Changes to this rule became operative on November 7, 2022. For options symbols which have not yet migrated to the new platform, the attached document displays the current rules. The symbol migration schedule is available at Options Trader Alert 2022-34.

Options 2 Options Market Participants

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Section 10. Preferenced Orders

(a) **Preferenced** Orders. An Electronic Access Member may designate a "Preferred Market Maker" on orders it enters into the System ("Preferenced Orders").

(1) A Preferred Market Maker may be the Primary Market Maker appointed to the options class or any Competitive Market Maker appointed to the options class.

(2) If the Preferred Market Maker is not quoting at a price equal to the NBBO at the time the Preferenced Order is received, the allocation procedure described in Options 3, Section 10(c)(1)(C) shall not be applied to the execution of the Preferenced Order.

(3) If the Preferred Market Maker is quoting at the NBBO at the time the Preferenced Order is received, the allocation procedure described in Options 3, Section 10(c)(1)(C) shall be applied to the execution of the Preferenced Order.

[Adopted July 8, 2019 (SR-MRX-2019-15); amended August 28, 2019 (SR-MRX-2019-17), operative September 27, 2019.]

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Options 3 Options Trading Rules

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Section 4. Entry and Display of Quotes

(a) All bids or offers made and accepted on the Exchange in accordance with the Rules shall constitute binding contracts, subject to applicable requirements of the By-Laws and the Rules and the Rules of the Clearing Corporation.

(b) Quotes are subject to the following requirements and conditions:

(1) Market Makers may generate and submit option quotations.

(2) The System shall time-stamp a quote which shall determine the time ranking of the quote for purposes of processing the quote.

(3) Market Makers may enter bids and/or offers in the form of a two-sided quote. Only one quote may be submitted at a time for an option series.

(4) The System accepts quotes for the Opening Process as specified in Options 3, Section 8.

(5) **Firm Quote**. Where quotes in options on another market or markets are subject to relief from the firm quote requirement set forth in the Rule 602 of Regulation NMS under the Exchange Act, orders and quotes will receive an automatic execution at or better than the NBBO based on the best bid or offer in markets whose quotes are not subject to such relief. Such determination may be made by way of notification from another market that its quotes are not firm or are unreliable; administrative message from the Option Price Reporting Authority ("OPRA"); quotes received from another market designated as "not firm" using the appropriate indicator; and/or telephonic or electronic inquiry to, and verification from, another market that its quotes are not firm. The Exchange shall maintain a record of each instance in which another exchange's quotes are excluded from the Exchange's calculation of NBBO, and shall notify such other exchange that its quotes have been so excluded. Where quotes in options on another market or markets previously subject to relief from the firm quote requirement set forth in the Quote Rule are no longer subject to such relief, such quotations will be included in the calculation of NBBO for such options. Such determination may be made by way of notification from another market that its quotes are firm; administrative message from OPRA; and/or telephonic or electronic inquiry to, and verification from, another market that its quotes are firm.

(6) **Trade-Through Compliance and Locked or Crossed Markets**. A quote will not be executed at a price that trades through another market or displayed at a price that would lock or cross another market. If, at the time of entry, a quote would cause a locked or crossed market violation or would cause a trade-through violation, it will either be re-priced and displayed at one minimum price variance above (for offers) or below (for bids) the national best price, or immediately cancelled, as configured by the Member.

(7) Quotes submitted to the System are subject to the following: minimum increments provided for in Options 3, Section 3 and risk protections provided for in Options 3, Section 15.

(c) Quotes will be displayed in the System as described in Options 3, Section 23.

[Adopted July 8, 2019 (SR-MRX-2019-15); amended September 17, 2019 (SR-MRX-2019-020), operative October 17, 2019.]

Section 5. Entry and Display of Single-Leg Orders

(a) Members can enter orders into the System, subject to the following requirements and conditions:

(1) Members shall be permitted to transmit to the System multiple orders at a single as well as multiple price levels.

(2) The System accepts orders beginning at a time specified by the Exchange and communicated on the Exchange's web site.

(3) The System shall time-stamp an order which shall determine the time ranking of the order for purposes of processing the order.

(4) Orders submitted to the System are subject to the following: minimum increments provided for in Options 3, Section 3, risk protections provided for in Options 3, Section 15, and the restrictions of any order type as provided for in Options 3, Section 7. Orders may execute at multiple prices.

(5) Nullification by Mutual Agreement. Trades may be nullified if all parties participating in the trade agree to the nullification. In such case, one party must notify the Exchange and the Exchange promptly will disseminate the nullification to OPRA. It is considered conduct inconsistent with just and equitable principles of trade for a party to use the mutual adjustment process to circumvent any applicable Exchange rule, the Act or any of the rules and regulations thereunder.

(b) **NBBO Price Protection**. Orders, other than Intermarket Sweep Orders (as defined in Options 5, Section 1(h)), will not be automatically executed by the System at prices inferior to the NBBO (as defined in Options 5, Section 1(j)).

(1) Orders that are not automatically executed will be handled as provided in Supplementary Material .02 to Options 5, Section 2; provided that Members may specify that a Non-Customer order should instead be accepted and immediately cancelled automatically by the System at the time of receipt.

(2) There is no NBBO price protection with respect to any other market whose quotations are Non-Firm (as defined in Options 5, Section 1(k)).

(c) The System automatically executes eligible orders using the Exchange's displayed best bid and offer ("BBO").

(d) **Trade-Through Compliance and Locked or Crossed Markets**. An order will not be executed at a price that trades through another market or displayed at a price that would lock or cross another market. An order that is designated by the Member as routable will be routed in compliance with applicable Trade-Through and Locked and Crossed Markets restrictions. Orders that are not automatically executed will be handled as provided in Supplementary

Material .02 to Options 5, Section 2; provided that Members may specify that a Non-Customer order should instead be cancelled automatically by the System at the time of receipt.

(e) Orders will be displayed in the System as described in Options 3, Section 23.

[Adopted July 8, 2019 (SR-MRX-2019-15); amended September 17, 2019 (SR-MRX-2019-020), operative October 17, 2019.]

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Section 7. Types of Orders and Order and Quote Protocols

The Exchange may determine to make certain order types and time-in-force, respectively, available on a class or System basis.

(a) *Market Orders*. A market order is an order to buy or sell a stated number of options contracts that is to be executed at the best price obtainable when the order reaches the Exchange.

(b) *Limit Orders*. A limit order is an order to buy or sell a stated number of options contracts at a specified price or better.

(1) *Marketable Limit Orders*. A marketable limit order is a limit order to buy (sell) at or above (below) the best offer (bid) on the Exchange.

(2) *Fill-or-Kill Orders*. A fill-or-kill order is a limit order that is to be executed in its entirety as soon as it is received and, if not so executed, treated as cancelled.

(3) *Immediate-or-Cancel Orders*. An immediate-or-cancel order is a limit order that is to be executed in whole or in part upon receipt. Any portion not so executed is to be treated as cancelled. An immediate-or-cancel order entered by a Market Maker through the Specialized Quote Feed protocol will not be subject to the Limit Order Price Protection and Size Limitation Protection as defined in MRX Options 3, Section 15(b)(2) and (3).

(4) Reserved.

(5) *Intermarket Sweep Orders*. An Intermarket Sweep Order (ISO) is a limit order that meets the requirements of Options 5, Section 1(h).

(c) *All-Or-None Orders*. An All-Or-None order is a limit or market order that is to be executed in its entirety or not at all. An All-Or-None Order may only be entered as an Immediate-or-Cancel Order.

(d) *Stop Orders*. A stop order is an order that becomes a market order when the stop price is elected. A stop order to buy is elected when the option is bid or trades on the Exchange at, or above, the specified stop price. A stop order to sell is elected when the option is offered or trades on the Exchange at, or below, the specified stop price.

(e) *Stop Limit Orders* A stop limit order is an order that becomes a limit order when the stop price is elected. A stop limit order to buy is elected when the option is bid or trades on the Exchange at, or above, the specified stop price. A stop limit order to sell becomes a sell limit order when the option is offered or trades on the Exchange at, or below, the specified stop price.

(f) Reserved.

(g) *Reserve Orders*. A Reserve Order is a limit order that contains both a displayed portion and a non-displayed portion.

1. Both the displayed and non-displayed portions of a Reserve Order are available for potential execution against incoming marketable orders. A non-marketable Reserve Order will rest on the order book.

2. The displayed portion of a Reserve Order shall be ranked at the specified limit price and the time of order entry.

3. The displayed portion of a Reserve Order will trade in accordance with Options 3, Section 10(c)(1)(A) for Priority Customer Orders, and Options 3, Section 10(c)(1)(E) for non- Priority Customer Orders.

4. When the displayed portion of a Reserve Order is decremented, either in full or in part, it shall be refreshed from the non-displayed portion of the resting Reserve Order. If the displayed portion is refreshed in part, the new displayed portion shall include the previously displayed portion. Upon any refresh, the entire displayed portion shall be ranked at the specified limit price and obtain a new time stamp, i.e., the time that the new displayed portion of the order was refreshed. The new displayed portion will trade in accordance with Options 3, Section 10(c)(1)(A) for Priority Customer Orders, and Options 3, Section 10(c)(1)(E) for non-Priority Customer Orders.

5. The initial non-displayed portion of a Reserve Order rests on the order book and is ranked based on the specified limit price and time of order entry. Thereafter, nondisplayed portions, if any, always obtain the same time stamp as that of the new displayed portion in paragraph 4 above. The non-displayed portion of any Reserve Order is available for execution only after all displayed interest has been executed. The non-displayed portion of

any Reserve Order will trade in accordance with Options 3, Section 10(c)(1)(A) for Priority Customer Orders, and Options 3, Section 10(c)(1)(E) for non-Priority Customer Orders.

(h) *Attributable Order*. An Attributable Order is a market or limit order which displays the user firm ID for purposes of electronic trading on the Exchange. Use of Attributable Orders is voluntary. Attributable Orders may not be available for all Exchange Systems. The Exchange will issue a Options Regulatory Alert specifying the Systems and the class of securities for which the Attributable Order type shall be available.

(i) *Customer Cross Orders*. A Customer Cross Order is comprised of a Priority Customer Order to buy and a Priority Customer Order to sell at the same price and for the same quantity.

(j) *Qualified Contingent Cross Order*. A Qualified Contingent Cross Order is comprised of an originating order to buy or sell at least 1000 contracts that is identified as being part of a qualified contingent trade, as that term is defined in Supplementary Material .01 below, coupled with a contra-side order or orders totaling an equal number of contracts.

(k) Legging Orders. A legging order is a limit order on the regular limit order book that represents one side of a Complex Options Order that is to buy or sell an equal quantity of two options series resting on the Exchange's Complex Order Book. Legging orders are firm orders that are included in the Exchange's displayed best bid or offer.

(1) A legging order may be automatically generated for one leg of a Complex Options Order at a price: (i) that matches or improves upon the best displayed bid or offer on the regular limit order book; and (ii) at which the net price can be achieved when the other leg is executed against the best displayed bid or offer on the regular limit order book. A legging order will not be created at a price that locks or crosses the best bid or offer of another exchange.

(2) A legging order is executed only after all other executable orders (including any non-displayed size) and quotes at the same price are executed in full. When a legging order is executed, the other portion of the Complex Options Order will be automatically executed against the displayed best bid or offer on the Exchange.

(3) A legging order is automatically removed from the regular limit order book if: (i) the price of the legging order is no longer at the displayed best bid or offer on the regular limit order book, (ii) execution of the legging order would no longer achieve the net price of the Complex Options Order when the other leg is executed against the best displayed bid or offer on the regular limit order book, (iii) the Complex Options Order is executed in full or in part on the Complex Order Book, or (iv) the Complex Options Order is cancelled or modified.

(l) Day Order. An order to buy or sell which, if not executed, expires at the end of the day on which it was entered. All orders by their terms are Day Orders unless otherwise specified.

(m) *Do-Not-Route Orders*. A do-not-route order is a market or limit order that is to be executed in whole or in part on the Exchange only. Due to prices available on another options exchange (as provided in Options 5 (Order Protection; Locked and Crossed Markets)), any balance of a do-not-route order that cannot be executed upon entry, or placed on the Exchange's limit order book, will be automatically cancelled.

(n) *Add Liquidity Order*. An Add Liquidity Order is a limit order that is to be executed in whole or in part on the Exchange (i) only after being displayed on the Exchange's limit order book; and (ii) without routing any portion of the order to another market center. Members may specify whether an Add Liquidity Order shall be cancelled or re-priced to the minimum price variation above the national best bid price (for sell orders) or below the national best offer price (for buy orders) if, at the time of entry, the order (i) is executable on the Exchange; or (ii) the order is not executable on the Exchange, but would lock or cross the national best bid or offer. If at the time of entry, an Add Liquidity Order would lock or cross one or more non-displayed orders on the Exchange, the Add Liquidity Order shall be cancelled or re-priced to the minimum price variation above the best non-displayed bid price (for sell orders) or below the best non-displayed offer price (for buy orders). An Add Liquidity Order will only be re-priced once and will be executed at the re-priced price. An Add Liquidity Order will be ranked in the Exchange's limit order book in accordance with Options 3, Section 10.

(o) *Opening Only Order*. An Opening Only order is a limit order that can be entered for the opening rotation only. Any portion of the order that is not executed during the opening rotation is cancelled.

(p) *Good-Till-Date Order*. A Good-Till-Date Order is a limit order to buy or sell which, if not executed, will be cancelled at the sooner of the end of the expiration date assigned to the order, or the expiration of the series.

(q) Reserved.

(r) Good-Till-Canceled Order (GTC Order). An order to buy or sell that remains in force until the order is filled, canceled or the option contract expires; provided, however, that GTC Orders will be canceled in the event of a corporate action that results in an adjustment to the terms of an option contract.

(s) Sweep Order. A Sweep Order is a limit order that is to be executed in whole or in part on the Exchange and the portion not so executed shall be routed pursuant to Supplementary Material .05 to Options 5, Section 2 to Eligible Exchange(s) for immediate execution as soon as the order is received by the Eligible Exchange(s). Any portion not immediately executed by the Eligible

Exchange(s) shall be canceled. If a Sweep Order is not marketable when it is submitted to the Exchange, it shall be canceled.

(t) QCC with Stock Orders. A QCC with Stock Order is a Qualified Contingent Cross Order, as defined in subparagraph (j), entered with a stock component to be communicated to a designated broker-dealer for execution pursuant to Options 3, Section 12(c).

(u) Opening Sweep. An Opening Sweep is a Market Maker order submitted for execution against eligible interest in the System during the Opening Process pursuant to Options 3, Section 8(b)(1).

(v) Block Order. A Block Order is an order entered into the Block Order Mechanism as described in Options 3, Section 11(a).

(w) Facilitation Order. A Facilitation Order is an order entered into the Facilitation Mechanism as described in Options 3, Section 11(b).

(x) SOM Order. A SOM Order is an order entered into the Solicited Order Mechanism as described in Options 3, Section 11(d).

(y) A PIM Order. A PIM Order is an order entered into the Price Improvement Mechanism as described in Options 3, Section 13(a).

Supplementary Material to Options 3, Section 7

.01 A "qualified contingent trade" is a transaction consisting of two or more component orders, executed as agent or principal, where:

(a) At least one component is an NMS Stock, as defined in Rule 600 of Regulation NMS under the Exchange Act;

(b) all components are effected with a product or price contingency that either has been agreed to by all the respective counterparties or arranged for by a broker-dealer as principal or agent;

(c) the execution of one component is contingent upon the execution of all other components at or near the same time;

(d) the specific relationship between the component orders (e.g., the spread between the prices of the component orders) is determined by the time the contingent order is placed;

(e) the component orders bear a derivative relationship to one another, represent different classes of shares of the same issuer, or involve the securities of participants in mergers or with intentions to merge that have been announced or cancelled; and

(f) the transaction is fully hedged (without regard to any prior existing position) as a result of other components of the contingent trade.

.02 Cancel and Replace Orders shall mean a single message for the immediate cancellation of a previously received order and the replacement of that order with a new order. If the previously placed order is already filled partially or in its entirety, the replacement order is automatically canceled or reduced by the number of contracts that were executed. The replacement order will retain the priority of the cancelled order, if the order posts to the Order Book, provided the price is not amended, size is not increased, or in the case of Reserve Orders, size is not changed. If the replacement portion of a Cancel and Replace Order does not satisfy the System's price or other reasonability checks (e.g. Options 3, Section 15(b)(1)(A) and Options 3, Section 15(b)(1)(B)) the existing order shall be cancelled and not replaced.

.03 The Exchange offers Members the following protocols for entering orders and quotes respectively:

(a) "**Financial Information eXchange**" or "**FIX**" is an interface that allows Members and their Sponsored Customers to connect, send, and receive messages related to orders and auction orders to the Exchange. Features include the following: (1) execution messages; (2) order messages; (3) risk protection triggers and cancel notifications; and (4) post trade allocation messages.

(b) "**Ouch to Trade Options**" or "**OTTO**" is an interface that allows Members and their Sponsored Customers to connect, send, and receive messages related to orders, auction orders, and auction responses to the Exchange. Features include the following: (1) options symbol directory messages (e.g., underlying and complex instruments); (2) system event messages (e.g., start of trading hours messages and start of opening); (3) trading action messages (e.g., halts and resumes); (4) execution messages; (5) order messages; (6) risk protection triggers and cancel notifications; (7) auction notifications; (8) auction responses; and (9) post trade allocation messages.

(c) "**Specialized Quote Feed**" or "**SQF**" is an interface that allows Market Makers to connect, send, and receive messages related to quotes, Immediate-or-Cancel Orders, and auction responses to the Exchange. Features include the following: (1) options symbol directory messages (e.g., underlying and complex instruments); (2) system event messages (e.g., start of trading hours messages and start of opening); (3) trading action messages (e.g., halts and resumes); (4) execution messages; (5) quote messages; (6) Immediate-or-Cancel Order messages; (7) risk protection triggers and purge notifications; (8) opening imbalance messages; (9) auction notifications; and (10) auction responses. The SQF Purge Interface only receives and notifies of purge requests from the Market Maker. Market Makers may only enter interest into SQF in their assigned options series.

[Adopted July 8, 2019 (SR-MRX-2019-15); amended July 24, 2019 (SR-MRX-2019-16), operative August 23, 2019; amended August 28, 2019 (SR-MRX-2019-17), operative September 27, 2019; amended September 17, 2019 (SR-MRX-2019-020), operative October 17, 2019; amended February 14, 2020 (SR-MRX-2020-04); amended March 9, 2020 (SR-MRX-2020-06).]

Section 8. Options Opening Process

(a) Definitions. The Exchange conducts an electronic opening for all option series traded on the Exchange using its System.

(1) The "ABBO" is the Away Best Bid or Offer.

(2) The "market for the underlying security" is either the primary listing market or an alternative market designated by the primary market. In the event that the primary market is unable to open and an alternative market is not designated by the primary market and/or the alternative market designated by the primary market does not open, the Exchange may utilize a non-primary market to open all underlying securities from the primary market. The Exchange will select the non-primary market with the most liquidity in the aggregate for all underlying securities that trade on the primary market for the previous two calendar months, excluding the primary and alternative markets.

(3) The Opening Price is described herein in sections (h) and (j).

(4) The Opening Process is described herein in section (c).

(5) The Potential Opening Price is described herein in section (g).

(6) The Pre-Market BBO is the highest bid and the lowest offer among Valid Width Quotes.

(7) A "Quality Opening Market" is a bid/ask differential applicable to the best bid and offer from all Valid Width Quotes defined in a table to be determined by the Exchange and published on the Exchange's web site. The calculation of Quality Opening Market is based on the best bid and offer of Valid Width Quotes. The differential between the best bid and offer are compared to reach this determination. The allowable differential, as determined by the Exchange, takes into account the type of security (for example, Penny versus non-Penny Interval Program issue), volatility, option premium, and liquidity. The Quality Opening Market differential is intended to ensure the price at which the Exchange opens reflects current market conditions.

(8) A "Valid Width Quote" is a two-sided electronic quotation submitted by a Market Maker that meets the following requirements: differentials shall be no more than $5, provided that, in the case of equity options, the bid/ask differential stated above shall not apply to in-the-money series where the market for the underlying security is wider than the differential set forth above. The bid/ask differentials for in-the-money options series may be as wide as the quotation for the underlying security on the primary market, or its decimal equivalent rounded down to the nearest minimum increment. The Exchange may establish differences other than the above for one or more series or classes of options. Such differences will be posted by the Exchange on its website.

(9) A "Zero Bid Market" is where the best bid for an options series is zero.

(10) The term "imbalance" shall mean the number of unmatched contracts priced through the Potential Opening Price.

(b) Eligible interest during the Opening Process includes Valid Width Quotes, Opening Sweeps and orders, including Opening Only Orders, but excluding orders with a Time in Force of "Immediate-or-Cancel" and Add Liquidity Orders. Quotes, other than Valid Width Quotes, will not be included in the Opening Process. The displayed and nondisplayed portions of Reserve Orders are considered for execution and in determining the Opening Price throughout the Opening Process. Only Public Customer interest is routable during the Opening Process.

(1) Opening Sweep.

(i) A Market Maker assigned in a particular option may only submit an Opening Sweep if, at the time of entry of the Opening Sweep, that Market Maker has already submitted and maintains a Valid Width Quote. All Opening Sweeps in the affected series entered by a Market Maker will be cancelled immediately if that Market Maker fails to maintain a continuous quote with a Valid Width Quote in the affected series.

(ii) Opening Sweeps may be entered at any price with a minimum price variation applicable to the affected series, on either side of the market, at single or multiple price level(s), and may be cancelled and re-entered. A single Market Maker may enter multiple Opening Sweeps, with each Opening Sweep at a different price level. If a Market Maker submits multiple Opening Sweeps, the System will consider only the most recent Opening Sweep at each price level submitted by such Market Maker in determining the Opening Price. Unexecuted Opening Sweeps will be cancelled once the affected series is open.

(2) The System will allocate interest pursuant to Options 3, Section 10.

Changes to this rule became operative on November 7, 2022. For options symbols which have not yet migrated to the new platform, the attached document displays the current rules. The symbol migration schedule is available at Options Trader Alert 2022-34.

(c) Market Maker Valid Width Quotes and Opening Sweeps received starting at 9:25 AM Eastern Time are included in the Opening Process. Orders entered at any time before an option series opens are included in the Opening Process.

(1) The Opening Process for an option series will be conducted pursuant to paragraphs (f) - (j) below on or after 9:30 AM Eastern Time if: the ABBO, if any, is not crossed; and the System has received, within two minutes (or such shorter time as determined by the Exchange and disseminated to membership on the Exchange's web site) of the opening trade or quote on the market for the underlying security in the case of equity options or, in the case of index options, within two minutes of the receipt of the opening price in the underlying index (or such shorter time as determined by the Exchange and disseminated to membership on the Exchange's web site), or within two minutes of market opening for the underlying security in the case of U.S. dollar-settled foreign currency options (or such shorter time as determined by the Exchange and disseminated to membership on the Exchange's web site) any of the following:

(i) the Primary Market Maker's ("PMM") Valid Width Quote; or

(ii) the Valid Width Quote of at least one Competitive Market Maker ("CMM").

(2) For all options, the underlying security, including indexes, must be open on the market for the underlying security for a certain time period as determined by the Exchange for the Opening Process to commence. The time period shall be no less than 100 milliseconds and no more than 5 seconds.

(3) The PMM assigned in a particular equity or index option must enter a Valid Width Quote, in 90% of their assigned series, not later than one minute following the dissemination of a quote or trade by the market for the underlying security or, in the case of index options, following the receipt of the opening price in the underlying index. The PMM assigned in a particular U.S. dollar-settled foreign currency option must enter a Valid Width Quote, in 90% of their assigned series, not later than one minute after the announced market opening. Provided an options series has not opened pursuant to Options 3, Section 8(c)(1)(ii), PMMs must promptly enter a Valid Width Quote in the remainder of their assigned series, which did not open within one minute following the dissemination of a quote or trade by the market for the underlying security or, in the case of index options, following the receipt of the opening price in the underlying index or, with respect to U.S. dollar-settled foreign currency options, following the announced market opening. Once an options series has opened pursuant to Options 3, Section 8(c)(1)(i) and ii, a PMM must submit intra-day, two-sided quotes in such options series pursuant to Options 2, Section 5(e)(2).

(4) A CMM that submits a quote pursuant to this Rule in any option series when the PMM's quote has not been submitted shall be required, once an options series has opened, to submit intra-day, two-sided quotes in such option series pursuant to Options 2, Section 5(e)(1).

(5) The Opening Process will stop and an option series will not open if the ABBO becomes crossed or when a Valid Width Quote(s) pursuant to Options 3, Section 8(c)(1) is no longer present. Once each of these conditions no longer exist, the Opening Process in the affected option series will start again pursuant to paragraphs (e) - (j) below.

(d) Reopening After a Trading Halt. The procedure described in Options 3, Section 8 will be used to reopen an option series after a trading halt. If there is a trading halt or pause in the underlying security, the Opening Process will start again irrespective of the specific times listed in paragraph (c)(1).

(e) Opening with a BBO (No Trade). If there are no opening quotes or orders that lock or cross each other and no routable orders locking or crossing the ABBO, the System will open with an opening quote by disseminating the Exchange's best bid and offer among quotes and orders ("BBO") that exist in the System at that time, unless all three of the following conditions exist: (i) a Zero Bid Market; (ii) no ABBO; and (iii) no Quality Opening Market. If all three conditions exist, the Exchange will calculate an Opening Quote Range pursuant to paragraph (i) and conduct the Price Discovery Mechanism pursuant to paragraph (j) below.

(f) Pre-Market BBO Calculation. If there are opening Valid Width Quotes, or orders, that lock or cross each other, the System will calculate the Pre-Market BBO.

(g) Potential Opening Price. The Potential Opening Price indicates a price where the System may open once all other Opening Process criteria is met. To calculate the Potential Opening Price, the System will take into consideration all Valid Width Quotes and orders (including Opening Sweeps and displayed and non-displayed portions of Reserve Orders) for the option series and identify the price at which the maximum number of contracts can trade ("maximum quantity criterion"). In addition, paragraphs (h)(3)(i) and (i)(5) - (7) below contain additional provisions related to Potential Opening Price.

(1) More Than One Potential Opening Price. When two or more Potential Opening Prices would satisfy the maximum quantity criterion and leave no contracts unexecuted, the System takes the highest and lowest of those prices and takes the mid-point; if such mid-point is not expressed as a permitted minimum price variation, it will be rounded to the minimum price variation that is closest to the closing price for the affected series from the immediately prior trading session. If there is no closing price from the immediately prior trading session, the System will round up to the minimum price variation to determine the Opening Price.

(2) If two or more Potential Opening Prices for the affected series would satisfy the maximum quantity criterion and leave contracts unexecuted, the Opening Price will be either the lowest executable bid or highest executable offer of the largest sized side.

(3) The Opening Price is bounded by the better away market price that may not be satisfied with the Exchange routable interest.

(h) Opening with Trade. The Exchange will open the option series for trading with a trade on Exchange interest only at the Opening Price, if any of these conditions occur:

(1) the Potential Opening Price is at or within the best of the Pre-Market BBO and the ABBO;

(2) the Potential Opening Price is at or within the non-zero bid ABBO if the Pre-Market BBO is crossed; or

(3) where there is no ABBO, the Potential Opening Price is at or within the Pre-Market BBO which is also a Quality Opening Market.

(i) If there is more than one Potential Opening Price which meets the conditions set forth in paragraphs (1) through (3) above where:

(A) no contracts would be left unexecuted and

(B) any value used for the mid-point calculation (which is described in paragraph (g) above) would cross either:

(I) the Pre-Market BBO, or

(II) the ABBO,

then, for the purposes of calculating the midpoint the Exchange will use the better of the Pre-Market BBO or ABBO as a boundary price and will open the option series for trading with an execution at the resulting Potential Opening Price. If these conditions are not met, an Opening Quote Range will be calculated pursuant to paragraph (i) below and thereafter, the Price Discovery Mechanism in paragraph (j) below will commence.

(i) The System will calculate an Opening Quote Range ("OQR") for a particular option series that will be utilized in the Price Discovery Mechanism described below, if the Exchange has not opened subject to any of the provisions above. OQR is constrained by the least aggressive limit prices within the broader limits of OQR. The least aggressive buy order or Valid Width Quote bid and least aggressive sell order or Valid Width Quote offer within the OQR will further bound the OQR.

(1) Except as provided in paragraphs (3) and (4) below, to determine the minimum value for the OQR, an amount, as defined in a table to be determined by the Exchange, will be subtracted from the highest quote bid among Valid Width Quotes on the Exchange and on the away market(s), if any.

(2) Except as provided in paragraphs (3) and (4) below, to determine the maximum value for the OQR, an amount, as defined in a table to be determined by the Exchange, will be added to the lowest quote offer among Valid Width Quotes on the Exchange and on the away market(s), if any.

(3) If one or more away markets are disseminating a BBO that is not crossed, (the Opening Process will stop and an option series will not open if the ABBO becomes crossed pursuant to (c)(5)) and there are Valid Width Quotes on the Exchange that cross each other or are marketable against the ABBO:

(i) The minimum value for the OQR will be the highest away bid.

(ii) The maximum value for the OQR will be the lowest away offer.

(4) If there are Valid Width Quotes on the Exchange that cross each other, and there is no away market disseminating a BBO in the affected option series:

(i) The minimum value for the OQR will be the lowest quote bid among Valid Width Quotes on the Exchange.

(ii) The maximum value for the OQR will be the highest quote offer among Valid Width Quotes on the Exchange.

(5) If there is more than one Potential Opening Price possible where no contracts would be left unexecuted, any price used for the mid-point calculation (which is described in paragraph (g)(1) above) that is wider than the OQR will be restricted to the OQR price on that side of the market for the purposes of the mid-point calculation.

(6) If there is more than one Potential Opening Price possible where no contracts would be left unexecuted, pursuant to paragraph (g)(3) above when contracts will be routed, the System will use the away market price as the Potential Opening Price.

(7) If the Exchange determines that non-routable interest can execute the maximum number of contracts against Exchange interest, after routable interest has been determined by the

System to satisfy the away market, then the Potential Opening Price is the price at which the maximum number of contracts can execute, excluding the interest which will be routed to an away market, which may be executed on the Exchange as described in paragraph (g) above. The System will route routable Public Customer interest pursuant to Options 3, Section 10(c)(1)(A).

(j) Price Discovery Mechanism. If the Exchange has not opened pursuant to paragraphs (e) or (h) above, after the OQR calculation in paragraph (i), the Exchange will conduct the following Price Discovery Mechanism.

(1) First, the System will broadcast an Imbalance Message for the affected series (which includes the symbol, side of the imbalance, size of matched contracts, size of the imbalance, and Potential Opening Price bounded by the Pre-Market BBO) to participants, and begin an "Imbalance Timer," not to exceed three seconds. The Imbalance Timer will be for the same number of seconds for all options traded on the Exchange. Each Imbalance Message is subject to an Imbalance Timer.

(A) An Imbalance Message will be disseminated showing a "0" volume and a $0.00 price if: (1) no executions are possible but routable interest is priced at or through the ABBO; (2) internal quotes are crossing each other; or (3) there is a Valid Width Quote, but there is no Quality Opening Market. Where the Potential Opening Price is through the ABBO, an imbalance message will display the side of interest priced through the ABBO.

(2) Any new interest received by the System will update the Potential Opening Price. If during or at the end of the Imbalance Timer, the Opening Price is at or within the OQR, the Imbalance Timer will end and the System will open with a trade at the Opening Price if the executions consist of Exchange interest only without trading through the ABBO and without trading through the limit price(s) of interest within OQR which is unable to be fully executed at the Opening Price. If no new interest comes in during the Imbalance Timer and the Potential Opening Price is at or within OQR and does not trade through the ABBO, the Exchange will open with a trade at the end of the Imbalance Timer at the Potential Opening Price.

(3) Next, provided the option series has not opened pursuant to paragraph (j)(2) above, the System will:

(i) send a second Imbalance Message with a Potential Opening Price that is bounded by the OQR (and would not trade through the limit price(s) of interest within OQR which is unable to be fully executed at the Opening Price) and includes away market volume in the size of the imbalance to participants; and concurrently.

(ii) initiate a Route Timer, not to exceed one second. The Route Timer operates as a pause before an order is routed to an away market. If during the Route Timer, interest is received by the System which would allow the Opening Price to be within OQR without trading through away markets and without trading through the limit price(s) of interest within OQR which is unable to be fully executed, the System will open with trades and the Route Timer will simultaneously end. The System will monitor quotes and orders received during the Route Timer period and make ongoing corresponding changes to the permitted OQR and Potential Opening Price to reflect them.

(iii) If no trade occurred pursuant to (ii) above, when the Route Timer expires, if the Potential Opening Price is within OQR (and would not trade through the limit price(s) of interest within OQR that is unable to be fully executed at the Opening Price), the System will determine if the total number of contracts displayed at better prices than the Exchange's Potential Opening Price on away markets ("better priced away contracts") would satisfy the number of marketable contracts available on the Exchange. The Exchange will open the option series by routing and/or trading on the Exchange, pursuant to paragraphs (A)-(C) below.

(A) If the total number of better priced away contracts would satisfy the number of marketable contracts available on the Exchange on either the buy or sell side, the System will route all marketable contracts on the Exchange to such better priced away markets as an ISO designated as an Immediate-or-Cancel ("IOC") order(s), and determine an opening BBO that reflects the interest remaining on the Exchange. The System will price any contracts routed to away markets at the Exchange's Opening Price; or

(B) If the total number of better priced away contracts would not satisfy the number of marketable contracts the Exchange has, the System will determine how many contracts it has available at the Exchange Opening Price. If the total number of better priced away contracts plus the number of contracts available at the Exchange Opening Price would satisfy the number of marketable contracts on the Exchange on either the buy or sell side, the System will contemporaneously route, based on price/time priority of routable interest, a number of contracts that will satisfy interest at away markets at prices better than the Opening Price and trade available contracts on the Exchange at the Exchange Opening Price. The System will price any contracts routed to away markets at the better of the Exchange Opening Price or the order's limit price pursuant to this sub-paragraph; or

(C) If the total number of better priced away contracts plus the number of contracts available at the Exchange Opening Price plus the contracts available at away markets at the Exchange Opening Price would satisfy the number of marketable contracts the Exchange has on either the buy or sell side, the System will contemporaneously route, based on price/time priority of routable interest, a number of contracts that will satisfy interest at away markets at prices better than the Exchange Opening Price (pricing any contracts routed to away markets at the better of the Exchange Opening Price or the order's limit price), trade available contracts on the Exchange at the Exchange Opening Price, and route a number of contracts that will satisfy interest at away markets at prices equal to the Exchange Opening Price.

(4) The System may send up to two additional Imbalance Messages (which may occur while the Route Timer is operating) bounded by OQR and reflecting away market interest in the volume. After the Route Timer has expired, the processes in paragraph (3) will repeat (except no new Route Timer will be initiated).

(5) Forced Opening. After all additional Imbalance Messages have occurred pursuant to paragraph (4) above, the System will open the series by executing as many contracts as possible by routing to away markets at prices better than the Exchange Opening Price for their disseminated size, trading available contracts on the Exchange at the Exchange Opening Price bounded by OQR (without trading through the limit price(s) of interest within OQR which is unable to be fully executed at the Opening Price), and routing contracts to away markets at prices equal to the Exchange Opening Price at their disseminated size. In this situation, the System will price any contracts routed to away markets at the better of the Exchange Opening Price or the order's limit price. Any unexecuted contracts from the imbalance not traded or routed will be cancelled back to the entering participant if they remain unexecuted and priced through the Opening Price, otherwise orders will remain in the Order Book, if consistent with the Member's instructions.

(6) The System will execute orders at the Opening Price that have contingencies (such as, without limitation, Reserve Orders) and non-routable orders, such as a "Do-Not-Route" or "DNR" Orders, to the extent possible. The System will only route non-contingency Public Customer orders, except that Public Customer Reserve Orders may route up to their full volume.

(i) For contracts that are not routable, pursuant to Options 3, Section 8(j)(6), such as DNR Orders and orders priced through the Opening Price, the System will cancel (1) any portion of a Do-Not-Route order that would otherwise have to be routed to the exchange(s) disseminating the ABBO for an opening to occur, or (2) any order or quote that is priced through the Opening Price. All other interest will be eligible for trading after opening.

(ii) During the opening of the option series, where there is an execution possible, the System will give priority to Market Orders first, then to resting Limit Orders and quotes.

The allocation provisions of Options 3, Section 10 and the Supplementary Material thereto apply with respect to other orders and quotes with the same price.

(iii) Upon opening of the option series, regardless of an execution, the System disseminates the price and size of the Exchange's best bid and offer (BBO).

(iv) Remaining contracts which are not priced through the Exchange Opening Price after routing a number of contracts to satisfy better priced away contracts will be posted to the Order Book at the better of the away market price or the order's limit price.

(k) Opening Process Cancel Timer. The Opening Process Cancel Timer represents a period of time since the underlying market has opened, and shall be established and disseminated by MRX on its website. If an option series has not opened before the conclusion of the Opening Process Cancel Timer, a Member may elect to have orders returned by providing written notification to the Exchange. These orders include all non Good-Till-Canceled and Good-Till-Date Orders received over the OTTO or FIX protocol.

Adopted July 8, 2019 (SR-MRX-2019-15); amended July 24, 2019 (SR-MRX-2019-16), operative August 23, 2019; amended March 23, 2020 (SR-MRX-2020-08); amended April 3, 2020 (SR-MRX-2020-09); amended June 23, 2020 (SR-MRX-2020-13); amended July 19, 2021 (SR-MRX-2021-09).

Section 9. Trading Halts

(a) *Halts*. An Exchange official designated by the Board may halt trading in any stock option in the interests of a fair and orderly market.

(1) The following are among the factors that may be considered in determining whether the trading in a stock option should be halted:

(i) trading in the underlying security has been halted or suspended in one or more of the markets trading the underlying security.

(ii) the opening of such underlying security has been delayed because of unusual circumstances.

(iii) other unusual conditions or circumstances are present.

(2) A designated Exchange official may halt trading (including a rotation) for a class or classes of options contracts whenever there is a halt of trading in an underlying security in one or more of the markets trading the underlying security. In such event, without the need for action by the Primary Market Maker, all trading in the effected class or classes of options

may be halted. The Exchange shall disseminate through its trading facilities and over OPRA a symbol in respect of such class or classes of options indicating that trading has been halted, and a record of the time and duration of the halt shall be made available to vendors. No Member or person associated with a Member shall effect a trade on the Exchange in any options class in which trading has been halted under the provisions of this Rule during the time in which the halt remains in effect. During a halt, the Exchange will maintain existing orders on the book (but not existing quotes prior to the halt), accept orders and quotes, and process cancels and modifications, except existing quotes are cancelled.

(b) *Resumptions*. Trading in a stock option that has been the subject of a halt under paragraph (a)(1) above may be resumed upon the determination by an Exchange official designated by the Board that the conditions which led to the halt are no longer present or that the interests of a fair and orderly market are best served by a resumption of trading.

(c) *Trading Pauses*. Trading on the Exchange in any option contract shall be halted whenever trading in the underlying security has been paused by the primary listing market. Trading in such options contracts may be resumed upon a determination by the Exchange that the conditions that led to the pause are no longer present and that the interests of a fair and orderly market are best served by a resumption of trading, which in no circumstances will be before the Exchange has received notification that the underlying security has resumed trading on at least one exchange.

(d) Capitalized terms used in this paragraph (d) shall have the same meaning as provided for in the Plan to Address Extraordinary Market Volatility Pursuant to Rule 608 of Regulation NMS, as it may be amended from time to time ("LULD Plan"). During a Limit State and Straddle State in the Underlying NMS stock:

(1) The Exchange will not open an affected option.

(2) Provided the Exchange has opened an affected option for trading, the Exchange shall reject Market Orders, as defined in Options 3, Section 7(a), and Market Complex Orders as defined in Options 3, Section 14(b), and shall notify Members of the reason for such rejection. The Exchange shall cancel Complex Orders that are Market Orders residing in the System, if the Market Complex Order becomes marketable while the affected underlying is in a Limit or Straddle State. Market Orders exposed at the NBBO pursuant to Supplementary Material. 02 to Options 5, Section 2 or Market Complex Orders exposed for price improvement pursuant to Supplementary Material .01 to Options 3, Section 14, pending in the System, will continue to be processed. If at the end of the exposure period the affected underlying is in a Limit or Straddle State, the Market Order or the Market Complex Order will be cancelled. If the affected underlying is no longer in a Limit or

Straddle State after the exposure period, the Market Order or the Market Complex Order will be processed with normal handling.

(3) Provided the Exchange has opened an affected option for trading, the Exchange shall elect Stop Orders if the condition as provided in Options 3, Section 7(d) is met, and, because they become Market Orders, shall cancel them back and notify Members of the reason for such rejection.

(4) When the security underlying an option class is in a Limit State or Straddle State, the maximum quotation spread requirements for Market Maker quotes contained in Options 2, Section 4(b)(4) and the intra-day quotation requirements contained in Options 2, Section 5(e) shall be suspended. The time periods associated with Limit States and Straddle States will not be considered by the Exchange when evaluating whether a Market Maker complied with the intra-day quotation requirements contained in Options 2, Section 5(e).

(e) **Trading Halts Due To Extraordinary Market Volatility**

The Exchange shall halt trading in all securities whenever a market-wide trading halt (commonly known as a circuit breaker) is initiated on the New York Stock Exchange in response to extraordinary market conditions.

Supplementary Material to Options 3, Section 9

.01 The Exchange shall nullify any transaction that occurs:

(a) during a trading halt in the affected option on the Exchange; or

(b) with respect to equity options (including options overlying ETFs), during a regulatory halt as declared by the primary listing market for the underlying security.

[Adopted July 8, 2019 (SR-MRX-2019-15); amended October 18, 2019 (SR-MRX-2019-23).]

Section 10. Priority of Quotes and Orders

(a) *Definitions and Applicability*.

(i) As provided in Options 1, Section 1(a)(6) and (a)(26), a "bid" is a quotation or Limit Order to buy options contracts and an "offer" is a quotation or Limit Order to sell options contracts. "Quotations," which are defined in Options 1, Section 1 (a)(45), may only be entered on the Exchange by Market Makers in the options classes to which they are appointed under Options 2, Section 3. Limit Orders may be entered by Market Makers in certain circumstances as provided in the Rules and by Electronic Access Members (either as agent or as principal). "Priority Customer Orders" and "Professional Orders" are defined in Options 1, Section 1(a)(37) and (38).

(ii) **Applicability**. This rule does not apply to the Block Order Mechanism described within Options 3, Section 11(a), the Facilitation Mechanism described within Options 3, Section 11(b), the Solicited Order Mechanism described within Options 3, Section 11(d), the Price Improvement Mechanism described within Options 3, Section 13, orders described within Options 3, Section 12 or an exposure period as provided in Options 5, Section 2 at Supplementary Material .02, unless Options 3, Section 3 is specifically referenced within MRX Rules applicable to the aforementioned functionality.

(b) *Priority on the Exchange*. The highest bid and lowest offer shall have priority on the Exchange.

(1) Zero-Bid Option Series. In the case where the bid price for any options contract is $0.00, a Market Order accepted into the System to sell that series shall be considered a Limit Order to sell at a price equal to the minimum trading increment as defined in Options 3, Section 3. With respect to Market Orders to sell which are submitted prior to the Opening Process and persist after the Opening Process, those orders are posted at a price equal to the minimum trading increment as defined in Options 3, Section 10.

(c) *Execution Priority and Processing in the System*. The Exchange will apply a Size Pro- Rata execution algorithm to orders, unless otherwise specified. The System shall execute trading interest within the System in price priority, meaning it will execute all trading interest at the best price level within the System before executing trading interest at the next best price. Size Pro-Rata Priority shall mean that if there are two or more resting orders or quotes at the same price, the System allocates contracts from an incoming order or quote to resting orders and quotes beginning with the resting order or quote displaying the largest size proportionally according to displayed size, based on the total number of contracts displayed at that price. If the result is not a whole number, it will be rounded up to the nearest whole number. If there are still contracts to be allocated after the displayed size of all orders at that price has been executed, the remaining size from the incoming order will be allocated proportionally against non-displayed interest according to remaining total size of each resting order at such price, beginning with the order which has the largest total size remaining.

(1) Priority Overlays Applicable to Size Pro-Rata Execution Algorithm: the Exchange will apply the following designated Member priority overlays. No Member shall be entitled to receive a number of contracts that is greater than the size that is associated with their quotation or order.

(A) **Priority Customer**: The highest bid and lowest offer shall have priority except that Priority Customer orders shall have priority over non-Priority Customer interest at the same price in the same options series. If there are two or more Priority Customer orders for the same options series at the same price, priority shall be afforded to such Priority Customer orders in the sequence in which they are received by the System.

(B) **Enhanced Primary Market Maker Priority**: A Primary Market Maker may be assigned by the Exchange in each option class in accordance with Options 2, Section 3(b). After all Priority Customer orders have been fully executed, provided the Primary Market Maker's quote is at the NBBO, the Primary Market Maker shall be entitled to receive the allocation described in Options 3, Section 10(c)(1)(B)(i), unless the incoming order to be allocated is a Preferenced Order and the Primary Market Maker is not the Preferred Market Maker, in which case allocation would be pursuant to (c)(1)(C). If the order is a Preferenced Order and the Primary Market Maker is also the Preferred Market Maker ("Preferred Market Maker Priority") then the Preferred Market Maker Participation Entitlement in (c)(1)(C) or (c)(1)(E) applies. The Primary Market Maker shall not be entitled to receive a number of contracts that is greater than the size associated with such Primary Market Maker's quote.

(i) When the Primary Market Maker is at the same price as a non- Priority Customer Order or Market Maker quote and the number of contracts is greater than 5, the Primary Market Maker shall receive the greater of:

a. 60% of remaining interest if there is one other non-Priority Customer Order or Market Maker quote at that price; 40% of remaining interest if there are two other non-Priority Customer Orders or Market Maker quotes at that price; or 30% of remaining interest if there are more than two other non-Priority Customer Orders and Market Maker quotes at that price (the "Primary Market Maker Participation Entitlement"); or

b. the Primary Market Maker's Size Pro-Rata share under subparagraph (a)(1)(E) ("All Other Remaining Interest").

(C) **Preferred Market Maker Priority**: After all Priority Customer orders have been fully executed, upon receipt of a Preferenced Order pursuant to Supplementary .01 to Options 3, Section 10, provided the Preferred Market Maker's quote is at the NBBO, the Preferred Market Maker will be afforded a participation entitlement. Preferred Market Maker participation entitlements will apply only after the Opening Process.

(i) When the Preferred Market Maker is at the same price as a non- Priority Customer Order or Market Maker quote, pursuant to the Preferred Market Maker participation entitlement, the Preferred Market Maker shall receive, with respect to a Preferenced Order, the greater of:

a. 60% of remaining interest if there is one other non-Priority Customer Order or Market Maker quote at that price; or 40% of remaining interest if there are two or more other non-Priority Customer Orders or Market Maker quotes at that price; or

b. the Preferred Market Maker's Size Pro-Rata share under subparagraph (c)(1)(E) ("All Other Remaining Interest"); or

c. the entitlement for Orders of 5 Contracts or Fewer under subparagraph (c)(1)(D) if the Preferred Market Maker is also the Primary Market Maker and the incoming Order is for 5 Contracts or Fewer.

(D) **Entitlement for Orders of 5 Contracts or Fewer**. This entitlement for Orders of 5 Contracts or Fewer shall only apply after the Opening Process. A Primary Market Maker is not entitled to receive a number of contracts that is greater than the size that is associated with its quote. On a quarterly basis, the Exchange will evaluate what percentage of the volume executed on the Exchange is comprised of orders for 5 contracts or fewer allocated to Primary Market Maker, and will reduce the size of the orders included in this provision if such percentage is over 40%.

(i) A Primary Market Maker is entitled to priority with respect to Orders of 5 Contracts or Fewer if the Primary Market Maker has a quote at the NBBO with no other Priority Customer or Preferenced Market Maker interest present which has a higher priority, including when the Primary Market Maker is also the Preferred Market Maker.

(ii) If the Primary Market Maker is quoting at the NBBO and the Primary Market Maker is also the Preferred Market Maker or there is no Preferred Market Maker quoting at the NBBO, and a Priority Customer has a higher priority at the time of execution, the Priority Customer will be allocated the Orders of 5 Contracts or Fewer up to their displayed size pursuant Options 3, Section 10(c)(1)(A) and if contracts remain, the Primary Market Maker will be allocated the remainder.

(iii) If the Primary Market Maker is quoting at the NBBO and no Priority Customer has a higher priority at the time of execution and a Preferred Market Maker, who is not the Primary Market Maker, is quoting at the NBBO then allocation shall proceed according to Options 3, Section 10(c)(1)(C).

(E) **All Other Remaining Interest**: If there are contracts remaining after all priorities in (A)-(D) have been fully executed, notwithstanding Options 3, Section 7(g)(3) and (k)(2), such contracts shall be executed based on the Size Pro-Rata execution algorithm as described within Options 3, Section 10(c). Legging Orders will be allocated after all other non-displayed interest, pursuant to Options 3, Section 7(k)(2).

(2) A Market Maker is entitled only to an Enhanced Primary Market Maker Priority pursuant to Options 3, Section 10(c)(1)(B) or the Entitlement for Orders of 5 Contracts or Fewer pursuant to Options 3, Section 10(c)(1)(D) on a quote, or the Preferred Market Maker Priority pursuant to Options 3, Section 10(c)(1)(C) on a quote.

Supplementary Material to Options 3, Section 10

.01 Preferred Competitive Market Makers are subject to enhanced quoting requirements as provided in Options 2, Section 5(e)(3).

.02 Notification of Public Customer Interest on the Book. The Exchange shall make available to Members the quantity of Public Customer contracts included in the Exchange's highest bid and lowest offer.

[Adopted July 8, 2019 (SR-MRX-2019-15); amended August 28, 2019 (SR-MRX-2019-17), operative September 27, 2019; amended Dec. 9, 2019 (SR-MRX-2019-25).]

Section 11. Auction Mechanisms

For purposes of this Rule, a "broadcast message" means an electronic message that is sent by the Exchange to all Members, and a "Response" means an electronic message that is sent by Members in response to a broadcast message. Also for purposes of this Rule, the time given to Members to enter Responses for any of the below auction mechanisms shall be designated by the Exchange via an Options Trader Alert, but no less than 100 milliseconds and no more than 1 second.

(a) **Block Order Mechanism**. The Block Order Mechanism is a process by which a Member can obtain liquidity for the execution of block-size orders. The Block Order Mechanism is for single leg transactions only. Block-size orders are orders for fifty (50) contracts or more.

(1) Upon the entry of an order into the Block Order Mechanism, a broadcast message will be sent that includes the series, and may include price, size and/or side, as specified by the Member entering the order, and Members will be given an opportunity to enter Responses with the prices and sizes at which they would be willing to trade with a block-size order.

(2) At the conclusion of the time given Members to enter Responses, either an execution will occur automatically, or the order will be cancelled.

(i) Responses, orders, and quotes will be executed at a single block execution price that is the price for the block-size order at which the maximum number of contracts can be executed consistent with the Member's instruction. Bids (offers) on the Exchange at the time the block order is executed that are priced higher (lower) than the block execution price, as well as Responses that are priced higher (lower) than the block execution price, will be executed in full at the block execution price up to the size of the block order.

(ii) At the block execution price, Priority Customer Orders and Priority Customer Responses will be executed first in price time priority, and then quotes, non-Priority Customer Orders, and non-Priority Customer Responses will participate in the execution of the block-size order based upon the percentage of the total number of contracts available at the block execution price that is represented by the size of the quote, non-Priority Customer Order, or non-Priority Customer Response.

(3) If a trading halt is initiated after an order is entered into the Block Order Mechanism, such auction will be automatically terminated without execution.

(b) **Facilitation Mechanism**. The Facilitation Mechanism is a process by which an Electronic Access Member can execute a transaction wherein the Electronic Access Member seeks to facilitate a block-size order it represents as agent, and/or a transaction wherein the Electronic Access Member solicited interest to execute against a block-size order it represents as agent. Electronic Access Members must be willing to execute the entire size of orders entered into the Facilitation Mechanism.

(1) Orders must be entered into the Facilitation Mechanism at a price that is (A) equal to or better than the NBBO on the same side of the market as the agency order unless there is a Priority Customer order on the same side Exchange best bid or offer, in which case the order must be entered at an improved price; and (B) equal to or better than the ABBO on the opposite side. Orders that do not meet these requirements are not eligible for the Facilitation Mechanism and will be rejected.

(2) Upon the entry of an order into the Facilitation Mechanism, a broadcast message that includes the series, price and size of the Agency Order, and whether it is to buy or sell, will be sent and Members will be given an opportunity to enter Responses with the prices and sizes at which they want to participate in the facilitation of the order.

(3) Responses may be priced at the price of the order to be facilitated or at a better price and will only be considered up to the size of the order to be facilitated.

(4) At the end of the period given for the entry of Responses, the facilitation order will be automatically executed.

(i) Unless there is sufficient size to execute the entire facilitation order at a better price, Priority Customer Orders and Priority Customer Responses to buy (sell) at the time the facilitation order is executed that are priced higher (lower) than the facilitation price will be executed at the facilitation price. Non-Priority Customer Orders and non-Priority Customer Responses to buy (sell) and Market Maker quotes at the time the facilitation order is executed that are priced higher (lower) than the facilitation price will be executed at their stated price, thereby providing the order being facilitated a better price for the number of contracts associated with such higher bids (lower offers). The facilitation order will be cancelled at the end of the exposure period if an execution would take place at a price that is inferior to the best bid (offer) on Nasdaq MRX.

(ii) The facilitating Electronic Access Member will be allocated up to forty percent (40%) (or such lower percentage requested by the Member) of the original size of the facilitation order, but only after better-priced Responses, orders and quotes, as well as Priority Customer Orders and Priority Customer Responses at the facilitation price, are executed in full at such price point. Thereafter, quotes, non-Priority Customer Orders, and non-Priority Customer Responses at the facilitation price will participate in the execution of the facilitation order based upon the percentage of the total number of contracts available at the facilitation price that is represented by the size of the quote, non-Priority Customer Order, or non-Priority Customer Response.

(iii) Upon entry of an order into the Facilitation Mechanism, the facilitating Electronic Access Member can elect to automatically match the price and size of orders, quotes and responses received during the exposure period up to a specified limit price or without specifying a limit price. If a Member elects to auto-match, the facilitating Electronic Access Member will be allocated the aggregate size of all competing quotes, orders, and Responses at each price point, or at each price point up to the specified limit price if a limit is specified, until a price point is reached where the balance of the order can be fully executed. At such price point, the facilitating Member shall be allocated up to forty percent (40%) (or such lower percentage requested by the Member) of the original size of the facilitation order, but only after Priority Customer Orders and Priority Customer Responses at such price point. Thereafter, all non-Priority Customer Orders, non-Priority Customer Responses, and quotes at the price point will participate in the execution of the facilitation order based upon the percentage of the total number of contracts available at the facilitation price that is represented by the size of the non-Priority Customer Order, non-Priority Customer Response or quote. An election to automatically match better prices cannot be cancelled or altered during the exposure period.

(5) If a trading halt is initiated after an order is entered into the Facilitation Mechanism, such auction will be automatically terminated without execution.

(c) Complex Facilitation Mechanism. Electronic Access Members may use the Facilitation Mechanism in sub-paragraph (b) above to execute block-size Complex Orders at a net price. Each options leg of a Complex Order entered into the Complex Facilitation Mechanism must meet the minimum contract size requirement. The Complex Facilitation Mechanism is a process by which an Electronic Access Member can execute a transaction wherein the Electronic Access Member seeks to facilitate a block-size Complex Order it represents as agent, and/or a transaction wherein the Electronic Access Member solicited interest to execute against a block-size Complex Order it represents as agent. Electronic Access Members must be willing to execute the entire size of Complex Orders entered into the Complex Facilitation Mechanism.

(1) Complex Orders entered into the Complex Facilitation Mechanism must be priced within the parameters described below. Complex Orders that do not meet these requirements are not eligible for the Complex Facilitation Mechanism and will be rejected.

(2) Complex Options Orders must be entered into the Complex Facilitation Mechanism at a price that is (A) equal to or better than the best bid or offer on the Complex Order Book on the same side of the market as the Agency Order; and (B) equal to or better than the best net price achievable from the best MRX bids and offers for the individual legs on the same side of the market as the Agency Order; provided that, if there is a Priority Customer order on the best bid or offer for any leg, the order must be entered at an improved price consistent with Options 3, Section 14(c)(2).

(3) Stock-Option Orders and Stock-Complex Orders must be entered into the Complex Facilitation Mechanism at a price that is (A) equal to or better than the best bid or offer on the Complex Order Book on the same side of the market as the Agency Order; and (B) equal to or better than the best net price achievable from the best MRX bids and offers for the individual legs on both sides of the market; provided that, if there is a Priority Customer order on the best bid or offer for any leg, the order must be entered at an improved price consistent with Options 3, Section 14(c)(2).

(4) A Complex Order entered into the Complex Facilitation Mechanism will be rejected if any component of the Complex Order has not opened for trading, or if there is a trading halt in any series underlying the Complex Order. If a trading halt is initiated after the order is entered into the Complex Facilitation Mechanism, such auction will be automatically terminated without execution.

(5) Upon the entry of a Complex Order into the Complex Facilitation Mechanism, a broadcast message that includes the net price, side and size of the Agency Complex Order will be sent and Members will be given an opportunity to enter Responses with the net prices and sizes at which they want to participate in the facilitation of the Agency Complex Order. The time given to Members to enter Responses shall be designated by the Exchange via Options Trader Alert, but will be no less than 100 milliseconds and no more than 1 second.

(6) Responses are only executable against the Complex Order with respect to which they are entered, and will only be considered up to the size of the Complex Order to be facilitated.

Responses must be entered in the increments provided in Options 3, Section 14(c)(1) at the facilitation price or at a price that is at least one cent better for the Agency Order.

(7) Responses submitted by Members shall not be visible to other auction participants during the exposure period and can be modified or deleted before the exposure period has ended. At the end of the period given for the entry of Responses, the facilitation order will be automatically executed.

(A) Unless there is sufficient size to execute the entire facilitation order at a better net price, Priority Customer Complex Orders and Priority Customer Responses to buy (sell) at the time the facilitation order is executed that are priced higher (lower) than the facilitation price will be executed at the facilitation price. Non-Priority Customer Complex Orders and non-Priority Customer Responses to buy (sell) at the time the facilitation order is executed that are priced higher (lower) than the facilitation price will be executed at their stated price, thereby providing the Complex Order being facilitated a better price for the number of contracts associated with such higher bids (lower offers).

(B) The facilitating Electronic Access Member will be allocated up to forty percent (40%) (or such lower percentage requested by the Member) of the original size of the facilitation order, but only after better-priced Responses, Complex Orders, as well as Priority Customer Complex Orders and Priority Customer Responses at the facilitation price, are executed in full. Thereafter, non-Priority Customer Complex Orders and non-Priority Customer Responses at the facilitation price will participate in the execution of the facilitation order based upon the percentage of the total number of contracts available at the facilitation price that is represented by the size of the non-Priority Customer Complex Order or non-Priority Customer Response.

(C) Upon entry of a Complex Order into the Complex Facilitation Mechanism, the facilitating Electronic Access Member can elect to automatically match the net price and size of Complex Orders, Responses received during the exposure period up to a specified limit price or without specifying a limit price. This election will also automatically match the net price available from the MRX best bids and offers on the individual legs for the full size of the order; provided that with notice to Members the Exchange may determine whether to offer this option only for Complex Options Orders, Stock-Option Orders, and/or Stock Complex Orders. If a Member elects to auto-match, the facilitating Electronic Access Member will be allocated the aggregate size of all competing Complex Orders and Responses at each price point, or at each price point up to the specified limit price if a limit is specified, until a price point is reached where the balance of the order can be fully executed. At such price point, the facilitating Member will be allocated up to forty percent (40%) (or such lower percentage requested by the Member) of the original size of the facilitation order, but only after Priority Customer

Orders and Priority Customer Responses at such price point. Thereafter, non-Priority Customer Complex Orders and non-Priority Customer Responses at the price point will participate in the execution of the facilitation order based upon the percentage of the total number of contracts available at the facilitation price that is represented by the size of the non-Priority Customer Complex Order or non-Priority Customer Response. An election to automatically match better prices cannot be cancelled or altered during the exposure period.

(D) With respect to bids and offers for the individual legs of a Complex Order entered into the Complex Facilitation Mechanism, the priority rules applicable to the execution of Complex Orders contained in Options 3, Section 14(c)(2) will continue to be applicable and may prevent the execution of a Complex Order entered into the Facilitation Mechanism, in which case the transaction will be cancelled. If an improved net price for the Complex Order being executed can be achieved from Complex Orders, Responses on the Complex Order Book and, for Complex Options Orders, the MRX best bids and offers on the individual legs, the facilitation order will be executed against such interest.

(d) **Solicited Order Mechanism**. The Solicited Order Mechanism is a process by which an Electronic Access Member can attempt to execute orders of 500 or more contracts it represents as agent (the "Agency Order") against contra orders that it solicited. Each order entered into the Solicited Order Mechanism shall be designated as all-or-none.

(1) Orders must be entered into the Solicited Order Mechanism at a price that is equal to or better than the NBBO on both sides of the market; provided that, if there is a Priority Customer order on the Exchange best bid or offer, the order must be entered at an improved price. Orders that do not meet these requirements are not eligible for the Solicited Order Mechanism and will be rejected.

(2) Upon entry of both orders into the Solicited Order Mechanism at a proposed execution price, a broadcast message that includes the series, price and size of the Agency Order, and whether it is to buy or sell, will be sent and Members will be given an opportunity to enter Responses with the prices and sizes at which they would be willing to participate in the execution of the Agency Order.

(3) At the end of the period given Members to enter Responses, the Agency Order will be automatically executed in full or cancelled.

(i) If at the time of execution there is insufficient size to execute the entire Agency Order at an improved price (or prices), the Agency Order will be executed against the solicited order at the proposed execution price so long as, at the time of execution: (A) the execution price is equal to or better than the best bid or offer on the Exchange, and (B) there are no Priority Customer Orders or Priority Customer Responses on the Exchange that are priced equal to the proposed execution price. If there are Priority Customer Orders or Priority Customer Responses on the Exchange on the opposite side of the Agency Order at the proposed execution price and there is sufficient size to execute the entire size of the Agency Order, the Agency Order will be executed against the bid or offer, and the solicited order will be cancelled. The aggregate size of all orders, quotes and Responses at the bid or offer will be used to determine whether the entire Agency Order can be executed. Both the solicited order and Agency Order will be cancelled if an execution would take place at a price that is inferior to the best bid or offer on the Exchange, or if there is a Priority Customer on the book at the proposed execution price but there is insufficient size on the Exchange to execute the entire Agency Order.

(ii) If at the time of execution there is sufficient size to execute the entire Agency Order at an improved price (or prices), the Agency Order will be executed at the improved price(s), subject to the condition in (i)(A), and the solicited order will be cancelled. The aggregate size of all orders, quotes and Responses at each price will be used to determine whether the entire agency order can be executed at an improved price (or prices).

(iii) When executing the Agency Order against the bid or offer in accordance with paragraph (i) above, or at an improved price in accordance with paragraph (ii) above, Priority Customer Orders and Priority Customer Responses will be executed first. Non-Priority Customer Orders, non-Priority Customer Responses, and Market Maker quotes participate next in the execution of the Agency Order based upon the percentage of the total number of contracts available at the best price that is represented by the size of the non-Priority Customer Order, non-Priority Customer Response, or Market Maker quote.

(4) If a trading halt is initiated after an order is entered into the Solicited Order Mechanism, such auction will be automatically terminated without execution.

(5) Prior to entering Agency Orders into the Solicited Order Mechanism on behalf of a customer, EAMs must deliver to the customer a written notification informing the customer that its order may be executed using the Exchange's Solicited Order Mechanism. Such written notification must disclose the terms and conditions contained in this Rule and must be in a form approved by the Exchange.

(e) Complex Solicited Order Mechanism. The Complex Solicited Order Mechanism is a process by which an Electronic Access Member can attempt to execute Complex Orders it represents as agent (the "Agency Complex Order") against contra orders that it solicited according to sub-paragraph (d) above. Each Complex Order entered into the Solicited Order Mechanism shall be designated as all-or-none, and each options leg must meet the minimum contract size requirement contained in sub-paragraph (d) above

(1) Complex Orders must be entered into the Complex Solicited Order Mechanism at a price that is (A) equal to or better than the best bid or offer on the Complex Order Book on both sides of the market; and (B) equal to or better than the best net price achievable from the best MRX bids and offers for the individual legs on both sides of the market; provided that, if there is a Priority Customer order on the best bid or offer for any leg, the order must be entered at an improved price consistent with Options 3, Section 14(c)(2). Complex Orders that do not meet these requirements are not eligible for the Complex Solicited Order Mechanism and will be rejected.

(2) A Complex Order entered into the Complex Solicited Order Mechanism will be rejected if any component of the Complex Order has not opened for trading, or if there is a trading halt in any series underlying the Complex Order. If a trading halt is initiated after the order is entered into the Complex Solicited Order Mechanism, such auction will be automatically terminated without execution.

(3) Upon entry of both orders into the Complex Solicited Order Mechanism at a proposed execution net price, a broadcast message that includes the net price, side and size of the Agency Complex Order will be sent and Members will be given an opportunity to enter Responses with the net prices and sizes at which they would be willing to participate in the execution of the Agency Complex Order. The time given to Members to enter Responses shall be designated by the Exchange via Options Trader Alert, but will be no less than 100 milliseconds and no more than 1 second. Responses are only executable against the Complex Order with respect to which they are entered, and will only be considered up to the size of the Agency Complex Order. Responses must be entered in the increments provided in Options 3, Section 14(c)(1) at the proposed execution net price or at a price that is at least one cent better for the Agency Order.

(4) Responses submitted by Members shall not be visible to other auction participants during the exposure period and can be modified or deleted before the exposure period has ended. At the end of the period given for the entry of Responses, the Agency Complex Order will be automatically executed in full pursuant to paragraphs (A) through (D) below, or cancelled.

(A) If at the time of execution there is insufficient size to execute the entire Agency Complex Order at an improved net price(s) pursuant to paragraph (e)(4)(C) below, the Agency Complex Order will be executed against the solicited Complex Order at the proposed execution net price so long as, at the time of execution: (i) the execution net price is equal to or better than the best net price achievable from the best MRX bids and offers for the individual legs, (ii) the Complex Order can be executed in accordance with Options 3, Section 14(c)(2) with respect to the individual legs, (iii) the execution net price is equal to or better than the best bid or offer on the Complex Order Book, and (iv) there are no Priority Customer Complex Orders or Responses that are priced equal to the proposed execution price.

(B) If there are Priority Customer Complex Orders or Responses on the opposite side of the Agency Complex Order at the proposed execution net price and there is sufficient size to execute the entire size of the Agency Complex Order, the Agency Complex Order will be executed against such interest, and the solicited Complex Order will be cancelled, provided that: (i) the execution net price is equal to or better than the best net price achievable from the best MRX bids and offers for the individual legs, and (ii) the Complex Order can be executed in accordance with Options 3, Section 14(c)(2) with respect to the individual legs. The aggregate size of all Complex Orders, Responses and, for Complex Options Orders, the aggregate size available from the best bids and offers for the individual legs, will be used to determine whether the entire Agency Complex Order can be executed pursuant to this paragraph.

(C) If at the time of execution there is sufficient size to execute the entire Agency Complex Order at an improved net price(s), the Agency Complex Order will be executed at the improved net price(s), and the solicited Complex Order will be cancelled, provided that: (i) the execution net price is equal to or better than the best net price achievable from the best MRX bids and offers for the individual legs, and (ii) the Complex Order can be executed in accordance with Options 3, Section 14(c)(2) with respect to the individual legs. The aggregate size of all Complex Orders, Responses, and the aggregate size available from the best bids and offers for the individual legs for a Complex Options Order, will be used to determine whether the entire Agency Complex Order can be executed at an improved net price(s).

(D) When executing the Agency Complex Order against other interest in accordance with Options 3, Section 14(d)(2)(ii), Priority Customer Complex Orders and Priority Customer Responses will be executed first. Non-Priority Customer Complex Orders and non-Priority Customer Responses participate next in the execution of the Agency Complex Order based upon the percentage of the total number of contracts available at the best price that is represented by the size of the non-Priority Customer Complex Order or non-Priority Customer Response. Finally, for Complex Options Orders, bids and offers for the individual legs will be executed pursuant to Options 3, Section 10 and the Supplementary Material thereto.

(5) Prior to entering Agency Orders into the Complex Solicited Order Mechanism on behalf of a customer, EAMs must deliver to the customer a written notification informing the customer that its order may be executed using Nasdaq MRX's Solicited Order Mechanism. Such written notification must disclose the terms and conditions contained in this Rule and must be in a form approved by the Exchange.

(f) **Limitation on Concurrent Complex Strategy Auctions**. Only one Exposure Auction at Supplementary Material .01 to Options 3, Section 14, Complex Price Improvement Mechanism auction at Options 3, Section 13(e), Complex Facilitation Mechanism auction at Options 3, Section 11(c), or Complex Solicited Order Mechanism auction at Options 3, Section 11(e), respectively, will be ongoing at any given time in a Complex Strategy, and such auctions will not queue or overlap in any manner. The Exchange will not initiate an Exposure Auction, Complex Price Improvement Mechanism auction, Complex Facilitation Mechanism auction, or Complex Solicited Order Mechanism auction in a Complex Strategy while another Exposure Auction, Complex Price Improvement Mechanism auction, Complex Facilitation Mechanism auction, or Complex Solicited Order Mechanism auction in that Complex Strategy is ongoing. If a Complex Price Improvement Mechanism auction, Complex Facilitation Mechanism auction, or Complex Solicited Order Mechanism auction for a Complex Strategy has been initiated, an Exposure Auction for that Complex Strategy will not be initiated, and an Exposure Only Complex Order for the Complex Strategy will be cancelled back to the Member. An Exposure Order for the Complex Strategy will be processed as an order that is not marked for price improvement.

(g) **Concurrent Complex Order and single leg auctions**. An auction in the Block Order Mechanism at Options 3, Section 11(a), Facilitation Mechanism at Options 3, Section 11(b), Solicited Order Mechanism at Options 3, Section 11(d), or Price Improvement Mechanism at Options 3, Section 13(d), respectively, or an exposure period as provided in Supplementary Material .02 to Options 5, Section 2, for an option series may occur concurrently with a Complex Order Exposure Auction at Supplementary Material .01 to Options 3, Section 14, Complex Facilitation Auction at Options 3, Section 11(c), Complex Solicited Order Auction at Options 3, Section 11(e), or Complex Price Improvement Mechanism auction at Options 11, Section 13(e), respectively, for a Complex Order that includes that series. To the extent that there are concurrent Complex Order and single leg auctions involving a specific option series, each auction will be processed sequentially based on the time the auction commenced. At the time an auction concludes, including when it concludes early, the auction will be processed pursuant to Options 3, Section 11(a), (b), (d), or Section 13(a) or Supplementary Material .02 to Options 5, Section 2, as applicable, for the single option, or pursuant to Supplementary Material .01 to Options 3, Section 14, Options 3, Section 11(c), 11(e), Options 3, Section 13(e), as applicable, for the Complex Order, except as provided for at Options 3, Section 13(e)(4)(vi).

Supplementary Material to Options 3, Section 11

.01 It will be a violation of a Member's duty of best execution to its customer if it were to cancel a facilitation order to avoid execution of the order at a better price. The availability of the Facilitation Mechanism does not alter a Member's best execution duty to get the best price for its customer. Accordingly, while facilitation orders can be canceled during the time period given for the entry of Responses, if a Member were to cancel a facilitation order when there was a superior price available on the Exchange and subsequently re-enter the facilitation order at the same facilitation price after the better price was no longer available without attempting to obtain that better price for its customer, there would be a presumption that the Member did so to avoid execution of its customer order in whole or in part by other brokers at the better price. Additionally, any solicited contra orders entered by Members into the Facilitation Mechanism to trade against Agency Orders may not be for the account of an Exchange Market Maker that is assigned to the options class.

.02 Responses represent non-firm interest that can be canceled at any time prior to execution. Responses are not displayed to any market participants.

.03 Under paragraph (d) above, Members may enter contra orders that are solicited. The Solicited Order Mechanism provides a facility for Members that locate liquidity for their customer orders. Members may not use the Solicited Order Mechanism to circumvent Exchange Options 3, Section 22(b) limiting principal transactions. This may include, but is not limited to, Members entering contra orders that are solicited from (1) affiliated broker-dealers, or (2) broker-dealers with which the Member has an arrangement that allows the Member to realize similar economic benefits from the solicited transaction as it would achieve by executing the customer order in whole or in part as principal. Additionally, any solicited contra orders entered by Members to trade against Agency Orders may not be for the account of an Exchange Market Maker that is assigned to the options class.

.04 Split Prices. Orders and Responses may be entered into the Facilitation and Solicitation Mechanisms and receive executions at the mid-price between the standard minimum trading increments for the options series ("Split Prices"). This means that orders and Responses for options with a minimum increment of 5 cents may be entered into the Facilitation and Solicitation Mechanisms and receive executions in 2.5 cent increments (e.g., $1.025, $1.05, $1.075, etc.), and that orders and Responses for options with a minimum increment of 10 cents may be entered into the Facilitation and Solicitation Mechanism and receive executions at 5 cent increments (e.g., $4.05, $4.10, $4.15, etc.). Orders and quotes in the market that receive the benefit of the facilitation price under paragraph (b) may also receive executions at Split Prices.

.05 Penny Prices. Orders and Responses may be entered into the Block Order Mechanism and receive executions at penny increments. Orders and quotes in the market that receive the benefit of the block execution price under paragraph (a)(2)(i) may also receive executions at penny increments.

Adopted July 8, 2019 (SR-MRX-2019-15); amended March 12, 2021 (SR-MRX-2021-01), operative April 11, 2021.

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Section 13. Price Improvement Mechanism for Crossing Transactions

Changes to this rule became operative on November 7, 2022. For options symbols which have not yet migrated to the new platform, the attached document displays the current rules. The symbol migration schedule is available at Options Trader Alert 2022-34.

(a) The Price Improvement Mechanism is a process by which an Electronic Access Member can provide price improvement opportunities for a transaction wherein the Electronic Access Member seeks to facilitate an order it represents as agent, and/or a transaction wherein the Electronic Access Member solicited interest to execute against an order it represents as agent (a "Crossing Transaction").

(b) Crossing Transaction Entry. A Crossing Transaction is comprised of the order the Electronic Access Member represents as agent (the "Agency Order") and a counter-side order for the full size of the Agency Order (the "Counter-Side Order"). The Counter-Side Order may represent interest for the Member's own account, or interest the Member has solicited from one or more other parties, or a combination of both.

(1) If the Agency Order is for less than 50 option contracts, and if the difference between the National Best Bid and National Best Offer ("NBBO") is $0.01, the Crossing Transaction must be entered at one minimum price improvement increment better than the NBBO on the opposite side of the market from the Agency Order and better than the limit order or quote on the Nasdaq MRX order book on the same side of the Agency Order.

(2) If the Agency Order is for 50 option contracts or more, or if the difference between the NBBO is greater than $0.01, a Crossing Transaction must be entered only at a price that is equal to or better than the NBBO and better than the limit order or quote on the Nasdaq MRX order book on the same side of the Agency Order.

(3) The Crossing Transaction may be priced in one-cent increments.

(4) The Crossing Transaction may not be canceled, but the price of the Counter-Side Order may be improved during the exposure period.

(c) Exposure Period. Upon entry of a Crossing Transaction into the Price Improvement Mechanism, a broadcast message that includes the series, price and size of the Agency Order, and whether it is to buy or sell, will be sent to all Members. This broadcast message will not be included in the Exchange's disseminated best bid or offer and will not be disseminated through OPRA.

(1) The Exchange will designate via an Options Trader Alert a time of no less than 100 milliseconds and no more than 1 second for Members to indicate the size and price at which they want to participate in the execution of the Agency Order ("Improvement Orders").

(2) Improvement Orders may be entered by all Members in one-cent increments at the same price as the Crossing Transaction or at an improved price for the Agency Order, and will only be considered up to the size of the Agency Order.

(3) During the exposure period, Improvement Orders may not be canceled, but may be modified to (i) increase the size at the same price, or (ii) improve the price of the Improvement Order for any size up to the size of the Agency Order.

(4) During the exposure period, responses (including the Counter-Side Order, Improvement Orders, and any changes to either) submitted by Members shall not be visible to other auction participants.

(5) The exposure period will automatically terminate (i) at the end of the time period designated by the Exchange pursuant to Options 3, Section 13(c)(1) above, (ii) upon the receipt of a market or marketable limit order on the Exchange in the same series, or (iii) upon the receipt of a non-marketable limit order in the same series on the same side of the market as the Agency Order that would cause the price of the Crossing Transaction to be outside of the best bid or offer on the Exchange.

(d) Execution. At the end of the exposure period the Agency Order will be executed in full at the best prices available, taking into consideration orders and quotes in the Exchange market, Improvement Orders, and the Counter-Side Order. The Agency Order will receive executions at multiple price levels if there is insufficient size to execute the entire order at the best price.

(1) At a given price, "Priority Customer Interest" (Priority Customer Orders and Improvement Orders from Priority Customers) is executed in full before "non-Priority Customer Interest" (non-Priority Customer Orders, Improvement Orders from non-Priority Customers and Market Maker quotes).

(2) After Priority Customer Interest at a given price, non-Priority Customer Interest will participate in the execution of the Agency Order based upon the percentage of the total number of contracts available at the price that is represented by the size of such interest.

(3) In the case where the Counter-Side Order is at the same price as non-Priority Customer Interest in (d)(2), the Counter-Side order will be allocated the greater of one (1) contract or forty percent (40%) (or such lower percentage requested by the Member) of the initial size of the Agency Order before non-Priority Customer Interest is executed. Upon entry of Counter-Side Orders, Members can elect to automatically match the price and size of orders, quotes and responses received during the exposure period up to a specified limit price or without specifying a limit price. If a Member elects to auto-match, the Counter-Side Order will be allocated the aggregate size of all competing quotes, orders and Improvement Orders at each price point, or at each price point up to the specified limit price if a limit is specified, until a price point is reached where the balance of the order can be fully executed. At such price point, the Counter-Side Order shall be allocated the greater of one contract or forty percent (40%) (or such lower percentage requested by the Member) of the original size of the Agency Order, but only after Priority Customer Interest

at such price point are executed in full. Thereafter, all non-Priority Customer Interest at the price point will participate in the execution of the Agency Order based upon the percentage of the total number of contracts available at the price that is represented by the size of the non-Priority Customer Interest. An election to automatically match better prices cannot be cancelled or altered during the exposure period.

(4) When a market order or marketable limit order on the opposite side of the market from the Agency Order ends the exposure period, it will participate in the execution of the Agency Order at the price that is mid-way between the best counter-side interest and the NBBO, so that both the market or marketable limit order and the Agency Order receive price improvement. Transactions will be rounded, when necessary, to the $.01 increment that favors the Agency Order.

(5) If a trading halt is initiated after an order is entered into the Price Improvement Mechanism, such auction will be automatically terminated without execution.

(e) Complex Price Improvement Mechanism. Electronic Access Members may use the Price Improvement Mechanism according to this Rule to execute Complex Orders at a net price. The Complex Price Improvement Mechanism is a process by which an Electronic Access Member can provide price improvement opportunities for a transaction wherein the Electronic Access Member seeks to facilitate a Complex Order it represents as agent, and/or a transaction wherein the Electronic Access Member solicited interest to execute against a Complex Order it represents as agent (a "Crossing Transaction").

(1) Crossing Transaction Entry. A Crossing Transaction is comprised of the order the Electronic Access Member represents as agent (the "Agency Order") and a counter-side order for the full size of the Agency Order (the "Counter-Side Order"). The Counter-Side Order may represent interest for the Member's own account, or interest the Member has solicited from one or more other parties, or a combination of both.

(2) Complex Orders must be entered into the Complex Price Improvement Mechanism at a price that is better than the best net price (i) available on the Complex Order Book on both sides of the market; and (ii) achievable from the best MRX bids and offers for the individual legs on both sides of the market (an "improved net price"). Complex Orders will be rejected unless they are entered at an improved net price.

(3) A Complex Order entered into the Complex Price Improvement Mechanism will be rejected if any component of the Complex Order has not opened for trading, or if there is a trading halt in any series underlying the Complex Order. If a trading halt is initiated after the order is entered into the Complex Price Improvement Mechanism, such auction will be automatically terminated without an execution.

(4) Exposure Period. Upon entry of a Complex Order into the Complex Price Improvement Mechanism, a broadcast message that includes the net price, side and size of the Agency Complex Order will be sent to Members.

(i) The Exchange will designate via Options Trader Alert a time of no less than 100 milliseconds and no more than 1 second for Members to indicate the size and net price at which they want to participate in the execution of the Agency Complex Order ("Improvement Complex Orders"). Improvement Complex Orders may be entered by all Members for their own account or for the account of a Public Customer. Improvement Complex Orders are only executable against the Complex Order with respect to which they are entered, and will only be considered up to the size of the Agency Complex Order. Improvement Complex Orders must be entered in the increments provided in Options 3, Section 14(c)(1) at the same price as the Crossing Transaction or at a price that is at least one cent better for the Agency Complex Order.

(ii) During the exposure period, Improvement Complex Orders may not be canceled, but may be modified to (1) increase the size at the same price, or (2) improve the price of the Improvement Complex Order for any size.

(iii) During the exposure period, responses (including the Counter-Side Order, Improvement Complex Orders, and any changes to either) submitted by Members shall not be visible to other auction participants.

(iv) The exposure period will automatically terminate (A) at the end of the time period designated by the Exchange pursuant to subparagraph (4)(i) above, (B) upon the receipt of a Complex Order in the same complex strategy on either side of the market that is marketable against the Complex Order Book or bids and offers for the individual legs, or (C) upon the receipt of a non-marketable Complex Order in the same complex strategy on the same side of the market as the Agency Complex Order that would cause the execution of the Agency Complex Order to be outside of the best bid or offer on the Complex Order Book.

(v) Pursuant to Supplementary Material .04 to this Rule, only one Complex Price Improvement Mechanism may be ongoing at any given time in a given complex strategy. However, a price improvement auction may be ongoing concurrently in series of individual legs of a complex strategy.

(vi) A Complex Price Improvement Mechanism in a complex strategy may be ongoing at the same time as a Price Improvement Auction pursuant to this Rule or during an exposure period pursuant to Supplementary Material .02 to Options 5, Section 2 in a component leg(s) of such Complex Order. If a Complex Price Improvement Mechanism is early terminated pursuant to paragraph (iv) above, and the incoming Complex Order that causes the early termination in the complex strategy is also marketable against a component leg(s) of the complex strategy that is the subject of a concurrent ongoing Price Improvement Auction pursuant to this Rule or an exposure period pursuant to Supplementary Material .02 to Options 5, Section 2, then the concurrent Complex Price Improvement Mechanism and component leg auction(s) are processed in the following sequence: (1) the Complex Price Improvement Mechanism is early terminated; (2) the component leg auction(s) are early terminated and processed; and (3) legging of residual incoming Complex Order interest occurs, except with respect to Stock Option Orders and Stock Complex Orders.

(5) Execution. At the end of the exposure period the Agency Complex Order will be executed in full at the best prices available, taking into consideration Complex Orders in the Complex Order Book, Improvement Complex Orders, the Counter-Side Order, and, for Complex Options Orders, the MRX best bids and offers on the individual legs. The Agency Complex Order will receive executions at multiple price levels if there is insufficient size to execute the entire order at the best price.

(i) At a given net price, Priority Customer interest on the Complex Order Book (i.e., Priority Customer Complex Orders and Improvement Complex Orders) is executed in full before non-Priority Customer interest (i.e., non-Priority Customer Complex Orders and Improvement Complex Orders) on the Complex Order Book.

(ii) After Priority Customer interest on the Complex Order Book at a given net price, non-Priority Customer interest on the Complex Order Book will participate in the execution of the Agency Complex Order based upon the percentage of the total number of contracts available at the price that is represented by the size of such interest.

(iii) In the case where the Counter-Side Complex Order is at the same net price as non-Priority Customer interest on the Complex Order Book in (ii) above, the Counter-Side Complex Order will be allocated the greater of one (1) contract or forty percent (40%) (or such lower percentage requested by the Member) of the initial size of the Agency Complex Order before other non-Priority Customer interest on the Complex Order Book are executed. Upon entry of Counter-Side Complex Orders, Members can elect to automatically match the price and size of Complex Orders and Improvement Complex Orders received on the Complex Order Book during the exposure period up to a specified limit net price or without specifying a limit net price. This election will also automatically match the net price available from the MRX best bids and offers on the individual legs for the full size of the order; provided that with notice to Members the Exchange may determine whether to offer this option only for Complex Options Orders, Stock-Option Orders, and/or Stock Complex Orders. If a Member elects to auto-match, the Counter-Side Complex Order will be allocated the aggregate size of all competing Complex Orders and Improvement Complex Orders at each price point, or at each price point up to the specified limit net price if a limit is specified, until a price point is reached where the balance of the order can be fully executed. At such price point, the Counter-Side Complex Order shall be allocated the greater of one contract or forty percent (40%) (or such lower percentage requested by the Member) of the original size of the Agency Complex Order, but only after Priority Customer Complex Orders and Improvement Complex Orders at such price point are executed in full. Thereafter, all non-Priority Customer Complex Orders and Improvement Complex Orders at the price point will participate in the execution of the Agency Complex Order based upon the percentage of the total number of contracts available at the price that is represented by the size of the non-Priority Customer Complex Order or Improvement Complex Order on the Complex Order Book.

(iv) When a marketable Complex Order on the opposite side of the Agency Complex Order ends the exposure period, it will participate in the execution of the Agency Complex Order at the price that is mid-way between the best counter-side interest and the same side best bid or offer on the Complex Order Book or net price from MRX best bid or offer on individual legs, whichever is better, so that both the marketable Complex Order and the Agency Complex Order receive price improvement.

(v) With respect to bids and offers for the individual legs of a Complex Order entered into the Complex Price Improvement Mechanism, the priority rules applicable to the execution of Complex Orders contained in Options 3, Section 14(c)(2) will continue to be applicable and may prevent the execution of a Complex Order entered into the Complex Price Improvement Mechanism, in which case the transaction will be cancelled. If an improved net price for the Complex Order being executed can be achieved from Complex Orders, Improvement Complex Orders on the Complex Order Book and, for Complex Options Orders, the MRX best bids and offers on the individual legs, the Agency Complex Order will be executed against such interest.

Supplementary Material to Options 3, Section 13

.01 It shall be considered conduct inconsistent with just and equitable principles of trade for any Member to enter orders, quotes, Agency Orders, Counter-Side Orders or Improvement Orders for the purpose of disrupting or manipulating the Price Improvement Mechanism. Such conduct includes, but is not limited to, engaging in a pattern of conduct where the Member submitting the Agency Order into the PIM breaks-up the Agency Order into separate orders for two (2) or fewer contracts for the purpose of gaining a higher allocation percentage than the Member would have otherwise received in accordance with the allocation procedures contained in paragraph (d) above.

.02 The Price Improvement Mechanism may only be used to execute bona fide Crossing Transactions.

.03 There will be no minimum size requirements for orders to be eligible for the Price Improvement Mechanism.

.04 Only one PIM may be ongoing at any given time in a series. PIMs will not queue or overlap in any manner, except as described in Options 3, Section 11(f) and (g).

.05 Pursuant to Options 3, Section 13(c)(2), Electronic Access Members may enter Improvement Orders for the account of Public Customers.

.06 Any solicited Counter-Side Orders submitted by an Electronic Access Member to trade against Agency Orders may not be for the account of an Exchange Market Maker assigned to the options class.

.07 Counter-Side Orders and Improvement Orders entered into the Price Improvement Mechanism only will execute against the Agency Order, and any unexecuted interest will be automatically cancelled.

.08 PIM ISO Order. A PIM ISO order (PIM ISO) is the transmission of two orders for crossing pursuant to this Rule without regard for better priced Protected Bids or Protected Offers (as defined in Options 5, Section 1) because the Member transmitting the PIM ISO to the Exchange has, simultaneously with the routing of the PIM ISO, routed one or more ISOs, as necessary, to execute against the full displayed size of any Protected Bid or Protected Offer that is superior to the starting PIM auction price and has swept all interest in the Exchange's book priced better than the proposed auction starting price. Any execution(s) resulting from such sweeps shall accrue to the PIM order.

Adopted July 8, 2019 (SR-MRX-2019-15); amended March 12, 2021 (SR-MRX-2021-01), operative April 11, 2021.

Section 14. Complex Orders

(a) Definitions.

(1) *Complex Options Strategy*. A Complex Options Strategy is the simultaneous purchase and/or sale of two or more different options series in the same underlying security, for the same account, in a ratio that is equal to or greater than one-to-three (.333) and less than or equal to three-to-one (3.00) and for the purpose of executing a particular investment strategy. Only those Complex Options Strategies with no more than the applicable number of legs, as determined by the Exchange on a class-by-class basis, are eligible for processing.

(2) *Stock-Option Strategy*. A Stock-Option Strategy is the purchase or sale of a stated number of units of an underlying stock or a security convertible into the underlying stock

("convertible security") coupled with the purchase or sale of options contract(s) on the opposite side of the market representing either (A) the same number of units of the underlying stock or convertible security, or (B) the number of units of the underlying stock necessary to create a delta neutral position, but in no case in a ratio greater than eight-to-one (8.00), where the ratio represents the total number of units of the underlying stock or convertible security in the option leg to the total number of units of the underlying stock or convertible security in the stock leg.

(3) *Stock-Complex Strategy*. A Stock-Complex Strategy is the purchase or sale of a stated number of units of an underlying stock or a security convertible into the underlying stock ("convertible security") coupled with the purchase or sale of a Complex Options Strategy on the opposite side of the market representing either (A) the same number of units of the underlying stock or convertible security, or (B) the number of units of the underlying stock necessary to create a delta neutral position, but in no case in a ratio greater than eight-to-one (8.00), where the ratio represents the total number of units of the underlying stock or convertible security in the option legs to the total number of units of the underlying stock or convertible security in the stock leg. Only those Stock-Complex Strategies with no more than the applicable number of legs, as determined by the Exchange on a class-by-class basis, are eligible for processing.

(4) The term "complex strategy" includes Complex Options Strategies, Stock-Option Strategies, and Stock-Complex Strategies.

(5) The terms "Complex Options Order," "Stock-Option Order," and "Stock-Complex Order" refer to orders for a Complex Options Strategy, Stock-Option Strategy, and Stock-Complex Strategy, respectively. The term "Complex Order" includes Complex Options Orders, Stock-Option Orders, and Stock-Complex Orders.

(b) *Types of Complex Orders*. Unless otherwise specified, the definitions used below have the same meaning contained in Options 3, Section 7. The Exchange may determine to make certain order types and/or times-in-force available on a class or System basis. Complex Orders may be entered using the following orders or designations:

(1) Market Complex Order. A Market Complex Order is a Complex Order to buy or sell a complex strategy that is to be executed at the best price obtainable. If not executable upon entry, such orders will rest on the Complex Order Book unless designated as fill-or-kill or immediate-or-cancel.

(2) Limit Complex Order. A Limit Complex Order is a Complex Order to buy or sell a complex strategy that is entered with a limit price expressed as a net purchase or sale price for the components of the order.

(3) All-Or-None Complex Order. A Complex Order may be designated as an All-or-None Order that is to be executed in its entirety or not at all. An All-Or-None Order may only be entered as an Immediate-or-Cancel Order.

(4) Attributable Complex Order. A Market or Limit Complex Order may be designated as an Attributable Order as provided in Options 3, Section 7(h).

(5) Customer Cross Complex Order. A Customer Cross Complex Order is comprised of a Priority Customer Complex Order to buy and a Priority Customer Complex Order to sell at the same price and for the same quantity. Such orders will trade in accordance with Options 3, Section 12(b).

(6) Qualified Contingent Cross Complex Order. A Complex Options Order may be entered as a Qualified Contingent Cross Order, as defined in Options 3, Section 7(j). Qualified Contingent Cross Complex Orders will trade in accordance with Options 3, Section 12(d).

(7) Day Complex Order. A Complex Order may be designated as a Day Order that if not executed, expires at the end of the day on which it was entered.

(8) Fill-or-Kill Complex Orders. A Complex Order may be designated as a Fill-or-Kill Order that is to be executed in its entirety as soon as it is received and, if not so executed, cancelled.

(9) Immediate-or-Cancel Complex Orders. A Complex Order may be designated as an Immediate-or-Cancel Order that is to be executed in whole or in part upon receipt. Any portion not so executed is cancelled.

(10) Opening Only Complex Order. An Opening Only Complex Order is a Limit Complex Order that may be entered for execution during the Complex Opening Process described in Supplementary Material .04 to Options 3, Section 14. Any portion of the order that is not executed during the Complex Opening Process is cancelled.

(11) Good-Till-Date Complex Order. A Good-Till-Date Complex Order is an order to buy or sell which, if not executed, will be cancelled at the sooner of the end of the expiration date assigned to the Complex Order, or the expiration of any individual series comprising the order.

(12) Good-Till-Cancel Complex Order. A Good-Till-Cancel Complex Order is an order to buy or sell that remains in force until the order is filled, canceled or any series of the order expires; provided, however, that a Good-Till-Cancel Complex Order will be cancelled in the event of a corporate action that results in an adjustment to the terms of any series underlying the Complex Order.

(13) Exposure Complex Order. An Exposure Complex Order is an order that will be exposed upon entry as provided in Supplementary Material .01 to this Rule if eligible, or entered on the Complex Order Book if not eligible. Any unexecuted balance of an Exposure Complex Order remaining upon the completion of the exposure process will be entered on the Complex Order Book.

(14) Exposure Only Complex Order. An Exposure Only Complex Order is an order that will be exposed upon entry as provided in Supplementary Material .01 to this Rule if eligible, or cancelled if not eligible. Any unexecuted balance of an Exposure Only Complex Order remaining upon the completion of the exposure process will be cancelled.

(15) Complex QCC with Stock Orders. A Complex QCC with Stock Order is a Qualified Contingent Cross Complex Order, as defined in subparagraph (b)(6), entered with a stock component to be communicated to a designated broker-dealer for execution pursuant to Options 3, Section 12(e).

(16) Complex Facilitation Order. A Complex Facilitation Order is an order entered into the Complex Facilitation Mechanism as described in Options 3, Section 11(c).

(17) Complex SOM Order. A Complex SOM Order is an order entered into the Complex Solicited Order Mechanism as described in Options 3, Section 11(e).

(18) Complex PIM Order. A Complex PIM Order is an order entered into the Complex Price Improvement Mechanism as described in Options 3, Section 13(e).

(c) *Applicability of Exchange Rules*. Except as otherwise provided in this Rule, complex strategies shall be subject to all other Exchange Rules that pertain to orders and quotes generally.

(1) *Minimum Increments*. Bids and offers for Complex Options Strategies may be expressed in one cent ($0.01) increments, and the options leg of Complex Options Strategies may be executed in one cent ($0.01) increments, regardless of the minimum increments otherwise applicable to the individual options legs of the order. Bids and offers for Stock-Option Strategies or Stock-Complex Strategies may be expressed in any decimal price determined by the Exchange, and the stock leg of a Stock-Option Strategy or Stock-Complex Strategy may be executed in any decimal price permitted in the equity market. The options leg of a Stock-Option Strategy or Stock-Complex Strategy may be executed in one cent ($0.01) increments, regardless of the minimum increments otherwise applicable to the individual options legs of the order.

(2) *Complex Order*. Complex strategies will not be executed at prices inferior to the best net price achievable from the best ISE bids and offers for the individual legs. Notwithstanding the provisions of Options 3, Section 10:

(i) a Complex Options Strategies may be executed at a total credit or debit price with one other Member without giving priority to bids or offers established on the Exchange that are no better than the bids or offers in the individual options series comprising such total credit or debit; provided, however, that if any of the bids or offers established on the Exchange consist of a Priority Customer Order, the price of at least one leg of the complex strategy must trade at a price that is better than the corresponding bid or offer on the Exchange by at least one minimum trading increment for the series as defined in Options 3, Section 3.

(ii) The option leg of a Stock-Option Strategy has priority over bids and offers for the individual options series established on the Exchange by Professional Orders and market maker quotes that are no better than the price of the options leg, but not over such bids and offers established by Priority Customer Orders.

(iii) The options legs of a Stock-Complex Strategy are executed in accordance with subparagraph (c)(2)(i) above.

(3) Internalization. Complex Orders represented as agent may be executed (i) as principal as provided in Options 3, Section 22(d), or (ii) against orders solicited from Members and non-Member broker-dealers as provided in Options 3, Section 22(e). The exposure requirements of Options 3, Section 22(d) or (e) must be met on the Complex Order Book unless the order is executed in one of the mechanisms described in Options 3, Sections 11, 12 and 13.

(d) *Execution of Complex Strategies*. Complex strategies will be executed without consideration of any prices that might be available on other exchanges trading the same options contracts. Complex strategies are not executable unless all of the terms of the strategy can be satisfied and the options legs can be executed at prices that comply with the provisions of paragraph (c)(2) above. Complex strategies, other than those that are executed as crossing transactions pursuant to Options 3, Sections 11, 12 and 13, are automatically executed as follows:

(1) Each Complex Order must specify upon entry whether it should be exposed upon entry if eligible, or whether such Complex Order should be processed without being exposed. Eligible incoming Complex Orders that are designated for exposure will be exposed for price improvement pursuant to Supplementary Material .01 to this Rule.

(2) Complex Options Orders will be executed at the best net price available from Complex Order Exposure pursuant to Supplementary Material .01 to this Rule, executable Complex

Orders on the Complex Order Book, and bids and offers for the individual options series; provided that at each price, executable Complex Options Orders will be automatically executed first against executable bids and offers on the Complex Order book prior to legging in the single leg order book. Notwithstanding the foregoing, executable Complex Options Orders will execute against Priority Customer interest on the single leg book at the same price before executing against the Complex Order Book. Thus, Priority Customer Orders on the single leg order book shall retain priority and will execute prior to any other Complex Order or non-Priority Customer single leg interest at the same price. Stock Option Orders and Stock Complex Orders will be executed at the best net price available from Complex Order Exposure pursuant to Supplementary Material .01 to this Rule and executable Complex Orders on the Complex Order Book. The Exchange may designate on a class basis whether bids and offers at the same price on the Complex Order Book will be executed:

(i) in time priority; or

(ii) pro-rata based on size.

(3) If there is no executable contra-side complex interest on the Complex Order Book at a particular price, executable Complex Options Orders up to a maximum number of legs (determined by the Exchange on a class basis as either two legs, three legs or four legs) may be automatically executed against bids and offers on the Exchange for the individual options series provided the Complex Order can be executed in full or in a permissible ratio by such bids and offers. Legging orders may be automatically generated on behalf of Complex Options Orders so that they are represented at the best bid and/or offer on the Exchange for the individual legs of the Complex Options Order as provided in Options 3, Section 7(k). Notwithstanding the foregoing:

(A) Complex Orders with 2 option legs where both legs are buying or both legs are selling and both legs are calls or both legs are puts may only trade against other Complex Orders in the Complex Order Book. The System will not generate legging orders for these Complex Orders.

(B) Complex Orders with 3 or 4 option legs where all legs are buying or all legs are selling may only trade against other Complex Orders in the Complex Order Book.

(4) Complex strategies that are not executable may rest on the Complex Order Book until they become executable.

Supplementary Material to Options 3, Section 14

.01 **Complex Order Exposure**. If designated by a Member for exposure, eligible Complex Orders are exposed upon entry for a period of up to one (1) second pursuant to subparagraph (d)(1) as follows:

(a) A Complex Order that improves upon the best price for the same complex strategy on the Complex Order Book (i.e., a limit order to buy priced higher than the best bid, a limit order to sell priced lower than the best offer, and a market order to buy or sell) is eligible to be exposed upon entry for a period of up to one (1) second as provided in Supplementary Material .01 to this Rule. Incoming orders will not be eligible to be exposed if there are market orders on the Complex Order Book on the same side of the market for the same complex strategy.

(b) Upon entry of an eligible Complex Order, a broadcast message that includes net price or at market, size, and side will be sent and Members will be given an opportunity to enter Responses with the prices and sizes at which they are willing to participate in the execution of the Complex Order.

(i) Responses are only executable against the Complex Order with respect to which they are entered, can be modified or withdrawn at any time prior to the end of the exposure period, and will be considered up to the size of the Complex Order being exposed. During the exposure period, the Exchange will broadcast the best Response price, and the aggregate size of Responses available at that price. At the conclusion of the exposure period, any unexecuted balance of a Response is automatically cancelled.

(ii) The exposure period for a Complex Order will end immediately: (A) upon the receipt of a Complex Order for the same complex strategy on either side of the market that is marketable against the Complex Order Book or bids and offers for the individual legs; (B) upon the receipt of a non-marketable Complex Order for the same complex strategy on the same side of the market that would cause the price of the exposed Complex Order to be outside of the best bid or offer for the same complex strategy on the Complex Order Book; or (C) when a resting Complex Order for the same complex strategy on either side of the market becomes marketable against interest on the Complex Order book or bids and offers for same individual legs of the complex strategy.

(iii) A Complex Order Exposure in a complex strategy may be ongoing in a complex strategy at the same time as a Price Improvement Auction pursuant to Options 3, Section 13 or during an exposure period pursuant to Supplementary Material .02 to Options 5, Section 2 in a component leg(s) of such complex strategy. If a Complex Order Exposure is early terminated pursuant to paragraph (ii) above, and the incoming Complex Order that causes the early termination in the complex strategy is also marketable against a component leg(s) of the complex strategy that is the subject of a concurrent ongoing Price Improvement Auction pursuant to Options 3, Section 13 or an exposure period pursuant to Supplementary Material .02 to Options 5, Section 2, then the concurrent Complex Order and component leg auction(s) are processed in the following sequence: (1) the Complex Order exposure is early terminated; (2) the component leg auction(s), which are early terminated and processed; and (3) legging of residual incoming Complex Order interest occurs.

(c) At the end of the exposure period, if the Complex Order still improves upon the best price for the complex strategy on the same side of the market, it is automatically executed to the greatest extent possible pursuant to subparagraph (d)(2)-(3), taking into consideration: (i) bids and offers on the Complex Order Book (including interest received during the exposure period), (ii) bids and offers on the Exchange for the individual options series (including interest received during the exposure period), and (iii) Responses received during the exposure period, provided that when allocating pursuant to subparagraph (d)(2)(ii), Responses are allocated pro-rata based on size. Thereafter, any unexecuted balance will be placed on the Complex Order Book (or cancelled in the case of an Exposure Only Complex Order). Notwithstanding the foregoing, Supplementary Material .01(c)(ii) to this Rule shall not be applicable with respect to Stock Option Orders and Stock Complex Orders.

(d) If a trading halt is initiated during the exposure period in any series underlying the Complex Order, the Complex Order exposure process will be automatically terminated without execution.

.02 **Stock-Option and Stock-Complex Orders**. The Exchange will electronically communicate the stock leg of an executable Stock-Option Order and Stock-Complex Order to a broker-dealer for execution. To execute Stock-Option Orders and Stock-Complex Orders on the Exchange, Members must enter into a brokerage agreement with a broker-dealer designated by the Exchange. The Member may also enter into a brokerage agreement with one or more other broker-dealers to which the Exchange is able to route stock orders. The Exchange will automatically transmit the stock leg of a trade to one-or more broker-dealer(s) with which a Member has an agreement for execution on behalf of the Member using routing logic that takes into consideration objective factors such as execution cost, speed of execution and fill-rates. The Exchange will have no financial arrangements with the brokers with respect to routing stock orders to them. Members may also indicate preferred execution brokers, and such preferences will determine order routing priority whenever possible. A trade of a Stock-Option Order or a Stock-Complex Order will be automatically cancelled if market conditions prevent the execution of the stock or option leg(s) at the prices necessary to achieve the agreed upon net price. When a Stock-Option Order or Stock-Complex Order has been matched with another Stock-Option Order or Stock-Complex Order that is for less than the full size of the Stock-Option Order or Stock-Complex Order, the full size of the Stock-Option Order or Stock Complex Order being processed by the stock execution venue will be unavailable for trading while the order is being processed.

.03 **Trade Value Allowance**. To facilitate the execution of the stock leg and options leg(s) of Stock-Option Strategies and Stock-Complex Strategies at valid increments pursuant to subparagraph (c)(1), Stock-Option Strategies and Stock-Complex Strategies may trade outside of their expected notional trade value by a specified amount ("Trade Value Allowance"). The Trade Value Allowance is the percentage difference between the expected notional value of a trade and the actual notional value of the trade. The amount of Trade Value Allowance permitted may be determined by the Member, or a default value determined by the Exchange and announced to Members; provided that any amount of Trade Value Allowance is permitted in mechanisms pursuant to Options 3, Sections 11 and 13 when auction orders do not trade solely with their contra-side order.

.04 **Complex Opening Process**. After each of the individual component legs have opened, or reopened following a trading halt, Complex Options Strategies will be opened pursuant to the Complex Opening Price Determination described in Supplementary Material .05 to this Rule, and Stock-Option Strategies and Stock-Complex Strategies will be opened pursuant to the Complex Uncrossing Process described in Supplementary Material .06(b) to this Rule.

.05 **Complex Opening Price Determination**.

(a) *Definitions*.

(1) "Boundary Price" is described herein in paragraph (d)(1).

(2) "Opening Price" is described herein in paragraph (d)(4).

(3) "Potential Opening Price" is described herein in paragraph (d)(2).

(b) *Eligible Interest*. Eligible interest during the Complex Opening Price Determination includes Complex Orders on the Complex Order Book. Bids and offers for the individual legs of the complex strategy are not eligible to participate in the Complex Opening Price Determination.

(c) If the best bid for a complex strategy does not lock or cross the best offer, there will be no trade in the Complex Opening Price Determination and the complex strategy will open pursuant to the Complex Uncrossing Process described in Supplementary Material .06(b) to this Rule.

(d) If the best bid for a complex strategy locks or crosses the best offer, the System will open the complex strategy as follows:

(1) *Boundary Prices*. The System calculates Boundary Prices at or within which Complex Orders may be executed during the Complex Opening Price Determination based on the

NBBO for the individual legs; provided that, if the NBBO for any leg includes a Priority Customer Order on the Exchange, the System adjusts the Boundary Prices according to subparagraph (c)(2).

(2) *Potential Opening Price*. The System will calculate the Potential Opening Price by identifying the price(s) at which the maximum number of contracts can trade ("maximum quantity criterion") taking into consideration all eligible interest pursuant to Supplementary Material .06(b) to this Rule.

(3) *More Than One Potential Opening Price*. When two or more Potential Opening Prices would satisfy the maximum quantity criterion: (A) without leaving unexecuted contracts on the bid or offer side of the market of Complex Orders to be traded at those prices, the System takes the highest and lowest of those prices and takes the mid-point; provided that (1) if the highest and/or lowest price described above is through the price of a bid or offer that is priced to not allocate in the Complex Opening Price Determination, the highest and/or lowest price will be rounded to the price of such bid or offer that is priced to not allocate before taking the mid-point, and (2) if the midpoint is not expressed as a permitted minimum trading increment, it will be rounded down to the nearest permissible minimum trading increment; or (B) leaving unexecuted contracts on the bid (offer) side of the market of Complex Orders to be traded at those prices, the Potential Opening Price is the highest (lowest) executable bid (offer) price. Notwithstanding the foregoing: (C) if there are Market Complex Orders on the bid (offer) side of the market that would equal the full quantity of Complex Orders on offer (bid) side of the market, the limit price of the highest (lowest) priced Limit Complex Order is the Potential Opening Price; and (D) if there are only Market Complex Orders on both sides of the market, or if there are Market Complex Orders on the bid (offer) side of the market for greater than the total size of Complex Orders on the offer (bid) side of the market, there will be no trade in the Complex Opening Price Determination and the complex strategy will open pursuant to the Complex Uncrossing Process described in Supplementary Material .06(b) to this Rule.

(4) *Opening Price*. If the Potential Opening Price is at or within the Boundary Prices, the Potential Opening Price becomes the Opening Price. If the Potential Opening Price is not at or within the Boundary Prices, the Opening Price will be the price closest to the Potential Opening Price that satisfies the maximum quantity criteria without leaving unexecuted contracts on the bid or offer side of the market at that price and is at or within the Boundary Prices. If the bid Boundary Price is higher than the offer Boundary Price, or if no valid Opening Price can be found at or within the Boundary Prices, there will be no trade in the Complex Opening Price Determination and the complex strategy will open pursuant to the Complex Uncrossing Process described in Supplementary Material .06(b) to this Rule.

(5) *Allocation*. During the Complex Opening Price Determination, where there is an execution possible, the System will give priority to Market Complex Orders first, then to resting Limit Complex Orders on the Complex Order Book. The allocation provisions of subparagraph (d)(2) apply with respect to Complex Orders with the same price with priority given first to better priced interest.

(6) *Uncrossing*. If the Complex Order Book remains locked or crossed following paragraphs (d)(1) - (5), the System will process any remaining Complex Orders, including Opening Only Complex Orders in accordance with the Complex Uncrossing Process described in Supplementary Material .06(b) to this Rule. Bids and offers for the individual legs of the Complex Option Order will also be eligible to trade in the Complex Uncrossing Process.

.06 **Complex Uncrossing Process**.

(a) The Complex Order Book will be uncrossed using the Complex Uncrossing Process described in paragraph (b) below if a resting Complex Order that is locked or crossed with other interest becomes executable during regular trading or as part of the Complex Opening Process.

(b) Complex Strategies are uncrossed using the following procedure:

(1) The System identifies the oldest Complex Order among the best priced bids and offers on the Complex Order Book. A Complex Order entered with an instruction that it must be executed at a price that is equal to or better than the national best bid or offer pursuant to paragraph (a) above is considered based on its actual limit or market price and not the price of the national best bid or offer for the component legs.

(2) The selected Complex Order is matched pursuant to subparagraph (d)(2)-(3) with resting contra-side interest on the Complex Order Book and, for Complex Option Orders, bids and offers for the individual legs of the complex strategy.

(3) The process described in (1) through (2) is repeated until the Complex Order Book is no longer executable.

.07 **Qualified Contingent Trade Exemption**. Members may only submit Complex Orders n Stock-Option Strategies and Stock-Complex Strategies if such Complex Orders comply with the Qualified Contingent Trade Exemption from Rule 611(a) of Regulation NMS under the Exchange Act. Members submitting Complex Orders in Stock-Option Strategies and Stock-Complex Strategies represent that they comply with the Qualified Contingent Trade Exemption. In addition, the stock leg of a stock-option order must be marked "buy," "sell," "sell short," or "sell short exempt" in compliance with Regulation SHO under the Exchange Act.

Changes to this rule became operative on November 7, 2022. For options symbols which have not yet migrated to the new platform, the attached document displays the current rules. The symbol migration schedule is available at Options Trader Alert 2022-34.

Adopted July 8, 2019 (SR-MRX-2019-15); amended March 9, 2020 (SR-MRX-2020-06); amended March 12, 2021 (SR-MRX-2021-01), operative April 11, 2021.

Section 15. Simple Order Risk Protections

(a) The following risk protections are automatically enforced by the System. In the event of unusual market conditions and in the interest of a fair and orderly market, the Exchange may temporarily establish the levels at which the order protections contained in this paragraph are triggered as necessary and appropriate.

(1) The following are order risk protections on MRX:

(A) **Limit Order Price Protection**. There is a limit on the amount by which incoming limit orders to buy may be priced above the Exchange's best offer and by which incoming limit orders to sell may be priced below the Exchange's best bid. Limit orders that exceed the pricing limit are rejected. The limit is established by the Exchange from time-to-time for orders to buy (sell) as the greater of the Exchange's best offer (bid) plus (minus): (i) an absolute amount not to exceed $2.00, or (ii) a percentage of the Exchange's best bid/offer not to exceed 10%. Limit Order Price Protection shall not apply to the Opening Process or during a trading halt.

(B) **Market Order Spread Protection**. Market Orders will be rejected if the NBBO is wider than a preset threshold at the time the order is received by the System. Market Order Spread Protection shall not apply to the Opening Process or during a trading halt. The Exchange may establish different thresholds for one or more series or classes of options.

(C) **Market Wide Risk Protection**. All Members must provide parameters for the order entry and execution rate protections described in this Rule. The Exchange will also establish default values for each of these parameters that apply to Members that do not submit the required parameters, and will announce these default values in an Options Trader Alert to be distributed to Members. The System will maintain one or more counting programs for each Member that count orders entered and contracts traded on Nasdaq MRX. Members can use multiple counting programs to separate risk protections for different groups established within the Member. The counting programs will maintain separate counts, over rolling time periods specified by the Member for each count, of: (1) the total number of orders entered; (2) the total number of contracts traded. The minimum and maximum duration of the applicable time period will be established by the Exchange and announced via an Options Trader Alert.

(i) If, during the applicable time period, the Member exceeds thresholds that it has set for any of the order entry or execution counts described above on Nasdaq MRX, the

System will automatically reject all subsequent incoming orders entered by the member on Nasdaq MRX.

(ii) Members may also choose to have the System automatically cancel all of their existing orders on Nasdaq MRX when the Market Wide Risk Protection is triggered.

(iii) The Market Wide Risk Protection will remain engaged until the Member manually notifies the Exchange to enable the acceptance of new orders. For Members that still have open orders on the book that have not been cancelled pursuant to subparagraph (b)(1)(D)(ii) above, the System will continue to allow those Members to interact with existing orders entered before the protection was triggered, including sending cancel order messages and receiving trade executions for those orders.

(2) The following are order and quote risk protections on MRX:

(A) **Acceptable Trade Range**.

(i) The System will calculate an Acceptable Trade Range to limit the range of prices at which an order or quote will be allowed to execute. The Acceptable Trade Range is calculated by taking the reference price, plus or minus a value to be determined by the Exchange (i.e., the reference price - (x) for sell orders/quotes and the reference price + (x) for buy orders or quotes). The Acceptable Trade Range will not be available for All-or-None Orders.

(ii) The reference price is the NBB for sell orders/quotes and the NBO for buy orders/quotes. The reference price is calculated upon receipt of a new order or quote, provided that if the applicable NBB or NBO price is improved at the time an order is routed to an away market, a new reference price is calculated based on the NBB or NBO at that time.

(iii) If an order or quote reaches the outer limit of the Acceptable Trade Range without being fully executed then any unexecuted balance will be cancelled.

(iv) There will be three categories of options for Acceptable Trade Range: (1) Penny Interval Program Options trading in one cent increments for options trading at less than $3.00 and increments of five cents for options trading at $3.00 or more, (2) Penny Interval Program Options trading in one-cent increments for all prices, and (3) Non-Penny Interval Program Options.

(B) **Size Limitation**. There is a limit on the number of contracts an incoming order or quote may specify. Orders or quotes that exceed the maximum number of contracts are rejected. The maximum number of contracts, which shall not be less than 10,000, is established by the Exchange from time-to-time.

(3) The following are Market Maker risk protections on MRX:

(A) **Anti-Internalization**. Quotes and orders entered by Market Makers will not be executed against quotes and orders entered on the opposite side of the market by the same Market Maker using the same Market Maker identifiers, or alternatively, if selected by the Member, the same Exchange account number or Member firm identifier. In such a case, the System will cancel the resting quote or order back to the entering party prior to execution. This functionality shall not apply in any auction, during an Opening Process, or with respect to Complex Order transactions.

(B) **Automated Quotation Adjustments**.

(i) Market Makers are required to utilize the Percentage, Volume, Delta and Vega Thresholds, each a Threshold, described in (a) - (d) below. For each of these features, the System will automatically remove a Market Maker's quotes in all series in an options class when any of the Percentage Threshold, Volume Threshold, Delta Threshold or Vega Threshold, as described below, has been exceeded. A Market Maker is required to specify a period of time not to exceed 30 seconds ("Specified Time Period") during which the System will automatically remove a Market Maker's quotes in all series of an options class. The Specified Time Period will commence for an options class every time an execution occurs in any series in such option class and will continue until the System removes quotes as described in (ii) or (iii) or the Specified Time Period expires. The Specified Time Period operates on a rolling basis among all series in an options class in that there may be Specified Time Periods occurring simultaneously for each Threshold and such Specified Time Periods may overlap. The Specified Time Periods will be the same value for each protection described in (a) - (d) below.

(a) **Percentage Threshold**. A Market Maker must provide a specified percentage ("Percentage Threshold"), of not less than 1%, by which the System will automatically remove a Market Maker's quotes in all series of an options class. For each series in an options class, the System will determine (i) during a Specified Time Period and for each side in a given series, a percentage calculated by dividing the size of a Market Maker's quote size executed in a particular series (the numerator) by the Marker Maker's quote size available at the time of execution plus the total number of the Market Marker's quote size previously executed during the unexpired Specified Time Period (the denominator) ("Series Percentage"); and (ii) the sum of the Series Percentage in the options class ("Issue Percentage") during a Specified Time Period. The System tracks and calculates the net impact of positions in the same options class; long call percentages are offset by short call percentages, and long put percentages are offset by short put percentages in the Issue Percentage. If the Issue Percentage exceeds the Percentage Threshold the System will automatically remove a Market Maker's quotes in all series of the options class during the Specified Time Period.

(b) **Volume Threshold**. A Market Maker must provide a Volume Threshold by which the System will automatically remove a Market Maker's quotes in all series of an options class when the Market Maker executes a number of contracts which exceeds the designated number of contracts in all series in an options class.

(c) **Delta Threshold**. A Market Maker must provide a Delta Threshold by which the System will automatically remove a Market Maker's quotes in all series of an options class. For each class of options, the System will maintain a Delta counter, which tracks the absolute value of the difference between (i) purchased call contracts plus sold put contracts and (ii) sold call contracts plus purchased put contracts. If the Delta counter exceeds the Delta Threshold established by the Member, the System will automatically remove a Market Maker's quotes in all series of the options class.

(d) **Vega Threshold**. A Market Maker must provide a Vega Threshold by which the System will automatically remove a Market Maker's quotes in all series of an options class. For each class of options, the System will maintain a Vega counter, which tracks the absolute value of purchased contracts minus sold contracts. If the Vega counter exceeds the Vega Threshold established by the Member, the System will automatically remove a Market Maker's quotes in all series of the options class.

(ii) The System will automatically remove quotes in all series of an options class when the Percentage Threshold, Volume Threshold, Delta Threshold or Vega Threshold has been exceeded. The System will send a Purge Notification Message to the Market Maker for all affected series when the above thresholds have been exceeded.

(a) The Percentage Threshold, Volume Threshold, Delta Threshold and Vega Threshold are considered independently of each other.

(b) Quotes will be automatically executed up to the Market Maker's size regardless of whether the execution would cause the Market Maker to exceed the Percentage Threshold, Volume Threshold, Delta Threshold or Vega Threshold

(iii) Notwithstanding subparagraph (b)(3)(B)(i) and (ii) above, if a Market Maker requests the System to remove quotes in all series of an options class, the System will automatically reset all Thresholds.

(iv) When the System removes quotes as a result of exceeding the Percentage Threshold, Volume Threshold, Delta Threshold or Vega Threshold, the Market Maker must send a re-entry indicator to re-enter the System.

(v) If a Market Maker does not provide a parameter for each of the automated quotation removal protections described in (B)(i)(a) - (d) above, the Exchange will apply default parameters, which are announced to Members.

(vi) In addition to the automated quotation removal protections described in (B)(i)(a) - (d) above, a Market Maker must provide a market wide parameter by which the Exchange will automatically remove a Market Maker's quotes in all classes when, during a time period established by the Market Maker, the total number of quote removal events specified in (B)(i)(a) - (d) exceeds the market wide parameter provided to the Exchange by the Market Maker. Market Makers must request the Exchange enable re-entry by contacting the Exchange's Operations Department.

Adopted July 8, 2019 (SR-MRX-2019-15); amended September 17, 2019 (SR-MRX-2019-020), operative October 17, 2019; amended June 23, 2020 (SR-MRX-2020-13); amended March 12, 2021 (SR-MRX-2021-01), operative April 11, 2021.

Section 16. Complex Order Risk Protections

The following are Complex Order risk protections on MRX:

(a) **Price limits for Complex Orders**. As provided in Options 3, Section 14(d)(2), the legs of a complex strategy may be executed at prices that are inferior to the prices available on other exchanges trading the same options series. Notwithstanding, the System will not permit any leg of a complex strategy to trade through the NBBO for the series or any stock component by a configurable amount calculated as the lesser of (i) an absolute amount not to exceed $0.10, and (ii) a percentage of the NBBO not to exceed 500%, as determined by the Exchange on a class, series or underlying basis. A Member can also include an instruction on a Complex Order that each leg of the Complex Order is to be executed only at a price that is equal to or better than the NBBO for the options series or any stock component, as applicable.

(1) The System will reject orders for a complex strategy where all legs are to buy if entered at a price that is less than the minimum net price, which is calculated as the sum of the ratio on each leg of the complex strategy multiplied by the minimum increment applicable to that leg pursuant to Options 3, Section 14(c)(1).

(b) **Strategy Protections**. The following protections will apply throughout the trading day, including pre-market, during the Opening Process and during a trading halt. The protections will not apply to Complex Orders being auctioned and auction responses in the Facilitation

Mechanism, Solicited Order Mechanism within Options 2, Section 11, and Price Improvement Mechanism within Options 3, Section 13 and will not apply to Customer Cross Orders pursuant to Options 3, Section 12.

(1) **Vertical Spread Protection**. The Vertical Spread Protection will apply to a vertical spread. A vertical spread is an order to buy a call (put) option and to sell another call (put) option in the same security with the same expiration but at a higher (lower) strike price).

(A) The System will reject a Vertical Spread order when entered with a net price of less than zero (minus a pre-set value), and will prevent the execution of a Vertical Spread order at a price that is less than zero (minus a pre-set value) when entered as a Market Order to sell. The Exchange will set a pre-set value not to exceed $1.00 to be applied uniformly across all classes. The Exchange may amend the pre-set value uniformly across all classes.

(B) The System will reject a Vertical Spread order when entered with a net price greater than the value of the higher strike price minus the lower strike price (plus a pre-set value), and will prevent the execution of a Vertical Spread order at a price that is greater than the value of the higher strike price minus the lower strike price (plus a pre-set value) when entered as a Market Order to buy. The pre-set value used by the vertical spread check will be the lesser of (1) an absolute amount not to exceed $1.00 and (2) a percentage of the difference between the strike prices not to exceed 10% to be applied uniformly across all classes. The Exchange may amend the pre-set value uniformly across all classes.

(2) **Calendar Spread Protection**. The Calendar Spread Protection will apply to a Calendar Spread. A calendar spread is an order to buy a call (put) option with a longer expiration and to sell another call (put) option with a shorter expiration in the same security at the same strike price.

(A) The System will reject a Calendar Spread order when entered with a net price of less than zero (minus a preset value), and will prevent the execution of a Calendar Spread order at a price that is less than zero (minus a pre-set value) when entered as a Market Complex Order to sell. The Exchange will set a pre-set value not to exceed $1.00 to be applied uniformly across all classes. The Exchange may amend the pre-set value uniformly across all classes.

(3) **Butterfly Spread Protection**. The Butterfly Spread Protection will apply to a butterfly spread. A butterfly spread is a three legged Complex Order with the following: (1) two legs to buy (sell) the same number of calls (puts); (2) one leg to sell (buy) twice the number of calls (puts) with a strike price at mid-point of the two legs to buy (sell); (3) all legs have the

same expiration; and (4) each leg strike price is equidistant from the next sequential strike price.

(A) A Butterfly Spread Limit Order that is priced higher than the Maximum Value or lower than the Minimum Value will be rejected. A Butterfly Spread Market Order (or Butterfly Spread Limit Order entered with a net price inside the Butterfly Spread Protection Range) to buy (sell) will be restricted from executing by legging into the single leg market with a net price higher (lower) than the Maximum (Minimum) Value. The Butterfly Spread Protection Range is the absolute difference between the Minimum Value and the Maximum Value.

(i) The Initial Maximum Value is the distance between the strike price of the leg with the mid-point strike and either of the outer leg strike prices. The Maximum Value Buffer is the lesser of a configurable absolute dollar value or percentage of the Initial Maximum Value set by the Exchange and announced via a notice to Members. The Maximum Value is calculated by adding the Initial Maximum Value and Maximum Value Buffer.

(ii) The Initial Minimum Value is zero. The Minimum Value Buffer is a configurable absolute dollar value set by the Exchange and announced via a notice to Members. The Minimum Value is calculated by subtracting the Minimum Value Buffer from the Initial Minimum Value of zero.

(4) **Box Spread Protection**. The Box Spread Protection will apply to a box spread. A box spread is a four legged Complex Order with the following: (1) one pair of legs with the same strike price with one leg to buy a call (put) and one leg to sell a put (call); (2) a second pair of legs with a different strike price from the pair described in (1) with one leg to sell a call (put) and one leg to buy a put (call); (3) all legs have the same expiration; and (4) all legs have equal volume.

(A) A Box Spread Limit Order that is priced higher than the Maximum Value or lower than the Minimum Value will be rejected. A Box Spread Market Order (or Box Spread Limit Order entered with a net price inside the Box Spread Protection Range) to buy (sell) will be restricted from executing by legging into the single leg market with a net price higher (lower) than the Maximum (Minimum) Value. The Box Spread Protection Range is the absolute difference between the Minimum Value and the Maximum Value.

(i) The Initial Maximum Value is the distance between the strike prices of each pair of leg strike prices. The Maximum Value Buffer is the lesser of a configurable absolute dollar value or percentage of the Initial Maximum Value set by the Exchange and announced via a notice to Members. The Maximum Value is calculated by adding the Initial Maximum Value and Maximum Value Buffer.

(ii) The Initial Minimum Value is zero. The Minimum Value Buffer is a configurable absolute dollar value set by the Exchange and announced via a notice to Members. The Minimum Value is calculated by subtracting the Minimum Value Buffer from the Initial Minimum Value of zero.

(c) Other Price Protections which apply to Complex Orders.

(1) **Limit Order Price Protection**. There is a limit on the amount by which the net price of an incoming Limit Complex Order to buy may exceed the net price available from the individual options series on the Exchange and the national best bid or offer for any stock leg, and by which the net price of an incoming Limit Complex Order to sell may be below the net price available from the individual options series on the Exchange and the national best bid or offer for any stock leg. Limit Complex Orders that exceed the pricing limit are rejected. The limit is established by the Exchange from time-to-time for Limit Complex Orders to buy (sell) as the net price available from the individual options series on the Exchange and the national best bid or offer for any stock leg plus (minus) the greater of: (i) an absolute amount not to exceed $2.00, or (ii) a percentage of the net price available from the individual options series on the Exchange and the national best bid or offer for any stock leg not to exceed 10%.

(2) **Size Limitation**. There is a limit on the number of contracts (and shares in the case of a Stock-Option Strategy or Stock-Complex Strategy) any single leg of an incoming Complex Order may specify. Orders that exceed the maximum number of contracts (or shares) are rejected. The maximum number of contracts (or shares), which shall not be less than 10,000 (or 100,000 shares), is established by the Exchange from time-to-time.

(3) **Price Level Protection**. There is a limit on the number of price levels at which an incoming Complex Order to sell (buy) will be executed automatically with the bids or offers of each component leg when there are no bids (offers) from other exchanges at any price for the options series. Complex Orders are executed at each successive price level until the maximum number of price levels is reached on any component leg where the protection has been triggered, and any balance is canceled. The number of price levels for the component leg, which may be from one (1) to ten (10), is determined by the Exchange from time-to-time on a class-by-class basis.

[Adopted July 8, 2019 (SR-MRX-2019-15); amended Dec. 9, 2019 (SR-MRX-2019-25).]

Section 17. Kill Switch

(a) Kill Switch enables Members to initiate a message to the System to promptly cancel and restrict their order activity on the Exchange, as described in sections (a)(1) and (a)(2) below. Members may submit a Kill Switch request to the System for certain identifier(s) ("Identifier") on either a user or group level. Permissible groups must reside within a single Member firm. The System will send an automated message to the Member when a Kill Switch request has been processed by the Exchange's System.

(1) A Member may submit a request to the System through FIX or OTTO to cancel all existing orders and restrict entry of additional orders for the requested Identifier(s) on a user level on the Exchange.

(2) Alternatively, a Member may submit a request to the System through a graphical user interface to cancel all existing, and restrict entry of additional, orders for the requested Identifier(s) on either a user or group level on the Exchange.

(3) Once a Member initiates the Kill Switch pursuant to section (a)(1) or (a)(2) above, the Member will be unable to enter additional orders for the affected Identifier(s) until the Member has made a verbal request to the Exchange and Exchange staff has set a re-entry indicator to enable re-entry. Once enabled for re-entry, the System will send a Re-entry Notification Message to the Member. The applicable Clearing Member also will be notified of such re-entry into the System, provided the Clearing Member has requested to receive such notification.

Adopted July 8, 2019 (SR-MRX-2019-15); amended Oct. 15, 2019 (SR-MRX-2019-22); amended September 2, 2021 (SR-MRX-2021-10), operative November 1, 2021.

Section 18. Detection of Loss of Communication

(a) Definitions

(1) A "Heartbeat" message is a communication which acts as a virtual pulse between the SQF, OTTO, or FIX Port and the Client Application. The Heartbeat message sent by the Member and subsequently received by the Exchange allows the SQF, OTTO, or FIX Port to continually monitor its connection with the Member.

(2) SQF Port is the Exchange's proprietary System component through which MRX Market Makers communicate their quotes from the Client Application.

(3) OTTO Port is the Exchange's proprietary System component through which Members communicate their orders from the Client Application.

(4) FIX Port is the Exchange's universal System component through which Members communicate their orders from the Client Application.

(5) Client Application is the System component of the Member through which the Exchange Member communicates its quotes and orders to the Exchange.

(6) Session of Connectivity shall mean each time the Member connects to the Exchange's System. Each new connection, intra-day or otherwise, is a new Session of Connectivity.

(b) When the SQF Port detects the loss of communication with a Member's Client Application because the Exchange's server does not receive a Heartbeat message for a certain time period ("nn" seconds), the Exchange will automatically logoff the Member's affected Client Application and automatically cancel all of the Member's open quotes pursuant to Section 18(e). Quotes will be cancelled across all Client Applications that are associated with the same MRX Market Maker ID and underlying issues.

(c) When the OTTO Port detects the loss of communication with a Member's Client Application because the Exchange's server does not receive a Heartbeat message for a certain time period ("nn" seconds), the Exchange will automatically logoff the Member's affected Client Application and if the Member has elected to have its orders cancelled pursuant to Section 18(f) automatically cancel all orders.

(d) When the FIX Port detects the loss of communication with a Member's Client Application because the Exchange's server does not receive a Heartbeat message for a certain time period ("nn" seconds), the Exchange will automatically logoff the Member's affected Client Application and if the Member has elected to have its orders cancelled pursuant to Section 18(g) automatically cancel all orders.

(e) The default time period ("nn" seconds) for SQF Ports shall be fifteen (15) seconds. A Member may determine another time period of "nn" seconds of no technical connectivity, as required in paragraph (b) above, to trigger the disconnect and must communicate that time to the Exchange. The period of "nn" seconds may be modified to a number between one hundred (100) milliseconds and 99,999 milliseconds for SQF Ports prior to each Session of Connectivity to the Exchange. This feature is enabled for each Member and may not be disabled.

(1) If the Member changes the default number of "nn" seconds, that new setting shall be in effect throughout the current Session of Connectivity and will then default back to fifteen seconds. The Member may change the default setting prior to each Session of Connectivity.

(2) If a time period is communicated to the Exchange by calling Exchange operations, the number of "nn" seconds selected by the Member shall persist for each subsequent Session of Connectivity until the Member either contacts Exchange operations by phone and changes the setting or the Member selects another time period through the Client Application prior to the next Session of Connectivity.

(f) The default period of "nn" seconds for OTTO Ports shall be fifteen (15) seconds for the disconnect and, if elected, the removal of orders. A Member may determine another time period of "nn" seconds of no technical connectivity, as required in paragraph (c) above, to trigger the disconnect and, if so elected, the removal of orders and communicate that time to the Exchange. The period of "nn" seconds may be modified to a number between one hundred (100) milliseconds and 99,999 milliseconds for OTTO Ports prior to each Session of Connectivity to the Exchange. This feature may be disabled for the removal of orders, however the Member will be disconnected.

(1) If the Member changes the default number of "nn" seconds, that new setting shall be in effect throughout the current Session of Connectivity and will then default back to fifteen seconds. The Member may change the default setting prior to each Session of Connectivity.

(2) If the time period is communicated to the Exchange by calling Exchange operations, the number of "nn" seconds selected by the Member shall persist for each subsequent Session of Connectivity until the Member either contacts Exchange operations by phone and changes the setting or the Member selects another time period through the Client Application prior to the next Session of Connectivity.

(g) The default period of "nn" seconds for FIX Ports shall be thirty (30) seconds for the disconnect and, if elected, the removal of orders. A Member may determine another time period of "nn" seconds of no technical connectivity, as required in paragraph (d) above, to trigger the disconnect and, if so elected, the removal of orders and communicate that time to the Exchange. The period of "nn" seconds may be modified to a number between one (1) second and thirty (30) seconds for FIX Ports prior to each Session of Connectivity to the Exchange. This feature may be disabled for the removal of orders, however the Member will be disconnected.

(1) If the Member changes the default number of "nn" seconds, that new setting shall be in effect throughout the current Session of Connectivity and will then default back to thirty seconds. The Member may change the default setting prior to each Session of Connectivity.

(2) If the time period is communicated to the Exchange by calling Exchange operations, the number of "nn" seconds selected by the Member shall persist for each subsequent Session of Connectivity until the Member either contacts Exchange operations by phone and changes the setting or the Member selects another time period through the Client Application prior to the next Session of Connectivity.

(h) The trigger for the SQF, OTTO, and FIX Ports is Client Application specific. The automatic cancellation of the MRX Market Maker's quotes for SQF Ports and open orders, if elected by the

Member, for OTTO and FIX Ports entered into the respective SQF, OTTO, or FIX Ports via a particular Client Application will neither impact nor determine the treatment of the quotes of other MRX Market Makers entered into SQF Ports or orders of the same or other Members entered into OTTO or FIX Ports via a separate and distinct Client Application.

[Adopted July 8, 2019 (SR-MRX-2019-15).]

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Section 23. Data Feeds and Trade Information

(a) The following data feeds contain MRX trading information offered by MRX:

(1) Nasdaq MRX Depth of Market Data Feed ("Depth of Market Feed") provides aggregate quotes and orders at the top five price levels on MRX, and provides subscribers with a consolidated view of tradable prices beyond the BBO, showing additional liquidity and enhancing transparency for MRX traded options. The data provided for each option series includes the symbols (series and underlying security), put or call indicator, expiration date, the strike price of the series, and whether the option series is available for trading on ISE and identifies if the series is available for closing transactions only. In addition, subscribers are provided with total aggregate quantity, Public Customer aggregate quantity, Priority Customer aggregate quantity, price, and side (i.e., bid/ask). This information is provided for each of the top five price levels on the Depth Feed. The feed also provides order imbalances on opening/reopening.

(2) Nasdaq MRX Order Feed ("Order Feed") provides information on new orders resting on the book (e.g. price, quantity and market participant capacity). In addition, the feed also announces all auctions. The data provided for each option series includes the symbols (series and underlying security), put or call indicator, expiration date, the strike price of the series, and whether the option series is available for trading on MRX and identifies if the series is available for closing transactions only. The feed also provides order imbalances on opening/reopening.

(3) Nasdaq MRX Top Quote Feed ("Top Quote Feed") calculates and disseminates MRX's best bid and offer position, with aggregated size (including total size in aggregate, for Professional Order size in the aggregate and Priority Customer Order size in the aggregate), based on displayable order and quote interest in the System. The feed also provides last trade information along with opening price, daily trading volume, high and low prices for the day. The data provided for each option series includes the symbols (series and underlying security), put or call indicator, expiration date, the strike price of the series, and whether the option series is available for trading on MRX and identifies if the

series is available for closing transactions only. The feed also provides order imbalances on opening/reopening.

(4) Nasdaq MRX Trades Feed ("Trades Feed") displays last trade information along with opening price, daily trading volume, high and low prices for the day. The data provided for each option series includes the symbols (series and underlying security), put or call indicator, expiration date, the strike price of the series, and whether the option series is available for trading on MRX and identifies if the series is available for closing transactions only.

(5) Nasdaq MRX Spread Feed ("Spread Feed") is a feed that consists of: (1) options orders for all Complex Orders (i.e., spreads, buy-writes, delta neutral strategies, etc.); (2) data aggregated at the top five price levels (BBO) on both the bid and offer side of the market; (3) last trades information. The Spread Feed provides updates, including prices, side, size and capacity, for every Complex Order placed on the MRX Complex Order Book. The Spread Feed shows: (1) aggregate bid/ask quote size; (2) aggregate bid/ask quote size for Professional Customer Orders; and (3) aggregate bid/ask quote size for Priority Customer Orders for MRX traded options. The feed also provides Complex Order auction notifications.

(b) The following order and execution information is available to Members:

(1) Clearing Trade Interface ("CTI") is a real-time cleared trade update message that is sent to a Member after an execution has occurred and contains trade details specific to that Member. The information includes, among other things, the following: (i) The Clearing Member Trade Agreement ("CMTA") or The Options Clearing Corporation ("OCC") number; (ii) badge or mnemonic; (iii) account number; (iv) information which identifies the transaction type (e.g. auction type) for billing purposes; and (v) market participant capacity.

(2) TradeInfo, a user interface, permits a Member to: (i) search all orders submitted in a particular security or all orders of a particular type, regardless of their status (open, canceled, executed, etc.); (ii) view orders and executions; and (iii) download orders and executions for recordkeeping purposes. TradeInfo users may also cancel open orders at the order, port or firm mnemonic level through TradeInfo.

(3) FIX DROP is a real-time order and execution update message that is sent to a Member after an order been received/modified or an execution has occurred and contains trade details specific to that Member. The information includes, among other things, the following: (i) executions; (ii) cancellations; (iii) modifications to an existing order; and (iv) busts or post-trade corrections.

Changes to this rule became operative on November 7, 2022. For options symbols which have not yet migrated to the new platform, the attached document displays the current rules. The symbol migration schedule is available at Options Trader Alert 2022-34.

[Adopted July 8, 2019 (SR-MRX-2019-15).]

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Options 7 Pricing Schedule

Section 1. General Provisions

(a) Removal of Days for Purposes of Pricing Tiers:

(1) **(A)** Any day that the Exchange announces in advance that it will not be open for trading will be excluded from the options tier calculations set forth in its Pricing Schedule; and **(B)** any day with a scheduled early market close ("Scheduled Early Close") may be excluded from the options tier calculations only pursuant to paragraph (3) below.

(2) The Exchange may exclude the following days ("Unanticipated Events") from the options tier calculations only pursuant to paragraph (3) below, specifically any day that: **(A)** the market is not open for the entire trading day, **(B)** the Exchange instructs members in writing to route their orders to other markets, **(C)** the Exchange is inaccessible to members during the 30-minute period before the opening of trade due to an Exchange system disruption, or **(D)** the Exchange's system experiences a disruption that lasts for more than 60 minutes during regular trading hours.

(3) If a day is to be excluded as a result of paragraph (1)(B) or (2) above, the Exchange will exclude the day from any member's monthly options tier calculations as follows:

(A) the Exchange may exclude from the ADV calculation any Scheduled Early Close or Unanticipated Event; and

(B) the Exchange may exclude from any other applicable options tier calculation provided for in its Pricing Schedule (together with (3)(A), "Tier Calculations") any Scheduled Early Close or Unanticipated Event.

provided, in each case, that the Exchange will only remove the day for members that would have a lower Tier Calculation with the day included.

(b) All fee disputes concerning fees which are billed by the Exchange must be submitted to the Exchange in writing and must be accompanied by supporting documentation. All fee disputes must be submitted no later than sixty calendar (60) days after receipt of a billing invoice.

Changes to this rule became operative on November 7, 2022. For options symbols which have not yet migrated to the new platform, the attached document displays the current rules. The symbol migration schedule is available at Options Trader Alert 2022-34.

(c) For purposes of assessing fees, the following references should serve as guidance. Terms not defined in this Pricing Schedule shall have the meaning ascribed to them under Nasdaq MRX Rules. Fees and rebates are listed per contract per leg unless otherwise noted.

An "**Affiliated Entity**" is a relationship between an Appointed Market Maker and an Appointed OFP for purposes of qualifying for certain pricing specified in the Pricing Schedule. Market Makers and OFPs are required to send an email to the Exchange to appoint their counterpart, at least 3 business days prior to the last day of the month to qualify for the next month. The Exchange will acknowledge receipt of the emails and specify the date the Affiliated Entity is eligible for applicable pricing, as specified in the Pricing Schedule. Each Affiliated Entity relationship will commence on the 1st of a month and may not be terminated prior to the end of any month. An Affiliated Entity relationship will automatically renew each month until or unless either party terminates earlier in writing by sending an email to the Exchange at least 3 business days prior to the last day of the month to terminate for the next month. Affiliated Members may not qualify as a counterparty comprising an Affiliated Entity. Each Member may qualify for only one (1) Affiliated Entity relationship at any given time.

An "**Affiliated Member**" is a Member that shares at least 75% common ownership with a particular Member as reflected on the Member's Form BD, Schedule A.

An "**Appointed Market Maker**" is a Market Maker who has been appointed by an OFP for purposes of qualifying as an Affiliated Entity.

An "**Appointed OFP**" is an OFP who has been appointed by a Market Maker for purposes of qualifying as an Affiliated Entity.

A "**Broker-Dealer**" order is an order submitted by a Member for a broker-dealer account that is not its own proprietary account.

A "**Complex Order**" is any order involving the simultaneous purchase and/or sale of two or more different options series in the same underlying security, as provided in Nasdaq MRX Options 3, Section 14, as well as Stock-Option Orders.

A "**Crossing Order**" is an order executed in the Exchange's Facilitation Mechanism, Solicited Order Mechanism, Price Improvement Mechanism ("PIM") or submitted as a Qualified Contingent Cross order. For purposes of this Pricing Schedule, orders executed in the Block Order Mechanism are also considered Crossing Orders.

"**Customer Total Consolidated Volume**" means the total volume cleared at The Options Clearing Corporation in the Customer range in equity and ETF options in that month.

An "**Exposed Order**" is an order that is broadcast via an order exposure alert as described within Options 5, Section 4 (Order Routing). Unless otherwise noted in Options 7, Section 3 pricing, Exposed Orders will be assessed the applicable "Taker" Fee and any order or quote that executes against an Exposed Order during a Route Timer will be paid/assessed the applicable "Maker" Rebate/Fee.

A "**Firm Proprietary**" order is an order submitted by a Member for its own proprietary account.

A "**Flash Order**" is an order that is exposed at the National Best Bid or Offer by the Exchange to all Members for execution, as provided under Supplementary Material .02 to Nasdaq MRX Options 5, Section 2. For all Flash Orders, the Exchange will charge the applicable taker fee and for responses that trade against a Flash Order, the Exchange will charge the applicable maker fee.

A "**Market Maker**" is a market maker as defined in Nasdaq MRX Rule Options 1, Section 1(a)(21).

A "**Non-Nasdaq MRX Market Maker**" is a market maker as defined in Section 3(a)(38) of the Securities Exchange Act of 1934, as amended, registered in the same options class on another options exchange.

"**Non-Penny Symbols**" are options overlying all symbols excluding Penny Symbols.

An "**Order Flow Provider**" ("OFP") is any Member, other than a Market Maker, that submits orders, as agent or principal, to the Exchange.

"**Penny Symbols**" are options overlying all symbols listed on Nasdaq MRX that are in the Penny Interval Program.

A "**Priority Customer**" is a person or entity that is not a broker/dealer in securities, and does not place more than 390 orders in listed options per day on average during a calendar month for its own beneficial account(s), as defined in Nasdaq MRX Options 1, Section 1(a)(36). Unless otherwise noted, when used in this Pricing Schedule the term "Priority Customer" includes "Retail" as defined below.

A "**Professional Customer**" is a person or entity that is not a broker/dealer and is not a Priority Customer.

A "**Regular Order**" is an order that consists of only a single option series and is not submitted with a stock leg.

Changes to this rule became operative on November 7, 2022. For options symbols which have not yet migrated to the new platform, the attached document displays the current rules. The symbol migration schedule is available at Options Trader Alert 2022-34.

"**Responses to Crossing Order**" is any contra-side interest (i.e., orders & quotes) submitted after the commencement of an auction in the Exchange's Facilitation Mechanism, Solicited Order Mechanism, Block Order Mechanism or Price Improvement Mechanism.

A "**Retail**" order is a Priority Customer order that originates from a natural person, provided that no change is made to the terms of the order with respect to price or side of market and the order does not originate from a trading algorithm or any other computerized methodology.

Adopted August 31, 2018 (SR-MRX-2018-27); amended December 21, 2018 (SR-MRX-2018-42); amended January 31, 2019 (SR-MRX-2019-02), operative February 1, 2019; amended June 12, 2019 (SR-MRX-2019-12); amended June 24, 2019 (SR-MRX-2019-14); amended June 5, 2019 (SR-MRX-2019-11), operative July 5, 2019; amended July 8, 2019 (SR-MRX-2019-15); amended Dec. 9, 2019 (SR-MRX-2019-25); amended July 1, 2020 (SR-MRX-2020-14); amended Nov. 2, 2020 (SR-MRX-2020-19); amended Nov. 6, 2020 (SR-MRX-2020-21; amended Apr. 1, 2021 (SR-MRX-2021-02); amended Apr. 13, 2021 (SR-MRX-2021-04); amended Dec. 1, 2021 (SR-MRX-2021-12); amended Oct. 12, 2022 (SR-MRX-2022-21).

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Section 5. Other Options Fees and Rebates

A. Route-Out Fees [1.]

Market Participant	Penny Symbols	Non-Penny Symbols
All Market Participants	$0.55	$1.09

[1.] Fee applies to executions of orders that are routed to one or more exchanges in connection with the Options Order Protection and Locked/Crossed Market Plan.

B. Marketing Fee

Market Participant	Penny Symbols	Non-Penny Symbols
Market Maker	$0.00*	$0.00*

* No marketing fees are charged for Penny and Non-Penny Symbols. If the Exchange determines to charge a marketing fee in the future, it will do so pursuant to a rule filing.

» Marketing fees apply to Market Makers for each Regular Priority Customer contract executed except as noted below.

» Marketing fees are waived for Flash Order responses.

» Marketing fees are waived for Market Maker orders that take liquidity from the order book.

» Marketing fees are waived for Crossing Orders and Responses to Crossing Orders.

» Marketing fees are waived for Complex Orders.

» The marketing fee will be rebated proportionately to the Members that paid the fee such that on a monthly basis the marketing fee fund balance administered by a Primary Market Maker for a Group of options established under Rule 802(b) does not exceed $100,000 and the marketing fee fund balance administered by a preferenced Competitive Market Maker for such a Group does not exceed $100,000. A preferenced Competitive Market Maker that elects not to administer a fund will not be charged the marketing fee. The Exchange assesses an administrative fee of .45% on the total amount of the funds collected each month.

C. Options Regulatory Fee

The ORF is $0.0004 per contract side.

The Options Regulatory Fee ("ORF") is assessed by MRX to each MRX Member for options transactions cleared by The Options Clearing Corporation ("OCC") in the customer range where: (1) the execution occurs on MRX or (2) the execution occurs on another exchange and is cleared by a MRX Member. The ORF is collected by OCC on behalf of MRX from (1) MRX clearing members for all customer transactions they clear or (2) non-members for all customer transactions they clear that were executed on MRX. MRX uses reports from OCC when assessing and collecting ORF. The Exchange will notify Members via an Options Trader Alert of any change in the amount of the fee at least 30 calendar days prior to the effective date of the change.

D. FINRA Web CRD Fees

These fees are collected and retained by FINRA via the Web CRD registration system for the registration of associated persons of member organizations of the Exchange that are not FINRA members. FINRA, on behalf of the Exchange, will bill and collect these fees.

General Registration Fees:

$125-For each initial Form U4 filed for the registration of a representative or principal.

$110-For the additional processing of each initial or amended Form U4, Form U5 or Form BD that includes the initial reporting, amendment or certification of one or more disclosure events or proceedings.

$45-FINRA Annual System Processing Fee Assessed only during Renewals.

Fingerprint Processing Fees:

$29.50-Initial Submission (Electronic)

$44.50-Initial Submission (Paper)

$15.00-Second Submission (Electronic)

$30.00-Second Submission (Paper)

$29.50-Third Submission (Electronic)

$44.50-Third Submission (Paper)

$30.00-FINRA Processing Fee for Fingerprint Results Submitted by Self-Regulatory Organizations other than FINRA.

Continuing Education Fee:

The Continuing Education Fee will be assessed as to each individual who is required to complete the Regulatory Element of the Continuing Education Requirements pursuant to Exchange General 4, Section 1240. This fee is paid directly to FINRA.

$55 Continuing Education Regulatory Element Session Fee for each individual who is required to complete the Regulatory Element of the Continuing Education Requirements pursuant to Exchange General 4, Section 1240. *This fee will be amended on January 1, 2023 as noted below*.

Maintaining Qualifications Program ("MQP") Fee: $100 fee for each individual electing to participate in the continuing education program under FINRA Rule 1240(c) for each year that such individual is participating in the program. Individuals who elect to participate in the program within two years from the termination of a registration would also be assessed any accrued annual fee. This fee is paid directly to FINRA.

The below Continuing Education Regulatory Element Session Fee will be assessed by FINRA commencing on January 1, 2023

$18 Continuing Education Regulatory Element Session Fee for all Registrations. This fee will be assessed as to each individual who is required to complete the Regulatory Element of the Continuing Education Requirements pursuant to Exchange General 4, Section 1240. This fee is paid directly to FINRA.

E. Access Fees

MRX Members would pay each applicable Access Fee below.

Electronic Access Member	$200 per month
Market Maker (Primary Market Maker or Competitive Market Maker)	$200 per month

F. CMM Trading Right Fees

First Trading Right	$850 per month
Each additional Trading Right	$500 per month

Adopted August 31, 2018 (SR-MRX-2018-27); amended February 1, 2019 (SR-MRX-2019-03); amended June 12, 2019 (SR-MRX-2019-12); amended June 24, 2019 (SR-MRX-2019-14); amended July 8, 2019 (SR-MRX-2019-15); amended June 1, 2020 (SR-MRX-2020-11); amended July 1, 2020 (SR-MRX-2020-14); amended Nov. 6, 2020 (SR-MRX-2020-21; amended Apr. 1, 2021 (SR-MRX-2021-02); amended Apr. 13, 2021 (SR-MRX-2021-04); amended November 5, 2021 (SR-MRX-2021-11), operative January 2, 2022; amended Jan. 11, 2022 (SR-MRX-2022-01), operative Jan. 31, 2022); amended May. 2, 2022 (SR-MRX-2022-04); amended Jun. 29, 2022 (SR-MRX-2022-07), operative Jun. 29, 2022; amended Aug. 25, 2022 (SR-MRX-2022-13); amended Oct. 5, 2022 (SR-MRX-2022-19); amended Nov. 1, 2022 (SR-MRX-2022-24).

Section 6. Ports and Other Services

MRX Members will be required to transition from legacy FIX Ports, SQF Ports, SQF Purge Ports, OTTO Ports, CTI Ports and FIX DROP Ports to new FIX Ports, SQF Ports, SQF Purge Ports, OTTO Ports, CTI Ports and FIX DROP Ports in conjunction with a technology infrastructure migration.

MRX will not assess the below port fees for any new FIX Ports, SQF Ports, SQF Purge Ports, OTTO Ports, CTI Ports and FIX DROP Ports, which are duplicative of legacy FIX Ports, SQF Ports, SQF Purge Ports, OTTO Ports, CTI Ports and FIX DROP Ports, acquired as part of the migration from November 1, 2022 through December 30, 2022 ("Transition Period").

Changes to this rule became operative on November 7, 2022. For options symbols which have not yet migrated to the new platform, the attached document displays the current rules. The symbol migration schedule is available at Options Trader Alert 2022-34.

MRX will continue to assess the below fees for legacy FIX Ports, SQF Ports, SQF Purge Ports, OTTO Ports, CTI Ports and FIX DROP Ports during the Transition Period. MRX will sunset legacy FIX Ports, SQF Ports, SQF Purge Ports, OTTO Ports, CTI Ports and FIX DROP Ports on December 30, 2022. Additionally, MRX will assess the below port fees for any new legacy FIX Ports, SQF Ports, SQF Purge Ports, OTTO Ports, CTI Ports and FIX DROP Ports acquired during the Transition Period.

Starting in January 2023, the below fees would apply to any substituted ports that a Member continues to subscribe to after the Transition Period.

The below charges are assessed by MRX for connectivity to MRX.

A port is a logical connection or session that enables a market participant to send inbound messages and/or receive outbound messages from the Exchange using various communication protocols. Fees are prorated for the first month of service under this section. Upon cancellation, market participants are required to pay for service for the remainder of the month, regardless of whether it is the first month of service.

(i) The following order and quote protocols are available on MRX.

Port Fee	Production	Disaster Recovery
(1) FIX Port Fee	$650 per port, per month, per account number[2, 3]	$50 per port, per month, per account number[2, 3]
(2) SQF Port Fee	$1,250 per port, per month[1, 4]	$50 per port, per month, per account number[2, 4]
(3) SQF Purge Port Fee	$1,250 per port, per month[1]	$50 per port, per month, per account number[2]
(4) OTTO Port Fee	$650 per port, per month, per account number[2]	$50 per port, per month, per account number[2]

(ii) The following order and execution information is available to Members.

Port Fee	Production	Disaster Recovery
(1) CTI Port Fee	$650 per port, per month[2]	$50 per port, per month[2]
(2) FIX DROP Port Fee	$650 per port, per month[2]	$50 per port, per month[2]

(3) TradeInfo MRX Interface	$0 per port, per month	$0 per port, per month

(iii) The following data ports fees apply in connection with data subscriptions pursuant to MRX Rules at Section 7. These ports are available to non-MRX Members and MRX Members.

Port Fee	Production	Disaster Recovery
(1) **Nasdaq MRX Depth of Market Data Port**	$0 per port, per month	$0 per port, per month
(2) **Nasdaq MRX Order Feed Port**	$0 per port, per month	$0 per port, per month
(3) **Nasdaq MRX Top Quote Feed Port**	$0 per port, per month	$0 per port, per month
(4) **Nasdaq MRX Trades Feed Port**	$0 per port, per month	$0 per port, per month
(5) **Nasdaq MRX Spread Feed Port**	$0 per port, per month	$0 per port, per month

(iv) Other ports:

Nasdaq Testing Facility Port Fee[5]	$0 per port, per month

MRX does not assess a fee for account numbers.

[1]The SQF Port and the SQF Purge Port are subject to a monthly cap of $17,500, which cap is applicable to Market Makers.

[2] OTTO Port, CTI Port, FIX Port, FIX Drop Port and all Disaster Recovery Ports are subject to a monthly cap of $7,500.

[3] MRX will waive one FIX Port fee and one FIX Disaster Recovery Port fee per Electronic Access Member per month.

[4] MRX will waive one SQF Port fee and one SQF Disaster Recovery Port fee per Market Maker per month.

[5]The Nasdaq Testing Facility Port Fee is applicable to all ports within this Section 6.

Adopted August 31, 2018 (SR-MRX-2018-27); amended May 31, 2019 (SR-MRX-2019-08), operative June 24, 2019; amended May. 2, 2022 (SR-MRX-2022-04); amended Jun. 29, 2022 (SR-MRX-2022-06); amended Jul. 1, 2022 (SR-MRX-2022-09); amended Aug. 25, 2022 (SR-MRX-2022-12); amended Sep. 1, 2022 (SR-MRX-2022-15); amended Oct. 11, 2022 (SR-MRX-2022-20); amended Oct. 12, 2022 (SR-MRX-2022-21).