

PATENT ASSIGNMENT

Electronic Version v1.1  
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| SUBMISSION TYPE:  | NEW ASSIGNMENT        |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
|---|-----------------------|---------------|-----------------|---------------------|-----------------------|---------------------|-------------|---------------------|------------|---------------------|------------|------------|------------|---------------------|------------|----------------|------------|--------------------|------------|----------------|------------|-------------------|------------|----------------|------------|------------------|------------|-----------|------------|-------------------|------------|
| NATURE OF CONVEYANCE:   | ASSIGNMENT            |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| CONVEYING PARTY DATA  |                       |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| <table border="1"><thead><tr><th>Name</th><th>Execution Date</th></tr></thead><tbody><tr><td>H. Toby Markowitz</td><td>04/02/2009</td></tr><tr><td>Sean Campbell-Massa</td><td>04/02/2009</td></tr><tr><td>Phillip Falkner</td><td>04/01/2009</td></tr><tr><td>Ioana Fleming</td><td>04/02/2009</td></tr><tr><td>Chad Giese</td><td>03/31/2009</td></tr><tr><td>Mustafa Karamanoglu</td><td>04/01/2009</td></tr><tr><td>Michael Kryger</td><td>04/06/2009</td></tr><tr><td>Shangqian P. Zhang</td><td>04/02/2009</td></tr><tr><td>Brian H. Craig</td><td>04/02/2009</td></tr><tr><td>Eduardo N. Warman</td><td>04/02/2009</td></tr><tr><td>Marie P. Smith</td><td>04/01/2009</td></tr><tr><td>Noelle C. Hurtig</td><td>04/01/2009</td></tr><tr><td>Olaf Eick</td><td>04/01/2009</td></tr><tr><td>Brent D. Chelgren</td><td>04/01/2009</td></tr></tbody></table> |                       | Name          | Execution Date  | H. Toby Markowitz   | 04/02/2009            | Sean Campbell-Massa | 04/02/2009  | Phillip Falkner     | 04/01/2009 | Ioana Fleming       | 04/02/2009 | Chad Giese | 03/31/2009 | Mustafa Karamanoglu | 04/01/2009 | Michael Kryger | 04/06/2009 | Shangqian P. Zhang | 04/02/2009 | Brian H. Craig | 04/02/2009 | Eduardo N. Warman | 04/02/2009 | Marie P. Smith | 04/01/2009 | Noelle C. Hurtig | 04/01/2009 | Olaf Eick | 04/01/2009 | Brent D. Chelgren | 04/01/2009 |
| Name  | Execution Date        |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| H. Toby Markowitz   | 04/02/2009            |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| Sean Campbell-Massa   | 04/02/2009            |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| Phillip Falkner   | 04/01/2009            |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| Ioana Fleming   | 04/02/2009            |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| Chad Giese  | 03/31/2009            |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| Mustafa Karamanoglu   | 04/01/2009            |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| Michael Kryger  | 04/06/2009            |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| Shangqian P. Zhang  | 04/02/2009            |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| Brian H. Craig  | 04/02/2009            |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| Eduardo N. Warman   | 04/02/2009            |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| Marie P. Smith  | 04/01/2009            |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| Noelle C. Hurtig  | 04/01/2009            |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| Olaf Eick   | 04/01/2009            |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| Brent D. Chelgren   | 04/01/2009            |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| RECEIVING PARTY DATA  |                       |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| <table border="1"><tr><td>Name:</td><td>Medtronic, Inc.</td></tr><tr><td>Street Address:</td><td>710 Medtronic Pkwy NE</td></tr><tr><td>City:</td><td>Minneapolis</td></tr><tr><td>State/Country:</td><td>MINNESOTA</td></tr><tr><td>Postal Code:</td><td>55432</td></tr></table>   |                       | Name:         | Medtronic, Inc. | Street Address:     | 710 Medtronic Pkwy NE | City:               | Minneapolis | State/Country:      | MINNESOTA  | Postal Code:        | 55432      |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| Name:   | Medtronic, Inc.       |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| Street Address:   | 710 Medtronic Pkwy NE |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| City:   | Minneapolis           |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| State/Country:  | MINNESOTA             |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| Postal Code:  | 55432                 |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| PROPERTY NUMBERS Total: 9   |                       |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| <table border="1"><thead><tr><th>Property Type</th><th>Number</th></tr></thead><tbody><tr><td>Application Number:</td><td>12421332</td></tr><tr><td>Application Number:</td><td>12423957</td></tr><tr><td>Application Number:</td><td>12423966</td></tr><tr><td>Application Number:</td><td>12424013</td></tr></tbody></table>  |                       | Property Type | Number          | Application Number: | 12421332              | Application Number: | 12423957    | Application Number: | 12423966   | Application Number: | 12424013   |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| Property Type   | Number                |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| Application Number:   | 12421332              |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
| Application Number:   | 12423957              |               |                 |                     |                       |                     |             |                     |            |                     |            |            |            |                     |            |                |            |                    |            |                |            |                   |            |                |            |                  |            |           |            |                   |            |
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CH \$360.00 12421332

501408601

PATENT  
REEL: 025652 FRAME: 0626

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|---------------------|----------|
| Application Number: | 12423994 |
| Application Number: | 12423973 |
| Application Number: | 12423996 |
| Application Number: | 12424007 |
| Application Number: | 12424037 |

#### CORRESPONDENCE DATA

Fax Number: (248)641-0270

*Correspondence will be sent via US Mail when the fax attempt is unsuccessful.*

Phone: 248-641-1600

Email: pneal@hdp.com

Correspondent Name: Harness, Dickey, & Pierce, PLC

Address Line 1: P.O. Box 828

Address Line 4: Bloomfield Hills, MICHIGAN 48303

|                         |                         |
|-------------------------|-------------------------|
| ATTORNEY DOCKET NUMBER: | 5074D-000005/CPA SERIES |
|-------------------------|-------------------------|

|                    |                   |
|--------------------|-------------------|
| NAME OF SUBMITTER: | Richard W. Warner |
|--------------------|-------------------|

#### Total Attachments: 17

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## ASSIGNMENT BY INVENTORS

**THIS ASSIGNMENT**, made by H. Toby Markowitz; Sean Campbell-Massa; Phillip Falkner; Ioana Fleming; Chad Giese; Mustafa Karamanoglu; Michael Kryger; Pooja Mehta; James Steeves; Shangqian P. Zhang; Steven L. Waldhauser; David Scanlon; Brian H. Craig; Eduardo N. Warman; Koen Michels; Marie P. Smith; Noelle C. Hurtig; Olaf Eick; Rogier Receveur; Vincent Larik; and Brent Chelgren (hereinafter referred to as Assignors), residing at 1670 Ridgewood Lane S, Roseville, Minnesota 55113; 930 Stony LN, Gladwyne, Pennsylvania 19035; 801 Washington Avenue N, Unit 310, Minneapolis, Minnesota 55401; 1310 Heidi Circle, Anchorage, Alaska 99518; 1230 Saint Clair Avenue, St. Paul, Minnesota 55015; 6245 Ben More Drive NE, Fridley, Minnesota 55432; 600 N. McClurg Ct., Apt 1306, Chicago, Illinois 60611; 135 Troutman Dr., Bartlett, Illinois 60103; 288 Bousfield Crescent, Milton, Ontario L9T 3G7, CANADA; 905 Hardwood Avenue, Shoreview, Minnesota 55126; 4467 Margaret Street, White Bear Township, Minnesota 55110; 3721 40th Ave. S, Minneapolis, Minnesota 55406; 4408 Washburn Ave. South, Minneapolis, Minnesota 55410; 10949 Pheasant Ln., N, Maple Grove, Minnesota 55369; \_\_\_\_\_ (*Koen Michels*); 4031 Lakehill Cr., White Bear Lake, Minnesota 55110; 5022 29th Ave., S., Minneapolis, Minnesota 55417; Kühlkenstrasse 3, 28717 Bremen, Germany ; Vlijtingerbank 6, 6213 KB Maastricht, Maastricht, NETHERLANDS; \_\_\_\_\_ (*Vincent Larik*); and \_\_\_\_\_ (*Brent Chelgren*); respectively;

**WHEREAS**, Assignors have invented certain new and useful improvements in Method and Apparatus for Mapping a Structure, set forth in a Patent application for Letters Patent of the United States, executed on even date preparatory to filing (each inventor should sign this Assignment on the same day as he/she signs the Declaration); and

**WHEREAS** Medtronic, Inc., a Corporation organized under and pursuant to the laws of Minnesota having its principal place of business at 710 Medtronic Parkway NE,

Minneapolis, Minnesota 55432-5604 (hereinafter referred to as Assignee), is desirous of acquiring the entire right, title and interest in and to said inventions and said Application for Letters Patent of the United States, and in and to any Letters Patent of the United States to be obtained therefore and thereon.

**NOW, THEREFORE**, for good and sufficient consideration, the receipt of which is hereby acknowledged, Assignors have sold, assigned, transferred and set over, and by these presents do sell, assign, transfer and set over, unto Assignee, its successors, legal representatives and assigns, the entire right, title and interest in and to the above-mentioned inventions and application for Letters Patent, and in and to any and all direct and indirect divisions, continuations and continuations-in-part of said application, and any and all Letters Patent in the United States and all foreign countries which may be granted therefore and thereon, and reissues, reexaminations and extensions of said Letters Patent, and all rights under the International Convention for the Protection of Industrial Property, including the right to recover for past infringements, the same to be held and enjoyed by Assignee, for its own use and benefit and the use and benefit of its successors, legal representatives and assigns, to the full end of the term or terms for which Letters Patent may be granted and/or extended, as fully and entirely as the same would have been held and enjoyed by Assignors, had this sale and assignment not been made.

**AND** for the same consideration, Assignors hereby represent and warrant to Assignee, its successors, legal representatives and assigns, that, at the time of execution and delivery of these presents, except for any rights, titles and/or interests that have arisen to Assignee under law or that have already been transferred to Assignee, Assignors are the sole and lawful owners of the entire right, title and interest in and to the said inventions and application for Letters Patent above-mentioned, and that the same are unencumbered and that Assignors have good and full right and lawful authority to sell and convey the same in the manner herein set forth.

**AND** for the same consideration, Assignors hereby covenant and agree to and with Assignee, its successors, legal representatives and assigns, that Assignors will sign all papers and documents, take all lawful oaths and do all acts necessary or required to be done for the procurement, maintenance, enforcement and defense of any Letters Patent and applications for Letters Patent for said inventions, without charge to Assignee, its successors, legal representatives and assigns, whenever counsel of Assignee, or counsel of its successors, legal representatives and assigns, shall advise: that any proceeding in connection with said inventions, or said Patent application for Letters Patent, or any proceeding in connection with any Letters Patent or applications for Letters Patent for said inventions in any country, including but not limited to interference proceedings, is lawful and desirable; or, that any division, continuation or continuation-in-part of any application for Letters Patent, or any reissue, reexamination or extension of any Letters Patent, to be obtained thereon, is lawful and desirable.

**AND** Assignors hereby request the Commissioner of Patent and Trademarks to issue said Letters Patent of the United States to Assignee, as Assignee of said inventions and the Letters Patent to be issued thereon, for the sole use and benefit of Assignee, its successors, legal representatives and assigns.

**AND** Assignors hereby grant the following individuals the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document:

HARNESS, DICKEY & PIERCE, P.L.C.

All practitioners at Customer Number 27572

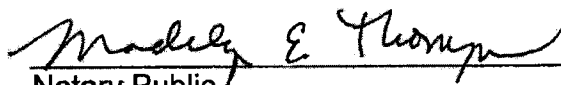
**AND** Assignors acknowledge an obligation of assignment of this invention to Assignee at the time the invention was made.

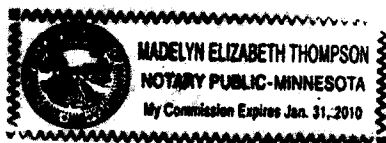
  
H. Toby Markowitz

Date: 2 APRIL 2009

United States of America )  
State of Minnesota ) ss.:  
County of Ramsey )

On this 2nd day of April, 2009, before me  
personally came H. Toby Markowitz, to me known to be the individual  
described in and who executed the foregoing instrument, and acknowledged execution  
of the same.

  
Notary Public



/Sean Campbell-Massa/

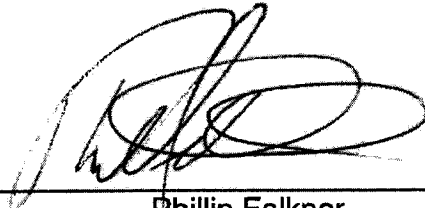
\_\_\_\_\_  
Sean Campbell-Massa

Date: 2 April 2009

United States of America )  
State of ) ss.:  
County of )

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me  
personally came Sean Campbell-Massa, to me known to be the individual  
described in and who executed the foregoing instrument, and acknowledged execution  
of the same.

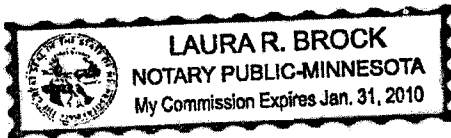
\_\_\_\_\_  
Notary Public

  
Phillip Falkner

Date: 4-11-09

United States of America )  
State of MINNESOTA ) ss.:  
County of ANOKA )

On this 1<sup>st</sup> day of APRIL, 2009, before me  
personally came Phillip Falkner, to me known to be the individual  
described in and who executed the foregoing instrument, and acknowledged execution  
of the same.



  
Notary Public



Ioana W Fleming

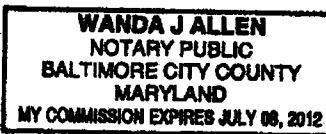
Ioana Fleming

Date: April 2nd 2009

United States of America )  
State of MD ) ss.:  
County of Baltimore )

On this 2nd day of April, 2009, before me  
personally came Ioana Fleming, to me known to be the individual  
described in and who executed the foregoing instrument, and acknowledged execution  
of the same.

Wanda J Allen  
Notary Public



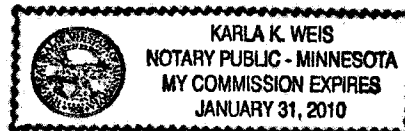
Chad Giese  
Chad Giese

Date: 31 March 2009

United States of America )  
State of Minnesota ) ss.:  
County of Anoka )

On this 31<sup>st</sup> day of March, 2009, before me  
personally came Chad Giese, to me known to be the individual  
described in and who executed the foregoing instrument, and acknowledged execution  
of the same.

Karla K. Weis  
Notary Public

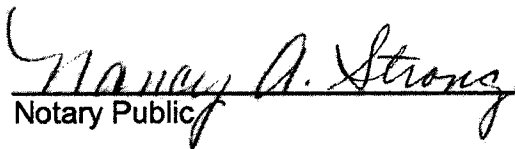


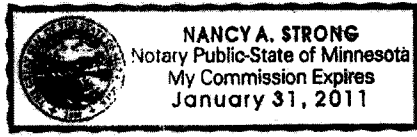
  
\_\_\_\_\_  
Mustafa Karamanoglu

Date: 4/1/2009

United States of America )  
State of MINNESOTA ) ss.:  
County of RAMSEY )

On this 1<sup>ST</sup> day of APRIL, 2009, before me  
personally came Mustafa Karamanoglu, to me known to be the individual  
described in and who executed the foregoing instrument, and acknowledged execution  
of the same.

  
\_\_\_\_\_  
Notary Public



Michael Kryger  
Michael Kryger

Date: April 6<sup>th</sup>, 2009

United States of America )  
State of Illinois ) ss.: 301 88 8941  
County of Cook )

On this 6 day of April, 2009, before me  
personally came Michael Kryger, to me known to be the individual  
described in and who executed the foregoing instrument, and acknowledged execution  
of the same.

Miroslava Rachuy  
Notary Public



*Shangqian P. Zhang*

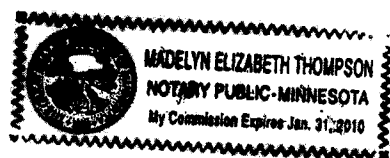
Shangqian P. Zhang

Date: 04/02/2009

United States of America )  
State of Minnesota ) ss.:  
County of Ramsey )

On this 2<sup>nd</sup> day of April, 2009, before me  
personally came Shangqian P. Zhang, to me known to be the individual  
described in and who executed the foregoing instrument, and acknowledged execution  
of the same.

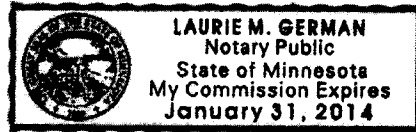
*Madelyn E. Thompson*  
Notary Public



Brian H. Craig  
Brian H. Craig

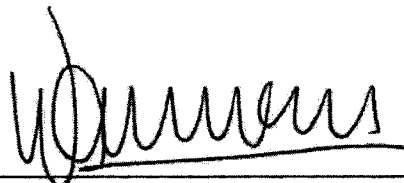
Date: April 2, 2009

United States of America )  
State of Minnesota ) ss.:  
County of Anoka )



On this 2nd day of April, 2009, before me  
personally came Brian H. Craig, to me known to be the individual  
described in and who executed the foregoing instrument, and acknowledged execution  
of the same.

Laurie M. German  
Notary Public



Eduardo N. Warman

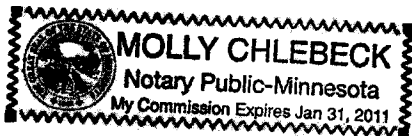
Date: 4-2-09

United States of America )  
State of Minnesota ) ss.:  
County of Ramsey )

On this 2nd day of April, 2009, before me  
personally came Eduardo N. Warman, to me known to be the individual  
described in and who executed the foregoing instrument, and acknowledged execution  
of the same.



Notary Public



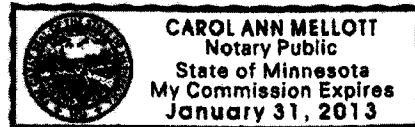
Marie P. Smith  
Marie P. Smith

Date: April 1, 2009

United States of America )  
State of Minnesota ) ss.:  
County of Ramsey )

On this 1st day of April, 2009, before me  
personally came Marie P. Smith, to me known to be the individual  
described in and who executed the foregoing instrument, and acknowledged execution  
of the same.

Carol Ann Mellott  
Notary Public





Noelle C. Hurtig  
Noelle C. Hurtig

Date: April 1, 2009

United States of America )  
State of Minnesota ) ss.:  
County of Ramsey )

On this 1<sup>st</sup> day of April, 2009, before me  
personally came Noelle C. Hurtig, to me known to be the individual  
described in and who executed the foregoing instrument, and acknowledged execution  
of the same.

Carol Ann Mellott  
Notary Public





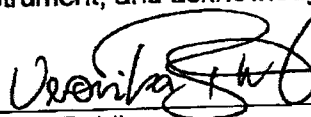

---

 Olaf Eick

Date: \_\_\_\_\_

United States of America )  
 State of \_\_\_\_\_ ) ss.:  
 County of \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, before me  
 personally came \_\_\_\_\_ Olaf Eick \_\_\_\_\_, to me known to be the individual  
 described in and who executed the foregoing instrument, and acknowledged execution  
 of the same.




---

 Notary Public

Veronika Btiken

Brent D. Chelgren

Brent Chelgren

Date: April 1, 2009

United States of America )  
State of Minnesota ) ss.:  
County of Ramsey )

On this 1st day of April, 2009, before me  
personally came Brent Chelgren, to me known to be the individual  
described in and who executed the foregoing instrument, and acknowledged execution  
of the same.

Molly Chlebeck

Notary Public

14294640 1

