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

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

MORPHIC HOLDING, INC.
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

47-3878772
(I.R.S. Employer
Identification No.)

35 Gatehouse Drive, A2
Waltham, MA
02451
(781) 996-0955

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

Praveen P. Tipirneni
President and Chief Executive Officer
Morphic Holding, Inc.
35 Gatehouse Drive, A2
Waltham, MA 02451
(781) 996-0955

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

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

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

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

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

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

Accelerated filer ☐

Non-accelerated filer ☒

Smaller reporting company ☒

Emerging growth company ☒

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

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered ⁽¹⁾	Amount to be Registered ⁽¹⁾⁽²⁾	Proposed Maximum Offering Price Per Security ⁽³⁾	Amount to be registered/proposed maximum offering price per unit/proposed maximum aggregate offering price ⁽³⁾	Amount of Registration Fee ⁽⁴⁾
Offering of Securities				
Common stock, \$0.0001 par value per share				
Preferred stock, \$0.0001 par value per share				
Debt securities				
Warrants				
Subscription rights				
Units				
Common stock, \$0.0001 par value per share ⁽²⁾			\$150,000,000	\$16,365

- (1) An unspecified aggregate initial offering price and number of the securities of each class is being registered as may from time to time be offered at unspecified prices or be issued on exercise, conversion, or exchange of other securities. Separate consideration may or may not be received for securities that are issuable on exercise, conversion, or exchange of other securities. In accordance with Rules 456(b) and 457(r) under the Securities Act of 1933, as amended, the Registrant is deferring payment of the registration fee. Any registration fee will be paid subsequently on a pay-as-you-go basis in accordance with Rule 457(r).
- (2) The securities registered hereunder may be sold separately or in a combination with other securities registered hereby.
- (3) The registration fee has been calculated in accordance with Rule 457(o) under the Securities Act of 1933, as amended.
- (4) Pursuant to Rule 457(p) under the Securities Act, the securities registered under this Registration Statement include unsold securities previously registered on the Company's Registration Statement on Form S-3 (Registration No. 333-258435), filed on August 4, 2021 and which has not been declared effective (the "Prior Registration Statement"). The Prior Registration Statement registered the "at-the-market" offering with an aggregate price of up to \$150,000,000, all of which securities (the "Unsold Securities") remain unsold as of the filing date of this Registration Statement and are being included in this Registration Statement. Pursuant to Rule 457(p) under the Securities Act, the filing fee of \$16,365 relating to the Unsold Securities under the Prior Registration Statement is hereby used to offset the current registration fee due. As a result, no filing fee relating to the "at-the-market" offering is being paid herewith.

EXPLANATORY NOTE

This automatic registration statement on Form S-3ASR, dated August 11, 2021, is replacing a previously filed registration statement on Form S-3, dated August 4, 2021, due to an error in the filing process which prevented the August 4, 2021 filing from being filed as an “automatic shelf registration statement” and tagged accordingly as an “S-3ASR.” The registration statement filed on August 4, 2021 was not declared effective by the Securities and Exchange Commission, and none of our securities were sold pursuant to such registration statement.

This registration statement contains two prospectuses:

- a base prospectus, which covers the offering, issuance and sale by us of our common stock, preferred stock, debt securities, warrants to purchase our common stock, preferred stock or debt securities, subscription rights to purchase our common stock, preferred stock or debt securities and/or units consisting of some or all of these securities; and
- a sales agreement prospectus supplement covering the offering, issuance and sale by us of up to a maximum aggregate offering price of \$150,000,000 of our common stock that may be issued and sold under an Open Market Sales Agreement dated July 1, 2020 and as amended by the Amended and Restated Amendment No. 1 to the Open Market Sales Agreement, dated August 11, 2021 with Jefferies LLC.

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 sales agreement prospectus supplement immediately follows the base prospectus.



Morphic Holding, Inc.

Common Stock, Preferred Stock, Debt Securities, Warrants, Subscription Rights and Units

From time to time, we may offer shares of our common stock or preferred stock, debt securities, warrants to purchase our common stock, preferred stock or debt securities, subscription rights to purchase our common stock, preferred stock or debt securities and/or units consisting of some or all of these securities, in any combination, together or separately, in one or more offerings, in amounts, at prices and on the terms that we will determine at the time of the offering and which will be set forth in a prospectus supplement and any related free writing prospectus. The prospectus supplement and any related free writing prospectus may also add, update or change information contained in this prospectus.

You should read this prospectus, the information incorporated, or deemed to be incorporated, by reference in this prospectus, and any applicable prospectus supplement and related free writing prospectus carefully before you invest.

Our common stock is traded on The Nasdaq Global Select Market under the symbol “MORF.” On August 9, 2021 the last reported sales price for our common stock was \$58.77 per share. None of the other securities we may offer are currently traded on any securities exchange. The applicable prospectus supplement and any related free writing prospectus will contain information, where applicable, as to any other listing on The Nasdaq Global Select Market or any securities market or exchange of the securities covered by the prospectus supplement and any related free writing prospectus.

An investment in our securities involves a high degree of risk. You should carefully consider the information under the heading “Risk Factors” beginning on page 5 of this prospectus before investing in our securities.

Common stock, preferred stock, debt securities, warrants, subscription rights and/or units may be sold by us to or through underwriters or dealers, directly to purchasers or through agents designated from time to time. For additional information on the methods of sale, you should refer to the section entitled “Plan of Distribution” in this prospectus. If any underwriters, dealers or agents are involved in the sale of any securities with respect to which this prospectus is being delivered, the names of such underwriters or agents and any applicable fees, discounts or commissions, details regarding over-allotment options, if any, and the net proceeds to us will be set forth in a prospectus supplement. The price to the public of such securities and the net proceeds we expect to receive from such sale will also be set forth in a prospectus supplement.

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 August 11, 2021

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ABOUT THIS PROSPECTUS

This prospectus is part of an automatic shelf registration statement that we filed with the Securities and Exchange Commission, or the SEC, as a “well-known seasoned issuer” as defined in Rule 405 under the Securities Act of 1933, as amended, or the Securities Act. Under this shelf registration process, from time to time, we may sell any combination of the securities described in this prospectus in one or more offerings. We have provided to you in this prospectus a general description of the securities we may offer. Each time we sell securities under this shelf registration process, we will provide a prospectus supplement that will contain specific information about the terms of the offering. We may also add, update or change in the prospectus supplement any of the information contained in this prospectus. To the extent there is a conflict between the information contained in this prospectus and the prospectus supplement, you should rely on the information in the prospectus supplement; *provided* that, if any statement in one of these documents is inconsistent with a statement in another document having a later date - for example, a document incorporated by reference in this prospectus or any prospectus supplement - the statement in the document having the later date modifies or supersedes the earlier statement. You should read both this prospectus and any prospectus supplement together with additional information described under the heading “Where You Can Find More Information.”

Neither we, nor any agent, underwriter or dealer have authorized anyone to give you any information or to make any representation other than the information and representations contained in or incorporated by reference into this prospectus or any applicable prospectus supplement. We and any agent, underwriter or dealer take no responsibility for, and can provide no assurance as to the reliability of, any other information others may give you. You may not imply from the delivery of this prospectus and any applicable prospectus supplement, nor from a sale made under this prospectus and any applicable prospectus supplement, that our affairs are unchanged since the date of this prospectus and any applicable prospectus supplement or that the information contained in any document incorporated by reference is accurate as of any date other than the date of the document incorporated by reference, regardless of the time of delivery of this prospectus and any applicable prospectus supplement or any sale of a security. This prospectus and any applicable prospectus supplement may only be used where it is legal to sell the securities.

THIS PROSPECTUS MAY NOT BE USED TO OFFER AND SELL SECURITIES UNLESS IT IS ACCOMPANIED BY AN ADDITIONAL PROSPECTUS OR A PROSPECTUS SUPPLEMENT.

In this prospectus, unless the context otherwise requires, the terms “Morphic,” “Morphic Therapeutic,” the “Company,” “we,” “us,” and “our” refer to Morphic Holding, Inc., a Delaware corporation.

PROSPECTUS SUMMARY

This summary highlights information contained in other parts of this prospectus or incorporated by reference in this prospectus from our Annual Report on Form 10-K for the year ended December 31, 2020, our Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2021 and our other filings with the SEC listed below under the heading “Incorporation of Information by Reference.” This summary may not contain all the information that you should consider before investing in securities. You should read the entire prospectus and the information incorporated by reference in this prospectus carefully, including “Risk Factors” and the financial data and related notes and other information incorporated by reference, before making an investment decision. See “Forward-Looking Statements.”

Our Company

We are a biopharmaceutical company applying our proprietary insights into integrins to discover and develop a pipeline of potentially first-in-class oral small molecule integrin therapeutics. Integrins are a target class with multiple approved injectable blockbuster drugs for the treatment of serious chronic diseases, including autoimmune, cardiovascular and metabolic diseases, fibrosis and cancer. To date, no oral small molecule integrin therapies have been approved by the U.S. Food and Drug Administration, or FDA. Despite significant unsuccessful efforts by others, we believe tremendous untapped potential remains for us to develop oral integrin therapies. The Morphic integrin technology platform, or MInT Platform, was created leveraging our unique understanding of integrin structure and function to develop novel product candidates designed to achieve the potency, high selectivity, and pharmaceutical properties required for oral administration. We are advancing our pipeline, including our lead product candidate, MORF-057, an $\alpha 4\beta 7$ -specific integrin inhibitor affecting inflammation, into clinical development for the treatment of inflammatory bowel disease, or IBD. We submitted an investigational new drug application, or IND, for MORF-057 in July 2020, and the FDA permitted the study submitted under the IND to proceed in August 2020. In September 2020, we initiated a Phase 1 clinical trial of MORF-057 in healthy volunteers comprised of single-ascending dose, or SAD, food effect, and multiple-ascending dose, or MAD, cohorts to establish our clinical program and select doses for our Phase 2 program in IBD with an initial focus on ulcerative colitis, or UC. In July 2021, we announced complete Phase 1 results that included SAD, MAD and food effect (FE) cohorts evaluating MORF-057 for safety, pharmacokinetic and pharmacodynamic measures.

The Securities We May Offer

With this prospectus, we may offer common stock, preferred stock, debt securities, warrants to purchase our common stock, preferred stock or debt securities, subscription rights to purchase our common stock, preferred stock or debt securities, and/or units consisting of some or all of these securities in any combination. Each time we offer securities with this prospectus, we will provide offerees with a prospectus supplement that will contain the specific terms of the securities being offered. The following is a summary of the securities we may offer with this prospectus.

Common Stock

We may offer shares of our common stock, par value \$0.0001 per share.

Preferred Stock

We may offer shares of our preferred stock, par value \$0.0001 per share, in one or more series. Our board of directors or a committee designated by the board will determine the dividend, voting, conversion and other rights of the series of shares of preferred stock being offered. Each series of preferred stock will be more fully described in the particular prospectus supplement that will accompany this prospectus, including redemption provisions, rights in the event of our liquidation, dissolution or the winding up, voting rights and rights to convert into common stock.

Debt Securities

We may offer general obligations, which may be secured or unsecured, senior or subordinated and convertible into shares of our common stock or preferred stock. In this prospectus, we refer to the senior debt securities and the

subordinated debt securities together as the “debt securities.” Our board of directors will determine the terms of each series of debt securities being offered.

We will issue the debt securities under an indenture between us and a trustee. In this document, we have summarized general features of the debt securities from the indenture. We encourage you to read the indenture, which is an exhibit to the registration statement of which this prospectus is a part.

Warrants

We may offer warrants for the purchase of debt securities, shares of preferred stock or shares of common stock. We may issue warrants independently or together with other securities. Our board of directors will determine the terms of the warrants.

Subscription Rights

We may offer subscription rights for the purchase of common stock, preferred stock or debt securities. We may issue subscription rights independently or together with other securities. Our board of directors will determine the terms of the subscription rights.

Units

We may offer units consisting of some or all of the securities described above, in any combination, including common stock, preferred stock, warrants and/or debt securities. The terms of these units will be set forth in a prospectus supplement. The description of the terms of these units in the related prospectus supplement will not be complete. You should refer to the applicable form of unit and unit agreement for complete information with respect to these units.

* * *

We were formed under the laws of the State of Delaware in August 2014 under the name Integrin Rock, LLC. We subsequently changed our name to Morphtic Rock Holding, LLC in October 2014 and then to Morphtic Holding, LLC in June 2016, and we subsequently converted to a corporation under the name Morphtic Holding, Inc. in December 2018. Our principal executive offices are located at 35 Gatehouse Drive, A2, Waltham, MA 02451, and our telephone number is (781) 996-0955. Our website address is www.morphictx.com. The information contained on, or that can be accessed through, our website is not part of, and is not incorporated by reference into, this prospectus. Investors should not rely on any such information in deciding whether to purchase our securities.

RISK FACTORS

An investment in our securities involves a high degree of risk. The prospectus supplement applicable to each offering of securities will contain a discussion of the risks applicable to an investment in our securities. Prior to making a decision about investing in our securities, you should carefully consider the specific factors discussed under the heading “Risk Factors” in the applicable prospectus supplement, together with all of the other information contained or incorporated by reference in the prospectus supplement or appearing or incorporated by reference in this prospectus. You should also consider the risks, uncertainties and assumptions discussed under Part II, Item 1A, “Risk Factors,” in our Quarterly Report on Form 10-Q for the quarter ended June 30, 2021, which is incorporated herein by reference, and may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future. The risks and uncertainties we have described are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our operations.

FORWARD-LOOKING STATEMENTS

This prospectus and documents incorporated herein by reference contain “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements involve a number of risks and uncertainties. We caution readers that any forward-looking statement is not a guarantee of future performance and that actual results could differ materially from those contained in the forward-looking statement. These statements are based on current expectations of future events.

Such statements include, but are not limited to, statements regarding expectations and intentions, costs and expenses, outcome of contingencies, financial condition, results of operations, liquidity, objectives of management, debt financing, our future results of operations and financial position, the impact of the COVID-19 pandemic, business strategies, market size, potential growth opportunities, clinical development activities, efficacy and safety profile of our product candidates, timing and results of our pre-clinical studies and clinical trials, the receipt and timing of potential regulatory designations, our ability to maintain and recognize the benefits of certain designations received by product candidates, the achievement of clinical and commercial milestones, the advancement of our technologies and our proprietary product candidates, the successful achievement of the goals of our collaborations, the advancement of the product candidates that are the subjects of these collaborations, the approvals and commercialization of product candidates and other statements that are not historical facts. You can find many of these statements by looking for words like “believes,” “expects,” “anticipates,” “estimates,” “may,” “might,” “should,” “will,” “could,” “plan,” “intend,” “project,” “seek” or similar expressions in this prospectus, in documents incorporated by reference into this prospectus or any free writing prospectus. We intend that such forward-looking statements be subject to the safe harbors created thereby.

These forward-looking statements are based on the current beliefs and expectations of our management and are subject to significant risks and uncertainties. If underlying assumptions prove inaccurate or unknown risks or uncertainties materialize, actual results may differ materially from current expectations and projections. Factors that might cause such a difference include those discussed in Part II, Item 1A, “Risk Factors,” in our Quarterly Report on Form 10-Q for the quarter ended June 30, 2021, as well as those discussed in this prospectus, the documents incorporated by reference into this prospectus and any free writing prospectus. You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this prospectus or, in the case of documents referred to or incorporated by reference, the date of those documents.

All subsequent written or oral forward-looking statements attributable to us or any person acting on our behalf are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. We do not undertake any obligation to release publicly any revisions to these forward-looking statements to reflect events or circumstances after the date of this prospectus or to reflect the occurrence of unanticipated events, except as may be required under applicable U.S. securities law. If we do update one or more forward-looking statements, no inference should be drawn that we will make additional updates with respect to those or other forward-looking statements.

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 securities offered hereby. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement, the exhibits filed therewith or the documents incorporated by reference therein. For further information about us and the securities offered hereby, reference is made to the registration statement, the exhibits filed therewith and the documents incorporated by reference therein. Statements contained in this prospectus regarding the contents of any contract or any other document that is filed as an exhibit to the registration statement are not necessarily complete, and in each instance, we refer you to the copy of such contract or other document filed as an exhibit to the registration statement.

We are subject to the informational requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act and are required to file annual, quarterly and other reports, proxy statements and other information with the SEC. The SEC maintains an Internet site (www.sec.gov) that contains reports, proxy and information statements, and various other information about us. You may also inspect the documents described herein at our principal executive offices, 35 Gatehouse Drive, A2, Waltham, Massachusetts 02451, during normal business hours.

Information about us is also available at our website at <http://www.morphictx.com>. However, the information on our website is not a part of this prospectus and is not incorporated by reference into this prospectus.

INCORPORATION OF INFORMATION BY REFERENCE

The SEC allows us to “incorporate by reference” information that we file with the SEC, which means that we can disclose important information to you by referring you to those other documents. The information incorporated by reference is an important part of this prospectus, and information we file later with the SEC will automatically update and supersede this information. A Current Report (or portion thereof) furnished, but not filed, on Form 8-K shall not be incorporated by reference into this prospectus. We incorporate by reference the documents listed below and any future filings we make with the SEC under Section 13(a), 13(c), 14, or 15(d) of the Exchange Act prior to the termination of any offering of securities made by this prospectus:

- [our Annual Report on Form 10-K for the fiscal year ended December 31, 2020, filed with the SEC on March 1, 2021;](#)
- our Quarterly Reports on Form 10-Q for the quarter ended [March 31, 2021, filed with the SEC on April 29, 2021](#) and [amended on May 17, 2021](#) and for the quarter ended [June 30, 2021, filed with the SEC on August 4, 2021;](#)
- our Current Reports on Form 8-K filed with the SEC on [January 5, 2021](#), [March 1, 2021](#) (only with regard to item 8.01), [March 3, 2021](#), [April 29, 2021](#) (only with regard to Items 5.02 and 8.01), [June 1, 2021](#), [June 21, 2021](#), and on [July 9, 2021;](#)
- our [Definitive Proxy Statement on Schedule 14A, filed with the SEC on April 29, 2021](#) (but only with respect to information required by Part III of our Annual Report on Form 10-K for the year ended December 31, 2020, which information shall update and supersede information included in Part III of our Annual Report on Form 10-K for the year ended December 31, 2020);
- the description of our common stock contained in our registration statement on [Form 8-A filed with the SEC on June 14, 2019](#) under Section 12(b) of the Exchange Act, including any amendment or report filed for the purpose of updating such description; and
- filings we make with the SEC pursuant to the Exchange Act after the date of the initial registration statement, of which this prospectus is a part, and prior to the effectiveness of the registration statement.

We will furnish without charge to you, on written or oral request, a copy of any or all of such documents that has been incorporated herein by reference (other than exhibits to such documents unless such exhibits are specifically incorporated by reference into the documents that this prospectus incorporates). Written or oral requests for copies should be directed to Morpic Holding, Inc., 35 Gatehouse Drive, A2, Waltham, Massachusetts 02451, and our telephone number is (781) 996-0955. See the section of this prospectus entitled “Where You Can Find More Information” for information concerning how to obtain copies of materials that we file with the SEC.

Any statement contained in this prospectus, or in a document, all or a portion of which is incorporated by reference, shall be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus, any prospectus supplement or any document incorporated by reference modifies or supersedes such statement. Any such statement so modified or superseded shall not, except as so modified or superseded, constitute a part of this prospectus.

USE OF PROCEEDS

We will retain broad discretion over the use of the net proceeds to us from the sale of our securities under this prospectus. Unless otherwise provided in the applicable prospectus supplement, we intend to use the net proceeds from the sale of securities under this prospectus for general corporate purposes, which may include funding research, clinical and process development and manufacturing of our product candidates, increasing our working capital, reducing indebtedness as applicable, acquisitions or investments in businesses, products or technologies that are complementary to our own and capital expenditures. We will set forth in the applicable prospectus supplement our intended use for the net proceeds received from the sale of any securities. Pending the application of the net proceeds, we intend to invest the net proceeds in short-term or long-term, investment-grade, interest-bearing securities.

PLAN OF DISTRIBUTION

We may sell the securities covered by this prospectus to one or more underwriters for public offering and sale by them, and may also sell the securities to investors directly or through agents. We will name any underwriter or agent involved in the offer and sale of securities in the applicable prospectus supplement. We have reserved the right to sell or exchange securities directly to investors on our own behalf in jurisdictions where we are authorized to do so. We may distribute the securities from time to time in one or more transactions:

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

We may directly solicit offers to purchase the securities being offered by this prospectus. We may also designate agents to solicit offers to purchase the securities from time to time. We will name in a prospectus supplement any agent involved in the offer or sale of our securities. Unless otherwise indicated in a prospectus supplement, an agent will be acting on a best efforts basis, and a dealer will purchase securities as a principal for resale at varying prices to be determined by the dealer.

If we utilize an underwriter in the sale of the securities being offered by this prospectus, we will execute an underwriting agreement with the underwriter at the time of sale and we will provide the name of any underwriter in the prospectus supplement that the underwriter will use to make resales of the securities to the public. In connection with the sale of the securities, we, or the purchasers of securities for whom the underwriter may act as agent, may compensate the underwriter in the form of underwriting discounts or commissions. The underwriter may sell the securities to or through dealers, and those dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters or commissions from the purchasers for whom they may act as agent.

We will provide in the applicable prospectus supplement any compensation we pay to underwriters, dealers, or agents in connection with the offering of the securities, and any discounts, concessions or commissions allowed by underwriters to participating dealers. Underwriters, dealers and agents participating in the distribution of the securities may be deemed to be underwriters within the meaning of the Securities Act of 1933, as amended, or the Securities Act, and any discounts and commissions received by them and any profit realized by them on resale of the securities may be deemed to be underwriting discounts and commissions. We may enter into agreements to indemnify underwriters, dealers and agents against civil liabilities, including liabilities under the Securities Act, and to reimburse them for certain expenses. We may grant underwriters who participate in the distribution of our securities under this prospectus an option to purchase additional securities to cover any over-allotments in connection with the distribution.

The securities we offer under this prospectus may or may not be listed through The Nasdaq Global Select Market or any other securities exchange. To facilitate the offering of securities, certain persons participating in the offering may engage in transactions that stabilize, maintain or otherwise affect the price of the securities. This may include short sales of the securities, which involves the sale by persons participating in the offering of more securities than we sold to them. In these circumstances, these persons would cover such short positions by making purchases in the open market or by exercising their option to purchase additional securities. In addition, these persons may stabilize or maintain the price of the securities by bidding for or purchasing securities in the open market or by imposing penalty bids, whereby selling concessions allowed to dealers participating in the offering may be reclaimed if securities sold by them are repurchased in connection with stabilization transactions. The effect of these transactions may be to stabilize or maintain the market price of the securities at a level above that which might otherwise prevail in the open market. These transactions may be discontinued at any time.

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 indicates, in connection with those derivatives, the third parties may sell securities covered by this prospectus and the applicable prospectus supplement, including 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 they may use securities received from us in settlement of those derivatives to close out any related open borrowings of stock. The third party in these sale transactions will be an underwriter and will be identified in the applicable prospectus supplement. 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. The 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.

We will file a prospectus supplement to describe the terms of any offering of our securities covered by this prospectus. The prospectus supplement will disclose:

- the terms of the offer;
- the names of any underwriters, including any managing underwriters, as well as any dealers or agents;
- the purchase price of the securities from us;
- the net proceeds to us from the sale of the securities;
- any delayed delivery arrangements;
- any over-allotment or other options under which underwriters, if any, may purchase additional securities from us;
- any underwriting discounts, commissions or other items constituting underwriters' compensation, and any commissions paid to agents;
- in a subscription rights offering, whether we have engaged dealer-managers to facilitate the offering or subscription, including their name or names and compensation;
- any public offering price; and
- other facts material to the transaction.

We will bear all or substantially all of the costs, expenses and fees in connection with the registration of our securities under this prospectus. The underwriters, dealers and agents may engage in transactions with us, or perform services for us, in the ordinary course of business.

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 or the securities are sold by us to an underwriter in a firm commitment underwritten offering. 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.

DESCRIPTION OF CAPITAL STOCK

General

Our authorized capital stock consists of 400,000,000 shares of common stock, \$0.0001 par value per share, and 10,000,000 shares of undesignated preferred stock, \$0.0001 par value per share. The following description summarizes the most important terms of our capital stock. Because it is only a summary, it does not contain all the information that may be important to you. For a complete description, you should refer to our restated certificate of incorporation, our restated bylaws, as amended, or restated bylaws, and our investors' rights agreement, which are included as exhibits to the registration statement of which this prospectus forms a part, and to the applicable provisions of Delaware law.

As of August 2, 2021, there were 36,451,080 shares of our common stock outstanding, and no shares of preferred stock outstanding.

Common Stock

Dividend rights

Subject to preferences that may apply to any shares of preferred stock outstanding at the time, the holders of our common stock are entitled to receive dividends out of funds legally available if our board of directors, in its discretion, determines to issue dividends and then only at the times and in the amounts that our board of directors may determine. For more information about our dividend policy, see "Dividends" in our Annual Report on Form 10-K for the year ended December 31, 2020, which is incorporated by reference in this prospectus.

Voting rights

Holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders. We have not provided for cumulative voting for the election of directors in our restated certificate of incorporation, which means that holders of a majority of the shares of our common stock will be able to elect all of our directors. Our restated certificate of incorporation establishes a classified board of directors, divided into three classes with staggered three-year terms. Only one class of directors will be elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms.

No preemptive or similar rights

Our common stock is not entitled to preemptive rights, and is not subject to conversion, redemption or sinking fund provisions.

Right to receive liquidation distributions

Upon our liquidation, dissolution or winding-up, the assets legally available for distribution to our stockholders would be distributable ratably among the holders of our common stock and any participating preferred stock outstanding at that time, subject to prior satisfaction of all outstanding debt and liabilities and the preferential rights of and the payment of liquidation preferences, if any, on any outstanding shares of preferred stock.

Preferred Stock

Our board of directors is authorized, subject to limitations prescribed by Delaware law, to issue preferred stock in one or more series, to establish from time to time the number of shares to be included in each series and to fix the designation, vesting, powers, preferences and rights of the shares of each series and any of their qualifications, limitations or restrictions, in each case without further vote or action by our stockholders. Our board of directors can also increase, but not above the total number of authorized shares of preferred stock, or decrease the number of

shares of any series of preferred stock, but not below the number of shares of that series then outstanding, without any further vote or action by our stockholders.

Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of our common stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in control of our company and might adversely affect the market price of our common stock and the voting and other rights of the holders of our common stock. We have no current plan to issue any shares of preferred stock.

Registration Rights

Certain of our common stockholders are entitled to certain registration rights with respect to the sale of such shares under the Securities Act. We refer to these shares as registrable securities. These rights are provided under the terms of an investors' rights agreement between us and the holders of these shares, which was entered into in connection with our preferred stock financings, and include demand registration rights, short-form registration rights and piggyback registration rights.

The registration rights terminate, with respect to any particular holder of these rights, on the earliest to occur of (a) the closing of a deemed liquidation event, as defined in our restated certificate of incorporation, (b) at such time that all of the holder's registrable securities can be sold without limitation in any three-month period without registration in compliance with Rule 144 or a similar exemption under the Securities Act 1933, as amended, and (c) seven years following the completion of our initial public offering.

Demand registration rights

Beginning 180 days after the completion of our initial public offering, if the holders of not less than 40% of the then-outstanding registrable securities may request the registration under the Securities Act of any registrable securities, if the anticipated aggregate offering price, net of selling expenses, would exceed \$10.0 million, we are obligated to provide notice of such request to all holders of registration rights and, as soon as practicable and in any event within 60 days, file a Form S-1 registration statement under the Securities Act covering all registrable securities that the initiating holders requested to be registered and any additional registrable securities requested to be included in such registration by any other holders. We are only required to file two registration statements that are declared effective upon exercise of these demand registration rights. We may postpone taking action with respect to such filing not more than twice during any 12-month period for a period of not more than 120 days, if after receiving a request for registration, we furnish to the holders requesting such registration a certificate signed by our Chief Executive Officer stating that, in the good faith judgment of our board of directors, it would be materially detrimental to us and our stockholders.

Form S-3 registration rights

The holders of at least 10% of the then-outstanding registrable securities can request that we register all or part of their shares on Form S-3 if we are eligible to file a registration statement on Form S-3 and if the aggregate price to the public of the shares offered, net of selling expenses, is at least \$3.0 million. The stockholders may only require us to effect two registration statements on Form S-3 in a 12-month period. We may postpone taking action with respect to such filing twice during any 12-month period for a period of not more than 120 days if our board of directors determines in its good faith judgment that the filing would be materially detrimental to us and our stockholders.

Piggyback registration rights

If we register any of our securities for public sale, holders of then-outstanding registrable securities or their permitted transferees will have the right to include their registrable securities in the registration statement. However, this right does not apply to a registration relating to any of our employee benefit plans, a corporate reorganization or

transaction under Rule 145 of the Securities Act, a registration that requires information that is not substantially the same, or a registration in which the only common stock being registered is common stock issuable upon conversion of debt securities that are also being registered. In an underwritten offering, if the total number of securities requested by stockholders to be included in the offering exceeds the number of securities to be sold (other than by the us) that the underwriters determine in their reasonable discretion is compatible with the success of the offering, then we will be required to include only that number of securities that the underwriters and us, in our sole discretion, determine will not jeopardize the success of the offering. If the underwriters determine that less than all the securities requested to be registered can be included in the offering, the number of shares to be registered will be apportioned pro rata among the selling holders, according to the total number of registrable securities owned by each holder, or in a manner mutually agreed upon by all such selling holders. However, the number of shares to be registered by these holders cannot be reduced unless all other securities (other than the securities to be sold by us) are excluded entirely and may not be reduced below 30% of the total number of securities included in such offering, except for in connection with an initial public offering, in which case the underwriters may exclude these holders entirely.

Expenses of registration rights

We generally will pay all expenses related to the registrations, other than underwriting discounts, selling commissions and stock transfer taxes incurred in connection with each of the registrations described above, including the fees and disbursements, not to exceed \$75,000, of one counsel for the selling holders.

Anti-Takeover Provisions

The provisions of Delaware General Corporation Law, or DGCL, our restated certificate of incorporation and our restated bylaws could have the effect of delaying, deferring or discouraging another person from acquiring control of our company. These provisions, which are summarized below, may have the effect of discouraging takeover bids. They are also designed, in part, to encourage persons seeking to acquire control of us to negotiate first with our board of directors. We believe that the benefits of increased protection of our potential ability to negotiate with an unfriendly or unsolicited acquirer outweigh the disadvantages of discouraging a proposal to acquire us because negotiation of these proposals could result in an improvement of their terms.

Delaware Law

We are subject to the provisions of Section 203 of the DGCL regulating corporate takeovers. In general, Section 203 prohibits a publicly-held Delaware corporation from engaging in a business combination with an interested stockholder for a period of three years following the date on which the person became an interested stockholder unless:

- prior to the date of the transaction, the board of directors of the corporation approved either the business combination or the transaction which 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, but not the outstanding voting stock owned by the interested stockholder, (i) shares owned by persons who are directors and also officers and (ii) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- at or subsequent to the date of the transaction, the business combination is approved by the board of directors of the corporation and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66.67% of the outstanding voting stock that is not owned by the interested stockholder.

Generally, a business combination includes a merger, asset or stock sale, or other transaction or series of transactions together resulting in a financial benefit to the interested stockholder. An interested stockholder is a person who, together with affiliates and associates, owns or, within three years prior to the determination of interested stockholder status, did own 15% or more of a corporation's outstanding voting stock. We expect the existence of this provision to have an anti-takeover effect with respect to transactions our board of directors does not approve in advance. We also anticipate that Section 203 may also discourage attempts that might result in a premium over the market price for the shares of common stock held by stockholders.

Restated Certificate of Incorporation and Restated Bylaws Provisions

Our restated certificate of incorporation and our restated bylaws include a number of provisions that could deter hostile takeovers or delay or prevent changes in control of our company, including the following:

- **Board of Directors vacancies.** Our restated certificate of incorporation and restated bylaws authorize only our board of directors to fill vacant directorships, including newly created seats. In addition, the number of directors constituting our board of directors is permitted to be set only by a resolution adopted by a majority vote of our entire board of directors. These provisions prevent a stockholder from increasing the size of our board of directors and then gaining control of our board of directors by filling the resulting vacancies with its own nominees. This makes it more difficult to change the composition of our board of directors but promotes continuity of management.
- **Classified board.** Our restated certificate of incorporation and restated bylaws provide that our board of directors is classified into three classes of directors, each with staggered three-year terms. A third party may be discouraged from making a tender offer or otherwise attempting to obtain control of us as it is more difficult and time consuming for stockholders to replace a majority of the directors on a classified board of directors.
- **Stockholder action; special meetings of stockholders.** Our restated certificate of incorporation provides that our stockholders may not take action by written consent, but may only take action at annual or special meetings of our stockholders. As a result, a holder controlling a majority of our capital stock would not be able to amend our restated bylaws or remove directors without holding a meeting of our stockholders called in accordance with our restated bylaws. Further, our restated bylaws provide that special meetings of our stockholders may be called only by a majority of our board of directors, the chairman of our board of directors, our Chief Executive Officer or our President, thus prohibiting a stockholder from calling a special meeting. These provisions might delay the ability of our stockholders to force consideration of a proposal or for stockholders controlling a majority of our capital stock to take any action, including the removal of directors.
- **Advance notice requirements for stockholder proposals and director nominations.** Our restated bylaws provide advance notice procedures for stockholders seeking to bring business before our annual meeting of stockholders or to nominate candidates for election as directors at our annual meeting of stockholders. Our restated bylaws also specify certain requirements regarding the form and content of a stockholder's notice. These provisions might preclude our stockholders from bringing matters before our annual meeting of stockholders or from making nominations for directors at our annual meeting of stockholders if the proper procedures are not followed. We expect that these provisions might also discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of our company.
- **No cumulative voting.** The DGCL provides that stockholders are not entitled to the right to cumulate votes in the election of directors unless a corporation's certificate of incorporation provides otherwise. Our restated certificate of incorporation and restated bylaws do not provide for cumulative voting.

- **Directors removed only for cause.** Our restated certificate of incorporation provides that stockholders may remove directors only for cause and only by the affirmative vote of the holders of at least two-thirds of our outstanding common stock.
- **Amendment of charter provisions.** Any amendment of the above provisions in our restated certificate of incorporation requires approval by holders of at least two-thirds of our outstanding common stock.
- **Issuance of undesignated preferred stock.** Our board of directors has the authority, without further action by the stockholders, to issue up to 10,000,000 shares of undesignated preferred stock with rights and preferences, including voting rights, designated from time to time by our board of directors. The existence of authorized but unissued shares of preferred stock enables our board of directors to render more difficult or to discourage an attempt to obtain control of us by merger, tender offer, proxy contest or other means.
- **Choice of forum.** Our restated certificate of incorporation provides that, to the fullest extent permitted by law, the Court of Chancery of the State of Delaware is the exclusive forum for any derivative action or proceeding brought on our behalf; any action asserting a breach of fiduciary duty; any action asserting a claim against us arising pursuant to the DGCL, our restated certificate of incorporation or our restated bylaws; or any action asserting a claim against us that is governed by the internal affairs doctrine. This exclusive forum provision does not apply to suits brought to enforce a duty or liability created by the Exchange Act. It could apply, however, to a suit that falls within one or more of the categories enumerated in the exclusive forum provision and asserts claims under the Securities Act, inasmuch as Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all suits brought to enforce any duty or liability created by the Securities Act or the rules and regulations thereunder. Our restated bylaws, as amended, provides that the federal district courts of the United States of America will, to the fullest extent permitted by law, be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act, with such provision in our restated bylaws referred to as a Federal Forum Provision. While there can be no assurance that federal or state courts will follow the holding of the Delaware Supreme Court or determine that the Federal Forum Provision should be enforced in a particular case, application of the Federal Forum Provision means that suits brought by our stockholders to enforce any duty or liability created by the Securities Act must be brought in federal court and cannot be brought in state court.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Computershare Trust Company, N.A.

Exchange Listing

Our common stock is listed on The Nasdaq Global Select Market under the symbol “MORF.”

DESCRIPTION OF DEBT SECURITIES

General

We will issue the debt securities offered by this prospectus and any accompanying prospectus supplement under an indenture to be entered into between us and the trustee identified in the applicable prospectus supplement. The terms of the debt securities will include those stated in the indenture and those made part of the indenture by reference to the Trust Indenture Act of 1939, as in effect on the date of the indenture. We have filed a copy of the form of indenture as an exhibit to the registration statement in which this prospectus is included. The indenture will be subject to and governed by the terms of the Trust Indenture Act of 1939.

Unless otherwise specified in the applicable prospectus supplement, the debt securities will represent our direct, unsecured obligations and will rank equally with all of our other unsecured indebtedness.

We may issue the debt securities in one or more series with the same or various maturities, at par, at a premium, or at a discount. We will describe the particular terms of each series of debt securities in a prospectus supplement relating to that series, which we will file with the SEC. The prospectus supplement relating to the particular series of debt securities being offered will specify the particular amounts, prices and terms of those debt securities. These terms may include:

- the title of the series;
- the aggregate principal amount, and, if a series, the total amount authorized and the total amount outstanding;
- the issue price or prices, expressed as a percentage of the aggregate principal amount of the debt securities;
- any limit on the aggregate principal amount;
- the date or dates on which principal is payable;
- the interest rate or rates (which may be fixed or variable) or, if applicable, the method used to determine such rate or rates;
- the date or dates from which interest, if any, will be payable and any regular record date for the interest payable;
- the place or places where principal and, if applicable, premium and interest, is payable;
- the terms and conditions upon which we may, or the holders may require us to, redeem or repurchase the debt securities;
- the denominations in which such debt securities may be issuable, if other than denominations of \$1,000 or any integral multiple of that number;
- whether the debt securities are to be issuable in the form of certificated securities (as described below) or global securities (as described below);
- the portion of principal amount that will be payable upon declaration of acceleration of the maturity date if other than the principal amount of the debt securities;
- the currency of denomination;

- the designation of the currency, currencies or currency units in which payment of principal and, if applicable, premium and interest, will be made;
- if payments of principal and, if applicable, premium or interest, on the debt securities are to be made in one or more currencies or currency units other than the currency of denomination, the manner in which the exchange rate with respect to such payments will be determined;
- if amounts of principal and, if applicable, premium and interest may be determined by reference to an index based on a currency or currencies or by reference to a commodity, commodity index, stock exchange index or financial index, then the manner in which such amounts will be determined;
- the provisions, if any, relating to any collateral provided for such debt securities;
- any addition to or change in the covenants and/or the acceleration provisions described in this prospectus or in the indenture;
- any events of default, if not otherwise described below under “Events of Default”;
- the terms and conditions, if any, for conversion into or exchange for shares of our common stock or preferred stock;
- any depositaries, interest rate calculation agents, exchange rate calculation agents or other agents; and
- the terms and conditions, if any, upon which the debt securities shall be subordinated in right of payment to our other indebtedness.

We may issue discount debt securities that provide for an amount less than the stated principal amount to be due and payable upon acceleration of the maturity of such debt securities in accordance with the terms of the indenture. We may also issue debt securities in bearer form, with or without coupons. If we issue discount debt securities or debt securities in bearer form, we will describe material U.S. federal income tax considerations and other material special considerations which apply to these debt securities in the applicable prospectus supplement.

We may issue debt securities denominated in or payable in a foreign currency or currencies or a foreign currency unit or units. If we do, we will describe the restrictions, elections, and general tax considerations relating to the debt securities and the foreign currency or currencies or foreign currency unit or units in the applicable prospectus supplement.

Debt securities offered under this prospectus and any prospectus supplement will be subordinated in right of payment to certain of our outstanding senior indebtedness. In addition, we will seek the consent of the holders of any such senior indebtedness prior to issuing any debt securities under this prospectus to the extent required by the agreements evidencing such senior indebtedness.

Registrar and Paying Agent

The debt securities may be presented for registration of transfer or for exchange at the corporate trust office of the security registrar or at any other office or agency that we maintain for those purposes. In addition, the debt securities may be presented for payment of principal, interest and any premium at the office of the paying agent or at any office or agency that we maintain for those purposes.

Conversion or Exchange Rights

Debt securities may be convertible into or exchangeable for shares of our common stock. The terms and conditions of conversion or exchange will be stated in the applicable prospectus supplement. The terms will include, among others, the following:

- the conversion or exchange price;
- the conversion or exchange period;
- provisions regarding the convertibility or exchangeability of the debt securities, including who may convert or exchange;
- events requiring adjustment to the conversion or exchange price;
- provisions affecting conversion or exchange in the event of our redemption of the debt securities; and
- any anti-dilution provisions, if applicable.

Registered Global Securities

If we decide to issue debt securities in the form of one or more global securities, then we will register the global securities in the name of the depositary for the global securities or the nominee of the depositary, and the global securities will be delivered by the trustee to the depositary for credit to the accounts of the holders of beneficial interests in the debt securities.

The prospectus supplement will describe the specific terms of the depositary arrangement for debt securities of a series that are issued in global form. None of us, the trustee, any payment 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 in a global debt security or for maintaining, supervising or reviewing any records relating to these beneficial ownership interests.

No Protection in the Event of Change of Control

The indenture does not have any covenants or other provisions providing for a put or increased interest or otherwise that would afford holders of our debt securities additional protection in the event of a recapitalization transaction, a change of control or a highly leveraged transaction. If we offer any covenants or provisions of this type with respect to any debt securities covered by this prospectus, we will describe them in the applicable prospectus supplement.

Covenants

Unless otherwise indicated in this prospectus or the applicable prospectus supplement, our debt securities will not have the benefit of any covenants that limit or restrict our business or operations, the pledging of our assets or the incurrence by us of indebtedness. We will describe in the applicable prospectus supplement any material covenants in respect of a series of debt securities.

Merger, Consolidation or Sale of Assets

The form of indenture provides that we will not consolidate with or merge into any other person or convey, transfer, sell or lease our properties and assets substantially as an entirety to any person, unless:

- we are the surviving person of such merger or consolidation, or if we are not the surviving person, the person formed by the consolidation or into or with which we are merged or the person to which our properties and assets are conveyed, transferred, sold or leased, is a corporation organized and existing under the laws of the U.S., any state or the District of Columbia or a corporation or comparable legal entity organized under the laws of a foreign jurisdiction and has expressly assumed all of our obligations, including the payment of the principal of and, premium, if any, and interest on the debt securities and the performance of the other covenants under the indenture; and

- immediately before and immediately after giving effect to the transaction on a pro forma basis, no event of default, and no event which, after notice or lapse of time or both, would become an event of default, has occurred and is continuing under the indenture.

Events of Default

Unless otherwise specified in the applicable prospectus supplement, the following events will be events of default under the indenture with respect to debt securities of any series:

- we fail to pay any principal or premium, if any, when it becomes due;
- we fail to pay any interest within 30 days after it becomes due;
- we fail to observe or perform any other covenant in the debt securities or the indenture for 90 days after written notice specifying the failure from the trustee or the holders of not less than 25% in aggregate principal amount of the outstanding debt securities of that series; and certain events involving bankruptcy, insolvency or reorganization of us or any of our significant subsidiaries.

The trustee may withhold notice to the holders of the debt securities of any series of any default, except in payment of principal of or premium, if any, or interest on the debt securities of a series, if the trustee considers it to be in the best interest of the holders of the debt securities of that series to do so.

If an event of default (other than an event of default resulting from certain events of bankruptcy, insolvency or reorganization) occurs, and is continuing, then the trustee or the holders of not less than 25% in aggregate principal amount of the outstanding debt securities of any series may accelerate the maturity of the debt securities. If this happens, the entire principal amount, plus the premium, if any, of all the outstanding debt securities of the affected series plus accrued interest to the date of acceleration will be immediately due and payable. At any time after the acceleration, but before a judgment or decree based on such acceleration is obtained by the trustee, the holders of a majority in aggregate principal amount of outstanding debt securities of such series may rescind and annul such acceleration if:

- all events of default (other than nonpayment of accelerated principal, premium or interest) have been cured or waived;
- all lawful interest on overdue interest and overdue principal has been paid; and
- the rescission would not conflict with any judgment or decree.

In addition, if the acceleration occurs at any time when we have outstanding indebtedness that is senior to the debt securities, the payment of the principal amount of outstanding debt securities may be subordinated in right of payment to the prior payment of any amounts due under the senior indebtedness, in which case the holders of debt securities will be entitled to payment under the terms prescribed in the instruments evidencing the senior indebtedness and the indenture.

If an event of default resulting from certain events of bankruptcy, insolvency or reorganization occurs, the principal, premium and interest amount with respect to all of the debt securities of any series will be due and payable immediately without any declaration or other act on the part of the trustee or the holders of the debt securities of that series.

The holders of a majority in principal amount of the outstanding debt securities of a series will have the right to waive any existing default or compliance with any provision of the indenture or the debt securities of that series and to direct the time, method and place of conducting any proceeding for any remedy available to the trustee, subject to certain limitations specified in the indenture.

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

- the holder gives to the trustee written notice of a continuing event of default;
- the holders of at least 25% in aggregate principal amount of the outstanding debt securities of the affected series make a written request and offer reasonable indemnity to the trustee to institute a proceeding as trustee;
- the trustee fails to institute a proceeding within 60 days after such request; and
- the holders of a majority in aggregate principal amount of the outstanding debt securities of the affected series do not give the trustee a direction inconsistent with such request during such 60-day period.

These limitations do not, however, apply to a suit instituted for payment on debt securities of any series on or after the due dates expressed in the debt securities.

We will periodically deliver certificates to the trustee regarding our compliance with our obligations under the indenture.

Modification and Waiver

From time to time, we and the trustee may, without the consent of holders of the debt securities of one or more series, amend the indenture or the debt securities of one or more series, or supplement the indenture, for certain specified purposes, including:

- to provide that the surviving entity following a change of control permitted under the indenture will assume all of our obligations under the indenture and debt securities;
- to provide for certificated debt securities in addition to uncertificated debt securities;
- to comply with any requirements of the SEC under the Trust Indenture Act of 1939;
- to provide for the issuance of and establish the form and terms and conditions of debt securities of any series as permitted by the indenture;
- to cure any ambiguity, defect or inconsistency, or make any other change that does not materially and adversely affect the rights of any holder; and
- to appoint a successor trustee under the indenture with respect to one or more series.

From time to time we and the trustee may, with the consent of holders of at least a majority in principal amount of an outstanding series of debt securities, amend or supplement the indenture or the debt securities series, or waive compliance in a particular instance by us with any provision of the indenture or the debt securities. We may not, however, without the consent of each holder affected by such action, modify or supplement the indenture or the debt securities or waive compliance with any provision of the indenture or the debt securities in order to:

- reduce the amount of debt securities whose holders must consent to an amendment, supplement, or waiver to the indenture or such debt security;
- reduce the rate of or change the time for payment of interest or reduce the amount of or postpone the date for payment of sinking fund or analogous obligations;
- reduce the principal of or change the stated maturity of the debt securities;

- make any debt security payable in money other than that stated in the debt security;
- change the amount or time of any payment required or reduce the premium payable upon any redemption, or change the time before which no such redemption may be made;
- waive a default in the payment of the principal of, premium, if any, or interest on the debt securities or a redemption payment;
- waive a redemption payment with respect to any debt securities or change any provision with respect to redemption of debt securities; or
- take any other action otherwise prohibited by the indenture to be taken without the consent of each holder affected by the action.

Defeasance of Debt Securities and Certain Covenants in Certain Circumstances

The indenture permits us, at any time, to elect to discharge our obligations with respect to one or more series of debt securities by following certain procedures described in the indenture. These procedures will allow us either:

- to defease and be discharged from any and all of our obligations with respect to any debt securities except for the following obligations (which discharge is referred to as “legal defeasance”):
 1. to register the transfer or exchange of such debt securities;
 2. to replace temporary or mutilated, destroyed, lost or stolen debt securities;
 3. to compensate and indemnify the trustee; or
 4. to maintain an office or agency in respect of the debt securities and to hold monies for payment in trust; or
 5. to be released from our obligations with respect to the debt securities under certain covenants contained in the indenture, as well as any additional covenants which may be contained in the applicable supplemental indenture (which release is referred to as “covenant defeasance”).

In order to exercise either defeasance option, we must irrevocably deposit with the trustee or other qualifying trustee, in trust for that purpose:

- money;
- U.S. Government Obligations (as described below) or Foreign Government Obligations (as described below) that through the scheduled payment of principal and interest in accordance with their terms will provide money; or
- a combination of money and/or U.S. Government Obligations and/or Foreign Government Obligations sufficient in the written opinion of a nationally-recognized firm of independent accountants to provide money;

that, in each case specified above, provides a sufficient amount to pay the principal of, premium, if any, and interest, if any, on the debt securities of the series, on the scheduled due dates or on a selected date of redemption in accordance with the terms of the indenture.

In addition, defeasance may be effected only if, among other things:

- in the case of either legal or covenant defeasance, we deliver to the trustee an opinion of counsel, as specified in the indenture, stating that as a result of the defeasance neither the trust nor the trustee will be required to register as an investment company under the Investment Company Act of 1940;
- in the case of legal defeasance, we deliver to the trustee an opinion of counsel stating that we have received from, or there has been published by, the Internal Revenue Service a ruling to the effect that, or there has been a change in any applicable federal income tax law with the effect that (and the opinion shall confirm that), the holders of outstanding debt securities will not recognize income, gain or loss for U.S. federal income tax purposes solely as a result of such legal defeasance and will be subject to U.S. federal income tax on the same amounts, in the same manner, including as a result of prepayment, and at the same times as would have been the case if legal defeasance had not occurred;
- in the case of covenant defeasance, we deliver to the trustee an opinion of counsel to the effect that the holders of the outstanding debt securities will not recognize income, gain or loss for U.S. federal income tax purposes as a result of 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 covenant defeasance had not occurred; and
- certain other conditions described in the indenture are satisfied.

If we fail to comply with our remaining obligations under the indenture and applicable supplemental indenture after a covenant defeasance of the indenture and applicable supplemental indenture, and the debt securities are declared due and payable because of the occurrence of any undefeased event of default, the amount of money and/or U.S. Government Obligations and/or Foreign Government Obligations on deposit with the trustee could be insufficient to pay amounts due under the debt securities of the affected series at the time of acceleration. We will, however, remain liable in respect of these payments.

The term “U.S. Government Obligations” as used in the above discussion means securities that are direct obligations of or non-callable obligations guaranteed by the United States of America for the payment of which obligation or guarantee the full faith and credit of the United States of America is pledged.

The term “Foreign Government Obligations” as used in the above discussion means, with respect to debt securities of any series that are denominated in a currency other than U.S. dollars, (1) direct obligations of the government that issued or caused to be issued such currency for the payment of which obligations its full faith and credit is pledged or (2) obligations of a person controlled or supervised by or acting as an agent or instrumentality of such government the timely payment of which is unconditionally guaranteed as a full faith and credit obligation by that government, which in either case under clauses (1) or (2), are not callable or redeemable at the option of the issuer.

Regarding the Trustee

We will identify the trustee with respect to any series of debt securities in the prospectus supplement relating to the applicable debt securities. You should note that if the trustee becomes a creditor of ours, the indenture and the Trust Indenture Act of 1939 limit the rights of the trustee to obtain payment of claims in certain cases, or to realize on certain property received in respect of any such claim, as security or otherwise. The trustee and its affiliates may engage in, and will be permitted to continue to engage in, other transactions with us and our affiliates. If, however, the trustee acquires any “conflicting interest” within the meaning of the Trust Indenture Act of 1939, it must eliminate such conflict or resign.

The holders of a majority in principal amount of the then outstanding debt securities of any series may direct the time, method and place of conducting any proceeding for exercising any remedy available to the trustee. If an event of default occurs and is continuing, the trustee, in the exercise of its rights and powers, must use the degree of care

and skill of a prudent person in the conduct of his or her own affairs. Subject to that provision, the trustee will be under no obligation to exercise any of its rights or powers under the indenture at the request of any of the holders of the debt securities, unless they have offered to the trustee reasonable indemnity or security.

No Individual Liability of Incorporators, Stockholders, Officers or Directors

Each indenture provides that no incorporator and no past, present or future stockholder, officer or director of our company or any successor corporation in those capacities will have any individual liability for any of our obligations, covenants or agreements under the debt securities or such indenture.

Governing Law

The indentures and the debt securities will be governed by, and construed in accordance with, the laws of the State of New York.

DESCRIPTION OF WARRANTS

General

We may issue warrants for the purchase of our debt securities, preferred stock, common stock, or any combination thereof. Warrants may be issued independently or together with our debt securities, preferred stock or common stock and may be attached to or separate from any offered securities. Each series of warrants will be issued under a separate warrant agreement to be entered into between us and a bank or trust company, as warrant agent. The warrant agent will act solely as our agent in connection with the warrants. The warrant agent will not have any obligation or relationship of agency or trust for or with any holders or beneficial owners of warrants. This summary of certain provisions of the warrants is not complete. For the terms of a particular series of warrants, you should refer to the prospectus supplement for that series of warrants and the warrant agreement for that particular series.

Debt Warrants

The prospectus supplement relating to a particular issue of warrants to purchase debt securities will describe the terms of the debt warrants, including the following:

- the title of the debt warrants;
- the offering price for the debt warrants, if any;
- the aggregate number of the debt warrants;
- the designation and terms of the debt securities, including any conversion rights, purchasable upon exercise of the debt warrants;
- if applicable, the date from and after which the debt warrants and any debt securities issued with them will be separately transferable;
- the principal amount of debt securities that may be purchased upon exercise of a debt warrant and the exercise price for the warrants, which may be payable in cash, securities or other property;
- the dates on which the right to exercise the debt warrants will commence and expire;
- if applicable, the minimum or maximum amount of the debt warrants that may be exercised at any one time;
- whether the debt warrants represented by the debt warrant certificates or debt securities that may be issued upon exercise of the debt warrants will be issued in registered or bearer form;
- information with respect to book-entry procedures, if any;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- if applicable, a discussion of material U.S. federal income tax considerations;
- the antidilution provisions of the debt warrants, if any;
- the redemption or call provisions, if any, applicable to the debt warrants;
- any provisions with respect to the holder's right to require us to repurchase the debt warrants upon a change in control or similar event; and

- any additional terms of the debt warrants, including procedures and limitations relating to the exchange, exercise, and settlement of the debt warrants.

Debt warrant certificates will be exchangeable for new debt warrant certificates of different denominations. Debt warrants may be exercised at the corporate trust office of the warrant agent or any other office indicated in the prospectus supplement. Prior to the exercise of their debt warrants, holders of debt warrants will not have any of the rights of holders of the debt securities purchasable upon exercise and will not be entitled to payment of principal or any premium, if any, or interest on the debt securities purchasable upon exercise.

Equity Warrants

The prospectus supplement relating to a particular series of warrants to purchase our common stock or preferred stock will describe the terms of the warrants, including the following:

- the title of the warrants;
- the offering price for the warrants, if any;
- the aggregate number of warrants;
- the designation and terms of the common stock or preferred stock that may be purchased upon exercise of the warrants;
- if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each security;
- if applicable, the date from and after which the warrants and any securities issued with the warrants will be separately transferable;
- the number of shares of common stock or preferred stock that may be purchased upon exercise of a warrant and the exercise price for the warrants;
- the dates on which the right to exercise the warrants shall commence and expire;
- if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- if applicable, a discussion of material U.S. federal income tax considerations;
- the antidilution provisions of the warrants, if any;
- the redemption or call provisions, if any, applicable to the warrants;
- any provisions with respect to a holder's right to require us to repurchase the warrants upon a change in control or similar event; and
- any additional terms of the warrants, including procedures and limitations relating to the exchange, exercise and settlement of the warrants.

Holders of equity warrants will not be entitled:

- to vote, consent, or receive dividends;

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

DESCRIPTION OF SUBSCRIPTION RIGHTS

We may issue subscription rights to purchase our common stock, preferred stock or debt securities. These subscription rights may be offered independently or together with any other security offered hereby and may or may not be transferable by the stockholder receiving the subscription rights in such offering. In connection with any offering of subscription rights, we may enter into a standby arrangement with one or more underwriters or other purchasers pursuant to which the underwriters or other purchasers may be required to purchase any securities remaining unsubscribed for after such offering.

The prospectus supplement relating to any subscription rights we offer, if any, will, to the extent applicable, include specific terms relating to the offering, including some or all of the following:

- the price, if any, for the subscription rights;
- the exercise price payable for our common stock, preferred stock or debt securities upon the exercise of the subscription rights;
- the number of subscription rights to be issued to each stockholder;
- the number and terms of our common stock, preferred stock or debt securities which may be purchased per each subscription right;
- the extent to which the subscription rights are transferable;
- any other terms of the subscription rights, including the terms, procedures and limitations relating to the exchange and exercise of the subscription rights;
- the date on which the right to exercise the subscription rights shall commence, and the date on which the subscription rights shall expire;
- the extent to which the subscription rights may include an over-subscription privilege with respect to unsubscribed securities or an over-allotment privilege to the extent the securities are fully subscribed; and
- if applicable, the material terms of any standby underwriting or purchase arrangement which may be entered into by us in connection with the offering of subscription rights.

The description in the applicable prospectus supplement of any subscription rights we offer will not necessarily be complete and will be qualified in its entirety by reference to the applicable subscription rights certificate, which will be filed with the SEC if we offer subscription rights. We urge you to read the applicable subscription rights certificate and any applicable prospectus supplement in their entirety.

DESCRIPTION OF UNITS

We may issue units consisting of some or all of the securities described above, in any combination, including common stock, preferred stock, warrants and/or debt securities. The terms of these units will be set forth in a prospectus supplement. The description of the terms of these units in the applicable prospectus supplement will not be complete. You should refer to the applicable form of unit and unit agreement for complete information with respect to these units.

LEGAL MATTERS

Fenwick & West LLP, San Francisco, California, will issue an opinion about certain legal matters with respect to the securities. Any underwriters or agents will be advised about legal matters relating to any offering by their own counsel.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2020, as set forth in their report, which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.



Common Stock

Preferred Stock

Debt Securities

Warrants

Subscription Rights

Units

PROSPECTUS

August 11, 2021

PROSPECTUS SUPPLEMENT
(To prospectus dated August 11, 2021)



Up to \$150,000,000

Common Stock

We have previously entered into an Open Market Sale AgreementSM dated July 1, 2020, as amended by the Amended and Restated Amendment No. 1 to the Open Market Sales Agreement dated August 11, 2021, or the sales agreement, with Jefferies LLC, or Jefferies, relating to shares of our common stock offered by this prospectus supplement. In accordance with the terms of the sales agreement, under this prospectus, we may offer and sell shares of our common stock, \$0.0001 par value per share, having an aggregate offering price of up to \$150,000,000 from time to time through Jefferies acting as our agent. From and after the date of this prospectus supplement, we shall not sell any Shares under the ATM Prospectus filed by us on July 1, 2020 with the U.S. Securities and Exchange Commission, or SEC.

Our common stock is traded on The Nasdaq Global Select Market under the symbol “MORE.” The last reported sales price of our common stock on The Nasdaq Global Select Market on August 9, 2021 was \$58.77 per share.

Sales of our common stock, if any, under this prospectus supplement and the accompanying prospectus 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, or the Securities Act. Jefferies is not required to sell any specific number or dollar amount of securities, but will act as a sales agent using commercially reasonable efforts consistent with its normal trading and sales practices, on mutually agreed terms between Jefferies and us. There is no arrangement for funds to be received in any escrow, trust or similar arrangement.

The compensation to Jefferies for sales of common stock sold pursuant to the sales agreement will be an amount equal to 3.0% of the gross proceeds of any shares of common stock sold under the sales agreement. In connection with the sale of the common stock on our behalf, Jefferies will be deemed to be an “underwriter” within the meaning of the Securities Act and the compensation of Jefferies will be deemed to be underwriting commissions or discounts. We have also agreed to provide indemnification and contribution to Jefferies with respect to certain liabilities, including liabilities under the Securities Act or the Securities Exchange Act of 1934, as amended, or the Exchange Act. See “Plan of Distribution” beginning on page [S-9](#) regarding the compensation to be paid to Jefferies.

Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties referenced under the heading “Risk Factors” on page [S-5](#) of this prospectus supplement as well as those contained in any accompanying prospectus and any related free writing prospectus or prospectus supplement we prepare or authorize in connection with this offering, and in the other documents that are incorporated by reference into this prospectus supplement or the accompanying prospectus.

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.

Jefferies

The date of this prospectus supplement is August 11, 2021.

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ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement is part of a registration statement that we filed with the Securities and Exchange Commission, or the SEC, using a “shelf” registration process. Under this shelf registration process, we may from time to time sell shares of our common stock. Under this prospectus supplement, we may from time to time sell shares of our common stock having an aggregate offering price of up to \$150,000,000, at prices and on terms to be determined by market conditions at the time of the offering.

This prospectus supplement describes the terms of this offering of common stock and also adds to and updates information contained in the documents incorporated by reference into this prospectus supplement. To the extent there is a conflict between the information contained in this prospectus supplement, on the one hand, and the information contained in any document incorporated by reference into this prospectus supplement that was filed with the SEC before the date of this prospectus supplement, on the other hand, you should rely on the information in this prospectus supplement. If any statement in one of these documents is inconsistent with a statement in another document having a later date - for example, a document incorporated by reference into this prospectus supplement - the statement in the document having the later date modifies or supersedes the earlier statement.

We have not, and Jefferies has not, authorized anyone to provide you with any information other than that contained or incorporated by reference in this prospectus supplement, the accompanying base prospectus or any related free writing prospectus to which we have referred you. Neither we nor Jefferies take any responsibility for, and can provide no assurance as to the reliability of, any other information others may give you. We are not, and Jefferies is not, making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted or in which the person making that offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make an offer or solicitation. You should assume that the information appearing in this prospectus supplement, the accompanying base prospectus, the documents incorporated by reference herein and therein and any free writing prospectus that we have authorized for use in connection with this offering, is accurate only as of the date of those respective documents. Our business, financial condition, results of operations and prospects may have changed since those dates. You should read this prospectus supplement, the accompanying base prospectus, the documents incorporated by reference herein and therein and any free writing prospectus that we have authorized for use in connection with this offering, in their entirety before making an investment decision.

When we refer to “Morphic,” “Morphic Therapeutic,” “we,” “our,” “us,” the “Registrant,” the “Company” and “our company” in this prospectus supplement, we mean Morphic Holding, Inc., a Delaware corporation, unless otherwise specified.

“Morphic,” “Morphic Therapeutic,” the Morphic logo, and all product names are our common law trademarks. All other service marks, trademarks and trade names appearing in this prospectus supplement are the property of their respective owners. Solely for convenience, the trademarks and tradenames referred to in this prospectus supplement appear without the ® and ™ symbols, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights, or the right of the applicable licensor to these trademarks and tradenames.

WHERE YOU CAN FIND MORE INFORMATION; INCORPORATION BY REFERENCE

Available Information

We file reports, proxy statements and other information with the SEC. The SEC maintains a web site that contains reports, proxy and information statements and other information about issuers, such as us, who file electronically with the SEC. The address of that website is www.sec.gov.

Our web site address is <http://www.morphictx.com>. The information on our web site, however, is not, and should not be deemed to be, a part of this prospectus supplement.

This prospectus supplement and the accompanying base prospectus are part of a registration statement that we filed with the SEC and does not contain all of the information in the registration statement. The full registration statement may be obtained from the SEC or us, as provided below. Documents establishing the terms of the offered securities are or may be filed as exhibits to the registration statement. Statements in this prospectus supplement or the accompanying base prospectus about these documents are summaries and each statement is qualified in all respects by reference to the document to which it refers. You should refer to the actual documents for a more complete description of the relevant matters. You may inspect a copy of the registration statement through the SEC's website, as provided above, or at our principal executive offices, 35 Gatehouse Drive, A2, Waltham, Massachusetts 02451, during normal business hours.

Incorporation by Reference

The SEC allows us to "incorporate by reference" information that we file with the SEC, which means that we can disclose important information to you by referring you to those other documents. The information incorporated by reference is an important part of this prospectus supplement, and information we file later with the SEC will automatically update and supersede this information. A Current Report (or portion thereof) furnished, but not filed, on Form 8-K shall not be incorporated by reference into this prospectus supplement. We incorporate by reference the documents listed below and any future filings we make with the SEC under Section 13(a), 13(c), 14, or 15(d) of the Exchange Act prior to the termination of any offering of securities made by this prospectus supplement:

- [our Annual Report on Form 10-K for the fiscal year ended December 31, 2020, filed with the SEC on March 1, 2021;](#)
- our Quarterly Reports on Form 10-Q for the quarter ended [March 31, 2021, filed with the SEC on April 29, 2021](#) and [amended on May 17, 2021](#) and for the quarter ended [June 30, 2021, filed with the SEC on August 4, 2021;](#)
- our Current Reports on Form 8-K filed with the SEC on [January 5, 2021](#), [March 1, 2021](#) (only with regard to item 8.01), [March 3, 2021](#), [April 29, 2021](#) (only with regard to Items 5.02 and 8.01), [June 1, 2021](#), [June 21, 2021](#), and on [July 9, 2021;](#)
- our Definitive Proxy Statement on Schedule 14A, [filed with the SEC on April 29, 2021](#) (but only with respect to information required by Part III of our Annual Report on Form 10-K for the year ended December 31, 2020, which information shall update and supersede information included in Part III of our Annual Report on Form 10-K for the year ended December 31, 2020); and
- the description of our common stock contained in our registration statement on [Form 8-A filed with the SEC on June 14, 2019](#) under Section 12(b) of the Exchange Act, including any amendment or report filed for the purpose of updating such description.

All reports and other documents we subsequently file pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the termination of this offering, including all such documents we may file with the SEC after the date of the initial registration statement and prior to the effectiveness of the registration statement, but excluding any information furnished to, rather than filed with, the SEC, will also be incorporated by reference in this prospectus supplement and deemed to be part of this prospectus from the date of the filing of such reports and documents.

We will furnish without charge to you, on written or oral request, a copy of any or all of such documents that has been incorporated herein by reference (other than exhibits to such documents unless such exhibits are specifically incorporated by reference into the documents that this prospectus incorporates). Written or oral requests for copies should be directed to Morphic Holding, Inc., 35 Gatehouse Drive, A2, Waltham, Massachusetts 02451, and our telephone number is (781) 996-0955.

PROSPECTUS SUMMARY

Our Company

We are a biopharmaceutical company applying our proprietary insights into integrins to discover and develop a pipeline of potentially first-in-class oral small molecule integrin therapeutics. Integrins are a target class with multiple approved injectable blockbuster drugs for the treatment of serious chronic diseases, including autoimmune, cardiovascular and metabolic diseases, fibrosis and cancer. To date, no oral small molecule integrin therapies have been approved by the U.S. Food and Drug Administration, or FDA. Despite significant unsuccessful efforts by others, we believe tremendous untapped potential remains for us to develop oral integrin therapies. The Morphic integrin technology platform, or MInT Platform, was created leveraging our unique understanding of integrin structure and function to develop novel product candidates designed to achieve the potency, high selectivity, and pharmaceutical properties required for oral administration. We are advancing our pipeline, including our lead product candidate, MORF-057, an $\alpha 4\beta 7$ -specific integrin inhibitor affecting inflammation, into clinical development for the treatment of inflammatory bowel disease, or IBD. We submitted an investigational new drug application, or IND, for MORF-057 in July 2020, and the FDA permitted the study submitted under the IND to proceed in August 2020. In September 2020, we initiated a Phase 1 clinical trial of MORF-057 in healthy volunteers comprised of single-ascending dose, or SAD, food effect, and multiple-ascending dose, or MAD, cohorts to establish our clinical program and select doses for our Phase 2 program in IBD with an initial focus on ulcerative colitis, or UC. In July 2021, we announced complete Phase 1 results that included SAD, MAD and food effect (FE) cohorts evaluating MORF-057 for safety, pharmacokinetic and pharmacodynamic measures.

Company Information

We were formed under the laws of the State of Delaware in August 2014 under the name Integrin Rock, LLC. We subsequently changed our name to Morphic Rock Holding, LLC in October 2014 and then to Morphic Holding, LLC in June 2016, and we subsequently converted to a corporation under the name Morphic Holding, Inc. in December 2018. Our principal executive offices are located at 35 Gatehouse Drive, A2, Waltham, MA 02451, and our telephone number is (781) 996-0955. Our website address is www.morphictx.com. The information contained on, or that can be accessed through, our website is not part of, and is not incorporated by reference into, this prospectus. Investors should not rely on any such information in deciding whether to purchase our securities.

THE OFFERING

Common stock offered by us	Shares of our common stock having an aggregate offering price of up to \$150,000,000.
Common stock to be outstanding immediately after this offering	Up to 38,829,834 shares (as more fully described in the notes following this table), assuming sales of 2,552,323 shares of our common stock in this offering at an offering price of \$58.77 per share, which was the last reported sale price of our common shares on The Nasdaq Global Select Market on August 9, 2021. The actual number of shares issued will vary depending on the sales price under this offering.
Plan of Distribution	“At the market offering” that may be made from time to time through our sales agent, Jefferies LLC. See the section entitled “Plan of Distribution” on page S-9 of this prospectus supplement.
Use of Proceeds	We currently intend to use the net proceeds of this offering primarily for general corporate purposes, which may include funding research, clinical and process development and manufacturing of our product candidates, working capital and capital expenditures. See the section entitled “Use of Proceeds” on page S-7 of this prospectus supplement.
Risk Factors	Investing in our common stock involves significant risks. See the disclosure under the heading “Risk Factors” on page S-5 in this prospectus and under similar headings in other documents incorporated by reference into this prospectus supplement.
The Nasdaq Global Select Market symbol	“MORF”

The number of shares of our common stock shown above to be outstanding after this offering is based on 36,277,511 shares of our common stock outstanding as of June 30, 2021, and excludes:

- 1,642,213 shares of common stock issuable upon exercise of options outstanding as of June 30, 2021 with a weighted average exercise price of \$12.39 per share;
- 7,500 shares of common stock issuable upon exercise of options that were granted after June 30, 2021 with a weighted average exercise price of \$57.63 per share pursuant to our 2019 Equity Incentive Plan;
- 48,719 shares of common stock issuable upon the vesting of restricted stock awards as of June 30, 2021;
- 51,473 shares of common stock issuable upon the vesting of restricted stock units as of June 30, 2021; and
- 7,511,549 shares of common stock reserved and available for future issuance as of June 30, 2021, under our equity incentives plans, consisting of (1) 6,700,925 shares of common stock reserved and available for issuance under our 2019 Equity Incentive Plan as of June 30, 2021, and (2) 810,624 shares of common stock reserved for issuance under our 2019 Employee Stock Purchase Plan as of June 30, 2021.

RISK FACTORS

Investment in any securities offered pursuant to this prospectus supplement and the accompanying base prospectus involves risks. You should carefully consider the risk factors described below, in our Annual Report on Form 10-K for the year ended December 31, 2020, and in our Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2021, incorporated by reference in this prospectus supplement, any amendment or update thereto reflected in subsequent filings with the SEC, including in our Annual Reports on Form 10-K and Quarterly Reports on Form 10-Q, and all other information contained or incorporated by reference in this prospectus supplement, as updated by our subsequent filings under the Exchange Act. The occurrence of any of these risks might cause you to lose all or part of your investment in the offered securities.

Risks Relating to this Offering

If you purchase shares of our common stock sold in this offering, you may experience immediate and substantial dilution in the net tangible book value of your shares. In addition, we may issue additional equity or convertible debt securities in the future, which may result in additional dilution to you.

The price per share of our common stock being offered may be higher than the net tangible book value per share of our outstanding common stock prior to this offering. Assuming that an aggregate of 2,586,653 shares of our common stock are sold at a price of \$57.99 per share, the last reported sale price of our common stock on the Nasdaq Global Select Market on August 2, 2021, for aggregate gross proceeds of approximately \$150,000,000, and after deducting commissions and estimated offering expenses payable by us, new investors in this offering will incur immediate dilution of \$45.30 per share. For a more detailed discussion of the foregoing, see the section entitled “Dilution” below. To the extent outstanding stock options or warrants are exercised, or restricted stock units vest and settle, there will be further dilution to new investors. In addition, to the extent we need to raise additional capital in the future and we issue additional shares of common stock or securities convertible or exchangeable for our common stock, our then existing stockholders may experience dilution and the new securities may have rights senior to those of our common stock offered in this offering.

We have broad discretion in the use of the net proceeds from this offering 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 entitled “Use of Proceeds,” and you will not have the opportunity as part of your investment decision to assess whether the net proceeds are being used appropriately. Because of the number and variability of factors that will determine our use of the net proceeds from this offering, their ultimate use may vary substantially from their currently intended use. Our management might not apply our net proceeds in ways that ultimately increase the value of your investment. We expect to use the net proceeds from this offering to fund research, clinical and process development and manufacturing of our product candidates, working capital, capital expenditures and other general corporate purposes. The failure by our management to apply these funds effectively could harm our business. Pending their use, we plan to invest the net proceeds from this offering in short-term or long-term, investment-grade, interest-bearing securities. These investments may not yield a favorable return to our stockholders. If we do not invest or apply the net proceeds from this offering in ways that enhance stockholder value, we may fail to achieve expected financial results, which could cause our stock price to decline.

The actual number of shares we will issue under the sales agreement, at any one time or in total, is uncertain.

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

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

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

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement and documents incorporated herein by reference contain “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements involve a number of risks and uncertainties. We caution readers that any forward-looking statement is not a guarantee of future performance and that actual results could differ materially from those contained in the forward-looking statement. These statements are based on current expectations of future events.

Such statements include, but are not limited to, statements regarding expectations and intentions, costs and expenses, outcome of contingencies, financial condition, results of operations, liquidity, objectives of management, debt financing, our future results of operations and financial position, the impact of the COVID-19 pandemic, business strategies, market size, potential growth opportunities, clinical development activities, efficacy and safety profile of our product candidates, timing and results of our pre-clinical studies and clinical trials, the receipt and timing of potential regulatory designations, our ability to maintain and recognize the benefits of certain designations received by product candidates, the achievement of clinical and commercial milestones, the advancement of our technologies and our proprietary product candidates, the successful achievement of the goals of our collaborations, the advancement of the product candidates that are the subjects of these collaborations, the approvals and commercialization of product candidates and other statements that are not historical facts. You can find many of these statements by looking for words like “believes,” “expects,” “anticipates,” “estimates,” “may,” “might,” “should,” “will,” “could,” “plan,” “intend,” “project,” “seek” or similar expressions in this prospectus supplement, in documents incorporated by reference into this prospectus supplement or any free writing prospectus. We intend that such forward-looking statements be subject to the safe harbors created thereby.

These forward-looking statements are based on the current beliefs and expectations of our management and are subject to significant risks and uncertainties. If underlying assumptions prove inaccurate or unknown risks or uncertainties materialize, actual results may differ materially from current expectations and projections. Factors that might cause such a difference include those discussed in Part II, Item 1A, “Risk Factors,” in our Quarterly Report on Form 10-Q for the quarter ended June 30, 2021, as well as those discussed in this prospectus supplement, the documents incorporated by reference into this prospectus and any free writing prospectus. You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this prospectus supplement or, in the case of documents referred to or incorporated by reference, the date of those documents.

All subsequent written or oral forward-looking statements attributable to us or any person acting on our behalf are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. We do not undertake any obligation to release publicly any revisions to these forward-looking statements to reflect events or circumstances after the date of this prospectus supplement or to reflect the occurrence of unanticipated events, except as may be required under applicable U.S. securities law. If we do update one or more forward-looking statements, no inference should be drawn that we will make additional updates with respect to those or other forward-looking statements.

USE OF PROCEEDS

We may issue and sell shares of our common stock having aggregate sales proceeds of up to \$150,000,000 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 the sales agreement with Jefferies as a source of financing.

We currently intend to use any net proceeds from the sale of securities under this prospectus supplement and the accompanying base prospectus primarily to fund research, clinical and process development and manufacturing of our product candidates, working capital, capital expenditures and other general corporate purposes. Additionally, we may use a portion of the net proceeds from this offering to expand our current business by in-licensing or acquiring, as the case may be, commercial products, product candidates, technologies, compounds, other assets or complementary businesses, using cash or shares of our common stock. However, we have no current commitments or obligations to do so.

The amounts and timing of our actual expenditures will depend on numerous factors, including the progress of our clinical trials and other development efforts and other factors described under “Risk Factors” in this prospectus supplement, the accompanying base prospectus and the documents incorporated by reference herein and therein, as well as the amount of cash used in our operations. We may find it necessary or advisable to use the net proceeds for other purposes, and we will have broad discretion in the application of the net proceeds. Pending the uses described above, we plan to invest the net proceeds from this offering in short-term or long-term, investment-grade, interest-bearing securities.

DILUTION

If you invest in our common stock, your interest will be diluted to the extent of the difference between the price per share you pay in this offering and the net tangible book value per share of our common stock immediately after this offering. Our net tangible book value of our common stock as of June 30, 2021 was approximately \$347.9 million, or approximately \$9.59 per share of common stock based upon 36,277,511 shares outstanding as of June 30, 2021. Net tangible book value per share is equal to our total tangible assets, less our total liabilities, divided by the total number of shares outstanding as of June 30, 2021.

After giving effect to the sale of our common stock in the aggregate amount of \$150,000,000 at an assumed offering price of \$57.99 per share, the last reported sale price of our common stock on the Nasdaq Global Select Market on August 2, 2021, and after deducting commissions and estimated offering expenses payable by us, our as adjusted net tangible book value as of June 30, 2021 would have been \$493.1 million, or \$12.69 per share of common stock. This represents an immediate increase in net tangible book value of \$3.10 per share to our existing stockholders and an immediate dilution in net tangible book value of \$45.30 per share to new investors in this offering.

The following table illustrates this calculation on a per share basis. The as-adjusted information is illustrative only and will adjust based on the actual price to the public, the actual number of shares sold and other terms of the offering determined at the time shares of our common stock are sold pursuant to this prospectus supplement. The as-adjusted information assumes that all of our common stock in the aggregate amount of \$150,000,000 is sold at the assumed offering price of \$57.99 per share, the last reported sale price of our common stock on the Nasdaq Global Select Market on August 2, 2021. The shares sold in this offering, if any, will be sold from time to time at various prices.

Assumed public offering price per share	\$	57.99
Net tangible book value per share as of June 30, 2021	\$	9.59
Increase in net tangible book value per share attributable to the offering	\$	3.10
As adjusted net tangible book value per share after giving effect to the offering	\$	12.69
Dilution per share to new investors participating in the offering	\$	45.30

The number of shares of our common stock to be outstanding immediately after this offering is based on 36,277,511 shares of our common stock outstanding as of June 30, 2021. The number of shares outstanding as of June 30, 2021 excludes:

- 1,642,213 shares of common stock issuable upon exercise of options outstanding as of June 30, 2021 with a weighted average exercise price of \$12.39 per share;
- 7,500 shares of common stock issuable upon exercise of options that were granted after June 30, 2021 with a weighted average exercise price of \$57.63 per share pursuant to our 2019 Equity Incentive Plan;
- 48,719 shares of common stock issuable upon the vesting of restricted stock awards as of June 30, 2021;
- 51,473 shares of common stock issuable upon the vesting of restricted stock units as of June 30, 2021; and
- 7,511,549 shares of common stock reserved and available for future issuance as of June 30, 2021, under our equity incentives plans, consisting of (1) 6,700,925 shares of common stock reserved and available for issuance under our 2019 Equity Incentive Plan as of June 30, 2021, and (2) 810,624 shares of common stock reserved for issuance under our 2019 Employee Stock Purchase Plan as of June 30, 2021.

The foregoing table does not give effect to the exercise of any outstanding options or vesting and settlement of restricted stock awards. To the extent options are exercised or restricted stock awards are vested and settled, there may be further dilution to new investors.

PLAN OF DISTRIBUTION

We have previously entered into a sales agreement dated July 1, 2020 as amended by the Amended and Restated Amendment No. 1 to the Open Market Sales Agreement, dated August 11, 2021 with Jefferies, under which we may offer and sell our shares of common stock from time to time through Jefferies acting as agent. Pursuant to this prospectus supplement we may offer and sell up to \$150,000,000 of our shares of common stock. Sales of our shares of common stock, if any, under this prospectus supplement and the accompanying prospectus will be made by any method that is deemed to be an “at the market offering” as defined in Rule 415(a)(4) under the Securities Act. From and after the date of this prospectus supplement, we shall not sell any Shares under the ATM Prospectus filed by us on July 1, 2020 with the SEC.

Each time we wish to issue and sell shares of common stock under the sales agreement, we will notify Jefferies of the number of shares to be issued, the dates on which such sales are anticipated to be made, any limitation on the number of shares to be sold in any one day and any minimum price below which sales may not be made. Once we have so instructed Jefferies, unless Jefferies declines to accept the terms of such notice, Jefferies has agreed to use its commercially reasonable efforts consistent with its normal trading and sales practices to sell such shares up to the amount specified on such terms. The obligations of Jefferies under the sales agreement to sell our shares of common stock are subject to a number of conditions that we must meet.

The settlement of sales of shares between us and Jefferies is generally anticipated to occur on the second trading day following the date on which the sale was made. Sales of our shares of 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 may agree upon. There is no arrangement for funds to be received in an escrow, trust or similar arrangement.

We will pay Jefferies a commission equal to 3.0% of the aggregate gross proceeds we receive from each sale of our shares of common stock. 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. In addition, we have agreed to reimburse Jefferies for the fees and disbursements of its counsel, payable upon execution of the sales agreement, in an amount not to exceed \$50,000, in addition to certain ongoing disbursements of its legal counsel unless we and Jefferies otherwise agree. We estimate that the total expenses for the offering, excluding any commissions or expense reimbursement payable to Jefferies under the terms of the sales agreement, will be approximately \$0.4 million. The remaining sale proceeds, after deducting any other transaction fees, will equal our net proceeds from the sale of such shares.

Jefferies will provide written confirmation to us before the open on The Nasdaq Global Select Market on the day following each day on which shares of common stock are sold under the sales agreement. Each confirmation will include the number of shares sold on that day, the aggregate gross proceeds of such sales and the proceeds to us.

In connection with the sale of the shares of common stock on our behalf, Jefferies will be deemed to be an “underwriter” within the meaning of the Securities Act, and the compensation of Jefferies will be deemed to be underwriting commissions or discounts. We have agreed to indemnify Jefferies against certain civil liabilities, including liabilities under the Securities Act. We have also agreed to contribute to payments Jefferies may be required to make in respect of such liabilities.

The offering of our shares of common stock pursuant to the sales agreement will terminate upon the earlier of (i) the sale of all shares of common stock subject to the sales agreement and (ii) the termination of the sales agreement as permitted therein.

This summary of the material provisions of the sales agreement does not purport to be a complete statement of its terms and conditions. A copy of the sales agreement is filed as an exhibit to the registration statement of which this prospectus supplement forms a part.

Jefferies and its affiliates may in the future provide various investment banking, commercial banking, financial advisory and other financial services for us and our affiliates, for which services they may in the future receive customary fees. In the course of its business, Jefferies may actively trade our securities for its own account or for the accounts of customers, and, accordingly, Jefferies may at any time hold long or short positions in such securities.

A prospectus supplement and the accompanying prospectus in electronic format may be made available on a website maintained by Jefferies, and Jefferies may distribute the prospectus supplement and the accompanying prospectus electronically.

LEGAL MATTERS

Fenwick & West LLP, San Francisco, California, will pass upon certain legal matters relating to the issuance and sale of the securities offered hereby on behalf of Morphic Holding, Inc. Jefferies LLC is being represented in connection with this offering by Cooley LLP, New York, New York.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2020, as set forth in their report, which is incorporated by reference in this prospectus supplement and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.



Up to \$150,000,000

Common Stock

PROSPECTUS SUPPLEMENT

Jefferies

August 11, 2021

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution

The following table sets forth estimated expenses in connection with the issuance and distribution of the securities being registered:

SEC registration fee*	\$	16,365
FINRA filing fee		225,500
Printing and engraving		**
Legal fees and expenses		**
Accounting fees and expenses		**
Transfer agent and registrar fees and expenses		**
Miscellaneous expenses		**
Total*	\$	**

* Represents registration fee applicable to amount included in prospectus supplement for up to \$150,000,000 shares of common stock to be sold by the Registrant pursuant to Open Market Sale AgreementSM, dated July 1, 2020 and amended by the Amended and Restated Amendment No. 1 to the Open Market Sales Agreement, dated August 11, 2021, by and between the Registrant and Jefferies LLC. Additional registration fees deferred in reliance upon Rules 456(b) and 457(r) under the Securities and Exchange Act of 1934, as amended.

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

Item 15. Indemnification of Officers and Directors

Section 145 of the Delaware General Corporation Law authorizes a court to award, or a corporation's board of directors to grant, indemnity to directors and officers under certain circumstances and subject to certain limitations. The terms of Section 145 of the Delaware General Corporation Law are sufficiently broad to permit indemnification under certain circumstances for liabilities, including reimbursement of expenses incurred, arising under the Securities Act of 1933, as amended, or the Securities Act.

As permitted by the Delaware General Corporation Law, the Registrant's restated certificate of incorporation contains a provision that eliminates, to the fullest extent permitted by law, the personal liability of a directors for monetary damages resulting from breach of his or her fiduciary duties as a director, except for liability:

- for any breach of the director's duty of loyalty to the Registrant or its stockholders;
- for acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law;
- under Section 174 of the Delaware General Corporation Law (regarding unlawful dividends, stock purchases or redemptions); or
- for any transaction from which the director derived an improper personal benefit.

As permitted by the Delaware General Corporation Law, the Registrant's restated bylaws provide that:

- the Registrant is required to indemnify its directors and officers to the fullest extent permitted by the Delaware General Corporation Law, subject to certain very limited exceptions;

- the Registrant may indemnify its other employees and agents as set forth in the Delaware General Corporation Law;
- the Registrant is required to advance expenses, as incurred, to its directors and officers in connection with a legal proceeding to the fullest extent permitted by the Delaware General Corporation Law, subject to certain very limited exceptions; and
- the rights conferred in the restated bylaws are not exclusive.

The Registrant has entered, and intends to continue to enter, into indemnification agreements with each of its directors and executive officers to provide these directors and executive officers additional contractual assurances regarding the scope of the indemnification set forth in the Registrant's restated certificate of incorporation and restated bylaws and to provide additional procedural protections. At present, there is no pending litigation or proceeding involving a director or executive officer of the Registrant for which indemnification is sought. The indemnification provisions in the Registrant's restated certificate of incorporation, restated bylaws and the indemnification agreements entered into or to be entered into between the Registrant and each of its directors and executive officers may be sufficiently broad to permit indemnification of the Registrant's directors and executive officers for liabilities arising under the Securities Act.

The Registrant currently carries liability insurance for its directors and officers.

Item 16. Exhibits

The exhibits listed below are filed (except where otherwise indicated) as part of this Registration Statement.

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
1.1*	Form of Underwriting Agreement					
1.2	Open Market Sale AgreementSM, dated July 1, 2020, by and between the Registrant and Jefferies LLC	S-3	333-239607	1.2	7/1/2020	
1.3	Amended and Restated Amendment No. 1 to the Open Market Sale AgreementSM, dated July 1, 2020, by and between the Registrant and Jefferies LLC, as amended on August 11, 2021					X
3.1	Restated Certificate of Incorporation	10-Q	001-38940	3.1	8/13/2019	
3.2	Restated Bylaws, as amended	10-Q	001-38940	3.2	5/6/2020	
4.1	Form of Common Stock Certificate	S-1/A	333-231837	4.1	6/14/2019	
4.2	Investors' Rights Agreement, dated December 5, 2018, by and among the Registrant and certain of its stockholders	S-1/A	333-231837	4.2	6/14/2019	
4.3	Form of Debt Security					X
4.4	Form of Indenture					X
4.5*	Form of Warrant					
4.6*	Form of Warrant Agreement					
4.7*	Form of Preferred Stock Certificate					
4.8*	Form of Subscription Rights Certificate					
4.9*	Form of Unit					
4.10*	Form of Unit Agreement					
5.1	Opinion of Fenwick & West LLP					X
23.1	Consent of Ernst & Young LLP					X
23.2	Consent of Fenwick & West LLP (included in Exhibit 5.1)					X
24.1	Power of Attorney (included on the signature page hereto)					X
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 by amendment or as an exhibit to a report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended and incorporated herein by reference.

** To be filed in accordance with the requirements of Section 305(b)(2) of the Trust Indenture Act of 1939 and Rule 5b-3 thereunder.

Item 17. Undertakings

(a) The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) to include any prospectus required by Section 10(a)(3) of the Securities Act;

(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 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) to include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that subparagraphs (i), (ii), and (iii) 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 Exchange Act 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, 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 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 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 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.

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

(c) Insofar as indemnification for liabilities arising under the Securities Act 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 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 and will be governed by the final adjudication of such issue.

(d) The Registrant hereby undertakes to file an application for the purpose of determining the eligibility of the trustee to act under subsection (a) of Section 310 of the Trust Indenture Act in accordance with the rules and regulations prescribed by the Securities and Exchange Commission under Section 305(b)(2) of the Trust Indenture Act.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Waltham, Commonwealth of Massachusetts, on August 11, 2021.

MORPHIC HOLDING, INC.

By: /s/ Praveen P. Tipirneni, M.D.

Praveen P. Tipirneni, M.D.

President and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Praveen P. Tipirneni and William D. DeVaul, and each of them, as his true and lawful attorneys-in-fact, proxies and agents, each with full power of substitution, for him in any and all capacities, to sign any and all amendments to this registration statement (including pre-effective and post-effective amendments, any supplements, any abbreviated registration statement and any amendments thereto filed pursuant to Rule 462(b) increasing the number of securities for which registration is sought), and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact, proxies and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully for all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact, proxies and agents, or their or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

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

Signature	Title	Date
/s/ Praveen P. Tipirneni	President, Chief Executive Officer and Director (Principal Executive Officer)	August 11, 2021
Praveen P. Tipirneni, M.D.		
/s/ Marc Schegerin	Chief Financial Officer and Chief Operating Officer (Principal Financial Officer)	August 11, 2021
Marc Schegerin		
/s/ Robert E. Farrell Jr.	Senior Vice President Finance and Chief Accounting Officer (Principal Accounting Officer)	August 11, 2021
Robert E. Farrell Jr., CPA		
/s/ Gustav Christensen	Director	August 11, 2021
Gustav Christensen		
/s/ Norbert Bischofberger	Director	August 11, 2021
Norbert Bischofberger		
/s/ Susannah Gray	Director	August 11, 2021
Susannah Gray		
/s/ Nilesh Kumar, Ph.D.	Director	August 11, 2021
Nilesh Kumar, Ph.D.		
/s/ Amir Nashat	Director	August 11, 2021
Amir Nashat		
/s/ Joseph P. Slattery	Director	August 11, 2021
Joseph P. Slattery, CPA		
/s/ Timothy A. Springer	Director	August 11, 2021
Timothy A. Springer, Ph.D.		
/s/ Martin W. Edwards	Director	August 11, 2021
Martin W. Edwards		

AMENDED AND RESTATED AMENDMENT NO. 1 TO THE OPEN MARKET SALE AGREEMENTSM

August 11, 2021

JEFFERIES LLC
520 Madison Avenue

New York, New York 10022 Ladies and Gentlemen:

This amended and restated Amendment No. 1 to the Open Market Sale AgreementSM (this “**Amendment**”), which amends and restates the amendment No. 1 to the Open Market Sale AgreementSM dated as of August 4, 2021 (the “**Original Amendment**”), is entered into as of the date first written above by Morphic Holding, Inc., a Delaware corporation (the “**Company**”), and Jefferies LLC (“**Agent**”), that are parties to that certain Open Market Sale AgreementsSM, dated July 1, 2020 (the “**Original Agreement**”). All capitalized terms not defined herein shall have the meanings ascribed to them in the Original Agreement. The parties, intending to be legally bound, hereby amend the Original Agreement and amend and restate the Original Amendment as follows:

Section 2(a) of the Original Agreement is hereby deleted in its entirety and replaced with the following:

“Registration Statement. The Company has prepared and filed with the Commission an “automatic shelf registration statement” as defined under Rule 405 of the Securities Act on Form S-3ASR that contains a base prospectus (the “**Base Prospectus**”). Such registration statement registers the issuance and sale by the Company of the Shares under the Securities Act. 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, with respect to the Shares. Except where the context otherwise requires, such registration statement(s), including any information deemed to be a part thereof pursuant to Rule 430B under the Securities Act, including all financial statements, exhibits and schedules thereto and all documents incorporated or deemed to be incorporated therein by reference pursuant to Item 12 of Form S-3 under the Securities Act as from time to time amended or supplemented, is herein referred to as the “**Registration Statement,**” and the prospectus constituting a part of such registration statement(s), together with any prospectus supplement filed with the Commission pursuant to Rule 424(b) under the Securities Act relating to a particular issuance of the Shares, including all documents incorporated or deemed to be incorporated therein by reference pursuant to Item 12 of Form S-3 under the Securities Act, in each case, as from time to time amended or supplemented, is referred to herein as the “**Prospectus,**” except that if any revised prospectus is provided to the Agent by the Company for use in connection with the offering of the Shares that is not required to be filed by the Company pursuant to Rule 424(b) under the Securities Act, the term “**Prospectus**” shall refer to

such revised prospectus from and after the time it is first provided to the Agent for such use. The Registration Statement at the time it originally became effective is herein called the **“Original Registration Statement.”** As used in this Agreement, the terms “amendment” or “supplement” when applied to the Registration Statement or the Prospectus shall be deemed to include the filing by the Company with the Commission of any document under the Exchange Act after the date hereof that is or is deemed to be incorporated therein by reference.

All references in this Agreement to financial statements and schedules and other information which 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 which is or is deemed to be incorporated by reference in or otherwise deemed under the Securities Act to be a part of or included in the Registration Statement or the Prospectus, as the case may be, as of any specified date; and all references in this Agreement to amendments or supplements to the Registration Statement or the Prospectus shall be deemed to mean and include, without limitation, the filing of any document under the Exchange Act which is or is deemed to be incorporated by reference in or otherwise deemed under the Securities Act to be a part of or included in the Registration Statement or the Prospectus, as the case may be, as of any specified date.

At the time the Original Registration Statement became effective and at the time the Company’s most recent annual report on Form 10-K was filed with the Commission, if later, the Company met the then-applicable requirements for use of Form S-3 under the Securities Act. During the Agency Period, each time the Company files an annual report on Form 10-K the Company will meet the then-applicable requirements for use of Form S-3 under the Securities Act.”

New Section 6(yy) shall be added as follows:

“Well-known Seasoned Issuer. (A) At the original effectiveness of the Registration Statement, (B) at the time of the most recent amendment thereto for the purposes of complying with Section 10(a)(3) of the Securities Act (whether such amendment was by post-effective amendment or incorporated report filed pursuant to Section 13 or 15(d) of the Exchange Act or in the form of a prospectus), and (C) at the time the Company or any person acting on its behalf (within the meaning, for this clause only, of Rule 163(c) under the Securities Act) made any offer relating to the Shares in reliance on the exemption of Rule 163 under the Securities Act, the Company was and is a “well-known seasoned issuer” (as defined in Rule 405).”

Section 4(b) of the Original Agreement is hereby deleted in its entirety and replaced with the following:

“Securities Act Compliance. After the date of this Agreement, the Company shall promptly advise the Agent in writing (i) of the receipt of any comments of, or requests for additional or supplemental information from, the Commission; (ii) of the time and date of any filing of any post-effective amendment to the Registration Statement, any Rule 462(b) Registration Statement or any amendment or supplement to the Prospectus, any Free Writing Prospectus; (iii) of the time and date that any post-effective amendment to the Registration Statement or any Rule 462(b) Registration

Statement becomes effective; (iv) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or any post-effective amendment thereto, any Rule 462(b) Registration Statement or any amendment or supplement to the Prospectus or of any order preventing or suspending the use of any Free Writing Prospectus or the Prospectus, or of any proceedings to remove, suspend or terminate from listing or quotation the Common Shares from any securities exchange upon which they are listed for trading or included or designated for quotation, or of the threatening or initiation of any proceedings for any of such purposes and (v) of the Company losing its status as a “well-known seasoned issuer” (as defined in Rule 405) as of the time the Company files with the Commission an annual report on Form 10-K. If the Commission shall enter any such stop order at any time, the Company will use commercially reasonable efforts to obtain the lifting of such order as soon as practicable. Additionally, the Company agrees that it shall comply with the provisions of Rule 424(b) and Rule 433, as applicable, under the Securities Act and will use its reasonable efforts to confirm that any filings made by the Company under such Rule 424(b) or Rule 433 were received in a timely manner by the Commission.”

4. New Section 4(w) shall be added as follows:

“Filing Fees. The Company will pay the required Commission filing fees relating to the Shares within the time required by Rule 456(b)(1) under the Securities Act without regard to the proviso therein and otherwise in accordance with Rules 456(b) and 457(r) under the Securities Act.”

Notwithstanding Section 3(d) of the Original Agreement, the Company shall reimburse the Agent for the reasonable fees and disbursements of the Agent’s counsel in connection with the negotiation, execution and filing of this Amendment and the filing of the Registration Statement in an amount not to exceed \$40,000.

From and after August 4, 2021, the Company shall not sell any Shares under the ATM Prospectus filed by the Company on July 1, 2020 with the SEC.

The Company represents and warrants to, and agrees with the Agent that this Amendment has been duly authorized, executed and delivered by, and is a valid and binding agreement of, the Company, enforceable in accordance with its terms, except as rights to indemnification hereunder may be limited by applicable law and except as the enforcement hereof may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws relating to or affecting the rights and remedies of creditors or by general equitable principles.

This Amendment together with the Original Agreement, as previously amended (including all schedules and exhibits attached hereto and thereto and Placement Notices issued pursuant hereto and thereto and the Original Amendment), constitutes 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 Amendment 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 Amendment. All references in the Original Agreement to the “Agreement” shall mean the Original Agreement as amended by this Amendment; provided, however, that all references to “date of this Agreement” in the Original Agreement shall continue to refer to the date of the Original Agreement.

This Amendment shall be governed by and construed in accordance with the internal laws of the State of New York applicable to agreements made and to be performed in such state. Any legal suit, action or proceeding arising out of or based upon this Amendment or the transactions contemplated hereby may be instituted in the federal courts of the United States of America located in the Borough of Manhattan in the City of New York or the courts of the State of New York in each case located in the Borough of Manhattan in the City of New York (collectively, the “**Specified Courts**”), and each party irrevocably submits to the exclusive jurisdiction (except for proceedings instituted in regard to the enforcement of a judgment of any such court, as to which such jurisdiction is non-exclusive) of such courts in any such suit, action or proceeding. Service of any process, summons, notice or document by mail to such party’s address set forth above shall be effective service of process for any suit, action or other proceeding brought in any such court. The parties irrevocably and unconditionally waive any objection to the laying of venue of any suit, action or other proceeding in the Specified Courts and irrevocably and unconditionally waive and agree not to plead or claim in any such court that any such suit, action or other proceeding brought in any such court has been brought in an inconvenient forum. The provisions of this paragraph shall survive any termination of this Amendment.

This Amendment 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 amendment by one party to the other may be made by facsimile transmission or electronic transmission (e.g., PDF).

[Remainder of Page Intentionally Blank]

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 amendment to the Original Agreement between the Company and the Agent.

Very truly yours,

JEFFERIES LLC

By: /s/ Donald Lynaugh

Name: Donald Lynaugh

Title: Managing Director

**ACCEPTED as of the date
first-above written:**

MORPHIC HOLDING, INC.

By: /s/ Praveen P. Tipirneni

Name: Praveen P. Tipirneni

Title: Chief Executive Officer

[Signature Page to Amended and Restated Amendment No. 1 to Sale Agreement]

FORM OF DEBT SECURITY

[Face of Security]

MORPHIC HOLDING, INC.

[If applicable, insert - FOR PURPOSES OF THE ORIGINAL ISSUE DISCOUNT PROVISIONS OF THE INTERNAL REVENUE CODE OF 1986, THE ISSUE PRICE OF THIS SECURITY IS % OF ITS PRINCIPAL AMOUNT AT STATED MATURITY SET FORTH BELOW (ITS "PRINCIPAL AMOUNT"), THE AMOUNT OF ORIGINAL ISSUE DISCOUNT IS % OF ITS PRINCIPAL AMOUNT, THE YIELD TO MATURITY IS % AND THE ISSUE DATE IS]

[IF THE SECURITY IS A GLOBAL SECURITY, INSERT - THIS NOTE IS A GLOBAL SECURITY. IT IS EXCHANGEABLE FOR NOTES REGISTERED IN THE NAME OF A PERSON OTHER THAN THE DEPOSITARY (AS HEREINAFTER DEFINED) OR ITS NOMINEE ONLY IN THE LIMITED CIRCUMSTANCES HEREINAFTER DESCRIBED AND MAY NOT BE TRANSFERRED EXCEPT AS A WHOLE BY THE DEPOSITARY TO A NOMINEE OF THE DEPOSITARY OR BY A NOMINEE OF THE DEPOSITARY TO THE DEPOSITARY OR ANOTHER NOMINEE OF THE DEPOSITARY OR BY THE DEPOSITARY OR A NOMINEE OF THE DEPOSITARY TO A SUCCESSOR OF THE DEPOSITARY OR A NOMINEE OF SUCH SUCCESSOR DEPOSITARY.]

No. ____

\$ ____

CUSIP No. ____

Morphic Holding, Inc., a Delaware corporation (herein called 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 [if 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, commencing , at the rate of % per annum, until the principal hereof is paid or made available for payment [if applicable, insert - , provided that any principal and premium, and any such installment of interest, which is overdue shall bear interest at the rate of % per annum (to the extent that the payment of such interest shall be legally enforceable), from the dates such amounts are due until they are paid or made available for payment, and such interest shall be payable on demand]]. 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 Person in whose name this Security (or one or more predecessor Securities) is registered at the close of business on the 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. Any such interest not so punctually paid or duly provided for will forthwith cease to be payable to the Holder on such record date and may either be paid to the Person at the time 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 be paid at any time in any other lawful manner not inconsistent with the requirements of any securities exchange on which the

Securities of this series may be listed, and upon such notice as may be required by such exchange, all as more fully provided in said Indenture. [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 Stated Maturity and in such case the overdue principal and any overdue premium shall bear interest at the rate of _____ % per annum (to the extent that the payment of such interest shall be legally enforceable), from the dates such amounts are due until they are paid or made available for payment. Interest on any overdue principal or premium shall be payable on demand. [Any such interest on overdue principal or premium which is not paid on demand shall bear interest at the rate of _____ % per annum (to the extent that the payment of such interest on interest shall be legally enforceable), from the date of such demand until the amount so demanded is paid or made available for payment. Interest on any overdue interest shall be payable on demand.]].

Payment of the principal of (and premium, if any, on) and [any such] interest on this Security will be made 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 payment of public and private debts[]; provided, however, that at the option of the Company payment of interest may be made by check mailed to the address of the Person entitled thereto as such address shall appear in the register of the Security maintained by the Registrar].

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 manually executed by or on behalf of the Trustee under the Indenture referred to on the reverse hereof, 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 under its corporate seal.

Dated:

Morphic Holding, Inc.

By _____

[Title]

Attest and Countersign

Secretary
[Reverse of Security.]

MORPHIC HOLDING, 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 _____, (herein called the “Indenture,” which term shall have the meaning assigned to it in such instrument), between the Company and _____, as trustee (herein called the “Trustee”, which term includes any successor trustee under the Indenture), to which the Indenture and all indentures supplemental thereto reference is hereby made for a statement of the respective rights, limitations or 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 series designated on the face hereof [, limited in aggregate principal amount to \$ _____].

[If the Security is to be subordinated, insert - The indebtedness evidenced by this Security is, to the extent and in the manner set forth in the Indenture, expressly subordinated and subject in right of payment to the prior payment in full of all senior Indebtedness (as defined in the Indenture) of the Company. This Security is issued subject to such provisions of the Indenture, and each Holder of this Security, by accepting the same, agrees to and shall be bound by such provisions and authorizes and directs the Trustee on the Holder’s behalf to take such action as may be necessary or appropriate to acknowledge or effectuate such subordination as provided in the Indenture and appoints the Trustee such Holder’s attorney-in-fact for any and all such purposes.]

The Securities of this series are subject to redemption upon not less than 30 days’, and no more than 60 days, notice provided in the manner set forth in the Indenture, [(1) on in any year commencing with the year and ending with the year at the Redemption Price (as indicated below) equal to 100% of the principal amount, and (2)] at any time [on or after], as a whole or in part, at the election of the principal the following Redemption Prices (expressed as percentages of the principal amount, as indicated below): If redeemed [on or before _____, _____ %, and if redeemed] during the 12-month period beginning of the years indicated,

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 with accrued interest to the Redemption Date, but interest installments whose Stated Maturity is on or prior to such Redemption Date will be payable to the Holders of such 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 the Security is to be redeemable in part, insert - In the event of redemption of this Security in part only, a new Security or Securities of this series for the unredeemed portion hereof will be issued in the name of the Holder hereof upon the cancellation hereof.]

[If the Security is to be subject to repayment at the option of the Holder, insert - To be repaid at the option of the Holder, the Company must receive this Security, with the form of “Option to Elect Repayment” hereon duly completed, at an office or agency of the Company maintained for that purpose in (or at such other place of which the Company shall from time to time notify the Holder of this Security) not less than _____ nor more than _____ days prior to the Repayment Date (as defined therein). The exercise of the repayment option by the Holder shall be irrevocable.]

[If the Security is not to be subject to redemption at the option of the Company, insert - The Securities are not redeemable at the option of the Company prior to Maturity.]

[If the Security is not to be an Original Issue Discount Security, insert - If an Event of Default with respect to Securities of this series 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.]

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 of each Series under the Indenture to be affected at any time by the Company with the consent of the Holders of not less than a majority in aggregate principal amount of the Securities then outstanding of each Series to be affected.

The Indenture also contains provisions permitting the Holders of a majority in principal amount of the Securities of any Series then outstanding, on behalf of the Holders of all Securities of such series, to waive compliance by the Company with certain provisions of the Indenture and certain past Defaults or Events of Default with respect to such Series 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 of any Security issued upon the registration of transfer hereof or in exchange herefor or in lieu hereof, whether or not notation of such consent of waiver is made upon this Security.

As provided in and subject to the provisions of the indenture, the Holder of this Security shall not have the right to institute any proceeding with respect to the Indenture or for the appointment of a receiver or trustee or for any other remedy thereunder, unless such Holder shall have previously given the Trustee written notice of a continuing Event of Default with respect to the Securities of this series, the Holders of not less than 25% in aggregate principal amount of the Securities of this series then outstanding shall have made written request to the Trustee to institute proceedings in respect of such Event of Default as Trustee and offered the Trustee indemnity reasonably satisfactory to the Trustee, and the Trustee shall not have received from the Holders of a majority in aggregate principal amount of Securities of this series then outstanding a direction inconsistent with such request, and shall have failed to institute any such proceeding, for 60 days after receipt of such notice, request and offer of indemnity. The foregoing shall not apply to any suit instituted by the Holder of this Security for the enforcement of any payment of principal hereof or any premium or interest hereon on or after the respective due dates expressed herein.

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, if any, on) and interest on this Security at the times, place and rate, and in the coin or currency, herein prescribed.

[If the Security is to be in registered form, insert - As provided in the Indenture and subject to certain limitations therein set forth, the transfer of this Security is registrable in the register of the Registrar, 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, if any, on) 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 Registrar duly executed by, the Holder hereof or his attorney duly authorized in writing, and, thereupon one or more new Securities of this series, of authorized denominations and for the same aggregate principal amount, will be issued to the designated transferee or transferees.]

[The Securities of this series are issuable only in registered form in denominations of \$ [and any integral multiple] [or increments of \$ in excess] thereof. As provided in the Indenture and subject to certain limitations therein set forth, Securities of this series are exchangeable for a like aggregate principal amount of Securities of this series of a different authorized denomination, as requested by the Holder surrendering the same.]

[No service charge shall be made for any such registration of transfer 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.]

[If the Security is a Global Security, insert - “Global Security” and “Global Securities” means a Security or Securities evidencing all or a part of a series of Securities, issued to the Depositary (as hereinafter defined) for such Series or its nominee, and registered in the name of such Depositary or its nominee. “Depositary” means, with respect to the Securities of any series issuable or issued in whole or in part in the form of one or more Global Securities, the person designated as the Depositary by the Company.

No holder of any beneficial interest in this Security held on its behalf by a Depositary or a nominee of such Depositary shall have any rights under the Indenture with respect to such Global Security, and such Depositary or nominee may 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. Notwithstanding the foregoing, nothing herein shall impair, as between a Depositary and such holders of beneficial interests, the operation of customary practices governing the exercise of the rights of the Depositary as Holder of any Security.

This Security is exchangeable, in whole but not in part, for Securities registered in the names of Persons other than the Depositary or its nominee or in the name of a successor to the Depositary or a nominee of such successor depositary only if (i) the Depositary notifies the Company that it is unwilling or unable to continue as Depositary for this Note or if at any time such Depositary ceases to be a clearing agency registered under the Securities Exchange Act of 1934, as amended, and, in either case, a successor depositary is not appointed by the Company within 90 days, (ii) the Company in its discretion at any time determines not to have all of the Securities of this series represented by one or more Global Security or Securities and notifies the Trustee thereof, or (iii) an Event of Default has occurred and is continuing with respect to the Securities of this series. If this Security is exchangeable pursuant to the preceding sentence, it shall be exchangeable for Securities issuable in authorized denominations and registered in such names as the Depositary holding this Security shall direct. Subject to the foregoing, this Security is not exchangeable, except for a Security or Securities of the same aggregate denominations to be registered in the name of such Depositary or its nominee or in the name of a successor to the Depositary or a nominee of such successor depositary.]

[The Indenture entitles Holders to receive annual reports with respect to the Trustee’s eligibility and qualifications to serve as Trustee by filing their names and addresses with the Trustee for that purpose within two years preceding and mailing of any such annual report.]

No recourse shall be had for the payment of the principal of (and premium, if any, on) or interest on this Security, or for any claim based hereon, or otherwise in respect hereof, or based on or in respect of the Indenture of any indenture supplemental thereto, against any incorporator, stockholder, officer or director, as such, past, present or future, of the Company or any successor corporation, 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.

All terms used in this Security which are defined in the Indenture shall have the meanings assigned to them in the Indenture.

This Security, including without limitation the obligation of the Company contained herein to pay the principal of (and premium, if any, on) and interest on this Security in accordance with the terms hereof and of the Indenture, shall be construed in accordance with and governed by the laws of the State of New York.

[Trustee's Certificate of Authentication.]

This is one of the Securities of the series designated herein referred to in the within-mentioned Indenture.

[Authenticating Agent for] the Trustee , as

By _____
Authorized Officer

MORPHIC HOLDING, INC.

And

, as Trustee

INDENTURE

Dated as of ,

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INDENTURE, dated as of _____, _____, by and between Morphic Holding, Inc., a Delaware corporation, as Issuer (the “Company”) and _____, a _____ organized under the laws of _____, as Trustee (the “Trustee”).

RECITALS OF THE COMPANY

The Company has duly authorized the execution and delivery of this Indenture to provide for the issuance from time to time of its debentures, notes or other evidences of indebtedness to be issued in one or more series (the “Securities”), as herein provided, up to such principal amount as may from time to time be authorized in or pursuant to one or more resolutions of the Board of Directors or by supplemental indenture.

All things necessary to make this Indenture a valid agreement of the Company in accordance with its terms have been done, and the execution and delivery thereof have been in all respects duly authorized by the parties hereto.

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 agreed, for the equal and proportionate benefit of all Holders of the Securities of a Series thereof, as follows:

Article 1 DEFINITIONS AND INCORPORATION BY REFERENCE

1.1 DEFINITIONS.

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

“Agent” means any Registrar, Paying Agent, co-registrar or agent for service of notices and demands.

“Board of Directors” means the Board of Directors of the Company or any committee duly authorized to act therefor.

“Board Resolution” means a copy of a resolution certified pursuant to an Officers’ Certificate to have been duly adopted by the Board of Directors of the Company and to be in full force and effect on the date of such certification which has been delivered to the Trustee.

“Capital Stock” means, with respect to any Person, any and all shares or other equivalents (however designated) of capital stock, partnership interests or any other participation, right or other interest in the nature of an equity interest in such Person or any option, warrant or other security convertible into any of the foregoing.

“Company” means the party named as such in the first paragraph of this Indenture until a successor replaces such party pursuant to Article 5 of this Indenture, and thereafter means the successor and any other primary obligor on the Securities.

“Company Order” means a written order signed in the name of the Company by two Officers, one of whom must be its Chief Executive Officer or its Chief Financial Officer.

“Company Request” means any written request signed in the name of the Company by its Chief Executive Officer, its President, any Vice President, its Chief Financial Officer or its Treasurer and attested to by its Secretary or any Assistant Secretary.

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

“Default” means any event that is, or that with the passing of time or giving of notice or both would be, an Event of Default.

“Depository” means, with respect to the Securities of any Series issuable or issued in whole or in part in the form of one or more Global Securities, the Person designated as Depository for such Series by the Company, which Depository shall be a clearing agency registered under the Exchange Act, until a successor Depository shall have become such pursuant to the applicable provisions of this Indenture, and thereafter “Depository” shall mean each Person who is then a Depository hereunder, and if at any time there is more than one such Person, such Persons.

“Dollars” means the currency of the United States of America.

“Euro” means the single currency of participating member states of the economic and monetary union as contemplated in the Treaty on European Union.

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

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

“Foreign Government Obligations” means, with respect to Securities that are denominated in a Foreign Currency, (i) direct obligations of the government that issued or caused to be issued such currency for the payment of which obligations its full faith and credit is pledged or (ii) obligations of a Person controlled or supervised by, or acting as an agency or instrumentality of, such government, the timely payment of which is unconditionally guaranteed as a full faith and credit obligation by such government, which, in either case under clauses (i) and (ii), are not callable or redeemable at the option of the issuer thereof.

“GAAP” means generally accepted accounting principles consistently applied as in effect in the United States of America from time to time.

“Global Security” or “Global Securities” means a Security or Securities, as the case may be, in the form established pursuant to Section 2.2, evidencing all or part of a Series of Securities issued to the Depository for such Series or its nominee, and registered in the name of such Depository or nominee, and bearing the legend set forth in Section 2.15(c) (or such other legend(s) as may be applied to such Securities in accordance with Section 2.2(24)).

“Holder” or “Securityholder” means the Person in whose name a Security is registered on the Registrar’s books.

“Indebtedness” means (without duplication), with respect to any Person, any indebtedness at any time outstanding, secured or unsecured, contingent or otherwise, which is 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), or evidenced by bonds, notes, debentures or similar instruments, or representing the balance, deferred and unpaid, of the purchase price of any property (excluding any balances that constitute accounts payable or trade payables, and other accrued liabilities arising in the ordinary course of business), if and to the extent any of the foregoing indebtedness would appear as a liability upon a balance sheet of such Person prepared in accordance with GAAP.

“Indenture” means this Indenture as amended, restated or supplemented from time to time.

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

“Lien” means, with respect to any property or assets of any Person, any mortgage or deed of trust, pledge, hypothecation, assignment, deposit arrangement, security interest, lien, charge, easement, encumbrance, preference, priority or other security agreement or preferential arrangement of any kind or nature whatsoever on or with respect to such property or assets (including, without limitation, any capitalized lease obligation, conditional sales or other title retention agreement having substantially the same economic effect as any of the foregoing).

“Maturity,” when used with respect to any Security, means the date on which the principal 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, call for redemption, notice of option to elect payment or otherwise.

“Officer” means the Chief Executive Officer, the President, any Vice President, the Chief Financial Officer, the Treasurer or the Secretary of the Company, or any other officer designated by the Board of Directors, as the case may be.

“Officers’ Certificate” means, with respect to any Person, a certificate signed by both (i) the Chief Executive Officer, President, any Vice President or Secretary and (ii) the Chief Financial Officer or any Treasurer of such Person, that shall comply with applicable provisions of this Indenture.

“Opinion of Counsel” means a written opinion from legal counsel, which counsel is reasonably acceptable to the Trustee. The counsel may be an employee of or outside counsel to the Company.

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

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

“Responsible Officer,” when used with respect to the Trustee, means any officer within the corporate trust department or division of the Trustee (or any successor group of the Trustee) or any other officer of the Trustee customarily performing functions similar to those performed by any of the above

designated officers, and also means, with respect to a particular corporate trust matter, any other officer to whom such matter is referred because of his knowledge of and familiarity with the particular subject.

“SEC” means the United States Securities and Exchange Commission as constituted from time to time, or any successor performing substantially the same functions.

“Securities” means the securities that are issued under this Indenture, as amended, restated or supplemented from time to time pursuant to this Indenture.

“Securities Act” means the Securities Act of 1933, as amended.

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

“Significant Subsidiary” means (i) any direct or indirect Subsidiary of the Company that would be a “significant subsidiary” as defined in Article 1, Rule 1-02 of Regulation S-X, promulgated pursuant to the Securities Act, as such regulation is in effect on the date hereof, or (ii) any group of direct or indirect Subsidiaries of the Company that, taken together as a group, would be a “significant subsidiary” as defined in Article 1, Rule 1-02 of Regulation S-X, promulgated pursuant to the Securities Act, as such regulation is in effect on the date hereof.

“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 as the fixed date on which the principal of such Security and the interest thereon, or such installment of principal or interest, is due and payable, and when used with respect to any other Indebtedness, means the date specified in the instrument governing such Indebtedness as the fixed date on which the principal of such Indebtedness, or any installment of interest thereon, is due and payable.

“Subsidiary” of any specified Person means any corporation, limited liability company, partnership, joint venture, association or other business entity, whether now existing or hereafter organized or acquired, (i) in the case of a corporation, of which more than 50% of the total voting power of the Capital Stock entitled (without regard to the occurrence of any contingency) to vote in the election of directors thereof is held, directly or indirectly, by such Person or any of its Subsidiaries; or (ii) in the case of a partnership, joint venture, association or other business entity, with respect to which such Person or any of its Subsidiaries has

the power to direct or cause the direction of the management and policies of such entity by contract or otherwise, or if in accordance with GAAP such entity is consolidated with such Person for financial statement purposes.

“TIA” means the Trust Indenture Act of 1939 (15 U.S. Code Section 77aaa-77bbb) as in effect on the date of this Indenture (except as provided in Section 8.3).

“Trustee” means the party named as such in this Indenture until a successor replaces it pursuant to this Indenture, and thereafter means the successor, and if at any time there is more than one such Person, “Trustee” as used with respect to the Securities of any Series shall mean the Trustee with respect to Securities of that Series.

“U.S. Government Obligations” means direct non-callable obligations of, or non-callable obligations guaranteed by, the United States of America for the payment of which obligation or guarantee the full faith and credit of the United States of America is pledged.

1.2 OTHER DEFINITIONS.

The definitions of the following terms may be found in the sections indicated as follows:

TERM	DEFINED IN SECTION
“Bankruptcy Law”	6.1
“Business Day”	10.7
“Covenant Defeasance”	9.3
“Custodian”	6.1
“Event of Default”	6.1
“Journal”	10.15
“Judgment Currency”	10.16
“Legal Defeasance”	9.2
“Legal Holiday”	10.7
“Market Exchange Rate”	10.15
“New York Paying Agent”	2.4
“Paying Agent”	2.4
“Place of Payment”	10.7
“Registrar”	2.4
“Required Currency”	10.16
“Service Agent”	2.4

1.3 INCORPORATION BY REFERENCE OF TRUST INDENTURE ACT.

Whenever this Indenture refers to a provision of the TIA, the portion of such provision required to be incorporated herein in order for this Indenture to be qualified under the TIA is incorporated by reference in and made a part of this Indenture. The following TIA terms used in this Indenture have the following meanings:

“Commission” means the SEC.

“Indenture securities” means the Securities.

“Indenture securityholder” means a Holder or Securityholder.

“Indenture to be qualified” means this Indenture.

“Indenture trustee” or “institutional trustee” means the Trustee.

“Obligor on the indenture securities” means the Company or any other obligor on the Securities.

All other terms used in this Indenture that are defined by the TIA, defined in the TIA by reference to another statute or defined by SEC rule have the meanings therein assigned to them.

1.4 RULES OF CONSTRUCTION.

Unless the context otherwise requires:

- (1) a term has the meaning assigned to it herein, whether defined expressly or by reference;
- (2) unless otherwise specified herein, all accounting terms used herein shall be interpreted, all accounting determinations hereunder shall be made, and all financial statements required to be delivered hereunder shall be prepared in accordance with GAAP;
- (3) “or” is not exclusive;
- (4) words in the singular include the plural, and in the plural include the singular;
- (5) words used herein implying any gender shall apply to each gender;
- (6) 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; and
- (7) “\$,” refers to Dollars, or such other money of the United States that at the time of payment is legal tender for payment of public and private debts.

Article 2 THE SECURITIES

2.1 ISSUABLE IN SERIES.

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

2.2 ESTABLISHMENT OF TERMS OF SERIES OF SECURITIES.

At or prior to the issuance of any Securities within a Series, the following shall be established (as to the Series generally, in the case of Subsection 2.2(1) and either as to such Securities within the Series or as to the Series generally in the case of Subsections 2.2(2) through 2.2(24)) by a Board Resolution, a supplemental indenture or an Officers’ Certificate, in each case, pursuant to authority granted under a Board Resolution:

- (1) the title of the Series (which shall distinguish the Securities of that particular Series from the Securities of any other Series);
- (2) any limit upon the aggregate principal amount of the Securities of the Series which may be authenticated and delivered under this Indenture (except for Securities authenticated and delivered

upon registration of transfer of, or in exchange for, or in lieu of, other Securities of the Series pursuant to Section 2.7, 2.8, 2.11, 3.6 or 8.5);

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

(4) the date or dates on which the principal of the Securities of the Series is payable;

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

(6) the place or places where the principal of, and interest and premium, if any, on, the Securities of the Series shall be payable, or the method of such payment, if by wire transfer, mail or other means;

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

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

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

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

(11) the forms of the Securities of the Series in bearer (if to be issued outside of the United States of America) or fully registered form (and, if in fully registered form, whether the Securities will be issuable as Global Securities);

(12) if other than the principal amount thereof, the portion of the principal amount of the Securities of the Series that shall be payable upon declaration of acceleration of the Maturity thereof pursuant to Section 6.2;

(13) the currency of denomination of the Securities of the Series, which may be Dollars or any Foreign Currency, including, but not limited to, the Euro, and, if such currency of denomination is a composite currency other than the Euro, the agency or organization, if any, responsible for overseeing such composite currency;

(14) the designation of the currency, currencies or currency units in which payment of the principal of, and interest and premium, if any, on, the Securities of the Series will be made;

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

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

(17) the provisions, if any, relating to any collateral provided for the Securities of the Series;

(18) any addition to or change in the covenants set forth in Articles 4 or 5 that applies to Securities of the Series;

(19) any addition to or change in the Events of Default which applies to any Securities of the Series, any provision for the payment of additional interest or liquidated damages in connection with any Event of Default, and any change in the right of the Trustee or the requisite Holders of such Securities to declare the principal amount thereof due and payable pursuant to Section 6.2;

(20) the terms and conditions, if any, for conversion of the Securities into or exchange of the Securities for shares of common stock, preferred stock, other debt securities, or warrants, subscription rights or units for common stock, preferred stock or other securities of any kind of the Company that apply to Securities of the Series;

(21) any Trustees, depositories, interest rate calculation agents, exchange rate calculation agents or other agents with respect to Securities of such Series if other than those appointed herein;

(22) the terms and conditions, if any, upon which the Securities shall be subordinated in right of payment to other Indebtedness of the Company;

(23) if applicable, that the Securities of the Series, in whole or any specified part, shall be defeasible pursuant to Article 9; and

(24) any other terms of the Securities of the Series (which terms shall not be inconsistent with the provisions of this Indenture, except as permitted by Section 8.1, but which may modify or delete any provision of this Indenture insofar as it applies to such Series).

All Securities of any one Series need not be issued at the same time, and may be issued from time to time, consistent with the terms of this Indenture, if so provided by or pursuant to the Board Resolution, supplemental indenture or Officers' Certificate referred to above, however, the authorized principal amount of any Series may not be increased to provide for issuances of additional Securities of such Series, unless otherwise provided in such Board Resolution, supplemental indenture or Officers' Certificate.

2.3 EXECUTION AND AUTHENTICATION.

The Securities shall be executed on behalf of the Company by two Officers of the Company or an Officer and an Assistant Secretary of the Company. Each such signature may be either manual or

facsimile. The Company's seal may be impressed, affixed, imprinted or reproduced on the Securities and may be in facsimile form.

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

A Security shall not be valid until authenticated by the manual signature of the Trustee or an authenticating agent. The signature shall be conclusive evidence that the Security has been authenticated under this Indenture. The Trustee shall at any time, and from time to time, authenticate Securities for original issue in the principal amount provided in the Board Resolution, supplemental indenture hereto or Officers' Certificate, upon receipt by the Trustee of a Company Order. Such Company Order may authorize authentication and delivery pursuant to oral or electronic instructions from the Company or its duly authorized agent or agents, which oral instructions shall be promptly confirmed in writing. Each Security shall be dated the date of its authentication.

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

Prior to the issuance of Securities of any Series, the Trustee shall have received and (subject to Section 7.1) shall be fully protected in relying on: (a) the Board Resolution, supplemental indenture hereto or Officers' Certificate establishing the form of the Securities of that Series or of Securities within that Series and the terms of the Securities of that Series or of Securities within that Series, (b) an Officers' Certificate complying with Section 10.4, and (c) an Opinion of Counsel complying with Section 10.4.

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

The Trustee may appoint an authenticating agent acceptable to the Company to authenticate Securities. An authenticating agent may authenticate Securities whenever the Trustee may do so. Any appointment shall be evidenced by an instrument signed by an authorized officer of the Trustee, a copy of which shall be furnished to the Company. Each reference in this Indenture to authentication by the Trustee includes authentication by such agent. An authenticating agent has the same rights as an Agent to deal with the Company or an Affiliate of the Company.

2.4 REGISTRAR AND PAYING AGENT.

The Company shall maintain in each Place of Payment for any Series of Securities (i) an office or agency where such Securities may be presented for registration of transfer or for exchange ("Registrar"), (ii) an office or agency where such Securities may be presented for payment ("Paying Agent"), and PROVIDED, that at the option of the Company payment of interest may be made by check mailed to the address of the Person entitled thereto as such address shall appear in the register for the Securities maintained by the Registrar), and (iii) an office or agency where notices and demands to or upon the Company in respect of the Securities and this Indenture may be served ("Service Agent"). The Registrar shall keep a register of the Securities and of their transfer and exchange. The Company may have one or

more co-Registrars and Service Agents and one or more additional Paying Agents. The Company shall give prompt written notice to the Trustee of the location, and any change in the location, of such office or agency. If at any time the Company shall fail to maintain any such required office, or to furnish the Trustee with the address thereof, such presentations, surrenders, notices and demands may be made or served at the address of the Trustee as set forth in Section 10.2. The Company or any of its Subsidiaries may also act as Paying Agent. If the Company acts as Paying Agent, it shall segregate the money held by it for the payment of principal of, and interest and premium, if any, on, the Securities and hold it as a separate trust fund. The Company may change any Paying Agent, Registrar, co-registrar, Service Agent or any other Agent without notice to any Securityholder.

The Company may also from time to time designate one or more other offices or agencies where the Securities may be presented or surrendered for any or all 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 each Place of Payment for Securities of any Series for such purposes. The Company hereby initially designates the Corporate Trust Office of the Trustee as such office of the Company. The Company shall give prompt written notice to the Trustee of such designation or rescission, and of any change in the location of any such other office or agency.

The Company shall enter into an appropriate agency agreement with any Registrar, Paying Agent or Service Agent not a party to this Indenture. The agreement shall implement the provisions of this Indenture that relate to such Agent. The Company shall notify the Trustee of the name and address of any such Agent. If the Company fails to maintain a Registrar, Paying Agent, or Service Agent and demands, or fails to give the foregoing notice, the Trustee shall act as such. The Company hereby appoints the Trustee as the initial Registrar, Paying Agent and Service Agent for each Series unless another Registrar, Paying Agent or Service Agent, as the case may be, is appointed prior to the time Securities of that Series are first issued. The Company designates, as the New York Paying Agent, with offices at: .

2.5 PAYING AGENT TO HOLD ASSETS IN TRUST.

The Trustee as Paying Agent shall, and the Company shall require each Paying Agent other than the Trustee to agree in writing that each Paying Agent shall, hold in trust for the benefit of the Holders of any Series of Securities or the Trustee all assets held by the Paying Agent for the payment of principal of, or interest or premium, if any, on, such Series of Securities (whether such assets have been distributed to it by the Company or any other obligor on such Series of Securities), and the Company and the Paying Agent shall notify the Trustee in writing of any Default by the Company (or any other obligor on such Series of Securities) in making any such payment. The Company at any time may require a Paying Agent to distribute all assets held by it to the Trustee and account for any assets disbursed, and the Trustee may, at any time during the continuance of any payment default with respect to any Series of Securities, upon written request to a Paying Agent, require such Paying Agent to distribute all assets held by it to the Trustee and to account for any assets distributed. Upon distribution to the Trustee of all assets that shall have been delivered by the Company to the Paying Agent, the Paying Agent shall have no further liability for such assets.

2.6 SECURITYHOLDER LISTS.

The Trustee shall preserve in as current a form as is reasonably practicable the most recent list available to it of the names and addresses of Securityholders of each Series of Securities. If the Trustee is not the Registrar, the Company shall furnish to the Trustee as of each regular record date for the payment

of interest on the Securities of a Series and before each related Interest Payment Date, and at such other times as the Trustee may request in writing, a list in such form and as of such date as the Trustee may reasonably require of the names and addresses of Securityholders of each Series of Securities.

2.7 TRANSFER AND EXCHANGE.

When Securities of a Series are presented by the Holder to the Registrar with a request to register the transfer thereof, the Registrar shall register the transfer as requested if the requirements of applicable law are met, and when such Securities of a Series are presented to the Registrar with a request to exchange them for an equal principal amount of other authorized denominations of Securities of the same Series, the Registrar shall make the exchange as requested. To permit transfers and exchanges, upon surrender of any Security for registration of transfer at the office or agency maintained pursuant to Section 2.4, the Company shall execute and the Trustee shall authenticate Securities at the Registrar's request.

If Securities are issued as Global Securities, the provisions of Section 2.15 shall apply.

All Securities issued upon any registration of transfer 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 exchange.

Every Security presented or surrendered for registration of transfer or for exchange shall (if so required by the Company or the Registrar or a co-registrar) be duly endorsed, or be accompanied by a written instrument of transfer in form satisfactory to the Company and the Registrar or a co-registrar, duly executed by the Holder thereof or his attorney duly authorized in writing.

Any exchange or transfer shall be without charge, except that the Company may require payment by the Holder of a sum sufficient to cover any tax or other governmental charge that may be imposed in relation to a transfer or exchange, but this provision shall not apply to any exchange pursuant to Section 2.11, 3.6 or 8.5. The Trustee shall not be required to register transfers of Securities of any Series, or to exchange Securities of any Series, for a period of 15 days before the record date for selection for redemption of such Securities. The Trustee shall not be required to exchange or register transfers of Securities of any Series called or being called for redemption in whole or in part, except the unredeemed portion of such Security being redeemed in part.

2.8 REPLACEMENT SECURITIES.

If a mutilated Security is surrendered to the Trustee, or if the Holder of a Security presents evidence to the satisfaction of the Company and the Trustee that the Security has been lost, destroyed or wrongfully taken, the Company shall issue and the Trustee shall authenticate a replacement Security of the same Series and of like tenor and principal amount and bearing a number not contemporaneously outstanding. An indemnity bond may be required by the Company or the Trustee that is sufficient in the reasonable judgment of the Company or the Trustee, as the case may be, to protect the Company, the Trustee or any Agent from any loss which any of them may suffer if a Security is replaced. The Company may charge such Holder for the Company's out-of-pocket expenses in replacing a Security, including the fees and expenses of the Trustee. Every replacement Security shall constitute an original additional obligation of the Company, whether or not the destroyed, lost or stolen Security shall be at any time enforceable by anyone, and shall be entitled to all the benefits of this Indenture equally and proportionately with any and all other Securities of that Series duly issued hereunder.

2.9 OUTSTANDING SECURITIES.

Securities outstanding at any time are all Securities authenticated by the Trustee, except for those canceled by it, those delivered to it for cancellation and those described in this Section 2.9 as not outstanding.

If a Security is replaced pursuant to Section 2.8 (other than a mutilated Security surrendered for replacement), it ceases to be outstanding until the Company and the Trustee receive proof satisfactory to each of them that the replaced Security is held by a bona fide purchaser. A mutilated Security ceases to be outstanding upon surrender of such Security and replacement thereof pursuant to Section 2.8.

If a Paying Agent holds on a Redemption Date or the Stated Maturity money sufficient to pay the principal of, premium, if any, and accrued interest on, Securities payable on that date, and is not prohibited from paying such money to the Holders thereof pursuant to the terms of this Indenture (PROVIDED, 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), then on and after that date and upon payment of such money to the Holder, such Securities will be cancelled and cease to be outstanding and interest on them ceases to accrue.

A Security does not cease to be outstanding solely because the Company or an Affiliate holds the Security.

2.10 WHEN TREASURY SECURITIES DISREGARDED; DETERMINATION OF HOLDERS' ACTION.

In determining whether the Holders of the required aggregate principal amount of the Securities of any Series have concurred in any direction, waiver or consent, the Securities of any Series owned by the Company or any other obligor on such Securities, or by any Affiliate of any of them, shall be disregarded, except that for the purposes of determining whether the Trustee shall be protected in relying on any such direction, waiver or consent, only Securities of such Series which the Trustee actually knows are so owned shall be so disregarded. Securities of such Series so owned which have been pledged in good faith shall not be disregarded if the pledgee establishes to the satisfaction of the Trustee the pledgee's right so to act with respect to the Securities of such Series and that the pledgee is not the Company or any other obligor on the Securities of such Series, or an Affiliate of any of them.

2.11 TEMPORARY SECURITIES.

Until definitive Securities are ready for delivery, the Company may prepare and execute, and the Trustee shall authenticate, temporary Securities. Temporary Securities shall be substantially in the form, and shall carry all rights, of definitive Securities, but may have variations that the Company considers appropriate for temporary Securities. Without unreasonable delay, the Company shall prepare and execute, and the Trustee shall authenticate, definitive Securities in exchange for temporary Securities without charge to the Holder.

2.12 CANCELLATION.

All Securities surrendered for payment, redemption or registration of transfer 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 for cancellation. 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. The Registrar and the Paying Agent shall forward to the Trustee any Securities surrendered to them for transfer, exchange or payment. The Trustee or, at the direction of the Trustee, the Registrar or the Paying Agent, and no one else, shall cancel, and at the written request of the Company shall dispose of, all Securities surrendered for transfer, exchange, payment or cancellation. If the Company shall acquire any of the Securities, 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 pursuant to this Section 2.12. No Securities shall be authenticated in lieu of or in exchange for any Securities cancelled as provided in this Section 2.12, except as expressly permitted by this Indenture.

2.13 PAYMENT OF INTEREST; DEFAULTED INTEREST; COMPUTATION OF INTEREST.

Except as otherwise provided as contemplated by Section 2.2 with respect to any Series of Securities, interest on any Security which 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 is registered at the close of business on the regular record date for such interest, as provided in the Board Resolution, supplemental indenture hereto or Officers' Certificate establishing the terms of such Series.

If the Company defaults in a payment of interest on the Securities, it shall pay the defaulted amounts, plus any interest payable on defaulted amounts pursuant to Section 4.1, to the Persons who are Securityholders on a subsequent special record date, which date shall be the 15th day next preceding the date fixed by the Company for the payment of defaulted interest, or the next succeeding Business Day if such date is not a Business Day. At least 15 days before the special record date, the Company shall mail or cause to be mailed to each Securityholder, with a copy to the Trustee, a notice that states the special record date, the payment date and the amount of defaulted interest, and interest payable on such defaulted interest, if any, to be paid.

Except as otherwise specified as contemplated by Section 2.2 for Securities of any Series, interest on the Securities of each Series shall be computed on the basis of a 360-day year of twelve 30-day months.

2.14 CUSIP NUMBER.

The Company in issuing the Securities may use one or more "CUSIP" numbers, and, if the Company does so, the Trustee shall use the CUSIP number(s) in notices of redemption or exchange as a convenience to Holders, PROVIDED, that any such notice may state that no representation is made as to the correctness or accuracy of the CUSIP number(s) printed in the notice or on the Securities, and that reliance may be placed only on the other identification numbers printed on the Securities, and that any such redemption or exchange shall not be affected by any defect in or omission of any such numbers.

2.15 PROVISIONS FOR GLOBAL SECURITIES.

(a) A Board Resolution, a supplemental indenture hereto or an Officers' Certificate shall establish whether the Securities of a Series shall be issued in whole or in part in the form of one or more Global Securities, and the Depository for such Global Securities or Securities.

(b) Notwithstanding any provisions to the contrary contained in Section 2.7 and in addition thereto, if, and only if the Depository (i) at any time is unwilling or unable to continue as Depository for such Global Security or ceases to be a clearing agency registered under the Exchange Act and (ii) a successor Depository is not appointed by the Company within 90 days after the date the Company is so informed in writing or becomes aware of the same, the Company promptly will execute and deliver to the Trustee definitive Securities, and the Trustee, upon receipt of a Company Request for the authentication and delivery of such definitive Securities (which the Company will promptly execute and deliver to the Trustee) and an Officers' Certificate to the effect that such Global Security shall be so exchangeable, will authenticate and deliver definitive Securities, without charge, registered in such names and in such authorized denominations as the Depository shall direct in writing (pursuant to instructions from its direct and indirect participants or otherwise) in an aggregate principal amount equal to the principal amount of the Global Security with like tenor and terms. Upon the exchange of a Global Security for definitive Securities, such Global Security shall be canceled by the Trustee. Unless and until it is exchanged in whole or in part for definitive Securities, as provided in this Section 2.15(b), a Global Security may not be transferred except as a whole by the Depository with respect to such Global Security to a nominee of such Depository, by a nominee of such Depository to such Depository or another nominee of such Depository or by the Depository or any such nominee to a successor Depository or a nominee of such a successor Depository.

(c) Any Global Security issued hereunder shall bear a legend in substantially the following form:

“This Security is a Global Security within the meaning of the Indenture hereinafter referred to, and is registered in the name of the Depository or a nominee of the 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, by a nominee of the Depository to the Depository or another nominee of the Depository or by the Depository or any such nominee to a successor Depository or a nominee of such a successor Depository.”

(d) The Depository, as a Holder, may appoint agents and otherwise authorize participants to give or take any request, demand, authorization, direction, notice, consent, waiver or other action which a Holder is entitled to give or take under the Indenture.

(e) Notwithstanding the other provisions of this Indenture, unless otherwise specified as contemplated by Section 2.2, payment of the principal of, and interest and premium, if any, on, any Global Security shall be made to the Depository or its nominee in its capacity as the Holder thereof.

(f) Except as provided in Section 2.15(e) above, the Company, the Trustee and any Agent shall treat a Person as the Holder of such principal amount of outstanding Securities of any Series represented by a Global Security as shall be specified in a written statement of the Depository (which may be in the form of a participants' list for such Series) with respect to such Global Security, for purposes of obtaining any consents, declarations, waivers or directions required to be given by the Holders pursuant to this Indenture, PROVIDED, that until the Trustee is so provided with a written statement, it may treat the Depository or any other Person in whose name a Global Security is registered as the owner of such Global Security for the purpose of receiving payment of the principal of, and any premium and (subject to

Section 2.13) any interest on, such Global Security and for all other purposes whatsoever, and none of the Company, the Trustee or any agent of the Company or the Trustee shall be affected by notice to the contrary.

2.16 PERSONS DEEMED OWNERS.

Prior to due presentment of a Security for registration of transfer, the Company, the Trustee, the Registrar and any agent of the Company, the Registrar or the Trustee may treat the Person in whose name such Security is registered as the owner of such Security for the purpose of receiving payment of the principal of, and any premium and (subject to Section 2.13) any interest on, such Security and for all other purposes whatsoever, and none of the Company, the Trustee, the Registrar or any agent of the Company, the Trustee or the Registrar shall be affected by notice to the contrary.

Article 3 REDEMPTION

3.1 NOTICES TO TRUSTEE.

The Company may, with respect to any Series of Securities, reserve the right to redeem and pay the Series of Securities, or may covenant to redeem and pay the Series of Securities or any part thereof, prior to the Stated Maturity thereof at such time and on such terms as provided for in such Securities or the related Board Resolution, supplemental indenture or Officers' Certificate. If a Series of Securities is redeemable and the Company elects to redeem all or part of such Series of Securities, it shall notify the Trustee of the Redemption Date and the principal amount of Securities to be redeemed at least 45 days (unless a shorter notice shall be satisfactory to the Trustee) before the Redemption Date. Any such notice may be canceled at any time prior to notice of such redemption being mailed to any Holder, and shall thereby be void and of no effect.

3.2 SELECTION BY TRUSTEE OF SECURITIES TO BE REDEEMED.

Unless otherwise indicated for a particular Series of Securities by a Board Resolution, a supplemental indenture or an Officers' Certificate, if fewer than all of the Securities of a Series are to be redeemed, the Trustee shall select the Securities of a Series to be redeemed pro rata, by lot or by any other method that the Trustee considers fair and appropriate (unless the Company specifically directs the Trustee otherwise) and, if such Securities are listed on any securities exchange, by a method that complies with the requirements of such exchange.

The Trustee shall make the selection from Securities of a Series outstanding and not previously called for redemption, and shall promptly notify the Company in writing of the Securities selected for redemption and, in the case of any Security selected for partial redemption, the principal amount thereof to be redeemed at least 35 but not more than 60 days before the Redemption Date. Securities of a Series in denominations of \$1,000 may be redeemed only in whole. The Trustee may select for redemption portions of the principal of Securities of a Series that have denominations larger than \$1,000. Securities of a Series and

portions of them it selects shall be in amounts of \$1,000 or, with respect to Securities of any Series issuable in other denominations pursuant to Section 2.2(10), the minimum principal denomination for each Series and integral multiples thereof. Provisions of this Indenture that apply to Securities called for redemption also apply to portions of Securities called for redemption.

3.3 NOTICE OF REDEMPTION.

Unless otherwise indicated for a particular Series by Board Resolution, a supplemental indenture hereto or an Officers' Certificate, at least 30 days, and no more than 60 days, before a Redemption Date, the Company shall mail, or cause to be mailed, a notice of redemption by first-class mail to each Holder of Securities to be redeemed at his or her last address as the same appears on the registry books maintained by the Registrar. The notice shall identify the Securities to be redeemed and shall state:

- (1) the Redemption Date;
- (2) the redemption price, and that such redemption price shall become due and payable on the Redemption Date;
- (3) if any Security of a Series is being redeemed in part, the portion of the principal amount of such Security of a Series to be redeemed and that, after the Redemption Date and upon surrender of such Security of a Series, a new Security or Securities in principal amount equal to the unredeemed portion will be issued;
- (4) the name and address of the Paying Agent;
- (5) that Securities of a Series called for redemption must be surrendered to the Paying Agent to collect the redemption price, and the place or places where each such Security is to be surrendered for such payment;
- (6) that, unless the Company defaults in making the redemption payment, interest on the Securities of a Series called for redemption ceases to accrue on the Redemption Date, and the only remaining right of the Holders of such Securities is to receive payment of the redemption price upon surrender to the Paying Agent of the Securities redeemed;
- (7) if fewer than all of the Securities of a Series are to be redeemed, the identification of the particular Securities of a Series (or portion thereof) to be redeemed, as well as the aggregate principal amount of Securities of a Series to be redeemed and the aggregate principal amount of Securities of a Series to be outstanding after such partial redemption.
- (8) the CUSIP number, if any, printed on the Securities being redeemed; and
- (9) that no representation is made as to the correctness or accuracy of the CUSIP number, if any, listed in such notice or printed on the Securities.

At the Company's request, the Trustee shall give the notice of redemption in the Company's name and at the Company's sole expense.

3.4 EFFECT OF NOTICE OF REDEMPTION.

Once the notice of redemption described in Section 3.3 is mailed, Securities of a Series called for redemption become due and payable on the Redemption Date and at the redemption price, plus interest, if any, accrued to the Redemption Date. Upon surrender to the Trustee or Paying Agent, such Securities of a Series shall be paid at the redemption price, plus accrued interest, if any, to the Redemption Date; PROVIDED, that if the Redemption Date is after a regular interest payment record date and on or prior to the next Interest Payment Date, the accrued interest shall be payable to the Holder of the redeemed

Securities registered on the relevant record date, as specified by the Company in the notice to the Trustee pursuant to Section 3.1.

3.5 DEPOSIT OF REDEMPTION PRICE.

On or prior to the Redemption Date (but no later than 11:00 A.M. Eastern Time on such date), the Company shall deposit with the Paying Agent money sufficient to pay the redemption price of and accrued interest, if any, on all Securities to be redeemed on that date other than Securities or portions thereof called for redemption on that date which have been delivered by the Company to the Trustee for cancellation.

On and after any Redemption Date, if money sufficient to pay the redemption price of, and accrued interest on, Securities called for redemption shall have been made available in accordance with the preceding paragraph and the Company and the Paying Agent are not prohibited from paying such moneys to Holders, the Securities called for redemption will cease to accrue interest and the only right of the Holders of such Securities will be to receive payment of the redemption price of and, subject to the proviso in Section 3.4, accrued and unpaid interest on such Securities to the Redemption Date. If any Security called for redemption shall not be so paid, interest will be paid, from the Redemption Date until such redemption payment is made, on the unpaid principal of the Security and any interest or premium, if any, not paid on such unpaid principal, in each case, at the rate and in the manner provided in the Securities.

3.6 SECURITIES REDEEMED IN PART.

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

Article 4 COVENANTS

4.1 PAYMENT OF SECURITIES.

The Company shall pay the principal of, and interest and premium, if any, on, each Series of Securities on the dates and in the manner provided in such Securities and this Indenture.

An installment of principal or interest shall be considered paid on the date it is due if the Trustee or Paying Agent holds on that date money designated for and sufficient to pay such installment and is not prohibited from paying such money to the Holders pursuant to the terms of this Indenture or otherwise.

The Company shall pay interest on overdue principal, and overdue interest, to the extent lawful, at the rate specified in the Series of Securities.

4.2 SEC REPORTS.

The Company will deliver to the Trustee within 15 days after the filing of the same with the SEC, copies of the quarterly and annual reports and of the information, documents and other reports, if any, which the Company is required to file with the SEC pursuant to Section 13 or 15(d) of the Exchange Act; PROVIDED, HOWEVER, that each such report or document will be deemed to be so delivered to the Trustee if the Company files such report or document with the SEC through the SEC's EDGAR database

no later than the time such report or document is required to be filed with the SEC pursuant to the Exchange Act. Notwithstanding that the Company may not be subject to the reporting requirements of Section 13 or 15(d) of the Exchange Act, the Company will file with the SEC, to the extent permitted, and provide the Trustee with, such quarterly and annual reports and such information, documents and other reports specified in Sections 13 and 15(d) of the Exchange Act. The Company will also comply with the other provisions of TIA Section 314(a).

4.3 WAIVER OF STAY, EXTENSION OR USURY LAWS.

The Company covenants (to the extent that it may lawfully do so) that it will not at any time insist upon, or plead (as a defense or otherwise) or in any manner whatsoever claim or take the benefit or advantage of, any stay, extension, usury or other law which would prohibit or forgive the Company from paying all or any portion of the principal of, and/or interest and premium, if any, on, the Securities as contemplated herein, wherever enacted, now or at any time hereafter in force, or which may affect the covenants or the performance of this Indenture; and the Company hereby expressly waives (to the extent that they may lawfully do so) 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.

4.4 COMPLIANCE CERTIFICATE.

(a) The Company shall deliver to the Trustee, within 120 days after the end of each fiscal year of the Company, an Officers' Certificate which complies with TIA Section 314(a)(4) stating that a review of the activities of the Company and its Subsidiaries during such fiscal year has been made under the supervision of the signing Officers with a view to determining whether the Company has kept, observed, performed and fulfilled its obligations under this Indenture, and further stating, as to each such Officer signing such certificate, that to the best of his or her knowledge the Company has kept, observed, performed and fulfilled each and every covenant contained in this Indenture and that there is no default in the performance or observance of any of the terms, provisions and conditions hereof (or, if a Default or Event of Default shall have occurred, describing all such Defaults or Events of Default of which he or she may have knowledge and what action the Company is taking or proposes to take with respect thereto) and that to the best of his or her knowledge no event has occurred and remains in existence by reason of which payments on account of the principal of, or interest or premium, if any, on, the Securities is prohibited, or if such event has occurred, a description of the event and what action the Company is taking or proposes to take with respect thereto.

(b) (i) If any Default or Event of Default has occurred and is continuing or (ii) if any Holder seeks to exercise any remedy hereunder with respect to a claimed Default under this Indenture or the Securities, within five Business Days after the Company becoming aware of such occurrence the Company shall deliver to the Trustee an Officers' Certificate specifying such event, notice or other action and what action the Company is taking or proposes to take with respect thereto.

4.5 CORPORATE EXISTENCE.

Subject to Article 5, the Company shall do or cause to be done all things necessary to preserve and keep in full force and effect its corporate existence, in accordance with the organizational documents (as the same may be amended from time to time) of the Company and the rights (charter and statutory), licenses and franchises of the Company; PROVIDED, HOWEVER, that the Company shall not be required to preserve any such right, license or franchise, or its corporate existence, if the Board of

Directors shall determine that the preservation thereof is no longer desirable in the conduct of the business of the Company and that the loss thereof is not adverse in any material respect to the Holders.

Article 5

SUCCESSOR CORPORATION

5.1 LIMITATION ON CONSOLIDATION, MERGER AND SALE OF ASSETS.

(a) The Company will not, in any transaction or series of transactions, merge or consolidate with or into, or sell, assign, convey, transfer, lease or otherwise dispose of all or substantially all of its properties and assets (as an entirety or substantially as an entirety in one transaction or a series of related transactions), to any Person or Persons, unless at the time of and after giving effect thereto (i) either (A) if the transaction or series of transactions is a merger or consolidation, the Company shall be the surviving Person of such merger or consolidation, or (B) the Person formed by such consolidation or into which the Company is merged or to which the properties and assets of the Company are transferred (any such surviving Person or transferee Person being the “Surviving Entity”) shall be a corporation organized and existing under the laws of the United States of America, any state thereof or the District of Columbia, or a corporation or comparable legal entity organized under the laws of a foreign jurisdiction and shall expressly assume by a supplemental indenture executed and delivered to the Trustee, in form reasonably satisfactory to the Trustee, all of the obligations of the Company (including, without limitation, the obligation to pay the principal of, and premium and interest, if any, on, the Securities and the performance of the other covenants) under the Securities of each Series and this Indenture, and in each case, this Indenture shall remain in full force and effect; and (ii) immediately before and immediately after giving effect to such transaction or series of transactions on a pro forma basis (including, without limitation, any Indebtedness incurred or anticipated to be incurred in connection with or in respect of such transaction or series of transactions), no Default or Event of Default shall have occurred and be continuing.

(b) In connection with any consolidation, merger or transfer of assets contemplated by this Section 5.1, the Company shall deliver, or cause to be delivered, to the Trustee, in form and substance reasonably satisfactory to the Trustee, an Officers’ Certificate and an Opinion of Counsel, each stating that such consolidation, merger or transfer, and the supplemental indenture in respect thereto, comply with this Section 5.1, and that all conditions precedent herein provided for relating to such transaction or transactions have been complied with.

5.2 SUCCESSOR PERSON SUBSTITUTED.

Upon any consolidation, merger or transfer of all or substantially all of the assets of the Company in accordance with Section 5.1 above, the successor corporation formed by such consolidation, or into which the Company is merged or to which such transfer is made, shall succeed to, and be substituted for, and may exercise every right and power of, the Company under this Indenture with the same effect as if such successor corporation had been named as the Company herein, and thereafter (except with respect to any such transfer which is a lease) the predecessor corporation shall be relieved of all obligations and covenants under this Indenture and the Securities.

Article 6

DEFAULTS AND REMEDIES

6.1 EVENTS OF DEFAULT.

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

- (1) there is a default in the payment of any principal of, or premium, if any, on, the Securities when the same becomes due and payable at Maturity, upon acceleration, redemption or otherwise;
- (2) there is a default in the payment of any interest on any Security of a Series when the same becomes due and payable, and the Default continues for a period of 30 days;
- (3) the Company defaults in the observance or performance of any other covenant in the Securities of a Series or in this Indenture for 90 days after written notice from the Trustee or the Holders of not less than 25% in the aggregate principal amount of the Securities of such Series then outstanding, which notice must specify the Default, demand that it be remedied and state that the notice is a “Notice of Default”;
- (4) 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,
 - (D) makes a general assignment for the benefit of its creditors, or
 - (E) generally is not paying its debts as they become due;
- (5) 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 the property of the Company or any Significant Subsidiary; or
 - (C) orders the liquidation of the Company or any Significant Subsidiary, and the order or decree remains unstayed and in effect for 90 consecutive days; or
- (6) any other Event of Default provided with respect to Securities of that Series, which is specified in a Board Resolution, a supplemental indenture hereto or an Officers’ Certificate, in accordance with Section 2.2(19).

The term “Bankruptcy Law” means Title 11, U.S. Code, or any similar federal or state law for the relief of debtors. The term “Custodian” means any receiver, trustee, assignee, liquidator or similar official under any Bankruptcy Law.

The Trustee may withhold notice of any Default (except in the payment of the principal of, or interest or premium, if any, on, the Securities) to the Holders of the Securities of any Series in accordance with Section 7.5. When a Default is cured, it ceases to exist.

6.2 ACCELERATION.

If an Event of Default with respect to Securities of any Series at the time outstanding (other than an Event of Default arising under Section 6.1(4) or (5)) occurs and is continuing, the Trustee by written notice to the Company, or the Holders of not less than 25% in aggregate principal amount of the Securities of that Series then outstanding by written notice to the Company and the Trustee, may declare that the entire principal amount of all the Securities of that Series then outstanding plus accrued and unpaid interest to the date of acceleration are immediately due and payable, in which case such amounts shall become immediately due and payable; PROVIDED, HOWEVER, that after such acceleration but before a judgment or decree based on such acceleration is obtained by the Trustee, the Holders of a majority in aggregate principal amount of the outstanding Securities of that Series may rescind and annul such acceleration and its consequences if (i) all existing Events of Default, other than the nonpayment of accelerated principal, interest or premium, if any, that has become due solely because of the acceleration, have been cured or waived, (ii) to the extent the payment of such interest is lawful, interest on overdue installments of interest and overdue principal, which has become due otherwise than by such declaration of acceleration, has been paid and (iii) the rescission would not conflict with any judgment or decree. No such rescission shall affect any subsequent Default or impair any right consequent thereto. In case an Event of Default specified in Section 6.1(4) or (5) with respect to the Company occurs, such principal, premium, if any, and interest amount with respect to all of the Securities of that Series shall be due and payable immediately without any declaration or other act on the part of the Trustee or the Holders of the Securities of that Series.

6.3 REMEDIES.

If an Event of Default with respect to Securities of any Series at the time outstanding occurs and is continuing, the Trustee may pursue any available remedy by proceeding at law or in equity to collect the payment of the principal of, or interest and premium, if any, on, the Securities of that Series, or to enforce the performance of any provision of the Securities of that Series or this Indenture.

The Trustee may maintain a proceeding even if it does not possess any of the Securities of that Series or does not produce any of them in the proceeding. A delay or omission by the Trustee or any Securityholder in exercising any right or remedy accruing upon an Event of Default shall not impair the right or remedy or constitute a waiver of or acquiescence in the Event of Default. No remedy is exclusive of any other remedy. All available remedies are cumulative to the extent permitted by law.

6.4 WAIVER OF PAST DEFAULTS AND EVENTS OF DEFAULT.

Subject to Sections 6.2, 6.7 and 8.2, the Holders of a majority in principal amount of the Securities of any Series then outstanding have the right to waive any existing Default or Event of Default with respect to such Series or compliance with any provision of this Indenture (with respect to such Series) or the Securities of such Series. Upon any such waiver, such Default with respect to such Series shall cease to exist, and any Event of Default with respect to such Series 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 thereto. This Section 6.4 shall be in lieu of TIA Section 316(a)(1)(B), and TIA Section 316(a)(1)(B) is hereby expressly excluded from this Indenture and Section as permitted by the TIA.

6.5 CONTROL BY MAJORITY.

Subject to Sections 6.2, 6.7 and 8.2, the Holders of a majority in principal amount of the Securities of any Series then outstanding may direct the time, method and place of conducting any proceeding for any remedy available to the Trustee or exercising any trust or power conferred on the Trustee by this Indenture with respect to such Series. The Trustee, however, may refuse to follow any direction that conflicts with law or this Indenture, or that the Trustee determines may be unduly prejudicial to the rights of another Securityholder, or that may involve the Trustee in personal liability; PROVIDED, that the Trustee may take any other action deemed proper by the Trustee which is not inconsistent with such direction. This Section 6.5 shall be in lieu of TIA Section 316(a)(1)(A), and TIA Section 316(a)(1)(A) is hereby expressly excluded from this Indenture and Section as permitted by the TIA.

6.6 LIMITATION ON SUITS.

Subject to Section 6.7, a Securityholder may not institute any proceeding or pursue any remedy with respect to this Indenture or the Securities of a Series unless:

- (1) the Holder gives to the Trustee written notice of a continuing Event of Default with respect to the Securities of that Series;
- (2) the Holders of at least 25% in aggregate principal amount of the Securities of such Series then outstanding make a written request to the Trustee to pursue the remedy;
- (3) such Holder or Holders offer to the Trustee indemnity reasonably satisfactory to the Trustee against any loss, liability or expense to be incurred in compliance with such request;
- (4) the Trustee does not comply with the request within 60 days after receipt of the request and the offer of indemnity; 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 aggregate principal amount of the Securities of such Series then outstanding.

A Securityholder may not use this Indenture to prejudice the rights of another Securityholder, or to obtain a preference or priority over another Securityholder.

6.7 RIGHTS OF HOLDERS TO RECEIVE PAYMENT.

Notwithstanding any other provision of this Indenture, the right of any Holder of a Security of a Series to receive payment of the principal of, and interest and premium, if any, on, the Security of such Series on or after the respective due dates expressed in the Security of such Series, or to bring suit for the enforcement of any such payment on or after such respective dates, is absolute and unconditional, and shall not be impaired or affected without the consent of the Holder.

6.8 COLLECTION SUIT BY TRUSTEE.

If an Event of Default in payment of principal, interest or premium, if any, specified in Section 6.1(1) or (2) with respect to Securities of any Series at the time outstanding occurs and is continuing, the Trustee may recover judgment in its own name and as trustee of an express trust against the Company (or any other obligor on the Securities of that Series) for the whole amount of unpaid principal and premium, if any, and accrued interest remaining unpaid, together with interest on overdue principal and premium, if any, and, to the extent that payment of such interest is lawful, interest on overdue installments of interest, in each case at the rate then borne by the Securities of that Series, and such further amounts 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, as set forth in Section 7.7.

6.9 TRUSTEE MAY FILE PROOFS OF CLAIM.

The Trustee may file such proofs of claim and other papers or documents, and take other actions (including sitting on a committee of creditors), 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 the Securityholders allowed in any judicial proceedings relative to the Company (or any other obligor on the Securities), any of their respective creditors or any of their respective property, and the Trustee shall be entitled and empowered to collect and receive any monies or other property payable or deliverable on any such claims, and to distribute the same after deduction of its charges and expenses to the extent that any such charges and expenses are not paid out of the estate in any such proceedings, and any custodian in any such judicial proceeding is hereby authorized by each Securityholder 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 Securityholders, to pay to the Trustee any amount due to it for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel, and any other amounts due the Trustee under Section 7.7.

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

6.10 PRIORITIES.

If the Trustee collects any money pursuant to this Article 6, it shall pay out the money in the following order:

FIRST: to the Trustee for amounts due under Section 7.7;

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

THIRD: to the Company.

The Trustee may fix a record date and payment date for any payment to Securityholders pursuant to this Section 6.10. At least 15 days before such record date, the Trustee shall mail to each Securityholder a notice that states the record date, the payment date and amount to be paid.

6.11 UNDERTAKING FOR COSTS.

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, a court in its discretion may require the filing by any party litigant in the suit of an undertaking to pay the costs of the suit, and the court in its discretion may assess reasonable costs, including reasonable attorneys' fees, against any party litigant in the suit, having due regard to the merits and good faith of the claims or defenses made by the party litigant. This Section 6.11 does not apply to a suit by the Trustee, a suit by a Holder pursuant to Section 6.7 or a suit by Holders of more than 10% in principal amount of the Securities of a Series then outstanding.

Article 7 TRUSTEE

7.1 DUTIES OF TRUSTEE.

(a) If an Event of Default has occurred and is continuing, the Trustee shall 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 Person would exercise or use under the same circumstances in the conduct of his own affairs.

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

(1) The Trustee need perform only those duties that are specifically set forth in this Indenture, and no covenants or obligations shall be implied in this Indenture against the Trustee.

(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.

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

(1) This paragraph does not limit the effect of paragraph (b) of this Section 7.1.

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

(3) The Trustee shall not be liable with respect to any action it takes or omits to take in good faith in accordance with a direction received by it pursuant to Sections 6.2 and 6.5.

(d) 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 rights or powers if it shall have reasonable grounds for believing that repayment of such funds or adequate indemnity satisfactory to it against such risk or liability is not reasonably assured to it.

(e) Whether or not therein expressly so provided, paragraphs (a), (b), (c) and (d) of this Section 7.1 shall govern every provision of this Indenture that in any way relates to the Trustee.

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

(g) The Paying Agent, the Registrar and any authenticating agent shall be entitled to the protections, immunities and standard of care set forth in paragraphs (a), (b), (c), (d) and (f) of this Section 7.1 and in Section 7.2 with respect to the Trustee.

7.2 RIGHTS OF TRUSTEE.

(a) Subject to Section 7.1:

(1) The Trustee may rely on, and shall be protected in acting or refraining from acting upon, any document reasonably believed by it to be genuine and to have been signed or presented by the proper Person. The Trustee need not investigate any fact or matter stated in the document.

(2) Before the Trustee acts or refrains from acting, it may require an Officers' Certificate or an Opinion of Counsel, or both, which shall conform to the provisions of Section 10.5. The Trustee shall be protected and shall not be liable for any action it takes or omits to take in good faith in reliance on such certificate or opinion.

(3) The Trustee may act through agents and attorneys, and shall not be responsible for the misconduct or negligence of any agent appointed by it with due care.

(4) The Trustee shall not be liable for any action it takes or omits to take in good faith which it reasonably believes to be authorized or within its rights or powers.

(5) The Trustee may consult with counsel reasonably acceptable to the Trustee, which may be counsel to the Company, and the advice or opinion of such counsel as to matters of law shall be full and complete authorization and protection from liability in respect of any action taken, omitted or suffered by it hereunder in good faith and in accordance with the advice or opinion of such counsel.

(6) The Trustee shall be under no obligation to exercise any of the rights or powers vested in it by this Indenture at the request, order or direction of any of the Holders pursuant to the provisions of this Indenture, unless such Holders shall have offered to the Trustee reasonable security or indemnity against the costs, expenses and liabilities which may be incurred therein or thereby.

(7) The Trustee shall not be deemed to have knowledge of any fact or matter (including, without limitation, a Default or Event of Default) unless such fact or matter is known to a Responsible Officer of the Trustee.

(8) Unless otherwise expressly provided herein or in the Securities of a Series or the related Board Resolution, supplemental indenture or Officers' Certificate, the Trustee shall not have any responsibility with respect to reports, notices, certificates or other documents filed with it hereunder, except to make them available for inspection, at reasonable times, by Securityholders, it being understood that 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 (except as set forth in Section 4.4).

7.3 INDIVIDUAL RIGHTS OF TRUSTEE.

The Trustee in its individual or any other capacity may become the owner or pledgee of Securities, and may make loans to, accept deposits from, perform services for or otherwise deal with the Company, or any Affiliate thereof, with the same rights it would have if it were not Trustee. Any Agent may do the same with like rights. The Trustee, however, shall be subject to Sections 7.10 and 7.11.

7.4 TRUSTEE'S DISCLAIMER.

The Trustee makes no representation as to the validity or adequacy of this Indenture or the Securities (except that the Trustee represents that it is duly authorized to execute and deliver this Indenture and authenticate the Securities and perform its obligations hereunder), and the Trustee shall not be accountable for the Company's use of the proceeds from the sale of Securities or any money paid to the Company pursuant to the terms of this Indenture, and the Trustee shall not be responsible for any statement in the Securities other than its certificates of authentication.

7.5 NOTICE OF DEFAULT.

If a Default or an Event of Default occurs and is continuing with respect to the Securities of any Series, and if it is known to the Trustee, the Trustee shall mail to each Securityholder of the Securities of that Series notice of the Default or the Event of Default, as the case may be, within 90 days after it occurs or, if later, after a Responsible Officer of the Trustee has knowledge of such Default or Event of Default (except if such Default or Event of Default has been validly cured or waived before the giving of such notice). Except in the case of a Default or an Event of Default in payment of the principal of, or interest or premium, if any, on, any Security of any Series, the Trustee may withhold the notice if and so long as the Board of Directors of the Trustee, the executive committee or any trust committee of such board and/or its Responsible Officers in good faith determine(s) that withholding the notice is in the interests of the Securityholders of that Series.

7.6 REPORTS BY TRUSTEE TO HOLDERS.

If and to the extent required by the TIA, within 60 days after April 1 of each year, commencing the April 1 following the date of this Indenture, the Trustee shall mail to each Securityholder a brief report dated as of such April 1 that complies with TIA Section 313(a). The Trustee also shall comply with TIA Sections 313(b) and 313(c).

A copy of each report at the time of its mailing to Securityholders shall be filed with the SEC and any stock exchange on which the Securities of that Series are listed. The Company shall promptly notify the Trustee when the Securities of any Series are listed on any stock exchange or any delisting thereof, and the Trustee shall comply with TIA Section 313(d).

7.7 COMPENSATION AND INDEMNITY.

The Company shall pay to the Trustee from time to time reasonable compensation for its services. The Trustee's compensation shall not be limited by any provision of law on compensation of a trustee of an express trust. The Company shall reimburse the Trustee within 45 days after receipt of request for all reasonable out-of-pocket disbursements and expenses incurred or made by it in connection with its duties

under this Indenture, including the reasonable compensation, disbursements and expenses of the Trustee's agents and counsel.

The Company shall indemnify the Trustee for, and hold it harmless against, any and all loss or liability incurred by it in connection with the acceptance or performance of its duties under this Indenture including the reasonable 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. The Trustee shall notify the Company promptly of any claim asserted against the Trustee for which it may seek indemnity.

The failure by the Trustee to so notify the Company shall not however relieve the Company of its obligations. Notwithstanding the foregoing, the Company need not reimburse the Trustee for any expense or indemnify it against any loss or liability incurred by the Trustee through its negligence or bad faith. To secure the payment obligations of the Company in this Section 7.7, the Trustee shall have a lien prior to the Securities of any Series on all money or property held or collected by the Trustee except such money or property held in trust to pay the principal of, interest and premium, if any, on particular Securities of that Series.

When the Trustee incurs expenses or renders services after an Event of Default specified in Section 6.1(4) or (5) occurs, the expenses and the compensation for the services are intended to constitute expenses of administration under any Bankruptcy Law.

For purposes of this Section 7.7, the term "Trustee" shall include any trustee appointed pursuant to this Article 7.

7.8 REPLACEMENT OF TRUSTEE.

The Trustee may resign with respect to the Securities of one or more Series by so notifying the Company in writing at least 90 days in advance of such resignation.

The Holders of a majority in principal amount of the outstanding Securities of any Series may remove the Trustee with respect to that Series by notifying the removed Trustee in writing and may appoint a successor Trustee with respect to that Series with the consent of the Company, which consent shall not be unreasonably withheld. The Company may remove the Trustee with respect to that Series at its election if:

(1) the Trustee fails to comply with, or ceases to be eligible under, Section 7.10;

(2) the Trustee is adjudged a bankrupt or an insolvent, or an order for relief is entered with respect to the Trustee, under any Bankruptcy Law;

(3) a Custodian or other public officer takes charge of the Trustee or its property; or

(4) the Trustee otherwise becomes incapable of acting.

(5) If the Trustee resigns or is removed, or if a vacancy exists in the office of Trustee, with respect to any Series of Securities for any reason, the Company shall promptly appoint, by Board Resolution, a successor Trustee.

If a successor Trustee with respect to the Securities of one or more Series does not take office within 60 days after the retiring Trustee resigns or is removed, the retiring Trustee, the Company or the

Holders of at least 10% in principal amount of the outstanding Securities of the applicable Series may petition any court of competent jurisdiction for the appointment of a successor Trustee.

If the Trustee with respect to the Securities of one or more Series fails to comply with Section 7.10, any Securityholder of the applicable Series may petition any court of competent jurisdiction for the removal of the Trustee and the appointment of a successor Trustee.

A successor Trustee shall deliver a written acceptance of its appointment to the retiring Trustee and to the Company. Immediately following such delivery, (i) the retiring Trustee with respect to one or more Series shall, subject to its rights under Section 7.7, transfer all property held by it as Trustee with respect to such Series to the successor Trustee, (ii) the resignation or removal of the retiring Trustee shall become effective and (iii) the successor Trustee with respect to such Series shall have all the rights, powers and duties of the Trustee under this Indenture. A successor Trustee with respect to the Securities of one or more Series shall mail notice of its succession to each Securityholder of such Series.

7.9 SUCCESSOR TRUSTEE BY CONSOLIDATION, MERGER OR CONVERSION.

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

7.10 ELIGIBILITY; DISQUALIFICATION.

This Indenture shall always have a Trustee who satisfies the requirements of TIA Sections 310(a)(1), (2) and (5) in every respect. The Trustee (or in the case of a Trustee that is a Person included in a bank holding company system, the related bank holding company) shall have a combined capital and surplus of at least \$100,000,000 as set forth in its most recent published annual report of condition. The Trustee shall comply with TIA Section 310(b), including the provision in Section 310(b)(1). In addition, if the Trustee is a Person included in a bank holding company system, the Trustee, independently of such bank holding company, shall meet the capital requirements of TIA Section 310(a)(2). If at any time the Trustee shall cease to be eligible in accordance with the provisions of this Section 7.10, it shall resign immediately in the manner and with the effect specified in this Article 7.

7.11 PREFERENTIAL COLLECTION OF CLAIMS AGAINST COMPANY.

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

7.12 PAYING AGENTS.

The Company shall cause each Paying Agent other than the Trustee to execute and deliver to it and the Trustee an instrument in which such agent shall agree with the Trustee, subject to the provisions of this Section 7.12:

(1) that it will hold all sums held by it as agent for the payment of the principal of, or interest or premium, if any, on, the Securities (whether such sums have been paid to it by the Company or by any obligor on the Securities) in trust for the benefit of Holders of the Securities or the Trustee;

(2) that it will at any time during the continuance of any Event of Default, upon written request from the Trustee, deliver to the Trustee all sums so held in trust by it together with a full accounting thereof; and

(3) that it will give the Trustee written notice within three Business Days after any failure of the Company (or by any obligor on the Securities) in the payment of any installment of the principal of, or interest or premium, if any, on, the Securities when the same shall be due and payable.

Article 8

AMENDMENTS, SUPPLEMENTS AND WAIVERS

8.1 WITHOUT CONSENT OF HOLDERS.

The Company, when authorized by a Board Resolution, and the Trustee may amend, restate or supplement this Indenture or the Securities of one or more Series without notice to or consent of any Securityholder:

- (1) to comply with Section 5.1;
- (2) to provide for certificated Securities in addition to uncertificated Securities;
- (3) to comply with any requirements of the SEC under the TIA;
- (4) to cure any ambiguity, defect or inconsistency, or to make any other change herein or in the Securities that does not materially and adversely affect the rights of any Securityholder;
- (5) to provide for the issuance of, and establish the form and terms and conditions of, Securities of any Series as permitted by this Indenture; or
- (6) 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.

The Trustee is hereby authorized to join with the Company in the execution of any supplemental indenture authorized or permitted by the terms of this Indenture, and to make any further appropriate agreements and stipulations which may be therein contained, but the Trustee shall not be obligated to enter into any such supplemental indenture which adversely affects its own rights, duties or immunities under this Indenture.

8.2 WITH CONSENT OF HOLDERS.

(a) The Company, when authorized by a Board Resolution, and the Trustee may amend, restate or supplement this Indenture or the Securities of one or more Series with the written consent of the Holders of not less than a majority in aggregate principal amount of the outstanding Securities of such Series affected by such amendment, restatement or supplement without notice to any Securityholder. The Holders of not less than a majority in aggregate principal amount of the outstanding Securities of each such Series affected by such amendment, restatement or supplement may waive compliance by the Company in a particular instance with any provision of this Indenture or the Securities of such Series

without notice to any Securityholder. Subject to Section 8.4, without the consent of each Securityholder affected, however, an amendment, supplement or waiver may not:

- (1) reduce the amount of Securities whose Holders must consent to an amendment, supplement or waiver to this Indenture or the Securities;
- (2) reduce the rate of, or change the time for payment of, interest on any Security;
- (3) reduce the principal, or change the Stated Maturity, of any Security, or reduce the amount of, or postpone the date fixed for, the payment of any sinking fund or analogous obligation;
- (4) make any Security payable in a currency other than that stated in the Security;
- (5) change the amount or time of any payment required by the Securities, or reduce the premium payable upon any redemption of the Securities, or change the time before which no such redemption may be made;
- (6) waive a Default or Event of Default in the payment of the principal of, or interest or premium, if any, on, any Security (except a rescission of acceleration of the Securities of any Series by the Holders of at least a majority in principal amount of the outstanding Securities of such Series and a waiver of the payment default that resulted from such acceleration);
- (7) waive a redemption payment with respect to any Security, or change any of the provisions with respect to the redemption of any Securities;
- (8) make any changes in Section 6.6 or this Section 8.2, except to increase any percentage of Securities the Holders of which must consent to any matter; or
- (9) take any other action otherwise prohibited by this Indenture to be taken without the consent of each Holder affected thereby.

(b) Upon the request of the Company, accompanied by a Board Resolution authorizing the execution of any such supplemental indenture, and upon the receipt by the Trustee of evidence reasonably satisfactory to the Trustee of the consent of the Securityholders as aforesaid and of the documents described in Section 8.6, the Trustee shall join with the Company in the execution of such supplemental indenture, unless such supplemental indenture affects the Trustee's own rights, duties or immunities under this Indenture, in which case the Trustee may in its discretion, but shall not be obligated to, enter into such supplemental indenture.

(c) It shall not be necessary for the consent of the Holders under this section to approve the particular form of any proposed amendment, restatement, supplement or waiver, but it shall be sufficient if such consent approves the substance thereof.

After an amendment, restatement or supplement under this Section becomes effective, the Company shall mail to Securityholders a notice briefly describing the amendment, restatement or supplement. Any failure of the Company to mail any such notice, or any defect therein, shall not, however, in any way impair or affect the validity of any supplemental indenture.

8.3 COMPLIANCE WITH TRUST INDENTURE ACT.

Every amendment to, or supplement of, this Indenture or the Securities shall comply with the TIA as then in effect.

8.4 REVOCATION AND EFFECT OF CONSENTS.

Until an amendment, restatement, supplement, waiver or other action becomes effective, a consent to it by a Holder of a Security is a continuing consent conclusive and binding upon such Holder and every subsequent Holder of the same Security or portion thereof, and of any Security issued upon the transfer thereof or in exchange therefor or in place thereof, even if notation of the consent is not made on any such Security. Any such Holder or subsequent Holder, however, may revoke the consent as to his Security or portion of a Security, if the Trustee receives the notice of revocation before the date the amendment, restatement, supplement, waiver or other action becomes effective.

The Company may, but shall not be obligated to, fix a record date for the purpose of determining the Holders entitled to consent to any amendment, restatement, supplement or waiver, which record date shall be at least 30 days prior to the first solicitation of such consent. If a record date is fixed, then, notwithstanding the preceding paragraph, those Persons who were Holders at such record date (or their duly designated proxies), and only such Persons, shall be entitled to consent to such amendment, restatement, supplement or waiver, or to revoke any consent previously given, whether or not such Persons continue to be Holders after such record date.

After an amendment, restatement, supplement, waiver or other action becomes effective, it shall bind every Securityholder, unless it makes a change described in any of clauses (1) through (9) of Section 8.2. In that case, the amendment, restatement, supplement, waiver or other action shall bind each Holder of a Security who has consented to it and every subsequent Holder of a Security or portion of a Security that evidences the same debt as the consenting Holder's Security; PROVIDED, that any such waiver shall not impair or affect the right of any Holder to receive payment of the principal of, and interest and premium, if any, on, a Security, on or after the respective due dates expressed in such Security, or to bring suit for the enforcement of any such payment on or after such respective dates without the consent of such Holder.

8.5 NOTATION ON OR EXCHANGE OF SECURITIES.

If an amendment, restatement, supplement or waiver changes the terms of a Security of any Series, the Trustee may request the Holder of such Security to deliver it to the Trustee. In such case, the Trustee shall place an appropriate notation on such Security about the changed terms and return it to the Holder. Alternatively, the Company, in exchange for such Security, may issue, and the Trustee shall authenticate, a new security that reflects the changed terms. Failure to make the appropriate notation or issue a new Security shall not affect the validity and effect of such amendment, restatement, supplement or waiver.

8.6 TRUSTEE TO SIGN AMENDMENTS, ETC.

The Trustee shall sign any amendment, restatement, supplement or waiver authorized pursuant to this Article 8 if the amendment, restatement, supplement or waiver does not adversely affect the rights, duties, liabilities or immunities of the Trustee. If it does, the Trustee may, but need not, sign it. In signing or refusing to sign such amendment, restatement, supplement or waiver the Trustee shall be entitled to receive and, subject to Section 7.1, shall be fully protected in relying upon an Officers' Certificate and an

Opinion of Counsel stating that such amendment, restatement, supplement or waiver is authorized or permitted by this Indenture. The Company may not sign an amendment, restatement or supplement until the Board of Directors of the Company approves it.

Article 9

DISCHARGE OF INDENTURE; DEFEASANCE

9.1 DISCHARGE OF INDENTURE.

The Company may terminate its obligations under the Securities of any Series and this Indenture with respect to such Series, except the obligations referred to in the last paragraph of this Section 9.1, if there shall have been canceled by the Trustee, or delivered to the Trustee for cancellation, all Securities of such Series theretofore authenticated and delivered (other than any Securities of such Series that are asserted to have been destroyed, lost or stolen and that shall have been replaced as provided in Section 2.8) and the Company has paid all sums payable by it hereunder or deposited all required sums with the Trustee.

After such delivery the Trustee upon request shall acknowledge in a writing prepared by or on behalf of the Company the discharge of the Company's obligations under the Securities of such Series and this Indenture, except for those surviving obligations specified below.

Notwithstanding the satisfaction and discharge of this Indenture, the obligations of the Company in Sections 7.7, 9.5 and 9.6 shall survive.

9.2 LEGAL DEFEASANCE.

The Company may at its option, by Board Resolution, be discharged from its obligations with respect to the Securities of any Series on the date upon which the conditions set forth in Section 9.4 below are satisfied (hereinafter, "Legal Defeasance"). For this purpose, such Legal Defeasance means that the Company shall be deemed to have paid and discharged the entire Indebtedness represented by the Securities of such Series and to have satisfied all its other obligations under such Securities and this Indenture insofar as such Securities are concerned (and the Trustee, at the expense of the Company, shall, subject to Section 9.6, execute proper instruments acknowledging the same, as are delivered to it by the Company), except for the following, which shall survive until otherwise terminated or discharged hereunder: (A) the rights of Holders of outstanding Securities of such Series to receive solely from the trust funds described in Section 9.4 and as more fully set forth in such section, payments in respect of the principal of, and interest and premium, if any, on, the Securities of such Series when such payments are due, (B) the Company's obligations with respect to the Securities of such Series under Sections 2.4, 2.5, 2.6, 2.7, 2.8 and 2.9, (C) the rights, powers, trusts, duties and immunities of the Trustee hereunder (including claims of, or payments to, the Trustee under or pursuant to Section 7.7) and (D) this Article 9. Subject to compliance with this Article 9, the Company may exercise its option under this Section 9.2 with respect to the Securities of any Series notwithstanding the prior exercise of its option under Section 9.3 below with respect to the Securities of such Series.

9.3 COVENANT DEFEASANCE.

At the option of the Company, pursuant to a Board Resolution, the Company shall be released from its obligations with respect to the outstanding Securities of any Series under Sections 4.2 through 4.5, inclusive, and Section 5.1, with respect to the outstanding Securities of such Series, on and after the date the conditions set forth in Section 9.4 are satisfied (hereinafter, "Covenant Defeasance"). For this

purpose, such Covenant Defeasance means that 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 specified section or portion thereof, whether directly or indirectly by reason of any reference elsewhere herein to any such specified Section or portion thereof or by reason of any reference in any such specified section or portion thereof to any other provision herein or in any other document, but the remainder of this Indenture and the Securities of any Series shall be unaffected thereby.

9.4 CONDITIONS TO LEGAL DEFEASANCE OR COVENANT DEFEASANCE.

The following shall be the conditions to application of Section 9.2 or Section 9.3 to the outstanding Securities of a Series:

(1) the Company shall irrevocably have deposited or caused to be deposited with the Trustee (or another trustee satisfying the requirements of Section 7.10 who shall agree to comply with the provisions of this Article 9 applicable to it) as 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 the Securities, (A) money in an amount, or (B) U.S. Government Obligations or Foreign Government Obligations 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, money in an amount, or (C) a combination thereof, sufficient, 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, the principal of, and accrued interest and premium, if any, on, the outstanding Securities of such Series at the Stated Maturity of such principal, interest or premium, if any, or on dates for payment and redemption of such principal, interest and premium, if any, selected in accordance with the terms of this Indenture and of the Securities of such Series;

(2) no Event of Default or Default with respect to the Securities of such Series shall have occurred and be continuing on the date of such deposit, or shall have occurred and be continuing at any time during the period ending on the 91st day after the date of such deposit or, if longer, ending on the day following the expiration of the longest preference period under any Bankruptcy Law applicable to the Company in respect of such deposit as specified in the Opinion of Counsel identified in paragraph (8) below (it being understood that this condition shall not be deemed satisfied until the expiration of such period);

(3) such Legal Defeasance or Covenant Defeasance shall not cause the Trustee to have a conflicting interest for purposes of the TIA with respect to any securities of the Company;

(4) such Legal Defeasance or Covenant Defeasance shall not result in a breach or violation of, or constitute default under, any other agreement or instrument to which the Company is a party or by which it is bound;

(5) the Company shall have delivered to the Trustee an Opinion of Counsel stating that, as a result of such Legal Defeasance or Covenant Defeasance, neither the trust nor the Trustee will be required to register as an investment company under the Investment Company Act of 1940, as amended;

(6) in the case of an election under Section 9.2, 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 to the effect that or (ii) there has been a change in any applicable Federal income tax law with the effect that, and such opinion shall confirm that, the Holders of

the outstanding Securities of such Series or Persons in their positions will not recognize income, gain or loss for Federal income tax purposes solely as a result of such Legal Defeasance and will be subject to Federal income tax on the same amounts, in the same manner, including as a result of prepayment, and at the same times as would have been the case if such Legal Defeasance had not occurred;

(7) in the case of an election under Section 9.3, the Company shall have delivered to the Trustee an Opinion of Counsel to the effect that the Holders of the outstanding Securities of such Series 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;

(8) the Company shall have delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that all conditions precedent provided for in this Article 9 relating to either the Legal Defeasance under Section 9.2 or the Covenant Defeasance under Section 9.3 (as the case may be) have been complied with;

(9) the Company shall have delivered to the Trustee an Officers' Certificate stating that the deposit under clause (1) was not made by the Company with the intent of defeating, hindering, delaying or defrauding any creditors of the Company or others; and

(10) the Company shall have paid, or duly provided for payment under terms mutually satisfactory to the Company and the Trustee, all amounts then due to the Trustee pursuant to Section 7.7.

9.5 DEPOSITED MONEY AND U.S. AND FOREIGN GOVERNMENT OBLIGATIONS TO BE HELD IN TRUST; OTHER MISCELLANEOUS PROVISIONS.

All money, U.S. Government Obligations and Foreign Government Obligations (including the proceeds thereof) deposited with the Trustee pursuant to Section 9.4 in respect of the outstanding Securities shall be held in trust and applied by the Trustee, in accordance with the provisions of such Securities and this Indenture, to the payment, either directly or through any Paying Agent as the Trustee may determine, to the Holders of such Securities, of all sums due and to become due thereon in respect of principal, accrued interest and premium, if any, but such money need not be segregated from other funds except to the extent required by law.

The Company shall pay and indemnify the Trustee against any tax, fee or other charge imposed on or assessed against the U.S. Government Obligations and Foreign Government Obligations deposited pursuant to Section 9.4 or the principal, interest and premium, if any, received in respect thereof other than any such tax, fee or other charge which by law is for the account of the Holders of the outstanding Securities.

Anything in this Article 9 to the contrary notwithstanding, but subject to payment of any of its outstanding fees and expenses, the Trustee shall deliver or pay to the Company from time to time upon Company Request any money, U.S. Government Obligations or Foreign Government Obligations held by the Trustee as provided in Section 9.4 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 an equivalent Legal Defeasance or Covenant Defeasance.

9.6 REINSTATEMENT.

If the Trustee or Paying Agent is unable to apply any money, U.S. Government Obligations or Foreign Government Obligations in accordance with Section 9.1, 9.2, 9.3 or 9.4 by reason of any legal proceeding or by reason of any order or judgment of any court or governmental authority enjoining, restraining or otherwise prohibiting such application, the Company's obligations under this Indenture and the Securities shall be revived and reinstated as though no deposit had occurred pursuant to this Article 9 until such time as the Trustee or Paying Agent is permitted to apply all such money, U.S. Government Obligations or Foreign Government Obligations, as the case may be, in accordance with Section 9.1, 9.2, 9.3 or 9.4; PROVIDED, HOWEVER, that if the Company has made any payment of principal of, or accrued interest or premium, if any, on, any Securities because of the reinstatement of its obligations, the Company shall be subrogated to the rights of the Holders of such Securities to receive such payment from the money, U.S. Government Obligations or Foreign Government Obligations held by the Trustee or Paying Agent.

9.7 MONEYS HELD BY PAYING AGENT.

In connection with the satisfaction and discharge of this Indenture, all moneys then held by any Paying Agent under the provisions of this Indenture shall, upon demand of the Company, be paid to the Trustee, or, if sufficient moneys have been deposited pursuant to Section 9.1, be paid to the Company, and thereupon such Paying Agent shall be released from all further liability with respect to such moneys.

9.8 MONEYS HELD BY TRUSTEE.

Any moneys deposited with the Trustee or any Paying Agent or then held by the Company in trust for the payment of the principal of, or interest or premium, if any, on, any Security that are not applied but remain unclaimed by the Holder of such Security for two years after the date upon which the principal of, or interest or premium, if any, on, such Security shall have respectively become due and payable shall be repaid to the Company upon Company Request, or if such moneys are then held by the Company in trust, such moneys shall be released from such trust; and the Holder of such Security entitled to receive such payment shall thereafter, as an unsecured general creditor, look only to the Company for the payment thereof, and all liability of the Trustee or such Paying Agent with respect to such trust money shall thereupon cease. After payment to the Company or the release of any money held in trust by the Company, Securityholders entitled to the money must look only to the Company for payment as general creditors, unless applicable abandoned property law designates another Person.

Article 10 MISCELLANEOUS

10.1 TRUST INDENTURE ACT CONTROLS.

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

10.2 NOTICES.

Any notice or communication shall be given in writing and delivered in Person, sent by facsimile (and receipt confirmed by telephone or electronic transmission report), delivered by commercial courier service or mailed by first-class mail, postage prepaid, addressed as follows:

If to the Company:

Morphic Holding, Inc.
35 Gatehouse Drive, A2
Waltham, MA, 02451
Attention: Chief Financial Officer

Copy to:

Fenwick & West LLP
555 California Street
San Francisco, CA, 94104
Fax: (650) 988-5200
Attention: Robert Freedman

If to the Trustee:

The Company or the Trustee by written notice to the other may designate additional or different addresses for subsequent notices or communications. Any notice or communication to the Company or the Trustee shall be deemed to have been given or made as of the date so delivered if personally delivered; when receipt is confirmed by telephone or electronic transmission report, if sent by facsimile; and three Business Days after mailing if sent by registered or certified mail, postage prepaid (except that a notice of change of address shall not be deemed to have been given until actually received by the addressee).

Any notice or communication mailed to a Securityholder shall be mailed to such Securityholder by first-class mail, postage prepaid, at such Securityholder's address shown on the register kept by the Registrar.

Failure to mail, or any defect in, a notice or communication to a Securityholder shall not affect its sufficiency with respect to other Securityholders. If a notice or communication to a Securityholder is mailed in the manner provided above, it shall be deemed duly given, three Business Days after such mailing, whether or not the addressee receives it.

In case by reason of the suspension of regular mail service, or by reason of any other cause, it shall be impossible to mail any notice as required by this Indenture, then such method of notification as shall be made with the approval of the Trustee shall constitute a sufficient mailing of such notice.

In the case of Global Securities, notices or communications to be given to Securityholders shall be given to the Depository, in accordance with its applicable policies as in effect from time to time.

In addition to the manner provided for in the foregoing provisions, notices or communications to Securityholders may be given by the Company by release made to Reuters Economic Services and Bloomberg Business News.

10.3 COMMUNICATIONS BY HOLDERS WITH OTHER HOLDERS.

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

10.4 CERTIFICATE AND OPINION AS TO CONDITIONS PRECEDENT.

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

(1) an Officers' Certificate (which shall include the statements set forth in Section 10.5 below) stating that, in the opinion of the signers, all conditions precedent, if any, provided for in this Indenture relating to the proposed action have been complied with; and

(2) an Opinion of Counsel (which shall include the statements set forth in Section 10.5 below) stating that, in the opinion of such counsel, all such conditions precedent have been complied with.

10.5 STATEMENT REQUIRED IN CERTIFICATE AND OPINION.

Each certificate and opinion with respect to compliance with a condition or covenant provided for in this Indenture (other than pursuant to Section 4.4) shall include:

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

(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 such Person, it or he has made such examination or investigation as is necessary to enable it or him to express an informed opinion as to whether or not such covenant or condition has been complied with; and

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

10.6 RULES BY TRUSTEE AND AGENTS.

The Trustee may make reasonable rules for action by or at meetings of Securityholders. The Registrar, Paying Agent and Service Agent may make reasonable rules for their functions.

10.7 BUSINESS DAYS; LEGAL HOLIDAYS; PLACE OF PAYMENT.

A "Business Day" is a day that is not a Legal Holiday. A "Legal Holiday" is a Saturday, a Sunday, a federally-recognized holiday or a day on which banking institutions are not authorized or required by law, regulation or executive order to be open in the State of New York.

If a payment date is a Legal Holiday at a Place of Payment, payment may be made at that place on the next succeeding day that is not a Legal Holiday, and no interest shall accrue for the intervening period. "Place of Payment" means the place or places where the principal of, and interest and premium, if any, on, the Securities of a Series are payable as specified as contemplated by Section 2.2. If the regular record date is a Legal Holiday, the record date shall not be affected.

10.8 GOVERNING LAW.

THIS INDENTURE AND THE SECURITIES SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK, AS APPLIED TO CONTRACTS MADE AND PERFORMED WITHIN THE STATE OF NEW YORK WITHOUT REGARD TO PRINCIPLES OF CONFLICTS OF LAW.

10.9 NO ADVERSE INTERPRETATION OF OTHER AGREEMENTS.

This Indenture may not be used to interpret another indenture, loan, security or debt agreement of the Company or any Subsidiary thereof. No such indenture, loan, security or debt agreement may be used to interpret this Indenture.

10.10 NO RECOURSE AGAINST OTHERS.

A director, officer, employee, stockholder or incorporator, as such, of the Company shall not have any liability for any obligations of the Company under the Securities or the Indenture. Each Securityholder by accepting a Security waives and releases all such liability. Such waiver and release are part of the consideration for the issuance of the Securities.

10.11 SUCCESSORS.

All covenants and agreements of the Company in this Indenture and the Securities shall bind the Company's successors and assigns, whether so expressed or not. All agreements of the Trustee, any additional trustee and any Paying Agents in this Indenture shall bind their respective successors and assigns.

10.12 MULTIPLE COUNTERPARTS.

The parties may sign multiple counterparts (which may include counterparts delivered by any standard form of telecommunication) of this Indenture. Each signed counterpart shall be deemed an original, but all of them together represent one and the same agreement. Counterparts may be delivered via facsimile, electronic mail (including any electronic signature covered by the U.S. federal ESIGN Act of 2000, Uniform Electronic Transactions Act, the Electronics Signatures and Records Act or other applicable law, e.g., www.docusign.com) or other transmission method and any counterparty so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

10.13 TABLE OF CONTENTS, HEADINGS, ETC.

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

10.14 SEVERABILITY.

Each provision of this Indenture shall be considered separable, and if for any reason any provision which is not essential to the effectuation of the basic purpose of this Indenture or the Securities shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby, and a Holder shall have no claim therefor against any party hereto.

10.15 SECURITIES IN A FOREIGN CURRENCY OR IN EUROS.

Unless otherwise specified in a Board Resolution, a supplemental indenture hereto or an Officers' Certificate delivered pursuant to Section 2.2 with respect to a particular Series of Securities, whenever for purposes of this Indenture any action may be taken by the Holders of a specified percentage in aggregate principal amount of Securities of all Series or all Series affected by a particular action at the time outstanding and, at such time, there are outstanding Securities of any Series which are denominated in a coin or currency other than Dollars (including Euros), then the principal amount of Securities of such Series which shall be deemed to be outstanding for the purpose of taking such action shall be that amount of Dollars that could be obtained for such amount at the Market Exchange Rate at such time. For purposes of this Section 10.15, "Market Exchange Rate" shall mean the noon Dollar buying rate in New York City for cable transfers of that currency as published by the Federal Reserve Bank of New York; PROVIDED, HOWEVER, in the case of Euros, Market Exchange Rate shall mean the rate of exchange determined by the Commission of the European Union (or any successor thereto) as published in the Official Journal of the European Union (such publication or any successor publication, the "Journal"). If such Market Exchange Rate is not available for any reason with respect to such currency, the Trustee shall use, in its sole discretion and without liability on its part, such quotation of the Federal Reserve Bank of New York or, in the case of Euros, the rate of exchange as published in the Journal, as of the most recent available date, or quotations or, in the case of Euros, rates of exchange from one or more major banks in New York City or in the country of issue of the currency in question or, in the case of Euros, in Luxembourg or such other quotations or, in the case of Euros, rates of exchange as the Trustee, upon consultation with the Company, shall deem appropriate. The provisions of this paragraph shall apply in determining the equivalent principal amount in respect of Securities of a Series denominated in currency other than Dollars in connection with any action taken by Holders of Securities pursuant to the terms of this Indenture.

All decisions and determinations of the Trustee regarding the Market Exchange Rate or any alternative determination provided for in the preceding paragraph shall be in the Trustee's sole discretion, and shall, in the absence of manifest error, be conclusive to the extent permitted by law for all purposes and irrevocably binding upon the Company and all Holders.

10.16 JUDGMENT CURRENCY.

The Company agrees, to the fullest extent that it may effectively do so under applicable law, that (a) if for the purpose of obtaining judgment in any court it is necessary to convert the sum due in respect of the principal of, or interest or premium, if any, or other amount on, the Securities of any Series (the "Required Currency") into a currency in which a judgment will be rendered (the "Judgment Currency"), the rate of exchange used shall be the rate at which, in accordance with normal banking procedures, the Trustee could purchase in The City of New York the Required Currency with the Judgment Currency on the day on which final unappealable judgment is entered, unless such day is not a Business Day, in which instance, the rate of exchange used shall be the rate at which, in accordance with normal banking

procedures, the Trustee could purchase in The City of New York the Required Currency with the Judgment Currency on the Business Day preceding the day on which final unappealable judgment is entered and (b) its obligations under this Indenture to make payments in the Required Currency (i) shall not be discharged or satisfied by any tender or any recovery pursuant to any judgment (whether or not entered in accordance with subsection (a)) in any currency other than the Required Currency, except to the extent that such tender or recovery shall result in the actual receipt, by the payee, of the full amount of the Required Currency expressed to be payable in respect of such payments, (ii) shall be enforceable as an alternative or additional cause of action for the purpose of recovering in the Required Currency the amount, if any, by which such actual receipt shall fall short of the full amount of the Required Currency so expressed to be payable and (iii) shall not be affected by judgment being obtained for any other sum due under this Indenture.

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IN WITNESS WHEREOF, the parties hereto have caused this Indenture to be duly executed, and their respective corporate seals to be hereunto affixed and attested, all as of the day and year first above written.

MORPHIC HOLDING, INC.

By: __

Name: __

Title: __

[Name of Trustee]

By: __

Name: __

Title: __

By: __

Name: __

Title: __



555 California Street
12th Floor
San Francisco, CA 94104

415.875.2300
Fenwick.com

August 11, 2021

Morphic Holding, Inc.
35 Gatehouse Drive, A2
Waltham, MA 02451

Gentlemen/Ladies:

At your request, we have examined the automatically effective Registration Statement on Form S-3ASR filed by Morphic Holding, Inc., a Delaware corporation (the "**Company**"), with the Securities and Exchange Commission (the "**Commission**") on August 11, 2021 (the "**Registration Statement**") in connection with the registration under the Securities Act of 1933, as amended (the "**Securities Act**"), of the offering and sale from time to time of (i) shares of the Company's common stock, \$0.0001 par value per share (the "**Common Stock**"), (ii) shares of the Company's preferred stock, \$0.0001 par value per share (the "**Preferred Stock**"), (iii) one or more series of debt securities (the "**Debt Securities**") issuable pursuant to an indenture (the "**Indenture**") by and between the Company and a financial institution to be identified therein as trustee (the "**Trustee**"), (iv) warrants to purchase Common Stock, Preferred Stock and/or Debt Securities (the "**Warrants**"), (v) subscription rights to purchase Common Stock, Preferred Stock and/or Debt Securities (the "**Subscription Rights**"), and/or (vi) units consisting of any combination of such foregoing securities described in clauses (i) through (v) above (the "**Units**"). The Common Stock, the Preferred Stock, the Debt Securities, the Warrants, the Subscription Rights and the Units are collectively referred to herein as the "**Securities**." The Securities may be sold from time to time by the Company as set forth in the Registration Statement, the prospectus contained within the Registration Statement (the "**Prospectus**") and supplements to the Prospectus.

We advise you that we have also examined (i) the sales agreement prospectus filed, together with the Registration Statement and Prospectus, with the Commission on August 11, 2021 (the "**Sales Agreement Prospectus**") relating to the sale by the Company through Jefferies LLC, as the sales agent (the "**Sales Agent**"), from time to time of shares of Common Stock (the "**Placement Shares**") having an aggregate maximum offering price of up to \$150,000,000 pursuant to the Registration Statement and the Sales Agreement Prospectus for the sale of the Placement Shares included in the Registration Statement, and (ii) that certain Sales Agreement, dated as of July 1, 2020, as amended by the Amended and Restated Amendment No. 1 to the Sales Agreement, dated on August 11, 2021, by and between the Company and the Sales Agent (collectively, the "**Sales Agreement**").

In connection with our opinion expressed below we have examined originals or copies of the Company's Restated Certificate of Incorporation (the "**Restated Certificate**") and Restated Bylaws, as amended (the "**Amended Bylaws**" and, together with the Restated Certificate, as each may be amended, modified or restated, the "**Charter Documents**"), certain corporate proceedings of the Company's board of directors (the "**Board**") and stockholders relating to the Registration Statement, the Company's Restated Certificate and Amended Bylaws, and such other agreements, documents, certificates and statements of the Company, its transfer agent and public or government officials, as we have deemed advisable, and have examined such questions of law as we have considered necessary. We have assumed, and express no opinion as to, the genuineness of all signatures on documents submitted to us, the authenticity and completeness of all documents submitted to us as originals, the conformity to originals and completeness of all documents submitted to us as copies, the legal capacity of all persons or entities (except for the Company) executing the same, the absence of any undisclosed termination, modification, waiver or amendment to any document reviewed by us, the absence of any other extrinsic

agreements or documents that might change or affect the interpretation or terms of documents we have reviewed, and the due authorization, execution and delivery of all such documents where due authorization, execution and delivery are prerequisites to the effectiveness thereof. In giving our opinion, we have also relied upon a good standing certificate regarding the Company issued by the Delaware Secretary of State dated August 4, 2021 and confirmed on August 11, 2021 and a management certificate addressed to us and dated of even date herewith executed by the Company containing certain factual representations (the “**Management Certificate**”).

We also have assumed that any certificates or instruments representing the Securities, including the Placement Shares, will be, when issued, properly signed by authorized officers of the Company, and, in the case of Debt Securities, properly authenticated in accordance with the terms of the Indenture and delivered to the intended recipients with the intent that the Company be bound thereby. Furthermore, with respect to the Company’s uncertificated capital stock, we assume that issued Common Stock, including any Placement Shares, will not be reissued by the Company in uncertificated form until any previously issued stock certificate representing such issued Common Stock has been surrendered to the Company in accordance with Section 158 of the Delaware General Corporation Law, and that the Company will properly register the transfer of the Common Stock to the purchasers of such Common Stock on the Company’s record of uncertificated securities. We also have assumed that the Indenture at the time of execution, authentication, issuance and delivery of the Debt Securities will be a valid and legally binding obligation of the Trustee.

As to matters of fact relevant to this opinion, we have relied solely upon our examination of the documents referred to above and the Management Certificate and have assumed the current accuracy and completeness of the information obtained from the documents referred to above and the representations and warranties made by representatives of the Company to us, including but not limited to those set forth in the Management Certificate. We have made no independent investigation or other attempt to verify the accuracy of any of such information or to determine the existence or non-existence of any other factual matters.

We are admitted to practice law in the State of California and we render this opinion only with respect to, and express no opinion herein concerning the application or effect of the laws of any jurisdiction other than (i) the existing laws of the State of California, (ii) the Delaware General Corporation Law, and (iii) solely with respect to whether or not the Debt Securities are the valid and binding obligations of the Company, the existing laws of the state of New York (clauses (i) through (iii) collectively, the “**Applicable Laws**”). To the extent that any Warrant Agreement, Subscription Rights Agreement or Unit Agreement (each as defined below) is governed by the laws of any jurisdiction other than the State of California, our opinion expressed below assumes that Internal California Law (as defined below) will exclusively apply to and govern such Warrant Agreement, Subscription Rights Agreement or Unit Agreement, without regard to any interpretation or construction that might be indicated by the laws stated as governing any such Warrant Agreement, Subscription Rights Agreement or Unit Agreement. As used herein “**Internal California Law**” means the internal laws of the State of California applicable to a contract made by California residents in the State of California that selects California law as the governing law of such contract, without regard to any laws or equitable principles regarding choice of law, conflict of laws or public policies that might make any other law(s) applicable. Without limitation, we express no opinion with respect to the federal laws of the United States of America or the securities or “blue sky” laws of any state or any local or regional laws.

In connection with our opinions expressed below, we have assumed that, (i) at or prior to the time of the delivery of any of the Securities, including the Placement Shares, there will not have occurred any change in the law or the facts affecting the validity of the Securities, (ii) if any Debt Securities are issued, such Debt Securities will only be issued pursuant to the Indenture in the form filed with the Registration Statement as an exhibit and that there will not have occurred any change in law affecting the enforceability of the Debt Securities or the Indenture, (iii) all applicable covenants binding on or applicable to the Company restricting the issuance of Debt Securities will have been validly waived, (iv) the Registration Statement and any amendments (including any necessary post-effective amendments) automatically became effective upon filing under the Securities Act, (v) at the time of the offer, issuance and sale of any Securities, including the Placement Shares, no stop order suspending the Registration Statement’s effectiveness will have been issued and remain in effect, (vi) no future amendments will be made to the Charter Documents that would be in conflict with or inconsistent with the Company’s right and ability to issue the Securities, including without limitation the

Placement Shares, (vii) at the time of each offer, issuance and sale of any Securities, including without limitation the Placement Shares, the Company will have a sufficient number of authorized and unissued and unreserved shares of the applicable class or series of its capital stock included in (or purchasable upon exercise or conversion of) the Securities, including without limitation the Placement Shares, so issued and sold (after taking into account all other outstanding securities of the Company which may require the Company to issue shares of such applicable class or series) to be able to issue all such shares, and (viii) all purchasers of Securities, including without limitation the purchasers of the Placement Shares, will timely pay in full to the Company all amounts they have agreed to pay to purchase such Securities, including the Placement Shares, as approved by the Board or a duly authorized committee thereof, and that the purchase price of any Securities, including the Placement Shares, that are shares of capital stock will not be less than the par value thereof. We also have assumed that the terms of any Debt Securities to be established subsequent to the date hereof, the issuance and delivery of Securities, including the Placement Shares, subsequent to the date hereof and the compliance by the Company with the terms of such Securities, including the Placement Shares, will not violate any applicable law (including, without limitation, any law relating to usury or similar laws) or result in a violation of any provision of any of the Charter Documents or of any instrument or agreement then binding upon the Company or any restriction imposed by any court or governmental body having jurisdiction over the Company.

This opinion is qualified by, and is subject to, and we render no opinion with respect to, the following limitations and exceptions to the enforceability of the Debt Securities:

- (1) The effect of the laws of bankruptcy, insolvency, reorganization, arrangement, moratorium, fraudulent conveyance, assignment for the benefit of creditors, and other similar laws now or hereinafter in effect relating to or affecting the rights and remedies of creditors, including the effect of statutory or other laws regarding fraudulent transfers or preferential transfers.
- (2) The effect of general principles of equity and similar principles, including, without limitation, concepts of materiality, reasonableness, good faith and fair dealing, public policy and unconscionability, and the possible unavailability of specific performance, injunctive relief, or other equitable remedies, regardless of whether considered in a proceeding in equity or at law.
- (3) The effect of laws relating to usury or permissible rates of interest for loans, forbearances or the use of money.

We express no opinion regarding the effectiveness of any waiver or stay, extension or of unknown future rights. Further, we express no opinion regarding the effect of provisions relating to indemnification, exculpation or contribution to the extent such provisions may be held unenforceable as contrary to federal or state securities laws or public policy.

The Company has informed us that the Company intends to issue the Securities, including without limitation the Placement Shares, from time to time on a delayed or continuous basis. This opinion is limited to the Applicable Laws, including the rules and regulations thereunder, as in effect on the date hereof. We are basing this opinion on our understanding that, prior to issuing any Securities, excluding the Placement Shares, in connection with the Registration Statement, the Company will advise us in writing of the terms thereof and other information material thereto, will afford us an opportunity to review the operative documents pursuant to which such Securities are to be issued (including the Registration Statement, the Prospectus and the applicable supplement to the Prospectus, as then in effect) and will file such supplement or amendment to this opinion (if any) as we may reasonably consider necessary or appropriate with respect to such Securities. However, we undertake no responsibility to monitor the Company's future compliance with applicable laws, rules or regulations of the Commission or other governmental body. In particular, except with respect to the Placement Shares, we assume that the Company will obtain the requisite approval of the Board and the requisite approval of its stockholders, if required by the laws of the State of Delaware and the Charter Documents, or if necessary because the Company does not have a sufficient number of authorized but unissued and unreserved shares of its capital stock at the time of issuance to comply with any Securities. Except with respect to the Placement Shares, we also assume

the Company will timely file any and all supplements to the Registration Statement and Prospectus as are necessary to comply with applicable laws in effect from time to time and duly amend its Restated Certificate to increase the authorized number of shares of its capital stock as necessary if the number of such shares to be sold pursuant to the Registration Statement would cause the Company to issue more such shares than it has authorized and unissued and unreserved.

With respect to our opinion expressed in paragraph (7) below, we have assumed that, upon the issuance of any of the Placement Shares, the total number of shares of Common Stock issued and outstanding and reserved for future issuance will not exceed the total number of shares of Common Stock that the Company is then authorized to issue under its Certificate of Incorporation, as then in effect.

Based upon the foregoing, we are of the following opinion:

1. With respect to the shares of Common Stock registered pursuant to the Registration Statement (other than the Placement Shares), when (i) the issuance of and the terms of the offering of such shares of Common Stock and related matters have been duly authorized by all required corporate action of the Board or a duly authorized committee thereof, and, if required, of the stockholders of the Company in accordance with the Charter Documents and Applicable Laws and (ii) if required, certificates representing the shares of Common Stock have been duly executed, countersigned, registered and delivered either (a) in accordance with the applicable definitive purchase, underwriting or similar agreement approved by the Board, or upon the exercise of Warrants to purchase Common Stock, upon payment of the consideration therefor (in an amount not less than the par value of the Common Stock) provided for therein and approved by the Board or a duly authorized committee thereof, or (b) upon conversion or exercise of any other security of the Company, in accordance with the terms of such security or the instrument governing such security providing for such conversion or exercise as approved by the Board, for the consideration approved by the Board (in an amount not less than the par value per share of the Common Stock), then such shares of Common Stock will be validly issued, fully paid and nonassessable.

2. With respect to any particular series of shares of Preferred Stock registered pursuant to the Registration Statement, when (i) the issuance and terms of such shares of Preferred Stock, the terms of the offering thereof and related matters, including the adoption of a certificate of designation relating to such Preferred Stock conforming to the Company's Restated Certificate and Amended Bylaws and the Delaware General Corporation Law (a "**Certificate**") and the filing of such Certificate with the Secretary of State of the State of Delaware (or the filing of an amendment to the Company's Certificate of Incorporation to similar effect), have been duly authorized by all required corporate action of the Board and, if required, of the stockholders of the Company in accordance with the Charter Documents and Applicable Laws and (ii) if required, certificates representing the shares of Preferred Stock have been duly executed, countersigned, registered and delivered either (a) in accordance with the applicable definitive purchase, underwriting or similar agreement approved by the Board, or upon the exercise of Warrants to purchase Preferred Stock, upon payment of the consideration therefor (in an amount not less than the par value per share of such Preferred Stock) provided for therein and approved by the Board or (b) upon conversion or exercise of any other security of the Company, in accordance with the terms of such security or the instrument governing such security providing for such conversion or exercise as approved by the Board, for the consideration approved by the Board (in an amount not less than the par value per share of the Preferred Stock), then such shares of Preferred Stock will be validly issued, fully paid and nonassessable.

3. With respect to any Debt Securities registered pursuant to the Registration Statement, when (i) the issuance of such Debt Securities has been duly authorized by all required corporate action of the Board and, if required, of the stockholders of the Company in accordance with the Charter Documents and Applicable Laws, (ii) an Indenture relating to such Debt Securities in the form filed with the Registration Statement as an exhibit has been duly authorized and validly executed and delivered by each of the Company (by duly authorized officers of the Company) and the Trustee, (iii) the form and terms of the Debt Securities have been duly established in accordance with the Indenture pursuant to resolutions duly adopted by the Board and as set forth in an officer's certificate or supplemental indenture duly authorized by the Board in accordance with the Charter Documents and Applicable Laws and duly executed by an authorized officer of the Company, and (iv) instruments representing such Debt Securities have been duly executed and authenticated in accordance with the terms of the Indenture and any supplement thereto, and issued, sold and delivered in the manner and for the consideration approved by the Board and stated in the Registration Statement, the Prospectus and any prospectus supplement relating thereto (as amended as of the date of such issuance, sale and delivery), any applicable definitive purchase, underwriting or similar agreement and upon the exercise of Warrants to purchase Debt Securities, upon payment

of the consideration therefor provided for therein, then the Debt Securities will be validly issued and will constitute valid and binding obligations of the Company.

4. With respect to any Warrants registered pursuant to the Registration Statement, when (i) the issuance and terms of such Warrants, the terms, execution and delivery of the warrant agreement relating to the Warrants ("**Warrant Agreement**"), the terms of the offering thereof and related matters have been duly authorized by all required corporate action of the Board and, if required, of the stockholders of the Company in accordance with the Charter Documents and Applicable Laws, (ii) the Warrant Agreement has been duly authorized and validly executed and delivered by the Company by duly authorized officers of the Company, and (iii) such Warrants have been duly executed, issued and delivered by the Company by duly authorized officers of the Company in accordance with the provisions of the applicable Warrant Agreement and the applicable definitive purchase, underwriting or similar agreement approved by the Board, upon payment of the consideration therefor provided for therein and approved by the Board, such Warrants will constitute valid and binding obligations of the Company.

5. With respect to any Subscription Rights registered pursuant to the Registration Statement, when (i) the issuance and terms of such Subscription Rights, the terms, execution and delivery of the subscription rights agreement relating to the Subscription Rights ("**Subscription Rights Agreement**"), the terms of the offering thereof and related matters have been duly authorized by all required corporate action of the Board and, if required, the stockholders of the Company in accordance with the Charter Documents and Applicable Laws, (ii) the Subscription Rights Agreement has been duly authorized and validly executed and delivered, and (iii) such Subscription Rights have been duly executed, issued and delivered by the Company by duly authorized officers of the Company in accordance with the provisions of the applicable Subscription Rights Agreement and the applicable definitive purchase, underwriting or similar agreement approved by the Board, upon payment of the consideration therefor provided for therein and approved by the Board, such Subscription Rights will constitute valid and binding obligations of the Company.

6. With respect to any Units registered pursuant to the Registration Statement, when (i) the conditions outlined in the immediately preceding paragraphs (1) through (5) that apply to the Securities that make up such Units are all met, (ii) the issuance and terms of such Units, the terms, execution and delivery of the unit purchase agreement relating to such Units ("**Unit Agreement**"), the terms of the offering thereof and related matters have been duly authorized by all required corporate action of the Board and, if required, of the stockholders of the Company, (iii) the Unit Agreement has been duly authorized and validly executed and delivered by the Company by duly authorized officers of the Company, and (iv) such Units have been duly executed, issued and delivered by the Company by duly authorized officers of the Company in accordance with the provisions of the applicable Unit Agreement and the applicable definitive purchase, underwriting or similar agreement approved by the Board, upon payment of the consideration therefor provided for therein and approved by the Board, such Units will constitute valid and binding obligations of the Company.

7. The Placement Shares, to be issued and sold by the Company, have been duly authorized for issuance and, when issued, sold and delivered in the manner of and for consideration (of not less than par value per share of the Common Stock) in the manner contemplated by the Sales Agreement and the Sales Agreement Prospectus and in accordance with the resolutions duly adopted and to be duly adopted by the Board and to be duly adopted by the Placement Committee of the Board with respect to the offer, sale and issuance of the Placement Shares, will be validly issued, fully paid and nonassessable.

We consent to the use of this opinion as an exhibit to the Registration Statement and further consent to all references to us, if any, in the Registration Statement, the Prospectus and Sales Agreement Prospectus constituting parts thereof and any amendments thereto. In giving this consent we do not thereby admit that we come within the category of persons whose consent is required by the Securities Act or by the rules and regulations promulgated thereunder.

[Concluding Paragraph Follows on Next Page]

This opinion is intended solely for use in connection with the issuance and sale of the Securities subject to the Registration Statement and is not to be relied upon for any other purpose. In providing this letter, we are opining only as to the specific legal issues expressly set forth above, and no opinion shall be inferred as to any other matter or matters. This opinion is rendered on, and speaks only as of, the date of this letter first written above, is based solely on our understanding of facts in existence as of such date after the aforementioned examination and does not address any potential changes in facts, circumstance or law that may occur after the date of this opinion letter. We assume no obligation to advise you of any fact, circumstance, event or change in the law or the facts that may hereafter be brought to our attention whether or not such occurrence would affect or modify any of the opinions expressed herein.

Very truly yours,

/s/ Fenwick & West LLP

FENWICK & WEST LLP

Consent of Independent Registered Public Accounting Firm

We consent to the reference to our firm under the caption “Experts” in the Registration Statement (Form S-3) and related Prospectus of Morphic Holding, Inc. for the registration of shares of its common stock, preferred stock, debt securities, warrants, subscription rights and units and to the incorporation by reference therein of our report dated March 1, 2021, with respect to the consolidated financial statements of Morphic Holding, Inc., included in its Annual Report (Form 10-K) for the year ended December 31, 2020, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Boston, Massachusetts
August 11, 2021