properties, management, financial position, stockholders’ equity or results of operations of the Company and its subsidiaries taken as a whole; (ii) neither the Company nor any of its subsidiaries has entered into any transaction or agreement (whether or not in the ordinary course of business) that is material to the Company and its subsidiaries taken as a whole or incurred any liability or obligation, direct or contingent, that is material to the Company and its subsidiaries taken as a whole; and (iii) neither the Company nor any of its subsidiaries has sustained any loss or interference with its business that is material to the Company and its subsidiaries taken as a whole and that is either from fire, explosion, flood or other calamity, whether or not covered by insurance, or from any labor disturbance or dispute or any action, order or decree of any court or arbitrator or governmental or regulatory authority, except in each case as otherwise disclosed in the Registration Statement, the Prospectus and the Issuer Free Writing Prospectuses, if any.

(e) Organization and Good Standing. The Company has been duly organized and is validly existing and in good standing under the laws of its respective jurisdiction of organization, is duly qualified to do business and is in good standing in each jurisdiction in which its respective ownership or lease of property or the conduct of their respective businesses requires such qualification, and has all power and authority necessary to own or hold its respective properties and to conduct the businesses in which it is engaged, except where the failure to be so qualified or in good standing or have such power or authority would not, individually or in the aggregate, have a material adverse effect on the condition (financial or otherwise), results of operations, business, properties or prospects of the Company and its subsidiaries taken as a whole or on the performance by the Company of its obligations under this Agreement (a “**Material Adverse Effect**”). The Company does not own or control, directly or indirectly, any corporation, association or other entity other than the subsidiaries listed in Schedule 4 to this Agreement. The subsidiaries listed in Schedule 4 to this Agreement are the only significant subsidiaries of the Company.

(f) Capitalization. The Company has an authorized capitalization as set forth in the Registration Statement and the Prospectus under the heading “Capitalization” and “Description of Capital Stock”; all the outstanding shares of capital stock of the Company have been duly and validly authorized and issued and are fully paid and non-assessable and are not subject to any pre-emptive or similar rights; except as described in or expressly contemplated by the Prospectus, there are no outstanding rights (including, without limitation, pre-emptive rights), warrants or options to acquire, or instruments convertible into or exchangeable for, any shares of capital stock or other equity interest in the Company or any of its subsidiaries, or any contract, commitment, agreement, understanding or arrangement of any kind relating to the issuance of any capital stock of the Company or any such subsidiary, any such convertible or exchangeable securities or any such rights, warrants or options; the capital stock of the Company conforms in all material respects to the description thereof contained in the Registration Statement and the Prospectus; and all the outstanding shares of capital stock or other equity interests of each subsidiary owned, directly or indirectly, by the Company have been duly and validly authorized and issued, are fully paid and non-assessable (except, in the case of any foreign subsidiary, for directors’ qualifying shares) and are owned directly or indirectly by the Company, free and clear of any lien, charge, encumbrance, security interest, restriction on voting or transfer or any other claim of any third party.

(g) Stock Options. With respect to the stock options (the “Stock Options”) granted pursuant to the stock-based compensation plans of the Company and its subsidiaries (the “Company Stock Plans”), (i) each Stock Option intended to qualify as an “incentive stock option” under Section 422 of the Internal Revenue Code of 1986, as amended (the “Code”) so qualifies, (ii) each grant of a Stock Option was duly authorized no later than the date on which the grant of such Stock Option was by its terms to be effective by all necessary corporate action, including, as applicable, approval by the board of directors of the Company (or a duly constituted and authorized committee thereof) and any required stockholder approval by the necessary number of votes or written consents, and the award agreement governing such grant (if any) was duly executed and delivered by each party thereto, (iii) each such grant was made in accordance with the terms of the Company Stock Plans and, to the extent applicable, the Exchange Act and the rules of the Nasdaq Capital Market (the “Nasdaq Market”) and any other exchange on which Company securities are traded, and (iv) each such grant was properly accounted for in accordance with GAAP in the financial statements (including the related notes) of the Company. Each Company Stock Plan is accurately described in all material respects in the Registration Statement and the Prospectus.

(h) Due Authorization. The Company has full right, power and authority to execute and deliver this Agreement and to perform its obligations hereunder; and all action required to be taken for the due and proper authorization, execution and delivery by it of this Agreement and the consummation by it of the transactions contemplated hereby has been duly and validly taken.

(i) Sales Agreement. This Agreement has been duly authorized, executed and delivered by the Company.

(j) Underwriter Agreements. Except for the Sales Agreements, the Company is not a party to any agreement with an agent or underwriter for any other “at the market” or continuous equity transaction.

(k) The Placement Shares. The Placement Shares, when issued and delivered pursuant to the terms approved by the board of directors of the Company or a duly authorized committee thereof, or a duly authorized executive committee, against payment therefor as provided herein, will be duly and validly authorized and issued and fully paid and nonassessable and will conform to the description thereof set forth in or incorporated into the Prospectus; and the issuance of the Placement Shares will not be subject to any preemptive or similar rights.

(l) Agent Purchases. The Company acknowledges and agrees that the Agent has informed the Company that the Agent may, to the extent permitted under the Securities Act and the Exchange Act, purchase and sell Common Stock for its own account while this Agreement is in effect, *provided*, that (i) no such purchase or sales shall take place while a Placement Notice is in effect (except to the extent such activity would not be prohibited under Regulation M or other anti-manipulation rules under the Securities Act) and (ii) the Company shall not be deemed to have authorized or consented to any such purchases or sales by the Agent.

(m) Listing. The Placement Shares will be approved for listing on the Nasdaq Capital Market prior to the sale of any Placement Shares.

(n) No Violation or Default. Neither the Company nor any of its subsidiaries is (i) in violation of its charter or bylaws or similar organizational documents; (ii) in default, and no event has occurred that, with notice or lapse of time or both, would constitute such a default, in the due performance or observance of any term, covenant or condition contained in any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which the Company or any of its subsidiaries is a party or by which the Company or any of its subsidiaries is bound or to which any property or asset of the Company or any of its subsidiaries is subject; or (iii) in violation of any law or statute or any judgment, order, rule or regulation of any court or arbitrator or governmental or regulatory authority, except, in the case of clauses (ii) and (iii) above, for any such default or violation that would not, individually or in the aggregate, have a Material Adverse Effect.

(o) No Conflicts. The execution, delivery and performance by the Company of this Agreement, the issuance and sale of the Placement Shares and the consummation by the Company of the transactions contemplated by this Agreement or the Prospectus will not (i) conflict with or result in a breach or violation of any of the terms or provisions of, or constitute a default under, result in the termination, modification or acceleration of, or result in the creation or imposition of any lien, charge or encumbrance upon any property, right or asset of the Company or any of its subsidiaries pursuant to, any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which the Company or any of its subsidiaries is a party or by which the Company or any of its subsidiaries is bound or to which any property, right or asset of the Company or any of its subsidiaries is subject; (ii) result in any violation of the provisions of the charter or bylaws or similar organizational documents of the Company or any of its subsidiaries or (iii) result in the violation of any law or statute or any judgment, order, rule or regulation of any court or arbitrator or governmental or regulatory authority, except, in the case of clauses (i) and (iii) above, for any such conflict, breach, violation, default, lien, charge or encumbrance that would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(p) No Consents Required. No consent, filing, approval, authorization, order, registration or qualification of or with any court or arbitrator or governmental or regulatory authority is required for the execution, delivery and performance by the Company of this Agreement, the issuance and sale of the Placement Shares and the consummation of the transactions contemplated by this Agreement, except for the registration of the Placement Shares under the Securities Act and such consents, approvals, authorizations, orders and registrations or qualifications as may be required by the Financial Industry Regulatory Authority, Inc. (“**FINRA**”) and under applicable state securities laws in connection with the purchase and distribution of the Placement Shares by the Agent.

(q) Legal Proceedings. Except as described in the Registration Statement and the Prospectus, there are no legal, governmental or regulatory investigations, actions, demands, claims, suits, arbitrations, inquiries or proceedings (“**Actions**”) pending to which the Company or any of its subsidiaries is a party or to which any property of the Company or any of its subsidiaries is the subject that, individually or in the aggregate, if determined adversely to the Company or any of its subsidiaries, could reasonably be expected to have a Material Adverse Effect; no such Actions are threatened or, to the knowledge of the Company, contemplated by any governmental or regulatory authority or threatened by others; and (i) there are no current or pending Actions that are required under the Securities Act to be described in the Registration Statement or the Prospectus that are not so described in the Registration Statement and the Prospectus and (ii) there are no statutes, regulations or contracts or other documents that are required under the Securities Act to be filed as exhibits to the Registration Statement or described in the Registration Statement or the Prospectus that are not so filed as exhibits to the Registration Statement or described in the Registration Statement and the Prospectus.

(r) Independent Accountants. Each of Ernst & Young LLP and EisnerAmper LLP, who have certified certain financial statements of the Company and its subsidiaries, is an independent registered public accounting firm with respect to the Company and its subsidiaries within the applicable rules and regulations adopted by the Commission and the Public Company Accounting Oversight Board (United States) and as required by the Securities Act.

(s) Title to Real and Personal Property. The Company and its subsidiaries have good and marketable title in fee simple to, or have valid rights to lease or otherwise use, all items of real and personal property that are material to the respective businesses of the Company and its subsidiaries, in each case free and clear of all liens, encumbrances, claims and defects and imperfections of title except those that (i) do not materially interfere with the use made and proposed to be made of such property by the Company and its subsidiaries or (ii) could not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect.

(t) **Intellectual Property.** Except as disclosed in the Registration Statement and the Prospectus, (i) the Company and its subsidiaries own or have the right to use all patents, patent applications, trademarks, service marks, trade names, trademark registrations, service mark registrations, domain names and other source indicators, copyrights and copyrightable works, know-how, trade secrets, systems, procedures, proprietary or confidential information and all other worldwide intellectual property, industrial property and proprietary rights (collectively, “**Intellectual Property**”) used in the conduct of their respective businesses except to the extent that the failure to own, possess, license or otherwise hold adequate rights to use such Intellectual Property would not, individually or in the aggregate, have a Material Adverse Effect; (ii) to the Company’s knowledge, the Company and its subsidiaries’ conduct of their respective businesses does not currently, and will not, upon the commercialization of any product candidates described or referred to in the Registration Statement or the Prospectus, infringe, misappropriate or otherwise violate any Intellectual Property of any person; (iii) the Company and its subsidiaries have not received any written notice of any claim relating to Intellectual Property; and (iv) to the knowledge of the Company, the Intellectual Property of the Company and their subsidiaries is not being infringed, misappropriated or otherwise violated by any person. To the Company’s knowledge: (i) there are no third parties who have rights to any Intellectual Property, except for customary reversionary rights of third-party licensors with respect to Intellectual Property that is disclosed in the Registration Statement and the Prospectus (“**Disclosure Documents**”) as licensed to the Company or its subsidiaries; and (ii) there is no infringement by third parties of any Intellectual Property. There is no pending or to the Company’s knowledge, threatened action, suit, proceeding or claim by others: (A) challenging the Company’s rights in or to any Intellectual Property, and the Company is unaware of any facts which would form a reasonable basis for any such action, suit, proceeding or claim; (B) challenging the validity, enforceability or scope of any Intellectual Property, and the Company is unaware of any facts which would form a reasonable basis for any such action, suit, proceeding or claim; or (C) asserting that the Company or its subsidiaries infringe, misappropriate, or otherwise violate, or would, upon the commercialization of any product or service described in the Disclosure Documents as under development, infringe, misappropriate, or otherwise violate, any Intellectual Property rights of others, and the Company is unaware of any facts which would form a reasonable basis for any such action, suit, proceeding or claim. The Company and its subsidiaries have complied with the terms of each agreement pursuant to which Intellectual Property has been licensed to the Company or its subsidiaries, and all such agreements are in full force and effect. To the Company’s knowledge, there are no material defects in any of the patents or patent applications included in the Intellectual Property. The Company and its subsidiaries have taken all reasonable steps to protect, maintain and safeguard their Intellectual Property Rights, including the execution of appropriate nondisclosure, confidentiality agreements and invention assignment agreements and invention assignments with their employees, and to the Company’s knowledge, no employee of the Company is in or has been in violation of any term of any employment contract, patent disclosure agreement, invention assignment agreement, non-competition agreement, non-solicitation agreement, nondisclosure agreement, or any restrictive covenant to or with a former employer where the basis of such violation relates to such employee’s employment with the Company. To the Company’s knowledge, the duty of candor and good faith as required by the United States Patent and Trademark Office during the prosecution of the United States patents and patent applications included in the Company Intellectual Property have been complied with; and in all foreign offices having similar requirements, all such requirements have been complied with. The product candidates described in the Disclosure Documents as under development by the Company or its subsidiary fall within the scope of the claims of one or more patents or patent applications owned by, or exclusively licensed to, the Company or its subsidiary.

(u) Clinical Data and Regulatory Compliance. The nonclinical tests, clinical trials and other studies (collectively, “**studies**”) that are described in, or the results of which are referred to in, the Registration Statement or the Prospectus were and, if still pending, are being conducted in all material respects in accordance with the protocols, procedures and controls designed and approved for such studies and with standard medical and scientific research procedures; each description of the results of such studies is accurate and complete in all material respects and fairly presents the data derived from such studies, and the Company and its subsidiaries have no knowledge of any other studies the results of which are inconsistent with, or otherwise call into question, the results described or referred to in the Registration Statement or the Prospectus; the Company and its subsidiaries have made all such filings and obtained all such approvals as may be required by the Food and Drug Administration of the U.S. Department of Health and Human Services or from any other U.S. or foreign government or drug regulatory agency, or health care facility Institutional Review Board (collectively, the “**Regulatory Agencies**”); the Company and its subsidiaries have not received any notice of, or correspondence from, any Regulatory Agency requiring the termination or suspension of any clinical trials that are described or referred to in the Registration Statement or the Prospectus; and the Company and its subsidiaries have operated and currently are in compliance in all material respects with all applicable rules and regulations of the Regulatory Agencies.

(v) Compliance with Health Care Laws. The Company and its subsidiaries are, and at all times have been, in compliance in all material respects with all Health Care Laws. For purposes of this Agreement, “**Health Care Laws**” means: (i) the Federal Food, Drug, and Cosmetic Act and the regulations promulgated thereunder; (ii) all applicable federal, state, local and all applicable foreign health care related fraud and abuse laws, including, without limitation, the U.S. Anti-Kickback Statute (42 U.S.C. Section 1320a-7b(b)), the U.S. civil monetary penalties law (42 U.S.C. § 1320a-7a), the U.S. Civil False Claims Act (31 U.S.C. Section 3729 et seq.), the U.S. criminal false statements law (42 U.S.C. § 1320a-7b(a)), all applicable federal, state, local and all foreign criminal laws relating to health care fraud and abuse, including but not limited to 18 U.S.C. Sections 286 and 287, and the health care fraud criminal provisions under the U.S. Health Insurance Portability and Accountability Act of 1996 (“**HIPAA**”) (42 U.S.C. Section 1320d et seq.), the U.S. exclusion law (42 U.S.C. § 1320a-7), the statutes, regulations and directives of applicable government funded or sponsored healthcare programs, and the regulations promulgated pursuant to such statutes; (iii) the Standards for Privacy of Individually Identifiable Health Information, the Security Standards, and the Standards for Electronic Transactions and Code Sets promulgated under HIPAA, the Health Information Technology for Economic and Clinical Health Act (42 U.S.C. Section 17921 et seq.), and the regulations promulgated thereunder and any state or non-U.S. counterpart thereof or other law or regulation the purpose of which is to protect the privacy of individuals or prescribers; (iv) the U.S. Patient Protection and Affordable Care Act of 2010 (Public Law 111-148), as amended by the U.S. Health Care and Education Reconciliation Act of 2010 (Public Law 111-152), the regulations promulgated thereunder; (v) the U.S. Physician Payments Sunshine Act (42 U.S.C. § 1320a-7h), (vi) the U.S. Controlled Substances Act (21 U.S.C. Section 801 et seq.); and (vii) all other local, state, federal, national, supranational and foreign laws applicable to the Company and its subsidiaries. The Company and its subsidiaries have not received written notice of any claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any court or arbitrator or governmental or regulatory authority or third party alleging that any product operation or activity is in violation of any Health Care Laws nor is any such claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action threatened. The Company and its subsidiaries have filed, maintained or submitted all material reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Health Care Laws, and all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were complete and accurate on the date filed in all material respects (or were corrected or supplemented by a subsequent submission). The Company and its subsidiaries are not a party to any corporate integrity agreements, monitoring agreements, consent decrees, settlement orders, or similar agreements with or imposed by any governmental or regulatory authority. Additionally, neither the Company and its subsidiaries nor, to the best of its knowledge, any of their employees, officers or directors has been excluded, suspended or debarred from participation in any U.S. federal health care program or human clinical research or is subject to a governmental inquiry, investigation, proceeding, or other similar action that could reasonably be expected to result in debarment, suspension, or exclusion.

(w) No Undisclosed Relationships. No relationship, direct or indirect, exists between or among the Company or any of its subsidiaries, on the one hand, and the directors, officers, stockholders, customers, suppliers or other affiliates of the Company or any of its subsidiaries, on the other, that is required by the Securities Act to be described in each of the Registration Statement and the Prospectus and that is not so described in such documents.

(x) Investment Company Act. The Company is not and, after giving effect to the issuance and sale of the Placement Shares and the application of the proceeds thereof as described in the Registration Statement and the Prospectus, will not be an “investment company” or an entity “controlled” by an “investment company” within the meaning of the Investment Company Act of 1940, as amended, and the rules and regulations of the Commission thereunder (collectively, the “**Investment Company Act**”).

(y) Taxes. The Company and its subsidiaries have paid all federal, state, local and foreign taxes and filed all tax returns required to be paid or filed through the date hereof, to the extent that such taxes have become due and are not being contested in good faith, except where the failure to file or pay would not have a Material Adverse Effect; and except as otherwise disclosed in each of the Registration Statement and the Prospectus, there is no tax deficiency that has been, or could reasonably be expected to be, asserted against the Company or any of its subsidiaries or any of their respective properties or assets which has had, or would have, individually or in the aggregate, a Material Adverse Effect.

(z) Stock Transfer Taxes. On each Settlement Date, all stock transfer or other taxes (other than income taxes) which are required to be paid in connection with the sale and transfer of the Placement Shares to be sold hereunder will be, or will have been, fully paid or provided for by the Company and all laws imposing such taxes will be or will have been fully complied with in all material respects.

(aa) Licenses and Permits. The Company and its subsidiaries possess all licenses, sub-licenses, certificates, permits and other authorizations issued by, and have made all declarations and filings with, the appropriate federal, state, local or foreign governmental or regulatory authorities that are necessary for the ownership or lease of their respective properties or the conduct of their respective businesses as described in each of the Registration Statement and the Prospectus, except where the failure to possess or make the same would not, individually or in the aggregate, have a Material Adverse Effect; and except as described in each of the Registration Statement and the Prospectus, neither the Company nor any of its subsidiaries has received notice of any revocation or modification of any such license, sub-license, certificate, permit or authorization or has any reason to believe that any such license, sub-license, certificate, permit or authorization will not be renewed in the ordinary course.

(bb) No Labor Disputes. No labor disturbance by or dispute with employees of the Company or any of its subsidiaries exists or, to the knowledge of the Company, is contemplated or threatened, and the Company is not aware of any existing or imminent labor disturbance by, or dispute with, the employees of any of its or its subsidiaries' principal suppliers, contractors or customers, except as would not have a Material Adverse Effect.

(cc) Certain Environmental Matters. (i) The Company and its subsidiaries (x) are in compliance with all, and have not violated any, applicable federal, state, local and foreign laws (including common law), rules, regulations, requirements, decisions, judgments, decrees, orders and other legally enforceable requirements relating to pollution or the protection of human health or safety, the environment, natural resources, hazardous or toxic substances or wastes, pollutants or contaminants (collectively, "Environmental Laws"); (y) have received and are in compliance with all, and have not violated any, permits, licenses, certificates or other authorizations or approvals required of them under any Environmental Laws to conduct their respective businesses; and (z) have not received notice of any actual or potential liability or obligation under or relating to, or any actual or potential violation of, any Environmental Laws, including for the investigation or remediation of any disposal or release of hazardous or toxic substances or wastes, pollutants or contaminants, and have no knowledge of any event or condition that would reasonably be expected to result in any such notice, and (ii) there are no costs or liabilities associated with Environmental Laws of or relating to the Company or its subsidiaries, except in the case of each of (i) and (ii) above, for any such matter as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect; and (iii) except as described in the Prospectus, (x) there is no proceeding that is pending, or that is known to be contemplated, against the Company or any of its subsidiaries under any Environmental Laws in which a governmental entity is also a party, other than such proceeding regarding which it is reasonably believed no monetary sanctions of \$100,000 or more will be imposed, (y) the Company and its subsidiaries are not aware of any facts or issues regarding compliance with Environmental Laws, or liabilities or other obligations under Environmental Laws or concerning hazardous or toxic substances or wastes, pollutants or contaminants, that could reasonably be expected to have a material effect on the capital expenditures, earnings or competitive position of the Company and its subsidiaries, and (z) none of the Company or its subsidiaries anticipates material capital expenditures relating to any Environmental Laws.

(dd) Hazardous Materials. There has been no storage, generation, transportation, use, handling, treatment, Release or threat of Release of Hazardous Materials by, relating to or caused by the Company or any of its subsidiaries for whose acts or omissions the Company and its subsidiaries are or could reasonably be expected to be liable) at, on, under or from any property or facility now or previously owned, operated or leased by the Company or its subsidiaries, or at, on, under or from any other property or facility, in violation of any Environmental Laws or in a manner or amount or to a location that could reasonably be expected to result in any liability under any Environmental Law, except for any violation or liability which would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. "Hazardous Materials" means any material, chemical, substance, waste, pollutant, contaminant, compound, mixture, or constituent thereof, in any form or amount, including petroleum (including crude oil or any fraction thereof) and petroleum products, natural gas liquids, asbestos and asbestos containing materials, naturally occurring radioactive materials, brine, and drilling mud, regulated or which can give rise to liability under any Environmental Law. "Release" means any spilling, leaking, seepage, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, disposing, depositing, dispersing, or migrating in, into or through the environment, or in, into from or through any building or structure.

(ee) Compliance with ERISA. (i) Each employee benefit plan, within the meaning of Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended (“**ERISA**”), for which the Company or any member of its “**Controlled Group**” (defined as any entity, whether or not incorporated, that is under common control with the Company within the meaning of Section 4001(a)(14) of ERISA or any entity that would be regarded as a single employer with the Company under Section 414(b),(c),(m) or (o) of the Code would have any liability (each, a “**Plan**”) has been maintained in compliance with its terms and the requirements of any applicable statutes, orders, rules and regulations, including but not limited to ERISA and the Code; (ii) no prohibited transaction, within the meaning of Section 406 of ERISA or Section 4975 of the Code, has occurred with respect to any Plan, excluding transactions effected pursuant to a statutory or administrative exemption; (iii) for each Plan that is subject to the funding rules of Section 412 of the Code or Section 302 of ERISA, no Plan has failed (whether or not waived), or is reasonably expected to fail, to satisfy the minimum funding standards (within the meaning of Section 302 of ERISA or Section 412 of the Code) applicable to such Plan; (iv) no Plan is, or is reasonably expected to be, in “at risk status” (within the meaning of Section 303(i) of ERISA) and no Plan that is a “multiemployer plan” within the meaning of Section 4001(a)(3) of ERISA is in “endangered status” or “critical status” (within the meaning of Sections 304 and 305 of ERISA) (v) the fair market value of the assets of each Plan exceeds the present value of all benefits accrued under such Plan (determined based on those assumptions used to fund such Plan); (vi) no “reportable event” (within the meaning of Section 4043(c) of ERISA and the regulations promulgated thereunder) has occurred or is reasonably expected to occur; (vii) each Plan that is intended to be qualified under Section 401(a) of the Code is so qualified, and nothing has occurred, whether by action or by failure to act, which would cause the loss of such qualification; (viii) neither the Company nor any member of the Controlled Group has incurred, nor reasonably expects to incur, any liability under Title IV of ERISA (other than contributions to the Plan or premiums to the Pension Benefit Guarantee Corporation, in the ordinary course and without default) in respect of a Plan (including a “multiemployer plan” within the meaning of Section 4001(a)(3) of ERISA); and (ix) none of the following events has occurred or is reasonably likely to occur: (A) a material increase in the aggregate amount of contributions required to be made to all Plans by the Company or its Controlled Group affiliates in the current fiscal year of the Company and its Controlled Group affiliates compared to the amount of such contributions made in the Company’s and its Controlled Group affiliates’ most recently completed fiscal year; or (B) a material increase in the Company and its subsidiaries’ “accumulated post-retirement benefit obligations” (within the meaning of Accounting Standards Codification Topic 715-60) compared to the amount of such obligations in the Company and its subsidiaries’ most recently completed fiscal year, except in each case with respect to the events or conditions set forth in (i) through (ix) hereof, as would not, individually or in the aggregate, have a Material Adverse Effect.

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

(gg) Accounting Controls. The Company maintains a system of “internal control over financial reporting” (as defined in Rule 13a-15(f) of the Exchange Act) that comply with the requirements of the Exchange Act and have been designed by, or under the supervision of, its principal executive and principal financial officers, or persons performing similar functions, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP. The Company maintains internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management’s general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain asset accountability; (iii) access to assets is permitted only in accordance with management’s general or specific authorization; (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences and (v) interactive data in eXtensible Business Reporting Language included or incorporated by reference in the Registration Statement and the Prospectus fairly presents the information called for in all material respects and is prepared in accordance with the Commission’s rules and guidelines applicable thereto. Based on the Company’s most recent evaluation of its internal controls over financial reporting pursuant to Rule 13a-15(c) of the Exchange Act, except as disclosed in the Registration Statement and the Prospectus, there are no material weaknesses in the Company’s internal controls. The Company’s auditors and the Audit Committee of the Board of Directors of the Company have been advised of: (i) all significant deficiencies and material weaknesses in the design or operation of internal controls over financial reporting which have adversely affected or are reasonably likely to adversely affect the Company’s ability to record, process, summarize and report financial information; and (ii) any fraud, whether or not material, that involves management or other employees who have a significant role in the Company’s internal controls over financial reporting.

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

(ii) Insurance. The Company has insurance covering its respective properties, operations, personnel and businesses, including business interruption insurance, which insurance is in amounts and insures against such losses and risks as are adequate to protect the Company and its respective businesses; and the Company has not (i) received notice from any insurer or agent of such insurer that capital improvements or other expenditures are required or necessary to be made in order to continue such insurance or (ii) any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage at reasonable cost from similar insurers as may be necessary to continue its business.

(jj) No Unlawful Payments. Neither the Company nor any of its subsidiaries nor any director, officer or employee of the Company or any of its subsidiaries nor, to the knowledge of the Company, any agent, affiliate or other person associated with or acting on behalf of the Company or any of its subsidiaries has (i) used any corporate funds for any unlawful contribution, gift, entertainment or other unlawful expense relating to political activity; (ii) made or taken an act in furtherance of an offer, promise or authorization of any direct or indirect unlawful payment or benefit to any foreign or domestic government official or employee, including of any government-owned or controlled entity or of a public international organization, or any person acting in an official capacity for or on behalf of any of the foregoing, or any political party or party official or candidate for political office; (iii) violated or is in violation of any provision of the U.S. Foreign Corrupt Practices Act of 1977, as amended, or any applicable law or regulation implementing the OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions, or committed an offence under the Bribery Act 2010 of the United Kingdom or any other applicable anti-bribery or anti-corruption law; or (iv) made, offered, agreed, requested or taken an act in furtherance of any unlawful bribe or other unlawful benefit, including, without limitation, any rebate, payoff, influence payment, kickback or other unlawful or improper payment or benefit. The Company has instituted, maintains and enforces, and will continue to maintain and enforce policies and procedures designed to promote and ensure compliance with all applicable anti-bribery and anti-corruption laws.

(kk) Compliance with Anti-Money Laundering Laws. The operations of the Company and its subsidiaries are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements, including those of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the applicable money laundering statutes of all jurisdictions where the Company or any of its subsidiaries conducts business, the rules and regulations thereunder and any related or similar rules, regulations or guidelines issued, administered or enforced by any governmental or regulatory agency (collectively, the “Anti-Money Laundering Laws”) and no action, suit or proceeding by or before any court or governmental or regulatory agency, authority or body or any arbitrator involving the Company or any of its subsidiaries with respect to the Anti-Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

(ll) No Conflicts with Sanctions Laws. Neither the Company nor any of its subsidiaries, directors, officers, nor, to the knowledge of the Company, any employee, agent or affiliate of the Company or any of its subsidiaries is currently the subject or the target of any sanctions or designated on any prohibited party lists administered or enforced by the U.S. government, (including, without limitation, the Office of Foreign Assets Control of the U.S. Department of the Treasury (“**OFAC**”) or the U.S. Department of State and including, without limitation, designation on OFAC’s Specially Designated Nationals and Blocked Persons List or OFAC’s Foreign Sanctions Evaders List), the United Nations Security Council (“**UNSC**”), the European Union, Her Majesty’s Treasury (“**HMT**”) or other relevant sanctions authorities (collectively, “**Sanctions**”), nor is the Company or any of its subsidiaries located, organized or resident in a country or territory that is the subject or target of Sanctions, including, without limitation, Cuba, Iran, North Korea, Syria and Crimea, but not including Sudan as of January 17, 2017 (each, a “**Sanctioned Country**”); and the Company will not directly or indirectly use the proceeds of the offering of the Placement Shares hereunder, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other person or entity (i) to fund or facilitate any activities of or business with any person that, at the time of such funding or facilitation, is the subject or target of Sanctions, (ii) to fund or facilitate any activities of or business in any Sanctioned Country or (iii) in any other manner that will result in a violation by any person (including any person participating in the transaction, whether as underwriter, advisor, investor or otherwise) of Sanctions. For the past five years, the Company and its subsidiaries have not knowingly engaged in and are not now knowingly engaged in any dealings or transactions with any person that at the time of the dealing or transaction is or was the subject or the target of Sanctions or with any Sanctioned Country.

(mm) No Restrictions on Subsidiaries. No subsidiary of the Company is currently prohibited, directly or indirectly, under any agreement or other instrument to which it is a party or is subject, from paying any dividends to the Company, from making any other distribution on such subsidiary’s capital stock or similar ownership interest, from repaying to the Company any loans or advances to such subsidiary from the Company or from transferring any of such subsidiary’s properties or assets to the Company or any other subsidiary of the Company.

(nn) Off-Balance Sheet Arrangements. There are no transactions, arrangements and other relationships between and/or among the Company, and/or any of its affiliates and any unconsolidated entity, including, but not limited to, any structural finance, special purpose or limited purpose entity (each, an “**Off-Balance Sheet Transaction**”) that could reasonably be expected to affect materially the Company’s liquidity or the availability of or requirements for its capital resources, including those Off- Balance Sheet Transactions described in the Commission’s Statement about Management’s Discussion and Analysis of Financial Conditions and Results of Operations (Release Nos. 33-8056; 34-45321; FR-61), required to be described in the Prospectus which have not been described as required.

(oo) Broker/Dealer Relationships. Neither the Company nor any of its subsidiaries (i) is required to register as a “broker” or “dealer” in accordance with the provisions of the Exchange Act or (ii) directly or indirectly through one or more intermediaries, controls or is a “person associated with a member” or “associated person of a member” (within the meaning set forth in the FINRA Manual).

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

(qq) No Registration Rights. No person has the right to require the Company or any of its subsidiaries to register any securities for sale under the Securities Act by reason of the filing of the Registration Statement with the Commission or the issuance and sale of the Placement Shares.

(rr) No Stabilization. The Company has not taken, directly or indirectly, any action designed to or that could reasonably be expected to cause or result in any stabilization or manipulation of the price of the Placement Shares.

(ss) Margin Rules. Neither the issuance, sale and delivery of the Placement Shares nor the application of the proceeds thereof by the Company as described in each of the Registration Statement and the Prospectus will violate Regulation T, U or X of the Board of Governors of the Federal Reserve System or any other regulation of such Board of Governors.

(tt) Forward-Looking Statements. No forward-looking statement (within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act) included or incorporated by reference in any of the Registration Statement or the Prospectus has been made or reaffirmed without a reasonable basis or has been disclosed other than in good faith.

(uu) Statistical and Market Data. Nothing has come to the attention of the Company that has caused the Company to believe that the statistical and market-related data included or incorporated by reference in each of the Registration Statement and the Prospectus is not based on or derived from sources that are reliable and accurate in all material respects.

(vv) Sarbanes-Oxley Act. There is and has been no failure on the part of the Company or any of the Company's directors or officers, in their capacities as such, to comply with any provision of the Sarbanes-Oxley Act of 2002, as amended and the rules and regulations promulgated in connection therewith (the "Sarbanes-Oxley Act"), including Section 402 related to loans and Sections 302 and 906 related to certifications.

(ww) Status under the Securities Act. At the time of filing the Registration Statement and the Prospectus, the Company was not and is not an "ineligible issuer," as defined in Rule 405 under the Securities Act. The Company has paid the registration fee for this offering pursuant to Rule 456(b) (1) under the Securities Act or will pay such fee within the time period required by such rule (without giving effect to the proviso therein) and in any event prior to the Closing Date.

(xx) No Ratings. There are (and prior to the Closing Date, will be) no debt securities or preferred stock issued or guaranteed by the Company or any of its subsidiaries that are rated by a "nationally recognized statistical rating organization", as such term is defined under Section 3(a)(62) under the Exchange Act.

(yy) Market Capitalization. At the time the Registration Statement will be originally declared effective, and at the time the Company's most recent Annual Report on Form 10-K was filed with the Commission, the Company met or will meet the then applicable requirements for the use of Form S-3 under the Securities Act, including, but not limited to, General Instruction I.B.1 of Form S-3. The Company satisfies the pre-1992 eligibility requirements for the use of a registration statement on Form S-3 in connection with this offering (the pre-1992 eligibility requirements for the use of the registration statement on Form S-3 include (i) having a non-affiliate, public common equity float of at least \$150 million or a non-affiliate, public common equity float of at least \$100 million and annual trading volume of at least three million shares and (ii) having been subject to the Exchange Act reporting requirements for a period of 36 months). The aggregate market value of the outstanding voting and non-voting common equity (as defined in Securities Act Rule 405) of the Company held by persons other than affiliates of the Company (pursuant to Securities Act Rule 144, those that directly, or indirectly through one or more intermediaries, control, or are controlled by, or are under common control with, the Company) (the "Non-Affiliate Shares"), was equal to or greater than \$75 million (calculated by multiplying (x) the highest price at which the common equity of the Company closed on the Exchange within 60 days of the date of this Agreement times (y) the number of Non-Affiliate Shares). The Company is not a shell company (as defined in Rule 405 under the Securities Act) and has not been a shell company for at least 12 calendar months previously and if it has been a shell company at any time previously, has filed current Form 10 information (as defined in Instruction I.B.6 of Form S-3) with the Commission at least 12 calendar months previously reflecting its status as an entity that is not a shell company.

(zz) No Reliance. The Company has not relied upon the Agent or legal counsel for the Agent for any legal, tax, investment, accounting or regulatory advice in any jurisdiction.

Any certificate signed by an officer of the Company and delivered to the Agent or to counsel for the Agent pursuant to or in connection with this Agreement shall be deemed to be a representation and warranty by the Company, as applicable, to the Agent as to the matters set forth therein.

7. Covenants of the Company. The Company covenants and agrees with the Agent that:

(a) Registration Statement Amendments. After the date of this Agreement and during any period in which a Prospectus relating to any Placement Shares is required to be delivered by the Agent under the Securities Act (including in circumstances where such requirement may be satisfied pursuant to Rule 172 under the Securities Act or similar rule), (i) the Company will notify the Agent promptly of the time when any subsequent amendment to the Registration Statement, other than documents incorporated by reference, has been filed with the Commission and/or has become effective or any subsequent supplement to the Prospectus, other than documents incorporated by reference, has been filed and of any request by the Commission for any amendment or supplement to the Registration Statement or Prospectus or for additional information, (ii) the Company will prepare and file with the Commission, promptly upon the Agent's request, any amendments or supplements to the Registration Statement or Prospectus that, in the Agent's reasonable opinion, may be necessary or advisable in connection with the distribution of the Placement Shares by the Agent (*provided, however*, that the failure of the Agent to make such request shall not relieve the Company of any obligation or liability hereunder, or affect the Agent's right to rely on the representations and warranties made by the Company in this Agreement and *provided, further*, that the only remedy the Agent shall have with respect to the failure to make such filing shall be to cease making sales under this Agreement until such amendment or supplement is filed); (iii) the Company will not file any amendment or supplement to the Registration Statement or Prospectus (except for documents incorporated by reference) relating to the Placement Shares or a security convertible into the Placement Shares unless a copy thereof has been submitted to the Agent within a reasonable period of time before the filing and the Agent has not reasonably objected thereto in writing within two (2) Business Days (*provided, however*, that (A) the failure of the Agent to make such objection shall not relieve the Company of any obligation or liability hereunder, or affect the Agent's right to rely on the representations and warranties made by the Company in this Agreement, and (B) the Company has no obligation to provide the Agent any advance copy of such filing or to provide the Agent an opportunity to object to such filing, if such filing does not name the Agent and does not reference the transactions contemplated under this Agreement; and *provided, further*, that the only remedy the Agent shall have with respect to the failure by the Company to obtain such consent shall be to cease making sales under this Agreement) and the Company will furnish to the Agent at the time of filing thereof a copy of any document that upon filing is deemed to be incorporated by reference into the Registration Statement or Prospectus, except for those documents available via EDGAR; and (iv) the Company will cause each amendment or supplement to the Prospectus to be filed with the Commission as required pursuant to the applicable paragraph of Rule 424(b) of the Securities Act or, in the case of any document to be incorporated therein by reference, to be filed with the Commission as required pursuant to the Exchange Act, within the time period prescribed (the determination to file or not file any amendment or supplement with the Commission under this Section 7(a)), based on the Company's reasonable opinion or reasonable objections, shall be made exclusively by the Company).

(b) Notice of Commission Stop Orders. The Company will advise the Agent, promptly after it receives notice or obtains knowledge thereof, of the issuance or threatened issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement, of the suspension of the qualification of the Placement Shares for offering or sale in any jurisdiction, or of the initiation or threatening of any proceeding for any such purpose; and it will promptly use its commercially reasonable efforts to prevent the issuance of any stop order or to obtain its withdrawal if such a stop order should be issued. The Company will advise the Agent promptly after it receives any request by the Commission for any amendments to the Registration Statement or any amendment or supplements to the Prospectus or any Issuer Free Writing Prospectus or for additional information related to the offering of the Placement Shares or for additional information related to the Registration Statement, the Prospectus or any Issuer Free Writing Prospectus.

(c) Delivery of Prospectus; Subsequent Changes. During any period in which a Prospectus relating to the Placement Shares is required to be delivered by the Agent under the Securities Act with respect to the offer and sale of the Placement Shares, (including in circumstances where such requirement may be satisfied pursuant to Rule 172 under the Securities Act or similar rule), the Company will comply in all material respects with all requirements imposed upon it by the Securities Act, as from time to time in force, and to file on or before their respective due dates all reports and any definitive proxy or information statements required to be filed by the Company with the Commission pursuant to Sections 13(a), 13(c), 14, 15(d) or any other provision of or under the Exchange Act. If the Company has omitted any information from the Registration Statement pursuant to Rule 430B under the Securities Act, it will use its best efforts to comply with the provisions of and make all requisite filings with the Commission pursuant to said Rule 430B and to notify the Agent promptly of all such filings. If during such period any event occurs as a result of which the Prospectus as then amended or supplemented would include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances then existing, not misleading, or if during such period it is necessary to amend or supplement the Registration Statement or Prospectus to comply with the Securities Act, the Company will promptly notify the Agent to suspend the offering of Placement Shares during such period and the Company will promptly amend or supplement the Registration Statement or Prospectus (at the expense of the Company) so as to correct such statement or omission or effect such compliance; *provided, however*, that the Company may delay any such amendment or supplement if, in the judgment of the Company, it is in the best interest of the Company to do so.

(d) Listing of Placement Shares. During any period in which the Prospectus relating to the Placement Shares is required to be delivered by the Agent under the Securities Act with respect to the offer and sale of the Placement Shares, the Company will use its reasonable best efforts to cause the Placement Shares to be listed on the Exchange.

(e) Delivery of Registration Statement and Prospectus. The Company will furnish to the Agent and its counsel (at the expense of the Company) copies of the Registration Statement, the Prospectus (including all Incorporated Documents) and all amendments and supplements to the Registration Statement or Prospectus that are filed with the Commission during any period in which a Prospectus relating to the Placement Shares is required to be delivered under the Securities Act (including all Incorporated Documents filed with the Commission during such period), in each case as soon as reasonably practicable and in such quantities as the Agent may from time to time reasonably request and, at the Agent's request, will also furnish copies of the Prospectus to each exchange or market on which sales of the Placement Shares may be made; *provided, however*, that the Company shall not be required to furnish any document (other than the Prospectus) to the Agent to the extent such document is available on EDGAR.

(f) Earnings Statement. To the extent not otherwise available on EDGAR, the Company will make generally available to its security holders as soon as practicable, but in any event not later than 15 months after the end of the Company's current fiscal quarter, an earnings statement covering a 12-month period that satisfies the provisions of Section 11(a) and Rule 158 of the Securities Act.

(g) Use of Proceeds. The Company will use the Net Proceeds as described in the Prospectus in the section entitled "Use of Proceeds."

(h) Notice of Other Sales. Without the prior written consent of the Agent, the Company will not, directly or indirectly, offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Stock (other than the Placement Shares offered pursuant to the Sales Agreements) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire, Common Stock during the period beginning on the fifth (5th) Trading Day immediately prior to the date on which any Placement Notice is delivered to the Agent hereunder and ending on the fifth (5th) Trading Day immediately following the final Settlement Date with respect to Placement Shares sold pursuant to such Placement Notice (or, if the Placement Notice has been terminated or suspended prior to the sale of all Placement Shares covered by a Placement Notice, the date of such suspension or termination); and will not directly or indirectly in any other "at the market" or continuous equity transaction offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Stock (other than the Placement Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire, Common Stock prior to the later of the termination of this Agreement and the sixtieth (60th) day immediately following the final Settlement Date with respect to Placement Shares sold pursuant to such Placement Notice; *provided, however*, that such restrictions will not apply in connection with the Company's issuance or sale of (i) Common Stock, options to purchase Common Stock, restricted stock unit awards or other equity awards to acquire Common Stock, or Common Stock issuable upon the exercise of options or settlement of restricted stock units or other equity awards, pursuant to any equity incentive or benefits plan, stock ownership plan or dividend reinvestment plan (but not Common Stock subject to a waiver to exceed plan limits in its dividend reinvestment plan) of the Company whether now in effect or hereafter implemented, (ii) Common Stock issuable upon conversion of securities or the exercise of warrants, options or other rights in effect or outstanding, and disclosed in filings by the Company available on EDGAR or otherwise in writing to the Agent and (iii) Common Stock or securities convertible into or exchangeable for shares of Common Stock as consideration for mergers, acquisitions, other business combinations or strategic alliances occurring after the date of this Agreement which are not issued for capital raising purposes.

(i) Change of Circumstances. The Company will, at any time during the pendency of a Placement Notice advise the Agent promptly after it shall have received notice or obtained knowledge thereof, of any information or fact that would alter or affect in any material respect any opinion, certificate, letter or other document required to be provided to the Agent pursuant to this Agreement.

(j) Due Diligence Cooperation. The Company will cooperate with any reasonable due diligence review conducted by the Agent or its representatives in connection with the transactions contemplated hereby, including, without limitation, providing information and making available documents and senior corporate officers, during regular business hours and at the Company's principal offices, as the Agent may reasonably request.

(k) Required Filings Relating to Placement of Placement Shares. To the extent that the filing of a prospectus supplement with the Commission with respect to the placement of Placement Shares becomes required under Rule 424(b) under the Securities Act, the Company agrees that on such dates as the Securities Act shall require, the Company will (i) file a prospectus supplement with the Commission under the applicable paragraph of Rule 424(b) under the Securities Act (each and every filing date under Rule 424(b), a "**Filing Date**"), which prospectus supplement will set forth, within the relevant period, the amount of Placement Shares sold through the Agent, the Net Proceeds to the Company and the compensation payable by the Company to the Agent with respect to such Placement Shares, and (ii) deliver such number of copies of each such prospectus supplement to each exchange or market on which such sales were effected as may be required by the rules or regulations of such exchange or market.

(l) Representation Dates; Certificate. (1) On or prior to the date of the first Placement Notice and (2) each time the Company:

(i) files the Prospectus relating to the Placement Shares or amends or supplements (other than a prospectus supplement relating solely to an offering of securities other than the Placement Shares) the Registration Statement or the Prospectus relating to the Placement Shares by means of a post-effective amendment, sticker, or supplement but not by means of incorporation of documents by reference into the Registration Statement or the Prospectus relating to the Placement Shares;

(ii) files an annual report on Form 10-K under the Exchange Act (including any Form 10-K/A containing amended financial information or a material amendment to the previously filed Form 10-K);

(iii) files its quarterly reports on Form 10-Q under the Exchange Act; or

(iv) files a current report on Form 8-K containing amended financial information (other than information “furnished” pursuant to Items 2.02 or 7.01 of Form 8-K or to provide disclosure pursuant to Item 8.01 of Form 8-K relating to the reclassification of certain properties as discontinued operations in accordance with Statement of Financial Accounting Standards No. 144) under the Exchange Act (each date of filing of one or more of the documents referred to in clauses (i) through (iv) shall be a “**Representation Date**”);

the Company shall furnish the Agent and the Alternative Agent (but in the case of clause (iv) above only if the Agent or the Alternative Agent reasonably determines that the information contained in such Form 8-K is material) with a certificate dated the Representation Date, in the form attached hereto as Exhibit 7(l). The requirement to provide a certificate under this Section 7(l) shall be automatically waived for any Representation Date occurring (1) at a time a Suspension is in effect, which waiver shall continue until the earlier to occur of the date the Company delivers instructions for the sale of Placement Shares hereunder (which for such calendar quarter shall be considered a Representation Date) and the next occurring Representation Date and (2) at a time at which no Placement Notice is pending hereunder or to the Alternative Sales Agent under the Alternative Sales Agreement, which waiver shall continue until the date the Company delivers a Placement Notice hereunder or to the Alternative Sales Agent under the Alternative Sales Agreement (which for such calendar quarter shall be considered a Representation Date), *provided* that a waiver under this clause (2) shall not apply for a Representation Date on which the Company files its annual report on Form 10-K. Notwithstanding the foregoing, if the Company subsequently decides to sell Placement Shares following a Representation Date when a Suspension was in effect and did not provide the Agent and the Alternative Agent with a certificate under this Section 7(l), then before the Company delivers the instructions for the sale of Placement Shares to the Agent or the Alternative Agent, or before the Agent or the Alternative Agent sells any Placement Shares pursuant to such instructions, the Company shall provide the Agent and the Alternative Agent with a certificate in conformity with this Section 7(l) dated as of the date that the instructions for the sale of Placement Shares are issued.

(m) Legal Opinion. (1) On or prior to the date of the first Placement Notice and (2) unless waived by the Agent, within five (5) Trading Days of each Representation Date with respect to which the Company is obligated to deliver a certificate pursuant to Section 7(l) for which no waiver is applicable and excluding the date of this Agreement, the Company shall cause to be furnished to the Agent and the Alternative Agent a written opinion of (A) Goodwin Procter LLP, as corporate counsel for the Company (“Company Counsel”), or other counsel reasonably satisfactory to the Agents; provided that the Company shall only be required to deliver a written opinion from Company Counsel pursuant to this section in connection with a Representation Date with respect to which the Company is obligated to deliver a certificate pursuant to Sections 7(l)(2)(i) through 7(l)(2)(iii), and (B) Goodwin Procter LLP, as intellectual property counsel for the Company (“IP Counsel”), or other counsel reasonably satisfactory to the Agents; provided that the Company shall only be required to deliver a written opinion from IP Counsel pursuant to this section in connection with a Representation Date with respect to which the Company is obligated to deliver a certificate pursuant to Section 7(l)(2)(i) through Section 7(l)(2)(iii), in each case in form and substance satisfactory to the Agent and its counsel and a written negative assurance letter of Company Counsel; *provided, however*, the Company shall be required to furnish to the Agents no more than one opinion and negative assurance letter from Company Counsel and one opinion from IP Counsel hereunder per calendar quarter and the Company shall not be required to furnish any such letter if the Company does not intend to deliver a Placement Notice in such calendar quarter until such time as the Company delivers its next Placement Notice; *provided, further*, that in lieu of such opinions for subsequent periodic filings under the Exchange Act, counsel may furnish the Agent and the Alternative Agent with a letter (a “Reliance Letter”) to the effect that the Agent and the Alternative Agent may rely on a prior opinion delivered under this Section 7(m) to the same extent as if it were dated the date of such letter (except that statements in such prior opinion shall be deemed to relate to the Registration Statement and the Prospectus as amended or supplemented as of the date of the Reliance Letter).

(n) Comfort Letter. (1) On or prior to the date of the first Placement Notice and (2) unless waived by the Agent, within five (5) Trading Days of each Representation Date with respect to which the Company is obligated to deliver a certificate in the form attached hereto as Exhibit 7(l) for which no waiver is applicable and excluding the date of this Agreement, the Company shall cause its independent registered public accounting firm to furnish the Agent and the Alternative Agent letters (the “Comfort Letters”), dated the date the Comfort Letter is delivered, which shall meet the requirements set forth in this Section 7(n); *provided*, that if requested by the Agent or the Alternative Agent the Company shall cause a Comfort Letter to be furnished to the Agents within ten (10) Trading Days of the date of occurrence of any material transaction or event requiring the filing of a Current Report on Form 8-K containing material financial information (including the restatement of the Company’s financial statements). The Comfort Letter from the Company’s independent registered public accounting firm shall be in a form and substance reasonably satisfactory to the Agents, (i) confirming that they are an independent registered public accounting firm within the meaning of the Securities Act and the PCAOB, (ii) stating, as of such date, the conclusions and findings of such firm with respect to the financial information and other matters ordinarily covered by accountants’ “comfort letters” to underwriters in connection with registered public offerings (the first such letter, the “Initial Comfort Letter”) and (iii) updating the Initial Comfort Letter with any information that would have been included in the Initial Comfort Letter had it been given on such date and modified as necessary to relate to the Registration Statement and the Prospectus, as amended and supplemented to the date of such letter.

(o) Market Activities; Compliance with Regulation M. The Company will not, directly or indirectly, (i) take any action designed to cause or result in, or that constitutes or might reasonably be expected to constitute, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of Common Stock (ii) sell, bid for or purchase Common Stock in violation of Regulation M, (iii) sell, bid for or purchase the Placement Shares to be issued and sold pursuant to the Sales Agreements or (iv) pay anyone any compensation for soliciting purchases of the Placement Shares to be issued and sold pursuant to the Sales Agreements other than the Agent or the Alternative Agent.

(p) Investment Company Act. The Company will conduct its affairs in such a manner so as to reasonably ensure that neither it nor any of its Subsidiaries will be or become, at any time prior to the termination of this Agreement, required to register as an “investment company,” as such term is defined in the Investment Company Act.

(q) No Offer to Sell. Other than an Issuer Free Writing Prospectus approved in advance by the Company and the Agent in its capacity as agent hereunder, neither the Agent nor the Company (including its agents and representatives, other than the Agent in its capacity as such) will make, use, prepare, authorize, approve or refer to any written communication (as defined in Rule 405 under the Securities Act), required to be filed with the Commission, that constitutes an offer to sell or solicitation of an offer to buy Placement Shares hereunder.

(r) Blue Sky and Other Qualifications. The Company will use its commercially reasonable efforts, in cooperation with the Agent, to qualify the Placement Shares for offering and sale, or to obtain an exemption for the Placement Shares to be offered and sold, under the applicable securities laws of such states and other jurisdictions (domestic or foreign) as the Agent may designate and to maintain such qualifications and exemptions in effect for so long as required for the distribution of the Placement Shares (but in no event for less than one year from the date of this Agreement); *provided, however*, that the Company shall not be obligated to file any general consent to service of process or to qualify as a foreign corporation or as a dealer in securities in any jurisdiction in which it is not so qualified or to subject itself to taxation in respect of doing business in any jurisdiction in which it is not otherwise so subject. In each jurisdiction in which the Placement Shares have been so qualified or exempt, the Company will file such statements and reports as may be required by the laws of such jurisdiction to continue such qualification or exemption, as the case may be, in effect for so long as required for the distribution of the Placement Shares (but in no event for less than one year from the date of this Agreement).

(s) Sarbanes-Oxley Act. The Company and the Subsidiaries will maintain and keep accurate books and records reflecting their assets and maintain internal accounting controls in a manner designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP and including those policies and procedures that (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Company, (ii) provide reasonable assurance that transactions are recorded as necessary to permit the preparation of the Company’s consolidated financial statements in accordance with GAAP, (iii) that receipts and expenditures of the Company are being made only in accordance with management’s and the Company’s directors’ authorization, and (iv) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company’s assets that could have a material effect on its financial statements. The Company and the Subsidiaries will maintain such controls and other procedures, including, without limitation, those required by Sections 302 and 906 of the Sarbanes-Oxley Act, and the applicable regulations thereunder that are designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Commission’s rules and forms, including, without limitation, controls and procedures designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Company’s management, including its principal executive officer and principal financial officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure and to ensure that material information relating to the Company or the Subsidiaries is made known to them by others within those entities, particularly during the period in which such periodic reports are being prepared.

(t) Secretary's Certificate; Further Documentation. On or prior to the date of the first Placement Notice, the Company shall deliver to the Agent a certificate of the Secretary of the Company and attested to by an executive officer of the Company, dated as of such date, certifying as to (i) the Certificate of Incorporation of the Company, (ii) the By-laws of the Company, (iii) the resolutions of the board of directors of the Company or a duly authorized committee of the board of directors of the Company authorizing the execution, delivery and performance of this Agreement and the issuance of the Placement Shares and (iv) the incumbency of the officers duly authorized to execute this Agreement and the other documents contemplated by this Agreement. Within five (5) Trading Days of each Representation Date, the Company shall have furnished to the Agent such further information, certificates and documents as the Agent may reasonably request.

8. Payment of Expenses. The Company will pay all expenses incident to the performance of its obligations under this Agreement, including (i) the preparation and filing of the Registration Statement, including any fees required by the Commission, and the printing or electronic delivery of the Prospectus as originally filed and of each amendment and supplement thereto, in such number as the Agent shall reasonably deem necessary, (ii) the printing and delivery to the Agent of the Sales Agreements and such other documents as may be required in connection with the offering, purchase, sale, issuance or delivery of the Placement Shares, (iii) the preparation, issuance and delivery of the certificates, if any, for the Placement Shares to the Agent, including any stock or other transfer taxes and any capital duties, stamp duties or other duties or taxes payable upon the sale, issuance or delivery of the Placement Shares to the Agent, (iv) the reasonable fees and expenses of the Company, including but not limited to the reasonable fees and expenses of the counsel, accountants and other advisors to the Company, (v) the reasonable fees and expenses of the Agent including but not limited to the fees and expenses of the counsel to the Agent, payable upon the execution of this Agreement, in an aggregate amount not to exceed \$50,000 to both Agents collectively, (vi) the qualification or exemption of the Placement Shares under state securities laws in accordance with the provisions of Section 7(r) hereof, including filing fees, but excluding fees of the Agent's counsel, (vii) the printing and delivery to the Agent of copies of any Permitted Issuer Free Writing Prospectus and the Prospectus and any amendments or supplements thereto in such number as the Agent shall reasonably deem necessary, (viii) the preparation, printing and delivery to the Agent of copies of the blue sky survey, (ix) the fees and expenses of the transfer agent and registrar for the Common Stock, (x) the filing and other fees incident to any review by FINRA of the terms of the sale of the Placement Shares including the fees of the Agent's counsel (subject to the cap, set forth in clause (v) above), and (xi) the fees and expenses incurred in connection with the listing of the Placement Shares on the Exchange.

9. Representations and Covenants of the Agent. The Agent represents and warrants that it is duly registered as a broker-dealer under FINRA, the Exchange Act and the applicable statutes and regulations of each state in which the Placement Shares will be offered and sold, except such states in which the Agent is exempt from registration or such registration is not otherwise required. The Agent shall continue, for the term of this Agreement, to be duly registered as a broker-dealer under FINRA, the Exchange Act and the applicable statutes and regulations of each state in which the Placement Shares will be offered and sold, except such states in which the Agent is exempt from registration or such registration is not otherwise required, during the term of this Agreement. The Agent will comply in all material respects with all applicable law and regulations in connection with the Placement Shares, including but not limited to Regulation M.

10. Conditions to the Agent's Obligations. The obligations of the Agent hereunder with respect to a Placement will be subject to the continuing accuracy and completeness of the representations and warranties made by the Company herein, to the due performance by the Company of its obligations hereunder, to the completion by the Agent of a due diligence review satisfactory to it in its reasonable judgment, and to the continuing satisfaction (or waiver by the Agent in its sole discretion) of the following additional conditions:

(a) Registration Statement Effective. The Registration Statement shall have become effective and shall be available for the (i) resale of all Placement Shares issued to the Agent and not yet sold by the Agent and (ii) sale of all Placement Shares contemplated to be issued by any Placement Notice.

(b) No Material Notices. None of the following events shall have occurred and be continuing: (i) receipt by the Company of any request for additional information from the Commission or any other federal or state Governmental Authority during the period of effectiveness of the Registration Statement, the response to which would require any post-effective amendments or supplements to the Registration Statement or the Prospectus if such post-effective amendments or supplements have not been made or become effective; (ii) the issuance by the Commission or any other federal or state Governmental Authority of any stop order suspending the effectiveness of the Registration Statement or the initiation of any proceedings for that purpose; (iii) receipt by the Company of any notification with respect to the suspension of the qualification or exemption from qualification of any of the Placement Shares for sale in any jurisdiction or the initiation or threatening of any proceeding for such purpose; or (iv) the occurrence of any event that makes any material statement made in the Registration Statement or the Prospectus or any material document incorporated or deemed to be incorporated therein by reference untrue in any material respect or that requires the making of any changes in the Registration Statement, the Prospectus or material incorporated documents so that, in the case of the Registration Statement, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein not misleading and, that in the case of the Prospectus, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

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

(d) Material Changes. Except as contemplated in the Prospectus, or disclosed in the Company's reports filed with the Commission, there shall not have been any material adverse change in the authorized capital stock of the Company or any Material Adverse Effect or any development that would reasonably be expected to cause a Material Adverse Effect, or a downgrading in or withdrawal of the rating assigned to any of the Company's securities (other than asset backed securities) by any rating organization or a public announcement by any rating organization that it has under surveillance or review its rating of any of the Company's securities (other than asset backed securities), the effect of which, in the case of any such action by a rating organization described above, in the reasonable judgment of the Agent (without relieving the Company of any obligation or liability it may otherwise have), is so material as to make it impracticable or inadvisable to proceed with the offering of the Placement Shares on the terms and in the manner contemplated in the Prospectus.

(e) Legal Opinions. The Agent and the Alternative Agent shall have received the opinion and negative assurance letter of Company Counsel and the opinion of IP Counsel, if applicable, required to be delivered pursuant to Section 7(m) on or before the date on which such delivery of such opinions and negative assurance letter, as applicable, are required pursuant to Section 7(m).

(f) Comfort Letter. The Agent and the Alternative Agent shall have received the Comfort Letter required to be delivered pursuant to Section 7(n) on or before the date on which such delivery of such Comfort Letter is required pursuant to Section 7(n).

(g) Representation Certificate. The Agent and the Alternative Agent shall have received the certificate required to be delivered pursuant to Section 7(l) on or before the date on which delivery of such certificate is required pursuant to Section 7(l).

(h) No Suspension. Trading in the Common Stock shall not have been suspended on the Exchange and the Common Stock shall not have been delisted from the Exchange.

(i) Other Materials. On each date on which the Company is required to deliver a certificate pursuant to Section 7(l), the Company shall have furnished to the Agent and the Alternative Agent such appropriate further information, opinions, certificates, letters and other documents as the Agent and the Alternative Agent may reasonably request. All such opinions, certificates, letters and other documents will be in compliance with the provisions hereof.

(j) Securities Act Filings Made. All filings with the Commission with respect to the Placement Shares required by Rule 424 under the Securities Act to have been filed prior to the issuance of any Placement Notice hereunder shall have been made within the applicable time period prescribed for such filing by Rule 424.

(k) Approval for Listing. The Placement Shares shall either have been (i) approved for listing on the Exchange, subject only to notice of issuance, or (ii) the Company shall have filed an application for listing of the Placement Shares on the Exchange at, or prior to, the issuance of any Placement Notice and, if required, the Exchange shall have reviewed such application and not provided any objections thereto.

(l) FINRA. If applicable, FINRA shall have raised no objection to the terms of this offering and the amount of compensation allowable or payable to the Agent as described in the Prospectus.

(m) No Termination Event. There shall not have occurred any event that would permit the Agent to terminate this Agreement pursuant to Section 12(a).

11. Indemnification and Contribution.

(a) Company Indemnification. The Company agrees to indemnify and hold harmless the Agent, its affiliates and their respective partners, members, directors, officers, employees and agents and each person, if any, who controls the Agent or any affiliate within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act as follows:

(i) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, joint or several, arising out of or based upon any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement (or any amendment thereto), or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein not misleading, or arising out of any untrue statement or alleged untrue statement of a material fact included in any related Issuer Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto), or the omission or alleged omission therefrom of a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading;

(ii) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, joint or several, to the extent of the aggregate amount paid in settlement of any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or of any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission; *provided* that (subject to Section 10(d) below) any such settlement is effected with the written consent of the Company, which consent shall not unreasonably be delayed or withheld; and

(iii) against any and all expense whatsoever, as incurred (including the fees and disbursements of counsel), reasonably incurred in investigating, preparing or defending against any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission (whether or not a party), to the extent that any such expense is not paid under (i) or (ii) above,

provided, however, that this indemnity agreement shall not apply to any loss, liability, claim, damage or expense to the extent arising out of (x) any untrue statement or omission or alleged untrue statement or omission made solely in reliance upon and in conformity with the Agent Information (as defined below) or (y) a breach of Agent's representations in Section 9 of this Agreement.

(b) Agent Indemnification. The Agent agrees to indemnify and hold harmless the Company and its directors and each officer of the Company who signed the Registration Statement, and each person, if any, who controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act against any and all loss, liability, claim, damage and expense described in the indemnity contained in Section 10(a), as incurred, but only with respect to untrue statements or omissions, or alleged untrue statements or omissions, made in the Registration Statement (or any amendments thereto), the Prospectus (or any amendment or supplement thereto) or any Issuer Free Writing Prospectus (or any amendment or supplement thereto) in reliance upon and in conformity with information relating to the Agent and furnished to the Company in writing by the Agent expressly for use therein or arising out of a breach of Agent's representations in Section 9 of this Agreement. The Company hereby acknowledges that the only information that the Agent has furnished to the Company expressly for use in the Registration Statement, the Prospectus or any Issuer Free Writing Prospectus (or any amendment or supplement thereto) are the statements set forth in the seventh and eighth paragraphs under the caption "Plan of Distribution" in the Prospectus (the "Agent Information").

(c) Procedure. Any party that proposes to assert the right to be indemnified under this Section 10 will, promptly after receipt of notice of commencement of any action against such party in respect of which a claim is to be made against an indemnifying party or parties under this Section 10, notify each such indemnifying party of the commencement of such action, enclosing a copy of all papers served, but the omission so to notify such indemnifying party will not relieve the indemnifying party from (i) any liability that it might have to any indemnified party otherwise than under this Section 10 and (ii) any liability that it may have to any indemnified party under the foregoing provision of this Section 10 unless, and only to the extent that, such omission results in the forfeiture of substantive rights or defenses by the indemnifying party. If any such action is brought against any indemnified party and it notifies the indemnifying party of its commencement, the indemnifying party will be entitled to participate in and, to the extent that it elects by delivering written notice to the indemnified party promptly after receiving notice of the commencement of the action from the indemnified party, jointly with any other indemnifying party similarly notified, to assume the defense of the action, with counsel reasonably satisfactory to the indemnified party, and after notice from the indemnifying party to the indemnified party of its election to assume the defense, the indemnifying party will not be liable to the indemnified party for any legal or other expenses except as provided below and except for the reasonable costs of investigation subsequently incurred by the indemnified party in connection with the defense. The indemnified party will have the right to employ its own counsel in any such action, but the fees, expenses and other charges of such counsel will be at the expense of such indemnified party unless (1) the employment of counsel by the indemnified party has been authorized in writing by the indemnifying party, (2) the indemnified party has reasonably concluded (based on advice of counsel) that there may be legal defenses available to it or other indemnified parties that are different from or in addition to those available to the indemnifying party, (3) a conflict or potential conflict exists (based on advice of counsel to the indemnified party) between the indemnified party and the indemnifying party (in which case the indemnifying party will not have the right to direct the defense of such action on behalf of the indemnified party) or (4) the indemnifying party has not in fact employed counsel to assume the defense of such action or counsel reasonably satisfactory to the indemnified party, in each case, within a reasonable time after receiving notice of the commencement of the action; in each of which cases the reasonable fees, disbursements and other charges of counsel will be at the expense of the indemnifying party or parties. It is understood that the indemnifying party or parties shall not, in connection with any proceeding or related proceedings in the same jurisdiction, be liable for the reasonable fees, disbursements and other charges of more than one separate firm (plus local counsel) admitted to practice in such jurisdiction at any one time for all such indemnified party or parties. All such fees, disbursements and other charges will be reimbursed by the indemnifying party promptly as they are incurred. An indemnifying party will not, in any event, be liable for any settlement of any action or claim effected without its written consent. No indemnifying party shall, without the prior written consent of each indemnified party, settle or compromise or consent to the entry of any judgment in any pending or threatened claim, action or proceeding relating to the matters contemplated by this Section 10 (whether or not any indemnified party is a party thereto), unless such settlement, compromise or consent (1) includes an unconditional release of each indemnified party, in form and substance reasonably satisfactory to such indemnified party, from all liability arising out of such litigation, investigation, proceeding or claim and (2) does not include a statement as to or an admission of fault, culpability or a failure to act by or on behalf of any indemnified party.

(d) Settlement Without Consent if Failure to Reimburse. If an indemnified party shall have requested an indemnifying party to reimburse the indemnified party for reasonable fees and expenses of counsel, such indemnifying party agrees that it shall be liable for any settlement of the nature contemplated by Section 10(a)(ii) effected without its written consent if (1) such settlement is entered into more than 45 days after receipt by such indemnifying party of the aforesaid request, (2) such indemnifying party shall have received notice of the terms of such settlement at least 30 days prior to such settlement being entered into and (3) such indemnifying party shall not have reimbursed such indemnified party in accordance with such request prior to the date of such settlement.

(e) Contribution. In order to provide for just and equitable contribution in circumstances in which the indemnification provided for in the foregoing paragraphs of this Section 10 is applicable in accordance with its terms but for any reason is held to be unavailable or insufficient from the Company or the Agent, the Company and the Agent will contribute to the total losses, claims, liabilities, expenses and damages (including any investigative, legal and other expenses reasonably incurred in connection with, and any amount paid in settlement of, any action, suit or proceeding or any claim asserted, but after deducting any contribution received by the Company from persons other than the Agent, such as persons who control the Company within the meaning of the Securities Act, officers of the Company who signed the Registration Statement and directors of the Company, who also may be liable for contribution) to which the Company and the Agent may be subject in such proportion as shall be appropriate to reflect the relative benefits received by the Company on the one hand and the Agent on the other hand. The relative benefits received by the Company on the one hand and the Agent on the other hand shall be deemed to be in the same proportion as the total net proceeds from the sale of the Placement Shares (before deducting expenses) received by the Company bear to the total compensation received by the Agent (before deducting expenses) from the sale of Placement Shares on behalf of the Company. If, but only if, the allocation provided by the foregoing sentence is not permitted by applicable law, the allocation of contribution shall be made in such proportion as is appropriate to reflect not only the relative benefits referred to in the foregoing sentence but also the relative fault of the Company, on the one hand, and the Agent, on the other hand, with respect to the statements or omission that resulted in such loss, claim, liability, expense or damage, or action in respect thereof, as well as any other relevant equitable considerations with respect to such offering. Such relative fault shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company or the Agent, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such statement or omission. The Company and the Agent agree that it would not be just and equitable if contributions pursuant to this Section 10(e) were to be determined by pro rata allocation or by any other method of allocation that does not take into account the equitable considerations referred to herein. The amount paid or payable by an indemnified party as a result of the loss, claim, liability, expense, or damage, or action in respect thereof, referred to above in this Section 10(e) shall be deemed to include, for the purpose of this Section 10(e), any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action or claim to the extent consistent with Section 10(c) hereof. Notwithstanding the foregoing provisions of this Section 10(e), the Agent shall not be required to contribute any amount in excess of the commissions received by it under this Agreement and no person found guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 10(e), any person who controls a party to this Agreement within the meaning of the Securities Act, and any officers, directors, partners, employees or agents of the Agent, will have the same rights to contribution as that party, and each director of the Company and each officer of the Company who signed the Registration Statement will have the same rights to contribution as the Company, subject in each case to the provisions hereof. Any party entitled to contribution, promptly after receipt of notice of commencement of any action against such party in respect of which a claim for contribution may be made under this Section 10(e), will notify any such party or parties from whom contribution may be sought, but the omission to so notify will not relieve that party or parties from whom contribution may be sought from any other obligation it or they may have under this Section 10(e) except to the extent that the failure to so notify such other party materially prejudiced the substantive rights or defenses of the party from whom contribution is sought. Except for a settlement entered into pursuant to the last sentence of Section 10(c) hereof, no party will be liable for contribution with respect to any action or claim settled without its written consent if such consent is required pursuant to Section 10(c) hereof.

12. Representations and Agreements to Survive Delivery. The indemnity and contribution agreements contained in Section 10 of this Agreement and all representations and warranties of the Company herein or in certificates delivered pursuant hereto shall survive, as of their respective dates, regardless of (i) any investigation made by or on behalf of the Agent, any controlling persons, or the Company (or any of their respective officers, directors or controlling persons), (ii) delivery and acceptance of the Placement Shares and payment therefor or (iii) any termination of this Agreement.

13. Termination.

(a) The Agent may terminate this Agreement, by notice to the Company, as hereinafter specified at any time (1) if there has been, since the time of execution of this Agreement or since the date as of which information is given in the Prospectus, any change, or any development or event involving a prospective change, in the condition, financial or otherwise, or in the business, properties, earnings, results of operations or prospects of the Company and its Subsidiaries considered as one enterprise, whether or not arising in the ordinary course of business, which individually or in the aggregate, in the sole judgment of the Agent is material and adverse and makes it impractical or inadvisable to market the Placement Shares or to enforce contracts for the sale of the Placement Shares, (2) if there has occurred any material adverse change in the financial markets in the United States or the international financial markets, any outbreak of hostilities or escalation thereof or other calamity or crisis or any change or development involving a prospective change in national or international political, financial or economic conditions, in each case the effect of which is such as to make it, in the judgment of the Agent, impracticable or inadvisable to market the Placement Shares or to enforce contracts for the sale of the Placement Shares, (3) if trading in the Common Stock has been suspended or limited by the Commission or the Exchange, or if trading generally on the Exchange has been suspended or limited, or minimum prices for trading have been fixed on the Exchange, (4) if any suspension of trading of any securities of the Company on any exchange or in the over-the-counter market shall have occurred and be continuing for at least ten (10) Trading Days, (5) if a major disruption of securities settlements or clearance services in the United States shall have occurred and be continuing, or (6) if a banking moratorium has been declared by either U.S. Federal or New York authorities. Any such termination shall be without liability of any party to any other party except that the provisions of Section 8 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination. If the Agent elects to terminate this Agreement as provided in this Section 13(a), the Agent shall provide the required notice as specified in Section 14 (Notices).

(b) The Company shall have the right, by giving ten (10) days' notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 8, Section 11, Section 12, Section 18 and Section 19 hereof shall remain in full force and effect notwithstanding such termination.

(c) The Agent shall have the right, by giving ten (10) days' notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 8, Section 11, Section 12, Section 18 and Section 19 hereof shall remain in full force and effect notwithstanding such termination.

(d) Unless earlier terminated pursuant to this Section 13, this Agreement shall automatically terminate upon the issuance and sale of all of the Placement Shares through the Agent on the terms and subject to the conditions set forth herein; provided that the provisions of Section 8, Section 11, Section 12, Section 18 and Section 19 hereof shall remain in full force and effect notwithstanding such termination.

(e) This Agreement shall remain in full force and effect unless terminated pursuant to Sections 13(a), (b), (c) or (d) above or otherwise by mutual agreement of the parties; *provided, however*, that any such termination by mutual agreement shall in all cases be deemed to provide that Section 8, Section 11, Section 12, Section 18 and Section 19 shall remain in full force and effect.

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

14. Notices. All notices or other communications required or permitted to be given by any party to any other party pursuant to the terms of this Agreement shall be in writing, unless otherwise specified, and if sent to the Agent, shall be delivered to:

Cantor Fitzgerald & Co.
499 Park Avenue
New York, NY 10022
Attention: Capital Markets/Jeffrey Lumby
Facsimile: (212) 307-3730

and:

Cantor Fitzgerald & Co.
499 Park Avenue
New York, NY 10022
Attention: General Counsel
Facsimile: (212) 829-4708

with a copy to:

Latham & Watkins LLP
12670 High Bluff Drive
San Diego, CA 92130
Attention: Cheston Larson, Esq.
Facsimile: (858) 523-5450

and if to the Company, shall be delivered to:

Assembly Biosciences, Inc.
11711 N. Meridian Street, Suite 310
Carmel, Indiana 46032
Attention: Elizabeth H. Lacy
Facsimile: (317) 663-2462

with a copy to:

Goodwin Procter LLP
100 Northern Avenue
Boston, Massachusetts 02210
Attention: Mitchell S. Bloom, Esq.
Facsimile: (617) 321-4377

Each party to this Agreement may change such address for notices by sending to the parties to this Agreement written notice of a new address for such purpose. Each such notice or other communication shall be deemed given (i) when delivered personally or by verifiable facsimile transmission (with an original to follow) on or before 4:30 p.m., New York City time, on a Business Day or, if such day is not a Business Day, on the next succeeding Business Day, (ii) by Electronic Notice as set forth in the next paragraph, (iii) on the next Business Day after timely delivery to a nationally-recognized overnight courier or (iv) on the Business Day actually received if deposited in the U.S. mail (certified or registered mail, return receipt requested, postage prepaid). For purposes of this Agreement, "**Business Day**" shall mean any day on which the Exchange and commercial banks in the City of New York are open for business.

An electronic communication ("**Electronic Notice**") shall be deemed written notice for purposes of this Section 14 if sent to the electronic mail address specified by the receiving party under separate cover. Electronic Notice shall be deemed received at the time the party sending Electronic Notice receives verification of receipt by the receiving party. Any party receiving Electronic Notice may request and shall be entitled to receive the notice on paper, in a nonelectronic form ("**Nonelectronic Notice**") which shall be sent to the requesting party within ten (10) days of receipt of the written request for Nonelectronic Notice.

15. Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the Company and the Agent and their respective successors and the parties referred to in Section 11 hereof. References to any of the parties contained in this Agreement shall be deemed to include the successors and permitted assigns of such party. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and permitted assigns any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement. Neither party may assign its rights or obligations under this Agreement without the prior written consent of the other party; *provided, however*, that the Agent may assign its rights and obligations hereunder to an affiliate thereof without obtaining the Company's consent so long as such affiliate is a registered broker dealer and the Agent provides notice of such assignment to the Company.

16. Adjustments for Stock Splits. The parties acknowledge and agree that all share-related numbers contained in this Agreement shall be adjusted to take into account any stock split, stock dividend or similar event effected with respect to the Placement Shares.

17. Entire Agreement; Amendment; Severability; Waiver. This Agreement (including all schedules and exhibits attached hereto and Placement Notices issued pursuant hereto), together with that certain letter agreement between the Company and the Agent dated the date hereof, constitute the entire agreement and supersedes all other prior and contemporaneous agreements and undertakings, both written and oral, among the parties hereto with regard to the subject matter hereof. Neither this Agreement nor any term hereof may be amended except pursuant to a written instrument executed by the Company and the Agent. In the event that any one or more of the provisions contained herein, or the application thereof in any circumstance, is held invalid, illegal or unenforceable as written by a court of competent jurisdiction, then such provision shall be given full force and effect to the fullest possible extent that it is valid, legal and enforceable, and the remainder of the terms and provisions herein shall be construed as if such invalid, illegal or unenforceable term or provision was not contained herein, but only to the extent that giving effect to such provision and the remainder of the terms and provisions hereof shall be in accordance with the intent of the parties as reflected in this Agreement. No implied waiver by a party shall arise in the absence of a waiver in writing signed by such party. No failure or delay in exercising any right, power, or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any right, power, or privilege hereunder.

18. GOVERNING LAW AND TIME; WAIVER OF JURY TRIAL. THIS AGREEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO THE PRINCIPLES OF CONFLICTS OF LAWS. SPECIFIED TIMES OF DAY REFER TO NEW YORK CITY TIME. EACH PARTY HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY.

19. CONSENT TO JURISDICTION. EACH PARTY HEREBY IRREVOCABLY SUBMITS TO THE EXCLUSIVE JURISDICTION OF THE STATE AND FEDERAL COURTS SITTING IN THE CITY OF NEW YORK, BOROUGH OF MANHATTAN, FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION WITH ANY TRANSACTION CONTEMPLATED HEREBY, AND HEREBY IRREVOCABLY WAIVES, AND AGREES NOT TO ASSERT IN ANY SUIT, ACTION OR PROCEEDING, ANY CLAIM THAT IT IS NOT PERSONALLY SUBJECT TO THE JURISDICTION OF ANY SUCH COURT, THAT SUCH SUIT, ACTION OR PROCEEDING IS BROUGHT IN AN INCONVENIENT FORUM OR THAT THE VENUE OF SUCH SUIT, ACTION OR PROCEEDING IS IMPROPER. EACH PARTY HEREBY IRREVOCABLY WAIVES PERSONAL SERVICE OF PROCESS AND CONSENTS TO PROCESS BEING SERVED IN ANY SUCH SUIT, ACTION OR PROCEEDING BY MAILING A COPY THEREOF (CERTIFIED OR REGISTERED MAIL, RETURN RECEIPT REQUESTED) TO SUCH PARTY AT THE ADDRESS IN EFFECT FOR NOTICES TO IT UNDER THIS AGREEMENT AND AGREES THAT SUCH SERVICE SHALL CONSTITUTE GOOD AND SUFFICIENT SERVICE OF PROCESS AND NOTICE THEREOF. NOTHING CONTAINED HEREIN SHALL BE DEEMED TO LIMIT IN ANY WAY ANY RIGHT TO SERVE PROCESS IN ANY MANNER PERMITTED BY LAW.

20. Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Delivery of an executed Agreement by one party to the other may be made by facsimile or electronic transmission.

21. Construction. The section and exhibit headings herein are for convenience only and shall not affect the construction hereof. References herein to any law, statute, ordinance, code, regulation, rule or other requirement of any Governmental Authority shall be deemed to refer to such law, statute, ordinance, code, regulation, rule or other requirement of any Governmental Authority as amended, reenacted, supplemented or superseded in whole or in part and in effect from time to time and also to all rules and regulations promulgated thereunder.

22. Permitted Free Writing Prospectuses. The Company represents, warrants and agrees that, unless it obtains the prior written consent of the Agent (including by email correspondence to each of the individuals of such party set forth on Schedule 3, if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply), and the Agent represents, warrants and agrees that, unless it obtains the prior written consent of the Company (including by email correspondence to each of the individuals of such party set forth on Schedule 3, if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply), it has not made and will not make any offer relating to the Placement Shares that would constitute an Issuer Free Writing Prospectus, or that would otherwise constitute a “free writing prospectus,” as defined in Rule 405, required to be filed with the Commission. Any such free writing prospectus consented to by the Agent or by the Company, as the case may be, is hereinafter referred to as a “Permitted Free Writing Prospectus.” The Company represents and warrants that it has treated and agrees that it will treat each Permitted Free Writing Prospectus as an “issuer free writing prospectus,” as defined in Rule 433, and has complied and will comply with the requirements of Rule 433 applicable to any Permitted Free Writing Prospectus, including timely filing with the Commission where required, legending and record keeping. For the purposes of clarity, the parties hereto agree that all free writing prospectuses, if any, listed in Exhibit 22 hereto are Permitted Free Writing Prospectuses.

23. Absence of Fiduciary Relationship. The Company acknowledges and agrees that:

(a) the Agent is acting solely as agent in connection with the public offering of the Placement Shares and in connection with each transaction contemplated by this Agreement and the process leading to such transactions, and no fiduciary or advisory relationship between the Company or any of its respective affiliates, stockholders (or other equity holders), creditors or employees or any other party, on the one hand, and the Agent, on the other hand, has been or will be created in respect of any of the transactions contemplated by this Agreement, irrespective of whether or not the Agent has advised or is advising the Company on other matters, and the Agent has no obligation to the Company with respect to the transactions contemplated by this Agreement except the obligations expressly set forth in this Agreement;

(b) it is capable of evaluating and understanding, and understands and accepts, the terms, risks and conditions of the transactions contemplated by this Agreement;

(c) neither the Agent nor its affiliates have provided any legal, accounting, regulatory or tax advice with respect to the transactions contemplated by this Agreement and it has consulted its own legal, accounting, regulatory and tax advisors to the extent it has deemed appropriate;

(d) it is aware that the Agent and its affiliates are engaged in a broad range of transactions which may involve interests that differ from those of the Company and the Agent and its affiliates have no obligation to disclose such interests and transactions to the Company by virtue of any fiduciary, advisory or agency relationship or otherwise; and

(e) it waives, to the fullest extent permitted by law, any claims it may have against the Agent or its affiliates for breach of fiduciary duty or alleged breach of fiduciary duty in connection with the sale of Placement Shares under this Agreement and agrees that the Agent and its affiliates shall not have any liability (whether direct or indirect, in contract, tort or otherwise) to it in respect of such a fiduciary duty claim or to any person asserting a fiduciary duty claim on its behalf or in right of it or the Company, employees or creditors of Company, other than in respect of the Agent's obligations under this Agreement and to keep information provided by the Company to the Agent and the Agent's counsel confidential to the extent not otherwise publicly available.

24. **Definitions.** As used in this Agreement, the following terms have the respective meanings set forth below:

"Applicable Time" means (i) each Representation Date, (ii) the time of each sale of any Placement Shares pursuant to this Agreement and (iii) each Settlement Date.

"Governmental Authority" means (i) any federal, provincial, state, local, municipal, national or international government or governmental authority, regulatory or administrative agency, governmental commission, department, board, bureau, agency or instrumentality, court, tribunal, arbitrator or arbitral body (public or private); (ii) any self-regulatory organization; or (iii) any political subdivision of any of the foregoing.

"Issuer Free Writing Prospectus" means any "issuer free writing prospectus," as defined in Rule 433, relating to the Placement Shares that (1) is required to be filed with the Commission by the Company, (2) is a "road show" that is a "written communication" within the meaning of Rule 433(d)(8)(i) whether or not required to be filed with the Commission, or (3) is exempt from filing pursuant to Rule 433(d)(5)(i) because it contains a description of the Placement Shares or of the offering that does not reflect the final terms, in each case in the form filed or required to be filed with the Commission or, if not required to be filed, in the form retained in the Company's records pursuant to Rule 433(g) under the Securities Act Regulations.

"Rule 164," "Rule 172," "Rule 405," "Rule 415," "Rule 424," "Rule 424(b)," "Rule 430B," and **"Rule 433"** refer to such rules under the Securities Act Regulations.

All references in this Agreement to financial statements and schedules and other information that is "contained," "included" or "stated" in the Registration Statement or the Prospectus (and all other references of like import) shall be deemed to mean and include all such financial statements and schedules and other information that is incorporated by reference in the Registration Statement or the Prospectus, as the case may be.

All references in this Agreement to the Registration Statement, the Prospectus or any amendment or supplement to any of the foregoing shall be deemed to include the copy filed with the Commission pursuant to EDGAR; all references in this Agreement to any Issuer Free Writing Prospectus (other than any Issuer Free Writing Prospectuses that, pursuant to Rule 433, are not required to be filed with the Commission) shall be deemed to include the copy thereof filed with the Commission pursuant to EDGAR; and all references in this Agreement to "supplements" to the Prospectus shall include, without limitation, any supplements, "wrappers" or similar materials prepared in connection with any offering, sale or private placement of any Placement Shares by the Agent outside of the United States.

[Signature Page Follows]

If the foregoing correctly sets forth the understanding between the Company and the Agent, please so indicate in the space provided below for that purpose, whereupon this letter shall constitute a binding agreement between the Company and the Agent.

Very truly yours,

ASSEMBLY BIOSCIENCES, INC.

By: /s/ Derek A. Small

Name: Derek A. Small

Title: Chief Executive Officer and President

ACCEPTED as of the date first-above written:

CANTOR FITZGERALD & CO.

By: /s/ Jeffrey Lumby

Name: Jeffrey Lumby

Title: Senior Managing Director

SCHEDULE 1

Form of Placement Notice

From: Assembly Biosciences, Inc.

To: Cantor Fitzgerald & Co.
Attention: [●]

Subject: Placement Notice

Date: [●], 20[●]

Ladies and Gentlemen:

Pursuant to the terms and subject to the conditions contained in the Sales Agreement between Assembly Biosciences, Inc., a Delaware corporation (the "**Company**"), and Cantor Fitzgerald & Co. (the "**Agent**"), dated December 29, 2017, the Company hereby requests that the Agent sell up to [●] of the Company's common stock, par value \$0.001 per share, at a minimum market price of \$[●] per share, during the time period beginning [month, day, time] and ending [month, day, time].

Assembly Biosciences

[Name, Title]

cc: [other Assembly notice parties]

SCHEDULE 2

Compensation

The Company shall pay to the Agent in cash, upon each sale of Placement Shares pursuant to this Agreement, an amount equal to up to 3.0% of the aggregate gross proceeds from each sale of Placement Shares.

SCHEDULE 3

Notice Parties

The Company

Derek A. Small (derek@assemblybio.com)

David J. Barrett (dbarrett@assemblybio.com)

With copies to:

Michael Samar (msamar@assemblybio.com)

Diane Hague (dhague@assemblybio.com)

Elizabeth H. Lacy (elizabeth@assemblybio.com)

The Agent

Jeffrey Lumby (jlumby@cantor.com)

Joshua Feldman (jfeldman@cantor.com)

Sameer Vasudev (svasudev@cantor.com)

With copies to:

CFControlledEquityOffering@cantor.com

SCHEDULE 4

Subsidiaries

Incorporated by reference to Exhibit 21 of the Company's most recently filed Annual Report on Form 10-K, as amended.

In addition to the above noted Subsidiaries, Assembly Biotechnology Development (Shanghai) Co., Ltd.

Exhibit 7(l)

Form of Representation Date Certificate

The undersigned, the duly qualified and elected [●], of Assembly Biosciences, Inc., a Delaware corporation (the “Company”), does hereby certify in such capacity and on behalf of the Company, pursuant to Section 7(l) of the Sales Agreement, dated December 29, 2017 (the “Sales Agreement”), between the Company and Cantor Fitzgerald & Co., that to the best of the knowledge of the undersigned:

(i) The representations and warranties of the Company in Section 6 of the Sales Agreement (A) to the extent such representations and warranties are subject to qualifications and exceptions contained therein relating to materiality or Material Adverse Effect, are true and correct on and as of the date hereof with the same force and effect as if expressly made on and as of the date hereof, except for those representations and warranties that speak solely as of a specific date and which were true and correct as of such date, and (B) to the extent such representations and warranties are not subject to qualifications or exceptions contained therein relating to materiality or Material Adverse Effect, are true and correct in all material respects as of the date hereof as if made on and as of the date hereof; *provided, however*, that such representations and warranties also shall be qualified by the disclosure included or incorporated by reference in the Registration Statement and Prospectus; and

(ii) The Company has complied with all agreements and satisfied all conditions on its part to be performed or satisfied pursuant to the Sales Agreement at or prior to the date hereof.

Capitalized terms used herein without definition shall have the meanings given to such terms in the Sales Agreement.

ASSEMBLY BIOSCIENCES, INC.

By: _____

Name: _____

Title: _____

Date: [●]

Exhibit 22

Permitted Free Writing Prospectus

None.

ASSEMBLY BIOSCIENCES, INC.

TO

[_____]

Trustee

Indenture

Dated as of _____, 20__

Senior Debt Securities

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ASSEMBLY BIOSCIENCES, INC.

Reconciliation and tie between the Trust Indenture Act of 1939, as amended (the “Trust Indenture Act” or “TIA”) and the Indenture, dated as of _____, 20__.

Trust Indenture Act Section	Indenture Section
§ 310(a)(1)	607
(a)(2)	607
(b)	607, 608
§ 312(c)	701
§ 313(a)	702
(c)	702
§ 314(a)	703
(a)(4)	1008
(c)(1)	102
(c)(2)	102
(e)	102
§ 315(b)	601
§ 316(a) (last sentence)	
101(“Outstanding”)	
(a)(1)(A)	502, 512
(a)(1)(B)	513
(b)	508
§ 317(a)(1)	503
(a)(2)	504
§ 318(a)	111
(c)	111

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

Attention should also be directed to Section 318(c) of the Trust Indenture Act, which provides that the provisions of Sections 310 to and including 317 of the Trust Indenture Act are a part of and govern every qualified indenture, whether or not physically contained therein.

INDENTURE, dated as of _____, 20__, between ASSEMBLY BIOSCIENCES, INC., a corporation organized under the laws of the State of Delaware (hereinafter called the "Company"), having its principal office at 99 Hudson Street, 5th Floor, New York, New York 10013, and [_____], as Trustee hereunder (hereinafter called the "Trustee"), having a Corporate Trust Office at [_____].

RECITALS OF THE COMPANY

The Company deems it necessary to issue from time to time for its lawful purposes senior debt securities (hereinafter called the "Securities") evidencing its unsecured and senior indebtedness, and has duly authorized the execution and delivery of this Indenture to provide for the issuance from time to time of the Securities, to be issued in one or more Series as provided in this Indenture.

This Indenture is subject to the provisions of the Trust Indenture Act of 1939, as amended (the "Trust Indenture Act" or "TIA"), that are deemed to be incorporated into this Indenture and shall, to the extent applicable, be governed by such provisions.

All things necessary to make this Indenture a valid and legally binding agreement of the Company, in accordance with its terms, have been done.

NOW, THEREFORE, THIS INDENTURE WITNESSETH:

For and in consideration of the premises and the purchase of the Securities by the Holders thereof, it is mutually covenanted and agreed, for the equal and proportionate benefit of all Holders of the Securities or of a Series thereof, as follows:

ARTICLE ONE - DEFINITIONS AND OTHER PROVISIONS OF GENERAL APPLICATION

SECTION 101. Definitions. For all purposes of this Indenture, except as otherwise expressly provided or unless the context otherwise requires:

- (1) the terms defined in this Article have the meanings assigned to them in this Article, and include the plural as well as the singular;
 - (2) all other terms used herein which are defined in the TIA, either directly or by reference therein, have the meanings assigned to them therein, and the terms "cash transactions" and "self-liquidating paper," as used in TIA Section 311, shall have the meanings assigned to them in the rules of the Commission adopted under the TIA;
 - (3) all accounting terms not otherwise defined herein have the meanings assigned to them in accordance with GAAP;
 - (4) any reference to an "Article" or a "Section" refers to an Article or Section, as the case may be, of this Indenture; and
 - (5) the words "herein," "hereof" and "hereunder" and other words of similar import refer to this Indenture as a whole and not to any particular Article, Section or other subdivision.
-

“Act,” when used with respect to any Holder, has the meaning specified in Section 104.

“Affiliate” of any specified Person means any other Person directly or indirectly controlling or controlled by or under direct or indirect common control with such specified Person. For the purposes of this definition, “control” when used with respect to any specified Person means the power to direct the management and policies of such Person, directly or indirectly, whether through the ownership of voting securities, by contract or otherwise; and the terms “controlling” and “controlled” have meanings correlative to the foregoing.

“Authenticating Agent” means any Person authorized by the Trustee pursuant to Section 611 hereof to act on behalf of the Trustee to authenticate Securities of one or more Series.

“Authorized Newspaper” means a newspaper, printed in the English language or in an official language of the country of publication, customarily published on each Business Day, whether or not published on Saturdays, Sundays or holidays, and of general circulation in each place in connection with which the term is used or in the financial community of each such place. Whenever successive publications are required to be made in Authorized Newspapers, the successive publications may be made in the same or in different Authorized Newspapers in the same city meeting the foregoing requirements and in each case on any Business Day.

“Bankruptcy Law” has the meaning specified in Section 501.

“Bearer Security” means any Security established pursuant to Section 201 which is payable to the bearer.

“Board of Directors” when used with reference to the Company, means the board of directors of the Company, or any committee of that board duly authorized to act hereunder, or any director or directors and/or officer or officers of the Company, to whom the board or committee shall have duly delegated its authority.

“Board Resolution” means a copy of (1) a resolution certified by the Secretary or an Assistant Secretary of the Company to have been duly adopted by the Board of Directors or a duly authorized committee of the Board of Directors and to be in full force and effect on the date of such certification, or (2) a certificate signed by the director or directors and/or officer or officers to whom the Board of Directors shall have duly delegated its authority, together with a resolution certified by the Secretary or an Assistant Secretary of the Company to have been duly adopted by the Board of Directors and to be in full force and effect on the date of such certification authorizing such delegation, and, in each case, delivered to the Trustee.

“Business Day,” when used with respect to any Place of Payment or any other particular location referred to in this Indenture or in the Securities, means, unless otherwise specified with respect to any Securities issued pursuant to Section 301, any day, other than a Saturday or Sunday, that is neither a legal holiday nor a day on which banking institutions in that Place of Payment or particular location are authorized or required by law, regulation or executive order to close.

“Capital Stock” means, with respect to any Person, any capital stock (including preferred stock), shares, interests, participations or other ownership interests (however designated) of such Person and any rights (other than debt securities convertible into or exchangeable for corporate stock), warrants or options to purchase any thereof.

“Clearstream” means Clearstream Banking Luxembourg, société anonyme, or its successor.

“Closing Price” means the closing price of a share of Common Stock of the Company as reported on the NASDAQ Capital Market.

“Code” means the Internal Revenue Code of 1986, as amended, and the regulations thereunder.

“Commission” means the Securities and Exchange Commission, as from time to time constituted, created under the Exchange Act, or, if at any time after execution of this instrument such Commission is not existing and performing the duties now assigned to it under the Trust Indenture Act, then the body performing such duties on such date.

“Common Depository” has the meaning specified in Section 304.

“Common Stock” means, with respect to any Person, all shares of capital stock issued by such Person other than Preferred Stock.

“Company” means the Person named as the “Company” in the first paragraph of this Indenture until a successor corporation shall have become such pursuant to the applicable provisions of this Indenture, and thereafter “Company” shall mean such successor corporation.

“Company Request” and “Company Order” mean, respectively, a written request or order signed in the name of the Company by its Chairman of the Board, the Chief Executive Officer, the President, or a Vice President, and by its Treasurer, an Assistant Treasurer, the Secretary or an Assistant Secretary, of the Company, and delivered to the Trustee.

“Constituent Person” has the meaning specified in Section 1611.

“Conversion Event” means the cessation of use of (i) a Foreign Currency both by the government of the country which issued such currency and for the settlement of transactions by a central bank or other public institutions of or within the international banking community, (ii) the ECU both within the European Monetary System and for the settlement of transactions by public institutions of or within the European Communities or (iii) any currency unit (or composite currency) other than the ECU for the purposes for which it was established.

“Conversion Price” has the meaning specified in Section 1601.

“Corporate Trust Office” means the office of the Trustee at which, at any particular time, its corporate trust business shall be principally administered, which office at the date hereof is located at [_____].

“corporation” includes corporations, associations, companies and business trusts.

“coupon” means any interest coupon appertaining to a Bearer Security.

“Covenant Defeasance” has the meaning specified in Section 1403.

“Custodian” has the meaning specified in Section 501.

“Defaulted Interest” has the meaning specified in Section 307.

“Defeasance” has the meaning specified in Section 1402.

“Distribution Record Date” has the meaning specified in Section 1611.

“Dividend Record Date” has the meaning specified in Section 1604.

“Dollar” or the sign “\$” means a dollar or other equivalent unit in such coin or currency of the United States of America as at the time of payment is legal tender for the payment of public and private debts.

“DTC” means The Depository Trust Company and any successor to DTC in its capacity as depository for any Securities.

“ECU” means the European Currency Unit as defined and revised from time to time by the Council of the European Communities.

“Euroclear” means the operator of the Euroclear System.

“European Communities” means the European Economic Community, the European Coal and Steel Community and the European Atomic Energy Community.

“European Monetary System” means the European Monetary System established by the Resolution of December 5, 1978 of the Council of the European Communities.

“Event of Default” has the meaning specified in Article Five.

“Exchange Act” means the Securities Exchange Act of 1934, as amended, as in force at the date as of which this Indenture was executed; provided, however, that in the event the Exchange Act is amended after such date, “Exchange Act” means to the extent required by any such amendment, the Exchange Act as so amended.

“Exchange Date” has the meaning specified in Section 304.

“FINRA” means the Financial Industry Regulatory Authority, Inc.

“Foreign Currency” means any currency, currency unit or composite currency, including, without limitation, the ECU issued by the government of one or more countries other than the United States of America or by any recognized confederation or association of such governments.

“GAAP” means, except as otherwise provided herein, generally accepted accounting principles, as in effect from time to time, as used in the United States applied on a consistent basis.

“Global Security” means a Security evidencing all or a part of a series of Securities issued to and registered in the name of the depository for such series, or its nominee, in accordance with Section 305, and bearing the legend prescribed in Section 203.

“Government Obligations” means (i) securities which are (A) direct obligations of the United States of America or the government which issued the Foreign Currency in which the Securities of a particular series are payable, for the payment of which its full faith and credit is pledged or (B) obligations of a Person controlled or supervised by and acting as an agency or instrumentality of the United States of America or such government which issued the Foreign Currency in which the Securities of such series are payable, the payment of which is unconditionally guaranteed as a full faith and credit obligation by the United States of America or such other government, which, in either case, are not callable or redeemable at the option of the issuer thereof, and (ii) a depository receipt issued by a bank or trust company as custodian with respect to any such Government Obligation or a specific payment of interest on or principal of any such 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 Government Obligation or the specific payment of interest on or principal of the Government Obligation evidenced by such depository receipt.

“Holder” means, in the case of a Registered Security, the Person in whose name a Security is registered in the Security Register and, in the case of a Bearer Security, the bearer thereof and, when used with respect to any coupon, shall mean the bearer thereof.

“Indenture” means this instrument as originally executed or as it may be supplemented or amended from time to time by one or more indentures supplemental hereto entered into pursuant to the applicable provisions hereof, and shall include the terms of particular series of Securities established as contemplated by Section 301; provided, however, that, if at any time more than one Person is acting as Trustee under this instrument, “Indenture” shall mean, with respect to any one or more series of Securities for which such Person is Trustee, this instrument as originally executed or as it may be supplemented or amended from time to time by one or more indentures supplemental hereto entered into pursuant to the applicable provisions hereof and shall include the terms of the or those particular series of Securities for which such Person is Trustee established as contemplated by Section 301, exclusive, however, of any provisions or terms which relate solely to other series of Securities for which such Person is Trustee, regardless of when such terms or provisions were adopted, and exclusive of any provisions or terms adopted by means of one or more indentures supplemental hereto executed and delivered after such Person had become such Trustee but to which such Person, as such Trustee, was not a party.

“Indexed Security” means a Security the terms of which provide that the principal amount thereof payable at Stated Maturity may be more or less than the principal face amount thereof at original issuance.

“Interest,” when used with respect to an Original Issue Discount Security which by its terms bears interest only after Maturity, shall mean interest payable after Maturity.

“Interest Payment Date,” when used with respect to any Security, means the Stated Maturity of an installment of interest on such Security.

“Make-Whole Amount,” when used with respect to any Security, means the amount, if any, in addition to principal (and accrued interest thereon, if any) which is required by a Security, under the terms and conditions specified therein or as otherwise specified as contemplated by Section 301, to be paid by the Company to the Holder thereof in connection with any optional redemption or accelerated payment of such Security.

“mandatory sinking fund payment” has the meaning specified in Section 1201.

“Market Value of the Distribution” has the meaning specified in Section 1604.

“Maturity,” when used with respect to any Security, means the date on which the principal (or, if the context so requires, in the case of an Original Issue Discount Security, or lesser amount or, in the case of an Indexed Security, an amount determined in accordance with the specified terms of that Security) of such Security or an installment of principal becomes due and payable as therein or herein provided, whether at the Stated Maturity or by declaration of acceleration, notice of redemption, notice of option to elect repayment or otherwise.

“Officers’ Certificate” means a certificate signed by the Chairman of the Board of Directors, the Chief Executive Officer, the President, or a Vice President (whether or not designated by a number or word or words added before or after the title “Vice President”), and by the Treasurer, an Assistant Treasurer, the Secretary or an Assistant Secretary of the Company, and delivered to the Trustee.

“Opinion of Counsel” means a written opinion of counsel, who may be counsel for the Company or who may be an employee of or other counsel for the Company.

“optional sinking fund payment” has the meaning specified in Section 1201.

“Original Issue Discount Security” means any Security which provides for an amount (excluding any amounts attributable to accrued but unpaid interest thereon) less than the principal amount thereof to be due and payable upon a declaration of acceleration of the Maturity thereof pursuant to Section 502.

“Outstanding,” when used with respect to Securities, means, as of the date of determination, all Securities theretofore authenticated and delivered under this Indenture, except:

- (i) Securities theretofore canceled by the Trustee or delivered to the Trustee for cancellation;
- (ii) Securities, or portions thereof, for whose payment or redemption (including repayment at the option of the Holder) money in the necessary amount has been theretofore deposited with the Trustee or any Paying Agent (other than the Company) in trust or set aside and segregated in trust by the Company (if the Company shall act as its own Paying Agent) for the Holders of such Securities and any coupons appertaining thereto; provided, however, that, if such Securities are to be redeemed, notice of such redemption has been duly given pursuant to this Indenture or provision therefor satisfactory to the Trustee has been made;

(iii) Securities, except to the extent provided in Sections 1402 and 1403, with respect to which the Company has effected Defeasance and/or Covenant Defeasance as provided in Article Fourteen; and

(iv) Securities which have been paid pursuant to Section 306 or in exchange for or in lieu of which other Securities have been authenticated and delivered pursuant to this Indenture, other than any such Securities in respect of which there shall have been presented to the Trustee proof satisfactory to it that such Securities are held by a bona fide purchaser in whose hands such Securities are valid obligations of the Company.

provided, however, that in determining whether the Holders of the requisite principal amount of the Outstanding Securities have given any request, demand, authorization, direction, notice, consent or waiver hereunder or are present at a meeting of Holders for quorum purposes, and for the purpose of making the calculations required by TIA Section 313, (i) the principal amount of an Original Issue Discount Security that may be counted in making such determination or calculation and that shall be deemed to be Outstanding for such purpose shall be equal to the amount of principal thereof that would be (or shall have been declared to be) due and payable, at the time of such determination, upon a declaration of acceleration of the maturity thereof pursuant to Section 502, (ii) the principal amount of any Security denominated in a Foreign Currency that may be counted in making such determination or calculation and that shall be deemed Outstanding for such purpose shall be equal to the Dollar equivalent, determined pursuant to Section 301 as of the date such Security is originally issued by the Company, of the principal amount (or, in the case of an Original Issue Discount Security, the Dollar equivalent as of such date of original issuance of the amount determined as provided in clause (i) above) of such Security, (iii) the principal amount of any Indexed Security that may be counted in making such determination or calculation and that shall be deemed outstanding for such purpose shall be equal to the principal face amount of such Indexed Security at original issuance, unless otherwise provided with respect to such Security pursuant to Section 301, and (iv) Securities owned by the Company or any other obligor upon the Securities or any Affiliate of the Company or of such other obligor shall be disregarded and deemed not to be Outstanding, except that, in determining whether the Trustee shall be protected in making such calculation or in relying upon any such request, demand, authorization, direction, notice, consent or waiver, only Securities which a Responsible Officer of the Trustee actually knows to be so owned shall be so disregarded. Securities owned as provided in clause (iv) above which have been pledged in good faith may be regarded as Outstanding if the pledgee establishes to the satisfaction of the Trustee the pledgee's right so to act with respect to such Securities and that the pledgee is not the Company or any other obligor upon the Securities or any Affiliate of the Company or of such other obligor. In case of a dispute as to such right, the advice of counsel shall be full protection in respect of any decision made by the Trustee in accordance with such advice.

“Paying Agent” means any Person authorized by the Company to pay the principal of (and premium or Make-Whole Amount, if any) or interest on any Securities or coupons on behalf of the Company.

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

“Place of Payment,” when used with respect to the Securities of or within any series, means the place or places where the principal of (and premium or Make-Whole Amount, if any) and interest on such Securities are payable as specified as contemplated by Sections 301 and 1002.

“Predecessor Security” of any particular Security means every previous Security evidencing all or a portion of the same debt as that evidenced by such particular Security; and, for the purposes of this definition, any Security authenticated and delivered under Section 306 in exchange for or in lieu of a mutilated, destroyed, lost or stolen Security or a Security to which a mutilated, destroyed, lost or stolen coupon appertains shall be deemed to evidence the same debt as the mutilated, destroyed, lost or stolen Security or the Security to which the mutilated, destroyed, lost or stolen coupon appertains.

“Preferred Stock” means, with respect to any Person, all capital stock issued by such Person that is entitled to a preference or priority over any other capital stock issued by such Person with respect to any distribution of such Person’s assets, whether by dividend or upon any voluntary or involuntary liquidation, dissolution or winding up.

“Redemption Date,” when used with respect to any Security to be redeemed, in whole or in part, means the date fixed for such redemption by or pursuant to this Indenture.

“Redemption Price,” when used with respect to any Security to be redeemed, means the price specified in the related Officers’ Certificate or supplemental indenture contemplated by and pursuant to Section 301, at which it is to be redeemed pursuant to this Indenture.

“Reference Date” has the meaning specified in Section 1604.

“Registered Security” shall mean any Security which is registered in the Security Register.

“Regular Record Date” for the interest payable on any Interest Payment Date on the Registered Securities of or within any series means the date specified for that purpose as contemplated by Section 301, whether or not a Business Day.

“Repayment Date” means, when used with respect to any Security to be repaid at the option of the Holder, the date fixed for such repayment by or pursuant to this Indenture.

“Repayment Price” means, when used with respect to any Security to be repaid at the option of the Holder, the price at which it is to be repaid by or pursuant to this Indenture.

“Responsible Officer,” when used with respect to the Trustee, means any Vice President (whether or not designated by a number or a word or words added before or after the title “Vice President”), Assistant Vice President, Trust Officer or Assistant Trust Officer working in its Corporate Trust Department, or any other officer of the Trustee customarily performing functions similar to those performed by any of the above designated officers and working in its Corporate Trust Department, and also means, with respect to a particular corporate trust matter, any other officer to whom such matter is referred because of such officer’s knowledge and familiarity with the particular subject and who shall have direct responsibility for the administration of this Indenture.

“Rights” has the meaning specified in Section 1604.

“Rights Record Date” has the meaning specified in Section 1604.

“Security” and “Securities” has the meaning stated in the first recital of this Indenture and, more particularly, means any Security or Securities authenticated and delivered under this Indenture; provided, however, that, if at any time there is more than one Person acting as Trustee under this Indenture, “Securities” with respect to the Indenture as to which such Person is Trustee shall have the meaning stated in the first recital of this Indenture and shall more particularly mean Securities authenticated and delivered under this Indenture, exclusive, however, of Securities of any series as to which such Person is not Trustee.

“Security Register” and “Security Registrar” have the respective meanings specified in Section 305.

A “Series” of Securities means all securities denoted as part of the same series authorized by or pursuant to a particular Board Resolution.

“Short Term Rights” has the meaning specified in Section 1604.

“Significant Subsidiary” means any Subsidiary which is a “significant subsidiary” (as defined in Article I, Rule 1-02 of Regulation S-X, promulgated under the Securities Act of 1933, as amended) of the Company.

“Special Record Date” for the payment of any Defaulted Interest on the Registered Securities of or within any series means a date fixed by the Company pursuant to Section 307.

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

“Subsidiary” means, with respect to any Person, any corporation, limited liability company, partnership or other entity of which a majority of (i) the voting power of the voting equity securities or (ii) the outstanding equity interests are owned, directly or indirectly, by such Person. For the purposes of this definition, “voting equity securities” means equity securities having voting power for the election of directors, whether at all times or only so long as no senior class of security has such voting power by reason of any contingency.

“Trading Day” means any day on which the NASDAQ Capital Market is open for business.

“Trigger Events” has the meaning specified in Section 1604.

“Trust Indenture Act” or “TIA” means the Trust Indenture Act of 1939, as amended and as in force at the date as of which this Indenture was executed, except as provided in Section 905.

“Trustee” means the Person named as the “Trustee” in the first paragraph of this Indenture 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; provided, however, that if at any time there is more than one such Person, “Trustee” as used with respect to the Securities of any series shall mean only the Trustee with respect to Securities of that series.

“Unadjusted Distribution” has the meaning specified in Section 1604.

“United States” means, unless otherwise specified with respect to any Securities pursuant to Section 301, the United States of America (including the states and the District of Columbia), its territories, its possessions and other areas subject to its jurisdiction.

“United States Person” means, unless otherwise specified with respect to any Securities pursuant to Section 301, an individual who is a citizen or resident of the United States, a corporation, partnership or other entity created or organized in or under the laws of the United States or an estate or trust the income of which is subject to United States Federal income taxation regardless of its source.

“Yield to Maturity” means the yield to maturity, computed at the time of issuance of a Security (or, if applicable, at the most recent redetermination of interest on such Security) and as set forth in such Security in accordance with generally accepted United States bond yield computation principles.

SECTION 102. Compliance Certificates and Opinions. Upon any application or request by the Company to the Trustee to take any action under any provision of this Indenture, the Company shall furnish to the Trustee an Officers’ Certificate stating that all conditions precedent, if any, provided for in this Indenture relating to the proposed action have been complied with and an Opinion of Counsel stating that in the opinion of such counsel all such conditions precedent, if any, have been complied with, except that in the case of any such application or request as to which the furnishing of such documents is specifically required by any provision of this Indenture relating to such particular application or request, no additional certificate or opinion need be furnished.

Every certificate or opinion with respect to compliance with a condition or covenant provided for in this Indenture (including certificates delivered pursuant to Section 1008) shall include:

- (1) a statement that each individual signing such certificate or opinion has read such condition or covenant and the definitions herein relating thereto;
- (2) 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;
- (3) a statement that, in the opinion of each such individual, he has made such examination or investigation as is necessary to enable him to express an informed opinion as to whether or not such condition or covenant has been complied with; and
- (4) a statement as to whether, in the opinion of each such individual, such condition or covenant has been complied with.

SECTION 103. Form of Documents Delivered to Trustee. In any case where several matters are required to be certified by, or covered by an opinion of, any specified Person, it is not necessary that all such matters be certified by, or covered by the opinion of, only one such Person, or that they be so certified or covered by only one document, but one such Person may certify or give an opinion with respect to some matters and one or more other such Persons as to other matters, and any such Person may certify or give an opinion as to such matters in one or several documents.

Any certificate or opinion of an officer of the Company may be based, insofar as it relates to legal matters, upon an Opinion of Counsel, or a certificate or representations by counsel, unless such officer knows, or in the exercise of reasonable care should know, that the opinion, certificate or representations with respect to the matters upon which his certificate or opinion is based are erroneous. Any such Opinion of Counsel or certificate or representations may be based, insofar as it relates to factual matters, upon a certificate or opinion of, or representations by, an officer or officers of the Company stating that the information as to such factual matters is in the possession of the Company, unless such counsel knows, or in the exercise of reasonable care should know, that the certificate or opinion or representations with respect to such matters are erroneous.

Where any Person is required to make, give or execute two or more applications, requests, consents, certificates, statements, opinions or other instruments under this Indenture, they may, but need not, be consolidated and form one instrument.

SECTION 104. Acts of Holders.

(a) Any request, demand, authorization, direction, notice, consent, waiver or other action provided by this Indenture to be given or taken by Holders of the Outstanding Securities of all series or one or more series, as the case may be, may be embodied in and evidenced by one or more instruments of substantially similar tenor signed by such Holders in person or by agents duly appointed in writing. If Securities of a series are issuable as Bearer Securities, any request, demand, authorization, direction, notice, consent, waiver or other action provided by this Indenture to be given or taken by Holders of Securities of such series may, alternatively, be embodied in and evidenced by the record of Holders of Securities of such series voting in favor thereof, either in person or by proxies duly appointed in writing, at any meeting of Holders of Securities of such series duly called and held in accordance with the provisions of Article Fifteen, or a combination of such instruments and any such record. Except as herein otherwise expressly provided, such action shall become effective when such instrument or instruments or record or both are delivered to the Trustee and, where it is hereby expressly required, to the Company. Such instrument or instruments and any such record (and the action embodied therein and evidenced thereby) are herein sometimes referred to as the "Act" of the Holders signing such instrument or instruments or so voting at any such meeting. Proof of execution of any such instrument or of a writing appointing any such agent, or of the holding by any Person of a Security, shall be sufficient for any purpose of this Indenture and conclusive in favor of the Trustee and the Company and any agent of the Trustee or the Company, if made in the manner provided in this Section. The record of any meeting of Holders of Securities shall be proved in the manner provided in Section 1506.

(b) The fact and date of the execution by any Person of any such instrument or writing may be proved by the affidavit of a witness of such execution or by a certificate of a notary public or other officer authorized by law to take acknowledgments of deeds, certifying that the individual signing such instrument or writing acknowledged to him the execution thereof. Where such execution is by a signer acting in a capacity other than his individual capacity, such certificate or affidavit shall also constitute sufficient proof of his authority. The fact and date of the execution of any such instrument or writing, or the authority of the Person executing the same, may also be proved in any other reasonable manner which the Trustee deems sufficient.

(c) The ownership of Registered Securities shall be proved by the Security Register. As to any matter relating to beneficial ownership interests in any Global Security, the appropriate depository's records shall be dispositive for purposes of this Indenture.

(d) The ownership of Bearer Securities may be proved by the production of such Bearer Securities or by a certificate executed, as depository, by any trust company, bank, banker or other depository, wherever situated, if such certificate shall be deemed by the Trustee to be satisfactory, showing that at the date therein mentioned such Person had on deposit with such depository, or exhibited to it, the Bearer Securities therein described; or such facts may be proved by the certificate or affidavit of the Person holding such Bearer Securities, if such certificate or affidavit is deemed by the Trustee to be satisfactory. The Trustee and the Company may assume that such ownership of any Bearer Security continues until (1) another certificate or affidavit bearing a later date issued in respect of the same Bearer Security is produced, or (2) such Bearer Security is produced to the Trustee by some other Person, or (3) such Bearer Security is surrendered in exchange for a Registered Security, or (4) such Bearer Security is no longer Outstanding. The ownership of Bearer Securities may also be proved in any other manner which the Trustee deems sufficient.

(e) If the Company shall solicit from the Holders of Registered Securities any request, demand, authorization, direction, notice, consent, waiver or other Act, the Company may, at its option, in or pursuant to a Board Resolution, fix in advance a record date for the determination of Holders entitled to give such request, demand, authorization, direction, notice, consent, waiver or other Act, but the Company shall have no obligation to do so. Notwithstanding TIA Section 316(c), such record date shall be the record date specified in or pursuant to such Board Resolution, which shall be a date not earlier than the date 30 days prior to the first solicitation of Holders generally in connection therewith and not later than the date such solicitation is completed. If such a record date is fixed, such request, demand, authorization, direction, notice, consent, waiver or other Act may be given before or after such record date, but only the Holders of record at the close of business on such record date shall be deemed to be Holders for the purposes of determining whether Holders of the requisite proportion of Outstanding Securities have authorized or agreed or consented to such request, demand, authorization, direction, notice, consent, waiver or other Act, and for that purpose the Outstanding Securities shall be computed as of such record date; provided that no such authorization, agreement or consent by the Holders on such record date shall be deemed effective unless it shall become effective pursuant to the provisions of this Indenture not later than eleven months after the record date.

(f) Any request, demand, authorization, direction, notice, consent, waiver or other Act of the Holder of any Security shall bind every future Holder of the same Security and the Holder of every Security issued upon the registration of transfer thereof or upon the conversion thereof or in exchange therefor or in lieu thereof in respect of anything done, omitted or suffered to be done by the Trustee, any Security Registrar, any Paying Agent, any Authenticating Agent or the Company in reliance thereon, whether or not notation of such action is made upon such Security.

SECTION 105. Notices, etc., to Trustee and Company. Any request, demand, authorization, direction, notice, consent, waiver or Act of Holders or other document provided or permitted by this Indenture to be made upon, given or furnished to, or filed with,

(1) the Trustee by any Holder or by the Company shall be sufficient for every purpose hereunder if made, given, furnished or filed in writing to or with the Trustee at [_____] or at any other address previously furnished in writing to the Company by the Trustee, Attention: [_____]; or

(2) the Company by the Trustee or by any Holder shall be sufficient for every purpose hereunder (unless otherwise herein expressly provided) if in writing and mailed, first-class postage prepaid, to the Company addressed to it at the address of its principal office specified in the first paragraph of this Indenture or at any other address previously furnished in writing to the Trustee by the Company, Attention: [_____]; or

(3) either the Trustee or the Company, by the other party or by any Holder, shall be sufficient for every purpose hereunder if given by facsimile transmission, receipt confirmed by telephone followed by an original copy delivered by guaranteed overnight courier; if to the Trustee at facsimile number [_____]; and if to the Company at facsimile number [_____].

SECTION 106. Notice to Holders; Waiver. Where this Indenture provides for notice of any event to Holders of Registered Securities by the Company or the Trustee, such notice shall be sufficiently given (unless otherwise herein expressly provided) if in writing and mailed, first-class postage prepaid, to each such Holder affected by such event, at his address as it appears in the Security Register, not later than the latest date, if any, and not earlier than the earliest date, if any, prescribed for the giving of such notice. In any case where notice to Holders of Registered Securities is given by mail, neither the failure to mail such notice, nor any defect in any notice so mailed, to any particular Holder shall affect the sufficiency of such notice with respect to other Holders of Registered Securities or the sufficiency of any notice to Holders of Bearer Securities given as provided herein. Any notice mailed to a Holder in the manner herein prescribed shall be conclusively deemed to have been received by such Holder, whether or not such Holder actually receives such notice.

If by reason of the suspension of or irregularities in regular mail service or by reason of any other cause it shall be impracticable to give such notice by mail, then such notification to Holders of Registered Securities as shall be made with the approval of the Trustee shall constitute a sufficient notification to such Holders for every purpose hereunder.

Except as otherwise expressly provided herein or otherwise specified with respect to any Securities pursuant to Section 301, where this Indenture provides for notice to Holders of Bearer Securities of any event, such notice shall be sufficiently given if published in an Authorized Newspaper in The City of New York and in such other city or cities as may be specified in such Securities on a Business Day, such publication to be not later than the latest date, if any, and not earlier than the earliest date, if any, prescribed for the giving of such notice. Any such notice shall be deemed to have been given on the date of such publication or, if published more than once, on the date of the first such publication.

If by reason of the suspension of publication of any Authorized Newspaper or Authorized Newspapers or by reason of any other cause it shall be impracticable to publish any notice to Holders of Bearer Securities as provided above, then such notification to Holders of Bearer Securities as shall be given with the approval of the Trustee shall constitute sufficient notice to such Holders for every purpose hereunder. Neither the failure to give notice by publication to any particular Holder of Bearer Securities as provided above, nor any defect in any notice so published, shall affect the sufficiency of such notice with respect to other Holders of Bearer Securities or the sufficiency of any notice to Holders of Registered Securities given as provided herein.

Any request, demand, authorization, direction, notice, consent or waiver required or permitted under this Indenture shall be in the English language, except that any published notice may be in an official language of the country of publication.

Where this Indenture provides for notice in any manner, such notice may be waived in writing by the Person entitled to receive such notice, either before or after the event, and such waiver shall be the equivalent of such notice. Waivers of notice by Holders shall be filed with the Trustee, but such filing shall not be a condition precedent to the validity of any action taken in reliance upon such waiver.

SECTION 107. Counterparts; Effect of Headings and Table of Contents. This Indenture may be executed in any number of counterparts, each of which so executed shall be deemed to be an original, but all such counterparts shall together constitute but one and the same Indenture. The Article and Section headings herein and the Table of Contents are for convenience only and shall not affect the construction hereof.

SECTION 108. Successors and Assigns. All covenants and agreements in this Indenture by the Company shall bind its successors and assigns, whether so expressed or not.

SECTION 109. Severability Clause. In case any provision in this Indenture or in any Security or coupon shall be held invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

SECTION 110. Benefits of Indenture. Nothing in this Indenture or in the Securities or coupons, if any, express or implied, shall give to any Person, other than the parties hereto, any Security Registrar, any Paying Agent, any Authenticating Agent and their successors hereunder and the Holders any benefit or any legal or equitable right, remedy or claim under this Indenture.

SECTION 111. Governing Law. This Indenture and the Securities and coupons shall be governed by and construed in accordance with the laws of the State of New York. This Indenture is subject to the provisions of the TIA that are required to be part of this Indenture and shall, to the extent applicable, be governed by such provisions.

SECTION 112. Legal Holidays. In any case where any Interest Payment Date, Redemption Date, Repayment Date, sinking fund payment date, Stated Maturity or Maturity of any Security or the last date on which a Holder has the right to convert or exchange a Security shall not be a Business Day at any Place of Payment, then (notwithstanding any other provision of this Indenture or any Security or coupon other than a provision in the Securities of any series which specifically states that such provision shall apply in lieu hereof), payment of interest or principal (and premium or Make-Whole Amount, if any) or conversion or exchange of such Security need not be made at such Place of Payment on such date, but (except as otherwise provided in the supplemental indenture with respect to such Security) may be made on the next succeeding Business Day at such Place of Payment with the same force and effect as if made on the Interest Payment Date, Redemption Date, Repayment Date or sinking fund payment date, or at the Stated Maturity or Maturity, or on such last day for conversion or exchange, provided that no interest shall accrue on the amount so payable for the period from and after such Interest Payment Date, Redemption Date, Repayment Date, sinking fund payment date, Stated Maturity or Maturity, as the case may be.

SECTION 113. Limited Liability; Immunity of Stockholders, Directors, Officers and Agents of the Company. Notwithstanding any other provision of this Indenture or of the Securities of any series to the contrary, no recourse under or upon any obligation, covenant or agreement contained in this Indenture or in any Security, or for the payment of any sums due on account of any indebtedness evidenced thereby, including without limitation principal, premium or interest, if any, or for any claim based on this Indenture or any Security or otherwise in respect of this Indenture or any Security, shall be had, whether by levy or execution or otherwise, against the Company, the Company's assets or against any past, present or future stockholder, employee, officer, director or agent, as such, of the Company or any successor, either directly or through the Company or any successor, under any rule of law, statute, constitutional provision or by the enforcement of any assessment or penalty, or by any legal or equitable proceeding or otherwise, nor shall any such parties be personally liable for any such amounts, obligations or claims, or liable for any deficiency judgment based thereon or with respect thereto, it being expressly understood that the sole remedies hereunder or under any other document with respect to the Securities against such parties with respect to such amounts, obligations or claims shall be against the Company and that all such liability of and recourse against such parties is expressly waived and released by the acceptance of the Securities by the Holders and as part of the consideration for the issue of the Securities.

SECTION 114. Conflict with Trust Indenture Act. If any provision hereof limits, qualifies or conflicts with another provision hereof which is required or deemed to be included in this Indenture by any of the provisions of the Trust Indenture Act, such required provision shall control. If any provision of this Indenture modifies or excludes any provision of the Trust Indenture Act that may be so modified or excluded, the latter provision shall be deemed to apply to this Indenture as so modified or to be excluded, as the case may be.

ARTICLE TWO - SECURITIES FORMS

SECTION 201. Forms of Securities. The Registered Securities, if any, of each series and the Bearer Securities, if any, of each series and related coupons shall be substantially in the form of Exhibit A hereto or in such other form as shall be established in one or more indentures supplemental hereto or approved from time to time by or pursuant to a Board Resolution in accordance with Section 301, shall have such appropriate insertions, omissions, substitutions and other variations as are required or permitted by this Indenture or any indenture supplemental hereto, and may have such letters, numbers or other marks of identification or designation and such legends or endorsements placed thereon as the Company may deem appropriate and as are not inconsistent with the provisions of this Indenture, or as may be required to comply with any law or with any rule or regulation made pursuant thereto or with any rule or regulation of any over-the-counter market or securities exchange, on which the Securities may be quoted or listed, or to conform to usage.

Unless otherwise specified as contemplated by Section 301, Bearer Securities shall have interest coupons attached.

The definitive Securities and coupons shall be printed, lithographed or engraved or produced by any combination of these methods on a steel engraved border or steel engraved borders or mechanically reproduced on safety paper or may be produced in any other manner, all as determined by the officers executing such Securities or coupons, as evidenced by their execution of such Securities or coupons.

SECTION 202. Form of Trustee's Certificate of Authentication. Subject to Section 611, the Trustee's certificate of authentication shall be in substantially the following form:

This is one of the Securities of the series designated therein referred to in the within- mentioned Indenture.

[_____],
as Trustee

Dated: _____

By: _____
Authorized Signatory

SECTION 203. Securities Issuable in Global Form. If Securities of or within a series are issuable in the form of one or more Global Securities, then, notwithstanding clause (8) of Section 301 and the provisions of Section 302, any such Global Security or Securities may provide that it or they shall represent the aggregate amount of all Outstanding Securities of such series (or such lesser amount as is permitted by the terms thereof) from time to time endorsed thereon and may also provide that the aggregate amount of Outstanding Securities of such series represented thereby may from time to time be increased or decreased to reflect exchanges. Any endorsement of any Global Security to reflect the amount, or any increase or decrease in the amount, or changes in the rights of Holders thereof, of Outstanding Securities represented thereby shall be made (or caused to be made) by the Trustee in such manner or by such Person or Persons as shall be specified therein or in the Company Order to be delivered to the Trustee pursuant to Section 303 or 304. Subject to the provisions of Section 303 and, if applicable, Section 304, the Trustee shall deliver and redeliver any Global Security in permanent global form in the manner and upon instructions given by the Person or Persons specified therein or in the applicable Company Order. If a Company Order pursuant to Section 303 or 304 has been, or simultaneously is, delivered, any instructions by the Company with respect to endorsement or delivery or redelivery of a Global Security shall be in writing but need not comply with Section 102 and need not be accompanied by an Opinion of Counsel.

The provisions of the last sentence of Section 303 shall apply to any Security represented by a Global Security if such Security was never issued and sold by the Company and the Company delivers to the Trustee the Global Security together with written instructions (which need not comply with Section 102 and need not be accompanied by an Opinion of Counsel) with regard to the reduction in the principal amount of Securities represented thereby, together with the written statement contemplated by the last sentence of Section 303.

Notwithstanding the provisions of Section 307, unless otherwise specified as contemplated by Section 301, payment of principal of and any premium or Make-Whole Amount, if any, and interest on any Global Security in permanent global form shall be made to the registered Holder thereof.

Notwithstanding the provisions of Section 308 and except as provided in the preceding paragraph, the Company, the Trustee and any agent of the Company and the Trustee shall treat as the Holder of such principal amount of Outstanding Securities represented by a permanent Global Security (i) in the case of a permanent Global Security in registered form, the Holder of such permanent Global Security in registered form, or (ii) in the case of a permanent Global Security in bearer form, Euroclear or Clearstream.

Any Global Security authenticated and delivered hereunder shall bear a legend in substantially the following form:

“This Security is a Global Security within the meaning set forth in the Indenture hereinafter referred to and is registered in the name of a Depository or a nominee of a Depository. This Security is exchangeable for Securities registered in the name of a person other than the Depository or its nominee only in the limited circumstances described in the Indenture, and may not be transferred except as a whole by the Depository to a nominee of the Depository or by a nominee of the Depository to the Depository or another nominee of the Depository or by the Depository or its nominee to a successor Depository or its nominee.”

ARTICLE THREE - THE SECURITIES

SECTION 301. Amount Unlimited; Issuable in Series. The aggregate principal amount of Securities which may be authenticated and delivered under this Indenture is unlimited.

The Securities may be issued in one or more series, each of which shall be authorized pursuant to Board Resolutions of the Company. There shall be established in one or more Board Resolutions or pursuant to authority granted by one or more Board Resolutions and, subject to Section 303, set forth in an Officers' Certificate, or established in one or more indentures supplemental hereto, prior to the issuance of Securities of any series:

- (1) The title of the Securities of the series, including “CUSIP” numbers (which shall distinguish the Securities of such series from all other series of Securities);
- (2) Any limit upon the aggregate principal amount of the Securities of the series that may be authenticated and delivered under this Indenture (except for Securities authenticated and delivered upon registration of transfer of, or upon conversion of, or in exchange for, or in lieu of, other Securities of the series pursuant to Section 304, 305, 306, 906, 1107 or 1305) and the minimum authorized denominations with respect to the Securities of such series;
- (3) The price (expressed as a percentage of the principal amount thereof) at which such Securities will be issued and, if other than the principal amount thereof, the portion of the principal amount thereof payable upon declaration of acceleration of the maturity thereof or (if applicable) the portion of the principal amount of such Securities that is convertible into Common Stock or the method by which any such portion shall be determined.
- (4) If convertible, the terms on which such Securities are convertible, including the initial conversion price or rate and the conversion period and any applicable limitations on the ownership or transferability of Common Stock or Preferred Stock receivable on conversion;
- (5) The date or dates, or the method for determining such date or dates, on which the principal of such Securities will be payable;

- (6) The rate or rates (which may be fixed or variable), or the method by which such rate or rates shall be determined, at which such Securities will bear interest, if any;
- (7) The date or dates, or the method for determining such date or dates, from which any such interest will accrue, the Interest Payment Dates on which any such interest will be payable, the Regular Record Dates for such Interest Payment Dates, or the method by which such dates shall be determined, the Persons to whom such interest shall be payable, and the basis upon which interest shall be calculated if other than that of a 360-day year of twelve 30-day months;
- (8) The Make-Whole Amount, if any, or method for determining the Make-Whole Amount, if any, payable with respect to such Securities, and the terms upon which such amount, if any, will be payable;
- (9) The place or places where the principal of (and premium or Make-Whole Amount, if any) and interest, if any, on such Securities will be payable, where such Securities may be surrendered for registration of transfer or conversion or exchange and where notices or demands to or upon the Company in respect of such Securities and this Indenture may be served;
- (10) The period or periods, if any, within which, the price or prices at which and the other terms and conditions upon which such Securities may, pursuant to any optional or mandatory redemption provisions, be redeemed, as a whole or in part, at the option of the Company;
- (11) The obligation, if any, of the Company to redeem, repay or purchase such Securities pursuant to any sinking fund or analogous provision or at the option of a Holder thereof, and the period or periods within which, the price or prices at which and the other terms and conditions upon which such Securities will be redeemed, repaid or purchased, as a whole or in part, pursuant to such obligation;
- (12) If other than Dollars, the currency or currencies in which such Securities are denominated and payable, which may be a foreign currency or units of two or more foreign currencies or a composite currency or currencies, the manner of determining the equivalent thereof in Dollars for purposes of the definition of "Outstanding" in Section 101, and the terms and conditions relating thereto;
- (13) Whether the amount of payments of principal of (and premium or Make-Whole Amount, if any, including any amount due upon redemption, if any) or interest on such Securities may be determined with reference to an index, formula or other method (which index, formula or method may, but need not be, based on the yield on or trading price of other securities, including United States Treasury securities or on a currency, currencies, currency unit or units, or composite currency or currencies) and the manner in which such amounts shall be determined;
- (14) Whether the principal of (and premium or Make-Whole Amount, if any) or interest on the Securities of the series are to be payable, at the election of the Company or a Holder thereof, in a currency or currencies, currency unit or units or composite currency or currencies other than that in which such Securities are denominated or stated to be payable, the period or periods within which, and the terms and conditions upon which, such election may be made, and the time and manner of, and identity of the exchange rate agent with responsibility for, determining the exchange rate between the currency or currencies, currency unit or units or composite currency or currencies in which such Securities are denominated or stated to be payable and the currency or currencies, currency unit or units or composite currency or currencies in which such Securities are to be so payable;

(15) Provisions, if any, granting special rights to the Holders of Securities of the series upon the occurrence of such events as may be specified;

(16) Any deletions from, modifications of or additions to the Events of Default or covenants of the Company with respect to Securities of the series, whether or not such Events of Default or covenants are consistent with the Events of Default or covenants set forth herein;

(17) Whether and under what circumstances the Company will pay any additional amounts on such Securities in respect of any tax, assessment or governmental charge and, if so, whether the Company will have the option to redeem such Securities in lieu of making such payment;

(18) Whether Securities of the series are to be issuable as Registered Securities, Bearer Securities (with or without coupons) or both, any restrictions applicable to the offer, sale or delivery of Bearer Securities and the terms upon which Bearer Securities of the series may be exchanged for Registered Securities of the series and vice versa (if permitted by applicable laws and regulations), whether any Securities of the series are to be issuable initially in temporary global form and whether any Securities of the series are to be issuable in permanent global form with or without coupons and, if so, whether beneficial owners of interests in any such permanent global Security may, or shall be required to, exchange such interests for Securities of such series and of like tenor of any authorized form and denomination and the circumstances under which any such exchanges may, or shall be required to, occur, if other than in the manner provided in the Indenture, and, if Registered Securities of the series are to be issuable as a Global Security, the identity of the depository for such series;

(19) The date as of which any Bearer Securities of the series and any temporary Global Security representing outstanding Securities of the series shall be dated if other than the date of original issuance of the first Security of the series to be issued;

(20) The Person to whom any interest on any Registered Security of the series shall be payable, if other than the Person in whose name that Security (or one or more Predecessor Securities) is registered at the close of business on the Regular Record Date for such interest the manner in which, or the Person to whom, any interest on any Bearer Security of the series shall be payable, if otherwise than upon presentation and surrender of the coupons appertaining thereto as they severally mature, and the extent to which, or the manner in which, any interest payable on a temporary Global Security on an Interest Payment Date will be paid if other than in the manner provided herein; provided, however, in each case, that the manner of determining such Person or making such payment shall be acceptable to the Trustee (as not imposing on it any undue administrative burden or risk of liability);

(21) The applicability, if any, of the Defeasance and Covenant Defeasance provisions of Article Fourteen hereof to the Securities of the series;

(22) The obligation, if any, of the Company to permit the conversion of the Securities of such series into Common Stock or Preferred Stock, as the case may be, and the terms and conditions upon which such conversion shall be effected (including, without limitation, the initial conversion price or rate, the conversion period, any adjustment of the applicable conversion price and any requirements relative to the reservation of such shares for purposes of conversion);

(23) If the Securities of such series are to be issuable in definitive form (whether upon original issue or upon exchange of a temporary Security of such series) only upon receipt of certain certificates or other documents or satisfaction of other conditions, then the form and/or terms of such certificates, documents or conditions;

(24) Designation of the Trustee, if different from the Trustee under the Indenture, with respect to such series and the terms applicable to such Trustee (which shall be accepted by such Trustee by its execution and delivery of a supplemental indenture as provided therein); and

(25) Any other terms of the series (which terms shall not be inconsistent with the provisions of this Indenture).

All Securities of any one series and the coupons appertaining to any Bearer Securities of such series shall be substantially identical except, in the case of Registered Securities, as to denomination and except as may otherwise be provided in or pursuant to such Board Resolution (subject to Section 303) and set forth in such Officers' Certificate or in any such indenture supplemental hereto. All Securities of any one series need not be issued at the same time and, unless otherwise provided, a series may be reopened, without the consent of the Holders, for issuances of additional Securities of such series.

If any of the terms of the Securities of any series are established by action taken pursuant to one or more Board Resolutions, a copy of an appropriate record of such action(s) shall be certified by the Secretary or an Assistant Secretary of the Company and delivered to the Trustee at or prior to the delivery of the Officers' Certificate setting forth the terms of the Securities of such series.

SECTION 302. Denominations. The Securities of each series shall be issuable in such denominations as shall be specified as contemplated by Section 301. With respect to Securities of any series denominated in Dollars, in the absence of any such provisions with respect to the Securities of any series, the Securities of such series, other than Global Securities (which may be of any denomination), shall be issuable in denominations of \$1,000 and any integral multiple thereof or the equivalent amounts thereof in the case of Securities denominated in the Foreign Currency or currency unit.

SECTION 303. Execution, Authentication, Delivery and Dating. The Securities and any coupons appertaining thereto shall be executed on behalf of the Company by its Chairman of the Board, its Chief Executive Officer, its President, or one of its Vice Presidents, under its corporate seal reproduced thereon, and attested by its Secretary or one of its Assistant Secretaries. The signature of any of these officers on the Securities and coupons may be manual or facsimile signatures of the present or any future such authorized officer and may be imprinted or otherwise reproduced on the Securities.

Securities and coupons bearing the manual or facsimile signatures of individuals who were at any time the proper officers of the Company shall bind the Company, notwithstanding that such individuals or any of them have ceased to hold such offices prior to the authentication and delivery of such Securities or did not hold such offices at the date of such Securities or coupons.

At any time and from time to time after the execution and delivery of this Indenture, the Company may deliver Securities of any series, together with any coupon appertaining thereto, executed by the Company to the Trustee for authentication, together with a Company Order for the authentication and delivery of such Securities (accompanied by a copy of the Board Resolution and the Officers' Certificate or supplemental indenture contemplated by Section 301), and the Trustee in accordance with the Company Order shall authenticate and deliver such Securities; provided, however, that, in connection with its original issuance, no Bearer Security shall be mailed or otherwise delivered to any location in the United States; and provided further that, unless otherwise specified with respect to any series of Securities pursuant to Section 301, a Bearer Security may be delivered in connection with its original issuance only if the Person entitled to receive such Bearer Security shall have furnished a certificate to Euroclear or Clearstream, as the case may be, in the form set forth in Exhibit B-1 to this Indenture or such other certificate as may be specified by the Company with respect to any series of Securities pursuant to Section 301, dated no earlier than 15 days prior to the earlier of the date on which such Bearer Security is delivered and the date on which any temporary Security first becomes exchangeable for such Bearer Security in accordance with the terms of such temporary Security and this Indenture. If any Security shall be represented by a permanent Global Security, then, for purposes of this Section and Section 304, the notation of a beneficial owner's interest therein upon original issuance of such Security or upon exchange of a portion of a temporary Global Security shall be deemed to be delivery in connection with its original issuance of such beneficial owner's interest in such permanent Global Security. Except as permitted by Section 306, the Trustee shall not authenticate and deliver any Bearer Security unless all appurtenant coupons for interest then matured have been detached and canceled.

If all the Securities of any series are not to be issued at one time and if the Board Resolution or supplemental indenture establishing such series shall so permit, such Company Order may set forth procedures acceptable to the Trustee for the issuance of such Securities and determining the terms of particular Securities of such series, such as interest rate or formula, maturity date, date of issuance and date from which interest shall accrue. In authenticating such Securities, and accepting the additional responsibilities under this Indenture in relation to such Securities, the Trustee shall be entitled to receive, and (subject to TIA Section 315(a) through 315(d)) shall be fully protected in relying upon,

(i) an Opinion of Counsel stating that

(a) the form or forms of such Securities and any coupons have been established in conformity with the provisions of this Indenture;

(b) the terms of such Securities and any coupons have been established in conformity with the provisions of this Indenture; and

(c) such Securities, together with any coupons appertaining thereto, when completed by appropriate insertions and executed and delivered by the Company to the Trustee for authentication in accordance with this Indenture, authenticated and delivered by the Trustee in accordance with this Indenture and issued by the Company in the manner and subject to any conditions specified in such Opinion of Counsel, will constitute legal, valid and legally binding obligations of the Company, enforceable in accordance with their terms, subject to applicable bankruptcy, insolvency, fraudulent transfer, reorganization and other similar laws of general applicability relating to or affecting the enforcement of creditors' rights generally and to general equitable principles; and

(ii) an Officers' Certificate stating that all conditions precedent provided for in this Indenture relating to the issuance of the Securities have been complied with and that, to the best of the knowledge of the signers of such certificate, that no Event of Default with respect to any of the Securities shall have occurred and be continuing.

If such form or terms have been so established, the Trustee shall not be required to authenticate such Securities (or to enter into the related supplemental indenture, if applicable) if the issue of such Securities pursuant to this Indenture will affect the Trustee's own rights, duties, obligations or immunities under the Securities and this Indenture or otherwise in a manner which is not reasonably acceptable to the Trustee.

Notwithstanding the provisions of Section 301 and of the preceding paragraph, if all the Securities of any series are not to be issued at one time, it shall not be necessary to deliver an Officers' Certificate otherwise required pursuant to Section 301 or a Company Order, or an Opinion of Counsel or an Officers' Certificate otherwise required pursuant to the preceding paragraph at the time of issuance of each Security of such series, but such order, opinion and certificates, with appropriate modifications to cover such future issuances, shall be delivered at or before the time of issuance of the first Security of such series.

Each Registered Security shall be dated the date of its authentication and each Bearer Security shall be dated as of the date specified as contemplated by Section 301.

No Security or coupon shall be entitled to any benefit under this Indenture or be valid or obligatory for any purpose unless there appears on such Security or Security to which such coupon appertains a certificate of authentication substantially in the form provided for herein duly executed by the Trustee (subject to Section 611) by manual signature of an authorized signatory, and such certificate upon any Security shall be conclusive evidence, and the only evidence, that such Security has been duly authenticated and delivered hereunder and is entitled to the benefits of this Indenture. Notwithstanding the foregoing, if any Security (including a Global Security) shall have been authenticated and delivered hereunder but never issued and sold by the Company, and the Company shall deliver such Security to the Trustee for cancellation as provided in Section 309 together with a written statement (which need not comply with Section 102 and need not be accompanied by an Opinion of Counsel) stating that such Security has never been issued and sold by the Company, for all purposes of this Indenture such Security shall be deemed never to have been authenticated and delivered hereunder and shall never be entitled to the benefits of this Indenture.

SECTION 304. Temporary Securities.

(a) Pending the preparation of definitive Securities of any series, the Company may execute, and upon Company Order the Trustee shall authenticate and deliver, temporary Securities which are printed, lithographed, typewritten, mimeographed or otherwise produced, in any authorized denomination, substantially of the tenor of the definitive Securities in lieu of which they are issued, in registered form, or, if authorized, in bearer form with one or more coupons or without coupons, and with such appropriate insertions, omissions, substitutions and other variations as the officers executing such Securities may determine, as conclusively evidenced by their execution of such Securities. In the case of Securities of any series, such temporary Securities may be in global form.

Except in the case of temporary Global Securities (which shall be exchanged as otherwise provided herein or as otherwise provided in or pursuant to a Board Resolution or supplemental indenture pursuant to Section 301), if temporary Securities of any series are issued, the Company will cause definitive Securities of that series to be prepared without unreasonable delay. After the preparation of definitive Securities of such series, the temporary Securities of such series shall be exchangeable for definitive Securities of such series upon surrender of the temporary Securities of such series at the office or agency of the Company in a Place of Payment for that series, without charge to the Holder. Upon surrender for cancellation of any one or more temporary Securities of any series (accompanied by any non-matured coupons appertaining thereto), the Company shall execute (in accordance with a Company Order delivered at or prior to the authentication of the first definitive security to such series) and the Trustee shall authenticate and deliver in exchange therefor a like principal amount of definitive Securities of the same series of authorized denominations; provided, however, that no definitive Bearer Security shall be delivered in exchange for a temporary Registered Security; and provided further that a definitive Bearer Security shall be delivered in exchange for a temporary Bearer Security only in compliance with the conditions set forth in Section 303. Until so exchanged, the temporary Securities of any series shall in all respects be entitled to the same benefits under this Indenture as definitive Securities of such series.

(b) Unless otherwise provided in or pursuant to a Board Resolution or supplemental indenture pursuant to Section 301, the following provisions of this Section 304(b) shall govern the exchange of temporary Securities other than through the facilities of the DTC. If any such temporary Security is issued in global form, then such temporary Global Security shall, unless otherwise provided therein, be delivered to the London office of a depository or common depository upon and pursuant to written direction of the Company (the "Common Depository"), for the benefit of Euroclear and Clearstream, for credit to the respective accounts of the beneficial owners of such Securities (or to such other accounts as they may direct).

Without unnecessary delay but in any event not later than the date specified in, or determined pursuant to the terms of, any such temporary Global Security (the “Exchange Date”), the Company shall deliver to the Trustee definitive Securities, in aggregate principal amount equal to the principal amount of such temporary Global Security, executed by the Company. On or after the Exchange Date, such temporary Global Security shall be surrendered by the Common Depository to the Trustee, as the Company’s agent for such purpose, to be exchanged, in whole or from time to time in part, for definitive Securities without charge, and the Trustee shall authenticate and deliver, in exchange for each portion of such temporary Global Security, an equal aggregate principal amount of definitive Securities of the same series of authorized denominations and of like tenor as the portion of such temporary Global Security to be exchanged. The definitive Securities to be delivered in exchange for any such temporary Global Security shall be in bearer form, registered form, permanent global bearer form or permanent global registered form, or any combination thereof, as specified as contemplated by Section 301, and, if any combination thereof is so specified, as requested by the beneficial owner thereof (as directed by or pursuant to information provided by the Common Depository); provided, however, that, unless otherwise specified in such temporary Global Security, upon such presentation by the Common Depository, such temporary Global Security shall be accompanied by a certificate dated the Exchange Date or a subsequent date and signed by Euroclear as to the portion of such temporary Global Security held for its account then to be exchanged and a certificate dated the Exchange Date or a subsequent date and signed by Clearstream as to the portion of such temporary Global Security held for its account then to be exchanged, each in the form set forth in Exhibit B-2 to this Indenture or in such other form as may be established pursuant to Section 301; and provided further that definitive Bearer Securities shall be delivered in exchange for a portion of a temporary Global Security only in compliance with the requirements of Section 303.

Unless otherwise specified in such temporary Global Security, the interest of a beneficial owner of Securities of a series in a temporary Global Security shall be exchanged for definitive Securities of the same series and of like tenor following the Exchange Date when the account holder instructs Euroclear or Clearstream, as the case may be, to request such exchange on his behalf and delivers to Euroclear or Clearstream, as the case may be, a certificate in the form set forth in Exhibit B-1 to this Indenture (or in such other form as may be established pursuant to Section 301), dated no earlier than 15 days prior to the Exchange Date, copies of which certificate shall be available from the offices of Euroclear and Clearstream, the Trustee, any Authenticating Agent appointed for such series of Securities and each Paying Agent. Unless otherwise specified in such temporary Global Security, any such exchange shall be made free of charge to the beneficial owners of such temporary Global Security, except that a Person receiving definitive Securities must bear the cost of insurance, postage, transportation and the like unless such Person takes delivery of such definitive Securities in person at the offices of Euroclear or Clearstream. Definitive Securities in bearer form to be delivered in exchange for any portion of a temporary Global Security shall be delivered only to an address located outside the United States.

Until exchanged in full as hereinabove provided, the temporary Securities of any series shall in all respects be entitled to the same benefits under this Indenture as definitive Securities of the same series and of like tenor authenticated and delivered hereunder, except that, unless otherwise specified as contemplated by Section 301, interest payable on a temporary Global Security on an Interest Payment Date for Securities of such series occurring prior to the applicable Exchange Date shall be payable to Euroclear and Clearstream on such Interest Payment Date upon delivery by Euroclear and Clearstream to the Trustee of a certificate or certificates in the form set forth in Exhibit B-2 to this Indenture (or in such other forms as may be established pursuant to Section 301), for credit without further interest on or after such Interest Payment Date to the respective accounts of Persons who are the beneficial owners of such temporary Global Security on such Interest Payment Date and who have each delivered to Euroclear or Clearstream, as the case may be, a certificate dated no earlier than 15 days prior to the Interest Payment Date occurring prior to such Exchange Date in the form set forth as Exhibit B-1 to this Indenture (or in such other forms as may be established pursuant to Section 301). Notwithstanding anything to the contrary herein contained, the certifications made pursuant to this paragraph shall satisfy the certification requirements of the preceding two paragraphs of this Section 304(b) and of the third paragraph of Section 303 of this Indenture and the interests of the Persons who are the beneficial owners of the temporary Global Security with respect to which such certification was made will be exchanged for definitive Securities of the same series and of like tenor on the Exchange Date or the date of certification if such date occurs after the Exchange Date, without further act or deed by such beneficial owners. Except as otherwise provided in this paragraph, no payments of principal or interest owing with respect to a beneficial interest in a temporary Global Security will be made unless and until such interest in such temporary Global Security shall have been exchanged for an interest in a definitive Security. Any interest so received by Euroclear and Clearstream and not paid as herein provided shall be returned to the Trustee prior to the expiration of two years after such Interest Payment Date in order to be repaid to the Company.

With respect to Exhibit B-1 or B-2 to this Indenture, the Company may, in its discretion and if required or desirable under applicable law, substitute one or more other forms of such exhibits for such exhibits, eliminate the requirement that any or all certificate be provided, or change the time that any certificate may be required, provided that such substitute form or forms or notice of elimination or change of such certification requirement have theretofore been delivered to the Trustee with a Company Request and such form or forms, elimination or change is reasonably acceptable to the Trustee.

SECTION 305. Registration, Registration of Transfer, Conversion and Exchange. The Company shall cause to be kept at the Corporate Trust Office of the Trustee or in any office or agency of the Company in a Place of Payment a register for each series of Securities (the registers maintained in such office or in any such office or agency of the Company in a Place of Payment being herein sometimes referred to collectively as the "Security Register") in which, subject to such reasonable regulations as it may prescribe, the Company shall provide for the registration of Registered Securities and of transfers of Registered Securities. The Security Register shall be in written form or any other form capable of being converted into written form within a reasonable time. The Trustee, at its Corporate Trust Office, is hereby initially appointed "Security Registrar" for the purpose of registering Registered Securities and transfers of Registered Securities on such Security Register as herein provided. In the event that the Trustee shall cease to be Security Registrar, it shall have the right to examine, and be provided a copy of, the Security Register at all reasonable times.

Subject to the provisions of this Section 305, upon surrender for registration of transfer of any Registered Security of any series at any office or agency of the Company in a Place of Payment for that series, the Company shall execute, and the Trustee shall authenticate and deliver, in the name of the designated transferee or transferees, one or more new Registered Securities of the same series, of any authorized denominations and of a like aggregate principal amount, bearing a number not contemporaneously outstanding, and containing identical terms and provisions.

Subject to the provisions of this Section 305, at the option of the Holder, Registered Securities of any series may be exchanged for other Registered Securities of the same series, of any authorized denomination or denominations and of a like aggregate principal amount, containing identical terms and provisions, upon surrender of the Registered Securities to be exchanged at any such office or agency. Whenever any such Registered Securities are so surrendered for exchange, the Company shall execute, and the Trustee shall authenticate and deliver, the Registered Securities which the Holder making the exchange is entitled to receive. Unless otherwise specified with respect to any series of Securities as contemplated by Section 301, Bearer Securities may not be issued in exchange for Registered Securities.

If (but only if) permitted by the applicable Board Resolution and (subject to Section 303) set forth in the applicable Officers' Certificate, or in any indenture supplemental hereto, delivered as contemplated by Section 301, at the option of the Holder, Bearer Securities of any series may be exchanged for Registered Securities of the same series of any authorized denominations and of a like aggregate principal amount and tenor, upon surrender of the Bearer Securities to be exchanged at any such office or agency, with all unmatured coupons and all matured coupons in default thereto appertaining. If the Holder of a Bearer Security is unable to produce any such unmatured coupon or coupons or matured coupon or coupons in default, any such permitted exchange may be effected if the Bearer Securities are accompanied by payment in funds acceptable to the Company (or to the Trustee for the Security in case of matured coupons in default) in an amount equal to the face amount of such missing coupon or coupons, or the surrender of such missing coupon or coupons may be waived by the Company and the Trustee if there is furnished to them such security or indemnity as they may require to save each of them and any Paying Agent harmless. If thereafter the Holder of such Security shall surrender to any Paying Agent any such missing coupon in respect of which such a payment shall have been made, such Holder shall be entitled to receive the amount of such payment; provided, however, that, except as otherwise provided in Section 1002, interest represented by coupons shall be payable only upon presentation and surrender of those coupons at an office or agency located outside the United States. Notwithstanding the foregoing, in case a Bearer Security of any series is surrendered at any such office or agency in a permitted exchange for a Registered Security of the same series and like tenor after the close of business at such office or agency on (i) any Regular Record Date and before the opening of business at such office or agency on the relevant Interest Payment Date, or (ii) any Special Record Date and before the opening of business at such office or agency on the related proposed date for payment of Defaulted Interest, such Bearer Security shall be surrendered without the coupon relating to such Interest Payment Date or proposed date for payment, as the case may be, and interest or Defaulted Interest, as the case may be, will not be payable on such Interest Payment Date or proposed date for payment, as the case may be, in respect of the Registered Security issued in exchange for such Bearer Security, but will be payable only to the Holder of such coupon when due in accordance with the provisions of this Indenture. Whenever any Securities are so surrendered for exchange, the Company shall execute, and the Trustee shall authenticate and deliver, the Securities which the Holder making the exchange is entitled to receive.

Notwithstanding the foregoing, except as otherwise specified as contemplated by Section 301, any permanent Global Security shall be exchangeable only as provided in this paragraph. If the depository for any permanent Global Security is DTC, then, unless the terms of such Global Security expressly permit such Global Security to be exchanged in whole or in part for definitive Securities, a Global Security may be transferred, in whole but not in part, only to a nominee of DTC, or by a nominee of DTC to DTC, or to a successor to DTC for such Global Security selected or approved by the Company or to a nominee of such successor to DTC. If at any time DTC notifies the Company that it is unwilling or unable to continue as depository for the applicable Global Security or Securities or if at any time DTC ceases to be a clearing agency registered under the Exchange Act if so required by applicable law or regulation, the Company shall appoint a successor depository with respect to such Global Security or Securities. If (w) a successor depository for such Global Security or Securities is not appointed by the Company within 90 days after the Company receives such notice or becomes aware of such unwillingness, inability or ineligibility, (x) the Company delivers to the Trustee for Securities of such series in registered form a Company Order stating that the Securities of such series shall be exchangeable, (y) an Event of Default has occurred and is continuing and the beneficial owners representing a majority in principal amount of the applicable series of Securities represented by such Global Security or Securities advise DTC to cease acting as depository for such Global Security or Securities or (z) the Company, in its sole discretion, determines at any time that all Outstanding Securities (but not less than all) of any series issued or issuable in the form of one or more Global Securities shall no longer be represented by such Global Security or Securities, then the Company shall execute, and the Trustee shall authenticate and deliver definitive Securities of like series, rank, tenor and terms in definitive form in an aggregate principal amount equal to the principal amount of such Global Security or Securities. If any beneficial owner of an interest in a permanent global Security is otherwise entitled to exchange such interest for Securities of such series and of like tenor and principal amount of another authorized form and denomination, as specified as contemplated by Section 301 and provided that any applicable notice provided in the permanent Global Security shall have been given, then without unnecessary delay but in any event not later than the earliest date on which such interest may be so exchanged, the Company shall execute, and the Trustee shall authenticate and deliver definitive Securities in aggregate principal amount equal to the principal amount of such beneficial owner's interest in such permanent Global Security. On or after the earliest date on which such interests may be so exchanged, such permanent Global Security shall be surrendered for exchange by DTC or such other depository as shall be specified in the Company Order with respect thereto to the Trustee, as the Company's agent for such purpose; provided, however, that no such exchanges may occur during a period beginning at the opening of business 15 days before any selection of Securities to be redeemed and ending on the relevant Redemption Date if the Security for which exchange is requested may be among those selected for redemption; and provided further that no Bearer Security delivered in exchange for a portion of a permanent Global Security shall be mailed or otherwise delivered to any location in the United States. If a Registered Security is issued in exchange for any portion of a permanent Global Security after the close of business at the office or agency where such exchange occurs on (i) any Regular Record Date and before the opening of business at such office or agency on the relevant Interest Payment Date, or (ii) any Special Record Date and the opening of business at such office or agency on the related proposed date for payment of Defaulted Interest, interest or Defaulted Interest, as the case may be, will not be payable on such Interest Payment Date or proposed date for payment, as the case may be, in respect of such Registered Security, but will be payable on such Interest Payment Date or proposed date for payment, as the case may be, only to the Person to whom interest in respect of such portion of such permanent Global Security is payable in accordance with the provisions of this Indenture.

All Securities issued upon any registration of transfer or conversion or exchange of Securities shall be the valid obligations of the Company, evidencing the same debt, and entitled to the same benefits under this Indenture, as the Securities surrendered upon such registration of transfer or conversion or exchange.

Every Registered Security presented or surrendered for registration of transfer or for conversion, exchange or redemption shall (if so required by the Company or the Security Registrar) be duly endorsed, or be accompanied by a written instrument of transfer in form satisfactory to the Company and the Security Registrar, duly executed by the Holder thereof or his attorney duly authorized in writing.

No service charge shall be made to the Holder for any registration of transfer or conversion or exchange of Securities, but the Company may require payment of a sum sufficient to cover any tax or other governmental charge that may be imposed in connection with any registration of transfer or conversion or exchange of Securities, other than exchanges pursuant to Section 304, 906, 1107 or 1305 not involving any transfer.

The Company or the Trustee, as applicable, shall not be required (i) to issue, register the transfer of or exchange any Security if such Security may be among those selected for redemption during a period beginning at the opening of business 15 days before selection of the Securities to be redeemed under Section 1103 and ending at the close of business on (A) if such Securities are issuable only as Registered Securities, the day of the mailing of the relevant notice of redemption and (B) if such Securities are issuable as Bearer Securities, the day of the first publication of the relevant notice of redemption or, if such Securities are also issuable as Registered Securities and there is no publication, the mailing of the relevant notice of redemption, or (ii) to register the transfer of or exchange any Registered Security so selected for redemption in whole or in part, except, in the case of any Registered Security to be redeemed in part, the portion thereof not to be redeemed, or (iii) to exchange any Bearer Security so selected for redemption except that such a Bearer Security may be exchanged for a Registered Security of that series and like tenor, provided that such Registered Security shall be simultaneously surrendered for redemption, or (iv) to issue, register the transfer of or exchange any Security which has been surrendered for repayment at the option of the Holder, except the portion, if any, of such Security not to be so repaid.

Furthermore, notwithstanding any other provision of this Section 305, the Company will not be required to exchange any Securities if, as a result of the exchange, the Company would suffer adverse consequences under any United States law or regulation.

SECTION 306. Mutilated, Destroyed, Lost and Stolen Securities. If any mutilated Security or a Security with a mutilated coupon appertaining to it is surrendered to the Trustee or the Company, together with, in proper cases, such security or indemnity as may be required by the Company or the Trustee to save each of them or any agent of either of them harmless, the Company shall execute and the Trustee shall authenticate and deliver in exchange therefor a new Security of the same series and principal amount, containing identical terms and provisions and bearing a number not contemporaneously outstanding, with coupons corresponding to the coupons, if any, appertaining to the surrendered Security.

If there shall be delivered to the Company and to the Trustee (i) evidence to their satisfaction of the destruction, loss or theft of any Security or coupon, and (ii) such security or indemnity as may be required by them to save each of them and any agent of either of them harmless, then, in the absence of notice to the Company or the Trustee that such Security or coupon has been acquired by a bona fide purchaser, the Company shall execute and upon its request the Trustee shall authenticate and deliver, in lieu of any such destroyed, lost or stolen Security or in exchange for the Security to which a destroyed, lost or stolen coupon appertains (with all appurtenant coupons not destroyed, lost or stolen), a new Security of the same series and principal amount, containing identical terms and provisions and bearing a number not contemporaneously outstanding, with coupons corresponding to the coupons, if any, appertaining to such destroyed, lost or stolen Security or to the Security to which such destroyed, lost or stolen coupon appertains.

Notwithstanding the provisions of the previous two paragraphs, in case any such mutilated, destroyed, lost or stolen Security or coupon has become or is about to become due and payable, the Company in its discretion may, instead of issuing a new Security, with coupons corresponding to the coupons, if any, appertaining to such destroyed, lost or stolen Security or to the Security to which such destroyed, lost or stolen coupon appertains, pay such Security or coupon if the applicant for such payment shall furnish to the Company and the Trustee for such Security such security or indemnity as may be required by them to save each of them harmless, and in the case of destruction, loss or theft, evidence satisfactory to the Company and Trustee and any agent of any of them of the destruction, loss or theft of such Security and the ownership thereof; provided, however, that payment of principal of (and premium or Make-Whole Amount, if any), and interest, if any, on, Bearer Securities shall, except as otherwise provided in Section 1002, be payable only at an office or agency located outside the United States and, unless otherwise specified as contemplated by Section 301, any interest on Bearer Securities shall be payable only upon presentation and surrender of the coupons appertaining thereto.

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 with its coupons, if any, issued pursuant to this Section in lieu of any destroyed, lost or stolen Security, or in exchange for a Security to which a destroyed, lost or stolen coupon appertains, shall constitute an original additional contractual obligation of the Company, whether or not the destroyed, lost or stolen Security and its coupons, if any, or the destroyed, lost or stolen coupon 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 and their coupons, if any, 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 or coupons.

SECTION 307. Payment of Interest; Interest Rights Preserved. Except as otherwise specified with respect to a series of Securities in accordance with the provisions of Section 301, interest on any Registered Security that is payable, and is punctually paid or duly provided for, on any Interest Payment Date shall be paid to the Person in whose name that Security (or one or more Predecessor Securities) is registered at the close of business on the Regular Record Date for such interest payment at the office or agency of the Company maintained for such purpose pursuant to Section 1002; provided, however, that each installment of interest on any Registered Security may at the Company's option be paid by (i) mailing a check for such interest, payable to or upon the written order of the Person entitled thereto pursuant to Section 308, to the address of such Person as it appears on the Security Register or (ii) transfer to an account maintained by the payee located inside the United States.

Unless otherwise provided as contemplated by Section 301 with respect to the Securities of any series, payment of interest may be made, in the case of a Bearer Security, by transfer to an account maintained by the payee with a bank located outside the United States.

Unless otherwise provided as contemplated by Section 301, every permanent Global Security will provide that interest, if any, payable on any Interest Payment Date will be paid to DTC, Euroclear and/or Clearstream, as the case may be, with respect to that portion of such permanent Global Security held for its account by Cede & Co. or the Common Depository, as the case may be, for the purpose of permitting such party to credit the interest received by it in respect of such permanent Global Security to the accounts of the beneficial owners thereof.

In case a Bearer Security of any series is surrendered in exchange for a Registered Security of such series after the close of business (at an office or agency in a Place of Payment for such series) on any Regular Record Date and before the opening of business (at such office or agency) on the next succeeding Interest Payment Date, such Bearer Security shall be surrendered without the coupon relating to such Interest Payment Date and interest will not be payable on such Interest Payment Date in respect of the Registered Security issued in exchange for such Bearer Security, but will be payable only to the Holder of such coupon when due in accordance with the provisions of this Indenture.

Except as otherwise specified with respect to a series of Securities in accordance with the provisions of Section 301, any interest on any Registered Security of any series that is payable, but is not punctually paid or duly provided for, on any Interest Payment Date (herein called "Defaulted Interest") shall forthwith cease to be payable to the registered Holder thereof on the relevant Regular Record Date by virtue of having been such Holder, and such Defaulted Interest may be paid by the Company, at its election in each case, as provided in clause (1) or (2) below:

(1) The Company may elect to make payment of any Defaulted Interest to the Persons in whose names the Registered Securities of such series (or their respective Predecessor Securities) are registered at the close of business on a Special Record Date for the payment of such Defaulted Interest, which shall be fixed in the following manner. The Company shall notify the Trustee in writing of the amount of Defaulted Interest proposed to be paid on each Registered Security of such series and the date of the proposed payment (which shall not be less than 20 days after such notice is received by the Trustee), and at the same time the Company shall deposit with the Trustee an amount of money in the currency or currencies, currency unit or units or composite currency or currencies in which the Securities of such series are payable (except as otherwise specified pursuant to Section 301 for the Securities of such series) equal to the aggregate amount proposed to be paid in respect of such Defaulted Interest or shall make arrangements satisfactory to the Trustee for such deposit on or prior to the date of the proposed payment, such money when deposited to be held in trust for the benefit of the Persons entitled to such Defaulted Interest as in this clause provided. Thereupon the Trustee shall fix a Special Record Date for the payment of such Defaulted Interest which shall be not more than 15 days and not less than 10 days prior to the date of the proposed payment and not less than 10 days after the receipt by the Trustee of the notice of the proposed payment. The Trustee shall promptly notify the Company of such Special Record Date and, in the name and at the expense of the Company, shall cause notice of the proposed payment of such Defaulted Interest and the Special Record Date therefor to be mailed, first-class postage prepaid, to each Holder of Registered Securities of such series at his address as it appears in the Security Register not less than 10 days prior to such Special Record Date. The Trustee may, in its discretion, in the name and at the expense of the Company, cause a similar notice to be published at least once in an Authorized Newspaper in each Place of Payment, but such publications shall not be a condition precedent to the establishment of such Special Record Date. Notice of the proposed payment of such Defaulted Interest and the Special Record Date therefor having been mailed as aforesaid, such Defaulted Interest shall be paid to the Persons in whose names the Registered Securities of such series (or their respective Predecessor Securities) are registered at the close of business on such Special Record Date and shall no longer be payable pursuant to the following clause (2). In case a Bearer Security of any series is surrendered at the office or agency in a Place of Payment for such series in exchange for a Registered Security of such series after the close of business at such office or agency on any Special Record Date and before the opening of business at such office or agency on the related proposed date for payment of Defaulted Interest, such Bearer Security shall be surrendered without the coupon relating to such proposed date of payment and Defaulted Interest will not be payable on such proposed date of payment in respect of the Registered Security issued in exchange for such Bearer Security, but will be payable only to the Holder of such coupon when due in accordance with the provisions of this Indenture.

(2) The Company may make payment of any Defaulted Interest on the Registered Securities of any series in any other lawful manner not inconsistent with the requirements of any over-the-counter market or securities exchange on which such Securities may be quoted or listed, and upon such notice as may be required by such market or exchange, if, after notice given by the Company to the Trustee of the proposed payment pursuant to this clause, such manner of payment shall be deemed practicable by the Trustee.

Subject to the foregoing provisions of this Section and Section 305, each Security delivered under this Indenture upon registration of transfer of or upon conversion of or in exchange for or in lieu of any other Security shall carry the rights to interest accrued and unpaid, and to accrue, which were carried by such other Security.

SECTION 308. Persons Deemed Owners. Prior to due presentment of a Registered Security for registration of transfer, the Company, the Trustee and any agent of the Company or the Trustee may treat the Person in whose name such Registered Security is registered as the owner of such Security for the purpose of receiving payment of principal of (and premium or Make-Whole Amount, if any), and (subject to Sections 305 and 307) interest on, such Registered Security and for all other purposes whatsoever, whether or not such Registered Security be overdue, and neither the Company, the Trustee nor any agent of the Company or the Trustee shall be affected by notice to the contrary. All such payments so made to any such Person, or upon such Person's order, shall be valid, and, to the extent of the sum or sums so paid, effectual to satisfy and discharge the liability for money payable upon any such Security.

Title to any Bearer Security and any coupons appertaining thereto shall pass by delivery. The Company, the Trustee and any agent of the Company or the Trustee may treat the Holder of any Bearer Security and the Holder of any coupon as the absolute owner of such Security or coupon for the purpose of receiving payment thereof or on account thereof and for all other purposes whatsoever, whether or not such Security or coupon be overdue, and neither the Company, the Trustee nor any agent of the Company or the Trustee shall be affected by notice to the contrary.

No holder of any beneficial interest in any Global Security held on its behalf by a depository shall have any rights under this Indenture with respect to such Global Security and such depository (which is the Holder of such security) shall be treated by the Company, the Trustee, and any agent of the Company or the Trustee as the owner of such Global Security for all purposes whatsoever. None of the Company, the Trustee, any Paying Agent or the Security Registrar will have any responsibility or liability for any aspect of the records relating to or payments made on account of beneficial ownership interests of a Global Security or for maintaining, supervising or reviewing any records relating to such beneficial ownership interests.

Notwithstanding the foregoing, with respect to any Global Security, nothing herein shall prevent the Company, the Trustee, or any agent of the Company or the Trustee, from giving effect to any written certification, proxy or other authorization furnished by any depository, as a Holder, with respect to such Global Security or impair, as between such depository and owners of beneficial interests in such Global Security, the operation of customary practices governing the exercise of the rights of such depository (or its nominee) as Holder of such Global Security.

SECTION 309. Cancellation. All Securities and coupons surrendered for payment, redemption, repayment at the option of the Holder, registration of transfer or conversion or exchange or for credit against any sinking fund payment shall, if surrendered to any Person other than the Trustee, be delivered to the Trustee, and any such Securities and coupons and Securities and coupons surrendered directly to the Trustee for any such purpose, upon direction by the Company, shall be promptly cancelled by it. The Company may at any time deliver to the Trustee for cancellation any Securities previously authenticated and delivered hereunder which the Company may have acquired in any manner whatsoever, and may deliver to the Trustee (or to any other Person for delivery to the Trustee) for cancellation any Securities previously authenticated hereunder which the Company has not issued and sold, and all Securities so delivered shall be promptly cancelled by the Trustee. If the Company shall so acquire any of the Securities, however, such acquisition shall not operate as a redemption or satisfaction of the indebtedness represented by such Securities unless and until the same are surrendered to the Trustee for cancellation. No Securities shall be authenticated in lieu of or in exchange for any Securities cancelled as provided in this Section, except as expressly permitted by this Indenture. Cancelled Securities and coupons held by the Trustee shall be disposed of by the Trustee in accordance with its customary practices (subject to the record retention requirements of the Exchange Act).

SECTION 310. Computation of Interest. Except as otherwise specified as contemplated by Section 301 with respect to Securities of any series, interest on the Securities of each series shall be computed on the basis of a 360-day year consisting of twelve 30-day months.

SECTION 311. 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, however, 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 identification numbers printed on the Securities, and any such redemption shall not be affected by any defect in or omission of such numbers. The Company will promptly notify the Trustee of any change in the “CUSIP” numbers.

ARTICLE FOUR - SATISFACTION AND DISCHARGE

SECTION 401. Satisfaction and Discharge of Indenture. This Indenture shall upon Company Request cease to be of further effect with respect to any series of Securities specified in such Company Request (except as to any surviving rights of registration of transfer or conversion or exchange of Securities of such series herein expressly provided for), and the Trustee, upon receipt of a Company Order, and at the expense of the Company, shall execute instruments in form and substance satisfactory to the Trustee and the Company acknowledging satisfaction and discharge of this Indenture as to such series when

(1) either

(A) all Securities of such series theretofore authenticated and delivered and all coupons, if any, appertaining thereto (other than (i) coupons appertaining to Bearer Securities surrendered for exchange for Registered Securities and maturing after such exchange, whose surrender is not required or has been waived as provided in Section 305, (ii) Securities and coupons of such series which have been destroyed, lost or stolen and which have been replaced or paid as provided in Section 306, (iii) coupons appertaining to Securities called for redemption and maturing after the relevant Redemption Date, whose surrender has been waived as provided in Section 1106, and (iv) Securities and coupons of such series for whose payment money has theretofore been deposited in trust or segregated and held in trust by the Company and thereafter repaid to the Company or discharged from such trust, as provided in Section 1003) have been delivered to the Trustee for cancellation; or

(B) all Securities of such series and, in the case of (i) or (ii) below, any coupons appertaining thereto not theretofore delivered to the Trustee for cancellation

(i) have become due and payable, or

(ii) will become due and payable at their Stated Maturity within one year, or

(iii) if redeemable at the option of the Company, 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,

and the Company, in the case of (B)(i), (B)(ii) or (B)(iii) above, has irrevocably deposited or caused to be deposited with the Trustee as trust funds in trust for the purpose an amount in the currency or currencies, currency unit or units or composite currency or currencies in which the Securities of such series are payable, sufficient to pay and discharge the entire indebtedness on such Securities and such coupons not theretofore delivered to the Trustee for cancellation, for principal (and premium or Make-Whole Amount, if any) and interest to the date of such deposit (in the case of Securities which have become due and payable) or to the Stated Maturity or Redemption Date, as the case may be;

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

(3) the Company has delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that all conditions precedent herein provided for relating to the satisfaction and discharge of this Indenture as to such series have been complied with.

Notwithstanding the satisfaction and discharge of this Indenture, the obligations of the Company to the Trustee and any predecessor Trustee under Section 606, the obligations of the Company to any Authenticating Agent under Section 611 and, if money shall have been deposited with and held by the Trustee pursuant to subclause (B) of clause (1) of this Section, the obligations of the Trustee under Section 402 and the last paragraph of Section 1003 shall survive such satisfaction and discharge.

SECTION 402. Application of Trust Funds. Subject to the provisions of the last paragraph of Section 1003, all money deposited with the Trustee pursuant to Section 401 shall be held in trust and applied by it, in accordance with the provisions of the Securities, the coupons 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 premium or Make-Whole Amount, if any), and any interest for whose payment such money has been deposited with or received by the Trustee, but such money need not be segregated from other funds except to the extent required by law.

ARTICLE FIVE - REMEDIES

SECTION 501. Events of Default. “Event of Default,” wherever used herein with respect to any particular series of Securities, means any one of the following events (whatever the reason for such Event of Default and whether or not it shall be voluntary or involuntary or be effected by operation of law or pursuant to any judgment, decree or order of any court or any order, rule or regulation of any administrative or governmental body):

- (1) default in the payment of any interest on any Security of that series or of any coupon appertaining thereto, when such interest or coupon becomes due and payable, and continuance of such default for a period of 30 days; or
- (2) default in the payment of the principal of (or premium or Make-Whole Amount, if any, on) any Security of that series when it becomes due and payable at its Maturity; or
- (3) default in the deposit of any sinking fund payment, to the extent applicable to such series of Securities, when and as due by the terms of any Security of that series; or
- (4) default in the performance, or breach, of any covenant or warranty of the Company in this Indenture with respect to any Security of that series (other than a covenant or warranty a default in whose performance or whose breach is elsewhere in this Section specifically dealt with or which has expressly been included in this Indenture solely for the benefit of a series of Securities other than that series), and continuance of such default or breach 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
- (5) default under any bond, debenture, note, mortgage, indenture or instrument under which there may be issued or by which there may be secured or evidenced any indebtedness for money borrowed by the Company (or by any Subsidiary, the repayment of which the Company has guaranteed or for which the Company is directly responsible or liable as obligor or guarantor), having an aggregate principal amount outstanding of at least \$30,000,000, whether such indebtedness now exists or shall hereafter be created, which default shall have resulted in such indebtedness becoming or being declared due and payable prior to the date on which it would otherwise have become due and payable, without such indebtedness having been discharged, or such acceleration having been rescinded or annulled, within a period of 30 days after there shall have 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 10% in principal amount of the Outstanding Securities of that series a written notice specifying such default and requiring the Company to cause such indebtedness to be discharged or cause such acceleration to be rescinded or annulled and stating that such notice is a “Notice of Default” hereunder; provided, however, that, subject to the provisions of Sections 601 and 602, the Trustee shall not be deemed to have knowledge of such default unless either (A) a Responsible Officer of the Trustee shall have knowledge of such default or (B) the Trustee shall have received written notice thereof from the Company, from any Holder, from the holder of any such indebtedness or from the trustee under any such mortgage, indenture or other instrument; or

- (6) the Company or any Significant Subsidiary pursuant to or within the meaning of any Bankruptcy Law:
 - (A) commences a voluntary case,
 - (B) consents to the entry of an order for relief against it in an involuntary case,
 - (C) consents to the appointment of a Custodian of it or for all or substantially all of its property, or
 - (D) makes a general assignment for the benefit of its creditors; or
- (7) a court of competent jurisdiction enters an order or decree under any Bankruptcy Law that:
 - (A) is for relief against the Company or any Significant Subsidiary in an involuntary case,
 - (B) appoints a Custodian of the Company or any Significant Subsidiary or for all or substantially all of either of its property,or
 - (C) orders the liquidation of the Company or any Significant Subsidiary, and the order or decree remains unstayed and in effect for 90 days; or
- (8) any other Event of Default provided with respect to Securities of that series.

As used in this Section 501, the term “Bankruptcy Law” means title 11, U.S. Code or any similar Federal or state law for the relief of debtors and the term “Custodian” means any receiver, trustee, assignee, liquidator or other similar official under any Bankruptcy Law.

SECTION 502. 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, then and 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 Securities of that Series are Original Issue Discount Securities or Indexed Securities, such portion of the principal as may be specified in the terms thereof) of all 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 the Holders), and upon any such declaration such principal or specified portion thereof shall become immediately due and payable.

At any time after such a declaration of acceleration with respect to Securities of 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 of acceleration and its consequences if:

- (1) the Company has paid or deposited with the Trustee a sum sufficient to pay in the currency, currency unit or composite currency in which the Securities of such series are payable (except as otherwise specified pursuant to Section 301 for the Securities of such series):
 - (A) all overdue installments of interest on all Outstanding Securities of that series and any related coupons,
 - (B) the principal of (and premium or Make-Whole Amount, if any, on) any Outstanding Securities of that series which have become due otherwise than by such declaration of acceleration and interest thereon at the rate or rates borne by or provided for in such Securities,
 - (C) to the extent that payment of such interest is lawful, interest upon overdue installments of interest at the rate or rates borne by or provided for in such Securities, and
 - (D) all sums paid or advanced by the Trustee hereunder and the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel; and
- (2) all Events of Default with respect to Securities of that series, other than the nonpayment of the principal of (or premium or Make-Whole Amount, if any) or interest on Securities of that series which have become due solely by such declaration of acceleration, have been cured or waived as provided in Section 513.

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

SECTION 503. Collection of Indebtedness and Suits for Enforcement by Trustee. The Company covenants that if:

- (1) default is made in the payment of any installment of interest on any Security of any series and any related coupon when such interest becomes due and payable and such default continues for a period of 30 days, or
- (2) default is made in the payment of the principal of (or premium or Make-Whole Amount, if any, on) any Security of any series at its Maturity,

then the Company will, upon demand of the Trustee, pay to the Trustee, for the benefit of the Holders of such Securities of such series and coupons, the whole amount then due and payable on such Securities and coupons for principal (and premium or Make-Whole Amount, if any) and interest, with interest upon any overdue principal (and premium or Make-Whole Amount, if any) and, to the extent that payment of such interest shall be legally enforceable, upon any overdue installments of interest at the rate or rates borne by or provided for in such Securities, and, in addition thereto, such further amount as shall be sufficient to cover the costs and expenses of collection, including the reasonable compensation, 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, and may prosecute such proceeding to judgment or final decree, and may enforce the same against the Company or any other obligor upon such Securities of such series and collect the moneys adjudged or decreed to be payable in the manner provided by law out of the property of the Company or any other obligor upon such Securities of such series, wherever situated.

If an Event of Default with respect to 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 and any related coupons by such appropriate judicial proceedings as the Trustee shall deem necessary 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 504. 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 of any series 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, premium or Make-Whole Amount, if any, or interest) shall be entitled and empowered, by intervention in such proceeding or otherwise:

(i) to file and prove a claim for the whole amount, or such lesser amount as may be provided for in the Securities of such series, of principal (and premium or Make-Whole Amount, if any) 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 reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel) and of the Holders allowed in such judicial proceeding, and

(ii) 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 of Securities of such series and coupons 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 to it for the reasonable compensation, expenses, disbursements and advances of the Trustee and any predecessor Trustee, their agents and counsel, and any other amounts due the Trustee or any predecessor Trustee under Section 606.

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

In any proceedings brought by the Trustee (and also any proceedings involving the interpretation of any provision of this Indenture to which the Trustee shall be a party) the Trustee shall be held to represent all the Holders of the Securities, and it shall not be necessary to make any Holders of the Securities parties to any such proceedings.

SECTION 505. Trustee May Enforce Claims Without Possession of Securities or Coupons. All rights of action and claims under this Indenture or any of the Securities or coupons may be prosecuted and enforced by the Trustee without the possession of any of the Securities or coupons 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 reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel, be for the ratable benefit of the Holders of the Securities and coupons in respect of which such judgment has been recovered.

SECTION 506. Application of Money Collected. Any money 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 on account of principal (or premium or Make-Whole Amount, if any) or interest, upon presentation of the Securities or coupons, or both, as the case may be, 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 and any predecessor Trustee under Section 606;

SECOND: To the payment of the amounts then due and unpaid upon the Securities and coupons for principal (and premium or Make-Whole Amount, if any) and interest, 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 aggregate amounts due and payable on such Securities and coupons for principal (and premium or Make-Whole Amount, if any) and interest, respectively; and

THIRD: To the payment of the remainder, if any, to the Company.

SECTION 507. Limitation on Suits. No Holder of any Security of any series or any related coupon shall have any right to institute any proceeding, judicial or otherwise, with respect to this Indenture or the Securities, or for the appointment of a receiver or trustee, or for any other remedy hereunder, unless:

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

(2) 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;

(3) such Holder or Holders have offered to the Trustee indemnity reasonably satisfactory to the Trustee against the costs, expenses and liabilities to be incurred in compliance with such request;

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

(5) 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 and intended 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.

SECTION 508. Unconditional Right of Holders to Receive Principal, Premium or Make-Whole Amount, if any, and Interest. Notwithstanding any other provision in this Indenture, the Holder of any Security or coupon shall have the right which is absolute and unconditional to receive payment of the principal of (and premium or Make-Whole Amount, if any) and (subject to Sections 305 and 307) interest on such Security or payment of such coupon on the respective due dates expressed in such Security or coupon (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 509. Restoration of Rights and Remedies. If the Trustee or any Holder of a Security or coupon 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, the Company, the Trustee and the Holders of Securities and coupons shall, subject to any determination in such proceeding, 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 510. Rights and Remedies Cumulative. Except as otherwise provided with respect to the replacement or payment of mutilated, destroyed, lost or stolen Securities or coupons in the last paragraph of Section 306, no right or remedy herein conferred upon or reserved to the Trustee or to the Holders of Securities or coupons 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 prevent the concurrent assertion or employment of any other appropriate right or remedy.

SECTION 511. Delay or Omission Not Waiver. No delay or omission of the Trustee or of any Holder of any Security or coupon 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 of Securities or coupons, as the case may be.

SECTION 512. Control by Holders of Securities. The Holders of not less than 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:

- (1) such direction shall not be in conflict with any rule of law or with this Indenture,
- (2) the Trustee may take any other action deemed proper by the Trustee which is not inconsistent with such direction, and
- (3) the Trustee need not take any action which might involve it in personal liability or be unduly prejudicial to the Holders of Securities of such series not joining therein.

Nothing in this Indenture shall impair the right of the Trustee in its discretion to take any action deemed proper by the Trustee and which is not inconsistent with such direction by Holders.

SECTION 513. 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 and any related coupons waive any past default hereunder with respect to such series and its consequences, except a default

- (1) in the payment of the principal of (or premium or Make-Whole Amount, if any) or interest on any Security of such series or any related coupons, or
- (2) in respect of a covenant or provision hereof which under Article Nine cannot be modified or amended without the consent of the Holder of each Outstanding Security of such series affected; or
- (3) in respect of a covenant or provision hereof for the benefit or protection of the Trustee, without its express written consent.

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 Event of Default or impair any right consequent thereon.

SECTION 514. Waiver of Usury, Stay or Extension Laws. The Company covenants (to the extent that it may lawfully do so) that it will not at any time insist upon, or plead, or in any manner whatsoever claim or take the benefit or advantage of, any usury, stay or extension law wherever enacted, now or at any time hereafter in force, which may affect the covenants or the performance of this Indenture; and the Company (to the extent that it may lawfully do so) hereby expressly waives all benefit or advantage of any such law, and covenants that it will not 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 had been enacted.

SECTION 515. 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 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 and expenses, 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 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 premium or Make-Whole Amount, if any) or interest on any Security on or after the respective Stated Maturities expressed in such Security (or, in the case of redemption, on or after the Redemption Date).

ARTICLE SIX - THE TRUSTEE

SECTION 601. Notice of Defaults. Within 90 days after the occurrence of any default hereunder with respect to the Securities of any series, the Trustee shall transmit in the manner and to the extent provided in TIA Section 313(c), notice of such default hereunder known to the Trustee, unless such default shall have been cured or waived; provided, however, that, except in the case of a default in the payment of the principal of (or premium or Make-Whole Amount, if any) or interest on any Security of such series, or in the payment of any sinking or purchase fund installment with respect to the Securities of such series, the Trustee shall be protected in withholding such notice if and so long as the board of directors, the executive committee, or a trust committee of directors and/or Responsible Officers of the Trustee in good faith determine that the withholding of such notice is in the interests of the Holders of the Securities and coupons of such series; and provided further that in the case of any default or breach of the character specified in Section 501(4) with respect to the Securities and coupons of such series, no such notice to Holders shall be given until at least 60 days after the occurrence thereof. For the purpose of this Section, the term "default" means any event which is, or after notice or lapse of time or both would become, an Event of Default with respect to the Securities of such series.

SECTION 602. Certain Rights of Trustee. Subject to the provisions of TIA Section 315(a) through 315(d):

(1) the Trustee may conclusively rely and shall be fully protected in acting or refraining from acting upon any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, bond, debenture, note, coupon or other paper or document (whether in its original or facsimile form) reasonably believed by it to be genuine and to have been signed or presented by the proper party or parties;

(2) any request or direction of the Company mentioned herein shall be sufficiently evidenced by a Company Request or Company Order (other than delivery of any Security, together with any coupons appertaining thereto, to the Trustee for authentication and delivery pursuant to Section 303 which shall be sufficiently evidenced as provided therein) and any resolution of the Board of Directors may be sufficiently evidenced by a Board Resolution;

(3) whenever in the administration of this Indenture the Trustee shall deem it desirable that a matter be proved or established prior to taking, suffering or omitting any action hereunder, the Trustee (unless other evidence be herein specifically prescribed) may, in the absence of bad faith on its part, rely upon an Officers' Certificate;

(4) the Trustee may consult with counsel of its own selection and the written 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 in good faith and in reliance thereon;

(5) 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 of any series or any related coupons pursuant to this Indenture, unless such Holders shall have offered to the Trustee security or indemnity reasonably satisfactory to the Trustee against the costs, expenses and liabilities which might be incurred by it in compliance with such request or direction;

(6) 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, coupon or other paper or document, unless requested in writing so to do by the Holders of not less than a majority in aggregate principal amount of the Outstanding Securities of any series; provided that, if the payment within a reasonable time to the Trustee of the costs, expenses or liabilities likely to be incurred by it in the making of such investigation is, in the opinion of the Trustee, not reasonably assured to the Trustee by the security afforded to it by the terms of this Indenture, the Trustee may require reasonable indemnity against such expenses or liabilities as a condition to proceeding; the reasonable expenses of every such examination shall be paid by the Holders or, if paid by the Trustee, shall be repaid by the Holders upon demand. The Trustee, in its discretion, may make such further inquiry or investigation into such facts or matters as it may see fit, and, if the Trustee shall determine to make such further inquiry or investigation, it shall be entitled to examine the books, records and premises of the Company, relevant to the facts or matters that are the subject of its inquiry, personally or by agent or attorney at the expense of the Company and shall incur no liability or additional liability of any kind by reason of such inquiry or investigation;

(7) the Trustee may execute any of the trusts or powers hereunder or perform any duties hereunder either directly or by or through agents or attorneys and the Trustee shall not be responsible for any misconduct or negligence on the part of any agent or attorney appointed with due care by it hereunder;

(8) the Trustee shall not be liable for any action taken, suffered or omitted by it in good faith and reasonably believed by it to be authorized or within the discretion or rights or powers conferred upon it by this Indenture;

(9) any permissive right or power available to the Trustee under this Indenture or any supplement hereto shall not be construed to be a mandatory duty or obligation;

(10) the Trustee shall not be charged with knowledge of any matter (including any default, other than as described in Section 501(1), (2) or (3)) unless and except to the extent actually known to a Responsible Officer of the Trustee or to the extent written notice thereof is received by the Trustee at the Corporate Trust Office;

(11) the Trustee shall have no liability for any inaccuracy in the books and records of, or for any actions or omissions of, DTC, Euroclear or Clearstream or any depository acting on behalf of any of them;

(12) the rights, privileges, protections, immunities and benefits given to the Trustee, including, without limitation, its right to be indemnified, are extended to, and shall be enforceable by, the Trustee in each of its capacities hereunder, and each agent, custodian and other Person employed by the Trustee to act hereunder; and

(13) the Trustee may request that the Company deliver an Officers' Certificate setting forth the names of individuals and/or titles of officers authorized at such time to take specified actions pursuant to this Indenture, which Officers' Certificate may be signed by any person authorized to sign an Officers' Certificate, including any person specified as so authorized in any such certificate previously delivered and not superseded.

The Trustee shall not be required to expend or risk its own funds or otherwise incur any financial liability in the performance of any of its duties hereunder, or in the exercise of any of its rights or powers, if it shall have reasonable grounds for believing that repayment of such funds or adequate indemnity against such risk or liability is not reasonably assured to it.

Except during the continuance of an Event of Default, the Trustee undertakes to perform only such duties as are specifically set forth in this Indenture, and no implied covenants or obligations shall be read into this Indenture against the Trustee.

SECTION 603. Not Responsible for Recitals or Issuance of Securities. The recitals contained herein and in the Securities, except the Trustee's certificate of authentication, and in any coupons shall be taken as the statements of the Company, and neither the Trustee nor any Authenticating Agent assumes any responsibility for their correctness. The Trustee makes no representations as to the validity or sufficiency of this Indenture or of the Securities or coupons, except that the Trustee represents that it is duly authorized to execute and deliver this Indenture, authenticate the Securities and perform its obligations hereunder. Neither the Trustee nor any Authenticating Agent shall be accountable for the use or application by the Company of Securities or the proceeds thereof. The Trustee shall have no responsibility with respect to any information, statement or recital in any offering prospectus or other disclosure materials prepared or distributed with respect to the Securities.

SECTION 604. May Hold Securities. The Trustee, any Paying Agent, Security Registrar, Authenticating Agent or any other agent of the Company, in its individual or any other capacity, may become the owner or pledgee of Securities and coupons and, subject to TIA Sections 310(b) and 311, may otherwise deal with the Company with the same rights it would have if it were not Trustee, Paying Agent, Security Registrar, Authenticating Agent or such other agent.

SECTION 605. Money Held in Trust. Money held by the Trustee in trust hereunder need not be segregated from other funds except to the extent required by law. The Trustee shall be under no liability for interest on any money received by it hereunder except as otherwise agreed in writing with the Company.

SECTION 606. Compensation and Reimbursement. The Company agrees:

(1) to pay to the Trustee as agreed upon in writing from time to time reasonable compensation for all services rendered by it hereunder (which compensation shall not be limited by any provision of law in regard to the compensation of a trustee of an express trust);

(2) except as otherwise expressly provided herein, to reimburse each of the Trustee and any predecessor Trustee upon its request for all reasonable expenses, and disbursements incurred by the Trustee in accordance with any provision of this Indenture (including the reasonable compensation and the reasonable expenses and disbursements of its agents and counsel), except any such expense or disbursement as shall be determined to have been caused by its own negligence, willful misconduct or bad faith; and

(3) to indemnify each of the Trustee and any predecessor Trustee for, and to hold it harmless against, any loss, liability, claim, damage or expense incurred without negligence, willful misconduct or bad faith on its part, arising out of or in connection with the acceptance or administration of the trust or trusts hereunder, including the costs and expenses of defending itself against any claim or liability in connection with the exercise or performance of any of its powers or duties hereunder.

When the Trustee incurs expenses or renders services in connection with an Event of Default specified in Section 501(7) or Section 501(8), the expenses (including the reasonable charges and expenses of its counsel) and the compensation for the services are intended to constitute expenses of administration under any applicable Federal or state bankruptcy, insolvency or other similar law.

As security for the performance of the obligations of the Company under this Section, the Trustee shall have a lien for payment of the Trustee's fees and expenses prior to the Securities upon all property and funds held or collected by the Trustee as such, except funds held in trust for the payment of principal of (or premium or Make-Whole Amount, if any) or interest on particular Securities or any coupons.

The provisions of this Section shall survive the termination of this Indenture and the resignation or removal of the Trustee.

SECTION 607. Corporate Trustee Required; Eligibility; Conflicting Interests. There shall at all times be a Trustee hereunder which shall be eligible to act as Trustee under TIA Section 310(a)(1) and shall have at all times a combined capital and surplus of at least \$50,000,000 (or which shall have a combined capital and surplus of at least \$10,000,000 and whose ultimate parent holding company shall have a combined capital and surplus of at least \$50,000,000. If the Trustee publishes reports of condition at least annually, pursuant to law or the requirements of Federal, state, territorial or District of Columbia supervising or examining authority, then for the purposes of this Section, the combined capital and surplus of the Trustee shall be deemed to be its combined capital and surplus as set forth in its most recent report of condition so published. If at any time the Trustee shall cease to be eligible in accordance with the provisions of this Section, it shall resign immediately in the manner and with the effect hereinafter specified in this Article. Neither the Company nor any Person directly or indirectly controlling, controlled by, or under common control with the Company shall serve as Trustee.

SECTION 608. Resignation and Removal; Appointment of Successor.

(a) No resignation or removal of the Trustee and no appointment of a successor Trustee pursuant to this Article shall become effective until the acceptance of appointment by the successor Trustee in accordance with the applicable requirements of Section 609.

(b) The Trustee may resign at any time with respect to the Securities of one or more series by giving written notice thereof to the Company. If an instrument of acceptance by a successor Trustee shall not have been delivered to the Trustee within 60 days after the giving of such notice of resignation, the resigning Trustee may petition, at the expense of the Company, any court of competent jurisdiction for the appointment of a successor Trustee.

(c) The Trustee may be removed at any time with respect to the Securities of any series by Act of the Holders of a majority in principal amount of the Outstanding Securities of such series delivered to the Trustee and to the Company. If an instrument of acceptance by a successor Trustee shall not have been delivered to the Trustee within 60 days after the giving of such notice of resignation, the resigning Trustee may petition, at the expense of the Company, any court of competent jurisdiction for the appointment of a successor Trustee.

(d) If at any time:

(1) the Trustee shall fail to comply with the provisions of TIA Section 310(b) after written request therefor by the Company or by any Holder of a Security who has been a bona fide Holder of a Security for at least six months, or

(2) the Trustee shall cease to be eligible under Section 607 and shall fail to resign after written request therefor by the Company or by any Holder of a Security who has been a bona fide Holder of a Security for at least six months, or

(3) the Trustee shall become incapable of acting or shall be adjudged a bankrupt or insolvent or a receiver of the Trustee or of its property shall be appointed or any public officer shall take charge or control of the Trustee or of its property or affairs for the purpose of rehabilitation, conservation or liquidation,

then, in any such case, (i) the Company by or pursuant to a Board Resolution may remove the Trustee and appoint a successor Trustee with respect to all Securities, or (ii) subject to TIA Section 315(e), any Holder of a Security who has been a bona fide Holder of a Security for at least six months may, on behalf of himself and all others similarly situated, petition any court of competent jurisdiction for the removal of the Trustee with respect to all Securities and the appointment of a successor Trustee or Trustees.

(e) If the Trustee shall resign, be removed or become incapable of acting, or if a vacancy shall occur in the office of Trustee for any cause with respect to the Securities of one or more series, the Company, by or pursuant to a Board Resolution, shall promptly appoint a successor Trustee or Trustees with respect to the Securities of that or those series (it being understood that any such successor Trustee may be appointed with respect to the Securities of one or more or all of such series and that at any time there shall be only one Trustee with respect to the Securities of any particular series). If, within one year after such resignation, removal or incapability, or the occurrence of such vacancy, a successor Trustee with respect to the Securities of any series shall be appointed by Act of the Holders of a majority in principal amount of the Outstanding Securities of such series delivered to the Company and the retiring Trustee, the successor Trustee so appointed shall, forthwith upon its acceptance of such appointment, become the successor Trustee with respect to the Securities of such series and to that extent supersede the successor Trustee appointed by the Company. If no successor Trustee with respect to the Securities of any series shall have been so appointed by the Company or the Holders of Securities and accepted appointment in the manner hereinafter provided, any Holder of a Security who has been a bona fide Holder of a Security of such series for at least six months may, on behalf of himself and all others similarly situated, petition any court of competent jurisdiction for the appointment of a successor Trustee with respect to Securities of such series.

(f) The Company shall give notice of each resignation and each removal of the Trustee with respect to the Securities of any series and each appointment of a successor Trustee with respect to the Securities of any series in the manner provided for notices to the Holders of Securities in Section 106. Each notice shall include the name of the successor Trustee with respect to the Securities of such series and the address of its Corporate Trust Office.

SECTION 609. Acceptance of Appointment by Successor.

(a) In case of the appointment hereunder of a successor Trustee with respect to all Securities, every such successor Trustee so appointed shall execute, acknowledge and deliver to the Company and to the retiring Trustee an instrument accepting such appointment, and thereupon the resignation or removal of the retiring Trustee shall become effective and such successor Trustee, without any further act, deed or conveyance, shall become vested with all the rights, powers, trusts and duties of the retiring Trustee; but, on request of the Company or the successor Trustee, such retiring Trustee shall, upon payment of its charges, execute and deliver an instrument transferring to such successor Trustee all the rights, powers and trusts of the retiring Trustee, and shall duly assign, transfer and deliver to such successor Trustee all property and money held by such retiring Trustee hereunder, subject nevertheless to its claim, if any, provided for in Section 606.

(b) In case of the appointment hereunder of a successor Trustee with respect to the Securities of one or more (but not all) series, the Company, the retiring Trustee and each successor Trustee with respect to the Securities of one or more series shall execute and deliver an indenture supplemental hereto, pursuant to Article Nine hereof, wherein each successor Trustee shall accept such appointment and which (1) shall contain such provisions as shall be necessary or desirable to transfer and confirm to, and to vest in, each successor Trustee all the rights, powers, trusts and duties of the retiring Trustee with respect to the Securities of that or those series to which the appointment of such successor Trustee relates, (2) if the retiring Trustee is not retiring with respect to all Securities, shall contain such provisions as shall be deemed necessary or desirable to confirm that all the rights, powers, trusts and duties of the retiring Trustee with respect to the Securities of that or those series as to which the retiring Trustee is not retiring shall continue to be vested in the retiring Trustee, and (3) shall 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, it being understood that nothing herein or in such supplemental indenture shall constitute such Trustees co-trustees of the same trust and that each such Trustee shall be trustee of a trust or trusts hereunder separate and apart from any trust or trusts hereunder administered by any other such Trustee; and upon the execution and delivery of such supplemental indenture the resignation or removal of the retiring Trustee shall become effective to the extent provided therein and each such successor Trustee, without any further act, deed or conveyance, shall become vested with all the rights, powers, trusts and duties of the retiring Trustee with respect to the Securities of that or those series to which the appointment of such successor Trustee relates; but, on request of the Company or any successor Trustee, such retiring Trustee shall duly assign, transfer and deliver to such successor Trustee all property and money held by such retiring Trustee hereunder with respect to the Securities of that or those series to which the appointment of such successor Trustee relates.

(c) Upon request of any such successor Trustee, the Company shall execute any and all instruments for more fully and certainly vesting in and confirming to such successor Trustee all such rights, powers and trusts referred to in paragraph (a) or (b) of this Section 609, as the case may be.

(d) No successor Trustee shall accept its appointment unless at the time of such acceptance such successor Trustee shall be qualified and eligible under this Article.

SECTION 610. Merger, Conversion, Consolidation or Succession to Business. Any corporation into which the Trustee may be merged or converted or with which it may be consolidated, or any corporation resulting from any merger, conversion or consolidation to which the Trustee shall be a party, or any corporation succeeding to all or substantially all of the corporate trust business of the Trustee, shall be the successor of the Trustee hereunder, provided such corporation shall be otherwise qualified and eligible under this Article, without the execution or filing of any paper or any further act on the part of any of the parties hereto. In case any Securities or coupons shall have been authenticated, but not delivered, by the Trustee then in office, any successor by merger, conversion or consolidation to such authenticating Trustee may adopt such authentication and deliver the Securities or coupons so authenticated with the same effect as if such successor Trustee had itself authenticated such Securities or coupons. In case any Securities or coupons shall not have been authenticated by such predecessor Trustee, any such successor Trustee may authenticate and deliver such Securities or coupons, in either its own name or that of its predecessor Trustee, with the full force and effect which this Indenture provides for the certificate of authentication of the Trustee.

SECTION 611. Appointment of Authenticating Agent. At any time when any of the Securities remain Outstanding, the Trustee may appoint an Authenticating Agent or Agents with respect to one or more series of Securities which shall be authorized to act on behalf of the Trustee to authenticate Securities of such series issued upon conversion or exchange, registration of transfer or partial redemption or repayment thereof, and Securities so authenticated shall be entitled to the benefits of this Indenture and shall be valid and obligatory for all purposes as if authenticated by the Trustee hereunder. Any such appointment shall be evidenced by an instrument in writing signed by a Responsible Officer of the Trustee, a copy of which instrument shall be promptly furnished to the Company. Wherever reference is made in this Indenture to the authentication and delivery of Securities by the Trustee or the Trustee's certificate of authentication, such reference shall be deemed to include authentication and delivery on behalf of the Trustee by an Authenticating Agent and a certificate of authentication executed on behalf of the Trustee by an Authenticating Agent. Each Authenticating Agent shall be acceptable to the Company and shall at all times be a bank or trust company or corporation organized and doing business and in good standing under the laws of the United States of America or of any state or the District of Columbia, authorized under such laws to act as Authenticating Agent, having a combined capital and surplus of not less than \$50,000,000 and subject to supervision or examination by Federal or state authorities. If such Authenticating Agent publishes reports of condition at least annually, pursuant to law or the requirements of the aforesaid supervising or examining authority, then for the purposes of this Section, the combined capital and surplus of such Authenticating Agent shall be deemed to be its combined capital and surplus as set forth in its most recent report of condition so published. In case at any time an Authenticating Agent shall cease to be eligible in accordance with the provisions of this Section, such Authenticating Agent shall resign immediately in the manner and with the effect specified in this Section.

Any corporation into which an Authenticating Agent may be merged or converted or with which it may be consolidated, or any corporation resulting from any merger, conversion or consolidation to which such Authenticating Agent shall be a party, or any corporation succeeding to the corporate agency or corporate trust business of an Authenticating Agent, shall continue to be an Authenticating Agent, provided such corporation shall be otherwise eligible under this Section, without the execution or filing of any paper or further act on the part of the Trustee or the Authenticating Agent.

An Authenticating Agent for any series of Securities may at any time resign by giving written notice of resignation to the Trustee for such series and to the Company. The Trustee for any series of Securities may at any time terminate the agency of an Authenticating Agent by giving written notice of termination to such Authenticating Agent and to the Company. Upon receiving such a notice of resignation or upon such a termination, or in case at any time such Authenticating Agent shall cease to be eligible in accordance with the provisions of this Section, the Trustee for such series may appoint a successor Authenticating Agent which shall be acceptable to the Company and shall give notice of such appointment to all Holders of Securities of the series with respect to which such Authenticating Agent will serve in the manner set forth in Section 106. Any successor Authenticating Agent upon acceptance of its appointment hereunder shall become vested with all the rights, powers and duties of its predecessor hereunder, with like effect as if originally named as an Authenticating Agent herein. No successor Authenticating Agent shall be appointed unless eligible under the provisions of this Section.

The Company agrees to pay to each Authenticating Agent from time to time reasonable compensation including reimbursement of its reasonable expenses for its services under this Section, subject to Section 606.

If an appointment with respect to one or more series is made pursuant to this Section, the Securities of such series may have endorsed thereon, in addition to or in lieu of the Trustee's certificate of authentication, an alternate certificate of authentication substantially in the following form:

This is one of the Securities of the series designated therein referred to in the within- mentioned Indenture.

[_____],
as Trustee

Dated: _____

By: _____
as Authenticating Agent

Dated: _____

By: _____
as Authenticating Agent

SECTION 612. Certain Duties and Responsibilities of the Trustee.

(a) With respect to the Securities of any series, except during the continuance of an Event of Default with respect to the Securities of such series:

(1) the Trustee undertakes to perform such duties and only such duties as are specifically set forth in this Indenture, and no implied covenants or obligations shall be read into this Indenture against the Trustee; and

(2) 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 certificates or opinions furnished to the Trustee and conforming to the requirements of this Indenture; but in the case of any such certificates or opinions which by any provision hereof are specifically required to be furnished to the Trustee, the Trustee shall be under a duty to examine the same to determine whether or not they conform to the requirements of this Indenture, but shall not be under any duty to verify the contents or accuracy thereof.

(b) In case an Event of Default with respect to the Securities of any series has occurred and is continuing, the Trustee shall, with respect to Securities of such series, exercise such of 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 man would exercise or use under the circumstances in the conduct of his own affairs.

(c) No provision of this Indenture shall be construed to relieve the Trustee from liability for its own negligent action, its own negligent failure to act, or its own willful misconduct, except that:

(1) this Subsection shall not be construed to limit the effect of Subsection (a) of this Section;

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

(3) the Trustee shall not be liable with respect to any action taken or omitted to be taken by it in good faith in accordance with the direction of the Holders of a majority in principal amount of the Outstanding Securities of any 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; and

(4) no provision of this Indenture shall require the Trustee to expend or risk its own funds or otherwise incur any financial liability in the performance of any of its duties hereunder, or in the exercise of any of its rights or powers, if it shall have reasonable grounds for believing that repayment of such funds or adequate indemnity against such risk or liability is not reasonably assured to it; and, the Trustee shall be under no obligation to exercise any of its rights and powers under this Indenture at the request of any Holder, unless such Holder shall have offered to the Trustee security and indemnity satisfactory to it against any loss, liability or expense.

(d) Whether or not therein expressly so provided, every provision of this Indenture relating to the conduct or affecting the liability of or affording protection to the Trustee shall be subject to the provisions of this Section 612.

(e) The Trustee shall not be liable for interest on any money or assets held by it except to the extent the Trustee may agree in writing with the Company. Assets held in trust by the Trustee need not be segregated from other assets except to the extent required by law.

ARTICLE SEVEN - HOLDERS' LISTS AND REPORTS BY TRUSTEE AND COMPANY

SECTION 701. Disclosure of Names and Addresses of Holders. Every Holder of Securities or coupons, by receiving and holding the same, agrees with the Company and the Trustee that neither the Company nor the Trustee nor any Authenticating Agent nor any Paying Agent nor any Security Registrar shall be held accountable by reason of the disclosure of any information as to the names and addresses of the Holders of Securities in accordance with TIA Section 312, regardless of the source from which such information was derived, and that the Trustee shall not be held accountable by reason of mailing any material pursuant to a request made under TIA Section 312(b).

SECTION 702. Reports by Trustee. The Trustee shall transmit to Holders such reports concerning the Trustee and its actions under this Indenture as may be required by TIA Section 313 at the times and in the manner provided by the TIA, which shall initially be not less than every twelve months commencing on _____, 20___. A copy of each such report shall, at the time of such transmission to Holders, be filed by the Trustee with each over-the-counter market or securities exchange, if any, upon which any Securities are quoted or listed, with the Commission and with the Company. The Company will notify the Trustee when any Securities are quoted or listed on any over-the-counter market or securities exchange or delisted therefrom.

SECTION 703. Reports by Company. The Company will:

(1) file with the Trustee, within 15 days after the Company is required to file the same with the Commission, 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 Commission may from time to time by rules and regulations prescribe) which the Company may be required to file as an accelerated filer with the Commission pursuant to Section 13 or Section 15(d) of the Exchange Act (and if the Company's status as an accelerated filer changes, the Company shall provide written notice of such change to the Trustee); or, if the Company is not required to file information, documents or reports pursuant to either of such Sections, then it will file with the Trustee and the Commission, in accordance with rules and regulations prescribed from time to time by the Commission, such of the supplementary and periodic information, documents and reports which may be required pursuant to Section 13 of the Exchange Act in respect of a security quoted or listed and registered on an over-the-counter market or national securities exchange as may be prescribed from time to time in such rules and regulations;

(2) file with the Trustee and the Commission, in accordance with rules and regulations prescribed from time to time by the Commission, such additional information, documents and reports with respect to compliance by the Company with the conditions and covenants of this Indenture as may be required from time to time by such rules and regulations;

(3) transmit by mail to the Holders of Securities, within [30 days] after the filing thereof with the Trustee, in the manner and to the extent provided in TIA Section 313(c), such summaries of any information, documents and reports required to be filed by the Company pursuant to paragraphs (1) and (2) of this Section as may be required by rules and regulations prescribed from time to time by the Commission; and

(4) delivery of such reports, information and documents to the Trustee is for informational purposes only and the Trustee's receipt of such shall not constitute constructive notice of any information contained therein or determinable from information contained therein, including the Company's compliance with any of its covenants hereunder (as to which the Trustee is entitled to rely exclusively on Officers' Certificates).

SECTION 704. Company to Furnish Trustee Names and Addresses of Holders. The Company will furnish or cause to be furnished to the Trustee:

(a) semiannually, not later than 15 days after the Regular Record Date for interest for each series of Securities, a list, in such form as the Trustee may reasonably require, of the names and addresses of the Holders of Registered Securities of such series as of such Regular Record Date, or if there is no Regular Record Date for interest for such series of Securities, semiannually, upon such dates as are set forth in the Board Resolution or indenture supplemental hereto authorizing such series, and

(b) at such other times as the Trustee may request in writing, within 30 days after the receipt by the Company of any such request, a list of similar form and content as of a date not more than 15 days prior to the time such list is furnished,

provided, however, that, so long as the Trustee is the Security Registrar, no such list shall be required to be furnished.

ARTICLE EIGHT - CONSOLIDATION, MERGER, SALE, LEASE OR CONVEYANCE

SECTION 801. Consolidations and Mergers of Company and Sales, Leases and Conveyances Permitted Subject to Certain Conditions. The Company may consolidate with, or sell, lease or convey all or substantially all of its assets to, or merge with or into any other corporation, provided that in any such case, (1) either the Company shall be the continuing corporation, or the successor corporation shall be a corporation organized and existing under the laws of the United States or a State thereof and such successor corporation shall expressly assume the due and punctual payment of the principal of (and premium or Make-Whole Amount, if any) and any interest on all of the Securities, according to their tenor, and the due and punctual performance and observance of all of the covenants and conditions of this Indenture to be performed by the Company by supplemental indenture, complying with Article Nine hereof, satisfactory to the Trustee, executed and delivered to the Trustee by such corporation, (2) immediately after giving effect to such transaction and treating any indebtedness which becomes an obligation of the Company or any Subsidiary as a result thereof as having been incurred by the Company or such Subsidiary at the time of such transaction, no Event of Default, and no event which, after notice or the lapse of time, or both, would become an Event of Default, shall have occurred and be continuing and (3) the Company shall have delivered to the Trustee the Officer's Certificate and Opinion of Counsel required pursuant to Section 803 below.

SECTION 802. Rights and Duties of Successor Corporation. In case of any such consolidation, merger, sale, lease or conveyance and upon any such assumption by the successor corporation, such successor corporation shall succeed to and be substituted for the Company, with the same effect as if it had been named herein as the party of the first part, and the predecessor corporation, except in the event of a lease, shall be relieved of any further obligation under this Indenture and the Securities. Such successor corporation thereupon may cause to be signed, and may issue either in its own name or in the name of the Company, any or all of the Securities issuable hereunder which theretofore shall not have been signed by the Company and delivered to the Trustee; and, upon the order of such successor corporation, instead of the Company, and subject to all the terms, conditions and limitations in this Indenture prescribed, the Trustee shall authenticate and shall deliver any Securities which previously shall have been signed and delivered by the officers of the Company to the Trustee for authentication, and any Securities which such successor corporation thereafter shall cause to be signed and delivered to the Trustee for that purpose. All the Securities so issued shall in all respects have the same legal rank and benefit under this Indenture as the Securities theretofore or thereafter issued in accordance with the terms of this Indenture as though all of such Securities had been issued at the date of the execution hereof.

In case of any such consolidation, merger, sale, lease or conveyance, such changes in phraseology and form (but not in substance) may be made in the Securities thereafter to be issued as may be appropriate.

SECTION 803. Officers' Certificate and Opinion of Counsel. Any consolidation, merger, sale, lease or conveyance permitted under Section 801 is also subject to the condition that the Trustee receive an Officers' Certificate and an Opinion of Counsel to the effect that any such consolidation, merger, sale, lease or conveyance, and the assumption by any successor corporation, complies with the provisions of this Article and that all conditions precedent herein provided for relating to such transaction have been complied with.

ARTICLE NINE - SUPPLEMENTAL INDENTURES

SECTION 901. Supplemental Indentures Without Consent of Holders. Without the consent of any Holders of Securities or coupons, the Company, when authorized by or pursuant to a Board Resolution, and the Trustee, at any time and from time to time, may enter into one or more indentures supplemental hereto, in form satisfactory to the Trustee, for any of the following purposes:

- (1) to evidence the succession of another Person to the Company and the assumption by any such successor of the covenants of the Company contained herein and in the Securities; or
- (2) to add to the covenants of the Company for the benefit of the Holders of all or any series of Securities (and if such covenants are to be for the benefit of less than all series of Securities, stating that such covenants are expressly being included solely for the benefit of such series) or to surrender any right or power herein conferred upon the Company; or
- (3) to add any additional Events of Default for the benefit of the Holders of all or any series of Securities (and if such Events of Default are to be for the benefit of less than all series of Securities, stating that such Events of Default are expressly being included solely for the benefit of such series); provided, however, that in respect of any such additional Events of Default such supplemental indenture may provide for a particular period of grace after default (which period may be shorter or longer than that allowed in the case of other defaults) or may provide for an immediate enforcement upon such default or may limit the remedies available to the Trustee upon such default or may limit the right of the Holders of a majority in aggregate principal amount of that or those series of Securities to which such additional Events of Default apply to waive such default; or
- (4) to add to or change any of the provisions of this Indenture to provide that Bearer Securities may be registrable as to principal, to change or eliminate any restrictions on the payment of principal of or premium or Make-Whole Amount, if any, or interest on Bearer Securities, to permit Bearer Securities to be issued in exchange for Registered Securities, to permit Bearer Securities to be issued in exchange for Bearer Securities of other authorized denominations or to permit or facilitate the issuance of Securities in uncertificated form, provided that any such action shall not adversely affect the interests of the Holders of Securities of any series or any related coupons in any material respect; or

- (5) to change or eliminate any of the provisions of this Indenture, provided that any such change or elimination shall become effective only when there is no Security Outstanding of any series created prior to the execution of such supplemental indenture which is entitled to the benefit of such provision; or
- (6) to secure the Securities; or
- (7) to establish the form or terms of Securities of any series and any related coupons as permitted or contemplated by Sections 201 and 301; or
- (8) 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
- (9) to cure any ambiguity, to correct or supplement any provision herein which may be defective or inconsistent with any other provision herein, or to make any other provisions with respect to matters or questions arising under this Indenture which shall not be inconsistent with the provisions of this Indenture, provided such provisions shall not adversely affect the interests of the Holders of Securities of any series or any related coupons in any material respect; or
- (10) to supplement any of the provisions of this Indenture to such extent as shall be necessary to permit or facilitate the Defeasance and discharge of any series of Securities pursuant to Sections 401, 1402 and 1403; provided that any such action shall not adversely affect the interests of the Holders of Securities of such series and any related coupons or any other series of Securities in any material respect; or
- (11) to make provisions with respect to Holders' rights of conversion with respect to any series of Securities pursuant to Article Sixteen.

SECTION 902. Supplemental Indentures with Consent of Holders. With the consent of the Holders of not less than a majority in principal amount of all Outstanding Securities affected by such supplemental indenture, by Act of said Holders delivered to the Company and the Trustee, the Company, when authorized by or pursuant to a Board Resolution, and the Trustee may enter into an indenture or indentures supplemental hereto for the purpose of adding any provisions to or changing in any manner or eliminating any of the provisions of this Indenture or of modifying in any manner the rights of the Holders of Securities and any related coupons under this Indenture; provided, however, that no such supplemental indenture shall, without the consent of the Holder of each Outstanding Security affected thereby:

- (1) change the Stated Maturity of the principal of (or premium or Make-Whole Amount, if any, on) or any installment of principal of or interest on, any Security; or reduce the principal amount thereof or the rate or amount of interest thereon, or any premium or Make-Whole Amount payable upon the redemption thereof, or reduce the amount of the principal of an Original Issue Discount Security that would be due and payable upon a declaration of acceleration of the Maturity thereof pursuant to Section 502 or the amount thereof provable in bankruptcy pursuant to Section 504, or adversely affect any right of repayment at the option of the Holder of any Security, or change any Place of Payment where, or the currency or currencies, currency unit or units or composite currency or currencies in which, any Security or any premium or Make-Whole Amount or the interest thereon is payable, or impair the right to institute suit for the enforcement of any such payment on or after the Stated Maturity thereof (or, in the case of redemption or repayment at the option of the Holder, on or after the Redemption Date or the Repayment Date, as the case may be), or (if Securities of such series are convertible) adversely affect the right of the Holder to convert any Security as provided in Article Sixteen; or

(2) reduce the percentage in principal amount of the Outstanding Securities of any series, the consent of whose Holders is required for any such supplemental indenture, or the consent of whose Holders is required for any waiver with respect to such series (or compliance with certain provisions of this Indenture or certain defaults hereunder and their consequences) provided for in this Indenture, or reduce the requirements of Section 1504 for quorum or voting, or

(3) modify any of the provisions of this Section, Section 513 or Section 1009, except to increase the required percentage to effect such action or to provide that certain other provisions of this Indenture cannot be modified or waived without the consent of the Holder of each Outstanding Security affected thereby, provided, however, that this clause shall not be deemed to require the consent of any Holder with respect to changes in the references to “the Trustee” and concomitant changes in this Section 902 and Section 1009, or the deletion of this proviso, in accordance with the requirements of Sections 609(b) and 901(11).

It shall not be necessary for any Act of Holders under this Section 902 to approve the particular form of any proposed supplemental indenture, but it shall be sufficient if such Act shall approve the substance thereof.

A supplemental indenture which changes or eliminates any covenant or other provision of this Indenture which has expressly been included solely for the benefit of one or more particular series of Securities, or which modifies the rights of the Holders of Securities of such series with respect to such covenant or other provision, shall be deemed not to affect the rights under this Indenture of the Holders of Securities of any other series.

SECTION 903. Execution of Supplemental Indentures. In executing, or accepting the additional trusts created by, any supplemental indenture permitted by this Article or the modification thereby of the trusts created by this Indenture, the Trustee shall be entitled to receive, and (subject to Section 612) shall be fully protected in relying upon, an Opinion of Counsel stating that the execution of such supplemental indenture is authorized or permitted by this Indenture. The Trustee may, but shall not be obligated to, enter into any such supplemental indenture which affects the Trustee’s own rights, duties or immunities under this Indenture or otherwise.

SECTION 904. Effect of Supplemental Indentures. Upon the execution of any supplemental indenture under this Article, this Indenture shall be modified in accordance therewith, and such supplemental indenture shall form a part of this Indenture for all purposes; and every Holder of Securities theretofore or thereafter authenticated and delivered hereunder and of any coupon appertaining thereto shall be bound thereby.

SECTION 905. Conformity with Trust Indenture Act. Every supplemental indenture executed pursuant to this Article shall conform to the requirements of the Trust Indenture Act as then in effect.

SECTION 906. Reference in Securities to Supplemental Indentures. Securities of any series authenticated and delivered after the execution of any supplemental indenture pursuant to this Article may, and shall, if required by the Trustee, bear a notation in form approved by the Trustee as to any matter provided for in such supplemental indenture. If the Company shall so determine, new Securities of any series so modified as to conform, in the opinion of the Trustee and the Company, to any such supplemental indenture may be prepared and executed by the Company and authenticated and delivered by the Trustee in exchange for Outstanding Securities of such series.

ARTICLE TEN - COVENANTS

SECTION 1001. Payment of Principal, Premium or Make-Whole Amount, if any; 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 premium or Make-Whole Amount, if any) and interest on the Securities of that series in accordance with the terms of such series of Securities, any coupons appertaining thereto and this Indenture. Unless otherwise specified as contemplated by Section 301 with respect to any series of Securities, any interest due on Bearer Securities on or before Maturity shall be payable only upon presentation and surrender of the several coupons for such interest installments as are evidenced thereby as they severally mature. Unless otherwise specified with respect to Securities of any series pursuant to Section 301, at the option of the Company (upon written notice to the Trustee), all payments of principal may be paid by check to the registered Holder of the Registered Security or other Person entitled thereto against surrender of such Security.

SECTION 1002. Maintenance of Office or Agency. If Securities of a series are issuable only as Registered Securities, the Company shall maintain in each Place of Payment for any series of Securities an office or agency where Securities of that series may be presented or surrendered for payment or conversion, where Securities of that series may be surrendered for registration of transfer or conversion or exchange and where notices and demands to or upon the Company in respect of the Securities of that series and this Indenture may be served. If Securities of a series are issuable as Bearer Securities, the Company will maintain: (A) in the Borough of Manhattan, The City of New York, an office or agency where any Registered Securities of that series may be presented or surrendered for payment or conversion, where any Registered Securities of that series may be surrendered for registration of transfer, where Securities of that series may be surrendered for conversion or exchange, where notices and demands to or upon the Company in respect of the Securities of that series and this Indenture may be served and where Bearer Securities of that series and related coupons may be presented or surrendered for payment or conversion in the circumstances described in the following paragraph (and not otherwise); (B) subject to any laws or regulations applicable thereto, in a Place of Payment for that series which is located outside the United States, an office or agency where Securities of that series and related coupons may be presented and surrendered for payment; provided, however, that if the Securities of that series are listed on any stock exchange located outside the United States and such stock exchange shall so require, the Company will maintain a Paying Agent for the Securities of that series in any required city located outside the United States, as the case may be, so long as the Securities of that series are listed on such exchange; and (C) subject to any laws or regulations applicable thereto, in a Place of Payment for that series located outside the United States an office or agency where any Registered Securities of that series may be surrendered for registration of transfer, where Securities of that series may be surrendered for conversion or exchange and where notices and demands to or upon the Company in respect of the Securities of that series and this Indenture may be served. The Company will give prompt written notice to the Trustee of the location, and any change in the location, of each such office or agency. If at any time the Company shall fail to maintain any such required office or agency or shall fail to furnish the Trustee with the address thereof, such presentations, surrenders, notices and demands may be made or served at the Corporate Trust Office of the Trustee, except that Bearer Securities of that series and the related coupons may be presented and surrendered for payment or conversion at the offices specified in the Security, in London, England, and the Company hereby appoints the same as its agent to receive such respective presentations, surrenders, notices and demands, and the Company hereby appoints the Trustee its agent to receive all such presentations, surrenders, notices and demands.

Unless otherwise specified with respect to any Securities pursuant to Section 301, no payment of principal, premium or Make-Whole Amount or interest on Bearer Securities shall be made at any office or agency of the Company in the United States or by check mailed to any address in the United States or by transfer to an account maintained with a bank located in the United States; provided, however, that, if the Securities of a series are payable in Dollars, payment of principal of and any premium or Make-Whole Amount and interest on any Bearer Security shall be made at the office of the Company's Paying Agent in the Borough of Manhattan, The City of New York, if (but only if) payment in Dollars of the full amount of such principal, premium or Make-Whole Amount, or interest, as the case may be, at all offices or agencies outside the United States maintained for the purpose by the Company in accordance with this Indenture, is illegal or effectively precluded by exchange controls or other similar restrictions.

The Company may from time to time designate one or more other offices or agencies (in or outside the Place of Payment) where the Securities of one or more series may be presented or surrendered for any or all of such purposes, 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 obligation to maintain an office or agency in accordance with the requirements set forth above 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 location of any such other office or agency. Unless otherwise specified with respect to any Securities pursuant to Section 301 with respect to a series of Securities, the Company hereby designates as a Place of Payment for each series of Securities, each of (i) the office or agency of the Company in the Borough of Manhattan, The City of New York, and (ii) the Corporate Trust Office of the Trustee (as Paying Agent); and the Company hereby initially appoints the Trustee at its Corporate Trust Office as Paying Agent in such city; and the Company hereby initially appoints as its agent to receive all such presentations, surrenders, notices and demands each of the Trustee, at its Corporate Trust Office.

Unless otherwise specified with respect to any Securities pursuant to Section 301, if and so long as the Securities of any series (i) are denominated in a Foreign Currency or (ii) may be payable in a Foreign Currency, or so long as it is required under any other provision of the Indenture, then the Company will maintain with respect to each such series of Securities, or as so required, at least one exchange rate agent (of which it shall give written notice to the Trustee).

SECTION 1003. Money for Securities Payments to Be Held in Trust. If the Company shall at any time act as its own Paying Agent with respect to any series of any Securities and any related coupons, it will, on or before each due date of the principal of (and premium or Make-Whole Amount, if any), or interest on any of the Securities of that series, segregate and hold in trust for the benefit of the Persons entitled thereto a sum in the currency or currencies, currency unit or units or composite currency or currencies in which the Securities of such series are payable (except as otherwise specified pursuant to Section 301 for the Securities of such series) sufficient to pay the principal (and premium or Make-Whole Amount, if any) or interest so becoming due until such sums shall be paid to such Persons or otherwise disposed of as herein provided, and will promptly notify the Trustee of its action or failure so to act.

Whenever the Company shall have one or more Paying Agents for any series of Securities and any related coupons, it will, on or before each due date of the principal of (and premium or Make-Whole Amount, if any), or interest on any Securities of that series, deposit with a Paying Agent a sum (in the currency or currencies, currency unit or units or composite currency or currencies described in the preceding paragraph) sufficient to pay the principal (and premium or Make-Whole Amount, if any) or interest so becoming due, such sum to be held in trust for the benefit of the Persons entitled to such principal, premium or Make-Whole Amount, if any, or interest and (unless such Paying Agent is the Trustee) the Company will promptly notify the Trustee of its action or failure so to act.

The Company will cause each Paying Agent for any series of Securities other than the Trustee to execute and deliver to the Trustee an instrument in which such Paying Agent shall agree with the Trustee, subject to the provisions of this Section, that such Paying Agent will

- (1) hold all sums held by it for the payment of principal of (and premium or Make-Whole Amount, if any) or interest on Securities in trust for the benefit of the Persons entitled thereto until such sums shall be paid to such Persons or otherwise disposed of as herein provided;
- (2) give the Trustee notice of any default by the Company (or any other obligor upon the Securities) in the making of any such payment of principal (and premium or Make-Whole Amount, if any) or interest on the Securities of that series; and

(3) at any time during the continuance of any such default upon the written request of the Trustee, forthwith pay to the Trustee all sums so held in trust by such Paying Agent.

The Company may at any time, for the purpose of obtaining the satisfaction and discharge of this Indenture or for any other purpose, pay, or by Company Order direct any Paying Agent to pay, to the Trustee all sums held in trust by the Company or such Paying Agent, such sums to be held by the Trustee upon the same trusts as those upon which such sums were held by the Company or such Paying Agent; and, upon such payment by any Paying Agent to the Trustee, such Paying Agent shall be released from all further liability with respect to such sums.

Except as otherwise provided in the Securities of any series, and subject to applicable laws, any money deposited with the Trustee or any Paying Agent, or then held by the Company, in trust for the payment of the principal of (and premium or Make-Whole Amount, if any) or interest on any Security of any series and remaining unclaimed for two years after such principal (and premium or Make-Whole Amount, if any) or interest has become due and payable shall be paid to the Company upon Company Request or (if then held by the Company) shall be discharged from such trust; and the Holder of such Security shall thereafter, as an unsecured general creditor, look only to the Company for payment of such principal of (and premium or Make-Whole Amount, if any) or interest on any Security, without interest thereon, and all liability of the Trustee or such Paying Agent with respect to such trust money, and all liability of the Company as trustee thereof, shall thereupon cease; provided, however, that the Trustee or such Paying Agent, before being required to make any such repayment, may at the expense of the Company cause to be published once, in an Authorized Newspaper, notice that such money remains unclaimed and that, after a date specified therein, which shall not be less than 30 days from the date of such publication, any unclaimed balance of such money then remaining will be repaid to the Company.

SECTION 1004. Existence. Subject to Article Eight, the Company will do or cause to be done all things necessary to preserve and keep in full force and effect its corporate existence, all material rights (by certificate of incorporation, by-laws and statute) and material franchises; provided, however, that the Company shall not be required to preserve any such right or franchise if the Board of Directors shall determine that the preservation thereof is no longer desirable in the conduct of the business of the Company.

SECTION 1005. Maintenance of Properties. The Company will cause all of its material properties used or useful in the conduct of its business or the business of any Subsidiary to be maintained and kept in good condition, repair and working order, normal wear and tear, casualty and condemnation excepted, and supplied with all necessary equipment and will cause to be made all necessary repairs, renewals, replacements, betterments and improvements thereof (and the Company may take out of service for a period of time, any of its properties that have been condemned or suffered any loss due to casualty in order to make such repairs, betterments and improvements), all as in the judgment of the Company may be necessary so that the business carried on in connection therewith may be properly and advantageously conducted at all times; provided, however, that the Company and its Subsidiaries shall not be prevented from (i) removing permanently any property that has been condemned or suffered a loss due to casualty based on the Company's reasonable judgment that such removal is in the best interest of the Company, or (ii) selling or otherwise disposing of their properties for value in the ordinary course of business.

SECTION 1006. Insurance. The Company will cause each of its and its Subsidiaries' insurable properties to be insured against loss or damage in an amount deemed reasonable by the Board of Directors with insurers of recognized responsibility.

SECTION 1007. Payment of Taxes and Other Claims. The Company will pay or discharge or cause to be paid or discharged, before the same shall become delinquent, (1) all taxes, assessments and governmental charges levied or imposed upon it or any Subsidiary or upon the income, profits or property of the Company or any Subsidiary, and (2) all lawful claims for labor, materials and supplies which, if unpaid, might by law become a lien upon the property of the Company or any Subsidiary; provided, however, that the Company shall not be required to pay or discharge or cause to be paid or discharged any such tax, assessment, charge or claim whose amount, applicability or validity is being contested in good faith by appropriate proceedings.

SECTION 1008. Statement as to Compliance. The Company will deliver to the Trustee, within 120 days after the end of each fiscal year, a brief certificate from the principal executive officer, principal financial officer or principal accounting officer as to his or her knowledge of the Company's compliance with all conditions and covenants under this Indenture and, in the event of any noncompliance, specifying such noncompliance and the nature and status thereof. For purposes of this Section 1008, such compliance shall be determined without regard to any period of grace or requirement of notice under this Indenture.

SECTION 1009. Waiver of Certain Covenants. The Company may omit in any particular instance to comply with any term, provision or condition set forth in Sections 1004 to 1008, inclusive, if before or after the time for such compliance the Holders of at least a majority in principal amount of all outstanding Securities of such series, by Act of such Holders, either waive such compliance in such instance or generally waive compliance with such covenant or condition, but no such waiver shall extend to or affect such covenant or condition except to the extent so expressly waived, and, until such waiver shall become effective, the obligations of the Company and the duties of the Trustee in respect of any such term, provision or condition shall remain in full force and effect.

ARTICLE ELEVEN - REDEMPTION OF SECURITIES

SECTION 1101. Applicability of Article. Securities of any series which are redeemable before their Stated Maturity shall be redeemable in accordance with their terms and (except as otherwise specified as contemplated by Section 301 for Securities of any series) in accordance with this Article.

SECTION 1102. Election to Redeem; Notice to Trustee. The election of the Company to redeem any Securities shall be evidenced by or pursuant to a Board Resolution. In case of any redemption at the election of the Company of less than all of the Securities of any series, the Company shall, at least 45 days prior to the giving of the notice of redemption in Section 1104 (unless a shorter notice shall be satisfactory to the Trustee), notify the Trustee of such Redemption Date and of the principal amount of Securities of such series to be redeemed. In the case of any redemption of Securities prior to the expiration of any restriction on such redemption provided in the terms of such Securities or elsewhere in this Indenture, the Company shall furnish the Trustee with an Officers' Certificate evidencing compliance with such restriction.

SECTION 1103. Selection by Trustee of Securities to Be Redeemed. If less than all the Securities of any series issued on the same day with the same terms are to be redeemed, the particular Securities to be redeemed shall be selected not more than 60 days prior to the Redemption Date by the Trustee, from the Outstanding Securities of such series issued on such date with the same terms not previously called for redemption, by such method as the Trustee shall deem fair and appropriate and which may provide for the selection for redemption of portions (equal to the minimum authorized denomination for Securities of that series or any integral multiple thereof) of the principal amount of Securities of such series of a denomination larger than the minimum authorized denomination for Securities of that series.

The Trustee shall promptly notify the Company and the Security Registrar (if other than itself) in writing of the Securities selected for redemption and, in the case of any Securities selected for partial redemption, the principal amount thereof to be redeemed.

For all purposes of this Indenture, unless the context otherwise requires, all provisions relating to the redemption of Securities shall relate, in the case of any Security redeemed or to be redeemed only in part, to the portion of the principal amount of such Security which has been or is to be redeemed.

SECTION 1104. Notice of Redemption. Notice of redemption shall be given in the manner provided in Section 106, not less than 30 days nor more than 60 days prior to the Redemption Date, unless a shorter period is specified by the terms of such series established pursuant to Section 301, to each Holder of Securities to be redeemed, but failure to give such notice in the manner herein provided to the Holder of any Security designated for redemption as a whole or in part, or any defect in the notice to any such Holder, shall not affect the validity of the proceedings for the redemption of any other such Security or portion thereof.

Any notice that is mailed to the Holders of Registered Securities in the manner herein provided shall be conclusively presumed to have been duly given, whether or not the Holder receives the notice.

All notices of redemption shall state:

- (1) the Redemption Date,
- (2) the Redemption Price, accrued interest to the Redemption Date payable as provided in Section 1106, if any,
- (3) if less than all Outstanding Securities of any series are to be redeemed, the identification (and, in the case of partial redemption, the principal amount) of the particular Security or Securities to be redeemed,

(4) in case any Security is to be redeemed in part only, the notice which relates to such Security shall state that on and after the Redemption Date, upon surrender of such Security, the holder will receive, without a charge, a new Security or Securities of authorized denominations for the principal amount thereof remaining unredeemed,

(5) that on the Redemption Date the Redemption Price and accrued interest to the Redemption Date payable as provided in Section 1106, if any, will become due and payable upon each such Security, or the portion thereof, to be redeemed and, if applicable, that interest thereon shall cease to accrue on and after said date,

(6) the Place or Places of Payment where such Securities, together in the case of Bearer Securities with all coupons appertaining thereto, if any, maturing after the Redemption Date, are to be surrendered for payment of the Redemption Price and accrued interest, if any, or for conversion,

(7) that the redemption is for a sinking fund, if such is the case,

(8) that, unless otherwise specified in such notice, Bearer Securities of any series, if any, surrendered for redemption must be accompanied by all coupons maturing subsequent to the date fixed for redemption or the amount of any such missing coupon or coupons will be deducted from the Redemption Price, unless security or indemnity satisfactory to the Company, the Trustee for such series and any Paying Agent is furnished,

(9) if Bearer Securities of any series are to be redeemed and any Registered Securities of such series are not to be redeemed, and if such Bearer Securities may be exchanged for Registered Securities not subject to redemption on this Redemption Date pursuant to Section 305 or otherwise, the last date, as determined by the Company, on which such exchanges may be made,

(10) the CUSIP number of such Security, if any, and

(11) if applicable, that a Holder of Securities who desires to convert Securities for redemption must satisfy the requirements for conversion contained in such Securities, the then existing conversion price or rate, the place or places where such Securities may be surrendered for conversion, and the date and time when the option to convert shall expire.

Notice of redemption of Securities to be redeemed at the election of the Company shall be given by the Company or, at the Company's request, by the Trustee in the name and at the expense of the Company.

SECTION 1105. Deposit of Redemption Price. On or prior to any Redemption Date, the Company shall deposit with the Trustee or with a Paying Agent (or, if the Company is acting as its own Paying Agent, which it may not do in the case of a sinking fund payment under Article Twelve, segregate and hold in trust as provided in Section 1003) an amount of money in the currency or currencies, currency unit or units or composite currency or currencies in which the Securities of such series are payable (except as otherwise specified pursuant to Section 301 for the Securities of such series) sufficient to pay on the Redemption Date the Redemption Price of, and (except if the Redemption Date shall be an Interest Payment Date) accrued interest on, all the Securities or portions thereof which are to be redeemed on that date.

If any Securities called for redemption are converted, any money deposited with the Trustee or with any Paying Agent or so segregated and held in trust for the redemption of such Security shall be paid to the Company upon Company Request or, if then held by the Company, shall be discharged from such trust.

SECTION 1106. Securities Payable on Redemption Date. Notice of redemption having been given as aforesaid, the Securities so to be redeemed shall, on the Redemption Date, become due and payable at the Redemption Price therein specified in the currency or currencies, currency unit or units or composite currency or currencies in which the Securities of such series are payable (except as otherwise specified pursuant to Section 301 for the Securities of such series) (together with accrued interest, if any, to the Redemption Date), and from and after such date (unless the Company shall default in the payment of the Redemption Price and accrued interest) such Securities shall, if the same were interest-bearing, cease to bear interest and the coupons for such interest appertaining to any Bearer Securities so to be redeemed, except to the extent provided below, shall be void. Upon surrender of any such Security for redemption in accordance with said notice, together with all coupons, if any, appertaining thereto maturing after the Redemption Date, such Security shall be paid by the Company at the Redemption Price, together with accrued interest, if any, to the Redemption Date; provided, however, that installments of interest on Bearer Securities whose Stated Maturity is on or prior to the Redemption Date shall be payable only at an office or agency located outside the United States (except as otherwise provided in Section 1002) and, unless otherwise specified as contemplated by Section 301, only upon presentation and surrender of coupons for such interest; and provided further that except as otherwise provided with respect to Securities convertible into the Company's Common Stock or Preferred Stock, installments of interest on Registered Securities whose Stated Maturity is on or prior to the Redemption Date shall be payable to the Holders of such Securities, or one or more Predecessor Securities, registered as such at the close of business on the relevant Record Dates according to their terms and the provisions of Section 307.

If any Bearer Security surrendered for redemption shall not be accompanied by all appurtenant coupons maturing after the Redemption Date, such Security may be paid after deducting from the Redemption Price an amount equal to the face amount of all such missing coupons, or the surrender of such missing coupon or coupons may be waived by the Company and the Trustee if there be furnished to them such security or indemnity as they may require to save each of them and any Paying Agent harmless. If thereafter the Holder of such Security shall surrender to the Trustee or any Paying Agent any such missing coupon in respect of which a deduction shall have been made from the Redemption Price, such Holder shall be entitled to receive the amount so deducted; provided, however, that interest represented by coupons shall be payable only at an office or agency located outside the United States (except as otherwise provided in Section 1002) and, unless otherwise specified as contemplated by Section 301, only upon presentation and surrender of those coupons.

If any Security called for redemption shall not be so paid upon surrender thereof for redemption, the principal (and premium or Make-Whole Amount, if any) shall, until paid, bear interest from the Redemption Date at the rate borne by the Security.

SECTION 1107. Securities Redeemed in Part. Any Registered Security which is to be redeemed only in part (pursuant to the provisions of this Article or of Article Twelve) shall be surrendered at a Place of Payment therefor (with, if the Company or the Trustee so requires, due endorsement by, or a written instrument of transfer in form satisfactory to the Company and the Trustee duly executed by, the Holder thereof or his attorney duly authorized in writing) and the Company shall execute and the Trustee shall authenticate and deliver to the Holder of such Security without service charge a new Security or Securities of the same series, of any authorized denomination as requested by such Holder in aggregate principal amount equal to and in exchange for the unredeemed portion of the principal of the Security so surrendered. If a Global Security is so surrendered, the Company shall execute and the Trustee shall authenticate and deliver to the depository, without service charge, a new Global Security in a denomination equal to and in exchange for the unredeemed portion of the principal of the Global Security so surrendered.

ARTICLE TWELVE - SINKING FUNDS

SECTION 1201. Applicability of Article. The provisions of this Article shall be applicable to any sinking fund for the retirement of Securities of a series except as otherwise specified as contemplated by Section 301 for Securities of such series.

The minimum amount of any sinking fund payment provided for by the terms of Securities of any series is herein referred to as a “mandatory sinking fund payment,” and any payment in excess of such minimum amount provided for by the terms of such Securities of any series is herein referred to as an “optional sinking fund payment.” If provided for by the terms of any Securities of any series, the cash amount of any mandatory sinking fund payment may be subject to reduction as provided in Section 1202. Each sinking fund payment shall be applied to the redemption of Securities of any series as provided for by the terms of Securities of such series.

SECTION 1202. Satisfaction of Sinking Fund Payments with Securities. The Company may, in satisfaction of all or any part of any mandatory sinking fund payment with respect to the Securities of a series, (1) deliver Outstanding Securities of such series (other than any previously called for redemption) together in the case of any Bearer Securities of such series with all unmatured coupons appertaining thereto and (2) apply as a credit Securities of such series which have been redeemed either at the election of the Company pursuant to the terms of such Securities or through the application of permitted optional sinking fund payments pursuant to the terms of such Securities, as provided for by the terms of such Securities, or which have otherwise been acquired by the Company; provided that such Securities so delivered or applied as a credit have not been previously so credited. Such Securities shall be received and credited for such purpose by the Trustee at the applicable Redemption Price specified in such Securities for redemption through operation of the sinking fund and the amount of such mandatory sinking fund payment shall be reduced accordingly.

SECTION 1203. Redemption of Securities for Sinking Fund. Not less than 60 days prior to each sinking fund payment date for Securities of any series, the Company will deliver to the Trustee an Officers’ 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 in the currency or currencies, currency unit or units or composite currency or currencies in which the Securities of such series are payable (except as otherwise specified pursuant to Section 301 for the Securities of such series) and the portion thereof, if any, which is to be satisfied by delivering and crediting Securities of that series pursuant to Section 1202, and the optional amount, if any, to be added in cash to the next ensuing mandatory sinking fund payment, and will also deliver to the Trustee any Securities to be so delivered and credited. If such Officers’ Certificate shall specify an optional amount to be added in cash to the next ensuing mandatory sinking fund payment, the Company shall thereupon be obligated to pay the amount therein specified. Not less than 30 days before each such sinking fund payment date the Trustee shall select the Securities to be redeemed upon such sinking fund payment date in the manner specified in Section 1103 and cause notice of the redemption thereof to be given in the name of and at the expense of the Company in the manner provided in Section 1104. Such notice having been duly given, the redemption of such Securities shall be made upon the terms and in the manner stated in Sections 1106 and 1107.

ARTICLE THIRTEEN - REPAYMENT AT THE OPTION OF HOLDERS

SECTION 1301. Applicability of Article. Repayment of Securities of any series before their Stated Maturity at the option of Holders thereof shall be made in accordance with the terms of such Securities, if any, and (except as otherwise specified by the terms of such series established pursuant to Section 301) in accordance with this Article.

SECTION 1302. Repayment of Securities. Securities of any series subject to repayment in whole or in part at the option of the Holders thereof will, unless otherwise provided in the terms of such Securities, be repaid at a price equal to the principal amount thereof, together with interest, if any, thereon accrued to the Repayment Date specified in or pursuant to the terms of such Securities. The Company covenants that on or prior to the Repayment Date it will deposit with the Trustee or with a Paying Agent (or, if the Company is acting as its own Paying Agent, segregate and hold in trust as provided in Section 1003) an amount of money in the currency or currencies, currency unit or units or composite currency or currencies in which the Securities of such series are payable (except as otherwise specified pursuant to Section 301 for the Securities of such series) sufficient to pay the principal (or, if so provided by the terms of the Securities of any series, a percentage of the principal) of, and (except if the Repayment Date shall be an Interest Payment Date) accrued interest on, all the Securities or portions thereof, as the case may be, to be repaid on such date.

SECTION 1303. Exercise of Option. Securities of any series subject to repayment at the option of the Holders thereof will contain an "Option to Elect Repayment" form on the reverse of such Securities. In order for any Security to be repaid at the option of the Holder, the Trustee must receive at the Place of Payment therefor specified in the terms of such Security (or at such other place or places of which the Company shall from time to time notify the Holders of such Securities) not earlier than 60 days nor later than 30 days prior to the Repayment Date (1) the Security so providing for such repayment together with the "Option to Elect Repayment" form on the reverse thereof duly completed by the Holder (or by the Holder's attorney duly authorized in writing) or (2) a telegram, telex, facsimile transmission or a letter from a member of a national securities exchange, or the FINRA, or a commercial bank or trust company in the United States setting forth the name of the Holder of the Security, the principal amount of the Security, the principal amount of the Security to be repaid, the CUSIP number, if any, or a description of the tenor and terms of the Security, a statement that the option to elect repayment is being exercised thereby and a guarantee that the Security to be repaid, together with the duly completed form entitled "Option to Elect Repayment" on the reverse of the Security, will be received by the Trustee not later than the fifth Business Day after the date of such telegram, telex, facsimile transmission or letter; provided, however, that such telegram, telex, facsimile transmission or letter shall only be effective if such Security and form duly completed are received by the Trustee by such fifth Business Day. If less than the entire principal amount of such Security is to be repaid in accordance with the terms of such Security, the principal amount of such Security to be repaid, in increments of the minimum denomination for Securities of such series, and the denomination or denominations of the Security or Securities to be issued to the Holder for the portion of the principal amount of such Security surrendered that is not to be repaid, must be specified. The principal amount of any Security providing for repayment at the option of the Holder thereof may not be repaid in part if, following such repayment, the unpaid principal amount of such Security would be less than the minimum authorized denomination of Securities of the series of which such Security to be repaid is a part. Except as otherwise may be provided by the terms of any Security providing for repayment at the option of the Holder thereof, exercise of the repayment option by the Holder shall be irrevocable unless waived by the Company.

SECTION 1304. When Securities Presented for Repayment Become Due and Payable. If Securities of any series providing for repayment at the option of the Holders thereof shall have been surrendered as provided in this Article and as provided by or pursuant to the terms of such Securities, such Securities or the portions thereof, as the case may be, to be repaid shall become due and payable and shall be paid by the Company on the Repayment Date therein specified, and on and after such Repayment Date (unless the Company shall default in the payment of such Securities on such Repayment Date) such Securities shall, if the same were interest-bearing, cease to bear interest and the coupons for such interest appertaining to any Bearer Securities so to be repaid, except to the extent provided below, shall be void. Upon surrender of any such Security for repayment in accordance with such provisions, together with all coupons, if any, appertaining thereto maturing after the Repayment Date, the principal amount of such Security so to be repaid shall be paid by the Company, together with accrued interest, if any, to the Repayment Date; provided, however, that coupons whose Stated Maturity is on or prior to the Repayment Date shall be payable only at an office or agency located outside the United States (except as otherwise provided in Section 1002) and, unless otherwise specified pursuant to Section 301, only upon presentation and surrender of such coupons; and provided further that, in the case of Registered Securities, installments of interest, if any, whose Stated Maturity is on or prior to the Repayment Date shall be payable (but without interest thereon, unless the Company shall default in the payment thereof) to the Holders of such Securities, or one or more Predecessor Securities, registered as such at the close of business on the relevant Record Dates according to their terms and the provisions of Section 307.

If any Bearer Security surrendered for repayment shall not be accompanied by all appurtenant coupons maturing after the Repayment Date, such Security may be paid after deducting from the amount payable therefor as provided in Section 1302 an amount equal to the face amount of all such missing coupons, or the surrender of such missing coupon or coupons may be waived by the Company and the Trustee if there be furnished to them such security or indemnity as they may require to save each of them and any Paying Agent harmless. If thereafter the Holder of such Security shall surrender to the Trustee or any Paying Agent any such missing coupon in respect of which a deduction shall have been made as provided in the preceding sentence, such Holder shall be entitled to receive the amount so deducted; provided, however, that interest represented by coupons shall be payable only at an office or agency located outside the United States (except as otherwise provided in Section 1002) and, unless otherwise specified as contemplated by Section 301, only upon presentation and surrender of those coupons.

If the principal amount of any Security surrendered for repayment shall not be so repaid upon surrender thereof, such principal amount (together with interest, if any, thereon accrued to such Repayment Date) shall, until paid, bear interest from the Repayment Date at the rate of interest or Yield to Maturity (in the case of Original Issue Discount Securities) set forth in such Security.

SECTION 1305. Securities Repaid in Part. Upon surrender of any Registered Security which is to be repaid in part only, the Company shall execute and the Trustee shall authenticate and deliver to the Holder of such Security, without service charge and at the expense of the Company, a new Registered Security or Securities of the same series, of any authorized denomination specified by the Holder, in an aggregate principal amount equal to and in exchange for the portion of the principal of such Security so surrendered which is not to be repaid.

ARTICLE FOURTEEN - DEFEASANCE AND COVENANT DEFEASANCE

SECTION 1401. Applicability of Article; Company's Option to Effect Defeasance or Covenant Defeasance. If, pursuant to Section 301, provision is made for either or both of (a) Defeasance of the Securities of or within a series under Section 1402 or (b) Covenant Defeasance of the Securities of or within a series under Section 1403, then the provisions of such Section or Sections, as the case may be, together with the other provisions of this Article (with such modifications thereto as may be specified pursuant to Section 301 with respect to any Securities), shall be applicable to such Securities and any coupons appertaining thereto, and the Company may at its option by Board Resolution, at any time, with respect to such Securities and any coupons appertaining thereto, elect to have Section 1402 (if applicable) or Section 1403 (if applicable) be applied to such Outstanding Securities and any coupons appertaining thereto upon compliance with the conditions set forth below in this Article.

SECTION 1402. Defeasance and Discharge. Upon the Company's exercise of the above option applicable to this Section with respect to any Securities of or within a series, the Company shall be deemed to have been discharged from its obligations with respect to such Outstanding Securities and any coupons appertaining thereto on the date the conditions set forth in Section 1404 are satisfied (hereinafter, "Defeasance"). For this purpose, such Defeasance means that the Company shall be deemed to have paid and discharged the entire indebtedness represented by such Outstanding Securities and any coupons appertaining thereto, which shall thereafter be deemed to be "Outstanding" only for the purposes of Section 1405 and the other Sections of this Indenture referred to in clauses (A) and (B) below, and to have satisfied all of its other obligations under such Securities and any coupons appertaining thereto and this Indenture insofar as such Securities and any coupons appertaining thereto are concerned (and the Trustee, at the expense of the Company, shall execute proper instruments acknowledging the same), except for the following which shall survive until otherwise terminated or discharged hereunder: (A) the rights of Holders of such Outstanding Securities and any coupons appertaining thereto to receive, solely from the trust fund described in Section 1404 and as more fully set forth in such Section, payments in respect of the principal of (and premium or Make-Whole Amount, if any) and interest, if any, on such Securities and any coupons appertaining thereto when such payments are due, (B) the Company's obligations with respect to such Securities under Sections 305, 306, 1002 and 1003, and the Company's obligations under Section 606 hereof (C) the rights, powers, trusts, duties and immunities of the Trustee hereunder and (D) this Article. Subject to compliance with this Article Fourteen, the Company may exercise its option under this Section notwithstanding the prior exercise of its option under Section 1403 with respect to such Securities and any coupons appertaining thereto.

SECTION 1403. Covenant Defeasance. Upon the Company's exercise of the above option applicable to this Section with respect to any Securities of or within a series, the Company shall be released from its obligations under Sections 1004 to 1009, inclusive, and, if specified pursuant to Section 301, its obligations under any other covenant contained herein or in any indenture supplemental hereto, with respect to such Outstanding Securities and any coupons appertaining thereto on and after the date the conditions set forth in Section 1404 are satisfied (hereinafter, "Covenant Defeasance"), and such Securities and any coupons appertaining thereto shall thereafter be deemed to be not "Outstanding" for the purposes of any direction, waiver, consent or declaration or Act of Holders (and the consequences of any thereof) in connection with Sections 1004 to 1009, inclusive, or such other covenant, but shall continue to be deemed "Outstanding" for all other purposes hereunder. For this purpose, such Covenant Defeasance means that, with respect to such Outstanding Securities and any coupons appertaining thereto, the Company may omit to comply with and shall have no liability in respect of any term, condition or limitation set forth in any such Section or such other covenant, whether directly or indirectly, by reason of any reference elsewhere herein to any such Section or such other covenant or by reason of reference in any such Section or such other covenant to any other provision herein or in any other document and such omission to comply shall not constitute a default or an Event of Default under Section 501(4) or 501(8) or otherwise, as the case may be, but, except as specified above, the remainder of this Indenture and such Securities and any coupons appertaining thereto shall be unaffected thereby.

SECTION 1404. Conditions to Defeasance or Covenant Defeasance. The following shall be the conditions to application of Section 1402 or Section 1403 to any Outstanding Securities of or within a series and any coupons appertaining thereto:

(a) The Company shall irrevocably have deposited or caused to be deposited with the Trustee (or another trustee satisfying the requirements of Section 607 who shall agree to comply with the provisions of this Article Fourteen applicable to it) 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 and any coupons appertaining thereto, (1) an amount in such currency, currencies or currency unit in which such Securities and any coupons appertaining thereto are then specified as payable at Stated Maturity, or (2) Government Obligations applicable to such Securities and coupons appertaining thereto (determined on the basis of the currency, currencies or currency unit in which such Securities and coupons appertaining thereto are then specified as payable at Stated Maturity) which through the scheduled payment of principal and interest in respect thereof in accordance with their terms will provide, not later than the due date of any payment of principal of (and premium or Make-Whole Amount, if any) and interest, if any, on such Securities and any coupons appertaining thereto, money in an amount, or (3) a combination thereof, in any case, in an amount, sufficient, without consideration of any reinvestment of such principal and interest, in the opinion of a nationally recognized firm of independent public accountants expressed in a written certification thereof delivered to the Trustee, to pay and discharge, and which shall be applied by the Trustee (or other qualifying trustee) to pay and discharge, (i) the principal of (and premium or Make-Whole Amount, if any) and interest, if any, on such Outstanding Securities and any coupons appertaining thereto on the Stated Maturity of such principal or installment of principal or interest and (ii) any mandatory sinking fund payments or analogous payments applicable to such Outstanding Securities and any coupons appertaining thereto on the day on which such payments are due and payable in accordance with the terms of this Indenture and of such Securities and any coupons appertaining thereto.

(b) Such Defeasance or Covenant Defeasance shall not result in a breach or violation of, or constitute a default under, this Indenture or any other material agreement or instrument to which the Company is a party or by which it is bound.

(c) No Event of Default or event which with notice or lapse of time or both would become an Event of Default with respect to such Securities and any coupons appertaining thereto shall have occurred and be continuing on the date of such deposit or, insofar as Sections 501(6) and 501(7) are concerned, at any time during the period ending on the 91st day after the date of such deposit (it being understood that this condition shall not be deemed satisfied until the expiration of such period).

(d) In the case of an election under Section 1402, the Company shall have delivered to the Trustee an Opinion of Counsel stating 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 shall confirm that, the Holders of such Outstanding Securities and any coupons appertaining thereto will not recognize income, gain or loss for Federal income tax purposes as a result of such Defeasance and will be subject to Federal income tax on the same amounts, in the same manner and at the same times as would have been the case if such Defeasance had not occurred.

(e) In the case of an election under Section 1403, the Company shall have delivered to the Trustee an Opinion of Counsel to the effect that the Holders of such Outstanding Securities and any coupons appertaining thereto will not recognize income, gain or loss for Federal income tax purposes as a result of such Covenant Defeasance and will be subject to Federal income tax on the same amounts, in the same manner and at the same times as would have been the case if such Covenant Defeasance had not occurred.

(f) The Company shall have delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that all conditions precedent to the Defeasance under Section 1402 or the Covenant Defeasance under Section 1403 (as the case may be) have been complied with and an Opinion of Counsel to the effect that either (i) as a result of a deposit pursuant to subsection (a) above and the related exercise of the Company's option under Section 1402 or Section 1403 (as the case may be), registration is not required under the Investment Company Act of 1940, as amended, by the Company, with respect to the trust funds representing such deposit or by the Trustee for such trust funds or (ii) all necessary registrations under said Act have been effected.

(g) Notwithstanding any other provisions of this Section, such Defeasance or Covenant Defeasance shall be effected in compliance with any additional or substitute terms, conditions or limitations which may be imposed on the Company in connection therewith pursuant to Section 301.

(h) The payment of amounts payable to the Trustee pursuant to this Indenture shall be paid or provided for to the reasonable satisfaction of the Trustee.

SECTION 1405. Deposited Money and Government Obligations to Be Held in Trust; Other Miscellaneous Provisions. Subject to the provisions of the last paragraph of Section 1003, all money and Government Obligations (or other property as may be provided pursuant to Section 301) (including the proceeds thereof) deposited with the Trustee (or other qualifying trustee, collectively for purposes of this Section 1405, the "Trustee") pursuant to Section 1404 in respect of any Outstanding Securities of any series and any coupons appertaining thereto shall be held in trust and applied by the Trustee, in accordance with the provisions of such Securities and any coupons appertaining thereto 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 Holders of such Securities and any coupons appertaining thereto of all sums due and to become due thereon in respect of principal (and premium or Make-Whole Amount, if any) and interest, but such money need not be segregated from other funds except to the extent required by law.

Unless otherwise specified with respect to any Security pursuant to Section 301, if, after a deposit referred to in Section 1404(a) has been made, (a) the Holder of a Security in respect of which such deposit was made is entitled to, and does, elect pursuant to Section 301 or the terms of such Security to receive payment in a currency or currency unit other than that in which the deposit pursuant to Section 1404(a) has been made in respect of such Security, or (b) a Conversion Event occurs in respect of the currency or currency unit in which the deposit pursuant to Section 1404(a) has been made, the indebtedness represented by such Security and any coupons appertaining thereto shall be deemed to have been, and will be, fully discharged and satisfied through the payment of the principal of (and premium or Make-Whole Amount, if any), and interest, if any, on such Security as the same becomes due out of the proceeds yielded by converting (from time to time as specified below in the case of any such election) the amount or other property deposited in respect of such Security into the currency or currency unit in which such Security becomes payable as a result of such election or Conversion Event based on the applicable market exchange rate for such currency or currency unit in effect on the second Business Day prior to each payment date, except, with respect to a Conversion Event, for such currency or currency unit in effect (as nearly as feasible) at the time of the Conversion Event.

The Company shall pay and indemnify the Trustee against any tax, fee or other charge imposed on or assessed against the Government Obligations deposited pursuant to Section 1404 or the principal and interest received in respect thereof other than any such tax, fee or other charge which by law is for the account of the Holders of such Outstanding Securities and any coupons appertaining thereto.

Anything in this Article to the contrary notwithstanding, subject to Section 606, the Trustee shall deliver or pay to the Company from time to time upon Company Request any money or Government Obligations (or other property and any proceeds therefrom) held by it as provided in Section 1404 which, in the opinion of a nationally recognized firm of independent public accountants expressed in a written certification thereof delivered to the Trustee, are in excess of the amount thereof which would then be required to be deposited to effect a Defeasance or Covenant Defeasance, as applicable, in accordance with this Article.

ARTICLE FIFTEEN - MEETINGS OF HOLDERS OF SECURITIES

SECTION 1501. Purposes for Which Meetings May Be Called. A meeting of Holders of Securities of any series may be called at any time and from time to time pursuant to this Article to make, give or take any request, demand, authorization, direction, notice, consent, waiver or other action provided by this Indenture to be made, given or taken by Holders of Securities of such series.

SECTION 1502. Call, Notice and Place of Meetings.

(a) The Trustee may at any time call a meeting of Holders of Securities of any series for any purpose specified in Section 1501, to be held at such time and at such place as the Trustee shall determine. Notice of every meeting of Holders of Securities of any series, setting forth the time and the place of such meeting and in general terms the action proposed to be taken at such meeting, shall be given, in the manner provided in Section 106, not less than 20 nor more than 180 days prior to the date fixed for the meeting.

(b) In case at any time the Company, pursuant to a Board Resolution, or the Holders of at least 25% in principal amount of the Outstanding Securities of any series shall have requested the Trustee to call a meeting of the Holders of Securities of such series for any purpose specified in Section 1501, by written request setting forth in reasonable detail the action proposed to be taken at the meeting, and the Trustee shall not have made the first publication of the notice of such meeting within 20 days after receipt of such request or shall not thereafter proceed to cause the meeting to be held as provided herein, then the Company or the Holders of Securities of such series in the amount above specified, as the case may be, may determine the time and the place for such meeting and may call such meeting for such purposes by giving notice thereof as provided in subsection (a) of this Section.

SECTION 1503. Persons Entitled to Vote at Meetings. To be entitled to vote at any meeting of Holders of Securities of any series, a Person shall be (1) a Holder of one or more Outstanding Securities of such series, or (2) a Person appointed by an instrument in writing as proxy for a Holder or Holders of one or more Outstanding Securities of such series by such Holder or Holders. The only Persons who shall be entitled to be present or to speak at any meeting of Holders of Securities of any series shall be the Persons entitled to vote at such meeting and their counsel, any representatives of the Trustee and its counsel and any representatives of the Company and its counsel.

SECTION 1504. Quorum; Action. The Persons entitled to vote a majority in principal amount of the Outstanding Securities of a series shall constitute a quorum for a meeting of Holders of Securities of such series; provided, however, that if any action is to be taken at such meeting with respect to a consent or waiver which this Indenture expressly provides may be given by the Holders of not less than a specified percentage in principal amount of the Outstanding Securities of a series, the Persons entitled to vote such specified percentage in principal amount of the Outstanding Securities of such series shall constitute a quorum. In the absence of a quorum within 30 minutes after the time appointed for any such meeting, the meeting shall, if convened at the request of Holders of Securities of such series, be dissolved. In any other case the meeting may be adjourned for a period of not less than 10 days as determined by the chairman of the meeting prior to the adjournment of such meeting. In the absence of a quorum at the reconvening of any such adjourned meeting, such adjourned meeting may be further adjourned for a period of not less than 10 days; at the reconvening of any meeting adjourned or further adjourned for lack of a quorum, the Persons entitled to vote 25% in aggregate principal amount of the then Outstanding Securities shall constitute a quorum for the taking of any action set forth in the notice of the original meeting. Notice of the reconvening of any adjourned meeting shall be given as provided in Section 1502(a), except that such notice need be given only once not less than five days prior to the date on which the meeting is scheduled to be reconvened.

Except as limited by the proviso to Section 902, any resolution presented to a meeting or adjourned meeting duly reconvened at which a quorum is present as aforesaid may be adopted by the affirmative vote of the Persons entitled to vote a majority in aggregate principal amount of the Outstanding Securities represented at such meeting; provided, however, that, except as limited by the proviso to Section 902, any resolution with respect to any request, demand, authorization, direction, notice, consent, waiver or other action which this Indenture expressly provides may be made, given or taken by the Holders of a specified percentage, which is less than a majority, in principal amount of the Outstanding Securities of a series may be adopted at a meeting or an adjourned meeting duly reconvened and at which a quorum is present as aforesaid by the affirmative vote of the Holders of such specified percentage in principal amount of the Outstanding Securities of that series.

Any resolution passed or decision taken at any meeting of Holders of Securities of any series duly held in accordance with this Section shall be binding on all the Holders of Securities of such series and the related coupons, whether or not present or represented at the meeting.

Notwithstanding the foregoing provisions of this Section 1504, if any action is to be taken at a meeting of Holders of Securities of any series with respect to any request, demand, authorization, direction, notice, consent, waiver or other action that this Indenture expressly provides may be made, given or taken by the Holders of a specified percentage in principal amount of all Outstanding Securities affected thereby, or of the Holders of such series and one or more additional series:

- (i) there shall be no minimum quorum requirement for such meeting; and

(ii) the principal amount of the Outstanding Securities of such series that vote in favor of such request, demand, authorization, direction, notice, consent, waiver or other action shall be taken into account in determining whether such request, demand, authorization, direction, notice, consent, waiver or other action has been made, given or taken under this Indenture.

SECTION 1505. Determination of Voting Rights; Conduct and Adjournment of Meetings.

(a) Notwithstanding any provisions of this Indenture, the Trustee may make such reasonable regulations as it may deem advisable for any meeting of Holders of Securities of a series in regard to proof of the holding of Securities of such series and of the appointment of proxies and in regard to the appointment and duties of inspectors of votes, the submission and examination of proxies, certificates and other evidence of the right to vote, and such other matters concerning the conduct of the meeting as it shall deem appropriate. Except as otherwise permitted or required by any such regulations, the holding of Securities shall be proved in the manner specified in Section 104 and the appointment of any proxy shall be proved in the manner specified in Section 104 or by having the signature of the Person executing the proxy witnessed or guaranteed by any trust company, bank or banker authorized by Section 104 to certify to the holding of Bearer Securities. Such regulations may provide that written instruments appointing proxies, regular on their face, may be presumed valid and genuine without the proof specified in Section 104 or other proof.

(b) The Trustee shall, by an instrument in writing appoint a temporary chairman of the meeting, unless the meeting shall have been called by the Company or by Holders of Securities as provided in Section 1502(b), in which case the Company or the Holders of Securities of the series calling the meeting, as the case may be, shall in like manner appoint a temporary chairman. A permanent chairman and a permanent secretary of the meeting shall be elected by vote of the Persons entitled to vote a majority in principal amount of the Outstanding Securities of such series represented at the meeting.

(c) At any meeting each Holder of a Security of such series or proxy shall be entitled to one vote for each \$1,000 principal amount of the Outstanding Securities of such series held or represented by him; provided, however, that no vote shall be cast or counted at any meeting in respect of any Security challenged as not Outstanding and ruled by the chairman of the meeting to be not Outstanding. The chairman of the meeting shall have no right to vote, except as a Holder of a Security of such series or proxy.

(d) Any meeting of Holders of Securities of any series duly called pursuant to Section 1502 at which a quorum is present may be adjourned from time to time by Persons entitled to vote a majority in principal amount of the Outstanding Securities of such series represented at the meeting, and the meeting may be held as so adjourned without further notice.

SECTION 1506. Counting Votes and Recording Action of Meetings. The vote upon any resolution submitted to any meeting of Holders of Securities of any series shall be by written ballots on which shall be subscribed the signatures of the Holders of Securities of such series or of their representatives by proxy and the principal amounts and serial numbers of the Outstanding Securities of such series held or represented by them. The permanent chairman of the meeting shall appoint two inspectors of votes who shall count all votes cast at the meeting for or against any resolution and who shall make and file with the secretary of the meeting their verified written reports in duplicate of all votes cast at the meeting. A record, at least in duplicate, of the proceedings of each meeting of Holders of Securities of any Series shall be prepared by the secretary of the meeting and there shall be attached to said record the original reports of the inspectors of votes on any vote by ballot taken thereat and affidavits by one or more persons having knowledge of the fact, setting forth a copy of the notice of the meeting and showing that said notice was given as provided in Section 1502 and, if applicable, Section 1504. Each copy shall be signed and verified by the affidavits of the permanent chairman and secretary of the meeting and one such copy shall be delivered to the Company and another to the Trustee to be preserved by the Trustee, the latter to have attached thereto the ballots voted at the meeting. Any record so signed and verified shall be conclusive evidence of the matters therein stated.

ARTICLE SIXTEEN - CONVERSION OF SECURITIES

SECTION 1601. Applicability of Article; Conversion Privilege and Conversion Price. Securities of any series which are convertible shall be convertible in accordance with their terms and (except as otherwise specified as contemplated by Section 301 for Securities of any series) in accordance with this Article Sixteen. Subject to and upon compliance with the provisions of this Article Sixteen, at any time during the period specified in the Securities, at the option of the Holder thereof, any Security or any portion of the principal amount thereof which is \$1,000 or an integral multiple of \$1,000 may be converted at the principal amount thereof, or of such portion thereof, into fully paid and nonassessable shares (calculated as to each conversion to the nearest 1/100 of a share) of Common Stock of the Company, at the Conversion Price, determined as hereinafter provided, in effect at the time of conversion. In case a Security or portion thereof is called for redemption, such conversion right in respect of the Security or portion so called shall expire at the close of business on the Business Day immediately preceding the Redemption Date, unless the Company defaults in making the payment due upon redemption, in which case such conversion right shall terminate on the date such default is cured.

The price at which shares of Common Stock shall be delivered upon conversion (herein called the "Conversion Price") of Securities of any series shall be specified in such Securities. The Conversion Price shall be adjusted in certain instances as provided in Section 1604.

In case the Company shall, by dividend or otherwise, declare or make a distribution on its Common Stock referred to in paragraph (4) of Section 1604, the Holder of each Security, upon the conversion thereof pursuant to this Article Sixteen subsequent to the close of business on the date fixed for the determination of stockholders entitled to receive such distribution and prior to the effectiveness of the Conversion Price adjustment in respect of such distribution pursuant to paragraph (4) of Section 1604, shall be entitled to receive for each share of Common Stock into which such Security is converted, the portion of the evidence of indebtedness, shares of Capital Stock or assets so distributed applicable to one share of Common Stock; provided, however, that, at the election of the Company (whose election shall be evidenced by a Board Resolution filed with the Trustee) with respect to all Holders so converting, the Company may, in lieu of distributing to such Holder any portion of such distribution not consisting of cash or securities of the Company, pay such Holder an amount in cash equal to the fair market value thereof (as determined in good faith by the Board of Directors, whose determination shall be conclusive and described in a Board Resolution filed with the Trustee). If any conversion of a Security entitled to the benefits described in the immediately preceding sentence occurs prior to the payment date for a distribution to holders of Common Stock which the Holder of the Security so converted is entitled to receive in accordance with the immediately preceding sentence, the Company may elect (such election to be evidenced by a Board Resolution filed with the Trustee) to distribute to such Holder a due bill for the evidences of indebtedness, shares of Capital Stock or assets to which such Holder is so entitled, provided that such due bill (i) meets any applicable requirements of the principal over-the-counter market or national securities exchange or other market on which the Common Stock is then traded, and (ii) requires payment or delivery of such evidences of indebtedness or assets no later than the date of payment or delivery thereof to holders of Common Stock receiving such distribution.

SECTION 1602. Exercise of Conversion Privilege. In order to exercise the conversion privilege, the Holder of any Security to be converted shall surrender such Security, duly endorsed or assigned to the Company or in blank, at any office or agency maintained by the Company pursuant to Section 1002, accompanied by written notice to the Company at such office or agency that the Holder elects to convert such Security or, if less than the entire principal amount thereof is to be converted, the portion thereof to be converted and shall comply with any additional requirements set forth in such Security. Securities surrendered for conversion during the period from the close of business on any Regular Record Date next preceding any Interest Payment Date to the opening of business on such Interest Payment Date shall (except for Securities the Maturity of which is prior to such Interest Payment Date) be accompanied by payment in funds acceptable to the Company of an amount equal to the interest payable on such Interest Payment Date on the principal amount of Securities being surrendered for conversion and such interest shall be paid on such Interest Payment Date as provided in Section 307. Except as provided in the preceding sentence, no payment or adjustment shall be made upon any conversion on account of any interest accrued on the Securities surrendered for conversion or on account of any dividends on the Common Stock issued upon conversion.

The Company's delivery to the Holder of the fixed number of shares of the Common Stock of the Company (and any cash in lieu of any fractional share of Common Stock) into which the Security is convertible shall be deemed to satisfy the Company's obligation to pay the principal amount of the Security and all accrued interest and original issue discount that has not previously been paid. The shares of Common Stock of the Company so delivered shall be treated as issued first in payment of accrued interest and original issue discount and then in payment of principal. Thus, accrued interest and original issue discount shall be treated as paid, rather than canceled, extinguished or forfeited.

Securities shall be deemed to have been converted immediately prior to the close of business on the day of surrender of such Securities for conversion in accordance with the foregoing provisions, and at such time the rights of the Holders of such Securities as Holders shall cease, and the Person or Persons entitled to receive the Common Stock issuable upon conversion shall be treated for all purposes as the record holder or holders of such Common Stock at such time. As promptly as practicable on or after the conversion date, the Company shall issue and shall deliver at such office or agency a certificate or certificates for the number of full shares of Common Stock issuable upon conversion, together with payment in lieu of any fraction of a share, as provided in Section 1603.

In the case of any Security which is converted in part only, as promptly as practicable on or after the conversion date the Company shall execute and the Trustee shall authenticate and make available for delivery to the Holder thereof (or the Depository in the case of a Global Security), at the expense of the Company, a new Security or Securities, of authorized denominations in aggregate principal amount equal to the unconverted portion of the principal amount of such Security.

SECTION 1603. Fractions of Shares. No fractional shares of Common Stock shall be issued upon conversion of Securities. If more than one Security shall be surrendered for conversion at one time by the same Holder, the number of full shares of Common Stock which shall be issuable upon conversion thereof shall be computed on the basis of the aggregate principal amount of the Securities (or specified portions thereof) so surrendered. Instead of any fractional share of Common Stock which would otherwise be issuable upon conversion of any Security or Securities (or specified portions thereof), the Company shall pay a cash adjustment (rounded to the nearest cent) in respect of such fraction in an amount equal to the same fraction of the Closing Price per share of the Common Stock on the day of conversion (or, if such day is not a Trading Day, on the Trading Day immediately preceding such day).

SECTION 1604. Adjustment of Conversion Price. The Conversion Price shall be subject to adjustment from time to time as follows:

(1) If the Company pays or makes a dividend or other distribution (a) on its Common Stock exclusively in Common Stock or (b) on any other class of Capital Stock of the Company, which dividend or distribution includes Common Stock of the Company, the Conversion Price in effect at the opening of business on the day following the date fixed for the determination of stockholders entitled to receive such dividend or other distribution (the "Dividend Record Date") shall be reduced by multiplying such Conversion Price by a fraction of which the numerator shall be the number of shares of Common Stock of the Company outstanding at the close of business on the Dividend Record Date and the denominator shall be the sum of such number of shares and the total number of shares constituting such dividend or other distribution. Such reduction shall become effective immediately after the opening of business on the day following the date fixed for such determination. For the purposes of this paragraph (1), the number of shares of Common Stock of the Company at any time outstanding shall not include shares held in the treasury of the Company, but shall include shares issuable in respect of scrip certificates issued in lieu of fractions of shares of Common Stock. The Company shall not pay any dividend or make any distribution on shares of Common Stock held in the treasury of the Company.

(2) Subject to paragraph (6) of this Section, if the Company pays or makes a dividend or other distribution on its Common Stock consisting exclusively of Short Term Rights (as defined below), or otherwise issues Short Term Rights to all holders of its Common Stock, the Conversion Price in effect at the opening of business on the day following the record date for the determination of holders of Common Stock entitled to receive such Short Term Rights (the "Rights Record Date") shall be reduced by multiplying such Conversion Price by a fraction of which the numerator shall be the number of shares of Common Stock of the Company outstanding at the close of business on the Rights Record Date plus the number of shares of Common Stock of the Company which the aggregate of the offering price of the total number of shares of Common Stock so offered for subscription or purchase would purchase at such current market price and the denominator shall be the number of shares of Common Stock of the Company outstanding at the close of business on the Rights Record Date plus the number of shares of Common Stock so offered for subscription or purchase. Such reduction shall become effective immediately after the opening of business on the day following the Rights Record Date. For the purposes of this paragraph (2), the number of shares of Common Stock of the Company at any time outstanding shall not include shares held in the treasury of the Company, but shall include shares issuable in respect of scrip certificates issued in lieu of fractions of shares of Common Stock of the Company. The Company shall not issue any rights, options or warrants in respect of shares of its Common Stock held in the treasury of the Company. When used in this Section 1604, the term "Short Term Rights" shall mean rights, warrants or options entitling the holders thereof (for a period commencing no earlier than the Rights Record Date and expiring not more than 45 days after the Rights Record Date) to subscribe for or purchase shares of Common Stock of the Company at a price per share less than the current market price per share (determined as provided in paragraph (7) of this Section 1604) of the Common Stock of the Company on the Rights Record Date.

(3) In case outstanding shares of Common Stock of the Company shall be subdivided into a greater number of shares of Common Stock, the Conversion Price in effect at the opening of business on the day following the day upon which such subdivision becomes effective shall be proportionately reduced, and, conversely, in case outstanding shares of Common Stock of the Company shall be combined into a smaller number of shares of Common Stock, the Conversion Price in effect at the opening of business on the day following the day upon which such combination becomes effective shall be proportionately increased, such reduction or increase, as the case may be, to become effective immediately after the opening of business on the day following the day upon which such subdivision or combination becomes effective.

(4) Subject to the last sentence of this paragraph (4) of this Section, if the Company, by dividend or otherwise, (a) distributes to all holders of its Common Stock evidences of its indebtedness, shares of any class of Capital Stock of the Company or other assets (other than cash dividends out of current or retained earnings), or (b) distributes to substantially all holders of Common Stock rights or warrants to subscribe for securities (other than Short Term Rights to which paragraph (2) of this Section 1604 applies), the Conversion Price shall be reduced by multiplying such Conversion Price by a fraction of which the numerator shall be the current market price per share (determined as provided in paragraph (7) of this Section 1604) of the Common Stock of the Company on the Reference Date (as defined below) less the fair market value (as determined in good faith by the Board of Directors, whose determination shall be conclusive and described in a Board Resolution filed with the Trustee), on the Reference Date, of the portion of the evidences of indebtedness and other assets so distributed or of such subscription rights or warrants applicable to one share of Common Stock (collectively, the "Market Value of the Distribution") and the denominator shall be such current market price per share of the Common Stock of the Company. Such reduction shall become effective immediately prior to the opening of business on the day (the "Reference Date") following the later of (a) the date fixed for the payment of such distribution and (b) the date 20 days after notice relating to such distribution is required to be given pursuant to Section 1606(a). If the Board of Directors determines the fair market value of any distribution for purposes of this paragraph (4) by reference to the actual or when issued trading market for any securities comprising such distribution, it must in doing so consider the prices in such market over the same period used in computing the current market price per share pursuant to paragraph (7) of this Section 1604. In the event that, with respect to any distribution to which this paragraph (4) of Section 1604 would otherwise apply, the Market Value of the Distribution is greater than the current market price per share of the Common Stock (such distribution being referred to herein as an "Unadjusted Distribution"), then the adjustment provided by this paragraph (4) shall not be made and in lieu thereof the provisions of Section 1611 shall apply with respect to such Unadjusted Distribution.

(5) The Company may, but shall not be required to, make such reductions in the Conversion Price, in addition to those required by paragraphs (1), (2), (3), and (4) of this Section 1604, as it considers to be advisable in order that any event treated for federal income tax purposes as a dividend of stock or stock rights shall not be taxable to the recipients. In addition, the Company, from time to time, may decrease the Conversion Price by any amount and for any reason, temporarily or otherwise, including situations where the Board of Directors determines such decrease to be fair and appropriate with respect to transactions in which holders of Common Stock have the right to participate.

(6) Rights or warrants issued or distributed by the Company to all holders of its Common Stock entitling the holders thereof to subscribe for or purchase shares of Common Stock or Preferred Stock, which rights or warrants (i) are deemed to be transferred with such shares of Common Stock, (ii) are not exercisable and (iii) are also issued or distributed in respect of future issuances of Common Stock, in each case in clauses (i) through (iii) until the occurrence of a specified event or events (“Trigger Events”), shall for purposes of this Section 1604 not be deemed issued or distributed until the occurrence of the earliest Trigger Event. Each share of Common Stock issued upon conversion of Securities pursuant to this Article Sixteen shall be entitled to receive the appropriate number of Common Stock purchase rights (the “Rights”), if any, and the certificates representing the Common Stock issued upon conversion shall bear such legends, if any. Notwithstanding anything to the contrary in this Article Sixteen, there shall not be any adjustment to the Conversion Price as a result of (i) the distribution of separate certificates representing the Rights; (ii) the occurrence of certain events entitling holders of Rights to receive, upon exercise thereof, Common Stock or other securities of the Company or other securities of another corporation; or (iii) the exercise of such Rights. No adjustment in the Conversion Price need be made for rights to purchase or the sale of Common Stock pursuant to a Company plan providing for reinvestment of dividends or interest.

(7) For the purpose of any computation under paragraph (2), (4) or (5) of this Section 1604, the “current market price” per share of Common Stock of the Company on any date shall be deemed to be the average of the daily Closing Prices for the 15 consecutive Trading Days selected by the Company commencing not more than 30 Trading Days before, and ending not later than, the date in question.

(8) No adjustment in the Conversion Price shall be required unless such adjustment would require an increase or decrease of at least 1% in the Conversion Price; provided, however, that any adjustments which by reason of this paragraph (8) are not required to be made shall be carried forward and taken into account in any subsequent adjustment. All calculations under this Article Sixteen shall be made to the nearest cent or to the nearest one-hundredth of a share of Common Stock, as the case may be.

(9) Anything herein to the contrary notwithstanding, in the event the Company shall declare any dividend or distribution requiring an adjustment in the Conversion Price hereunder and shall, thereafter and before the payment of such dividend or distribution to stockholders, legally abandon its plan to pay such dividend or distribution, the Conversion Price then in effect hereunder, if changed to reflect such dividend or distribution, shall upon the legal abandonment of such plan be changed to the Conversion Price which would have been in effect at the time of such abandonment (after giving effect to all other adjustments not so legally abandoned pursuant to the provisions of this Article Sixteen) had such dividend or distribution never been declared.

(10) Notwithstanding any other provision of this Section 1604, no adjustment to the Conversion Price shall reduce the Conversion Price below the then par value per share of the Common Stock of the Company, and any such purported adjustment shall instead reduce the Conversion Price to such par value. Notwithstanding the foregoing sentence, the Company hereby covenants that it will from time to time take all such action as may be required to assure that the par value per share of the Common Stock is at all times equal to or less than the Conversion Price.

(11) In the event that this Article Sixteen requires adjustments to the Conversion Price under more than one of paragraphs (1), (2), (3) or (4) of this Section 1604, and the record or effective dates for the transaction giving rise to such adjustments shall occur on the same date, then such adjustments shall be made by applying (to the extent they are applicable), first, the provisions of paragraph (3) of this Section 1604, second, the provisions of paragraph (1) of this Section 1604, third, the provisions of paragraph (4) of this Section 1604 and, fourth, the provisions of paragraph (2) of this Section 1604. Anything herein to the contrary notwithstanding, no single event shall require or result in duplicative adjustments in the Conversion Price pursuant to this Section 1604. After an adjustment to the Conversion Price under this Article Sixteen, any subsequent event requiring an adjustment under this Article Sixteen shall cause an adjustment to the Conversion Price as so adjusted. If, after an adjustment, a Holder of a Security upon conversion of such Security receives shares of two or more classes of Capital Stock of the Company, the Conversion Price shall thereafter be subject to adjustment upon the occurrence of an action taken with respect to any such class of Capital Stock as is contemplated by this Article Sixteen with respect to the Common Stock in this Article Sixteen.

SECTION 1605. Notice of Adjustments of Conversion Price. Whenever the Conversion Price is adjusted as herein provided:

(1) the Company shall compute the adjusted Conversion Price in accordance with Section 1604 or Section 1611 and shall prepare an Officer's Certificate setting forth the adjusted Conversion Price and showing in reasonable detail the facts upon which such adjustment is based, and such certificate shall forthwith be filed (with a copy to the Trustee) at each office or agency maintained for the purpose of conversion of any Securities pursuant to Section 1002; and

(2) a notice stating that the Conversion Price has been adjusted and setting forth the adjusted Conversion Price shall forthwith be required, and as soon as practicable after it is required, such notice shall be mailed by the Company to all Holders at their last addresses as they shall appear in the Security Register.

SECTION 1606. Notice of Certain Corporate Action. In case:

(1) the Company shall take any action that would require a Conversion Price adjustment pursuant to Section 1604 or Section 1611; or

(2) there shall occur any reclassification of the Common Stock of the Company (other than a subdivision or combination of its outstanding shares of Common Stock), or any consolidation or merger to which the Company is a party, or the sale, transfer or lease of all or substantially all of the assets of the Company and for which approval of any stockholders of the Company is required; or

(3) there shall occur the voluntary or involuntary dissolution, liquidation or winding up of the Company, then the Company shall cause to be filed at each office or agency maintained for the purpose of conversion of Securities pursuant to Section 1002, and shall cause to be mailed to all Holders at their last addresses as they shall appear in the Security Register, at least 10 days prior to the applicable record, effective or expiration date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of any dividend, distribution or granting of rights, warrants or options, or, if a record is not to be taken, the date as of which the holders of Common Stock of record to be entitled to such dividend, distribution, rights, options or warrants are to be determined, or (y) the date on which such reclassification, consolidation, merger, sale, transfer, dissolution, liquidation or winding up is expected to become effective, and, if applicable, the date as of which it is expected that holders of Common Stock of record shall be entitled to exchange their shares of Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer, dissolution, liquidation or winding up.

SECTION 1607. Company to Reserve Common Stock. The Company shall at all times reserve and keep available, free from preemptive rights, out of its authorized but unissued Common Stock, for the purpose of effecting the conversion of Securities, a number of shares of Common Stock for the conversion of all outstanding Securities of any series which is convertible into Common Stock.

SECTION 1608. Taxes on Conversion. The Company will pay any and all taxes that may be payable in respect of the issue or delivery of shares of Common Stock on conversion of Securities pursuant hereto. The Company shall not, however, be required to pay any tax which may be payable in respect of any transfer involved in the issue and delivery of shares of Common Stock in a name other than that of the Holder of the Security or Securities to be converted, and no such issue or delivery shall be made unless and until the Person requesting such issue has paid to the Company the amount of any such tax, or has established to the satisfaction of the Company that such tax has been paid.

SECTION 1609. Covenants as to Common Stock. The Company covenants that all shares of Common Stock which may be issued upon conversion of Securities will upon issue be duly and validly issued, fully paid and nonassessable, free of preemptive or any similar rights, and, except as provided in Section 1608, the Company will pay all taxes, liens and charges with respect to the issue thereof.

The Company will endeavor promptly to comply with all Federal and state securities laws regulating the offer and delivery of shares of Common Stock upon conversion of Securities, if any, and will list or cause to have quoted such shares of Common Stock on each national securities exchange or in the over-the-counter market or such other market on which the Common Stock is then listed or quoted.

SECTION 1610. Cancellation of Converted Securities. All Securities delivered for conversion shall be delivered to the Trustee to be cancelled by or at the direction of the Trustee, which shall dispose of the same as provided in Section 309.

SECTION 1611. Provisions in Case of Consolidation, Merger or Sale of Assets; Special Distributions. If any of the following shall occur, namely: (i) any reclassification or change of outstanding shares of Common Stock issuable upon conversion of Securities (other than a change in par value, or from par value to no par value, or from no par value to par value, or as a result of a subdivision or combination), (ii) any consolidation or merger to which the Company is a party other than a merger in which the Company is the continuing corporation and which does not result in any reclassification of, or change (other than a change in name, or par value, or from par value to no par value, or from no par value to par value or as a result of a subdivision or combination) in, outstanding shares of Common Stock or (iii) any sale or conveyance of all or substantially all of the property or business of the Company as an entirety, then the Person formed by such consolidation or resulting from such merger or which acquires such properties or assets, as the case may be, shall as a condition precedent to such transaction execute and deliver to the Trustee a supplemental indenture providing that the Holder of each Security then outstanding shall have the right thereafter, during the period such Security shall be convertible as specified in Section 1601, to convert such Security only into the kind and amount of securities, cash and other property receivable, if any, upon such consolidation, merger, sale, transfer or lease by a holder of the number of shares of Common Stock of the Company into which such Security might have been converted immediately prior to such consolidation, merger, sale, transfer or lease; provided that the kind and amount of securities, cash and other property so receivable shall be determined on the basis of the following assumptions. The holder of Common Stock referred to in the foregoing sentence:

(1) is not (a) a Person with which the Company consolidated, (b) a Person into which the Company merged or which merged into the Company, or (c) a Person to which such sale, transfer or lease was made (any Person described in the foregoing clauses (a), (b), or (c), hereinafter referred to as a "Constituent Person"), or (d) an Affiliate of a Constituent Person; and

(2) failed to exercise his rights of election, if any, as to the kind or amount of securities, cash and other property receivable upon such consolidation, merger, sale, transfer or lease (provided that if the kind or amount of securities, cash and other property receivable upon such consolidation, merger, sale transfer or lease is not the same for each share of Common Stock of the Company in respect of which such rights of election shall not have been exercised, then for the purpose of this Section 1611 the kind and amount of securities, cash and other property receivable upon such consolidation, merger, sale, transfer or lease shall be deemed to be the kind and amount so receivable per share by a plurality of such shares of Common Stock).

Such supplemental indenture shall provide for adjustments which, for events subsequent to the effective date of such supplemental indenture, shall be as nearly equivalent as may be practicable to the adjustments provided for in this Article Sixteen. If, in the case of any such consolidation, merger, sale transfer or lease the stock or other securities and property (including cash) receivable thereupon by a holder of Common Stock includes shares of stock or other securities and property of a corporation other than the successor or purchasing corporation, as the case may be, in such consolidation, merger, sale, transfer or lease then such supplemental indenture shall also be executed by such other corporation and shall contain such additional provisions to protect the interests of the Holders of the Securities as the Board of Directors of the Company shall reasonably consider necessary by reason of the foregoing. The above provisions of this Section 1611 shall similarly apply to successive consolidations, mergers, sales, transfers or leases.

In the event the Company shall execute a supplemental indenture pursuant to this Section 1611, the Company shall promptly file with the Trustee an Officers' Certificate briefly stating the reasons therefor, the kind or amount of shares of stock or securities or property (including cash) receivable by Holders of the Securities upon the conversion of their Securities after any such reclassification, change, consolidation, merger, sale, transfer or lease and any adjustment to be made with respect thereto.

If the Company makes a distribution to all holders of its Common Stock that constitutes an Unadjusted Distribution pursuant to the last sentence of paragraph (4) of Section 1604, then, from and after the record date for determining the holders of Common Stock entitled to receive such distribution (the "Distribution Record Date"), a Holder of a Security who converts such Security in accordance with the provisions of this Indenture shall, upon conversion, be entitled to receive, in addition to the shares of Common Stock into which the Security is convertible, the kind and amount of evidences of indebtedness, shares of Capital Stock, or other assets or subscription rights or warrants, as the case may be, comprising the distribution that such Holder would have received if such Holder had converted the Security immediately prior to the Distribution Record Date.

SECTION 1612. Trustee Adjustment Disclaimer; Company Determination Final. The Trustee has no duty to determine when an adjustment under this Article Sixteen should be made, how it should be made or what it should be. The Trustee has no duty to determine whether a supplemental indenture under Section 1611 need be entered into or whether any provisions of any supplemental indenture are correct. The Trustee shall not be accountable for and makes no representation as to the validity or value of any securities or assets issued upon conversion of Securities. The Trustee shall not be responsible for the Company's failure to comply with this Article Sixteen. Any determination that the Company or the Board of Directors must make pursuant to this Article Sixteen is conclusive, absent manifest error.

SECTION 1613. When No Adjustment Required. Except as expressly set forth in Section 1604, no adjustment in the Conversion Price shall be made because the Company issues, in exchange for cash, property or services, shares of its Common Stock, or any securities convertible into or exchangeable for shares of its Common Stock, or securities (including warrants, rights and options) carrying the right to subscribe for or purchase shares of its Common Stock or such convertible or exchangeable securities.

(1) Notwithstanding anything herein to the contrary, no adjustment in the Conversion Price shall be made pursuant to Section 1604 in respect of any dividend or distribution if the Holders may participate therein (on a basis to be determined in good faith by the Board of Directors) and receive the same consideration they would have received if they had converted the Securities immediately prior to the record date with respect to such dividend or distribution.

SECTION 1614. Equivalent Adjustments. In the event that, as a result of an adjustment made pursuant to Section 1604 above, the holder of any Security thereafter surrendered for conversion shall become entitled to receive any shares of Capital Stock of the Company other than shares of its Common Stock, thereafter the Conversion Price of such other shares so receivable upon conversion of any Securities shall be subject to adjustment from time to time in a manner and on terms as nearly equivalent as practicable to the provisions with respect to Common Stock contained in this Article Sixteen.

SIGNATURES

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

ASSEMBLY BIOSCIENCES, INC.

By: _____
Name:
Title:

[_____] ,
as Trustee

By: _____
Name:
Title:

EXHIBIT A

FORM OF REDEEMABLE OR NON-REDEEMABLE SENIOR SECURITY

[Face of Security]

[If the Holder of this Security (as indicated below) is The Depository Trust Company (“DTC”) or a nominee of DTC, this Security is a Global Security and the following two legends apply:

Unless this Security is presented by an authorized representative of The Depository Trust Company a New York corporation (“DTC”) to the Company or its agent for registration of transfer, conversion, exchange or payment, and such Security issued is registered in the name of Cede & Co., or in such other name as 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.

Unless and until this Security is exchanged in whole or in part for Securities in certificated form, this Security may not be transferred except as a whole by DTC to a nominee thereof or by a nominee thereof to DTC or another nominee of DTC or by DTC or any such nominee to a successor of DTC or a nominee of such successor.]

[If this Security is an Original Issue Discount Security, insert -- FOR PURPOSES OF SECTION 1273 and 1275 OF THE UNITED STATES INTERNAL REVENUE CODE, THE AMOUNT OF ORIGINAL ISSUE DISCOUNT ON THIS SECURITY IS ___% OF ITS PRINCIPAL AMOUNT, THE ISSUE DATE IS _____, 20__, AND THE YIELD TO MATURITY IS ___%. THE METHOD USED TO DETERMINE THE AMOUNT OF ORIGINAL ISSUE DISCOUNT APPLICABLE TO THE SHORT ACCRUAL PERIOD OF _____, 20__ TO _____, 20__, IS ___% OF THE PRINCIPAL AMOUNT OF THIS SECURITY.]

ASSEMBLY BIOSCIENCES, INC.

[Designation of Series]

No. _____

\$ _____

CUSIP No. _____

ASSEMBLY BIOSCIENCES, INC., a Delaware corporation (herein referred to as the “Company,” which term includes any successor corporation under the Indenture referred to on the reverse hereof), for value received, hereby promises to pay to _____ or registered assigns the principal sum of _____ Dollars on _____ (the “Stated Maturity Date”) [or insert date fixed for earlier redemption (the “Redemption Date,” and together with the Stated Maturity Date with respect to principal repayable on such date, the “Maturity Date.”)]

[If the Security is to bear interest prior to Maturity, insert -- and to pay interest thereon from _____ or from the most recent Interest Payment Date to which interest has been paid or duly provided for, semi-annually on _____ and _____ in each year (each, an "Interest Payment Date"), commencing _____, at the rate of ___% per annum, until the principal hereof is paid or duly provided for. The interest so payable, and punctually paid or duly provided for, on any Interest Payment Date will, as provided in such Indenture, be paid to the Holder in whose name this Security (or one or more Predecessor Securities) is registered at the close of business on the Regular Record Date for such interest, which shall be the _____ or _____ (whether or not a Business Day), as the case may be, next preceding such Interest Payment Date [at the office or agency of the Company maintained for such purpose; provided, however, that such interest may be paid, at the Company's option, by mailing a check to such Holder at its registered address or by transfer of funds to an account maintained by such Holder within the United States]. Any such interest not so punctually paid or duly provided for shall forthwith cease to be payable to the Holder on such Regular Record Date, and may be paid to the Holder in whose name this Security (or one or more Predecessor Securities) is registered at the close of business on a Special Record Date for the payment of such Defaulted Interest to be fixed by the Trustee, notice whereof shall be given to Holders of Securities of this series not less than 10 days prior to such Special Record Date, or may be paid at any time in any other lawful manner not inconsistent with the requirements of any over-the-counter market or securities exchange on which the Securities of this series may be quoted or listed, and upon such notice as may be required by such market or exchange, all as more fully provided in the Indenture. Interest will be computed on the basis of a 360-day year of twelve 30-day months.]

[If the Security is not to bear interest prior to Maturity, insert -- The principal of this Security shall not bear interest except in the case of a default in payment of principal upon acceleration, upon redemption or at the [Stated] Maturity Date and in such case the overdue principal of this Security shall bear interest at the rate of ___% per annum (to the extent that the payment of such interest shall be legally enforceable), which shall accrue from the date of such default in payment to the date payment of such principal has been made or duly provided for. Interest on any overdue principal shall be payable on demand. Any such interest on any overdue principal that is not so paid on demand shall bear interest at the rate of ___% per annum (to the extent that the payment of such interest shall be legally enforceable), which shall accrue from the date of such demand for payment to the date payment of such interest has been made or duly provided for, and such interest shall also be payable on demand.]

The principal of this Security payable on the Stated Maturity Date [or the principal of, premium or Make-Whole Amount, if any, and, if the Redemption Date is not an Interest Payment Date, interest on this Security payable on the Redemption Date] will be paid against presentation of this Security at the office or agency of the Company maintained for that purpose in _____, in such coin or currency of the United States of America as at the time of payment is legal tender for the payment of public and private debts.

Interest payable on this Security on any Interest Payment Date and on the [Stated] Maturity Date [or Redemption Date, as the case may be,] will include interest accrued from and including the next preceding Interest Payment Date in respect of which interest has been paid or duly provided for (or from and including _____, if no interest has been paid on this Security) to but excluding such Interest Payment Date or the [Stated] Maturity Date [or Redemption Date, as the case may be.] If any Interest Payment Date or the [Stated] Maturity Date or [Redemption Date] falls on a day that is not a Business Day, as defined below, principal, premium or Make-Whole Amount, if any, and/or interest payable with respect to such Interest Payment Date or [Stated] Maturity Date [or Redemption Date, as the case may be,] will be paid on the next succeeding Business Day with the same force and effect as if it were paid on the date such payment was due, and no interest shall accrue on the amount so payable for the period from and after such Interest Payment Date or [Stated] Maturity Date [or Redemption Date, as the case may be.] "Business Day" means any day, other than a Saturday or Sunday, that is neither a legal holiday nor a day on which banking institutions in The City of New York are required or authorized by law, regulation or executive order to close.

[If this Security is a Global Security, insert -- All payments of principal, premium or Make-Whole Amount, if any, and interest in respect of this Security will be made by the Company in immediately available funds.]

Reference is hereby made to the further provisions of this Security set forth on the reverse hereof, which further provisions shall for all purposes have the same effect as if set forth at this place.

Unless the Certificate of Authentication hereon has been executed by the Trustee by manual signature of one of its authorized signatories, this Security shall not be entitled to any benefit under the Indenture, or be valid or obligatory for any purpose.

IN WITNESS WHEREOF, the Company has caused this instrument to be duly executed.

Dated: _____

ASSEMBLY BIOSCIENCES, INC.

By: _____
Name:
Title:

Attest:

Secretary

ASSEMBLY BIOSCIENCES, INC.

This Security is one of a duly authorized issue of securities of the Company (herein called the "Securities"), issued and to be issued in one or more series under an

Indenture, dated as of _____, 20__ (herein called the "Indenture") between the Company and [_____] , as Trustee (herein called the "Trustee," which term includes any successor trustee under the Indenture with respect to the series of which this Security is a part), to which Indenture and all indentures supplemental thereto reference is hereby made for a statement of the respective rights, limitations of rights, duties and immunities thereunder of the Company, the Trustee and the Holders of the Securities, and of the terms upon which the Securities are, and are to be, authenticated and delivered. This Security is one of the duly authorized series of Securities designated on the face hereof (collectively, the "Securities"), [if applicable, insert -- and the aggregate principal amount of the Securities to be issued under such series is limited to \$_____ (except for Securities authenticated and delivered upon transfer of, or in exchange for, or in lieu of other Securities).] All terms used in this Security which are defined in the Indenture shall have the meanings assigned to them in the Indenture.

If an Event of Default, as defined in the Indenture, shall occur and be continuing, the principal of the Securities of this series may be declared due and payable in the manner and with the effect provided in the Indenture.

[If applicable, insert -- The Securities may not be redeemed prior to the Stated Maturity Date.]

[If applicable, insert -- The Securities are subject to redemption [(1) (If applicable, insert -- on _____ in any year commencing with the year _____ and ending with the year _____ through operation of the sinking fund for this series at a Redemption Price equal to 100% of the principal amount, and (2)] [If applicable, insert -- at any time [on or after _____], as a whole or in part, at the election of the Company, at the following Redemption Prices (expressed as percentages of the principal amount):

If redeemed on or before _____, ___% and if redeemed during the 12-month period beginning _____ of the years indicated at the Redemption Prices indicated below.

Year	Redemption Price	Year	Redemption Price

and thereafter at a Redemption Price equal to ___% of the principal amount, together in the case of any such redemption [If applicable, insert -- (whether through operation of the sinking fund or otherwise)] with accrued interest to the Redemption Date; provided, however, that installments of interest on this Security whose Stated Maturity is on or prior to such Redemption Date will be payable to the Holder of this Security, or one or more Predecessor Securities, of record at the close of business on the relevant Record Dates referred to on the face hereof, all as provided in the Indenture.]

[If applicable, insert -- The Securities are subject to redemption (1) on _____ in any year commencing with the year _____ and ending with the year _____ through operation of the sinking fund for this series at the Redemption Prices for redemption through operation of the sinking fund (expressed as percentages of the principal amount) set forth in the table below, and (2) at any time [on or after _____], as a whole or in part, at the election of the Company, at the Redemption Prices for redemption otherwise than through operation of the sinking fund (expressed as percentages of the principal amount) set forth in the table below: If redeemed during the 12-month period beginning _____ of the years indicated,

Year	Redemption Price for Redemption Through Operation of the Sinking Fund	Redemption Price for Redemption Otherwise Than Through Operation of the Sinking Fund

and thereafter at a Redemption Price equal to ___% of the principal amount, together in the case of any such redemption (whether through operation of the sinking fund or otherwise) with accrued interest to the Redemption Date; provided, however, that installments of interest on this Security whose Stated Maturity is on or prior to such Redemption Date will be payable to the Holder of this Security, or one or more Predecessor Securities, of record at the close of business on the relevant Record Dates referred to on the face hereof, all as provided in the Indenture.]

[If applicable, insert -- Notwithstanding the foregoing, the Company may not, prior to _____, redeem any Securities as contemplated by [Clause (2) of] the preceding paragraph as a part of, or in anticipation of, any refunding operation by the application, directly or indirectly, of moneys borrowed having an interest cost to the Company (calculated in accordance with generally accepted financial practice) of less than ___% per annum.]

[If applicable, insert -- The sinking fund for the Securities provides for the redemption on _____ in each year, beginning with the year _____ and ending with the year _____, of [not less than] \$_____] [(“mandatory sinking fund”) and not more than \$_____] aggregate principal amount of the Securities. [The Securities acquired or redeemed by the Company otherwise than through [mandatory] sinking fund payments may be credited against subsequent [mandatory] sinking fund payments otherwise required to be made in the [describe order] order in which they become due.]]

Notice of redemption will be given by mail to Holders of Securities, not less than 30 nor more than [60 days] prior to the Redemption Date, all as provided in the Indenture.

In the event of redemption of this Security in part only, a new Security or Securities for the unredeemed portion hereof shall be issued in the name of the Holder hereof upon the cancellation hereof.

[If applicable, insert conversion provisions set forth in any Board Resolution or indenture supplemental to the Indenture.]

The Indenture permits, with certain exceptions as therein provided, the amendment thereof and the modification of the rights and obligations of the Company and the rights of the Holders of the Securities under the Indenture at any time by the Company and the Trustee with the consent of the Holders of not less than a majority of the aggregate principal amount of all Securities issued under the Indenture at the time Outstanding and affected thereby. The Indenture also contains provisions permitting the Holders of not less than a majority of the aggregate principal amount of the Outstanding Securities, on behalf of the Holders of all such Securities, to waive compliance by the Company with certain provisions of the Indenture. Furthermore, provisions in the Indenture permit the Holders of not less than a majority of the aggregate principal amount, in certain instances, of the Outstanding Securities of any series to waive, on behalf of all of the Holders of Securities of such series, certain past defaults under the Indenture and their consequences. Any such consent or waiver by the Holder of this Security shall be conclusive and binding upon such Holder and upon all future Holders of this Security and other Securities issued upon the registration of transfer hereof or conversion or in exchange herefor or in lieu hereof, whether or not notation of such consent or waiver is made upon this Security.

No reference herein to the Indenture and no provision of this Security or of the Indenture shall alter or impair the obligation of the Company, which is absolute and unconditional, to pay the principal of (and premium or Make-Whole Amount, if any) and interest on this Security at the times, places and rate, and in the coin or currency, herein prescribed.

As provided in the Indenture and subject to certain limitations therein [and herein] set forth, the transfer of this Security is registrable in the Security Register of the Company upon surrender of this Security for registration of transfer at the office or agency of the Company in any place where the principal of (and premium or Make-Whole Amount, if any) and interest on this Security are payable, duly endorsed by, or accompanied by a written instrument of transfer in form satisfactory to the Company and the Security Registrar duly executed by, the Holder hereof or by his attorney duly authorized in writing, and thereupon one or more new Securities, of authorized denominations and for the same aggregate principal amount, will be issued to the designated transferee or transferees.

As provided in the Indenture and subject to certain limitations therein [and herein] set forth, this Security is exchangeable for a like aggregate principal amount of Securities of different authorized denominations but otherwise having the same terms and conditions, as requested by the Holder hereof surrendering the same.

The Securities of this series are issuable only in registered form [without coupons] in denominations of \$ _____ and any integral multiple thereof.

No service charge shall be made for any such registration of transfer or conversion or exchange, but the Company may require payment of a sum sufficient to cover any tax or other governmental charge payable in connection therewith,

Prior to due presentment of this Security for registration of transfer, the Company, the Trustee and any agent of the Company or the Trustee may treat the Person in whose name this Security is registered as the owner hereof for all purposes, whether or not this Security be overdue, and neither the Company, the Trustee nor any such agent shall be affected by notice to the contrary.

No recourse shall be had for the payment of the principal of or premium or Make-Whole Amount, if any, or the interest on this Security, or for any claim based hereon, or otherwise in respect hereof, or based on or in respect of the Indenture or any indenture supplemental thereto, against any past, present or future stockholder, employee, officer or director, as such, of the Company or of any successor, either directly or through the Company or any successor, whether by virtue of any constitution, statute or rule of law or by the enforcement of any assessment or penalty or otherwise, all such liability being, by the acceptance hereof and as part of the consideration for the issue hereof, expressly waived and released.

The Indenture and the Securities shall be governed by and construed in accordance with the laws of the State of New York applicable to agreements made and to be performed entirely in such State.

EXHIBIT B

FORMS OF CERTIFICATION

EXHIBIT B-1

FORM OF CERTIFICATE TO BE GIVEN BY PERSON ENTITLED TO RECEIVE BEARER SECURITY OR TO OBTAIN INTEREST PAYABLE PRIOR TO THE EXCHANGE DATE

CERTIFICATE

[Insert title or sufficient description of Securities to be delivered]

This is to certify that, as of the date hereof, and except as set forth below, the above-captioned Securities held by you for our account (i) are owned by person(s) that are not citizens or residents of the United States, domestic partnerships, domestic corporations or any estate or trust the income of which is subject to United States Federal income taxation regardless of its source ("United States person(s)"), (ii) are owned by United States person(s) that are (a) foreign branches of United States financial institutions (financial institutions, as defined in United States Treasury Regulations Section 2.165-12(c)(1)(v) are herein referred to as "financial institutions") purchasing for their own account or for resale, or (b) United States person(s) who acquired the Securities through foreign branches of United States financial institutions and who hold the Securities through such United States financial institutions on the date hereof (and in either case (a) or (b), each such United States financial institution hereby agrees, on its own behalf or through its agent, that you may advise Assembly Biosciences, Inc. or its agent that such financial institution will comply with the requirements of Section 165(j)(3)(A), (B) or (C) of the United States Internal Revenue Code of 1986, as amended, and the regulations thereunder), or (iii) are owned by United States or foreign financial institution(s) for purposes of resale during the restricted period (as defined in United States Treasury Regulations Section 1.163-5(c)(2)(i)(D)(7)), and, in addition, if the owner is a United States or foreign financial institution described in clause (iii) above (whether or not also described in clause (i) or (ii)), this is to further certify that such financial institution has not acquired the Securities for purposes of resale directly or indirectly to a United States person or to a person within the United States or its possessions.

As used herein, "United States" means the United States of America (including the States and the District of Columbia); and its "possessions" include Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, Wake Island and the Northern Mariana Islands.

We undertake to advise you promptly by tested telex or by telecopy on or prior to the date on which you intend to submit your certification relating to the above-captioned Securities held by you for our account in accordance with your operating procedures if any applicable statement herein is not correct on such date, and in the absence of any such notification it may be assumed that this certification applies as of such date.

This certificate excepts and does not relate to [U.S.\$] of such interest in the above-captioned Securities in respect of which we are not able to certify and as to which we understand an exchange for an interest in a permanent Global Security or an exchange for and delivery of definitive Securities (or, if relevant, collection of any interest) cannot be made until we do so certify.

We understand that this certificate may be required in connection with certain tax legislation in the United States. If administrative or legal proceedings are commenced or threatened in connection with which this certificate is or would be relevant, we irrevocably authorize you to produce this certificate or a copy thereof to any interested party in such proceedings.

Dated: _____

[To be dated no earlier than the 15th day prior to (i) the Exchange Date or (ii) the relevant Interest Payment Date occurring prior to the Exchange Date, as applicable]

[Name of Person Making Certification]

(Authorized Signature)

Name:

Title:

EXHIBIT B-2

FORM OF CERTIFICATE TO BE GIVEN BY EUROCLEAR AND CLEARSTREAM S.A. IN CONNECTION WITH THE EXCHANGE OF A PORTION OF A TEMPORARY GLOBAL SECURITY OR TO OBTAIN INTEREST PAYABLE PRIOR TO THE EXCHANGE DATE

CERTIFICATE

[Insert title or sufficient description of Securities to be delivered]

This is to certify that, based solely on written certifications that we have received in writing, by tested telex or by electronic transmission from each of the persons appearing in our records as persons entitled to a portion of the principal amount set forth below (our "Member Organizations") substantially in the form attached hereto, as of the date hereof, [U.S.\$] principal amount of the above-captioned Securities (i) is owned by person(s) that are not citizens or residents of the United States, domestic partnerships, domestic corporations or any estate or trust the income of which is subject to United States Federal income taxation regardless of its source ("United States person(s)"), (ii) is owned by United States person(s) that are (a) foreign branches of United States financial institutions (financial institutions, as defined in U.S. Treasury Regulations Section 1.165-12(c)(1)(v) are herein referred to as "financial institutions") purchasing for their own account or for resale, or (b) United States person(s) who acquired the Securities through foreign branches of United States financial institutions and who hold the Securities through such United States financial institutions on the date hereof (and in either case (a) or (b), each such financial institution has agreed, on its own behalf or through its agent, that we may advise Assembly Biosciences, Inc. or its agent that such financial institution will comply with the requirements of Section 165(j)(3)(A), (B) or (C) of the Internal Revenue Code of 1986, as amended, and the regulations thereunder), or (iii) is owned by United States or foreign financial institution(s) for purposes of resale during the restricted period (as defined in United States Treasury Regulations Section 1.163-5(c)(2)(i)(D)(7)), and, to the further effect, that financial institutions described in clause (iii) above (whether or not also described in clause (i) or (ii)) have certified that they have not acquired the Securities for purposes of resale directly or indirectly to a United States person or to a person within the United States or its possessions.

As used herein, "United States" means the United States of America (including the States and the District of Columbia); and its "Possessions" include Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, Wake Island and the Northern Mariana Islands.

We further certify that (i) we are not making available herewith for exchange (or, if relevant, collection of any interest) any portion of the temporary Global Security representing the above-captioned Securities excepted in the above-referenced certificates of Member Organizations and (ii) as of the date hereof we have not received any notification from any of our Member Organizations to the effect that the statements made by such Member Organizations with respect to any portion of the part submitted herewith for exchange (or, if relevant, collection of any interest) are no longer true and cannot be relied upon as of the date hereof.

We understand that this certification is required in connection with certain tax legislation in the United States. If administrative or legal proceedings are commenced or threatened in connection with which this certificate is or would be relevant, we irrevocably authorize you to produce this certificate or a copy thereof to any interested party in such proceedings.

Dated: _____

[To be dated no earlier than the Exchange Date or the relevant Interest Payment Date occurring prior to the Exchange Date, as applicable]

[_____, as Operator of the Euroclear System Clearstream Banking Luxembourg]

By: _____

Name:

Title:

ASSEMBLY BIOSCIENCES, INC.

TO

[_____]

Trustee

Indenture

Dated as of _____, 20__

Subordinated Debt Securities

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ASSEMBLY BIOSCIENCES, INC.

Reconciliation and tie between the Trust Indenture Act of 1939, as amended (the “Trust Indenture Act” or “TIA”) and the Indenture, dated as of _____, 20__.

Trust Indenture Act Section	Indenture Section
§ 310(a)(1)	607
(a)(2)	607
(b)	607, 608
§ 312(c)	701
§ 313(a)	702
(c)	702
§ 314(a)	703
(a)(4)	1008
(c)(1)	102
(c)(2)	102
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§ 315(b)	601
§ 316(a) (last sentence)	101(“Outstanding”)
(a)(1)(A)	502, 512
(a)(1)(B)	513
(b)	508
§ 317(a)(1)	503
(a)(2)	504
§ 318(a)	111
(c)	111

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

Attention should also be directed to Section 318(c) of the Trust Indenture Act, which provides that the provisions of Sections 310 to and including 317 of the Trust Indenture Act are a part of and govern every qualified indenture, whether or not physically contained therein.

INDENTURE, dated as of _____, 20__, between ASSEMBLY BIOSCIENCES, INC., a corporation organized under the laws of the State of Delaware (hereinafter called the "Company"), having its principal office at 99 Hudson Street, 5th Floor, New York, New York 10013, and [_____] , as Trustee hereunder (hereinafter called the "Trustee"), having a Corporate Trust Office at [_____].

RECITALS OF THE COMPANY

The Company deems it necessary to issue from time to time for its lawful purposes subordinated debt securities (hereinafter called the "Securities") evidencing its unsecured and subordinated indebtedness, and has duly authorized the execution and delivery of this Indenture to provide for the issuance from time to time of the Securities, to be issued in one or more Series as provided in this Indenture.

This Indenture is subject to the provisions of the Trust Indenture Act of 1939, as amended (the "Trust Indenture Act" or "TIA"), that are deemed to be incorporated into this Indenture and shall, to the extent applicable, be governed by such provisions.

All things necessary to make this Indenture a valid and legally binding agreement of the Company, in accordance with its terms, have been done.

NOW, THEREFORE, THIS INDENTURE WITNESSETH:

For and in consideration of the premises and the purchase of the Securities by the Holders thereof, it is mutually covenanted and agreed, for the equal and proportionate benefit of all Holders of the Securities or of a Series thereof, as follows:

ARTICLE ONE - DEFINITIONS AND OTHER PROVISIONS OF GENERAL APPLICATION

SECTION 101. Definitions. For all purposes of this Indenture, except as otherwise expressly provided or unless the context otherwise requires:

- (1) the terms defined in this Article have the meanings assigned to them in this Article, and include the plural as well as the singular;
 - (2) all other terms used herein which are defined in the TIA, either directly or by reference therein, have the meanings assigned to them therein, and the terms "cash transactions" and "self-liquidating paper," as used in TIA Section 311, shall have the meanings assigned to them in the rules of the Commission adopted under the TIA;
 - (3) all accounting terms not otherwise defined herein have the meanings assigned to them in accordance with GAAP;
 - (4) any reference to an "Article" or a "Section" refers to an Article or Section, as the case may be, of this Indenture; and
 - (5) the words "herein," "hereof" and "hereunder" and other words of similar import refer to this Indenture as a whole and not to any particular Article, Section or other subdivision.
-

“Act,” when used with respect to any Holder, has the meaning specified in Section 104.

“Affiliate” of any specified Person means any other Person directly or indirectly controlling or controlled by or under direct or indirect common control with such specified Person. For the purposes of this definition, “control” when used with respect to any specified Person means the power to direct the management and policies of such Person, directly or indirectly, whether through the ownership of voting securities, by contract or otherwise; and the terms “controlling” and “controlled” have meanings correlative to the foregoing.

“Authenticating Agent” means any Person authorized by the Trustee pursuant to Section 611 hereof to act on behalf of the Trustee to authenticate Securities of one or more Series.

“Authorized Newspaper” means a newspaper, printed in the English language or in an official language of the country of publication, customarily published on each Business Day, whether or not published on Saturdays, Sundays or holidays, and of general circulation in each place in connection with which the term is used or in the financial community of each such place. Whenever successive publications are required to be made in Authorized Newspapers, the successive publications may be made in the same or in different Authorized Newspapers in the same city meeting the foregoing requirements and in each case on any Business Day.

“Bankruptcy Law” has the meaning specified in Section 501.

“Bearer Security” means any Security established pursuant to Section 201 which is payable to the bearer.

“Board of Directors” when used with reference to the Company, means the board of directors of the Company, or any committee of that board duly authorized to act hereunder, or any director or directors and/or officer or officers of the Company, to whom the board or committee shall have duly delegated its authority.

“Board Resolution” means a copy of (1) a resolution certified by the Secretary or an Assistant Secretary of the Company to have been duly adopted by the Board of Directors or a duly authorized committee of the Board of Directors and to be in full force and effect on the date of such certification, or (2) a certificate signed by the director or directors and/or officer or officers to whom the Board of Directors shall have duly delegated its authority, together with a resolution certified by the Secretary or an Assistant Secretary of the Company to have been duly adopted by the Board of Directors and to be in full force and effect on the date of such certification authorizing such delegation, and, in each case, delivered to the Trustee.

“Business Day,” when used with respect to any Place of Payment or any other particular location referred to in this Indenture or in the Securities, means, unless otherwise specified with respect to any Securities issued pursuant to Section 301, any day, other than a Saturday or Sunday, that is neither a legal holiday nor a day on which banking institutions in that Place of Payment or particular location are authorized or required by law, regulation or executive order to close.

“Capital Stock” means, with respect to any Person, any capital stock (including preferred stock), shares, interests, participations or other ownership interests (however designated) of such Person and any rights (other than debt securities convertible into or exchangeable for corporate stock), warrants or options to purchase any thereof.

“Clearstream” means Clearstream Banking Luxembourg, société anonyme, or its successor.

“Closing Price” means the closing price of a share of Common Stock of the Company as reported on the NASDAQ Capital Market.

“Code” means the Internal Revenue Code of 1986, as amended, and the regulations thereunder.

“Commission” means the Securities and Exchange Commission, as from time to time constituted, created under the Exchange Act, or, if at any time after execution of this instrument such Commission is not existing and performing the duties now assigned to it under the Trust Indenture Act, then the body performing such duties on such date.

“Common Depository” has the meaning specified in Section 304.

“Common Stock” means, with respect to any Person, all shares of capital stock issued by such Person other than Preferred Stock.

“Company” means the Person named as the “Company” in the first paragraph of this Indenture until a successor corporation shall have become such pursuant to the applicable provisions of this Indenture, and thereafter “Company” shall mean such successor corporation.

“Company Request” and “Company Order” mean, respectively, a written request or order signed in the name of the Company by its Chairman of the Board, the Chief Executive Officer, the President, or a Vice President, and by its Treasurer, an Assistant Treasurer, the Secretary or an Assistant Secretary, of the Company, and delivered to the Trustee.

“Constituent Person” has the meaning specified in Section 1711.

“Conversion Event” means the cessation of use of (i) a Foreign Currency both by the government of the country which issued such currency and for the settlement of transactions by a central bank or other public institutions of or within the international banking community, (ii) the ECU both within the European Monetary System and for the settlement of transactions by public institutions of or within the European Communities or (iii) any currency unit (or composite currency) other than the ECU for the purposes for which it was established.

“Conversion Price” has the meaning specified in Section 1701.

“Corporate Trust Office” means the office of the Trustee at which, at any particular time, its corporate trust business shall be principally administered, which office at the date hereof is located at [_____].

“corporation” includes corporations, associations, companies and business trusts.

“coupon” means any interest coupon appertaining to a Bearer Security.

“Covenant Defeasance” has the meaning specified in Section 1403.

“Custodian” has the meaning specified in Section 501.

“Defaulted Interest” has the meaning specified in Section 307.

“Defeasance” has the meaning specified in Section 1402.

“Distribution Record Date” has the meaning specified in Section 1711.

“Dividend Record Date” has the meaning specified in Section 1704.

“Dollar” or the sign “\$” means a dollar or other equivalent unit in such coin or currency of the United States of America as at the time of payment is legal tender for the payment of public and private debts.

“DTC” means The Depository Trust Company and any successor to DTC in its capacity as depository for any Securities.

“ECU” means the European Currency Unit as defined and revised from time to time by the Council of the European Communities.

“Euroclear” means the operator of the Euroclear System.

“European Communities” means the European Economic Community, the European Coal and Steel Community and the European Atomic Energy Community.

“European Monetary System” means the European Monetary System established by the Resolution of December 5, 1978 of the Council of the European Communities.

“Event of Default” has the meaning specified in Article Five.

“Exchange Act” means the Securities Exchange Act of 1934, as amended, as in force at the date as of which this Indenture was executed; provided, however, that in the event the Exchange Act is amended after such date, “Exchange Act” means to the extent required by any such amendment, the Exchange Act as so amended.

“Exchange Date” has the meaning specified in Section 304.

“FINRA” means the Financial Industry Regulatory Authority, Inc.

“Foreign Currency” means any currency, currency unit or composite currency, including, without limitation, the ECU issued by the government of one or more countries other than the United States of America or by any recognized confederation or association of such governments.

“GAAP” means, except as otherwise provided herein, generally accepted accounting principles, as in effect from time to time, as used in the United States applied on a consistent basis.

“Global Security” means a Security evidencing all or a part of a series of Securities issued to and registered in the name of the depository for such series, or its nominee, in accordance with Section 305, and bearing the legend prescribed in Section 203.

“Government Obligations” means (i) securities which are (A) direct obligations of the United States of America or the government which issued the Foreign Currency in which the Securities of a particular series are payable, for the payment of which its full faith and credit is pledged or (B) obligations of a Person controlled or supervised by and acting as an agency or instrumentality of the United States of America or such government which issued the Foreign Currency in which the Securities of such series are payable, the payment of which is unconditionally guaranteed as a full faith and credit obligation by the United States of America or such other government, which, in either case, are not callable or redeemable at the option of the issuer thereof, and (ii) a depository receipt issued by a bank or trust company as custodian with respect to any such Government Obligation or a specific payment of interest on or principal of any such 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 Government Obligation or the specific payment of interest on or principal of the Government Obligation evidenced by such depository receipt.

“Guaranty” by any Person means any Obligation, contingent or otherwise, of such Person guaranteeing any Indebtedness of any other Person (the “primary obligor”) in any manner, whether directly or indirectly, and including, without limitation, every Obligation of such Person (i) to purchase or pay (or advance or supply funds for the purchase or payment of) such Indebtedness or to purchase (or to advance or supply funds for the purchase of) any security for the payment of such Indebtedness, (ii) to purchase property, securities or services for the purpose of assuring the holder of such Indebtedness of the payment of such Indebtedness or (iii) to maintain working capital, equity capital or other financial statement condition or liquidity of the primary obligor so as to enable the primary obligor to pay such Indebtedness; provided, however, that a Guaranty by any Person shall not include endorsements by such Person for collection or deposit, in either case in the ordinary course of business. The terms “Guaranteed,” “Guaranteeing” and “Guarantor” shall have meanings correlative to the foregoing.

“Holder” means, in the case of a Registered Security, the Person in whose name a Security is registered in the Security Register and, in the case of a Bearer Security, the bearer thereof and, when used with respect to any coupon, shall mean the bearer thereof.

“Indebtedness” means, with respect to any Person, without duplication, (i) any Obligation of such Person relating to any indebtedness of such Person (A) for borrowed money (whether or not the recourse of the lender is to the whole of the assets, of such person or only to a portion thereof), (B) evidenced by notes, debentures or similar instruments (including purchase money obligations) given in connection with the acquisition of any property or assets (other than trade accounts payable for inventory or similar property acquired in the ordinary course of business), including securities, for the payment of which such Person is liable, directly or indirectly, or the payment of which is secured by a lien, charge or encumbrance on property or assets of such Person, (C) for goods, materials or services purchased in the ordinary course of business (other than trade accounts payable arising in the ordinary course of business), (D) with respect to letters of credit or bankers acceptances issued for the account of such Person or performance, surety or similar bonds, (E) for the payment of money relating to a capitalized lease Obligation or (F) under interest rate swaps, caps or similar agreements and foreign exchange contracts, currency swaps or similar agreements; (ii) any liability of others of the kind described in the preceding clause (i), which such Person has Guaranteed or which is otherwise its legal liability; and (iii) any and all deferrals, renewals, extensions and refunding of, or amendments, modifications or supplements to, any liability of the kind described in any of the preceding clauses (i) or (ii).

“Indenture” means this instrument as originally executed or as it may be supplemented or amended from time to time by one or more indentures supplemental hereto entered into pursuant to the applicable provisions hereof, and shall include the terms of particular series of Securities established as contemplated by Section 301; provided, however, that, if at any time more than one Person is acting as Trustee under this instrument, “Indenture” shall mean, with respect to any one or more series of Securities for which such Person is Trustee, this instrument as originally executed or as it may be supplemented or amended from time to time by one or more indentures supplemental hereto entered into pursuant to the applicable provisions hereof and shall include the terms of the or those particular series of Securities for which such Person is Trustee established as contemplated by Section 301, exclusive, however, of any provisions or terms which relate solely to other series of Securities for which such Person is Trustee, regardless of when such terms or provisions were adopted, and exclusive of any provisions or terms adopted by means of one or more indentures supplemental hereto executed and delivered after such Person had become such Trustee but to which such Person, as such Trustee, was not a party.

“Indexed Security” means a Security the terms of which provide that the principal amount thereof payable at Stated Maturity may be more or less than the principal face amount thereof at original issuance.

“Interest,” when used with respect to an Original Issue Discount Security which by its terms bears interest only after Maturity, shall mean interest payable after Maturity.

“Interest Payment Date,” when used with respect to any Security, means the Stated Maturity of an installment of interest on such Security.

“Make-Whole Amount,” when used with respect to any Security, means the amount, if any, in addition to principal (and accrued interest thereon, if any) which is required by a Security, under the terms and conditions specified therein or as otherwise specified as contemplated by Section 301, to be paid by the Company to the Holder thereof in connection with any optional redemption or accelerated payment of such Security.

“mandatory sinking fund payment” has the meaning specified in Section 1201.

“Market Value of the Distribution” has the meaning specified in Section 1704.

“Maturity,” when used with respect to any Security, means the date on which the principal (or, if the context so requires, in the case of an Original Issue Discount Security, or lesser amount or, in the case of an Indexed Security, an amount determined in accordance with the specified terms of that Security) of such Security or an installment of principal becomes due and payable as therein or herein provided, whether at the Stated Maturity or by declaration of acceleration, notice of redemption, notice of option to elect repayment or otherwise.

“Obligation” of any Person with respect to any specified Indebtedness means any obligation of such Person to pay principal, premium, interest (including interest accruing on or after the filing of any petition in bankruptcy or for reorganization relating to such Person, whether or not a claim for such post-petition interest is allowed in such proceeding), penalties, reimbursement or indemnification amounts, fees, expenses or other amounts relating to such Indebtedness.

“Officers’ Certificate” means a certificate signed by the Chairman of the Board of Directors, the Chief Executive Officer, the President, or a Vice President (whether or not designated by a number or word or words added before or after the title “Vice President”), and by the Treasurer, an Assistant Treasurer, the Secretary or an Assistant Secretary of the Company, and delivered to the Trustee.

“Opinion of Counsel” means a written opinion of counsel, who may be counsel for the Company or who may be an employee of or other counsel for the Company.

“optional sinking fund payment” has the meaning specified in Section 1201.

“Original Issue Discount Security” means any Security which provides for an amount (excluding any amounts attributable to accrued but unpaid interest thereon) less than the principal amount thereof to be due and payable upon a declaration of acceleration of the Maturity thereof pursuant to Section 502.

“Outstanding,” when used with respect to Securities, means, as of the date of determination, all Securities theretofore authenticated and delivered under this Indenture, except:

- (i) Securities theretofore canceled by the Trustee or delivered to the Trustee for cancellation;
- (ii) Securities, or portions thereof, for whose payment or redemption (including repayment at the option of the Holder) money in the necessary amount has been theretofore deposited with the Trustee or any Paying Agent (other than the Company) in trust or set aside and segregated in trust by the Company (if the Company shall act as its own Paying Agent) for the Holders of such Securities and any coupons appertaining thereto; provided, however, that, if such Securities are to be redeemed, notice of such redemption has been duly given pursuant to this Indenture or provision therefor satisfactory to the Trustee has been made;
- (iii) Securities, except to the extent provided in Sections 1402 and 1403, with respect to which the Company has effected Defeasance and/or Covenant Defeasance as provided in Article Fourteen; and

(iv) Securities which have been paid pursuant to Section 306 or in exchange for or in lieu of which other Securities have been authenticated and delivered pursuant to this Indenture, other than any such Securities in respect of which there shall have been presented to the Trustee proof satisfactory to it that such Securities are held by a bona fide purchaser in whose hands such Securities are valid obligations of the Company.

provided, however, that in determining whether the Holders of the requisite principal amount of the Outstanding Securities have given any request, demand, authorization, direction, notice, consent or waiver hereunder or are present at a meeting of Holders for quorum purposes, and for the purpose of making the calculations required by TIA Section 313, (i) the principal amount of an Original Issue Discount Security that may be counted in making such determination or calculation and that shall be deemed to be Outstanding for such purpose shall be equal to the amount of principal thereof that would be (or shall have been declared to be) due and payable, at the time of such determination, upon a declaration of acceleration of the maturity thereof pursuant to Section 502, (ii) the principal amount of any Security denominated in a Foreign Currency that may be counted in making such determination or calculation and that shall be deemed Outstanding for such purpose shall be equal to the Dollar equivalent, determined pursuant to Section 301 as of the date such Security is originally issued by the Company, of the principal amount (or, in the case of an Original Issue Discount Security, the Dollar equivalent as of such date of original issuance of the amount determined as provided in clause (i) above) of such Security, (iii) the principal amount of any Indexed Security that may be counted in making such determination or calculation and that shall be deemed outstanding for such purpose shall be equal to the principal face amount of such Indexed Security at original issuance, unless otherwise provided with respect to such Security pursuant to Section 301, and (iv) Securities owned by the Company or any other obligor upon the Securities or any Affiliate of the Company or of such other obligor shall be disregarded and deemed not to be Outstanding, except that, in determining whether the Trustee shall be protected in making such calculation or in relying upon any such request, demand, authorization, direction, notice, consent or waiver, only Securities which a Responsible Officer of the Trustee actually knows to be so owned shall be so disregarded. Securities owned as provided in clause (iv) above which have been pledged in good faith may be regarded as Outstanding if the pledgee establishes to the satisfaction of the Trustee the pledgee's right so to act with respect to such Securities and that the pledgee is not the Company or any other obligor upon the Securities or any Affiliate of the Company or of such other obligor. In case of a dispute as to such right, the advice of counsel shall be full protection in respect of any decision made by the Trustee in accordance with such advice.

“Paying Agent” means any Person authorized by the Company to pay the principal of (and premium or Make-Whole Amount, if any) or interest on any Securities or coupons on behalf of the Company.

“Payment Blockage Notice” and “Payment Blockage Period” have the respective meanings specified in Section 1603.

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

“Place of Payment,” when used with respect to the Securities of or within any series, means the place or places where the principal of (and premium or Make-Whole Amount, if any) and interest on such Securities are payable as specified as contemplated by Sections 301 and 1002.

“Predecessor Security” of any particular Security means every previous Security evidencing all or a portion of the same debt as that evidenced by such particular Security; and, for the purposes of this definition, any Security authenticated and delivered under Section 306 in exchange for or in lieu of a mutilated, destroyed, lost or stolen Security or a Security to which a mutilated, destroyed, lost or stolen coupon appertains shall be deemed to evidence the same debt as the mutilated, destroyed, lost or stolen Security or the Security to which the mutilated, destroyed, lost or stolen coupon appertains.

“Preferred Stock” means, with respect to any Person, all capital stock issued by such Person that is entitled to a preference or priority over any other capital stock issued by such Person with respect to any distribution of such Person’s assets, whether by dividend or upon any voluntary or involuntary liquidation, dissolution or winding up.

“Proceeding” has the meaning specified in Section 1602.

“Redemption Date,” when used with respect to any Security to be redeemed, in whole or in part, means the date fixed for such redemption by or pursuant to this Indenture.

“Redemption Price,” when used with respect to any Security to be redeemed, means the price specified in the related Officers’ Certificate or supplemental indenture contemplated by and pursuant to Section 301, at which it is to be redeemed pursuant to this Indenture.

“Reference Date” has the meaning specified in Section 1704.

“Registered Security” shall mean any Security which is registered in the Security Register.

“Regular Record Date” for the interest payable on any Interest Payment Date on the Registered Securities of or within any series means the date specified for that purpose as contemplated by Section 301, whether or not a Business Day.

“Repayment Date” means, when used with respect to any Security to be repaid at the option of the Holder, the date fixed for such repayment by or pursuant to this Indenture.

“Repayment Price” means, when used with respect to any Security to be repaid at the option of the Holder, the price at which it is to be repaid by or pursuant to this Indenture.

“Responsible Officer,” when used with respect to the Trustee, means any Vice President (whether or not designated by a number or a word or words added before or after the title “Vice President”), Assistant Vice President, Trust Officer or Assistant Trust Officer working in its Corporate Trust Department, or any other officer of the Trustee customarily performing functions similar to those performed by any of the above designated officers and working in its Corporate Trust Department, and also means, with respect to a particular corporate trust matter, any other officer to whom such matter is referred because of such officer’s knowledge and familiarity with the particular subject and who shall have direct responsibility for the administration of this Indenture.

“Rights” has the meaning specified in Section 1704.

“Rights Record Date” has the meaning specified in Section 1704.

“Securities Payment” has the meaning specified in Section 1602.

“Security” and “Securities” has the meaning stated in the first recital of this Indenture and, more particularly, means any Security or Securities authenticated and delivered under this Indenture; provided, however, that, if at any time there is more than one Person acting as Trustee under this Indenture, “Securities” with respect to the Indenture as to which such Person is Trustee shall have the meaning stated in the first recital of this Indenture and shall more particularly mean Securities authenticated and delivered under this Indenture, exclusive, however, of Securities of any series as to which such Person is not Trustee.

“Security Register” and “Security Registrar” have the respective meanings specified in Section 305.

“Senior Indebtedness” means Indebtedness of the Company, whether outstanding on the date of this Indenture or thereafter created, incurred, assumed or guaranteed by the Company, other than the following: (1) any Indebtedness as to which, in the instrument evidencing such Indebtedness or pursuant to which such Indebtedness was issued, it is expressly provided that such Indebtedness is subordinate in right of payment to all Indebtedness of the Company not expressly subordinated to such Indebtedness; (2) any Indebtedness which by its terms refers explicitly to the Securities and states that such Indebtedness shall not be senior, shall be pari passu or shall be subordinated in right of payment to the Securities; and (3) with respect to any series of Securities, any Indebtedness of the Company evidenced by Securities of the same or of another series. Notwithstanding anything to the contrary in the foregoing, Senior Indebtedness shall not include: (a) Indebtedness of or amounts owed by the Company for compensation to employees, or for goods, materials or services purchased in the ordinary course of business, or (b) Indebtedness of the Company to a Subsidiary of the Company.

A “Series” of Securities means all securities denoted as part of the same series authorized by or pursuant to a particular Board Resolution.

“Short Term Rights” has the meaning specified in Section 1704.

“Significant Subsidiary” means any Subsidiary which is a “significant subsidiary” (as defined in Article I, Rule 1-02 of Regulation S-X, promulgated under the Securities Act of 1933, as amended) of the Company.

“Special Record Date” for the payment of any Defaulted Interest on the Registered Securities of or within any series means a date fixed by the Company pursuant to Section 307.

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

“Subsidiary” means, with respect to any Person, any corporation, limited liability company, partnership or other entity of which a majority of (i) the voting power of the voting equity securities or (ii) the outstanding equity interests are owned, directly or indirectly, by such Person. For the purposes of this definition, “voting equity securities” means equity securities having voting power for the election of directors, whether at all times or only so long as no senior class of security has such voting power by reason of any contingency.

“Trading Day” means any day on which the NASDAQ Capital Market is open for business.

“Trigger Events” has the meaning specified in Section 1704.

“Trust Indenture Act” or “TIA” means the Trust Indenture Act of 1939, as amended and as in force at the date as of which this Indenture was executed, except as provided in Section 905.

“Trustee” means the Person named as the “Trustee” in the first paragraph of this Indenture 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; provided, however, that if at any time there is more than one such Person, “Trustee” as used with respect to the Securities of any series shall mean only the Trustee with respect to Securities of that series.

“Unadjusted Distribution” has the meaning specified in Section 1704.

“United States” means, unless otherwise specified with respect to any Securities pursuant to Section 301, the United States of America (including the states and the District of Columbia), its territories, its possessions and other areas subject to its jurisdiction.

“United States Person” means, unless otherwise specified with respect to any Securities pursuant to Section 301, an individual who is a citizen or resident of the United States, a corporation, partnership or other entity created or organized in or under the laws of the United States or an estate or trust the income of which is subject to United States Federal income taxation regardless of its source.

“Yield to Maturity” means the yield to maturity, computed at the time of issuance of a Security (or, if applicable, at the most recent redetermination of interest on such Security) and as set forth in such Security in accordance with generally accepted United States bond yield computation principles.

SECTION 102. Compliance Certificates and Opinions. Upon any application or request by the Company to the Trustee to take any action under any provision of this Indenture, the Company shall furnish to the Trustee an Officers’ Certificate stating that all conditions precedent, if any, provided for in this Indenture relating to the proposed action have been complied with and an Opinion of Counsel stating that in the opinion of such counsel all such conditions precedent, if any, have been complied with, except that in the case of any such application or request as to which the furnishing of such documents is specifically required by any provision of this Indenture relating to such particular application or request, no additional certificate or opinion need be furnished.

Every certificate or opinion with respect to compliance with a condition or covenant provided for in this Indenture (including certificates delivered pursuant to Section 1008) shall include:

- (1) a statement that each individual signing such certificate or opinion has read such condition or covenant and the definitions herein relating thereto;
- (2) 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;
- (3) a statement that, in the opinion of each such individual, he has made such examination or investigation as is necessary to enable him to express an informed opinion as to whether or not such condition or covenant has been complied with; and
- (4) a statement as to whether, in the opinion of each such individual, such condition or covenant has been complied with.

SECTION 103. Form of Documents Delivered to Trustee. In any case where several matters are required to be certified by, or covered by an opinion of, any specified Person, it is not necessary that all such matters be certified by, or covered by the opinion of, only one such Person, or that they be so certified or covered by only one document, but one such Person may certify or give an opinion with respect to some matters and one or more other such Persons as to other matters, and any such Person may certify or give an opinion as to such matters in one or several documents.

Any certificate or opinion of an officer of the Company may be based, insofar as it relates to legal matters, upon an Opinion of Counsel, or a certificate or representations by counsel, unless such officer knows, or in the exercise of reasonable care should know, that the opinion, certificate or representations with respect to the matters upon which his certificate or opinion is based are erroneous. Any such Opinion of Counsel or certificate or representations may be based, insofar as it relates to factual matters, upon a certificate or opinion of, or representations by, an officer or officers of the Company stating that the information as to such factual matters is in the possession of the Company, unless such counsel knows, or in the exercise of reasonable care should know, that the certificate or opinion or representations with respect to such matters are erroneous.

Where any Person is required to make, give or execute two or more applications, requests, consents, certificates, statements, opinions or other instruments under this Indenture, they may, but need not, be consolidated and form one instrument.

SECTION 104. Acts of Holders.

(a) Any request, demand, authorization, direction, notice, consent, waiver or other action provided by this Indenture to be given or taken by Holders of the Outstanding Securities of all series or one or more series, as the case may be, may be embodied in and evidenced by one or more instruments of substantially similar tenor signed by such Holders in person or by agents duly appointed in writing. If Securities of a series are issuable as Bearer Securities, any request, demand, authorization, direction, notice, consent, waiver or other action provided by this Indenture to be given or taken by Holders of Securities of such series may, alternatively, be embodied in and evidenced by the record of Holders of Securities of such series voting in favor thereof, either in person or by proxies duly appointed in writing, at any meeting of Holders of Securities of such series duly called and held in accordance with the provisions of Article Fifteen, or a combination of such instruments and any such record. Except as herein otherwise expressly provided, such action shall become effective when such instrument or instruments or record or both are delivered to the Trustee and, where it is hereby expressly required, to the Company. Such instrument or instruments and any such record (and the action embodied therein and evidenced thereby) are herein sometimes referred to as the "Act" of the Holders signing such instrument or instruments or so voting at any such meeting. Proof of execution of any such instrument or of a writing appointing any such agent, or of the holding by any Person of a Security, shall be sufficient for any purpose of this Indenture and conclusive in favor of the Trustee and the Company and any agent of the Trustee or the Company, if made in the manner provided in this Section. The record of any meeting of Holders of Securities shall be proved in the manner provided in Section 1506.

(b) The fact and date of the execution by any Person of any such instrument or writing may be proved by the affidavit of a witness of such execution or by a certificate of a notary public or other officer authorized by law to take acknowledgments of deeds, certifying that the individual signing such instrument or writing acknowledged to him the execution thereof. Where such execution is by a signer acting in a capacity other than his individual capacity, such certificate or affidavit shall also constitute sufficient proof of his authority. The fact and date of the execution of any such instrument or writing, or the authority of the Person executing the same, may also be proved in any other reasonable manner which the Trustee deems sufficient.

(c) The ownership of Registered Securities shall be proved by the Security Register. As to any matter relating to beneficial ownership interests in any Global Security, the appropriate depository's records shall be dispositive for purposes of this Indenture.

(d) The ownership of Bearer Securities may be proved by the production of such Bearer Securities or by a certificate executed, as depository, by any trust company, bank, banker or other depository, wherever situated, if such certificate shall be deemed by the Trustee to be satisfactory, showing that at the date therein mentioned such Person had on deposit with such depository, or exhibited to it, the Bearer Securities therein described; or such facts may be proved by the certificate or affidavit of the Person holding such Bearer Securities, if such certificate or affidavit is deemed by the Trustee to be satisfactory. The Trustee and the Company may assume that such ownership of any Bearer Security continues until (1) another certificate or affidavit bearing a later date issued in respect of the same Bearer Security is produced, or (2) such Bearer Security is produced to the Trustee by some other Person, or (3) such Bearer Security is surrendered in exchange for a Registered Security, or (4) such Bearer Security is no longer Outstanding. The ownership of Bearer Securities may also be proved in any other manner which the Trustee deems sufficient.

(e) If the Company shall solicit from the Holders of Registered Securities any request, demand, authorization, direction, notice, consent, waiver or other Act, the Company may, at its option, in or pursuant to a Board Resolution, fix in advance a record date for the determination of Holders entitled to give such request, demand, authorization, direction, notice, consent, waiver or other Act, but the Company shall have no obligation to do so. Notwithstanding TIA Section 316(c), such record date shall be the record date specified in or pursuant to such Board Resolution, which shall be a date not earlier than the date 30 days prior to the first solicitation of Holders generally in connection therewith and not later than the date such solicitation is completed. If such a record date is fixed, such request, demand, authorization, direction, notice, consent, waiver or other Act may be given before or after such record date, but only the Holders of record at the close of business on such record date shall be deemed to be Holders for the purposes of determining whether Holders of the requisite proportion of Outstanding Securities have authorized or agreed or consented to such request, demand, authorization, direction, notice, consent, waiver or other Act, and for that purpose the Outstanding Securities shall be computed as of such record date; provided that no such authorization, agreement or consent by the Holders on such record date shall be deemed effective unless it shall become effective pursuant to the provisions of this Indenture not later than eleven months after the record date.

(f) Any request, demand, authorization, direction, notice, consent, waiver or other Act of the Holder of any Security shall bind every future Holder of the same Security and the Holder of every Security issued upon the registration of transfer thereof or upon the conversion thereof or in exchange thereof or in lieu thereof in respect of anything done, omitted or suffered to be done by the Trustee, any Security Registrar, any Paying Agent, any Authenticating Agent or the Company in reliance thereon, whether or not notation of such action is made upon such Security.

SECTION 105. Notices, etc., to Trustee and Company. Any request, demand, authorization, direction, notice, consent, waiver or Act of Holders or other document provided or permitted by this Indenture to be made upon, given or furnished to, or filed with,

(1) the Trustee by any Holder or by the Company shall be sufficient for every purpose hereunder if made, given, furnished or filed in writing to or with the Trustee at [_____] or at any other address previously furnished in writing to the Company by the Trustee, Attention: [____]; or

(2) the Company by the Trustee or by any Holder shall be sufficient for every purpose hereunder (unless otherwise herein expressly provided) if in writing and mailed, first-class postage prepaid, to the Company addressed to it at the address of its principal office specified in the first paragraph of this Indenture or at any other address previously furnished in writing to the Trustee by the Company, Attention: [____]; or

(3) either the Trustee or the Company, by the other party or by any Holder, shall be sufficient for every purpose hereunder if given by facsimile transmission, receipt confirmed by telephone followed by an original copy delivered by guaranteed overnight courier; if to the Trustee at facsimile number [____]; and if to the Company at facsimile number [_____].

SECTION 106. Notice to Holders; Waiver. Where this Indenture provides for notice of any event to Holders of Registered Securities by the Company or the Trustee, such notice shall be sufficiently given (unless otherwise herein expressly provided) if in writing and mailed, first-class postage prepaid, to each such Holder affected by such event, at his address as it appears in the Security Register, not later than the latest date, if any, and not earlier than the earliest date, if any, prescribed for the giving of such notice. In any case where notice to Holders of Registered Securities is given by mail, neither the failure to mail such notice, nor any defect in any notice so mailed, to any particular Holder shall affect the sufficiency of such notice with respect to other Holders of Registered Securities or the sufficiency of any notice to Holders of Bearer Securities given as provided herein. Any notice mailed to a Holder in the manner herein prescribed shall be conclusively deemed to have been received by such Holder, whether or not such Holder actually receives such notice.

If by reason of the suspension of or irregularities in regular mail service or by reason of any other cause it shall be impracticable to give such notice by mail, then such notification to Holders of Registered Securities as shall be made with the approval of the Trustee shall constitute a sufficient notification to such Holders for every purpose hereunder.

Except as otherwise expressly provided herein or otherwise specified with respect to any Securities pursuant to Section 301, where this Indenture provides for notice to Holders of Bearer Securities of any event, such notice shall be sufficiently given if published in an Authorized Newspaper in The City of New York and in such other city or cities as may be specified in such Securities on a Business Day, such publication to be not later than the latest date, if any, and not earlier than the earliest date, if any, prescribed for the giving of such notice. Any such notice shall be deemed to have been given on the date of such publication or, if published more than once, on the date of the first such publication.

If by reason of the suspension of publication of any Authorized Newspaper or Authorized Newspapers or by reason of any other cause it shall be impracticable to publish any notice to Holders of Bearer Securities as provided above, then such notification to Holders of Bearer Securities as shall be given with the approval of the Trustee shall constitute sufficient notice to such Holders for every purpose hereunder. Neither the failure to give notice by publication to any particular Holder of Bearer Securities as provided above, nor any defect in any notice so published, shall affect the sufficiency of such notice with respect to other Holders of Bearer Securities or the sufficiency of any notice to Holders of Registered Securities given as provided herein.

Any request, demand, authorization, direction, notice, consent or waiver required or permitted under this Indenture shall be in the English language, except that any published notice may be in an official language of the country of publication.

Where this Indenture provides for notice in any manner, such notice may be waived in writing by the Person entitled to receive such notice, either before or after the event, and such waiver shall be the equivalent of such notice. Waivers of notice by Holders shall be filed with the Trustee, but such filing shall not be a condition precedent to the validity of any action taken in reliance upon such waiver.

SECTION 107. Counterparts; Effect of Headings and Table of Contents. This Indenture may be executed in any number of counterparts, each of which so executed shall be deemed to be an original, but all such counterparts shall together constitute but one and the same Indenture. The Article and Section headings herein and the Table of Contents are for convenience only and shall not affect the construction hereof.

SECTION 108. Successors and Assigns. All covenants and agreements in this Indenture by the Company shall bind its successors and assigns, whether so expressed or not.

SECTION 109. Severability Clause. In case any provision in this Indenture or in any Security or coupon shall be held invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

SECTION 110. Benefits of Indenture. Nothing in this Indenture or in the Securities or coupons, if any, express or implied, shall give to any Person, other than the parties hereto, any Security Registrar, any Paying Agent, any Authenticating Agent and their successors hereunder and the Holders any benefit or any legal or equitable right, remedy or claim under this Indenture.

SECTION 111. Governing Law. This Indenture and the Securities and coupons shall be governed by and construed in accordance with the laws of the State of New York. This Indenture is subject to the provisions of the TIA that are required to be part of this Indenture and shall, to the extent applicable, be governed by such provisions.

SECTION 112. Legal Holidays. In any case where any Interest Payment Date, Redemption Date, Repayment Date, sinking fund payment date, Stated Maturity or Maturity of any Security or the last date on which a Holder has the right to convert or exchange a Security shall not be a Business Day at any Place of Payment, then (notwithstanding any other provision of this Indenture or any Security or coupon other than a provision in the Securities of any series which specifically states that such provision shall apply in lieu hereof), payment of interest or principal (and premium or Make-Whole Amount, if any) or conversion or exchange of such Security need not be made at such Place of Payment on such date, but (except as otherwise provided in the supplemental indenture with respect to such Security) may be made on the next succeeding Business Day at such Place of Payment with the same force and effect as if made on the Interest Payment Date, Redemption Date, Repayment Date or sinking fund payment date, or at the Stated Maturity or Maturity, or on such last day for conversion or exchange, provided that no interest shall accrue on the amount so payable for the period from and after such Interest Payment Date, Redemption Date, Repayment Date, sinking fund payment date, Stated Maturity or Maturity, as the case may be.

SECTION 113. Limited Liability; Immunity of Stockholders, Directors, Officers and Agents of the Company. Notwithstanding any other provision of this Indenture or of the Securities of any series to the contrary, no recourse under or upon any obligation, covenant or agreement contained in this Indenture or in any Security, or for the payment of any sums due on account of any indebtedness evidenced thereby, including without limitation principal, premium or interest, if any, or for any claim based on this Indenture or any Security or otherwise in respect of this Indenture or any Security, shall be had, whether by levy or execution or otherwise, against the Company, the Company's assets or against any past, present or future stockholder, employee, officer, director or agent, as such, of the Company or any successor, either directly or through the Company or any successor, under any rule of law, statute, constitutional provision or by the enforcement of any assessment or penalty, or by any legal or equitable proceeding or otherwise, nor shall any such parties be personally liable for any such amounts, obligations or claims, or liable for any deficiency judgment based thereon or with respect thereto, it being expressly understood that the sole remedies hereunder or under any other document with respect to the Securities against such parties with respect to such amounts, obligations or claims shall be against the Company and that all such liability of and recourse against such parties is expressly waived and released by the acceptance of the Securities by the Holders and as part of the consideration for the issue of the Securities.

SECTION 114. Conflict with Trust Indenture Act. If any provision hereof limits, qualifies or conflicts with another provision hereof which is required or deemed to be included in this Indenture by any of the provisions of the Trust Indenture Act, such required provision shall control. If any provision of this Indenture modifies or excludes any provision of the Trust Indenture Act that may be so modified or excluded, the latter provision shall be deemed to apply to this Indenture as so modified or to be excluded, as the case may be.

ARTICLE TWO - SECURITIES FORMS

SECTION 201. Forms of Securities. The Registered Securities, if any, of each series and the Bearer Securities, if any, of each series and related coupons shall be substantially in the form of Exhibit A hereto or in such other form as shall be established in one or more indentures supplemental hereto or approved from time to time by or pursuant to a Board Resolution in accordance with Section 301, shall have such appropriate insertions, omissions, substitutions and other variations as are required or permitted by this Indenture or any indenture supplemental hereto, and may have such letters, numbers or other marks of identification or designation and such legends or endorsements placed thereon as the Company may deem appropriate and as are not inconsistent with the provisions of this Indenture, or as may be required to comply with any law or with any rule or regulation made pursuant thereto or with any rule or regulation of any over-the-counter market or securities exchange, on which the Securities may be quoted or listed, or to conform to usage.

Unless otherwise specified as contemplated by Section 301, Bearer Securities shall have interest coupons attached.

The definitive Securities and coupons shall be printed, lithographed or engraved or produced by any combination of these methods on a steel engraved border or steel engraved borders or mechanically reproduced on safety paper or may be produced in any other manner, all as determined by the officers executing such Securities or coupons, as evidenced by their execution of such Securities or coupons.

SECTION 202. Form of Trustee's Certificate of Authentication. Subject to Section 611, the Trustee's certificate of authentication shall be in substantially the following form:

This is one of the Securities of the series designated therein referred to in the within- mentioned Indenture.

[_____],
as Trustee

Dated: _____

By: _____
Authorized Signatory

SECTION 203. Securities Issuable in Global Form. If Securities of or within a series are issuable in the form of one or more Global Securities, then, notwithstanding clause (8) of Section 301 and the provisions of Section 302, any such Global Security or Securities may provide that it or they shall represent the aggregate amount of all Outstanding Securities of such series (or such lesser amount as is permitted by the terms thereof) from time to time endorsed thereon and may also provide that the aggregate amount of Outstanding Securities of such series represented thereby may from time to time be increased or decreased to reflect exchanges. Any endorsement of any Global Security to reflect the amount, or any increase or decrease in the amount, or changes in the rights of Holders thereof, of Outstanding Securities represented thereby shall be made (or caused to be made) by the Trustee in such manner or by such Person or Persons as shall be specified therein or in the Company Order to be delivered to the Trustee pursuant to Section 303 or 304. Subject to the provisions of Section 303 and, if applicable, Section 304, the Trustee shall deliver and redeliver any Global Security in permanent global form in the manner and upon instructions given by the Person or Persons specified therein or in the applicable Company Order. If a Company Order pursuant to Section 303 or 304 has been, or simultaneously is, delivered, any instructions by the Company with respect to endorsement or delivery or redelivery of a Global Security shall be in writing but need not comply with Section 102 and need not be accompanied by an Opinion of Counsel.

The provisions of the last sentence of Section 303 shall apply to any Security represented by a Global Security if such Security was never issued and sold by the Company and the Company delivers to the Trustee the Global Security together with written instructions (which need not comply with Section 102 and need not be accompanied by an Opinion of Counsel) with regard to the reduction in the principal amount of Securities represented thereby, together with the written statement contemplated by the last sentence of Section 303.

Notwithstanding the provisions of Section 307, unless otherwise specified as contemplated by Section 301, payment of principal of and any premium or Make-Whole Amount, if any, and interest on any Global Security in permanent global form shall be made to the registered Holder thereof.

Notwithstanding the provisions of Section 308 and except as provided in the preceding paragraph, the Company, the Trustee and any agent of the Company and the Trustee shall treat as the Holder of such principal amount of Outstanding Securities represented by a permanent Global Security (i) in the case of a permanent Global Security in registered form, the Holder of such permanent Global Security in registered form, or (ii) in the case of a permanent Global Security in bearer form, Euroclear or Clearstream.

Any Global Security authenticated and delivered hereunder shall bear a legend in substantially the following form:

“This Security is a Global Security within the meaning set forth in the Indenture hereinafter referred to and is registered in the name of a Depository or a nominee of a Depository. This Security is exchangeable for Securities registered in the name of a person other than the Depository or its nominee only in the limited circumstances described in the Indenture, and may not be transferred except as a whole by the Depository to a nominee of the Depository or by a nominee of the Depository to the Depository or another nominee of the Depository or by the Depository or its nominee to a successor Depository or its nominee.”

ARTICLE THREE - THE SECURITIES

SECTION 301. Amount Unlimited; Issuable in Series. The aggregate principal amount of Securities which may be authenticated and delivered under this Indenture is unlimited.

The Securities may be issued in one or more series, each of which shall be authorized pursuant to Board Resolutions of the Company. There shall be established in one or more Board Resolutions or pursuant to authority granted by one or more Board Resolutions and, subject to Section 303, set forth in an Officers' Certificate, or established in one or more indentures supplemental hereto, prior to the issuance of Securities of any series:

- (1) The title of the Securities of the series, including “CUSIP” numbers (which shall distinguish the Securities of such series from all other series of Securities);
- (2) Any limit upon the aggregate principal amount of the Securities of the series that may be authenticated and delivered under this Indenture (except for Securities authenticated and delivered upon registration of transfer of, or upon conversion of, or in exchange for, or in lieu of, other Securities of the series pursuant to Section 304, 305, 306, 906, 1107 or 1305) and the minimum authorized denominations with respect to the Securities of such series;
- (3) The price (expressed as a percentage of the principal amount thereof) at which such Securities will be issued and, if other than the principal amount thereof, the portion of the principal amount thereof payable upon declaration of acceleration of the maturity thereof or (if applicable) the portion of the principal amount of such Securities that is convertible into Common Stock or the method by which any such portion shall be determined.
- (4) If convertible, the terms on which such Securities are convertible, including the initial conversion price or rate and the conversion period and any applicable limitations on the ownership or transferability of Common Stock or Preferred Stock receivable on conversion;
- (5) The date or dates, or the method for determining such date or dates, on which the principal of such Securities will be payable;

- (6) The rate or rates (which may be fixed or variable), or the method by which such rate or rates shall be determined, at which such Securities will bear interest, if any;
- (7) The date or dates, or the method for determining such date or dates, from which any such interest will accrue, the Interest Payment Dates on which any such interest will be payable, the Regular Record Dates for such Interest Payment Dates, or the method by which such dates shall be determined, the Persons to whom such interest shall be payable, and the basis upon which interest shall be calculated if other than that of a 360-day year of twelve 30-day months;
- (8) The Make-Whole Amount, if any, or method for determining the Make-Whole Amount, if any, payable with respect to such Securities, and the terms upon which such amount, if any, will be payable;
- (9) The place or places where the principal of (and premium or Make-Whole Amount, if any) and interest, if any, on such Securities will be payable, where such Securities may be surrendered for registration of transfer or conversion or exchange and where notices or demands to or upon the Company in respect of such Securities and this Indenture may be served;
- (10) The period or periods, if any, within which, the price or prices at which and the other terms and conditions upon which such Securities may, pursuant to any optional or mandatory redemption provisions, be redeemed, as a whole or in part, at the option of the Company;
- (11) The obligation, if any, of the Company to redeem, repay or purchase such Securities pursuant to any sinking fund or analogous provision or at the option of a Holder thereof, and the period or periods within which, the price or prices at which and the other terms and conditions upon which such Securities will be redeemed, repaid or purchased, as a whole or in part, pursuant to such obligation;
- (12) If other than Dollars, the currency or currencies in which such Securities are denominated and payable, which may be a foreign currency or units of two or more foreign currencies or a composite currency or currencies, the manner of determining the equivalent thereof in Dollars for purposes of the definition of "Outstanding" in Section 101, and the terms and conditions relating thereto;
- (13) Whether the amount of payments of principal of (and premium or Make-Whole Amount, if any, including any amount due upon redemption, if any) or interest on such Securities may be determined with reference to an index, formula or other method (which index, formula or method may, but need not be, based on the yield on or trading price of other securities, including United States Treasury securities or on a currency, currencies, currency unit or units, or composite currency or currencies) and the manner in which such amounts shall be determined;
- (14) Whether the principal of (and premium or Make-Whole Amount, if any) or interest on the Securities of the series are to be payable, at the election of the Company or a Holder thereof, in a currency or currencies, currency unit or units or composite currency or currencies other than that in which such Securities are denominated or stated to be payable, the period or periods within which, and the terms and conditions upon which, such election may be made, and the time and manner of, and identity of the exchange rate agent with responsibility for, determining the exchange rate between the currency or currencies, currency unit or units or composite currency or currencies in which such Securities are denominated or stated to be payable and the currency or currencies, currency unit or units or composite currency or currencies in which such Securities are to be so payable;

(15) Provisions, if any, granting special rights to the Holders of Securities of the series upon the occurrence of such events as may be specified;

(16) Any deletions from, modifications of or additions to the Events of Default or covenants of the Company with respect to Securities of the series, whether or not such Events of Default or covenants are consistent with the Events of Default or covenants set forth herein;

(17) Whether and under what circumstances the Company will pay any additional amounts on such Securities in respect of any tax, assessment or governmental charge and, if so, whether the Company will have the option to redeem such Securities in lieu of making such payment;

(18) Whether Securities of the series are to be issuable as Registered Securities, Bearer Securities (with or without coupons) or both, any restrictions applicable to the offer, sale or delivery of Bearer Securities and the terms upon which Bearer Securities of the series may be exchanged for Registered Securities of the series and vice versa (if permitted by applicable laws and regulations), whether any Securities of the series are to be issuable initially in temporary global form and whether any Securities of the series are to be issuable in permanent global form with or without coupons and, if so, whether beneficial owners of interests in any such permanent global Security may, or shall be required to, exchange such interests for Securities of such series and of like tenor of any authorized form and denomination and the circumstances under which any such exchanges may, or shall be required to, occur, if other than in the manner provided in the Indenture, and, if Registered Securities of the series are to be issuable as a Global Security, the identity of the depository for such series;

(19) The date as of which any Bearer Securities of the series and any temporary Global Security representing outstanding Securities of the series shall be dated if other than the date of original issuance of the first Security of the series to be issued;

(20) The Person to whom any interest on any Registered Security of the series shall be payable, if other than the Person in whose name that Security (or one or more Predecessor Securities) is registered at the close of business on the Regular Record Date for such interest the manner in which, or the Person to whom, any interest on any Bearer Security of the series shall be payable, if otherwise than upon presentation and surrender of the coupons appertaining thereto as they severally mature, and the extent to which, or the manner in which, any interest payable on a temporary Global Security on an Interest Payment Date will be paid if other than in the manner provided herein; provided, however, in each case, that the manner of determining such Person or making such payment shall be acceptable to the Trustee (as not imposing on it any undue administrative burden or risk of liability);

(21) The applicability, if any, of the Defeasance and Covenant Defeasance provisions of Article Fourteen hereof to the Securities of the series;

(22) The obligation, if any, of the Company to permit the conversion of the Securities of such series into Common Stock or Preferred Stock, as the case may be, and the terms and conditions upon which such conversion shall be effected (including, without limitation, the initial conversion price or rate, the conversion period, any adjustment of the applicable conversion price and any requirements relative to the reservation of such shares for purposes of conversion);

(23) If the Securities of such series are to be issuable in definitive form (whether upon original issue or upon exchange of a temporary Security of such series) only upon receipt of certain certificates or other documents or satisfaction of other conditions, then the form and/or terms of such certificates, documents or conditions;

(24) Designation of the Trustee, if different from the Trustee under the Indenture, with respect to such series and the terms applicable to such Trustee (which shall be accepted by such Trustee by its execution and delivery of a supplemental indenture as provided therein); and

(25) Any other terms of the series (which terms shall not be inconsistent with the provisions of this Indenture).

All Securities of any one series and the coupons appertaining to any Bearer Securities of such series shall be substantially identical except, in the case of Registered Securities, as to denomination and except as may otherwise be provided in or pursuant to such Board Resolution (subject to Section 303) and set forth in such Officers' Certificate or in any such indenture supplemental hereto. All Securities of any one series need not be issued at the same time and, unless otherwise provided, a series may be reopened, without the consent of the Holders, for issuances of additional Securities of such series.

If any of the terms of the Securities of any series are established by action taken pursuant to one or more Board Resolutions, a copy of an appropriate record of such action(s) shall be certified by the Secretary or an Assistant Secretary of the Company and delivered to the Trustee at or prior to the delivery of the Officers' Certificate setting forth the terms of the Securities of such series.

SECTION 302. Denominations. The Securities of each series shall be issuable in such denominations as shall be specified as contemplated by Section 301. With respect to Securities of any series denominated in Dollars, in the absence of any such provisions with respect to the Securities of any series, the Securities of such series, other than Global Securities (which may be of any denomination), shall be issuable in denominations of \$1,000 and any integral multiple thereof or the equivalent amounts thereof in the case of Securities denominated in the Foreign Currency or currency unit.

SECTION 303. Execution, Authentication, Delivery and Dating. The Securities and any coupons appertaining thereto shall be executed on behalf of the Company by its Chairman of the Board, its Chief Executive Officer, its President, or one of its Vice Presidents, under its corporate seal reproduced thereon, and attested by its Secretary or one of its Assistant Secretaries. The signature of any of these officers on the Securities and coupons may be manual or facsimile signatures of the present or any future such authorized officer and may be imprinted or otherwise reproduced on the Securities.

Securities and coupons bearing the manual or facsimile signatures of individuals who were at any time the proper officers of the Company shall bind the Company, notwithstanding that such individuals or any of them have ceased to hold such offices prior to the authentication and delivery of such Securities or did not hold such offices at the date of such Securities or coupons.

At any time and from time to time after the execution and delivery of this Indenture, the Company may deliver Securities of any series, together with any coupon appertaining thereto, executed by the Company to the Trustee for authentication, together with a Company Order for the authentication and delivery of such Securities (accompanied by a copy of the Board Resolution and the Officers' Certificate or supplemental indenture contemplated by Section 301), and the Trustee in accordance with the Company Order shall authenticate and deliver such Securities; provided, however, that, in connection with its original issuance, no Bearer Security shall be mailed or otherwise delivered to any location in the United States; and provided further that, unless otherwise specified with respect to any series of Securities pursuant to Section 301, a Bearer Security may be delivered in connection with its original issuance only if the Person entitled to receive such Bearer Security shall have furnished a certificate to Euroclear or Clearstream, as the case may be, in the form set forth in Exhibit B-1 to this Indenture or such other certificate as may be specified by the Company with respect to any series of Securities pursuant to Section 301, dated no earlier than 15 days prior to the earlier of the date on which such Bearer Security is delivered and the date on which any temporary Security first becomes exchangeable for such Bearer Security in accordance with the terms of such temporary Security and this Indenture. If any Security shall be represented by a permanent Global Security, then, for purposes of this Section and Section 304, the notation of a beneficial owner's interest therein upon original issuance of such Security or upon exchange of a portion of a temporary Global Security shall be deemed to be delivery in connection with its original issuance of such beneficial owner's interest in such permanent Global Security. Except as permitted by Section 306, the Trustee shall not authenticate and deliver any Bearer Security unless all appurtenant coupons for interest then matured have been detached and canceled.

If all the Securities of any series are not to be issued at one time and if the Board Resolution or supplemental indenture establishing such series shall so permit, such Company Order may set forth procedures acceptable to the Trustee for the issuance of such Securities and determining the terms of particular Securities of such series, such as interest rate or formula, maturity date, date of issuance and date from which interest shall accrue. In authenticating such Securities, and accepting the additional responsibilities under this Indenture in relation to such Securities, the Trustee shall be entitled to receive, and (subject to TIA Section 315(a) through 315(d)) shall be fully protected in relying upon,

(i) an Opinion of Counsel stating that

(a) the form or forms of such Securities and any coupons have been established in conformity with the provisions of this Indenture;

(b) the terms of such Securities and any coupons have been established in conformity with the provisions of this Indenture; and

(c) such Securities, together with any coupons appertaining thereto, when completed by appropriate insertions and executed and delivered by the Company to the Trustee for authentication in accordance with this Indenture, authenticated and delivered by the Trustee in accordance with this Indenture and issued by the Company in the manner and subject to any conditions specified in such Opinion of Counsel, will constitute legal, valid and legally binding obligations of the Company, enforceable in accordance with their terms, subject to applicable bankruptcy, insolvency, fraudulent transfer, reorganization and other similar laws of general applicability relating to or affecting the enforcement of creditors' rights generally and to general equitable principles; and

(ii) an Officers' Certificate stating that all conditions precedent provided for in this Indenture relating to the issuance of the Securities have been complied with and that, to the best of the knowledge of the signers of such certificate, that no Event of Default with respect to any of the Securities shall have occurred and be continuing.

If such form or terms have been so established, the Trustee shall not be required to authenticate such Securities (or to enter into the related supplemental indenture, if applicable) if the issue of such Securities pursuant to this Indenture will affect the Trustee's own rights, duties, obligations or immunities under the Securities and this Indenture or otherwise in a manner which is not reasonably acceptable to the Trustee.

Notwithstanding the provisions of Section 301 and of the preceding paragraph, if all the Securities of any series are not to be issued at one time, it shall not be necessary to deliver an Officers' Certificate otherwise required pursuant to Section 301 or a Company Order, or an Opinion of Counsel or an Officers' Certificate otherwise required pursuant to the preceding paragraph at the time of issuance of each Security of such series, but such order, opinion and certificates, with appropriate modifications to cover such future issuances, shall be delivered at or before the time of issuance of the first Security of such series.

Each Registered Security shall be dated the date of its authentication and each Bearer Security shall be dated as of the date specified as contemplated by Section 301.

No Security or coupon shall be entitled to any benefit under this Indenture or be valid or obligatory for any purpose unless there appears on such Security or Security to which such coupon appertains a certificate of authentication substantially in the form provided for herein duly executed by the Trustee (subject to Section 611) by manual signature of an authorized signatory, and such certificate upon any Security shall be conclusive evidence, and the only evidence, that such Security has been duly authenticated and delivered hereunder and is entitled to the benefits of this Indenture. Notwithstanding the foregoing, if any Security (including a Global Security) shall have been authenticated and delivered hereunder but never issued and sold by the Company, and the Company shall deliver such Security to the Trustee for cancellation as provided in Section 309 together with a written statement (which need not comply with Section 102 and need not be accompanied by an Opinion of Counsel) stating that such Security has never been issued and sold by the Company, for all purposes of this Indenture such Security shall be deemed never to have been authenticated and delivered hereunder and shall never be entitled to the benefits of this Indenture.

SECTION 304. Temporary Securities.

(a) Pending the preparation of definitive Securities of any series, the Company may execute, and upon Company Order the Trustee shall authenticate and deliver, temporary Securities which are printed, lithographed, typewritten, mimeographed or otherwise produced, in any authorized denomination, substantially of the tenor of the definitive Securities in lieu of which they are issued, in registered form, or, if authorized, in bearer form with one or more coupons or without coupons, and with such appropriate insertions, omissions, substitutions and other variations as the officers executing such Securities may determine, as conclusively evidenced by their execution of such Securities. In the case of Securities of any series, such temporary Securities may be in global form.

Except in the case of temporary Global Securities (which shall be exchanged as otherwise provided herein or as otherwise provided in or pursuant to a Board Resolution or supplemental indenture pursuant to Section 301), if temporary Securities of any series are issued, the Company will cause definitive Securities of that series to be prepared without unreasonable delay. After the preparation of definitive Securities of such series, the temporary Securities of such series shall be exchangeable for definitive Securities of such series upon surrender of the temporary Securities of such series at the office or agency of the Company in a Place of Payment for that series, without charge to the Holder. Upon surrender for cancellation of any one or more temporary Securities of any series (accompanied by any non-matured coupons appertaining thereto), the Company shall execute (in accordance with a Company Order delivered at or prior to the authentication of the first definitive security to such series) and the Trustee shall authenticate and deliver in exchange therefor a like principal amount of definitive Securities of the same series of authorized denominations; provided, however, that no definitive Bearer Security shall be delivered in exchange for a temporary Registered Security; and provided further that a definitive Bearer Security shall be delivered in exchange for a temporary Bearer Security only in compliance with the conditions set forth in Section 303. Until so exchanged, the temporary Securities of any series shall in all respects be entitled to the same benefits under this Indenture as definitive Securities of such series.

(b) Unless otherwise provided in or pursuant to a Board Resolution or supplemental indenture pursuant to Section 301, the following provisions of this Section 304(b) shall govern the exchange of temporary Securities other than through the facilities of the DTC. If any such temporary Security is issued in global form, then such temporary Global Security shall, unless otherwise provided therein, be delivered to the London office of a depository or common depository upon and pursuant to written direction of the Company (the "Common Depository"), for the benefit of Euroclear and Clearstream, for credit to the respective accounts of the beneficial owners of such Securities (or to such other accounts as they may direct).

Without unnecessary delay but in any event not later than the date specified in, or determined pursuant to the terms of, any such temporary Global Security (the “Exchange Date”), the Company shall deliver to the Trustee definitive Securities, in aggregate principal amount equal to the principal amount of such temporary Global Security, executed by the Company. On or after the Exchange Date, such temporary Global Security shall be surrendered by the Common Depository to the Trustee, as the Company’s agent for such purpose, to be exchanged, in whole or from time to time in part, for definitive Securities without charge, and the Trustee shall authenticate and deliver, in exchange for each portion of such temporary Global Security, an equal aggregate principal amount of definitive Securities of the same series of authorized denominations and of like tenor as the portion of such temporary Global Security to be exchanged. The definitive Securities to be delivered in exchange for any such temporary Global Security shall be in bearer form, registered form, permanent global bearer form or permanent global registered form, or any combination thereof, as specified as contemplated by Section 301, and, if any combination thereof is so specified, as requested by the beneficial owner thereof (as directed by or pursuant to information provided by the Common Depository); provided, however, that, unless otherwise specified in such temporary Global Security, upon such presentation by the Common Depository, such temporary Global Security shall be accompanied by a certificate dated the Exchange Date or a subsequent date and signed by Euroclear as to the portion of such temporary Global Security held for its account then to be exchanged and a certificate dated the Exchange Date or a subsequent date and signed by Clearstream as to the portion of such temporary Global Security held for its account then to be exchanged, each in the form set forth in Exhibit B-2 to this Indenture or in such other form as may be established pursuant to Section 301; and provided further that definitive Bearer Securities shall be delivered in exchange for a portion of a temporary Global Security only in compliance with the requirements of Section 303.

Unless otherwise specified in such temporary Global Security, the interest of a beneficial owner of Securities of a series in a temporary Global Security shall be exchanged for definitive Securities of the same series and of like tenor following the Exchange Date when the account holder instructs Euroclear or Clearstream, as the case may be, to request such exchange on his behalf and delivers to Euroclear or Clearstream, as the case may be, a certificate in the form set forth in Exhibit B-1 to this Indenture (or in such other form as may be established pursuant to Section 301), dated no earlier than 15 days prior to the Exchange Date, copies of which certificate shall be available from the offices of Euroclear and Clearstream, the Trustee, any Authenticating Agent appointed for such series of Securities and each Paying Agent. Unless otherwise specified in such temporary Global Security, any such exchange shall be made free of charge to the beneficial owners of such temporary Global Security, except that a Person receiving definitive Securities must bear the cost of insurance, postage, transportation and the like unless such Person takes delivery of such definitive Securities in person at the offices of Euroclear or Clearstream. Definitive Securities in bearer form to be delivered in exchange for any portion of a temporary Global Security shall be delivered only to an address located outside the United States.

Until exchanged in full as hereinabove provided, the temporary Securities of any series shall in all respects be entitled to the same benefits under this Indenture as definitive Securities of the same series and of like tenor authenticated and delivered hereunder, except that, unless otherwise specified as contemplated by Section 301, interest payable on a temporary Global Security on an Interest Payment Date for Securities of such series occurring prior to the applicable Exchange Date shall be payable to Euroclear and Clearstream on such Interest Payment Date upon delivery by Euroclear and Clearstream to the Trustee of a certificate or certificates in the form set forth in Exhibit B-2 to this Indenture (or in such other forms as may be established pursuant to Section 301), for credit without further interest on or after such Interest Payment Date to the respective accounts of Persons who are the beneficial owners of such temporary Global Security on such Interest Payment Date and who have each delivered to Euroclear or Clearstream, as the case may be, a certificate dated no earlier than 15 days prior to the Interest Payment Date occurring prior to such Exchange Date in the form set forth as Exhibit B-1 to this Indenture (or in such other forms as may be established pursuant to Section 301). Notwithstanding anything to the contrary herein contained, the certifications made pursuant to this paragraph shall satisfy the certification requirements of the preceding two paragraphs of this Section 304(b) and of the third paragraph of Section 303 of this Indenture and the interests of the Persons who are the beneficial owners of the temporary Global Security with respect to which such certification was made will be exchanged for definitive Securities of the same series and of like tenor on the Exchange Date or the date of certification if such date occurs after the Exchange Date, without further act or deed by such beneficial owners. Except as otherwise provided in this paragraph, no payments of principal or interest owing with respect to a beneficial interest in a temporary Global Security will be made unless and until such interest in such temporary Global Security shall have been exchanged for an interest in a definitive Security. Any interest so received by Euroclear and Clearstream and not paid as herein provided shall be returned to the Trustee prior to the expiration of two years after such Interest Payment Date in order to be repaid to the Company.

With respect to Exhibit B-1 or B-2 to this Indenture, the Company may, in its discretion and if required or desirable under applicable law, substitute one or more other forms of such exhibits for such exhibits, eliminate the requirement that any or all certificate be provided, or change the time that any certificate may be required, provided that such substitute form or forms or notice of elimination or change of such certification requirement have theretofore been delivered to the Trustee with a Company Request and such form or forms, elimination or change is reasonably acceptable to the Trustee.

SECTION 305. Registration, Registration of Transfer, Conversion and Exchange. The Company shall cause to be kept at the Corporate Trust Office of the Trustee or in any office or agency of the Company in a Place of Payment a register for each series of Securities (the registers maintained in such office or in any such office or agency of the Company in a Place of Payment being herein sometimes referred to collectively as the "Security Register") in which, subject to such reasonable regulations as it may prescribe, the Company shall provide for the registration of Registered Securities and of transfers of Registered Securities. The Security Register shall be in written form or any other form capable of being converted into written form within a reasonable time. The Trustee, at its Corporate Trust Office, is hereby initially appointed "Security Registrar" for the purpose of registering Registered Securities and transfers of Registered Securities on such Security Register as herein provided. In the event that the Trustee shall cease to be Security Registrar, it shall have the right to examine, and be provided a copy of, the Security Register at all reasonable times.

Subject to the provisions of this Section 305, upon surrender for registration of transfer of any Registered Security of any series at any office or agency of the Company in a Place of Payment for that series, the Company shall execute, and the Trustee shall authenticate and deliver, in the name of the designated transferee or transferees, one or more new Registered Securities of the same series, of any authorized denominations and of a like aggregate principal amount, bearing a number not contemporaneously outstanding, and containing identical terms and provisions.

Subject to the provisions of this Section 305, at the option of the Holder, Registered Securities of any series may be exchanged for other Registered Securities of the same series, of any authorized denomination or denominations and of a like aggregate principal amount, containing identical terms and provisions, upon surrender of the Registered Securities to be exchanged at any such office or agency. Whenever any such Registered Securities are so surrendered for exchange, the Company shall execute, and the Trustee shall authenticate and deliver, the Registered Securities which the Holder making the exchange is entitled to receive. Unless otherwise specified with respect to any series of Securities as contemplated by Section 301, Bearer Securities may not be issued in exchange for Registered Securities.

If (but only if) permitted by the applicable Board Resolution and (subject to Section 303) set forth in the applicable Officers' Certificate, or in any indenture supplemental hereto, delivered as contemplated by Section 301, at the option of the Holder, Bearer Securities of any series may be exchanged for Registered Securities of the same series of any authorized denominations and of a like aggregate principal amount and tenor, upon surrender of the Bearer Securities to be exchanged at any such office or agency, with all unmatured coupons and all matured coupons in default thereto appertaining. If the Holder of a Bearer Security is unable to produce any such unmatured coupon or coupons or matured coupon or coupons in default, any such permitted exchange may be effected if the Bearer Securities are accompanied by payment in funds acceptable to the Company (or to the Trustee for the Security in case of matured coupons in default) in an amount equal to the face amount of such missing coupon or coupons, or the surrender of such missing coupon or coupons may be waived by the Company and the Trustee if there is furnished to them such security or indemnity as they may require to save each of them and any Paying Agent harmless. If thereafter the Holder of such Security shall surrender to any Paying Agent any such missing coupon in respect of which such a payment shall have been made, such Holder shall be entitled to receive the amount of such payment; provided, however, that, except as otherwise provided in Section 1002, interest represented by coupons shall be payable only upon presentation and surrender of those coupons at an office or agency located outside the United States. Notwithstanding the foregoing, in case a Bearer Security of any series is surrendered at any such office or agency in a permitted exchange for a Registered Security of the same series and like tenor after the close of business at such office or agency on (i) any Regular Record Date and before the opening of business at such office or agency on the relevant Interest Payment Date, or (ii) any Special Record Date and before the opening of business at such office or agency on the related proposed date for payment of Defaulted Interest, such Bearer Security shall be surrendered without the coupon relating to such Interest Payment Date or proposed date for payment, as the case may be, and interest or Defaulted Interest, as the case may be, will not be payable on such Interest Payment Date or proposed date for payment, as the case may be, in respect of the Registered Security issued in exchange for such Bearer Security, but will be payable only to the Holder of such coupon when due in accordance with the provisions of this Indenture. Whenever any Securities are so surrendered for exchange, the Company shall execute, and the Trustee shall authenticate and deliver, the Securities which the Holder making the exchange is entitled to receive.

Notwithstanding the foregoing, except as otherwise specified as contemplated by Section 301, any permanent Global Security shall be exchangeable only as provided in this paragraph. If the depository for any permanent Global Security is DTC, then, unless the terms of such Global Security expressly permit such Global Security to be exchanged in whole or in part for definitive Securities, a Global Security may be transferred, in whole but not in part, only to a nominee of DTC, or by a nominee of DTC to DTC, or to a successor to DTC for such Global Security selected or approved by the Company or to a nominee of such successor to DTC. If at any time DTC notifies the Company that it is unwilling or unable to continue as depository for the applicable Global Security or Securities or if at any time DTC ceases to be a clearing agency registered under the Exchange Act if so required by applicable law or regulation, the Company shall appoint a successor depository with respect to such Global Security or Securities. If (w) a successor depository for such Global Security or Securities is not appointed by the Company within 90 days after the Company receives such notice or becomes aware of such unwillingness, inability or ineligibility, (x) the Company delivers to the Trustee for Securities of such series in registered form a Company Order stating that the Securities of such series shall be exchangeable, (y) an Event of Default has occurred and is continuing and the beneficial owners representing a majority in principal amount of the applicable series of Securities represented by such Global Security or Securities advise DTC to cease acting as depository for such Global Security or Securities or (z) the Company, in its sole discretion, determines at any time that all Outstanding Securities (but not less than all) of any series issued or issuable in the form of one or more Global Securities shall no longer be represented by such Global Security or Securities, then the Company shall execute, and the Trustee shall authenticate and deliver definitive Securities of like series, rank, tenor and terms in definitive form in an aggregate principal amount equal to the principal amount of such Global Security or Securities. If any beneficial owner of an interest in a permanent global Security is otherwise entitled to exchange such interest for Securities of such series and of like tenor and principal amount of another authorized form and denomination, as specified as contemplated by Section 301 and provided that any applicable notice provided in the permanent Global Security shall have been given, then without unnecessary delay but in any event not later than the earliest date on which such interest may be so exchanged, the Company shall execute, and the Trustee shall authenticate and deliver definitive Securities in aggregate principal amount equal to the principal amount of such beneficial owner's interest in such permanent Global Security. On or after the earliest date on which such interests may be so exchanged, such permanent Global Security shall be surrendered for exchange by DTC or such other depository as shall be specified in the Company Order with respect thereto to the Trustee, as the Company's agent for such purpose; provided, however, that no such exchanges may occur during a period beginning at the opening of business 15 days before any selection of Securities to be redeemed and ending on the relevant Redemption Date if the Security for which exchange is requested may be among those selected for redemption; and provided further that no Bearer Security delivered in exchange for a portion of a permanent Global Security shall be mailed or otherwise delivered to any location in the United States. If a Registered Security is issued in exchange for any portion of a permanent Global Security after the close of business at the office or agency where such exchange occurs on (i) any Regular Record Date and before the opening of business at such office or agency on the relevant Interest Payment Date, or (ii) any Special Record Date and the opening of business at such office or agency on the related proposed date for payment of Defaulted Interest, interest or Defaulted Interest, as the case may be, will not be payable on such Interest Payment Date or proposed date for payment, as the case may be, in respect of such Registered Security, but will be payable on such Interest Payment Date or proposed date for payment, as the case may be, only to the Person to whom interest in respect of such portion of such permanent Global Security is payable in accordance with the provisions of this Indenture.

All Securities issued upon any registration of transfer or conversion or exchange of Securities shall be the valid obligations of the Company, evidencing the same debt, and entitled to the same benefits under this Indenture, as the Securities surrendered upon such registration of transfer or conversion or exchange.

Every Registered Security presented or surrendered for registration of transfer or for conversion, exchange or redemption shall (if so required by the Company or the Security Registrar) be duly endorsed, or be accompanied by a written instrument of transfer in form satisfactory to the Company and the Security Registrar, duly executed by the Holder thereof or his attorney duly authorized in writing.

No service charge shall be made to the Holder for any registration of transfer or conversion or exchange of Securities, but the Company may require payment of a sum sufficient to cover any tax or other governmental charge that may be imposed in connection with any registration of transfer or conversion or exchange of Securities, other than exchanges pursuant to Section 304, 906, 1107 or 1305 not involving any transfer.

The Company or the Trustee, as applicable, shall not be required (i) to issue, register the transfer of or exchange any Security if such Security may be among those selected for redemption during a period beginning at the opening of business 15 days before selection of the Securities to be redeemed under Section 1103 and ending at the close of business on (A) if such Securities are issuable only as Registered Securities, the day of the mailing of the relevant notice of redemption and (B) if such Securities are issuable as Bearer Securities, the day of the first publication of the relevant notice of redemption or, if such Securities are also issuable as Registered Securities and there is no publication, the mailing of the relevant notice of redemption, or (ii) to register the transfer of or exchange any Registered Security so selected for redemption in whole or in part, except, in the case of any Registered Security to be redeemed in part, the portion thereof not to be redeemed, or (iii) to exchange any Bearer Security so selected for redemption except that such a Bearer Security may be exchanged for a Registered Security of that series and like tenor, provided that such Registered Security shall be simultaneously surrendered for redemption, or (iv) to issue, register the transfer of or exchange any Security which has been surrendered for repayment at the option of the Holder, except the portion, if any, of such Security not to be so repaid.

Furthermore, notwithstanding any other provision of this Section 305, the Company will not be required to exchange any Securities if, as a result of the exchange, the Company would suffer adverse consequences under any United States law or regulation.

SECTION 306. Mutilated, Destroyed, Lost and Stolen Securities. If any mutilated Security or a Security with a mutilated coupon appertaining to it is surrendered to the Trustee or the Company, together with, in proper cases, such security or indemnity as may be required by the Company or the Trustee to save each of them or any agent of either of them harmless, the Company shall execute and the Trustee shall authenticate and deliver in exchange therefor a new Security of the same series and principal amount, containing identical terms and provisions and bearing a number not contemporaneously outstanding, with coupons corresponding to the coupons, if any, appertaining to the surrendered Security.

If there shall be delivered to the Company and to the Trustee (i) evidence to their satisfaction of the destruction, loss or theft of any Security or coupon, and (ii) such security or indemnity as may be required by them to save each of them and any agent of either of them harmless, then, in the absence of notice to the Company or the Trustee that such Security or coupon has been acquired by a bona fide purchaser, the Company shall execute and upon its request the Trustee shall authenticate and deliver, in lieu of any such destroyed, lost or stolen Security or in exchange for the Security to which a destroyed, lost or stolen coupon appertains (with all appurtenant coupons not destroyed, lost or stolen), a new Security of the same series and principal amount, containing identical terms and provisions and bearing a number not contemporaneously outstanding, with coupons corresponding to the coupons, if any, appertaining to such destroyed, lost or stolen Security or to the Security to which such destroyed, lost or stolen coupon appertains.

Notwithstanding the provisions of the previous two paragraphs, in case any such mutilated, destroyed, lost or stolen Security or coupon has become or is about to become due and payable, the Company in its discretion may, instead of issuing a new Security, with coupons corresponding to the coupons, if any, appertaining to such destroyed, lost or stolen Security or to the Security to which such destroyed, lost or stolen coupon appertains, pay such Security or coupon if the applicant for such payment shall furnish to the Company and the Trustee for such Security such security or indemnity as may be required by them to save each of them harmless, and in the case of destruction, loss or theft, evidence satisfactory to the Company and Trustee and any agent of any of them of the destruction, loss or theft of such Security and the ownership thereof; provided, however, that payment of principal of (and premium or Make-Whole Amount, if any), and interest, if any, on, Bearer Securities shall, except as otherwise provided in Section 1002, be payable only at an office or agency located outside the United States and, unless otherwise specified as contemplated by Section 301, any interest on Bearer Securities shall be payable only upon presentation and surrender of the coupons appertaining thereto.

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 with its coupons, if any, issued pursuant to this Section in lieu of any destroyed, lost or stolen Security, or in exchange for a Security to which a destroyed, lost or stolen coupon appertains, shall constitute an original additional contractual obligation of the Company, whether or not the destroyed, lost or stolen Security and its coupons, if any, or the destroyed, lost or stolen coupon 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 and their coupons, if any, 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 or coupons.

SECTION 307. Payment of Interest; Interest Rights Preserved. Except as otherwise specified with respect to a series of Securities in accordance with the provisions of Section 301, interest on any Registered Security that is payable, and is punctually paid or duly provided for, on any Interest Payment Date shall be paid to the Person in whose name that Security (or one or more Predecessor Securities) is registered at the close of business on the Regular Record Date for such interest payment at the office or agency of the Company maintained for such purpose pursuant to Section 1002; provided, however, that each installment of interest on any Registered Security may at the Company's option be paid by (i) mailing a check for such interest, payable to or upon the written order of the Person entitled thereto pursuant to Section 308, to the address of such Person as it appears on the Security Register or (ii) transfer to an account maintained by the payee located inside the United States.

Unless otherwise provided as contemplated by Section 301 with respect to the Securities of any series, payment of interest may be made, in the case of a Bearer Security, by transfer to an account maintained by the payee with a bank located outside the United States.

Unless otherwise provided as contemplated by Section 301, every permanent Global Security will provide that interest, if any, payable on any Interest Payment Date will be paid to DTC, Euroclear and/or Clearstream, as the case may be, with respect to that portion of such permanent Global Security held for its account by Cede & Co. or the Common Depository, as the case may be, for the purpose of permitting such party to credit the interest received by it in respect of such permanent Global Security to the accounts of the beneficial owners thereof.

In case a Bearer Security of any series is surrendered in exchange for a Registered Security of such series after the close of business (at an office or agency in a Place of Payment for such series) on any Regular Record Date and before the opening of business (at such office or agency) on the next succeeding Interest Payment Date, such Bearer Security shall be surrendered without the coupon relating to such Interest Payment Date and interest will not be payable on such Interest Payment Date in respect of the Registered Security issued in exchange for such Bearer Security, but will be payable only to the Holder of such coupon when due in accordance with the provisions of this Indenture.

Except as otherwise specified with respect to a series of Securities in accordance with the provisions of Section 301, any interest on any Registered Security of any series that is payable, but is not punctually paid or duly provided for, on any Interest Payment Date (herein called "Defaulted Interest") shall forthwith cease to be payable to the registered Holder thereof on the relevant Regular Record Date by virtue of having been such Holder, and such Defaulted Interest may be paid by the Company, at its election in each case, as provided in clause (1) or (2) below:

(1) The Company may elect to make payment of any Defaulted Interest to the Persons in whose names the Registered Securities of such series (or their respective Predecessor Securities) are registered at the close of business on a Special Record Date for the payment of such Defaulted Interest, which shall be fixed in the following manner. The Company shall notify the Trustee in writing of the amount of Defaulted Interest proposed to be paid on each Registered Security of such series and the date of the proposed payment (which shall not be less than 20 days after such notice is received by the Trustee), and at the same time the Company shall deposit with the Trustee an amount of money in the currency or currencies, currency unit or units or composite currency or currencies in which the Securities of such series are payable (except as otherwise specified pursuant to Section 301 for the Securities of such series) equal to the aggregate amount proposed to be paid in respect of such Defaulted Interest or shall make arrangements satisfactory to the Trustee for such deposit on or prior to the date of the proposed payment, such money when deposited to be held in trust for the benefit of the Persons entitled to such Defaulted Interest as in this clause provided. Thereupon the Trustee shall fix a Special Record Date for the payment of such Defaulted Interest which shall be not more than 15 days and not less than 10 days prior to the date of the proposed payment and not less than 10 days after the receipt by the Trustee of the notice of the proposed payment. The Trustee shall promptly notify the Company of such Special Record Date and, in the name and at the expense of the Company, shall cause notice of the proposed payment of such Defaulted Interest and the Special Record Date therefor to be mailed, first-class postage prepaid, to each Holder of Registered Securities of such series at his address as it appears in the Security Register not less than 10 days prior to such Special Record Date. The Trustee may, in its discretion, in the name and at the expense of the Company, cause a similar notice to be published at least once in an Authorized Newspaper in each Place of Payment, but such publications shall not be a condition precedent to the establishment of such Special Record Date. Notice of the proposed payment of such Defaulted Interest and the Special Record Date therefor having been mailed as aforesaid, such Defaulted Interest shall be paid to the Persons in whose names the Registered Securities of such series (or their respective Predecessor Securities) are registered at the close of business on such Special Record Date and shall no longer be payable pursuant to the following clause (2). In case a Bearer Security of any series is surrendered at the office or agency in a Place of Payment for such series in exchange for a Registered Security of such series after the close of business at such office or agency on any Special Record Date and before the opening of business at such office or agency on the related proposed date for payment of Defaulted Interest, such Bearer Security shall be surrendered without the coupon relating to such proposed date of payment and Defaulted Interest will not be payable on such proposed date of payment in respect of the Registered Security issued in exchange for such Bearer Security, but will be payable only to the Holder of such coupon when due in accordance with the provisions of this Indenture.

(2) The Company may make payment of any Defaulted Interest on the Registered Securities of any series in any other lawful manner not inconsistent with the requirements of any over-the-counter market or securities exchange on which such Securities may be quoted or listed, and upon such notice as may be required by such market or exchange, if, after notice given by the Company to the Trustee of the proposed payment pursuant to this clause, such manner of payment shall be deemed practicable by the Trustee.

Subject to the foregoing provisions of this Section and Section 305, each Security delivered under this Indenture upon registration of transfer of or upon conversion of or in exchange for or in lieu of any other Security shall carry the rights to interest accrued and unpaid, and to accrue, which were carried by such other Security.

SECTION 308. Persons Deemed Owners. Prior to due presentment of a Registered Security for registration of transfer, the Company, the Trustee and any agent of the Company or the Trustee may treat the Person in whose name such Registered Security is registered as the owner of such Security for the purpose of receiving payment of principal of (and premium or Make-Whole Amount, if any), and (subject to Sections 305 and 307) interest on, such Registered Security and for all other purposes whatsoever, whether or not such Registered Security be overdue, and neither the Company, the Trustee nor any agent of the Company or the Trustee shall be affected by notice to the contrary. All such payments so made to any such Person, or upon such Person's order, shall be valid, and, to the extent of the sum or sums so paid, effectual to satisfy and discharge the liability for money payable upon any such Security.

Title to any Bearer Security and any coupons appertaining thereto shall pass by delivery. The Company, the Trustee and any agent of the Company or the Trustee may treat the Holder of any Bearer Security and the Holder of any coupon as the absolute owner of such Security or coupon for the purpose of receiving payment thereof or on account thereof and for all other purposes whatsoever, whether or not such Security or coupon be overdue, and neither the Company, the Trustee nor any agent of the Company or the Trustee shall be affected by notice to the contrary.

No holder of any beneficial interest in any Global Security held on its behalf by a depository shall have any rights under this Indenture with respect to such Global Security and such depository (which is the Holder of such security) shall be treated by the Company, the Trustee, and any agent of the Company or the Trustee as the owner of such Global Security for all purposes whatsoever. None of the Company, the Trustee, any Paying Agent or the Security Registrar will have any responsibility or liability for any aspect of the records relating to or payments made on account of beneficial ownership interests of a Global Security or for maintaining, supervising or reviewing any records relating to such beneficial ownership interests.

Notwithstanding the foregoing, with respect to any Global Security, nothing herein shall prevent the Company, the Trustee, or any agent of the Company or the Trustee, from giving effect to any written certification, proxy or other authorization furnished by any depository, as a Holder, with respect to such Global Security or impair, as between such depository and owners of beneficial interests in such Global Security, the operation of customary practices governing the exercise of the rights of such depository (or its nominee) as Holder of such Global Security.

SECTION 309. Cancellation. All Securities and coupons surrendered for payment, redemption, repayment at the option of the Holder, registration of transfer or conversion or exchange or for credit against any sinking fund payment shall, if surrendered to any Person other than the Trustee, be delivered to the Trustee, and any such Securities and coupons and Securities and coupons surrendered directly to the Trustee for any such purpose, upon direction by the Company, shall be promptly cancelled by it. The Company may at any time deliver to the Trustee for cancellation any Securities previously authenticated and delivered hereunder which the Company may have acquired in any manner whatsoever, and may deliver to the Trustee (or to any other Person for delivery to the Trustee) for cancellation any Securities previously authenticated hereunder which the Company has not issued and sold, and all Securities so delivered shall be promptly cancelled by the Trustee. If the Company shall so acquire any of the Securities, however, such acquisition shall not operate as a redemption or satisfaction of the indebtedness represented by such Securities unless and until the same are surrendered to the Trustee for cancellation. No Securities shall be authenticated in lieu of or in exchange for any Securities cancelled as provided in this Section, except as expressly permitted by this Indenture. Cancelled Securities and coupons held by the Trustee shall be disposed of by the Trustee in accordance with its customary practices (subject to the record retention requirements of the Exchange Act).

SECTION 310. Computation of Interest. Except as otherwise specified as contemplated by Section 301 with respect to Securities of any series, interest on the Securities of each series shall be computed on the basis of a 360-day year consisting of twelve 30-day months.

SECTION 311. 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, however, 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 identification numbers printed on the Securities, and any such redemption shall not be affected by any defect in or omission of such numbers. The Company will promptly notify the Trustee of any change in the “CUSIP” numbers.

ARTICLE FOUR - SATISFACTION AND DISCHARGE

SECTION 401. Satisfaction and Discharge of Indenture. This Indenture shall upon Company Request cease to be of further effect with respect to any series of Securities specified in such Company Request (except as to any surviving rights of registration of transfer or conversion or exchange of Securities of such series herein expressly provided for), and the Trustee, upon receipt of a Company Order, and at the expense of the Company, shall execute instruments in form and substance satisfactory to the Trustee and the Company acknowledging satisfaction and discharge of this Indenture as to such series when

(1) either

(A) all Securities of such series theretofore authenticated and delivered and all coupons, if any, appertaining thereto (other than (i) coupons appertaining to Bearer Securities surrendered for exchange for Registered Securities and maturing after such exchange, whose surrender is not required or has been waived as provided in Section 305, (ii) Securities and coupons of such series which have been destroyed, lost or stolen and which have been replaced or paid as provided in Section 306, (iii) coupons appertaining to Securities called for redemption and maturing after the relevant Redemption Date, whose surrender has been waived as provided in Section 1106, and (iv) Securities and coupons of such series for whose payment money has theretofore been deposited in trust or segregated and held in trust by the Company and thereafter repaid to the Company or discharged from such trust, as provided in Section 1003) have been delivered to the Trustee for cancellation; or

(B) all Securities of such series and, in the case of (i) or (ii) below, any coupons appertaining thereto not theretofore delivered to the Trustee for cancellation

(i) have become due and payable, or

(ii) will become due and payable at their Stated Maturity within one year, or

(iii) if redeemable at the option of the Company, 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,

and the Company, in the case of (B)(i), (B)(ii) or (B)(iii) above, has irrevocably deposited or caused to be deposited with the Trustee as trust funds in trust for the purpose an amount in the currency or currencies, currency unit or units or composite currency or currencies in which the Securities of such series are payable, sufficient to pay and discharge the entire indebtedness on such Securities and such coupons not theretofore delivered to the Trustee for cancellation, for principal (and premium or Make-Whole Amount, if any) and interest to the date of such deposit (in the case of Securities which have become due and payable) or to the Stated Maturity or Redemption Date, as the case may be;

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

(3) the Company has delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that all conditions precedent herein provided for relating to the satisfaction and discharge of this Indenture as to such series have been complied with.

Notwithstanding the satisfaction and discharge of this Indenture, the obligations of the Company to the Trustee and any predecessor Trustee under Section 606, the obligations of the Company to any Authenticating Agent under Section 611 and, if money shall have been deposited with and held by the Trustee pursuant to subclause (B) of clause (1) of this Section, the obligations of the Trustee under Section 402 and the last paragraph of Section 1003 shall survive such satisfaction and discharge.

SECTION 402. Application of Trust Funds. Subject to the provisions of the last paragraph of Section 1003, all money deposited with the Trustee pursuant to Section 401 shall be held in trust and applied by it, in accordance with the provisions of the Securities, the coupons 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 premium or Make-Whole Amount, if any), and any interest for whose payment such money has been deposited with or received by the Trustee, but such money need not be segregated from other funds except to the extent required by law.

ARTICLE FIVE - REMEDIES

SECTION 501. Events of Default. “Event of Default,” wherever used herein with respect to any particular series of Securities, means any one of the following events (whatever the reason for such Event of Default and whether or not it shall be voluntary or involuntary or be effected by operation of law or pursuant to any judgment, decree or order of any court or any order, rule or regulation of any administrative or governmental body):

- (1) default in the payment of any interest on any Security of that series or of any coupon appertaining thereto, when such interest or coupon becomes due and payable, and continuance of such default for a period of 30 days; or
- (2) default in the payment of the principal of (or premium or Make-Whole Amount, if any, on) any Security of that series when it becomes due and payable at its Maturity; or
- (3) default in the deposit of any sinking fund payment, to the extent applicable to such series of Securities, when and as due by the terms of any Security of that series; or
- (4) default in the performance, or breach, of any covenant or warranty of the Company in this Indenture with respect to any Security of that series (other than a covenant or warranty a default in whose performance or whose breach is elsewhere in this Section specifically dealt with or which has expressly been included in this Indenture solely for the benefit of a series of Securities other than that series), and continuance of such default or breach 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
- (5) default under any bond, debenture, note, mortgage, indenture or instrument under which there may be issued or by which there may be secured or evidenced any indebtedness for money borrowed by the Company (or by any Subsidiary, the repayment of which the Company has guaranteed or for which the Company is directly responsible or liable as obligor or guarantor), having an aggregate principal amount outstanding of at least \$30,000,000, whether such indebtedness now exists or shall hereafter be created, which default shall have resulted in such indebtedness becoming or being declared due and payable prior to the date on which it would otherwise have become due and payable, without such indebtedness having been discharged, or such acceleration having been rescinded or annulled, within a period of 30 days after there shall have 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 10% in principal amount of the Outstanding Securities of that series a written notice specifying such default and requiring the Company to cause such indebtedness to be discharged or cause such acceleration to be rescinded or annulled and stating that such notice is a “Notice of Default” hereunder; provided, however, that, subject to the provisions of Sections 601 and 602, the Trustee shall not be deemed to have knowledge of such default unless either (A) a Responsible Officer of the Trustee shall have knowledge of such default or (B) the Trustee shall have received written notice thereof from the Company, from any Holder, from the holder of any such indebtedness or from the trustee under any such mortgage, indenture or other instrument; or

- (6) the Company or any Significant Subsidiary pursuant to or within the meaning of any Bankruptcy Law:
 - (A) commences a voluntary case,
 - (B) consents to the entry of an order for relief against it in an involuntary case,
 - (C) consents to the appointment of a Custodian of it or for all or substantially all of its property, or
 - (D) makes a general assignment for the benefit of its creditors; or
- (7) a court of competent jurisdiction enters an order or decree under any Bankruptcy Law that:
 - (A) is for relief against the Company or any Significant Subsidiary in an involuntary case,
 - (B) appoints a Custodian of the Company or any Significant Subsidiary or for all or substantially all of either of its property,or
 - (C) orders the liquidation of the Company or any Significant Subsidiary, and the order or decree remains unstayed and in effect for 90 days; or
- (8) any other Event of Default provided with respect to Securities of that series.

As used in this Section 501, the term “Bankruptcy Law” means title 11, U.S. Code or any similar Federal or state law for the relief of debtors and the term “Custodian” means any receiver, trustee, assignee, liquidator or other similar official under any Bankruptcy Law.

SECTION 502. 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, then and 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 Securities of that Series are Original Issue Discount Securities or Indexed Securities, such portion of the principal as may be specified in the terms thereof) of all 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 the Holders), and upon any such declaration such principal or specified portion thereof shall become immediately due and payable.

At any time after such a declaration of acceleration with respect to Securities of 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 of acceleration and its consequences if:

- (1) the Company has paid or deposited with the Trustee a sum sufficient to pay in the currency, currency unit or composite currency in which the Securities of such series are payable (except as otherwise specified pursuant to Section 301 for the Securities of such series):
 - (A) all overdue installments of interest on all Outstanding Securities of that series and any related coupons,
 - (B) the principal of (and premium or Make-Whole Amount, if any, on) any Outstanding Securities of that series which have become due otherwise than by such declaration of acceleration and interest thereon at the rate or rates borne by or provided for in such Securities,
 - (C) to the extent that payment of such interest is lawful, interest upon overdue installments of interest at the rate or rates borne by or provided for in such Securities, and
 - (D) all sums paid or advanced by the Trustee hereunder and the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel; and
- (2) all Events of Default with respect to Securities of that series, other than the nonpayment of the principal of (or premium or Make-Whole Amount, if any) or interest on Securities of that series which have become due solely by such declaration of acceleration, have been cured or waived as provided in Section 513.

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

SECTION 503. Collection of Indebtedness and Suits for Enforcement by Trustee. The Company covenants that if:

- (1) default is made in the payment of any installment of interest on any Security of any series and any related coupon when such interest becomes due and payable and such default continues for a period of 30 days, or
- (2) default is made in the payment of the principal of (or premium or Make-Whole Amount, if any, on) any Security of any series at its Maturity,

then the Company will, upon demand of the Trustee, pay to the Trustee, for the benefit of the Holders of such Securities of such series and coupons, the whole amount then due and payable on such Securities and coupons for principal (and premium or Make-Whole Amount, if any) and interest, with interest upon any overdue principal (and premium or Make-Whole Amount, if any) and, to the extent that payment of such interest shall be legally enforceable, upon any overdue installments of interest at the rate or rates borne by or provided for in such Securities, and, in addition thereto, such further amount as shall be sufficient to cover the costs and expenses of collection, including the reasonable compensation, 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, and may prosecute such proceeding to judgment or final decree, and may enforce the same against the Company or any other obligor upon such Securities of such series and collect the moneys adjudged or decreed to be payable in the manner provided by law out of the property of the Company or any other obligor upon such Securities of such series, wherever situated.

If an Event of Default with respect to 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 and any related coupons by such appropriate judicial proceedings as the Trustee shall deem necessary 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 504. 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 of any series 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, premium or Make-Whole Amount, if any, or interest) shall be entitled and empowered, by intervention in such proceeding or otherwise:

(i) to file and prove a claim for the whole amount, or such lesser amount as may be provided for in the Securities of such series, of principal (and premium or Make-Whole Amount, if any) 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 reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel) and of the Holders allowed in such judicial proceeding, and

(ii) 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 of Securities of such series and coupons 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 to it for the reasonable compensation, expenses, disbursements and advances of the Trustee and any predecessor Trustee, their agents and counsel, and any other amounts due the Trustee or any predecessor Trustee under Section 606.

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

In any proceedings brought by the Trustee (and also any proceedings involving the interpretation of any provision of this Indenture to which the Trustee shall be a party) the Trustee shall be held to represent all the Holders of the Securities, and it shall not be necessary to make any Holders of the Securities parties to any such proceedings.

SECTION 505. Trustee May Enforce Claims Without Possession of Securities or Coupons. All rights of action and claims under this Indenture or any of the Securities or coupons may be prosecuted and enforced by the Trustee without the possession of any of the Securities or coupons 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 reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel, be for the ratable benefit of the Holders of the Securities and coupons in respect of which such judgment has been recovered.

SECTION 506. Application of Money Collected. Any money 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 on account of principal (or premium or Make-Whole Amount, if any) or interest, upon presentation of the Securities or coupons, or both, as the case may be, 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 and any predecessor Trustee under Section 606;

SECOND: To the payment of the amounts then due and unpaid upon the Securities and coupons for principal (and premium or Make-Whole Amount, if any) and interest, 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 aggregate amounts due and payable on such Securities and coupons for principal (and premium or Make-Whole Amount, if any) and interest, respectively; and

THIRD: To the payment of the remainder, if any, to the Company.

SECTION 507. Limitation on Suits. No Holder of any Security of any series or any related coupon shall have any right to institute any proceeding, judicial or otherwise, with respect to this Indenture or the Securities, or for the appointment of a receiver or trustee, or for any other remedy hereunder, unless:

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

(2) 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;

(3) such Holder or Holders have offered to the Trustee indemnity reasonably satisfactory to the Trustee against the costs, expenses and liabilities to be incurred in compliance with such request;

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

(5) 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 and intended 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.

SECTION 508. Unconditional Right of Holders to Receive Principal, Premium or Make-Whole Amount, if any, and Interest. Notwithstanding any other provision in this Indenture, the Holder of any Security or coupon shall have the right which is absolute and unconditional to receive payment of the principal of (and premium or Make-Whole Amount, if any) and (subject to Sections 305 and 307) interest on such Security or payment of such coupon on the respective due dates expressed in such Security or coupon (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 509. Restoration of Rights and Remedies. If the Trustee or any Holder of a Security or coupon 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, the Company, the Trustee and the Holders of Securities and coupons shall, subject to any determination in such proceeding, 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 510. Rights and Remedies Cumulative. Except as otherwise provided with respect to the replacement or payment of mutilated, destroyed, lost or stolen Securities or coupons in the last paragraph of Section 306, no right or remedy herein conferred upon or reserved to the Trustee or to the Holders of Securities or coupons 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 prevent the concurrent assertion or employment of any other appropriate right or remedy.

SECTION 511. Delay or Omission Not Waiver. No delay or omission of the Trustee or of any Holder of any Security or coupon 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 of Securities or coupons, as the case may be.

SECTION 512. Control by Holders of Securities. The Holders of not less than 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:

- (1) such direction shall not be in conflict with any rule of law or with this Indenture,
- (2) the Trustee may take any other action deemed proper by the Trustee which is not inconsistent with such direction, and
- (3) the Trustee need not take any action which might involve it in personal liability or be unduly prejudicial to the Holders of Securities of such series not joining therein.

Nothing in this Indenture shall impair the right of the Trustee in its discretion to take any action deemed proper by the Trustee and which is not inconsistent with such direction by Holders.

SECTION 513. 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 and any related coupons waive any past default hereunder with respect to such series and its consequences, except a default

- (1) in the payment of the principal of (or premium or Make-Whole Amount, if any) or interest on any Security of such series or any related coupons, or
- (2) in respect of a covenant or provision hereof which under Article Nine cannot be modified or amended without the consent of the Holder of each Outstanding Security of such series affected; or
- (3) in respect of a covenant or provision hereof for the benefit or protection of the Trustee, without its express written consent.

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 Event of Default or impair any right consequent thereon.

SECTION 514. Waiver of Usury, Stay or Extension Laws. The Company covenants (to the extent that it may lawfully do so) that it will not at any time insist upon, or plead, or in any manner whatsoever claim or take the benefit or advantage of, any usury, stay or extension law wherever enacted, now or at any time hereafter in force, which may affect the covenants or the performance of this Indenture; and the Company (to the extent that it may lawfully do so) hereby expressly waives all benefit or advantage of any such law, and covenants that it will not 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 had been enacted.

SECTION 515. 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 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 and expenses, 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 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 premium or Make-Whole Amount, if any) or interest on any Security on or after the respective Stated Maturities expressed in such Security (or, in the case of redemption, on or after the Redemption Date).

ARTICLE SIX - THE TRUSTEE

SECTION 601. Notice of Defaults. Within 90 days after the occurrence of any default hereunder with respect to the Securities of any series, the Trustee shall transmit in the manner and to the extent provided in TIA Section 313(c), notice of such default hereunder known to the Trustee, unless such default shall have been cured or waived; provided, however, that, except in the case of a default in the payment of the principal of (or premium or Make-Whole Amount, if any) or interest on any Security of such series, or in the payment of any sinking or purchase fund installment with respect to the Securities of such series, the Trustee shall be protected in withholding such notice if and so long as the board of directors, the executive committee, or a trust committee of directors and/or Responsible Officers of the Trustee in good faith determine that the withholding of such notice is in the interests of the Holders of the Securities and coupons of such series; and provided, further that in the case of any default or breach of the character specified in Section 501(4) with respect to the Securities and coupons of such series, no such notice to Holders shall be given until at least 60 days after the occurrence thereof. For the purpose of this Section, the term "default" means any event which is, or after notice or lapse of time or both would become, an Event of Default with respect to the Securities of such series.

SECTION 602. Certain Rights of Trustee. Subject to the provisions of TIA Section 315(a) through 315(d):

(1) the Trustee may conclusively rely and shall be fully protected in acting or refraining from acting upon any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, bond, debenture, note, coupon or other paper or document (whether in its original or facsimile form) reasonably believed by it to be genuine and to have been signed or presented by the proper party or parties;

(2) any request or direction of the Company mentioned herein shall be sufficiently evidenced by a Company Request or Company Order (other than delivery of any Security, together with any coupons appertaining thereto, to the Trustee for authentication and delivery pursuant to Section 303 which shall be sufficiently evidenced as provided therein) and any resolution of the Board of Directors may be sufficiently evidenced by a Board Resolution;

(3) whenever in the administration of this Indenture the Trustee shall deem it desirable that a matter be proved or established prior to taking, suffering or omitting any action hereunder, the Trustee (unless other evidence be herein specifically prescribed) may, in the absence of bad faith on its part, rely upon an Officers' Certificate;

(4) the Trustee may consult with counsel of its own selection and the written 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 in good faith and in reliance thereon;

(5) 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 of any series or any related coupons pursuant to this Indenture, unless such Holders shall have offered to the Trustee security or indemnity reasonably satisfactory to the Trustee against the costs, expenses and liabilities which might be incurred by it in compliance with such request or direction;

(6) 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, coupon or other paper or document, unless requested in writing so to do by the Holders of not less than a majority in aggregate principal amount of the Outstanding Securities of any series; provided that, if the payment within a reasonable time to the Trustee of the costs, expenses or liabilities likely to be incurred by it in the making of such investigation is, in the opinion of the Trustee, not reasonably assured to the Trustee by the security afforded to it by the terms of this Indenture, the Trustee may require reasonable indemnity against such expenses or liabilities as a condition to proceeding; the reasonable expenses of every such examination shall be paid by the Holders or, if paid by the Trustee, shall be repaid by the Holders upon demand. The Trustee, in its discretion, may make such further inquiry or investigation into such facts or matters as it may see fit, and, if the Trustee shall determine to make such further inquiry or investigation, it shall be entitled to examine the books, records and premises of the Company, relevant to the facts or matters that are the subject of its inquiry, personally or by agent or attorney at the expense of the Company and shall incur no liability or additional liability of any kind by reason of such inquiry or investigation;

(7) the Trustee may execute any of the trusts or powers hereunder or perform any duties hereunder either directly or by or through agents or attorneys and the Trustee shall not be responsible for any misconduct or negligence on the part of any agent or attorney appointed with due care by it hereunder;

(8) the Trustee shall not be liable for any action taken, suffered or omitted by it in good faith and reasonably believed by it to be authorized or within the discretion or rights or powers conferred upon it by this Indenture;

(9) any permissive right or power available to the Trustee under this Indenture or any supplement hereto shall not be construed to be a mandatory duty or obligation;

(10) the Trustee shall not be charged with knowledge of any matter (including any default, other than as described in Section 501(1), (2) or (3)) unless and except to the extent actually known to a Responsible Officer of the Trustee or to the extent written notice thereof is received by the Trustee at the Corporate Trust Office;

(11) the Trustee shall have no liability for any inaccuracy in the books and records of, or for any actions or omissions of, DTC, Euroclear or Clearstream or any depository acting on behalf of any of them;

(12) the rights, privileges, protections, immunities and benefits given to the Trustee, including, without limitation, its right to be indemnified, are extended to, and shall be enforceable by, the Trustee in each of its capacities hereunder, and each agent, custodian and other Person employed by the Trustee to act hereunder; and

(13) the Trustee may request that the Company deliver an Officers' Certificate setting forth the names of individuals and/or titles of officers authorized at such time to take specified actions pursuant to this Indenture, which Officers' Certificate may be signed by any person authorized to sign an Officers' Certificate, including any person specified as so authorized in any such certificate previously delivered and not superseded.

The Trustee shall not be required to expend or risk its own funds or otherwise incur any financial liability in the performance of any of its duties hereunder, or in the exercise of any of its rights or powers, if it shall have reasonable grounds for believing that repayment of such funds or adequate indemnity against such risk or liability is not reasonably assured to it.

Except during the continuance of an Event of Default, the Trustee undertakes to perform only such duties as are specifically set forth in this Indenture, and no implied covenants or obligations shall be read into this Indenture against the Trustee.

SECTION 603. Not Responsible for Recitals or Issuance of Securities. The recitals contained herein and in the Securities, except the Trustee's certificate of authentication, and in any coupons shall be taken as the statements of the Company, and neither the Trustee nor any Authenticating Agent assumes any responsibility for their correctness. The Trustee makes no representations as to the validity or sufficiency of this Indenture or of the Securities or coupons, except that the Trustee represents that it is duly authorized to execute and deliver this Indenture, authenticate the Securities and perform its obligations hereunder. Neither the Trustee nor any Authenticating Agent shall be accountable for the use or application by the Company of Securities or the proceeds thereof. The Trustee shall have no responsibility with respect to any information, statement or recital in any offering prospectus or other disclosure materials prepared or distributed with respect to the Securities.

SECTION 604. May Hold Securities. The Trustee, any Paying Agent, Security Registrar, Authenticating Agent or any other agent of the Company, in its individual or any other capacity, may become the owner or pledgee of Securities and coupons and, subject to TIA Sections 310(b) and 311, may otherwise deal with the Company with the same rights it would have if it were not Trustee, Paying Agent, Security Registrar, Authenticating Agent or such other agent.

SECTION 605. Money Held in Trust. Money held by the Trustee in trust hereunder need not be segregated from other funds except to the extent required by law. The Trustee shall be under no liability for interest on any money received by it hereunder except as otherwise agreed in writing with the Company.

SECTION 606. Compensation and Reimbursement. The Company agrees:

(1) to pay to the Trustee as agreed upon in writing from time to time reasonable compensation for all services rendered by it hereunder (which compensation shall not be limited by any provision of law in regard to the compensation of a trustee of an express trust);

(2) except as otherwise expressly provided herein, to reimburse each of the Trustee and any predecessor Trustee upon its request for all reasonable expenses, and disbursements incurred by the Trustee in accordance with any provision of this Indenture (including the reasonable compensation and the reasonable expenses and disbursements of its agents and counsel), except any such expense or disbursement as shall be determined to have been caused by its own negligence, willful misconduct or bad faith; and

(3) to indemnify each of the Trustee and any predecessor Trustee for, and to hold it harmless against, any loss, liability, claim, damage or expense incurred without negligence, willful misconduct or bad faith on its part, arising out of or in connection with the acceptance or administration of the trust or trusts hereunder, including the costs and expenses of defending itself against any claim or liability in connection with the exercise or performance of any of its powers or duties hereunder.

When the Trustee incurs expenses or renders services in connection with an Event of Default specified in Section 501(7) or Section 501(8), the expenses (including the reasonable charges and expenses of its counsel) and the compensation for the services are intended to constitute expenses of administration under any applicable Federal or state bankruptcy, insolvency or other similar law.

As security for the performance of the obligations of the Company under this Section, the Trustee shall have a lien for payment of the Trustee's fees and expenses prior to the Securities upon all property and funds held or collected by the Trustee as such, except funds held in trust for the payment of principal of (or premium or Make-Whole Amount, if any) or interest on particular Securities or any coupons.

The provisions of this Section shall survive the termination of this Indenture and the resignation or removal of the Trustee.

SECTION 607. Corporate Trustee Required; Eligibility; Conflicting Interests. There shall at all times be a Trustee hereunder which shall be eligible to act as Trustee under TIA Section 310(a)(1) and shall have at all times a combined capital and surplus of at least \$50,000,000 (or which shall have a combined capital and surplus of at least \$10,000,000 and whose ultimate parent holding company shall have a combined capital and surplus of at least \$50,000,000. If the Trustee publishes reports of condition at least annually, pursuant to law or the requirements of Federal, state, territorial or District of Columbia supervising or examining authority, then for the purposes of this Section, the combined capital and surplus of the Trustee shall be deemed to be its combined capital and surplus as set forth in its most recent report of condition so published. If at any time the Trustee shall cease to be eligible in accordance with the provisions of this Section, it shall resign immediately in the manner and with the effect hereinafter specified in this Article. Neither the Company nor any Person directly or indirectly controlling, controlled by, or under common control with the Company shall serve as Trustee.

SECTION 608. Resignation and Removal; Appointment of Successor.

(a) No resignation or removal of the Trustee and no appointment of a successor Trustee pursuant to this Article shall become effective until the acceptance of appointment by the successor Trustee in accordance with the applicable requirements of Section 609.

(b) The Trustee may resign at any time with respect to the Securities of one or more series by giving written notice thereof to the Company. If an instrument of acceptance by a successor Trustee shall not have been delivered to the Trustee within 60 days after the giving of such notice of resignation, the resigning Trustee may petition, at the expense of the Company, any court of competent jurisdiction for the appointment of a successor Trustee.

(c) The Trustee may be removed at any time with respect to the Securities of any series by Act of the Holders of a majority in principal amount of the Outstanding Securities of such series delivered to the Trustee and to the Company. If an instrument of acceptance by a successor Trustee shall not have been delivered to the Trustee within 60 days after the giving of such notice of resignation, the resigning Trustee may petition, at the expense of the Company, any court of competent jurisdiction for the appointment of a successor Trustee.

(d) If at any time:

(1) the Trustee shall fail to comply with the provisions of TIA Section 310(b) after written request therefor by the Company or by any Holder of a Security who has been a bona fide Holder of a Security for at least six months, or

(2) the Trustee shall cease to be eligible under Section 607 and shall fail to resign after written request therefor by the Company or by any Holder of a Security who has been a bona fide Holder of a Security for at least six months, or

(3) the Trustee shall become incapable of acting or shall be adjudged a bankrupt or insolvent or a receiver of the Trustee or of its property shall be appointed or any public officer shall take charge or control of the Trustee or of its property or affairs for the purpose of rehabilitation, conservation or liquidation,

then, in any such case, (i) the Company by or pursuant to a Board Resolution may remove the Trustee and appoint a successor Trustee with respect to all Securities, or (ii) subject to TIA Section 315(e), any Holder of a Security who has been a bona fide Holder of a Security for at least six months may, on behalf of himself and all others similarly situated, petition any court of competent jurisdiction for the removal of the Trustee with respect to all Securities and the appointment of a successor Trustee or Trustees.

(e) If the Trustee shall resign, be removed or become incapable of acting, or if a vacancy shall occur in the office of Trustee for any cause with respect to the Securities of one or more series, the Company, by or pursuant to a Board Resolution, shall promptly appoint a successor Trustee or Trustees with respect to the Securities of that or those series (it being understood that any such successor Trustee may be appointed with respect to the Securities of one or more or all of such series and that at any time there shall be only one Trustee with respect to the Securities of any particular series). If, within one year after such resignation, removal or incapability, or the occurrence of such vacancy, a successor Trustee with respect to the Securities of any series shall be appointed by Act of the Holders of a majority in principal amount of the Outstanding Securities of such series delivered to the Company and the retiring Trustee, the successor Trustee so appointed shall, forthwith upon its acceptance of such appointment, become the successor Trustee with respect to the Securities of such series and to that extent supersede the successor Trustee appointed by the Company. If no successor Trustee with respect to the Securities of any series shall have been so appointed by the Company or the Holders of Securities and accepted appointment in the manner hereinafter provided, any Holder of a Security who has been a bona fide Holder of a Security of such series for at least six months may, on behalf of himself and all others similarly situated, petition any court of competent jurisdiction for the appointment of a successor Trustee with respect to Securities of such series.

(f) The Company shall give notice of each resignation and each removal of the Trustee with respect to the Securities of any series and each appointment of a successor Trustee with respect to the Securities of any series in the manner provided for notices to the Holders of Securities in Section 106. Each notice shall include the name of the successor Trustee with respect to the Securities of such series and the address of its Corporate Trust Office.

SECTION 609. Acceptance of Appointment by Successor.

(a) In case of the appointment hereunder of a successor Trustee with respect to all Securities, every such successor Trustee so appointed shall execute, acknowledge and deliver to the Company and to the retiring Trustee an instrument accepting such appointment, and thereupon the resignation or removal of the retiring Trustee shall become effective and such successor Trustee, without any further act, deed or conveyance, shall become vested with all the rights, powers, trusts and duties of the retiring Trustee; but, on request of the Company or the successor Trustee, such retiring Trustee shall, upon payment of its charges, execute and deliver an instrument transferring to such successor Trustee all the rights, powers and trusts of the retiring Trustee, and shall duly assign, transfer and deliver to such successor Trustee all property and money held by such retiring Trustee hereunder, subject nevertheless to its claim, if any, provided for in Section 606.

(b) In case of the appointment hereunder of a successor Trustee with respect to the Securities of one or more (but not all) series, the Company, the retiring Trustee and each successor Trustee with respect to the Securities of one or more series shall execute and deliver an indenture supplemental hereto, pursuant to Article Nine hereof, wherein each successor Trustee shall accept such appointment and which (1) shall contain such provisions as shall be necessary or desirable to transfer and confirm to, and to vest in, each successor Trustee all the rights, powers, trusts and duties of the retiring Trustee with respect to the Securities of that or those series to which the appointment of such successor Trustee relates, (2) if the retiring Trustee is not retiring with respect to all Securities, shall contain such provisions as shall be deemed necessary or desirable to confirm that all the rights, powers, trusts and duties of the retiring Trustee with respect to the Securities of that or those series as to which the retiring Trustee is not retiring shall continue to be vested in the retiring Trustee, and (3) shall 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, it being understood that nothing herein or in such supplemental indenture shall constitute such Trustees co-trustees of the same trust and that each such Trustee shall be trustee of a trust or trusts hereunder separate and apart from any trust or trusts hereunder administered by any other such Trustee; and upon the execution and delivery of such supplemental indenture the resignation or removal of the retiring Trustee shall become effective to the extent provided therein and each such successor Trustee, without any further act, deed or conveyance, shall become vested with all the rights, powers, trusts and duties of the retiring Trustee with respect to the Securities of that or those series to which the appointment of such successor Trustee relates; but, on request of the Company or any successor Trustee, such retiring Trustee shall duly assign, transfer and deliver to such successor Trustee all property and money held by such retiring Trustee hereunder with respect to the Securities of that or those series to which the appointment of such successor Trustee relates.

(c) Upon request of any such successor Trustee, the Company shall execute any and all instruments for more fully and certainly vesting in and confirming to such successor Trustee all such rights, powers and trusts referred to in paragraph (a) or (b) of this Section 609, as the case may be.

(d) No successor Trustee shall accept its appointment unless at the time of such acceptance such successor Trustee shall be qualified and eligible under this Article.

SECTION 610. Merger, Conversion, Consolidation or Succession to Business. Any corporation into which the Trustee may be merged or converted or with which it may be consolidated, or any corporation resulting from any merger, conversion or consolidation to which the Trustee shall be a party, or any corporation succeeding to all or substantially all of the corporate trust business of the Trustee, shall be the successor of the Trustee hereunder, provided such corporation shall be otherwise qualified and eligible under this Article, without the execution or filing of any paper or any further act on the part of any of the parties hereto. In case any Securities or coupons shall have been authenticated, but not delivered, by the Trustee then in office, any successor by merger, conversion or consolidation to such authenticating Trustee may adopt such authentication and deliver the Securities or coupons so authenticated with the same effect as if such successor Trustee had itself authenticated such Securities or coupons. In case any Securities or coupons shall not have been authenticated by such predecessor Trustee, any such successor Trustee may authenticate and deliver such Securities or coupons, in either its own name or that of its predecessor Trustee, with the full force and effect which this Indenture provides for the certificate of authentication of the Trustee.

SECTION 611. Appointment of Authenticating Agent. At any time when any of the Securities remain Outstanding, the Trustee may appoint an Authenticating Agent or Agents with respect to one or more series of Securities which shall be authorized to act on behalf of the Trustee to authenticate Securities of such series issued upon conversion or exchange, registration of transfer or partial redemption or repayment thereof, and Securities so authenticated shall be entitled to the benefits of this Indenture and shall be valid and obligatory for all purposes as if authenticated by the Trustee hereunder. Any such appointment shall be evidenced by an instrument in writing signed by a Responsible Officer of the Trustee, a copy of which instrument shall be promptly furnished to the Company. Wherever reference is made in this Indenture to the authentication and delivery of Securities by the Trustee or the Trustee's certificate of authentication, such reference shall be deemed to include authentication and delivery on behalf of the Trustee by an Authenticating Agent and a certificate of authentication executed on behalf of the Trustee by an Authenticating Agent. Each Authenticating Agent shall be acceptable to the Company and shall at all times be a bank or trust company or corporation organized and doing business and in good standing under the laws of the United States of America or of any state or the District of Columbia, authorized under such laws to act as Authenticating Agent, having a combined capital and surplus of not less than \$50,000,000 and subject to supervision or examination by Federal or state authorities. If such Authenticating Agent publishes reports of condition at least annually, pursuant to law or the requirements of the aforesaid supervising or examining authority, then for the purposes of this Section, the combined capital and surplus of such Authenticating Agent shall be deemed to be its combined capital and surplus as set forth in its most recent report of condition so published. In case at any time an Authenticating Agent shall cease to be eligible in accordance with the provisions of this Section, such Authenticating Agent shall resign immediately in the manner and with the effect specified in this Section.

Any corporation into which an Authenticating Agent may be merged or converted or with which it may be consolidated, or any corporation resulting from any merger, conversion or consolidation to which such Authenticating Agent shall be a party, or any corporation succeeding to the corporate agency or corporate trust business of an Authenticating Agent, shall continue to be an Authenticating Agent, provided such corporation shall be otherwise eligible under this Section, without the execution or filing of any paper or further act on the part of the Trustee or the Authenticating Agent.

An Authenticating Agent for any series of Securities may at any time resign by giving written notice of resignation to the Trustee for such series and to the Company. The Trustee for any series of Securities may at any time terminate the agency of an Authenticating Agent by giving written notice of termination to such Authenticating Agent and to the Company. Upon receiving such a notice of resignation or upon such a termination, or in case at any time such Authenticating Agent shall cease to be eligible in accordance with the provisions of this Section, the Trustee for such series may appoint a successor Authenticating Agent which shall be acceptable to the Company and shall give notice of such appointment to all Holders of Securities of the series with respect to which such Authenticating Agent will serve in the manner set forth in Section 106. Any successor Authenticating Agent upon acceptance of its appointment hereunder shall become vested with all the rights, powers and duties of its predecessor hereunder, with like effect as if originally named as an Authenticating Agent herein. No successor Authenticating Agent shall be appointed unless eligible under the provisions of this Section.

The Company agrees to pay to each Authenticating Agent from time to time reasonable compensation including reimbursement of its reasonable expenses for its services under this Section, subject to Section 606.

If an appointment with respect to one or more series is made pursuant to this Section, the Securities of such series may have endorsed thereon, in addition to or in lieu of the Trustee's certificate of authentication, an alternate certificate of authentication substantially in the following form:

This is one of the Securities of the series designated therein referred to in the within- mentioned Indenture.

[_____],
as Trustee

Dated: _____

By: _____
as Authenticating Agent

Dated: _____

By: _____
as Authenticating Agent

SECTION 612. Certain Duties and Responsibilities of the Trustee.

(a) With respect to the Securities of any series, except during the continuance of an Event of Default with respect to the Securities of such series:

(1) the Trustee undertakes to perform such duties and only such duties as are specifically set forth in this Indenture, and no implied covenants or obligations shall be read into this Indenture against the Trustee; and

(2) 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 certificates or opinions furnished to the Trustee and conforming to the requirements of this Indenture; but in the case of any such certificates or opinions which by any provision hereof are specifically required to be furnished to the Trustee, the Trustee shall be under a duty to examine the same to determine whether or not they conform to the requirements of this Indenture, but shall not be under any duty to verify the contents or accuracy thereof.

(b) In case an Event of Default with respect to the Securities of any series has occurred and is continuing, the Trustee shall, with respect to Securities of such series, exercise such of 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 man would exercise or use under the circumstances in the conduct of his own affairs.

(c) No provision of this Indenture shall be construed to relieve the Trustee from liability for its own negligent action, its own negligent failure to act, or its own willful misconduct, except that:

(1) this Subsection shall not be construed to limit the effect of Subsection (a) of this Section;

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

(3) the Trustee shall not be liable with respect to any action taken or omitted to be taken by it in good faith in accordance with the direction of the Holders of a majority in principal amount of the Outstanding Securities of any 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; and

(4) no provision of this Indenture shall require the Trustee to expend or risk its own funds or otherwise incur any financial liability in the performance of any of its duties hereunder, or in the exercise of any of its rights or powers, if it shall have reasonable grounds for believing that repayment of such funds or adequate indemnity against such risk or liability is not reasonably assured to it; and, the Trustee shall be under no obligation to exercise any of its rights and powers under this Indenture at the request of any Holder, unless such Holder shall have offered to the Trustee security and indemnity satisfactory to it against any loss, liability or expense.

(d) Whether or not therein expressly so provided, every provision of this Indenture relating to the conduct or affecting the liability of or affording protection to the Trustee shall be subject to the provisions of this Section 612.

(e) The Trustee shall not be liable for interest on any money or assets held by it except to the extent the Trustee may agree in writing with the Company. Assets held in trust by the Trustee need not be segregated from other assets except to the extent required by law.

ARTICLE SEVEN - HOLDERS' LISTS AND REPORTS BY TRUSTEE AND COMPANY

SECTION 701. Disclosure of Names and Addresses of Holders. Every Holder of Securities or coupons, by receiving and holding the same, agrees with the Company and the Trustee that neither the Company nor the Trustee nor any Authenticating Agent nor any Paying Agent nor any Security Registrar shall be held accountable by reason of the disclosure of any information as to the names and addresses of the Holders of Securities in accordance with TIA Section 312, regardless of the source from which such information was derived, and that the Trustee shall not be held accountable by reason of mailing any material pursuant to a request made under TIA Section 312(b).

SECTION 702. Reports by Trustee. The Trustee shall transmit to Holders such reports concerning the Trustee and its actions under this Indenture as may be required by TIA Section 313 at the times and in the manner provided by the TIA, which shall initially be not less than every twelve months commencing on _____, 20___. A copy of each such report shall, at the time of such transmission to Holders, be filed by the Trustee with each over-the-counter market or securities exchange, if any, upon which any Securities are quoted or listed, with the Commission and with the Company. The Company will notify the Trustee when any Securities are quoted or listed on any over-the-counter market or securities exchange or delisted therefrom.

SECTION 703. Reports by Company. The Company will:

(1) file with the Trustee, within 15 days after the Company is required to file the same with the Commission, 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 Commission may from time to time by rules and regulations prescribe) which the Company may be required to file as an accelerated filer with the Commission pursuant to Section 13 or Section 15(d) of the Exchange Act (and if the Company's status as an accelerated filer changes, the Company shall provide written notice of such change to the Trustee); or, if the Company is not required to file information, documents or reports pursuant to either of such Sections, then it will file with the Trustee and the Commission, in accordance with rules and regulations prescribed from time to time by the Commission, such of the supplementary and periodic information, documents and reports which may be required pursuant to Section 13 of the Exchange Act in respect of a security quoted or listed and registered on an over-the-counter market or national securities exchange as may be prescribed from time to time in such rules and regulations;

(2) file with the Trustee and the Commission, in accordance with rules and regulations prescribed from time to time by the Commission, such additional information, documents and reports with respect to compliance by the Company with the conditions and covenants of this Indenture as may be required from time to time by such rules and regulations;

(3) transmit by mail to the Holders of Securities, within 30 days after the filing thereof with the Trustee, in the manner and to the extent provided in TIA Section 313(c), such summaries of any information, documents and reports required to be filed by the Company pursuant to paragraphs (1) and (2) of this Section as may be required by rules and regulations prescribed from time to time by the Commission; and

(4) delivery of such reports, information and documents to the Trustee is for informational purposes only and the Trustee's receipt of such shall not constitute constructive notice of any information contained therein or determinable from information contained therein, including the Company's compliance with any of its covenants hereunder (as to which the Trustee is entitled to rely exclusively on Officers' Certificates).

SECTION 704. Company to Furnish Trustee Names and Addresses of Holders. The Company will furnish or cause to be furnished to the Trustee:

(a) semiannually, not later than 15 days after the Regular Record Date for interest for each series of Securities, a list, in such form as the Trustee may reasonably require, of the names and addresses of the Holders of Registered Securities of such series as of such Regular Record Date, or if there is no Regular Record Date for interest for such series of Securities, semiannually, upon such dates as are set forth in the Board Resolution or indenture supplemental hereto authorizing such series, and

(b) at such other times as the Trustee may request in writing, within 30 days after the receipt by the Company of any such request, a list of similar form and content as of a date not more than 15 days prior to the time such list is furnished,

provided, however, that, so long as the Trustee is the Security Registrar, no such list shall be required to be furnished.

ARTICLE EIGHT - CONSOLIDATION, MERGER, SALE, LEASE OR CONVEYANCE

SECTION 801. Consolidations and Mergers of Company and Sales, Leases and Conveyances Permitted Subject to Certain Conditions. The Company may consolidate with, or sell, lease or convey all or substantially all of its assets to, or merge with or into any other corporation, provided that in any such case, (1) either the Company shall be the continuing corporation, or the successor corporation shall be a corporation organized and existing under the laws of the United States or a State thereof and such successor corporation shall expressly assume the due and punctual payment of the principal of (and premium or Make-Whole Amount, if any) and any interest on all of the Securities, according to their tenor, and the due and punctual performance and observance of all of the covenants and conditions of this Indenture to be performed by the Company by supplemental indenture, complying with Article Nine hereof, satisfactory to the Trustee, executed and delivered to the Trustee by such corporation, (2) immediately after giving effect to such transaction and treating any indebtedness which becomes an obligation of the Company or any Subsidiary as a result thereof as having been incurred by the Company or such Subsidiary at the time of such transaction, no Event of Default, and no event which, after notice or the lapse of time, or both, would become an Event of Default, shall have occurred and be continuing and (3) the Company shall have delivered to the Trustee the Officer's Certificate and Opinion of Counsel required pursuant to Section 803 below.

SECTION 802. Rights and Duties of Successor Corporation. In case of any such consolidation, merger, sale, lease or conveyance and upon any such assumption by the successor corporation, such successor corporation shall succeed to and be substituted for the Company, with the same effect as if it had been named herein as the party of the first part, and the predecessor corporation, except in the event of a lease, shall be relieved of any further obligation under this Indenture and the Securities. Such successor corporation thereupon may cause to be signed, and may issue either in its own name or in the name of the Company, any or all of the Securities issuable hereunder which theretofore shall not have been signed by the Company and delivered to the Trustee; and, upon the order of such successor corporation, instead of the Company, and subject to all the terms, conditions and limitations in this Indenture prescribed, the Trustee shall authenticate and shall deliver any Securities which previously shall have been signed and delivered by the officers of the Company to the Trustee for authentication, and any Securities which such successor corporation thereafter shall cause to be signed and delivered to the Trustee for that purpose. All the Securities so issued shall in all respects have the same legal rank and benefit under this Indenture as the Securities theretofore or thereafter issued in accordance with the terms of this Indenture as though all of such Securities had been issued at the date of the execution hereof.

In case of any such consolidation, merger, sale, lease or conveyance, such changes in phraseology and form (but not in substance) may be made in the Securities thereafter to be issued as may be appropriate.

SECTION 803. Officers' Certificate and Opinion of Counsel. Any consolidation, merger, sale, lease or conveyance permitted under Section 801 is also subject to the condition that the Trustee receive an Officers' Certificate and an Opinion of Counsel to the effect that any such consolidation, merger, sale, lease or conveyance, and the assumption by any successor corporation, complies with the provisions of this Article and that all conditions precedent herein provided for relating to such transaction have been complied with.

ARTICLE NINE - SUPPLEMENTAL INDENTURES

SECTION 901. Supplemental Indentures Without Consent of Holders. Without the consent of any Holders of Securities or coupons, the Company, when authorized by or pursuant to a Board Resolution, and the Trustee, at any time and from time to time, may enter into one or more indentures supplemental hereto, in form satisfactory to the Trustee, for any of the following purposes:

- (1) to evidence the succession of another Person to the Company and the assumption by any such successor of the covenants of the Company contained herein and in the Securities; or
- (2) to add to the covenants of the Company for the benefit of the Holders of all or any series of Securities (and if such covenants are to be for the benefit of less than all series of Securities, stating that such covenants are expressly being included solely for the benefit of such series) or to surrender any right or power herein conferred upon the Company; or
- (3) to add any additional Events of Default for the benefit of the Holders of all or any series of Securities (and if such Events of Default are to be for the benefit of less than all series of Securities, stating that such Events of Default are expressly being included solely for the benefit of such series); provided, however, that in respect of any such additional Events of Default such supplemental indenture may provide for a particular period of grace after default (which period may be shorter or longer than that allowed in the case of other defaults) or may provide for an immediate enforcement upon such default or may limit the remedies available to the Trustee upon such default or may limit the right of the Holders of a majority in aggregate principal amount of that or those series of Securities to which such additional Events of Default apply to waive such default; or
- (4) to add to or change any of the provisions of this Indenture to provide that Bearer Securities may be registrable as to principal, to change or eliminate any restrictions on the payment of principal of or premium or Make-Whole Amount, if any, or interest on Bearer Securities, to permit Bearer Securities to be issued in exchange for Registered Securities, to permit Bearer Securities to be issued in exchange for Bearer Securities of other authorized denominations or to permit or facilitate the issuance of Securities in uncertificated form, provided that any such action shall not adversely affect the interests of the Holders of Securities of any series or any related coupons in any material respect; or

- (5) to change or eliminate any of the provisions of this Indenture, provided that any such change or elimination shall become effective only when there is no Security Outstanding of any series created prior to the execution of such supplemental indenture which is entitled to the benefit of such provision; or
- (6) to secure the Securities; or
- (7) to establish the form or terms of Securities of any series and any related coupons as permitted or contemplated by Sections 201 and 301; or
- (8) 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
- (9) to cure any ambiguity, to correct or supplement any provision herein which may be defective or inconsistent with any other provision herein, or to make any other provisions with respect to matters or questions arising under this Indenture which shall not be inconsistent with the provisions of this Indenture, provided such provisions shall not adversely affect the interests of the Holders of Securities of any series or any related coupons in any material respect; or
- (10) to supplement any of the provisions of this Indenture to such extent as shall be necessary to permit or facilitate the Defeasance and discharge of any series of Securities pursuant to Sections 401, 1402 and 1403; provided that any such action shall not adversely affect the interests of the Holders of Securities of such series and any related coupons or any other series of Securities in any material respect; or
- (11) to make provisions with respect to Holders' rights of conversion with respect to any series of Securities pursuant to Article Seventeen.

SECTION 902. Supplemental Indentures with Consent of Holders. With the consent of the Holders of not less than a majority in principal amount of all Outstanding Securities affected by such supplemental indenture, by Act of said Holders delivered to the Company and the Trustee, the Company, when authorized by or pursuant to a Board Resolution, and the Trustee may enter into an indenture or indentures supplemental hereto for the purpose of adding any provisions to or changing in any manner or eliminating any of the provisions of this Indenture or of modifying in any manner the rights of the Holders of Securities and any related coupons under this Indenture; provided, however, that no such supplemental indenture shall, without the consent of the Holder of each Outstanding Security affected thereby:

(1) change the Stated Maturity of the principal of (or premium or Make-Whole Amount, if any, on) or any installment of principal of or interest on, any Security; or reduce the principal amount thereof or the rate or amount of interest thereon, or any premium or Make-Whole Amount payable upon the redemption thereof, or reduce the amount of the principal of an Original Issue Discount Security that would be due and payable upon a declaration of acceleration of the Maturity thereof pursuant to Section 502 or the amount thereof provable in bankruptcy pursuant to Section 504, or adversely affect any right of repayment at the option of the Holder of any Security, or change any Place of Payment where, or the currency or currencies, currency unit or units or composite currency or currencies in which, any Security or any premium or Make-Whole Amount or the interest thereon is payable, or impair the right to institute suit for the enforcement of any such payment on or after the Stated Maturity thereof (or, in the case of redemption or repayment at the option of the Holder, on or after the Redemption Date or the Repayment Date, as the case may be), or (if Securities of such series are convertible) adversely affect the right of the Holder to convert any Security as provided in Article Seventeen, or modify the provisions of this Indenture with respect to the subordination of the Securities in a manner materially adverse to the Holders; or

(2) reduce the percentage in principal amount of the Outstanding Securities of any series, the consent of whose Holders is required for any such supplemental indenture, or the consent of whose Holders is required for any waiver with respect to such series (or compliance with certain provisions of this Indenture or certain defaults hereunder and their consequences) provided for in this Indenture, or reduce the requirements of Section 1504 for quorum or voting, or

(3) modify any of the provisions of this Section, Section 513 or Section 1009, except to increase the required percentage to effect such action or to provide that certain other provisions of this Indenture cannot be modified or waived without the consent of the Holder of each Outstanding Security affected thereby, provided, however, that this clause shall not be deemed to require the consent of any Holder with respect to changes in the references to “the Trustee” and concomitant changes in this Section 902 and Section 1009, or the deletion of this proviso, in accordance with the requirements of Sections 609(b) and 901(11).

It shall not be necessary for any Act of Holders under this Section 902 to approve the particular form of any proposed supplemental indenture, but it shall be sufficient if such Act shall approve the substance thereof.

A supplemental indenture which changes or eliminates any covenant or other provision of this Indenture which has expressly been included solely for the benefit of one or more particular series of Securities, or which modifies the rights of the Holders of Securities of such series with respect to such covenant or other provision, shall be deemed not to affect the rights under this Indenture of the Holders of Securities of any other series.

SECTION 903. Execution of Supplemental Indentures. In executing, or accepting the additional trusts created by, any supplemental indenture permitted by this Article or the modification thereby of the trusts created by this Indenture, the Trustee shall be entitled to receive, and (subject to Section 612) shall be fully protected in relying upon, an Opinion of Counsel stating that the execution of such supplemental indenture is authorized or permitted by this Indenture. The Trustee may, but shall not be obligated to, enter into any such supplemental indenture which affects the Trustee’s own rights, duties or immunities under this Indenture or otherwise.

SECTION 904. Effect of Supplemental Indentures. Upon the execution of any supplemental indenture under this Article, this Indenture shall be modified in accordance therewith, and such supplemental indenture shall form a part of this Indenture for all purposes; and every Holder of Securities theretofore or thereafter authenticated and delivered hereunder and of any coupon appertaining thereto shall be bound thereby.

SECTION 905. Conformity with Trust Indenture Act. Every supplemental indenture executed pursuant to this Article shall conform to the requirements of the Trust Indenture Act as then in effect.

SECTION 906. Reference in Securities to Supplemental Indentures. Securities of any series authenticated and delivered after the execution of any supplemental indenture pursuant to this Article may, and shall, if required by the Trustee, bear a notation in form approved by the Trustee as to any matter provided for in such supplemental indenture. If the Company shall so determine, new Securities of any series so modified as to conform, in the opinion of the Trustee and the Company, to any such supplemental indenture may be prepared and executed by the Company and authenticated and delivered by the Trustee in exchange for Outstanding Securities of such series.

ARTICLE TEN - COVENANTS

SECTION 1001. Payment of Principal, Premium or Make-Whole Amount, if any; 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 premium or Make-Whole Amount, if any) and interest on the Securities of that series in accordance with the terms of such series of Securities, any coupons appertaining thereto and this Indenture. Unless otherwise specified as contemplated by Section 301 with respect to any series of Securities, any interest due on Bearer Securities on or before Maturity shall be payable only upon presentation and surrender of the several coupons for such interest installments as are evidenced thereby as they severally mature. Unless otherwise specified with respect to Securities of any series pursuant to Section 301, at the option of the Company (upon written notice to the Trustee), all payments of principal may be paid by check to the registered Holder of the Registered Security or other Person entitled thereto against surrender of such Security.

SECTION 1002. Maintenance of Office or Agency. If Securities of a series are issuable only as Registered Securities, the Company shall maintain in each Place of Payment for any series of Securities an office or agency where Securities of that series may be presented or surrendered for payment or conversion, where Securities of that series may be surrendered for registration of transfer or conversion or exchange and where notices and demands to or upon the Company in respect of the Securities of that series and this Indenture may be served. If Securities of a series are issuable as Bearer Securities, the Company will maintain: (A) in the Borough of Manhattan, The City of New York, an office or agency where any Registered Securities of that series may be presented or surrendered for payment or conversion, where any Registered Securities of that series may be surrendered for registration of transfer, where Securities of that series may be surrendered for conversion or exchange, where notices and demands to or upon the Company in respect of the Securities of that series and this Indenture may be served and where Bearer Securities of that series and related coupons may be presented or surrendered for payment or conversion in the circumstances described in the following paragraph (and not otherwise); (B) subject to any laws or regulations applicable thereto, in a Place of Payment for that series which is located outside the United States, an office or agency where Securities of that series and related coupons may be presented and surrendered for payment; provided, however, that if the Securities of that series are listed on any stock exchange located outside the United States and such stock exchange shall so require, the Company will maintain a Paying Agent for the Securities of that series in any required city located outside the United States, as the case may be, so long as the Securities of that series are listed on such exchange; and (C) subject to any laws or regulations applicable thereto, in a Place of Payment for that series located outside the United States an office or agency where any Registered Securities of that series may be surrendered for registration of transfer, where Securities of that series may be surrendered for conversion or exchange and where notices and demands to or upon the Company in respect of the Securities of that series and this Indenture may be served. The Company will give prompt written notice to the Trustee of the location, and any change in the location, of each such office or agency. If at any time the Company shall fail to maintain any such required office or agency or shall fail to furnish the Trustee with the address thereof, such presentations, surrenders, notices and demands may be made or served at the Corporate Trust Office of the Trustee, except that Bearer Securities of that series and the related coupons may be presented and surrendered for payment or conversion at the offices specified in the Security, in London, England, and the Company hereby appoints the same as its agent to receive such respective presentations, surrenders, notices and demands, and the Company hereby appoints the Trustee its agent to receive all such presentations, surrenders, notices and demands.

Unless otherwise specified with respect to any Securities pursuant to Section 301, no payment of principal, premium or Make-Whole Amount or interest on Bearer Securities shall be made at any office or agency of the Company in the United States or by check mailed to any address in the United States or by transfer to an account maintained with a bank located in the United States; provided, however, that, if the Securities of a series are payable in Dollars, payment of principal of and any premium or Make-Whole Amount and interest on any Bearer Security shall be made at the office of the Company's Paying Agent in the Borough of Manhattan, The City of New York, if (but only if) payment in Dollars of the full amount of such principal, premium or Make-Whole Amount, or interest, as the case may be, at all offices or agencies outside the United States maintained for the purpose by the Company in accordance with this Indenture, is illegal or effectively precluded by exchange controls or other similar restrictions.

The Company may from time to time designate one or more other offices or agencies (in or outside the Place of Payment) where the Securities of one or more series may be presented or surrendered for any or all of such purposes, 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 obligation to maintain an office or agency in accordance with the requirements set forth above 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 location of any such other office or agency. Unless otherwise specified with respect to any Securities pursuant to Section 301 with respect to a series of Securities, the Company hereby designates as a Place of Payment for each series of Securities, each of (i) the office or agency of the Company in the Borough of Manhattan, The City of New York, and (ii) the Corporate Trust Office of the Trustee (as Paying Agent); and the Company hereby initially appoints the Trustee at its Corporate Trust Office as Paying Agent in such city; and the Company hereby initially appoints as its agent to receive all such presentations, surrenders, notices and demands each of the Trustee, at its Corporate Trust Office.

Unless otherwise specified with respect to any Securities pursuant to Section 301, if and so long as the Securities of any series (i) are denominated in a Foreign Currency or (ii) may be payable in a Foreign Currency, or so long as it is required under any other provision of the Indenture, then the Company will maintain with respect to each such series of Securities, or as so required, at least one exchange rate agent (of which it shall give written notice to the Trustee).

SECTION 1003. Money for Securities Payments to Be Held in Trust. If the Company shall at any time act as its own Paying Agent with respect to any series of any Securities and any related coupons, it will, on or before each due date of the principal of (and premium or Make-Whole Amount, if any), or interest on any of the Securities of that series, segregate and hold in trust for the benefit of the Persons entitled thereto a sum in the currency or currencies, currency unit or units or composite currency or currencies in which the Securities of such series are payable (except as otherwise specified pursuant to Section 301 for the Securities of such series) sufficient to pay the principal (and premium or Make-Whole Amount, if any) or interest so becoming due until such sums shall be paid to such Persons or otherwise disposed of as herein provided, and will promptly notify the Trustee of its action or failure so to act.

Whenever the Company shall have one or more Paying Agents for any series of Securities and any related coupons, it will, on or before each due date of the principal of (and premium or Make-Whole Amount, if any), or interest on any Securities of that series, deposit with a Paying Agent a sum (in the currency or currencies, currency unit or units or composite currency or currencies described in the preceding paragraph) sufficient to pay the principal (and premium or Make-Whole Amount, if any) or interest so becoming due, such sum to be held in trust for the benefit of the Persons entitled to such principal, premium or Make-Whole Amount, if any, or interest and (unless such Paying Agent is the Trustee) the Company will promptly notify the Trustee of its action or failure so to act.

The Company will cause each Paying Agent for any series of Securities other than the Trustee to execute and deliver to the Trustee an instrument in which such Paying Agent shall agree with the Trustee, subject to the provisions of this Section, that such Paying Agent will

- (1) hold all sums held by it for the payment of principal of (and premium or Make-Whole Amount, if any) or interest on Securities in trust for the benefit of the Persons entitled thereto until such sums shall be paid to such Persons or otherwise disposed of as herein provided;
- (2) give the Trustee notice of any default by the Company (or any other obligor upon the Securities) in the making of any such payment of principal (and premium or Make-Whole Amount, if any) or interest on the Securities of that series; and

(3) at any time during the continuance of any such default upon the written request of the Trustee, forthwith pay to the Trustee all sums so held in trust by such Paying Agent.

The Company may at any time, for the purpose of obtaining the satisfaction and discharge of this Indenture or for any other purpose, pay, or by Company Order direct any Paying Agent to pay, to the Trustee all sums held in trust by the Company or such Paying Agent, such sums to be held by the Trustee upon the same trusts as those upon which such sums were held by the Company or such Paying Agent; and, upon such payment by any Paying Agent to the Trustee, such Paying Agent shall be released from all further liability with respect to such sums.

Except as otherwise provided in the Securities of any series, and subject to applicable laws, any money deposited with the Trustee or any Paying Agent, or then held by the Company, in trust for the payment of the principal of (and premium or Make-Whole Amount, if any) or interest on any Security of any series and remaining unclaimed for two years after such principal (and premium or Make-Whole Amount, if any) or interest has become due and payable shall be paid to the Company upon Company Request or (if then held by the Company) shall be discharged from such trust; and the Holder of such Security shall thereafter, as an unsecured general creditor, look only to the Company for payment of such principal of (and premium or Make-Whole Amount, if any) or interest on any Security, without interest thereon, and all liability of the Trustee or such Paying Agent with respect to such trust money, and all liability of the Company as trustee thereof, shall thereupon cease; provided, however, that the Trustee or such Paying Agent, before being required to make any such repayment, may at the expense of the Company cause to be published once, in an Authorized Newspaper, notice that such money remains unclaimed and that, after a date specified therein, which shall not be less than 30 days from the date of such publication, any unclaimed balance of such money then remaining will be repaid to the Company.

SECTION 1004. Existence. Subject to Article Eight, the Company will do or cause to be done all things necessary to preserve and keep in full force and effect its corporate existence, all material rights (by certificate of incorporation, by-laws and statute) and material franchises; provided, however, that the Company shall not be required to preserve any such right or franchise if the Board of Directors shall determine that the preservation thereof is no longer desirable in the conduct of the business of the Company.

SECTION 1005. Maintenance of Properties. The Company will cause all of its material properties used or useful in the conduct of its business or the business of any Subsidiary to be maintained and kept in good condition, repair and working order, normal wear and tear, casualty and condemnation excepted, and supplied with all necessary equipment and will cause to be made all necessary repairs, renewals, replacements, betterments and improvements thereof (and the Company may take out of service for a period of time, any of its properties that have been condemned or suffered any loss due to casualty in order to make such repairs, betterments and improvements), all as in the judgment of the Company may be necessary so that the business carried on in connection therewith may be properly and advantageously conducted at all times; provided, however, that the Company and its Subsidiaries shall not be prevented from (i) removing permanently any property that has been condemned or suffered a loss due to casualty based on the Company's reasonable judgment that such removal is in the best interest of the Company, or (ii) selling or otherwise disposing of their properties for value in the ordinary course of business.

SECTION 1006. Insurance. The Company will cause each of its and its Subsidiaries' insurable properties to be insured against loss or damage in an amount deemed reasonable by the Board of Directors with insurers of recognized responsibility.

SECTION 1007. Payment of Taxes and Other Claims. The Company will pay or discharge or cause to be paid or discharged, before the same shall become delinquent, (1) all taxes, assessments and governmental charges levied or imposed upon it or any Subsidiary or upon the income, profits or property of the Company or any Subsidiary, and (2) all lawful claims for labor, materials and supplies which, if unpaid, might by law become a lien upon the property of the Company or any Subsidiary; provided, however, that the Company shall not be required to pay or discharge or cause to be paid or discharged any such tax, assessment, charge or claim whose amount, applicability or validity is being contested in good faith by appropriate proceedings.

SECTION 1008. Statement as to Compliance. The Company will deliver to the Trustee, within 120 days after the end of each fiscal year, a brief certificate from the principal executive officer, principal financial officer or principal accounting officer as to his or her knowledge of the Company's compliance with all conditions and covenants under this Indenture and, in the event of any noncompliance, specifying such noncompliance and the nature and status thereof. For purposes of this Section 1008, such compliance shall be determined without regard to any period of grace or requirement of notice under this Indenture.

SECTION 1009. Waiver of Certain Covenants. The Company may omit in any particular instance to comply with any term, provision or condition set forth in Sections 1004 to 1008, inclusive, if before or after the time for such compliance the Holders of at least a majority in principal amount of all outstanding Securities of such series, by Act of such Holders, either waive such compliance in such instance or generally waive compliance with such covenant or condition, but no such waiver shall extend to or affect such covenant or condition except to the extent so expressly waived, and, until such waiver shall become effective, the obligations of the Company and the duties of the Trustee in respect of any such term, provision or condition shall remain in full force and effect.

ARTICLE ELEVEN - REDEMPTION OF SECURITIES

SECTION 1101. Applicability of Article. Securities of any series which are redeemable before their Stated Maturity shall be redeemable in accordance with their terms and (except as otherwise specified as contemplated by Section 301 for Securities of any series) in accordance with this Article.

SECTION 1102. Election to Redeem; Notice to Trustee. The election of the Company to redeem any Securities shall be evidenced by or pursuant to a Board Resolution. In case of any redemption at the election of the Company of less than all of the Securities of any series, the Company shall, at least 45 days prior to the giving of the notice of redemption in Section 1104 (unless a shorter notice shall be satisfactory to the Trustee), notify the Trustee of such Redemption Date and of the principal amount of Securities of such series to be redeemed. In the case of any redemption of Securities prior to the expiration of any restriction on such redemption provided in the terms of such Securities or elsewhere in this Indenture, the Company shall furnish the Trustee with an Officers' Certificate evidencing compliance with such restriction.

SECTION 1103. Selection by Trustee of Securities to Be Redeemed. If less than all the Securities of any series issued on the same day with the same terms are to be redeemed, the particular Securities to be redeemed shall be selected not more than 60 days prior to the Redemption Date by the Trustee, from the Outstanding Securities of such series issued on such date with the same terms not previously called for redemption, by such method as the Trustee shall deem fair and appropriate and which may provide for the selection for redemption of portions (equal to the minimum authorized denomination for Securities of that series or any integral multiple thereof) of the principal amount of Securities of such series of a denomination larger than the minimum authorized denomination for Securities of that series.

The Trustee shall promptly notify the Company and the Security Registrar (if other than itself) in writing of the Securities selected for redemption and, in the case of any Securities selected for partial redemption, the principal amount thereof to be redeemed.

For all purposes of this Indenture, unless the context otherwise requires, all provisions relating to the redemption of Securities shall relate, in the case of any Security redeemed or to be redeemed only in part, to the portion of the principal amount of such Security which has been or is to be redeemed.

SECTION 1104. Notice of Redemption. Notice of redemption shall be given in the manner provided in Section 106, not less than 30 days nor more than 60 days prior to the Redemption Date, unless a shorter period is specified by the terms of such series established pursuant to Section 301, to each Holder of Securities to be redeemed, but failure to give such notice in the manner herein provided to the Holder of any Security designated for redemption as a whole or in part, or any defect in the notice to any such Holder, shall not affect the validity of the proceedings for the redemption of any other such Security or portion thereof.

Any notice that is mailed to the Holders of Registered Securities in the manner herein provided shall be conclusively presumed to have been duly given, whether or not the Holder receives the notice.

All notices of redemption shall state:

- (1) the Redemption Date,
- (2) the Redemption Price, accrued interest to the Redemption Date payable as provided in Section 1106, if any,
- (3) if less than all Outstanding Securities of any series are to be redeemed, the identification (and, in the case of partial redemption, the principal amount) of the particular Security or Securities to be redeemed,

(4) in case any Security is to be redeemed in part only, the notice which relates to such Security shall state that on and after the Redemption Date, upon surrender of such Security, the holder will receive, without a charge, a new Security or Securities of authorized denominations for the principal amount thereof remaining unredeemed,

(5) that on the Redemption Date the Redemption Price and accrued interest to the Redemption Date payable as provided in Section 1106, if any, will become due and payable upon each such Security, or the portion thereof, to be redeemed and, if applicable, that interest thereon shall cease to accrue on and after said date,

(6) the Place or Places of Payment where such Securities, together in the case of Bearer Securities with all coupons appertaining thereto, if any, maturing after the Redemption Date, are to be surrendered for payment of the Redemption Price and accrued interest, if any, or for conversion,

(7) that the redemption is for a sinking fund, if such is the case,

(8) that, unless otherwise specified in such notice, Bearer Securities of any series, if any, surrendered for redemption must be accompanied by all coupons maturing subsequent to the date fixed for redemption or the amount of any such missing coupon or coupons will be deducted from the Redemption Price, unless security or indemnity satisfactory to the Company, the Trustee for such series and any Paying Agent is furnished,

(9) if Bearer Securities of any series are to be redeemed and any Registered Securities of such series are not to be redeemed, and if such Bearer Securities may be exchanged for Registered Securities not subject to redemption on this Redemption Date pursuant to Section 305 or otherwise, the last date, as determined by the Company, on which such exchanges may be made,

(10) the CUSIP number of such Security, if any, and

(11) if applicable, that a Holder of Securities who desires to convert Securities for redemption must satisfy the requirements for conversion contained in such Securities, the then existing conversion price or rate, the place or places where such Securities may be surrendered for conversion, and the date and time when the option to convert shall expire.

Notice of redemption of Securities to be redeemed at the election of the Company shall be given by the Company or, at the Company's request, by the Trustee in the name and at the expense of the Company.

SECTION 1105. Deposit of Redemption Price. On or prior to any Redemption Date, the Company shall deposit with the Trustee or with a Paying Agent (or, if the Company is acting as its own Paying Agent, which it may not do in the case of a sinking fund payment under Article Twelve, segregate and hold in trust as provided in Section 1003) an amount of money in the currency or currencies, currency unit or units or composite currency or currencies in which the Securities of such series are payable (except as otherwise specified pursuant to Section 301 for the Securities of such series) sufficient to pay on the Redemption Date the Redemption Price of, and (except if the Redemption Date shall be an Interest Payment Date) accrued interest on, all the Securities or portions thereof which are to be redeemed on that date.

If any Securities called for redemption are converted, any money deposited with the Trustee or with any Paying Agent or so segregated and held in trust for the redemption of such Security shall be paid to the Company upon Company Request or, if then held by the Company, shall be discharged from such trust.

SECTION 1106. Securities Payable on Redemption Date. Notice of redemption having been given as aforesaid, the Securities so to be redeemed shall, on the Redemption Date, become due and payable at the Redemption Price therein specified in the currency or currencies, currency unit or units or composite currency or currencies in which the Securities of such series are payable (except as otherwise specified pursuant to Section 301 for the Securities of such series) (together with accrued interest, if any, to the Redemption Date), and from and after such date (unless the Company shall default in the payment of the Redemption Price and accrued interest) such Securities shall, if the same were interest-bearing, cease to bear interest and the coupons for such interest appertaining to any Bearer Securities so to be redeemed, except to the extent provided below, shall be void. Upon surrender of any such Security for redemption in accordance with said notice, together with all coupons, if any, appertaining thereto maturing after the Redemption Date, such Security shall be paid by the Company at the Redemption Price, together with accrued interest, if any, to the Redemption Date; provided, however, that installments of interest on Bearer Securities whose Stated Maturity is on or prior to the Redemption Date shall be payable only at an office or agency located outside the United States (except as otherwise provided in Section 1002) and, unless otherwise specified as contemplated by Section 301, only upon presentation and surrender of coupons for such interest; and provided further that except as otherwise provided with respect to Securities convertible into the Company's Common Stock or Preferred Stock, installments of interest on Registered Securities whose Stated Maturity is on or prior to the Redemption Date shall be payable to the Holders of such Securities, or one or more Predecessor Securities, registered as such at the close of business on the relevant Record Dates according to their terms and the provisions of Section 307.

If any Bearer Security surrendered for redemption shall not be accompanied by all appurtenant coupons maturing after the Redemption Date, such Security may be paid after deducting from the Redemption Price an amount equal to the face amount of all such missing coupons, or the surrender of such missing coupon or coupons may be waived by the Company and the Trustee if there be furnished to them such security or indemnity as they may require to save each of them and any Paying Agent harmless. If thereafter the Holder of such Security shall surrender to the Trustee or any Paying Agent any such missing coupon in respect of which a deduction shall have been made from the Redemption Price, such Holder shall be entitled to receive the amount so deducted; provided, however, that interest represented by coupons shall be payable only at an office or agency located outside the United States (except as otherwise provided in Section 1002) and, unless otherwise specified as contemplated by Section 301, only upon presentation and surrender of those coupons.

If any Security called for redemption shall not be so paid upon surrender thereof for redemption, the principal (and premium or Make-Whole Amount, if any) shall, until paid, bear interest from the Redemption Date at the rate borne by the Security.

SECTION 1107. Securities Redeemed in Part. Any Registered Security which is to be redeemed only in part (pursuant to the provisions of this Article or of Article Twelve) shall be surrendered at a Place of Payment therefor (with, if the Company or the Trustee so requires, due endorsement by, or a written instrument of transfer in form satisfactory to the Company and the Trustee duly executed by, the Holder thereof or his attorney duly authorized in writing) and the Company shall execute and the Trustee shall authenticate and deliver to the Holder of such Security without service charge a new Security or Securities of the same series, of any authorized denomination as requested by such Holder in aggregate principal amount equal to and in exchange for the unredeemed portion of the principal of the Security so surrendered. If a Global Security is so surrendered, the Company shall execute and the Trustee shall authenticate and deliver to the depository, without service charge, a new Global Security in a denomination equal to and in exchange for the unredeemed portion of the principal of the Global Security so surrendered.

ARTICLE TWELVE - SINKING FUNDS

SECTION 1201. Applicability of Article. The provisions of this Article shall be applicable to any sinking fund for the retirement of Securities of a series except as otherwise specified as contemplated by Section 301 for Securities of such series.

The minimum amount of any sinking fund payment provided for by the terms of Securities of any series is herein referred to as a “mandatory sinking fund payment,” and any payment in excess of such minimum amount provided for by the terms of such Securities of any series is herein referred to as an “optional sinking fund payment.” If provided for by the terms of any Securities of any series, the cash amount of any mandatory sinking fund payment may be subject to reduction as provided in Section 1202. Each sinking fund payment shall be applied to the redemption of Securities of any series as provided for by the terms of Securities of such series.

SECTION 1202. Satisfaction of Sinking Fund Payments with Securities. The Company may, in satisfaction of all or any part of any mandatory sinking fund payment with respect to the Securities of a series, (1) deliver Outstanding Securities of such series (other than any previously called for redemption) together in the case of any Bearer Securities of such series with all unmatured coupons appertaining thereto and (2) apply as a credit Securities of such series which have been redeemed either at the election of the Company pursuant to the terms of such Securities or through the application of permitted optional sinking fund payments pursuant to the terms of such Securities, as provided for by the terms of such Securities, or which have otherwise been acquired by the Company; provided that such Securities so delivered or applied as a credit have not been previously so credited. Such Securities shall be received and credited for such purpose by the Trustee at the applicable Redemption Price specified in such Securities for redemption through operation of the sinking fund and the amount of such mandatory sinking fund payment shall be reduced accordingly.

SECTION 1203. Redemption of Securities for Sinking Fund. Not less than 60 days prior to each sinking fund payment date for Securities of any series, the Company will deliver to the Trustee an Officers' 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 in the currency or currencies, currency unit or units or composite currency or currencies in which the Securities of such series are payable (except as otherwise specified pursuant to Section 301 for the Securities of such series) and the portion thereof, if any, which is to be satisfied by delivering and crediting Securities of that series pursuant to Section 1202, and the optional amount, if any, to be added in cash to the next ensuing mandatory sinking fund payment, and will also deliver to the Trustee any Securities to be so delivered and credited. If such Officers' Certificate shall specify an optional amount to be added in cash to the next ensuing mandatory sinking fund payment, the Company shall thereupon be obligated to pay the amount therein specified. Not less than 30 days before each such sinking fund payment date the Trustee shall select the Securities to be redeemed upon such sinking fund payment date in the manner specified in Section 1103 and cause notice of the redemption thereof to be given in the name of and at the expense of the Company in the manner provided in Section 1104. Such notice having been duly given, the redemption of such Securities shall be made upon the terms and in the manner stated in Sections 1106 and 1107.

ARTICLE THIRTEEN - REPAYMENT AT THE OPTION OF HOLDERS

SECTION 1301. Applicability of Article. Repayment of Securities of any series before their Stated Maturity at the option of Holders thereof shall be made in accordance with the terms of such Securities, if any, and (except as otherwise specified by the terms of such series established pursuant to Section 301) in accordance with this Article.

SECTION 1302. Repayment of Securities. Securities of any series subject to repayment in whole or in part at the option of the Holders thereof will, unless otherwise provided in the terms of such Securities, be repaid at a price equal to the principal amount thereof, together with interest, if any, thereon accrued to the Repayment Date specified in or pursuant to the terms of such Securities. The Company covenants that on or prior to the Repayment Date it will deposit with the Trustee or with a Paying Agent (or, if the Company is acting as its own Paying Agent, segregate and hold in trust as provided in Section 1003) an amount of money in the currency or currencies, currency unit or units or composite currency or currencies in which the Securities of such series are payable (except as otherwise specified pursuant to Section 301 for the Securities of such series) sufficient to pay the principal (or, if so provided by the terms of the Securities of any series, a percentage of the principal) of, and (except if the Repayment Date shall be an Interest Payment Date) accrued interest on, all the Securities or portions thereof, as the case may be, to be repaid on such date.

SECTION 1303. Exercise of Option. Securities of any series subject to repayment at the option of the Holders thereof will contain an "Option to Elect Repayment" form on the reverse of such Securities. In order for any Security to be repaid at the option of the Holder, the Trustee must receive at the Place of Payment therefor specified in the terms of such Security (or at such other place or places of which the Company shall from time to time notify the Holders of such Securities) not earlier than 60 days nor later than 30 days prior to the Repayment Date (1) the Security so providing for such repayment together with the "Option to Elect Repayment" form on the reverse thereof duly completed by the Holder (or by the Holder's attorney duly authorized in writing) or (2) a telegram, telex, facsimile transmission or a letter from a member of a national securities exchange, or the FINRA, or a commercial bank or trust company in the United States setting forth the name of the Holder of the Security, the principal amount of the Security, the principal amount of the Security to be repaid, the CUSIP number, if any, or a description of the tenor and terms of the Security, a statement that the option to elect repayment is being exercised thereby and a guarantee that the Security to be repaid, together with the duly completed form entitled "Option to Elect Repayment" on the reverse of the Security, will be received by the Trustee not later than the fifth Business Day after the date of such telegram, telex, facsimile transmission or letter; provided, however, that such telegram, telex, facsimile transmission or letter shall only be effective if such Security and form duly completed are received by the Trustee by such fifth Business Day. If less than the entire principal amount of such Security is to be repaid in accordance with the terms of such Security, the principal amount of such Security to be repaid, in increments of the minimum denomination for Securities of such series, and the denomination or denominations of the Security or Securities to be issued to the Holder for the portion of the principal amount of such Security surrendered that is not to be repaid, must be specified. The principal amount of any Security providing for repayment at the option of the Holder thereof may not be repaid in part if, following such repayment, the unpaid principal amount of such Security would be less than the minimum authorized denomination of Securities of the series of which such Security to be repaid is a part. Except as otherwise may be provided by the terms of any Security providing for repayment at the option of the Holder thereof, exercise of the repayment option by the Holder shall be irrevocable unless waived by the Company.

SECTION 1304. When Securities Presented for Repayment Become Due and Payable. If Securities of any series providing for repayment at the option of the Holders thereof shall have been surrendered as provided in this Article and as provided by or pursuant to the terms of such Securities, such Securities or the portions thereof, as the case may be, to be repaid shall become due and payable and shall be paid by the Company on the Repayment Date therein specified, and on and after such Repayment Date (unless the Company shall default in the payment of such Securities on such Repayment Date) such Securities shall, if the same were interest-bearing, cease to bear interest and the coupons for such interest appertaining to any Bearer Securities so to be repaid, except to the extent provided below, shall be void. Upon surrender of any such Security for repayment in accordance with such provisions, together with all coupons, if any, appertaining thereto maturing after the Repayment Date, the principal amount of such Security so to be repaid shall be paid by the Company, together with accrued interest, if any, to the Repayment Date; provided, however, that coupons whose Stated Maturity is on or prior to the Repayment Date shall be payable only at an office or agency located outside the United States (except as otherwise provided in Section 1002) and, unless otherwise specified pursuant to Section 301, only upon presentation and surrender of such coupons; and provided further that, in the case of Registered Securities, installments of interest, if any, whose Stated Maturity is on or prior to the Repayment Date shall be payable (but without interest thereon, unless the Company shall default in the payment thereof) to the Holders of such Securities, or one or more Predecessor Securities, registered as such at the close of business on the relevant Record Dates according to their terms and the provisions of Section 307.

If any Bearer Security surrendered for repayment shall not be accompanied by all appurtenant coupons maturing after the Repayment Date, such Security may be paid after deducting from the amount payable therefor as provided in Section 1302 an amount equal to the face amount of all such missing coupons, or the surrender of such missing coupon or coupons may be waived by the Company and the Trustee if there be furnished to them such security or indemnity as they may require to save each of them and any Paying Agent harmless. If thereafter the Holder of such Security shall surrender to the Trustee or any Paying Agent any such missing coupon in respect of which a deduction shall have been made as provided in the preceding sentence, such Holder shall be entitled to receive the amount so deducted; provided, however, that interest represented by coupons shall be payable only at an office or agency located outside the United States (except as otherwise provided in Section 1002) and, unless otherwise specified as contemplated by Section 301, only upon presentation and surrender of those coupons.

If the principal amount of any Security surrendered for repayment shall not be so repaid upon surrender thereof, such principal amount (together with interest, if any, thereon accrued to such Repayment Date) shall, until paid, bear interest from the Repayment Date at the rate of interest or Yield to Maturity (in the case of Original Issue Discount Securities) set forth in such Security.

SECTION 1305. Securities Repaid in Part. Upon surrender of any Registered Security which is to be repaid in part only, the Company shall execute and the Trustee shall authenticate and deliver to the Holder of such Security, without service charge and at the expense of the Company, a new Registered Security or Securities of the same series, of any authorized denomination specified by the Holder, in an aggregate principal amount equal to and in exchange for the portion of the principal of such Security so surrendered which is not to be repaid.

ARTICLE FOURTEEN - DEFEASANCE AND COVENANT DEFEASANCE

SECTION 1401. Applicability of Article; Company's Option to Effect Defeasance or Covenant Defeasance. If, pursuant to Section 301, provision is made for either or both of (a) Defeasance of the Securities of or within a series under Section 1402 or (b) Covenant Defeasance of the Securities of or within a series under Section 1403, then the provisions of such Section or Sections, as the case may be, together with the other provisions of this Article (with such modifications thereto as may be specified pursuant to Section 301 with respect to any Securities), shall be applicable to such Securities and any coupons appertaining thereto, and the Company may at its option by Board Resolution, at any time, with respect to such Securities and any coupons appertaining thereto, elect to have Section 1402 (if applicable) or Section 1403 (if applicable) be applied to such Outstanding Securities and any coupons appertaining thereto upon compliance with the conditions set forth below in this Article.

SECTION 1402. Defeasance and Discharge. Upon the Company's exercise of the above option applicable to this Section with respect to any Securities of or within a series, the Company shall be deemed to have been discharged from its obligations with respect to such Outstanding Securities and any coupons appertaining thereto on the date the conditions set forth in Section 1404 are satisfied (hereinafter, "Defeasance"). For this purpose, such Defeasance means that the Company shall be deemed to have paid and discharged the entire indebtedness represented by such Outstanding Securities and any coupons appertaining thereto, which shall thereafter be deemed to be "Outstanding" only for the purposes of Section 1405 and the other Sections of this Indenture referred to in clauses (A) and (B) below, and to have satisfied all of its other obligations under such Securities and any coupons appertaining thereto and this Indenture insofar as such Securities and any coupons appertaining thereto are concerned (and the Trustee, at the expense of the Company, shall execute proper instruments acknowledging the same), except for the following which shall survive until otherwise terminated or discharged hereunder: (A) the rights of Holders of such Outstanding Securities and any coupons appertaining thereto to receive, solely from the trust fund described in Section 1404 and as more fully set forth in such Section, payments in respect of the principal of (and premium or Make-Whole Amount, if any) and interest, if any, on such Securities and any coupons appertaining thereto when such payments are due, (B) the Company's obligations with respect to such Securities under Sections 305, 306, 1002 and 1003, and the Company's obligations under Section 606 hereof (C) the rights, powers, trusts, duties and immunities of the Trustee hereunder and (D) this Article. Subject to compliance with this Article Fourteen, the Company may exercise its option under this Section notwithstanding the prior exercise of its option under Section 1403 with respect to such Securities and any coupons appertaining thereto.

SECTION 1403. Covenant Defeasance. Upon the Company's exercise of the above option applicable to this Section with respect to any Securities of or within a series, the Company shall be released from its obligations under Sections 1004 to 1009, inclusive, and, if specified pursuant to Section 301, its obligations under any other covenant contained herein or in any indenture supplemental hereto, with respect to such Outstanding Securities and any coupons appertaining thereto on and after the date the conditions set forth in Section 1404 are satisfied (hereinafter, "Covenant Defeasance"), and such Securities and any coupons appertaining thereto shall thereafter be deemed to be not "Outstanding" for the purposes of any direction, waiver, consent or declaration or Act of Holders (and the consequences of any thereof) in connection with Sections 1004 to 1009, inclusive, or such other covenant, but shall continue to be deemed "Outstanding" for all other purposes hereunder. For this purpose, such Covenant Defeasance means that, with respect to such Outstanding Securities and any coupons appertaining thereto, the Company may omit to comply with and shall have no liability in respect of any term, condition or limitation set forth in any such Section or such other covenant, whether directly or indirectly, by reason of any reference elsewhere herein to any such Section or such other covenant or by reason of reference in any such Section or such other covenant to any other provision herein or in any other document and such omission to comply shall not constitute a default or an Event of Default under Section 501(4) or 501(8) or otherwise, as the case may be, but, except as specified above, the remainder of this Indenture and such Securities and any coupons appertaining thereto shall be unaffected thereby.

SECTION 1404. Conditions to Defeasance or Covenant Defeasance. The following shall be the conditions to application of Section 1402 or Section 1403 to any Outstanding Securities of or within a series and any coupons appertaining thereto:

(a) The Company shall irrevocably have deposited or caused to be deposited with the Trustee (or another trustee satisfying the requirements of Section 607 who shall agree to comply with the provisions of this Article Fourteen applicable to it) 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 and any coupons appertaining thereto, (1) an amount in such currency, currencies or currency unit in which such Securities and any coupons appertaining thereto are then specified as payable at Stated Maturity, or (2) Government Obligations applicable to such Securities and coupons appertaining thereto (determined on the basis of the currency, currencies or currency unit in which such Securities and coupons appertaining thereto are then specified as payable at Stated Maturity) which through the scheduled payment of principal and interest in respect thereof in accordance with their terms will provide, not later than the due date of any payment of principal of (and premium or Make-Whole Amount, if any) and interest, if any, on such Securities and any coupons appertaining thereto, money in an amount, or (3) a combination thereof, in any case, in an amount, sufficient, without consideration of any reinvestment of such principal and interest, in the opinion of a nationally recognized firm of independent public accountants expressed in a written certification thereof delivered to the Trustee, to pay and discharge, and which shall be applied by the Trustee (or other qualifying trustee) to pay and discharge, (i) the principal of (and premium or Make-Whole Amount, if any) and interest, if any, on such Outstanding Securities and any coupons appertaining thereto on the Stated Maturity of such principal or installment of principal or interest and (ii) any mandatory sinking fund payments or analogous payments applicable to such Outstanding Securities and any coupons appertaining thereto on the day on which such payments are due and payable in accordance with the terms of this Indenture and of such Securities and any coupons appertaining thereto.

(b) Such Defeasance or Covenant Defeasance shall not result in a breach or violation of, or constitute a default under, this Indenture or any other material agreement or instrument to which the Company is a party or by which it is bound.

(c) No Event of Default or event which with notice or lapse of time or both would become an Event of Default with respect to such Securities and any coupons appertaining thereto shall have occurred and be continuing on the date of such deposit or, insofar as Sections 501(6) and 501(7) are concerned, at any time during the period ending on the 91st day after the date of such deposit (it being understood that this condition shall not be deemed satisfied until the expiration of such period).

(d) In the case of an election under Section 1402, the Company shall have delivered to the Trustee an Opinion of Counsel stating 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 shall confirm that, the Holders of such Outstanding Securities and any coupons appertaining thereto will not recognize income, gain or loss for Federal income tax purposes as a result of such Defeasance and will be subject to Federal income tax on the same amounts, in the same manner and at the same times as would have been the case if such Defeasance had not occurred.

(e) In the case of an election under Section 1403, the Company shall have delivered to the Trustee an Opinion of Counsel to the effect that the Holders of such Outstanding Securities and any coupons appertaining thereto will not recognize income, gain or loss for Federal income tax purposes as a result of such Covenant Defeasance and will be subject to Federal income tax on the same amounts, in the same manner and at the same times as would have been the case if such Covenant Defeasance had not occurred.

(f) The Company shall have delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that all conditions precedent to the Defeasance under Section 1402 or the Covenant Defeasance under Section 1403 (as the case may be) have been complied with and an Opinion of Counsel to the effect that either (i) as a result of a deposit pursuant to subsection (a) above and the related exercise of the Company's option under Section 1402 or Section 1403 (as the case may be), registration is not required under the Investment Company Act of 1940, as amended, by the Company, with respect to the trust funds representing such deposit or by the Trustee for such trust funds or (ii) all necessary registrations under said Act have been effected.

(g) Notwithstanding any other provisions of this Section, such Defeasance or Covenant Defeasance shall be effected in compliance with any additional or substitute terms, conditions or limitations which may be imposed on the Company in connection therewith pursuant to Section 301.

(h) The payment of amounts payable to the Trustee pursuant to this Indenture shall be paid or provided for to the reasonable satisfaction of the Trustee.

SECTION 1405. Deposited Money and Government Obligations to Be Held in Trust; Other Miscellaneous Provisions. Subject to the provisions of the last paragraph of Section 1003, all money and Government Obligations (or other property as may be provided pursuant to Section 301) (including the proceeds thereof) deposited with the Trustee (or other qualifying trustee, collectively for purposes of this Section 1405, the "Trustee") pursuant to Section 1404 in respect of any Outstanding Securities of any series and any coupons appertaining thereto shall be held in trust and applied by the Trustee, in accordance with the provisions of such Securities and any coupons appertaining thereto 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 Holders of such Securities and any coupons appertaining thereto of all sums due and to become due thereon in respect of principal (and premium or Make-Whole Amount, if any) and interest, but such money need not be segregated from other funds except to the extent required by law.

Unless otherwise specified with respect to any Security pursuant to Section 301, if, after a deposit referred to in Section 1404(a) has been made, (a) the Holder of a Security in respect of which such deposit was made is entitled to, and does, elect pursuant to Section 301 or the terms of such Security to receive payment in a currency or currency unit other than that in which the deposit pursuant to Section 1404(a) has been made in respect of such Security, or (b) a Conversion Event occurs in respect of the currency or currency unit in which the deposit pursuant to Section 1404(a) has been made, the indebtedness represented by such Security and any coupons appertaining thereto shall be deemed to have been, and will be, fully discharged and satisfied through the payment of the principal of (and premium or Make-Whole Amount, if any), and interest, if any, on such Security as the same becomes due out of the proceeds yielded by converting (from time to time as specified below in the case of any such election) the amount or other property deposited in respect of such Security into the currency or currency unit in which such Security becomes payable as a result of such election or Conversion Event based on the applicable market exchange rate for such currency or currency unit in effect on the second Business Day prior to each payment date, except, with respect to a Conversion Event, for such currency or currency unit in effect (as nearly as feasible) at the time of the Conversion Event.

The Company shall pay and indemnify the Trustee against any tax, fee or other charge imposed on or assessed against the Government Obligations deposited pursuant to Section 1404 or the principal and interest received in respect thereof other than any such tax, fee or other charge which by law is for the account of the Holders of such Outstanding Securities and any coupons appertaining thereto.

Anything in this Article to the contrary notwithstanding, subject to Section 606, the Trustee shall deliver or pay to the Company from time to time upon Company Request any money or Government Obligations (or other property and any proceeds therefrom) held by it as provided in Section 1404 which, in the opinion of a nationally recognized firm of independent public accountants expressed in a written certification thereof delivered to the Trustee, are in excess of the amount thereof which would then be required to be deposited to effect a Defeasance or Covenant Defeasance, as applicable, in accordance with this Article.

ARTICLE FIFTEEN - MEETINGS OF HOLDERS OF SECURITIES

SECTION 1501. Purposes for Which Meetings May Be Called. A meeting of Holders of Securities of any series may be called at any time and from time to time pursuant to this Article to make, give or take any request, demand, authorization, direction, notice, consent, waiver or other action provided by this Indenture to be made, given or taken by Holders of Securities of such series.

SECTION 1502. Call, Notice and Place of Meetings.

(a) The Trustee may at any time call a meeting of Holders of Securities of any series for any purpose specified in Section 1501, to be held at such time and at such place as the Trustee shall determine. Notice of every meeting of Holders of Securities of any series, setting forth the time and the place of such meeting and in general terms the action proposed to be taken at such meeting, shall be given, in the manner provided in Section 106, not less than 20 nor more than 180 days prior to the date fixed for the meeting.

(b) In case at any time the Company, pursuant to a Board Resolution, or the Holders of at least 25% in principal amount of the Outstanding Securities of any series shall have requested the Trustee to call a meeting of the Holders of Securities of such series for any purpose specified in Section 1501, by written request setting forth in reasonable detail the action proposed to be taken at the meeting, and the Trustee shall not have made the first publication of the notice of such meeting within 20 days after receipt of such request or shall not thereafter proceed to cause the meeting to be held as provided herein, then the Company or the Holders of Securities of such series in the amount above specified, as the case may be, may determine the time and the place for such meeting and may call such meeting for such purposes by giving notice thereof as provided in subsection (a) of this Section.

SECTION 1503. Persons Entitled to Vote at Meetings. To be entitled to vote at any meeting of Holders of Securities of any series, a Person shall be (1) a Holder of one or more Outstanding Securities of such series, or (2) a Person appointed by an instrument in writing as proxy for a Holder or Holders of one or more Outstanding Securities of such series by such Holder or Holders. The only Persons who shall be entitled to be present or to speak at any meeting of Holders of Securities of any series shall be the Persons entitled to vote at such meeting and their counsel, any representatives of the Trustee and its counsel and any representatives of the Company and its counsel.

SECTION 1504. Quorum; Action. The Persons entitled to vote a majority in principal amount of the Outstanding Securities of a series shall constitute a quorum for a meeting of Holders of Securities of such series; provided, however, that if any action is to be taken at such meeting with respect to a consent or waiver which this Indenture expressly provides may be given by the Holders of not less than a specified percentage in principal amount of the Outstanding Securities of a series, the Persons entitled to vote such specified percentage in principal amount of the Outstanding Securities of such series shall constitute a quorum. In the absence of a quorum within 30 minutes after the time appointed for any such meeting, the meeting shall, if convened at the request of Holders of Securities of such series, be dissolved. In any other case the meeting may be adjourned for a period of not less than 10 days as determined by the chairman of the meeting prior to the adjournment of such meeting. In the absence of a quorum at the reconvening of any such adjourned meeting, such adjourned meeting may be further adjourned for a period of not less than 10 days; at the reconvening of any meeting adjourned or further adjourned for lack of a quorum, the Persons entitled to vote 25% in aggregate principal amount of the then Outstanding Securities shall constitute a quorum for the taking of any action set forth in the notice of the original meeting. Notice of the reconvening of any adjourned meeting shall be given as provided in Section 1502(a), except that such notice need be given only once not less than five days prior to the date on which the meeting is scheduled to be reconvened.

Except as limited by the proviso to Section 902, any resolution presented to a meeting or adjourned meeting duly reconvened at which a quorum is present as aforesaid may be adopted by the affirmative vote of the Persons entitled to vote a majority in aggregate principal amount of the Outstanding Securities represented at such meeting; provided, however, that, except as limited by the proviso to Section 902, any resolution with respect to any request, demand, authorization, direction, notice, consent, waiver or other action which this Indenture expressly provides may be made, given or taken by the Holders of a specified percentage, which is less than a majority, in principal amount of the Outstanding Securities of a series may be adopted at a meeting or an adjourned meeting duly reconvened and at which a quorum is present as aforesaid by the affirmative vote of the Holders of such specified percentage in principal amount of the Outstanding Securities of that series.

Any resolution passed or decision taken at any meeting of Holders of Securities of any series duly held in accordance with this Section shall be binding on all the Holders of Securities of such series and the related coupons, whether or not present or represented at the meeting.

Notwithstanding the foregoing provisions of this Section 1504, if any action is to be taken at a meeting of Holders of Securities of any series with respect to any request, demand, authorization, direction, notice, consent, waiver or other action that this Indenture expressly provides may be made, given or taken by the Holders of a specified percentage in principal amount of all Outstanding Securities affected thereby, or of the Holders of such series and one or more additional series:

- (i) there shall be no minimum quorum requirement for such meeting; and
- (ii) the principal amount of the Outstanding Securities of such series that vote in favor of such request, demand, authorization, direction, notice, consent, waiver or other action shall be taken into account in determining whether such request, demand, authorization, direction, notice, consent, waiver or other action has been made, given or taken under this Indenture.

SECTION 1505. Determination of Voting Rights; Conduct and Adjournment of Meetings.

(a) Notwithstanding any provisions of this Indenture, the Trustee may make such reasonable regulations as it may deem advisable for any meeting of Holders of Securities of a series in regard to proof of the holding of Securities of such series and of the appointment of proxies and in regard to the appointment and duties of inspectors of votes, the submission and examination of proxies, certificates and other evidence of the right to vote, and such other matters concerning the conduct of the meeting as it shall deem appropriate. Except as otherwise permitted or required by any such regulations, the holding of Securities shall be proved in the manner specified in Section 104 and the appointment of any proxy shall be proved in the manner specified in Section 104 or by having the signature of the Person executing the proxy witnessed or guaranteed by any trust company, bank or banker authorized by Section 104 to certify to the holding of Bearer Securities. Such regulations may provide that written instruments appointing proxies, regular on their face, may be presumed valid and genuine without the proof specified in Section 104 or other proof.

(b) The Trustee shall, by an instrument in writing appoint a temporary chairman of the meeting, unless the meeting shall have been called by the Company or by Holders of Securities as provided in Section 1502(b), in which case the Company or the Holders of Securities of the series calling the meeting, as the case may be, shall in like manner appoint a temporary chairman. A permanent chairman and a permanent secretary of the meeting shall be elected by vote of the Persons entitled to vote a majority in principal amount of the Outstanding Securities of such series represented at the meeting.

(c) At any meeting each Holder of a Security of such series or proxy shall be entitled to one vote for each \$1,000 principal amount of the Outstanding Securities of such series held or represented by him; provided, however, that no vote shall be cast or counted at any meeting in respect of any Security challenged as not Outstanding and ruled by the chairman of the meeting to be not Outstanding. The chairman of the meeting shall have no right to vote, except as a Holder of a Security of such series or proxy.

(d) Any meeting of Holders of Securities of any series duly called pursuant to Section 1502 at which a quorum is present may be adjourned from time to time by Persons entitled to vote a majority in principal amount of the Outstanding Securities of such series represented at the meeting, and the meeting may be held as so adjourned without further notice.

SECTION 1506. Counting Votes and Recording Action of Meetings. The vote upon any resolution submitted to any meeting of Holders of Securities of any series shall be by written ballots on which shall be subscribed the signatures of the Holders of Securities of such series or of their representatives by proxy and the principal amounts and serial numbers of the Outstanding Securities of such series held or represented by them. The permanent chairman of the meeting shall appoint two inspectors of votes who shall count all votes cast at the meeting for or against any resolution and who shall make and file with the secretary of the meeting their verified written reports in duplicate of all votes cast at the meeting. A record, at least in duplicate, of the proceedings of each meeting of Holders of Securities of any Series shall be prepared by the secretary of the meeting and there shall be attached to said record the original reports of the inspectors of votes on any vote by ballot taken thereat and affidavits by one or more persons having knowledge of the fact, setting forth a copy of the notice of the meeting and showing that said notice was given as provided in Section 1502 and, if applicable, Section 1504. Each copy shall be signed and verified by the affidavits of the permanent chairman and secretary of the meeting and one such copy shall be delivered to the Company and another to the Trustee to be preserved by the Trustee, the latter to have attached thereto the ballots voted at the meeting. Any record so signed and verified shall be conclusive evidence of the matters therein stated.

ARTICLE SIXTEEN - SUBORDINATION OF SECURITIES

SECTION 1601. Agreement to Subordinate. Notwithstanding anything in this Indenture to the contrary (other than Article Four of this Indenture), the Company covenants and agrees, and each Holder of a Security, by his acceptance thereof, likewise covenants and agrees, that, to the extent and in the manner hereinafter set forth in this Article, the Indebtedness represented by the Securities and the payment of any Obligations with respect to each and all of the Securities are hereby expressly made subordinate and subject in right of payment to the prior payment in full of all Senior Indebtedness.

SECTION 1602. Payment Over of Proceeds upon Dissolution, Etc. In the event of (a) any insolvency or bankruptcy case or Proceeding, or any receivership, liquidation, reorganization or other similar case or Proceeding in connection therewith, relative to the Company or to its creditors, as such, or to its assets, or (b) any liquidation, dissolution or other winding up of the Company, whether voluntary or involuntary and whether or not involving insolvency or bankruptcy, or (c) any assignment for the benefit of creditors or any other marshaling of assets and liabilities of the Company, then and in any such event specified in (a), (b) or (c) above (each such event, if any, herein sometimes referred to as a "Proceeding")

(1) the holders of Senior Indebtedness shall first be entitled to receive payment in full of all Obligations due or to become due on or in respect of all Senior Indebtedness, or provision shall be made for such payment in cash or cash equivalents or otherwise in a manner satisfactory to the holders of Senior Indebtedness, before the Holders of the Securities are entitled to receive any payment or distribution on account of principal of or premium, if any, or interest on or other Obligations in respect of the Securities or on account of any purchase, redemption or other acquisition of Securities by the Company or any Subsidiary (individually and collectively, a "Securities Payment"), and

(2) any payment or distribution of assets of the Company of any kind or character, whether in cash, property or securities (other than Capital Stock or securities of the Company as reorganized or readjusted, or securities of the Company or any other corporation provided for by a plan of reorganization or readjustment, the payment of which is subordinate, at least to the extent provided in this Article Sixteen with respect to the Securities, to the payment in full, without diminution or modification by such plan, of all Senior Indebtedness), to which the Holders would be entitled except for the provisions of this Article Sixteen, shall be paid by the liquidating trustee or agent or other person making such a payment or distribution, directly to the holders of Senior Indebtedness (or their representative(s) or trustee(s) acting on their behalf), ratably according to the aggregate amounts remaining unpaid on account of the principal of or interest on and other amounts due on the Senior Indebtedness held or represented by each, to the extent necessary to make payment in full of all Senior Indebtedness remaining unpaid, after giving effect to any concurrent payment or distribution to the holders of such Senior Indebtedness.

In the event that, notwithstanding the foregoing provisions of this Section 1602, the Trustee or the Holder of any Security shall have received any payment or distribution of assets of the Company of any kind or character, whether in cash, property or securities (other than Capital Stock or securities of the Company as reorganized or readjusted, or securities of the Company or any other corporation provided for by a plan of reorganization or readjustment, the payment of which is subordinate, at least to the extent provided in this Article with respect to the Securities, to the payment in full, without diminution or modification by such plan, of Senior Indebtedness), before all Senior Indebtedness is paid in full or payment thereof provided for in cash or cash equivalents or otherwise in a manner satisfactory to the holders of Senior Indebtedness, such payment or distribution shall be held in trust for the benefit of, and be paid over to, the holders of the Senior Indebtedness remaining unpaid (or their representative(s) or trustee(s) acting on their behalf), ratably as aforesaid, for application to the payment of such Senior Indebtedness until such Senior Indebtedness shall have been paid in full, after giving effect to any concurrent payment or distribution to the holders of such Senior Indebtedness.

The consolidation of the Company with, or the merger of the Company into, another Person or the liquidation or dissolution of the Company following the conveyance or transfer of all or substantially all of its properties and assets as an entirety to another Person upon the terms and conditions set forth in Article Eight shall not be deemed a Proceeding for the purposes of this Section 1602 if the Person formed by such consolidation or into which the Company is merged or the Person which acquires by conveyance or transfer such properties and assets as an entirety, as the case may be, shall, as a part of such consolidation, merger, conveyance or transfer, comply with the conditions set forth in Article Eight.

SECTION 1603. No Payment When Senior Indebtedness in Default. Anything in this Indenture to the contrary notwithstanding, no payment on account of principal of or redemption of, interest on or other amounts due on the Securities, and no redemption, purchase, or other acquisition of the Securities, shall be made by or on behalf of the Company (i) unless full payment of amounts then due for principal and interest and of all other obligations then due on all Senior Indebtedness has been made or duly provided for pursuant to the terms of the instrument governing such Senior Indebtedness, (ii) if, at the time of such payment, redemption, purchase or other acquisition, or immediately after giving effect thereto, there shall exist under any Senior Indebtedness, or any agreement pursuant to which any Senior Indebtedness is issued, any default, which default shall not have been cured or waived and which default shall have resulted in the full amount of such Senior Indebtedness being declared due and payable or (iii) if, at the time of such payment, redemption, purchase or other acquisition, the Trustee shall have received written notice from the holder or holders of any Senior Indebtedness or their representative or representatives (a "Payment Blockage Notice") that there exists under such Senior Indebtedness, or any agreement pursuant to which such Senior Indebtedness is issued, any default, which default shall not have been cured or waived, permitting the holders thereof to declare the full amount of such Senior Indebtedness due and payable, but only for the period (the "Payment Blockage Period") commencing on the date of receipt of the Payment Blockage Notice and ending (unless earlier terminated by notice given to the Trustee by the Holders of such Senior Indebtedness) on the earlier of (A) the date on which such event of default shall have been cured or waived or (B) 180 days from the receipt of the Payment Blockage Notice. Upon termination of a Payment Blockage Period, payments on account of principal of or interest on the Securities and redemptions, purchases or other acquisitions may be made by or on behalf of the Company. Notwithstanding anything herein to the contrary, (A) only one Payment Blockage Notice may be given during any period of 360 consecutive days with respect to the same event of default and any other events of default on the same issue of Senior Indebtedness existing and known to the person giving such notice at the time of such notice and (B) no new Payment Blockage Period may be commenced by the holder or holders of the same issue of Senior Indebtedness or their representative or representatives during any period of 360 consecutive days unless all events of default which were the object of the immediately preceding Payment Blockage Notice, and any other event of default on the same issue of Senior Indebtedness existing and known to the person giving such notice at the time of such notice, have been cured or waived.

In the event that, notwithstanding the provisions of this Section 1603, payments are made by or on behalf of the Company in contravention of the provisions of this Section 1603, such payments shall be held by the Trustee, any Paying Agent or the Holders, as applicable, in trust for the benefit of, and shall be paid over to and delivered to, the holders of Senior Indebtedness or their representative or the trustee under the indenture or other agreement (if any), pursuant to which any instruments evidencing any Senior Indebtedness may have been issued, as their respective interests may appear, for application to the payment of all Senior Indebtedness remaining unpaid to the extent necessary to pay all Senior Indebtedness in full in accordance with the terms of such Senior Indebtedness, after giving effect to any concurrent payment or distribution to or for the holders of Senior Indebtedness.

The provisions of this Section shall not apply to any payment with respect to which Section 1602 would be applicable.

SECTION 1604. Reliance by Senior Indebtedness on Subordination Provisions. Each Holder of any Security by his acceptance thereof acknowledges and agrees that the foregoing subordination provisions are, and are intended to be, an inducement and a consideration for each holder of any Senior Indebtedness, whether such Senior Indebtedness was created or acquired before or after the issuance of the Securities, to acquire and continue to hold, or to continue to hold, such Senior Indebtedness, and such holder of Senior Indebtedness shall be deemed conclusively to have relied on such subordination provisions in acquiring and continuing to hold or in continuing to hold such Senior Indebtedness.

SECTION 1605. Subrogation to Rights of Holders of Senior Indebtedness. Subject to the payment in full of all Obligations due or to become due on or in respect of Senior Indebtedness, or the provision for such payment in cash or cash equivalents or otherwise in a manner satisfactory to the holders of Senior Indebtedness, the Holders of the Securities shall be subrogated to the extent of the payments or distributions made to the holders of such Senior Indebtedness pursuant to the provisions of this Article Sixteen to the rights of the holders of such Senior Indebtedness to receive payments and distributions of cash, property and securities applicable to the Senior Indebtedness until the principal of and premium, if any, and interest on the Securities shall be paid in full. For purposes of such subrogation, no payments or distributions to the holders of the Senior Indebtedness of any cash, property or securities to which the Holders of the Securities or the Trustee would be entitled except for the provisions of this Article Sixteen, and no payments over pursuant to the provisions of this Article Sixteen to the holders of Senior Indebtedness by Holders of the Securities or the Trustee, shall, as among the Company, its creditors other than holders of Senior Indebtedness and the Holders of the Securities, be deemed to be a payment or distribution by the Company to or on account of the Senior Indebtedness.

SECTION 1606. Provisions Solely to Define Relative Rights. The provisions of this Article Sixteen are and are intended solely for the purpose of defining the relative rights of the Holders of the Securities on the one hand and the holders of Senior Indebtedness on the other hand. Nothing contained in this Article or elsewhere in this Indenture or in the Securities is intended to or shall (a) impair, as among the Company, its creditors other than holders of Senior Indebtedness and the Holders of the Securities, the obligation of the Company, which is absolute and unconditional (and which, subject to the rights under this Article Sixteen of the holders of Senior Indebtedness, is intended to rank equally with all other general obligations of the Company), to pay to the Holders of the Securities the principal of and premium, if any, and interest on the Securities as and when the same shall become due and payable in accordance with their terms; or (b) affect the relative rights against the Company of the Holders of the Securities and creditors of the Company other than the holders of Senior Indebtedness; or (c) prevent the Trustee or the Holder of any Security from exercising all remedies otherwise permitted by applicable law upon default under this Indenture, subject to the rights, if any, under this Article of the holders of Senior Indebtedness to receive cash, property and securities otherwise payable or deliverable to the Trustee or such Holder.

SECTION 1607. Trustee to Effectuate Subordination. Each Holder of a Security by his acceptance thereof authorizes and directs the Trustee on his behalf to take such action as may be necessary or appropriate to effectuate, as between the Holders of the Securities and the holders of Senior Indebtedness, the subordination provided in this Article Sixteen and appoints the Trustee his attorney-in-fact for any and all such purposes, including, in the event of any dissolution, winding up or liquidation or reorganization under any applicable bankruptcy law of the Company (whether in bankruptcy, insolvency or receivership Proceedings or otherwise), the timely filing of a claim for the unpaid balance of such Holder's Securities in the form required in such Proceedings and the causing of such claim to be approved. If the Trustee does not file a claim or proof of debt in the form required in such Proceedings prior to 30 days before the expiration of the time to file such claims or proofs, then the holders of Senior Indebtedness, jointly, or their representatives shall have the right to file an appropriate claim for and on behalf of the Holders and to demand, sue for, collect, receive and receipt for the payments and distributions in respect of the Securities which are required to be paid or delivered to the holders of Senior Indebtedness as provided in this Article Sixteen and to take all such other action in the name of the Holders or otherwise, as such holder of Senior Indebtedness or representative thereof may determine to be necessary or appropriate for the enforcement of the provisions of this Article Sixteen.

SECTION 1608. No Waiver of Subordination Provisions. No right of any present or future holder of any Senior Indebtedness to enforce subordination as herein provided shall at any time in any way be prejudiced or impaired by any act or failure to act on the part of the Company or by any act or failure to act, in good faith, by any such holder or any representative or trustee therefor, or by any non-compliance by the Company with the terms, provisions and covenants of this Indenture, regardless of any knowledge thereof any such holder may have or be otherwise charged with.

Without in any way limiting the generality of the foregoing paragraph, the holders of Senior Indebtedness may, at any time from time to time, without the consent of or notice to the Trustee or the Holders of the Securities, without incurring responsibility to the Holders of the Securities and without impairing or releasing the subordination provided in this Article Sixteen or the obligations hereunder of the Holders of the Securities to the holders of Senior Indebtedness, do any one or more of the following: (i) change the manner, place or terms of payment or extend the time of payment of, or renew or alter, Senior Indebtedness, or otherwise amend or supplement in any manner Senior Indebtedness or any instrument evidencing the same or any agreement under which Senior Indebtedness is outstanding; (ii) sell, exchange, release or otherwise deal with any property pledged, mortgaged or otherwise securing Senior Indebtedness; (iii) release any Person liable in any manner for the collection of Senior Indebtedness and settle or compromise Senior Indebtedness (which, to the extent so settled and compromised, shall be deemed to have been paid in full for all purposes hereof); (iv) apply any amounts received to any liability of the Company owing to holders of Senior Indebtedness; and (v) exercise or refrain from exercising any rights against the Company and any other Person.

SECTION 1609. Notice to Trustee. The Company shall give prompt written notice to the Trustee of any default or event of default with respect to any Senior Indebtedness or of any fact known to the Company which would prohibit the making of any payment to or by the Trustee in respect of the Securities pursuant to the provisions of this Article Sixteen. Notwithstanding the provisions of this Article Sixteen or any other provision of this Indenture, the Trustee shall not be charged with knowledge of the existence of any facts which would prohibit the making of any payment to or by the Trustee in respect of the Securities, unless and until the Trustee shall have received written notice thereof from the Company or a holder of Senior Indebtedness or from any representative or trustee acting on their behalf; and, prior to the receipt of any such written notice, the Trustee, subject to the provisions of Section 612, shall be entitled in all respects to assume that no such facts exist; provided, however, that if the Trustee shall not have received the notice provided for in this Section at least three Business Days prior to the date upon which by the terms hereof any money may become payable for any purpose (including, without limitation, the payment of the principal of and premium, if any, or interest on any Security), then, anything herein contained to the contrary notwithstanding, the Trustee shall have full power and authority to receive such money and to apply the same to the purpose for which such money was received and shall not be affected by any notice to the contrary which may be received by it within three Business Days prior to such date. Nothing contained in this Article Sixteen or any other Article of this Indenture or in any of the Securities shall prevent (a) the Company, at any time except during the pendency of any Proceeding, or under the conditions described in Section 1603, from making payments at any time in respect of the Securities, or (b) the application by the Trustee of any money deposited with it hereunder to the payment of or on account of the Securities, or the retention thereof by any Holder, if the Trustee did not have notice, as provided in this Section 1609, that such payment would have been prohibited by the provisions of this Article Sixteen.

Subject to the provisions of Section 612, the Trustee shall be entitled to rely on the delivery to it of a written notice by a Person representing himself to be a holder of Senior Indebtedness (or a representative or trustee therefor) to establish that such notice has been given by a holder of Senior Indebtedness (or a trustee therefor). In the event that the Trustee determines in good faith that further evidence is required with respect to the right of any Person as a holder of Senior Indebtedness to participate in any payment or distribution pursuant to this Article Sixteen, the Trustee may request such Person to furnish evidence to the reasonable satisfaction of the Trustee as to the amount of Senior Indebtedness held by such Person, the extent to which such Person is entitled to participate in such payment or distribution and any other facts pertinent to the rights of such Person under this Article Sixteen, and if such evidence is not furnished, the Trustee may defer any payment to such Person pending judicial determination as to the right of such Person to receive such payment.

SECTION 1610. Reliance on Judicial Order or Certificate of Liquidating Agent. Upon any payment or distribution of assets of the Company referred to in this Article Sixteen, the Trustee, subject to the provisions of Section 612, and the Holders of the Securities shall be entitled to rely upon any order or decree entered by any court of competent jurisdiction in which any Proceeding is pending, or a certificate of the trustee in bankruptcy, receiver, liquidating trustee, custodian, assignee for the benefit of creditors, agent or other Person making such payment or distribution, delivered to the Trustee or to the Holders of Securities, for the purpose of ascertaining the Persons entitled to participate in such payment or distribution, the holders of the Senior Indebtedness and other indebtedness of the Company, the amount thereof or payable thereon, the amount or amounts paid or distributed thereon and all other facts pertinent thereto or to this Article.

SECTION 1611. Trustee Not Fiduciary for Holders of Senior Indebtedness. The Trustee shall not be deemed to owe any fiduciary duty to the holders of Senior Indebtedness. Nothing contained in this Article Sixteen or elsewhere in this Indenture, or in any of the Securities, shall prevent the application by the Trustee of any moneys which were deposited with it hereunder, prior to its receipt of written notice of facts which would prohibit such application, for the purpose of the payment of or on account of the principal of or interest on, the Securities unless, prior to the date on which such application is made by the Trustee, the Trustee shall be charged with notice under Section 1609 hereof of the facts which would prohibit the making of such application.

SECTION 1612. Rights of Trustee as Holder of Senior Indebtedness; Preservation of Trustee's Rights. The Trustee in its individual capacity shall be entitled to all the rights set forth in this Article Sixteen with respect to any Senior Indebtedness which may at any time be held by it, to the same extent as any other holder of Senior Indebtedness, and nothing in this Indenture shall deprive the Trustee of any of its rights as such holder. Nothing in this Article shall apply to claims of, or payments to, the Trustee under or pursuant to Section 606.

SECTION 1613. Article Applicable to Paying Agents. In case at any time any Paying Agent other than the Trustee shall have been appointed by the Company and be then acting hereunder, the term "Trustee" as used in this Article Sixteen shall in such case (unless the context otherwise requires) be construed as extending to and including such Paying Agent within its meaning as fully for all intents and purposes as if such Paying Agent were named in this Article in addition to or in place of the Trustee; provided, however, that Section 1612 shall not apply to the Company or any Affiliate of the Company if it or such Affiliate acts as Paying Agent.

ARTICLE SEVENTEEN - CONVERSION OF SECURITIES

SECTION 1701. Applicability of Article; Conversion Privilege and Conversion Price. Securities of any series which are convertible shall be convertible in accordance with their terms and (except as otherwise specified as contemplated by Section 301 for Securities of any series) in accordance with this Article Seventeen. Subject to and upon compliance with the provisions of this Article Seventeen, at any time during the period specified in the Securities, at the option of the Holder thereof, any Security or any portion of the principal amount thereof which is \$1,000 or an integral multiple of \$1,000 may be converted at the principal amount thereof, or of such portion thereof, into fully paid and nonassessable shares (calculated as to each conversion to the nearest 1/100 of a share) of Common Stock of the Company, at the Conversion Price, determined as hereinafter provided, in effect at the time of conversion. In case a Security or portion thereof is called for redemption, such conversion right in respect of the Security or portion so called shall expire at the close of business on the Business Day immediately preceding the Redemption Date, unless the Company defaults in making the payment due upon redemption, in which case such conversion right shall terminate on the date such default is cured.

The price at which shares of Common Stock shall be delivered upon conversion (herein called the "Conversion Price") of Securities of any series shall be specified in such Securities. The Conversion Price shall be adjusted in certain instances as provided in Section 1704.

In case the Company shall, by dividend or otherwise, declare or make a distribution on its Common Stock referred to in paragraph (4) of Section 1704, the Holder of each Security, upon the conversion thereof pursuant to this Article Seventeen subsequent to the close of business on the date fixed for the determination of stockholders entitled to receive such distribution and prior to the effectiveness of the Conversion Price adjustment in respect of such distribution pursuant to paragraph (4) of Section 1704, shall be entitled to receive for each share of Common Stock into which such Security is converted, the portion of the evidence of indebtedness, shares of Capital Stock or assets so distributed applicable to one share of Common Stock; provided, however, that, at the election of the Company (whose election shall be evidenced by a Board Resolution filed with the Trustee) with respect to all Holders so converting, the Company may, in lieu of distributing to such Holder any portion of such distribution not consisting of cash or securities of the Company, pay such Holder an amount in cash equal to the fair market value thereof (as determined in good faith by the Board of Directors, whose determination shall be conclusive and described in a Board Resolution filed with the Trustee). If any conversion of a Security entitled to the benefits described in the immediately preceding sentence occurs prior to the payment date for a distribution to holders of Common Stock which the Holder of the Security so converted is entitled to receive in accordance with the immediately preceding sentence, the Company may elect (such election to be evidenced by a Board Resolution filed with the Trustee) to distribute to such Holder a due bill for the evidences of indebtedness, shares of Capital Stock or assets to which such Holder is so entitled, provided that such due bill (i) meets any applicable requirements of the principal over-the-counter market or national securities exchange or other market on which the Common Stock is then traded, and (ii) requires payment or delivery of such evidences of indebtedness or assets no later than the date of payment or delivery thereof to holders of Common Stock receiving such distribution.

SECTION 1702. Exercise of Conversion Privilege. In order to exercise the conversion privilege, the Holder of any Security to be converted shall surrender such Security, duly endorsed or assigned to the Company or in blank, at any office or agency maintained by the Company pursuant to Section 1002, accompanied by written notice to the Company at such office or agency that the Holder elects to convert such Security or, if less than the entire principal amount thereof is to be converted, the portion thereof to be converted and shall comply with any additional requirements set forth in such Security. Securities surrendered for conversion during the period from the close of business on any Regular Record Date next preceding any Interest Payment Date to the opening of business on such Interest Payment Date shall (except for Securities the Maturity of which is prior to such Interest Payment Date) be accompanied by payment in funds acceptable to the Company of an amount equal to the interest payable on such Interest Payment Date on the principal amount of Securities being surrendered for conversion and such interest shall be paid on such Interest Payment Date as provided in Section 307. Except as provided in the preceding sentence, no payment or adjustment shall be made upon any conversion on account of any interest accrued on the Securities surrendered for conversion or on account of any dividends on the Common Stock issued upon conversion.

The Company's delivery to the Holder of the fixed number of shares of the Common Stock of the Company (and any cash in lieu of any fractional share of Common Stock) into which the Security is convertible shall be deemed to satisfy the Company's obligation to pay the principal amount of the Security and all accrued interest and original issue discount that has not previously been paid. The shares of Common Stock of the Company so delivered shall be treated as issued first in payment of accrued interest and original issue discount and then in payment of principal. Thus, accrued interest and original issue discount shall be treated as paid, rather than canceled, extinguished or forfeited.

Securities shall be deemed to have been converted immediately prior to the close of business on the day of surrender of such Securities for conversion in accordance with the foregoing provisions, and at such time the rights of the Holders of such Securities as Holders shall cease, and the Person or Persons entitled to receive the Common Stock issuable upon conversion shall be treated for all purposes as the record holder or holders of such Common Stock at such time. As promptly as practicable on or after the conversion date, the Company shall issue and shall deliver at such office or agency a certificate or certificates for the number of full shares of Common Stock issuable upon conversion, together with payment in lieu of any fraction of a share, as provided in Section 1703.

In the case of any Security which is converted in part only, as promptly as practicable on or after the conversion date the Company shall execute and the Trustee shall authenticate and make available for delivery to the Holder thereof (or the Depository in the case of a Global Security), at the expense of the Company, a new Security or Securities, of authorized denominations in aggregate principal amount equal to the unconverted portion of the principal amount of such Security.

SECTION 1703. Fractions of Shares. No fractional shares of Common Stock shall be issued upon conversion of Securities. If more than one Security shall be surrendered for conversion at one time by the same Holder, the number of full shares of Common Stock which shall be issuable upon conversion thereof shall be computed on the basis of the aggregate principal amount of the Securities (or specified portions thereof) so surrendered. Instead of any fractional share of Common Stock which would otherwise be issuable upon conversion of any Security or Securities (or specified portions thereof), the Company shall pay a cash adjustment (rounded to the nearest cent) in respect of such fraction in an amount equal to the same fraction of the Closing Price per share of the Common Stock on the day of conversion (or, if such day is not a Trading Day, on the Trading Day immediately preceding such day).

SECTION 1704. Adjustment of Conversion Price. The Conversion Price shall be subject to adjustment from time to time as follows:

(1) If the Company pays or makes a dividend or other distribution (a) on its Common Stock exclusively in Common Stock or (b) on any other class of Capital Stock of the Company, which dividend or distribution includes Common Stock of the Company, the Conversion Price in effect at the opening of business on the day following the date fixed for the determination of stockholders entitled to receive such dividend or other distribution (the "Dividend Record Date") shall be reduced by multiplying such Conversion Price by a fraction of which the numerator shall be the number of shares of Common Stock of the Company outstanding at the close of business on the Dividend Record Date and the denominator shall be the sum of such number of shares and the total number of shares constituting such dividend or other distribution. Such reduction shall become effective immediately after the opening of business on the day following the date fixed for such determination. For the purposes of this paragraph (1), the number of shares of Common Stock of the Company at any time outstanding shall not include shares held in the treasury of the Company, but shall include shares issuable in respect of scrip certificates issued in lieu of fractions of shares of Common Stock. The Company shall not pay any dividend or make any distribution on shares of Common Stock held in the treasury of the Company.

(2) Subject to paragraph (6) of this Section, if the Company pays or makes a dividend or other distribution on its Common Stock consisting exclusively of Short Term Rights (as defined below), or otherwise issues Short Term Rights to all holders of its Common Stock, the Conversion Price in effect at the opening of business on the day following the record date for the determination of holders of Common Stock entitled to receive such Short Term Rights (the "Rights Record Date") shall be reduced by multiplying such Conversion Price by a fraction of which the numerator shall be the number of shares of Common Stock of the Company outstanding at the close of business on the Rights Record Date plus the number of shares of Common Stock of the Company which the aggregate of the offering price of the total number of shares of Common Stock so offered for subscription or purchase would purchase at such current market price and the denominator shall be the number of shares of Common Stock of the Company outstanding at the close of business on the Rights Record Date plus the number of shares of Common Stock so offered for subscription or purchase. Such reduction shall become effective immediately after the opening of business on the day following the Rights Record Date. For the purposes of this paragraph (2), the number of shares of Common Stock of the Company at any time outstanding shall not include shares held in the treasury of the Company, but shall include shares issuable in respect of scrip certificates issued in lieu of fractions of shares of Common Stock of the Company. The Company shall not issue any rights, options or warrants in respect of shares of its Common Stock held in the treasury of the Company. When used in this Section 1704, the term "Short Term Rights" shall mean rights, warrants or options entitling the holders thereof (for a period commencing no earlier than the Rights Record Date and expiring not more than 45 days after the Rights Record Date) to subscribe for or purchase shares of Common Stock of the Company at a price per share less than the current market price per share (determined as provided in paragraph (7) of this Section 1704) of the Common Stock of the Company on the Rights Record Date.

(3) In case outstanding shares of Common Stock of the Company shall be subdivided into a greater number of shares of Common Stock, the Conversion Price in effect at the opening of business on the day following the day upon which such subdivision becomes effective shall be proportionately reduced, and, conversely, in case outstanding shares of Common Stock of the Company shall be combined into a smaller number of shares of Common Stock, the Conversion Price in effect at the opening of business on the day following the day upon which such combination becomes effective shall be proportionately increased, such reduction or increase, as the case may be, to become effective immediately after the opening of business on the day following the day upon which such subdivision or combination becomes effective.

(4) Subject to the last sentence of this paragraph (4) of this Section, if the Company, by dividend or otherwise, (a) distributes to all holders of its Common Stock evidences of its indebtedness, shares of any class of Capital Stock of the Company or other assets (other than cash dividends out of current or retained earnings), or (b) distributes to substantially all holders of Common Stock rights or warrants to subscribe for securities (other than Short Term Rights to which paragraph (2) of this Section 1704 applies), the Conversion Price shall be reduced by multiplying such Conversion Price by a fraction of which the numerator shall be the current market price per share (determined as provided in paragraph (7) of this Section 1704) of the Common Stock of the Company on the Reference Date (as defined below) less the fair market value (as determined in good faith by the Board of Directors, whose determination shall be conclusive and described in a Board Resolution filed with the Trustee), on the Reference Date, of the portion of the evidences of indebtedness and other assets so distributed or of such subscription rights or warrants applicable to one share of Common Stock (collectively, the "Market Value of the Distribution") and the denominator shall be such current market price per share of the Common Stock of the Company. Such reduction shall become effective immediately prior to the opening of business on the day (the "Reference Date") following the later of (a) the date fixed for the payment of such distribution and (b) the date 20 days after notice relating to such distribution is required to be given pursuant to Section 1706(a). If the Board of Directors determines the fair market value of any distribution for purposes of this paragraph (4) by reference to the actual or when issued trading market for any securities comprising such distribution, it must in doing so consider the prices in such market over the same period used in computing the current market price per share pursuant to paragraph (7) of this Section 1704. In the event that, with respect to any distribution to which this paragraph (4) of Section 1704 would otherwise apply, the Market Value of the Distribution is greater than the current market price per share of the Common Stock (such distribution being referred to herein as an "Unadjusted Distribution"), then the adjustment provided by this paragraph (4) shall not be made and in lieu thereof the provisions of Section 1711 shall apply with respect to such Unadjusted Distribution.

(5) The Company may, but shall not be required to, make such reductions in the Conversion Price, in addition to those required by paragraphs (1), (2), (3), and (4) of this Section 1704, as it considers to be advisable in order that any event treated for federal income tax purposes as a dividend of stock or stock rights shall not be taxable to the recipients. In addition, the Company, from time to time, may decrease the Conversion Price by any amount and for any reason, temporarily or otherwise, including situations where the Board of Directors determines such decrease to be fair and appropriate with respect to transactions in which holders of Common Stock have the right to participate.

(6) Rights or warrants issued or distributed by the Company to all holders of its Common Stock entitling the holders thereof to subscribe for or purchase shares of Common Stock or Preferred Stock, which rights or warrants (i) are deemed to be transferred with such shares of Common Stock, (ii) are not exercisable and (iii) are also issued or distributed in respect of future issuances of Common Stock, in each case in clauses (i) through (iii) until the occurrence of a specified event or events (“Trigger Events”), shall for purposes of this Section 1704 not be deemed issued or distributed until the occurrence of the earliest Trigger Event. Each share of Common Stock issued upon conversion of Securities pursuant to this Article Seventeen shall be entitled to receive the appropriate number of Common Stock purchase rights (the “Rights”), if any, and the certificates representing the Common Stock issued upon conversion shall bear such legends, if any. Notwithstanding anything to the contrary in this Article Seventeen, there shall not be any adjustment to the Conversion Price as a result of (i) the distribution of separate certificates representing the Rights; (ii) the occurrence of certain events entitling holders of Rights to receive, upon exercise thereof, Common Stock or other securities of the Company or other securities of another corporation; or (iii) the exercise of such Rights. No adjustment in the Conversion Price need be made for rights to purchase or the sale of Common Stock pursuant to a Company plan providing for reinvestment of dividends or interest.

(7) For the purpose of any computation under paragraph (2), (4) or (5) of this Section 1704, the “current market price” per share of Common Stock of the Company on any date shall be deemed to be the average of the daily Closing Prices for the 15 consecutive Trading Days selected by the Company commencing not more than 30 Trading Days before, and ending not later than, the date in question.

(8) No adjustment in the Conversion Price shall be required unless such adjustment would require an increase or decrease of at least 1% in the Conversion Price; provided, however, that any adjustments which by reason of this paragraph (8) are not required to be made shall be carried forward and taken into account in any subsequent adjustment. All calculations under this Article Seventeen shall be made to the nearest cent or to the nearest one-hundredth of a share of Common Stock, as the case may be.

(9) Anything herein to the contrary notwithstanding, in the event the Company shall declare any dividend or distribution requiring an adjustment in the Conversion Price hereunder and shall, thereafter and before the payment of such dividend or distribution to stockholders, legally abandon its plan to pay such dividend or distribution, the Conversion Price then in effect hereunder, if changed to reflect such dividend or distribution, shall upon the legal abandonment of such plan be changed to the Conversion Price which would have been in effect at the time of such abandonment (after giving effect to all other adjustments not so legally abandoned pursuant to the provisions of this Article Seventeen) had such dividend or distribution never been declared.

(10) Notwithstanding any other provision of this Section 1704, no adjustment to the Conversion Price shall reduce the Conversion Price below the then par value per share of the Common Stock of the Company, and any such purported adjustment shall instead reduce the Conversion Price to such par value. Notwithstanding the foregoing sentence, the Company hereby covenants that it will from time to time take all such action as may be required to assure that the par value per share of the Common Stock is at all times equal to or less than the Conversion Price.

(11) In the event that this Article Seventeen requires adjustments to the Conversion Price under more than one of paragraphs (1), (2), (3) or (4) of this Section 1704, and the record or effective dates for the transaction giving rise to such adjustments shall occur on the same date, then such adjustments shall be made by applying (to the extent they are applicable), first, the provisions of paragraph (3) of this Section 1704, second, the provisions of paragraph (1) of this Section 1704, third, the provisions of paragraph (4) of this Section 1704 and, fourth, the provisions of paragraph (2) of this Section 1704. Anything herein to the contrary notwithstanding, no single event shall require or result in duplicative adjustments in the Conversion Price pursuant to this Section 1704. After an adjustment to the Conversion Price under this Article Seventeen, any subsequent event requiring an adjustment under this Article Seventeen shall cause an adjustment to the Conversion Price as so adjusted. If, after an adjustment, a Holder of a Security upon conversion of such Security receives shares of two or more classes of Capital Stock of the Company, the Conversion Price shall thereafter be subject to adjustment upon the occurrence of an action taken with respect to any such class of Capital Stock as is contemplated by this Article Seventeen with respect to the Common Stock in this Article Seventeen.

SECTION 1705. Notice of Adjustments of Conversion Price. Whenever the Conversion Price is adjusted as herein provided:

(1) the Company shall compute the adjusted Conversion Price in accordance with Section 1704 or Section 1711 and shall prepare an Officer's Certificate setting forth the adjusted Conversion Price and showing in reasonable detail the facts upon which such adjustment is based, and such certificate shall forthwith be filed (with a copy to the Trustee) at each office or agency maintained for the purpose of conversion of any Securities pursuant to Section 1002; and

(2) a notice stating that the Conversion Price has been adjusted and setting forth the adjusted Conversion Price shall forthwith be required, and as soon as practicable after it is required, such notice shall be mailed by the Company to all Holders at their last addresses as they shall appear in the Security Register.

SECTION 1706. Notice of Certain Corporate Action. In case:

(1) the Company shall take any action that would require a Conversion Price adjustment pursuant to Section 1704 or Section 1711; or

(2) there shall occur any reclassification of the Common Stock of the Company (other than a subdivision or combination of its outstanding shares of Common Stock), or any consolidation or merger to which the Company is a party, or the sale, transfer or lease of all or substantially all of the assets of the Company and for which approval of any stockholders of the Company is required; or

(3) there shall occur the voluntary or involuntary dissolution, liquidation or winding up of the Company, then the Company shall cause to be filed at each office or agency maintained for the purpose of conversion of Securities pursuant to Section 1002, and shall cause to be mailed to all Holders at their last addresses as they shall appear in the Security Register, at least 10 days prior to the applicable record, effective or expiration date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of any dividend, distribution or granting of rights, warrants or options, or, if a record is not to be taken, the date as of which the holders of Common Stock of record to be entitled to such dividend, distribution, rights, options or warrants are to be determined, or (y) the date on which such reclassification, consolidation, merger, sale, transfer, dissolution, liquidation or winding up is expected to become effective, and, if applicable, the date as of which it is expected that holders of Common Stock of record shall be entitled to exchange their shares of Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer, dissolution, liquidation or winding up.

SECTION 1707. Company to Reserve Common Stock. The Company shall at all times reserve and keep available, free from preemptive rights, out of its authorized but unissued Common Stock, for the purpose of effecting the conversion of Securities, a number of shares of Common Stock for the conversion of all outstanding Securities of any series which is convertible into Common Stock.

SECTION 1708. Taxes on Conversion. The Company will pay any and all taxes that may be payable in respect of the issue or delivery of shares of Common Stock on conversion of Securities pursuant hereto. The Company shall not, however, be required to pay any tax which may be payable in respect of any transfer involved in the issue and delivery of shares of Common Stock in a name other than that of the Holder of the Security or Securities to be converted, and no such issue or delivery shall be made unless and until the Person requesting such issue has paid to the Company the amount of any such tax, or has established to the satisfaction of the Company that such tax has been paid.

SECTION 1709. Covenants as to Common Stock. The Company covenants that all shares of Common Stock which may be issued upon conversion of Securities will upon issue be duly and validly issued, fully paid and nonassessable, free of preemptive or any similar rights, and, except as provided in Section 1708, the Company will pay all taxes, liens and charges with respect to the issue thereof.

The Company will endeavor promptly to comply with all Federal and state securities laws regulating the offer and delivery of shares of Common Stock upon conversion of Securities, if any, and will list or cause to have quoted such shares of Common Stock on each national securities exchange or in the over-the-counter market or such other market on which the Common Stock is then listed or quoted.

SECTION 1710. Cancellation of Converted Securities. All Securities delivered for conversion shall be delivered to the Trustee to be cancelled by or at the direction of the Trustee, which shall dispose of the same as provided in Section 309.

SECTION 1711. Provisions in Case of Consolidation, Merger or Sale of Assets; Special Distributions. If any of the following shall occur, namely: (i) any reclassification or change of outstanding shares of Common Stock issuable upon conversion of Securities (other than a change in par value, or from par value to no par value, or from no par value to par value, or as a result of a subdivision or combination), (ii) any consolidation or merger to which the Company is a party other than a merger in which the Company is the continuing corporation and which does not result in any reclassification of, or change (other than a change in name, or par value, or from par value to no par value, or from no par value to par value or as a result of a subdivision or combination) in, outstanding shares of Common Stock or (iii) any sale or conveyance of all or substantially all of the property or business of the Company as an entirety, then the Person formed by such consolidation or resulting from such merger or which acquires such properties or assets, as the case may be, shall as a condition precedent to such transaction execute and deliver to the Trustee a supplemental indenture providing that the Holder of each Security then outstanding shall have the right thereafter, during the period such Security shall be convertible as specified in Section 1701, to convert such Security only into the kind and amount of securities, cash and other property receivable, if any, upon such consolidation, merger, sale, transfer or lease by a holder of the number of shares of Common Stock of the Company into which such Security might have been converted immediately prior to such consolidation, merger, sale, transfer or lease; provided that the kind and amount of securities, cash and other property so receivable shall be determined on the basis of the following assumptions. The holder of Common Stock referred to in the foregoing sentence:

(1) is not (a) a Person with which the Company consolidated, (b) a Person into which the Company merged or which merged into the Company, or (c) a Person to which such sale, transfer or lease was made (any Person described in the foregoing clauses (a), (b), or (c), hereinafter referred to as a “Constituent Person”), or (d) an Affiliate of a Constituent Person; and

(2) failed to exercise his rights of election, if any, as to the kind or amount of securities, cash and other property receivable upon such consolidation, merger, sale, transfer or lease (provided that if the kind or amount of securities, cash and other property receivable upon such consolidation, merger, sale transfer or lease is not the same for each share of Common Stock of the Company in respect of which such rights of election shall not have been exercised, then for the purpose of this Section 1711 the kind and amount of securities, cash and other property receivable upon such consolidation, merger, sale, transfer or lease shall be deemed to be the kind and amount so receivable per share by a plurality of such shares of Common Stock).

Such supplemental indenture shall provide for adjustments which, for events subsequent to the effective date of such supplemental indenture, shall be as nearly equivalent as may be practicable to the adjustments provided for in this Article Seventeen. If, in the case of any such consolidation, merger, sale transfer or lease the stock or other securities and property (including cash) receivable thereupon by a holder of Common Stock includes shares of stock or other securities and property of a corporation other than the successor or purchasing corporation, as the case may be, in such consolidation, merger, sale, transfer or lease then such supplemental indenture shall also be executed by such other corporation and shall contain such additional provisions to protect the interests of the Holders of the Securities as the Board of Directors of the Company shall reasonably consider necessary by reason of the foregoing. The above provisions of this Section 1711 shall similarly apply to successive consolidations, mergers, sales, transfers or leases.

In the event the Company shall execute a supplemental indenture pursuant to this Section 1711, the Company shall promptly file with the Trustee an Officers’ Certificate briefly stating the reasons therefor, the kind or amount of shares of stock or securities or property (including cash) receivable by Holders of the Securities upon the conversion of their Securities after any such reclassification, change, consolidation, merger, sale, transfer or lease and any adjustment to be made with respect thereto.

If the Company makes a distribution to all holders of its Common Stock that constitutes an Unadjusted Distribution pursuant to the last sentence of paragraph (4) of Section 1704, then, from and after the record date for determining the holders of Common Stock entitled to receive such distribution (the “Distribution Record Date”), a Holder of a Security who converts such Security in accordance with the provisions of this Indenture shall, upon conversion, be entitled to receive, in addition to the shares of Common Stock into which the Security is convertible, the kind and amount of evidences of indebtedness, shares of Capital Stock, or other assets or subscription rights or warrants, as the case may be, comprising the distribution that such Holder would have received if such Holder had converted the Security immediately prior to the Distribution Record Date.

SECTION 1712. Trustee Adjustment Disclaimer; Company Determination Final. The Trustee has no duty to determine when an adjustment under this Article Seventeen should be made, how it should be made or what it should be. The Trustee has no duty to determine whether a supplemental indenture under Section 1711 need be entered into or whether any provisions of any supplemental indenture are correct. The Trustee shall not be accountable for and makes no representation as to the validity or value of any securities or assets issued upon conversion of Securities. The Trustee shall not be responsible for the Company's failure to comply with this Article Seventeen. Any determination that the Company or the Board of Directors must make pursuant to this Article Seventeen is conclusive, absent manifest error.

SECTION 1713. When No Adjustment Required. Except as expressly set forth in Section 1704, no adjustment in the Conversion Price shall be made because the Company issues, in exchange for cash, property or services, shares of its Common Stock, or any securities convertible into or exchangeable for shares of its Common Stock, or securities (including warrants, rights and options) carrying the right to subscribe for or purchase shares of its Common Stock or such convertible or exchangeable securities.

(1) Notwithstanding anything herein to the contrary, no adjustment in the Conversion Price shall be made pursuant to Section 1704 in respect of any dividend or distribution if the Holders may participate therein (on a basis to be determined in good faith by the Board of Directors) and receive the same consideration they would have received if they had converted the Securities immediately prior to the record date with respect to such dividend or distribution.

SECTION 1714. Equivalent Adjustments. In the event that, as a result of an adjustment made pursuant to Section 1704 above, the holder of any Security thereafter surrendered for conversion shall become entitled to receive any shares of Capital Stock of the Company other than shares of its Common Stock, thereafter the Conversion Price of such other shares so receivable upon conversion of any Securities shall be subject to adjustment from time to time in a manner and on terms as nearly equivalent as practicable to the provisions with respect to Common Stock contained in this Article Seventeen.

SIGNATURES

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

ASSEMBLY BIOSCIENCES, INC.

By: _____
Name: _____
Title: _____

[_____] ,
as Trustee

By: _____
Name: _____
Title: _____

EXHIBIT A

FORM OF REDEEMABLE OR NON-REDEEMABLE SUBORDINATED SECURITY

[Face of Security]

[If the Holder of this Security (as indicated below) is The Depository Trust Company (“DTC”) or a nominee of DTC, this Security is a Global Security and the following two legends apply:

Unless this Security is presented by an authorized representative of The Depository Trust Company a New York corporation (“DTC”) to the Company or its agent for registration of transfer, conversion, exchange or payment, and such Security issued is registered in the name of Cede & Co., or in such other name as 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.

Unless and until this Security is exchanged in whole or in part for Securities in certificated form, this Security may not be transferred except as a whole by DTC to a nominee thereof or by a nominee thereof to DTC or another nominee of DTC or by DTC or any such nominee to a successor of DTC or a nominee of such successor.]

[If this Security is an Original Issue Discount Security, insert — FOR PURPOSES OF SECTION 1273 and 1275 OF THE UNITED STATES INTERNAL REVENUE CODE, THE AMOUNT OF ORIGINAL ISSUE DISCOUNT ON THIS SECURITY IS ___% OF ITS PRINCIPAL AMOUNT, THE ISSUE DATE IS _____, 20__, AND THE YIELD TO MATURITY IS ___%. THE METHOD USED TO DETERMINE THE AMOUNT OF ORIGINAL ISSUE DISCOUNT APPLICABLE TO THE SHORT ACCRUAL PERIOD OF _____, 20__ TO _____, 20__, IS ___% OF THE PRINCIPAL AMOUNT OF THIS SECURITY.]

ASSEMBLY BIOSCIENCES, INC.

[Designation of Series]

No. _____

\$ _____

CUSIP No. _____

ASSEMBLY BIOSCIENCES, INC., a Delaware corporation (herein referred to as the “Company,” which term includes any successor corporation under the Indenture referred to on the reverse hereof), for value received, hereby promises to pay to _____ or registered assigns the principal sum of _____ Dollars on _____ (the “Stated Maturity Date”) [or insert date fixed for earlier redemption (the “Redemption Date,” and together with the Stated Maturity Date with respect to principal repayable on such date, the “Maturity Date.”)]

[If the Security is to bear interest prior to Maturity, insert — and to pay interest thereon from _____ or from the most recent Interest Payment Date to which interest has been paid or duly provided for, semi-annually on _____ and _____ in each year (each, an “Interest Payment Date”), commencing _____, at the rate of ___% per annum, until the principal hereof is paid or duly provided for. The interest so payable, and punctually paid or duly provided for, on any Interest Payment Date will, as provided in such Indenture, be paid to the Holder in whose name this Security (or one or more Predecessor Securities) is registered at the close of business on the Regular Record Date for such interest, which shall be the _____ or _____ (whether or not a Business Day), as the case may be, next preceding such Interest Payment Date [at the office or agency of the Company maintained for such purpose; provided, however, that such interest may be paid, at the Company’s option, by mailing a check to such Holder at its registered address or by transfer of funds to an account maintained by such Holder within the United States]. Any such interest not so punctually paid or duly provided for shall forthwith cease to be payable to the Holder on such Regular Record Date, and may be paid to the Holder in whose name this Security (or one or more Predecessor Securities) is registered at the close of business on a Special Record Date for the payment of such Defaulted Interest to be fixed by the Trustee, notice whereof shall be given to Holders of Securities of this series not less than 10 days prior to such Special Record Date, or may be paid at any time in any other lawful manner not inconsistent with the requirements of any over-the-counter market or securities exchange on which the Securities of this series may be quoted or listed, and upon such notice as may be required by such market or exchange, all as more fully provided in the Indenture. Interest will be computed on the basis of a 360-day year of twelve 30-day months.]

[If the Security is not to bear interest prior to Maturity, insert — The principal of this Security shall not bear interest except in the case of a default in payment of principal upon acceleration, upon redemption or at the [Stated] Maturity Date and in such case the overdue principal of this Security shall bear interest at the rate of ___% per annum (to the extent that the payment of such interest shall be legally enforceable), which shall accrue from the date of such default in payment to the date payment of such principal has been made or duly provided for. Interest on any overdue principal shall be payable on demand. Any such interest on any overdue principal that is not so paid on demand shall bear interest at the rate of ___% per annum (to the extent that the payment of such interest shall be legally enforceable), which shall accrue from the date of such demand for payment to the date payment of such interest has been made or duly provided for, and such interest shall also be payable on demand.]

The principal of this Security payable on the Stated Maturity Date [or the principal of, premium or Make-Whole Amount, if any, and, if the Redemption Date is not an Interest Payment Date, interest on this Security payable on the Redemption Date] will be paid against presentation of this Security at the office or agency of the Company maintained for that purpose in _____, in such coin or currency of the United States of America as at the time of payment is legal tender for the payment of public and private debts.

Interest payable on this Security on any Interest Payment Date and on the [Stated] Maturity Date [or Redemption Date, as the case may be,] will include interest accrued from and including the next preceding Interest Payment Date in respect of which interest has been paid or duly provided for (or from and including _____, if no interest has been paid on this Security) to but excluding such Interest Payment Date or the [Stated] Maturity Date [or Redemption Date, as the case may be.] If any Interest Payment Date or the [Stated] Maturity Date or [Redemption Date] falls on a day that is not a Business Day, as defined below, principal, premium or Make-Whole Amount, if any, and/or interest payable with respect to such Interest Payment Date or [Stated] Maturity Date [or Redemption Date, as the case may be,] will be paid on the next succeeding Business Day with the same force and effect as if it were paid on the date such payment was due, and no interest shall accrue on the amount so payable for the period from and after such Interest Payment Date or [Stated] Maturity Date [or Redemption Date, as the case may be.] "Business Day" means any day, other than a Saturday or Sunday, that is neither a legal holiday nor a day on which banking institutions in The City of New York are required or authorized by law, regulation or executive order to close.

[If this Security is a Global Security, insert — All payments of principal, premium or Make-Whole Amount, if any, and interest in respect of this Security will be made by the Company in immediately available funds.]

Reference is hereby made to the further provisions of this Security set forth on the reverse hereof, which further provisions shall for all purposes have the same effect as if set forth at this place.

Unless the Certificate of Authentication hereon has been executed by the Trustee by manual signature of one of its authorized signatories, this Security shall not be entitled to any benefit under the Indenture, or be valid or obligatory for any purpose.

IN WITNESS WHEREOF, the Company has caused this instrument to be duly executed.

Dated: _____

ASSEMBLY BIOSCIENCES, INC.

By: _____

Name:

Title:

Attest:

Secretary

[Reverse of Security]

ASSEMBLY BIOSCIENCES, INC.

This Security is one of a duly authorized issue of securities of the Company (herein called the "Securities"), issued and to be issued in one or more series under an

Indenture, dated as of _____, 20__ (herein called the "Indenture") between the Company and [_____] , as Trustee (herein called the "Trustee," which term includes any successor trustee under the Indenture with respect to the series of which this Security is a part), to which Indenture and all indentures supplemental thereto reference is hereby made for a statement of the respective rights, limitations of rights, duties and immunities thereunder of the Company, the Trustee and the Holders of the Securities, and of the terms upon which the Securities are, and are to be, authenticated and delivered. This Security is one of the duly authorized series of Securities designated on the face hereof (collectively, the "Securities"), [if applicable, insert — and the aggregate principal amount of the Securities to be issued under such series is limited to \$_____ (except for Securities authenticated and delivered upon transfer of, or in exchange for, or in lieu of other Securities).] All terms used in this Security which are defined in the Indenture shall have the meanings assigned to them in the Indenture.

If an Event of Default, as defined in the Indenture, shall occur and be continuing, the principal of the Securities of this series may be declared due and payable in the manner and with the effect provided in the Indenture.

[If applicable, insert — The Securities may not be redeemed prior to the Stated Maturity Date.]

[If applicable, insert — The Securities are subject to redemption [(1) (If applicable, insert — on _____ in any year commencing with the year _____ and ending with the year _____ through operation of the sinking fund for this series at a Redemption Price equal to 100% of the principal amount, and (2)] [If applicable, insert — at any time [on or after _____], as a whole or in part, at the election of the Company, at the following Redemption Prices (expressed as percentages of the principal amount):

If redeemed on or before _____, ___% and if redeemed during the 12-month period beginning _____ of the years indicated at the Redemption Prices indicated below.

Year	Redemption Price	Year	Redemption Price

and thereafter at a Redemption Price equal to ___% of the principal amount, together in the case of any such redemption [If applicable, insert — (whether through operation of the sinking fund or otherwise)] with accrued interest to the Redemption Date; provided, however, that installments of interest on this Security whose Stated Maturity is on or prior to such Redemption Date will be payable to the Holder of this Security, or one or more Predecessor Securities, of record at the close of business on the relevant Record Dates referred to on the face hereof, all as provided in the Indenture.]

[If applicable, insert — The Securities are subject to redemption (1) on _____ in any year commencing with the year _____ and ending with the year _____ through operation of the sinking fund for this series at the Redemption Prices for redemption through operation of the sinking fund (expressed as percentages of the principal amount) set forth in the table below, and (2) at any time [on or after _____], as a whole or in part, at the election of the Company, at the Redemption Prices for redemption otherwise than through operation of the sinking fund (expressed as percentages of the principal amount) set forth in the table below: If redeemed during the 12-month period beginning _____ of the years indicated,

Year	Redemption Price for Redemption Through Operation of the Sinking Fund	Redemption Price for Redemption Otherwise Than Through Operation of the Sinking Fund

and thereafter at a Redemption Price equal to ___% of the principal amount, together in the case of any such redemption (whether through operation of the sinking fund or otherwise) with accrued interest to the Redemption Date; provided, however, that installments of interest on this Security whose Stated Maturity is on or prior to such Redemption Date will be payable to the Holder of this Security, or one or more Predecessor Securities, of record at the close of business on the relevant Record Dates referred to on the face hereof, all as provided in the Indenture.]

[If applicable, insert — Notwithstanding the foregoing, the Company may not, prior to _____, redeem any Securities as contemplated by [Clause (2) of] the preceding paragraph as a part of, or in anticipation of, any refunding operation by the application, directly or indirectly, of moneys borrowed having an interest cost to the Company (calculated in accordance with generally accepted financial practice) of less than ___% per annum.]

[If applicable, insert — The sinking fund for the Securities provides for the redemption on _____ in each year, beginning with the year _____ and ending with the year _____, of [not less than] \$_____] [(“mandatory sinking fund”) and not more than \$_____] aggregate principal amount of the Securities. [The Securities acquired or redeemed by the Company otherwise than through [mandatory] sinking fund payments may be credited against subsequent [mandatory] sinking fund payments otherwise required to be made in the [describe order] order in which they become due.]]

Notice of redemption will be given by mail to Holders of Securities, not less than 30 nor more than [60 days] prior to the Redemption Date, all as provided in the Indenture.

In the event of redemption of this Security in part only, a new Security or Securities for the unredeemed portion hereof shall be issued in the name of the Holder hereof upon the cancellation hereof.

[If applicable, insert conversion provisions set forth in any Board Resolution or indenture supplemental to the Indenture.]

The Indenture permits, with certain exceptions as therein provided, the amendment thereof and the modification of the rights and obligations of the Company and the rights of the Holders of the Securities under the Indenture at any time by the Company and the Trustee with the consent of the Holders of not less than a majority of the aggregate principal amount of all Securities issued under the Indenture at the time Outstanding and affected thereby. The Indenture also contains provisions permitting the Holders of not less than a majority of the aggregate principal amount of the Outstanding Securities, on behalf of the Holders of all such Securities, to waive compliance by the Company with certain provisions of the Indenture. Furthermore, provisions in the Indenture permit the Holders of not less than a majority of the aggregate principal amount, in certain instances, of the Outstanding Securities of any series to waive, on behalf of all of the Holders of Securities of such series, certain past defaults under the Indenture and their consequences. Any such consent or waiver by the Holder of this Security shall be conclusive and binding upon such Holder and upon all future Holders of this Security and other Securities issued upon the registration of transfer hereof or conversion or in exchange hereof or in lieu hereof, whether or not notation of such consent or waiver is made upon this Security.

No reference herein to the Indenture and no provision of this Security or of the Indenture shall alter or impair the obligation of the Company, which is absolute and unconditional, to pay the principal of (and premium or Make-Whole Amount, if any) and interest on this Security at the times, places and rate, and in the coin or currency, herein prescribed.

As provided in the Indenture and subject to certain limitations therein [and herein] set forth, the transfer of this Security is registrable in the Security Register of the Company upon surrender of this Security for registration of transfer at the office or agency of the Company in any place where the principal of (and premium or Make-Whole Amount, if any) and interest on this Security are payable, duly endorsed by, or accompanied by a written instrument of transfer in form satisfactory to the Company and the Security Registrar duly executed by, the Holder hereof or by his attorney duly authorized in writing, and thereupon one or more new Securities, of authorized denominations and for the same aggregate principal amount, will be issued to the designated transferee or transferees.

As provided in the Indenture and subject to certain limitations therein [and herein] set forth, this Security is exchangeable for a like aggregate principal amount of Securities of different authorized denominations but otherwise having the same terms and conditions, as requested by the Holder hereof surrendering the same.

This Security is subordinated to the prior payment in full in cash of Senior Indebtedness to the extent set forth in Article Sixteen of the Indenture.

The Securities of this series are issuable only in registered form [without coupons] in denominations of \$_____ and any integral multiple thereof.

No service charge shall be made for any such registration of transfer or conversion or exchange, but the Company may require payment of a sum sufficient to cover any tax or other governmental charge payable in connection therewith,

Prior to due presentment of this Security for registration of transfer, the Company, the Trustee and any agent of the Company or the Trustee may treat the Person in whose name this Security is registered as the owner hereof for all purposes, whether or not this Security be overdue, and neither the Company, the Trustee nor any such agent shall be affected by notice to the contrary.

No recourse shall be had for the payment of the principal of or premium or Make-Whole Amount, if any, or the interest on this Security, or for any claim based hereon, or otherwise in respect hereof, or based on or in respect of the Indenture or any indenture supplemental thereto, against any past, present or future stockholder, employee, officer or director, as such, of the Company or of any successor, either directly or through the Company or any successor, whether by virtue of any constitution, statute or rule of law or by the enforcement of any assessment or penalty or otherwise, all such liability being, by the acceptance hereof and as part of the consideration for the issue hereof, expressly waived and released.

The Indenture and the Securities shall be governed by and construed in accordance with the laws of the State of New York applicable to agreements made and to be performed entirely in such State.

EXHIBIT B

FORMS OF CERTIFICATION

EXHIBIT B-1

FORM OF CERTIFICATE TO BE GIVEN BY PERSON ENTITLED TO RECEIVE BEARER SECURITY OR TO OBTAIN INTEREST PAYABLE PRIOR TO THE EXCHANGE DATE

CERTIFICATE

[Insert title or sufficient description of Securities to be delivered]

This is to certify that, as of the date hereof, and except as set forth below, the above-captioned Securities held by you for our account (i) are owned by person(s) that are not citizens or residents of the United States, domestic partnerships, domestic corporations or any estate or trust the income of which is subject to United States Federal income taxation regardless of its source ("United States person(s)"), (ii) are owned by United States person(s) that are (a) foreign branches of United States financial institutions (financial institutions, as defined in United States Treasury Regulations Section 2.165-12(c)(1)(v) are herein referred to as "financial institutions") purchasing for their own account or for resale, or (b) United States person(s) who acquired the Securities through foreign branches of United States financial institutions and who hold the Securities through such United States financial institutions on the date hereof (and in either case (a) or (b), each such United States financial institution hereby agrees, on its own behalf or through its agent, that you may advise Assembly Biosciences, Inc. or its agent that such financial institution will comply with the requirements of Section 165(j)(3)(A), (B) or (C) of the United States Internal Revenue Code of 1986, as amended, and the regulations thereunder), or (iii) are owned by United States or foreign financial institution(s) for purposes of resale during the restricted period (as defined in United States Treasury Regulations Section 1.163-5(c)(2)(i)(D)(7)), and, in addition, if the owner is a United States or foreign financial institution described in clause (iii) above (whether or not also described in clause (i) or (ii)), this is to further certify that such financial institution has not acquired the Securities for purposes of resale directly or indirectly to a United States person or to a person within the United States or its possessions.

As used herein, "United States" means the United States of America (including the States and the District of Columbia); and its "possessions" include Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, Wake Island and the Northern Mariana Islands.

We undertake to advise you promptly by tested telex or by telecopy on or prior to the date on which you intend to submit your certification relating to the above-captioned Securities held by you for our account in accordance with your operating procedures if any applicable statement herein is not correct on such date, and in the absence of any such notification it may be assumed that this certification applies as of such date.

This certificate excepts and does not relate to [U.S.\$] of such interest in the above-captioned Securities in respect of which we are not able to certify and as to which we understand an exchange for an interest in a permanent Global Security or an exchange for and delivery of definitive Securities (or, if relevant, collection of any interest) cannot be made until we do so certify.

We understand that this certificate may be required in connection with certain tax legislation in the United States. If administrative or legal proceedings are commenced or threatened in connection with which this certificate is or would be relevant, we irrevocably authorize you to produce this certificate or a copy thereof to any interested party in such proceedings.

Dated: _____

[To be dated no earlier than the 15th day prior to (i) the Exchange Date or (ii) the relevant Interest Payment Date occurring prior to the Exchange Date, as applicable]

[Name of Person Making Certification]

(Authorized Signature)

Name:

Title:

EXHIBIT B-2

FORM OF CERTIFICATE TO BE GIVEN BY EUROCLEAR AND CLEARSTREAM S.A. IN CONNECTION WITH THE EXCHANGE OF A PORTION OF A TEMPORARY GLOBAL SECURITY OR TO OBTAIN INTEREST PAYABLE PRIOR TO THE EXCHANGE DATE

CERTIFICATE

[Insert title or sufficient description of Securities to be delivered]

This is to certify that, based solely on written certifications that we have received in writing, by tested telex or by electronic transmission from each of the persons appearing in our records as persons entitled to a portion of the principal amount set forth below (our "Member Organizations") substantially in the form attached hereto, as of the date hereof, [U.S.\$] principal amount of the above-captioned Securities (i) is owned by person(s) that are not citizens or residents of the United States, domestic partnerships, domestic corporations or any estate or trust the income of which is subject to United States Federal income taxation regardless of its source ("United States person(s)"), (ii) is owned by United States person(s) that are (a) foreign branches of United States financial institutions (financial institutions, as defined in U.S. Treasury Regulations Section 1.165-12(c)(1)(v) are herein referred to as "financial institutions") purchasing for their own account or for resale, or (b) United States person(s) who acquired the Securities through foreign branches of United States financial institutions and who hold the Securities through such United States financial institutions on the date hereof (and in either case (a) or (b), each such financial institution has agreed, on its own behalf or through its agent, that we may advise Assembly Biosciences, Inc. or its agent that such financial institution will comply with the requirements of Section 165(j)(3)(A), (B) or (C) of the Internal Revenue Code of 1986, as amended, and the regulations thereunder), or (iii) is owned by United States or foreign financial institution(s) for purposes of resale during the restricted period (as defined in United States Treasury Regulations Section 1.163-5(c)(2)(i)(D)(7)), and, to the further effect, that financial institutions described in clause (iii) above (whether or not also described in clause (i) or (ii)) have certified that they have not acquired the Securities for purposes of resale directly or indirectly to a United States person or to a person within the United States or its possessions.

As used herein, "United States" means the United States of America (including the States and the District of Columbia); and its "Possessions" include Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, Wake Island and the Northern Mariana Islands.

We further certify that (i) we are not making available herewith for exchange (or, if relevant, collection of any interest) any portion of the temporary Global Security representing the above-captioned Securities excepted in the above-referenced certificates of Member Organizations and (ii) as of the date hereof we have not received any notification from any of our Member Organizations to the effect that the statements made by such Member Organizations with respect to any portion of the part submitted herewith for exchange (or, if relevant, collection of any interest) are no longer true and cannot be relied upon as of the date hereof.

We understand that this certification is required in connection with certain tax legislation in the United States. If administrative or legal proceedings are commenced or threatened in connection with which this certificate is or would be relevant, we irrevocably authorize you to produce this certificate or a copy thereof to any interested party in such proceedings.

Dated: _____

[To be dated no earlier than the Exchange Date or the relevant Interest Payment Date occurring prior to the Exchange Date, as applicable]

[_____, as Operator of the Euroclear System Clearstream Banking Luxembourg]

By: _____

Name:

Title:



December 29, 2017

Assembly Biosciences, Inc.
11711 N. Meridian St., Suite 310
Carmel, Indiana 46032

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

Ladies and Gentlemen:

We have acted as counsel to you in connection with your filing of a Registration Statement on Form S-3 (as amended or supplemented, the "Registration Statement") filed on December 29, 2017 with the Securities and Exchange Commission pursuant to the Securities Act of 1933, as amended (the "Securities Act"), relating to the registration of up to \$250,000,000 of any combination of (i) common stock, par value \$0.001 per share (the "Common Stock"), of Assembly Biosciences, Inc., a Delaware corporation (the "Company"), (ii) preferred stock, par value \$0.001 per share, of the Company (the "Preferred Stock"), (iii) debt securities of the Company ("Debt Securities"), (iv) warrants to purchase Common Stock, Preferred Stock, Debt Securities or Units (as defined below) ("Warrants"), and (v) units comprised of Common Stock, Preferred Stock, Debt Securities, Warrants and other securities in any combination ("Units"), obligating the holders thereof to purchase from or sell to the Company, or the Company to sell to or purchase from such holders, Common Stock, Preferred Stock or other securities at a future date or dates. The Common Stock, Preferred Stock, Debt Securities, Warrants and Units are sometimes referred to collectively herein as the "Securities." Securities may be issued in an unspecified number (with respect to Common Stock, Preferred Stock, Warrants and Units) or in an unspecified principal amount (with respect to Debt Securities). The Registration Statement provides that the Securities may be offered separately or together, in separate series, in amounts, at prices and on terms to be set forth in one or more prospectus supplements (each a "Prospectus Supplement") to the prospectus contained in the Registration Statement.

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

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

For purposes of the opinions set forth below, without limiting any other exceptions or qualifications set forth herein, we have assumed that after the issuance of any Securities offered pursuant to the Registration Statement, the total number of issued shares of Common Stock or

Preferred Stock, as applicable, together with the total number of shares of such stock issuable upon the exercise, exchange, conversion or settlement, as the case may be, of any exercisable, exchangeable or convertible security (including without limitation any Unit), as the case may be, then outstanding, will not exceed the total number of authorized shares of Common Stock or Preferred Stock, as applicable, under the Company's certificate of incorporation as then in effect (the "Charter").

For purposes of the opinions set forth below, we refer to the following as the "Future Authorization and Issuance" of Securities:

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

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

1. Upon the Future Authorization and Issuance of shares of Common Stock, such shares of Common Stock will be validly issued, fully paid and nonassessable.
2. Upon the Future Authorization and Issuance of shares of Preferred Stock, such shares of Preferred Stock will be validly issued, fully paid and nonassessable.
3. Upon the Future Authorization and Issuance of Debt Securities, such Debt Securities will be valid and binding obligations of the Company.
4. Upon the Future Authorization and Issuance of Warrants, such Warrants will be valid and binding obligations of the Company.
5. Upon the Future Authorization and Issuance of Units, such Units will be valid and binding obligations of the Company.

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

This opinion letter and the opinions it contains shall be interpreted in accordance with the Legal Opinion Principles issued by the Committee on Legal Opinions of the American Bar Association's Business Law Section as published in 53 Business Lawyer 831 (May 1998).

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

Very truly yours,

/s/ Goodwin Procter LLP

GOODWIN PROCTER LLP



December 29, 2017

Assembly Biosciences, Inc.
11711 N. Meridian St., Suite 310
Carmel, Indiana 46032

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

Ladies and Gentlemen:

We have acted as counsel to you in connection with your filing of a Registration Statement on Form S-3 (as amended or supplemented, the "Registration Statement") filed on December 29, 2017 with the Securities and Exchange Commission (the "Commission") pursuant to the Securities Act of 1933, as amended (the "Securities Act"), relating to the registration of the offering by Assembly Biosciences, Inc., a Delaware corporation (the "Company"), of up to \$250,000,000 of any combination of securities of the types specified therein. We are delivering this supplemental opinion letter in connection with the sales agreement prospectus (the "Prospectus") contained in the Registration Statement. The Prospectus relates to the offering by the Company of up to \$75,000,000 in shares (the "Shares") of the Company's common stock, par value \$0.001 per share ("Common Stock"), covered by the Registration Statement. The Shares are being offered and sold by the sales agent named in, and pursuant to, each of the Controlled Equity OfferingSM Sales Agreements, dated December 29, 2017, between the Company and such sales agent.

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

For purposes of the opinion set forth below, we have assumed that the Shares are issued for a price per share equal to or greater than the closing price of the Common Stock as reported on the Nasdaq Capital Market on December 27, 2017 (the "Minimum Price") and, in the future, the Company does not issue shares of Common Stock or reduce the total number of shares of Common Stock that the Company is authorized to issue under its certificate of incorporation such that the number of authorized but unissued shares of Common Stock under the Company's certificate of incorporation is less than the number of unissued Shares that may be issued for the Minimum Price.

For purposes of the opinions set forth below, we refer to the following as "Future Approval and Issuance": (a) the approval by the Company's board of directors (or a duly authorized committee of the board of directors) of the issuance of the Shares (the "Approval")

and (b) the issuance of the Shares in accordance with the Approval and the receipt by the Company of the consideration (which shall not be less than the par value of such Shares) to be paid in accordance with the Approval.

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

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

We hereby consent to the inclusion of this opinion as Exhibit 5.2 to the Registration Statement. In giving our consent, we do not admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations thereunder.

Very truly yours,

/s/ Goodwin Procter LLP

GOODWIN PROCTER LLP

Consent of Independent Registered Public Accounting Firm

We consent to the reference to our firm under the caption "Experts" in the Registration Statement (Form S-3) and related Prospectus supplement of Assembly Biosciences, Inc. for the registration of its common stock, preferred stock, debt securities, warrants and units and to the incorporation by reference therein of our reports dated March 1, 2017, with respect to the consolidated financial statements of Assembly Biosciences, Inc, and the effectiveness of internal control over financial reporting of Assembly Biosciences, Inc, included in its Annual Report (Form 10-K) for the year ended December 31, 2016, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Stamford, Connecticut

December 29, 2017

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement of Assembly Biosciences, Inc. on Form S-3 to be filed on or about December 29, 2017 of our report dated March 12, 2015 on our audit of the consolidated financial statements for the year ended December 31, 2014, which report was included in the Annual Report on Form 10-K filed March 2, 2017. We also consent to the reference of our firm under the caption "Experts" in the Registration Statement on Form S-3.

/s/ EisnerAmper LLP

EISNERAMPER LLP
New York, New York
December 29, 2017
