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BRIOHN DESIGN GROUP, LLC
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September 15th, 2026

Lindsey Gessler
N69 W20947 Pleasant St.
Menomonee Falls, WI. 53051

RE: N69 W20947 Pleasant St, Menomonee Falls, WI. Structural Inspection

Dear Lindsey,

Per your request, I conducted an inspection of the residence located at N69 W20947 Pleasant Street in Menomonee Falls, Wisconsin on September 10th, 2026. The purpose of the inspection was to evaluate the existing structure & foundation to determine if repairs are required. A home inspection report was done by Extensive Home Inspections dated August 31st, 2026. This report specifically addresses issues pointed out in the inspection report that are specified to be evaluated by a structural engineer.

The residence is a single-story wood framed structure constructed on concrete block foundation walls that measure approximately 7'-1½" from the basement floor to the underside of floor joists. The building is 73 years old according to public records. The exterior grade slopes down toward the back of the residence which has an attached single car garage drive-in at the basement elevation. A detached garage exists directly to the south of the main house as seen below. Below is a Google Maps image of the property with north facing up on the page.



Google Maps Image of Property

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The following items were evaluated by the home inspector and were referenced to be evaluated by a structural engineer:

Structure

FOUNDATIONS \ Performance opinion
Condition: • Significant movement/displacement was observed at the concrete block foundation wall. Measurement at the affected area showed approximately 3 inches of displacement, with additional cracking and separation of mortar joints noted throughout portions of the wall. Due to the extent of movement and cracking, recommend evaluation by a qualified structural engineer to determine the cause, structural significance, and necessary corrective repairs.
Location: Interior of detached garage on North wall
Task: Defect: further evaluate, repair or replace as necessary, by qualified contractor

Condition: • The interior of garage East foundation wall was measured with a laser level and was found to be more than 1 inch out of plumb and interior of home East foundation wall measured over 1/2" out of plum. This may indicate past or ongoing wall movement. Recommend evaluation by a qualified foundation/structural professional to determine the significance and whether stabilization or repairs are necessary.
Location: Interior garage and interior home
Task: Defect further evaluate all foundation walls, repair is necessary by qualified contractor

FLOORS \ Joists
Condition: • A floor joist has been significantly cut/notched to accommodate ductwork. The alteration has reduced the joist's cross-sectional area and may compromise its structural capacity. Recommend evaluation and appropriate repair/reinforcement by a qualified contractor or structural professional.
Location: Lower level bedroom
Task: Defect: repair as necessary by qualified contractor

ROOF FRAMING \ Rafters/trusses
Condition: • Multiple roof rafters/framing members were observed with splitting and cracking. The extent of the damage and remaining structural capacity could not be determined during the visual inspection. Recommend evaluation by a qualified structural contractor or structural engineer and repair/reinforcement as recommended.
Location: Multiple areas in the attic space
Task: Defect: further evaluate, repair or replace as necessary by qualified contractor

Foundations

The NE wall of the detached garage was measured to be bowed inward at the center of the with associated step & vertical cracking. Up to 7/8" of base shear was noted along the wall. The apparent 3" of displacement or shearing in the home inspector's photo of the NW wall below is not associated with movement of the wall – The wall was built in this condition. There is no possible way the wall could have moved in this fashion.



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However, the photos below indicate movement of the longer NE wall. The wall is visually bowed lengthwise and in the 5 courses of height, the wall is tipped inward up to ½" with up to 7/8" of base shear. In my opinion, the wall should be reinforced with #5 re-bar and grouted at 4'-0" o.c.. To accomplish this, the 2X top plate should be cut to access the hollow core at 4'-0" o.c. These openings will allow access to install the re-bar and grout. Water control and grading along this wall should be done to avoid a build-up of water/soil pressure.



Photo #1 – 5 course garage wall retaining soil

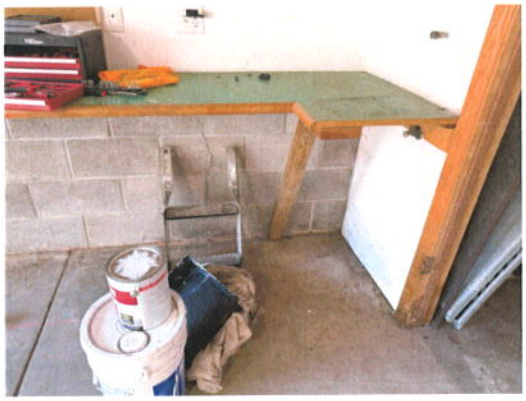
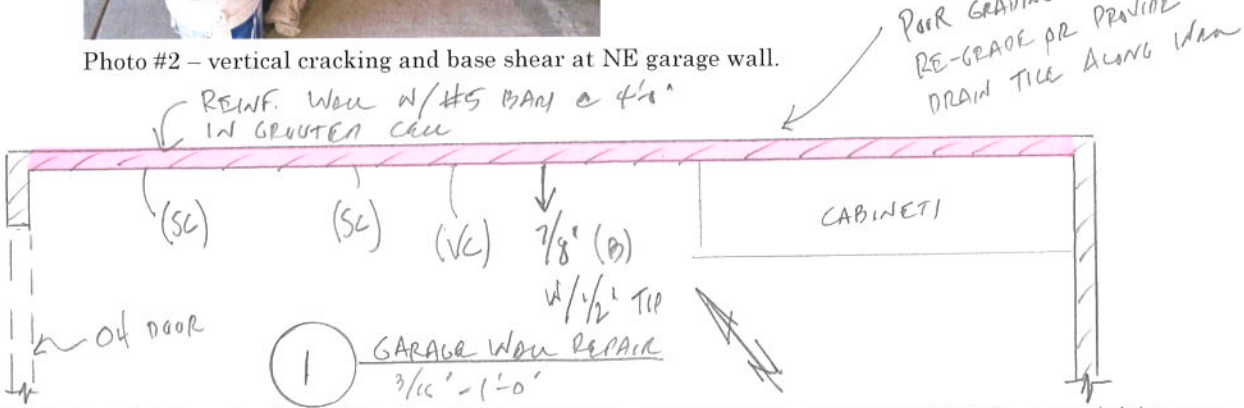


Photo #2 – vertical cracking and base shear at NE garage wall.



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The attached garage SE wall was measured to be tipped outward up to ¾". No active cracking was noted at the time of the inspection and since the wall is tipped outward, steel bracing is not required. The NE wall of the attached garage had wood stacked against the wall but was measured to be tipped inward up to ½" from the mid-height of the wall to the top. Horizontal, step and vertical cracking was present on the wall indicating active lateral movement. In my opinion, this wall should be braced per WAFRP standards. No excavation is required. Grading should be assessed and monitored seasonally to assure proper drainage away from the walls.



Photo #3 – SE basement garage wall tipped outward – no repair required



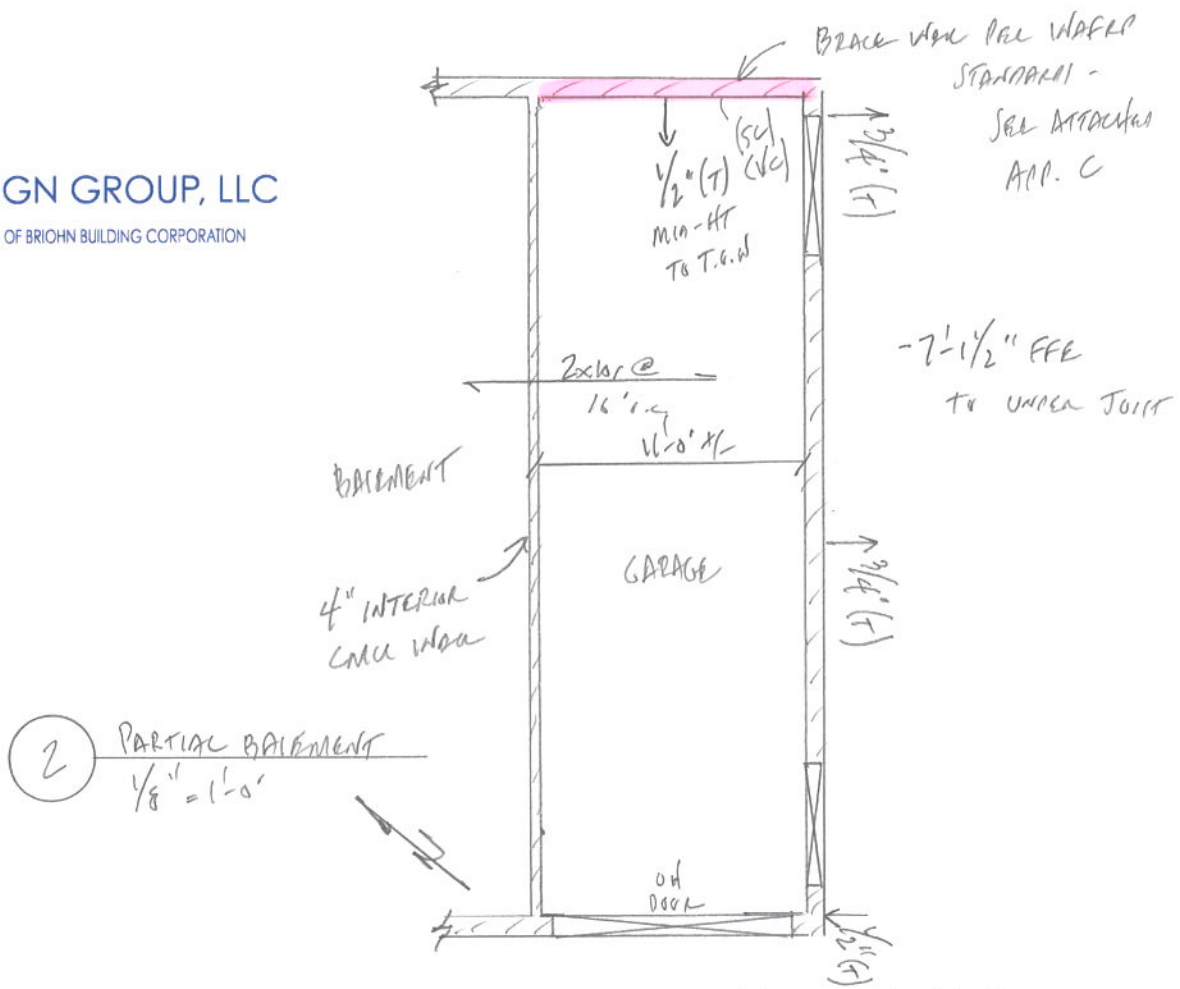
Photo #4 – NE basement garage wall – brace per WAFRP standards.

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Exterior grading and maintenance of the existing gutters and downspouts is critical in the performance of the foundation walls. Any grade or slab that pitches toward the basement walls should be raised to pitch away a minimum of 1" per foot(soil) and ¼" per foot(concrete) for a total of 6 feet. Downspouts should be extended to a minimum of 6' away from the basement walls and gutters should be cleaned of debris a minimum of twice a year. Generally, if proper grade is maintained, assuring proper flow of the gutters and downspouts, and the structural repairs indicated, the likelihood of wall movement or water infiltration is greatly reduced.



Photo #5 – Stone veneer has shifted and continues to move based on patch and re-crack.

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Photo #6 – Some bulging of the veneer was noted, and concrete sidewalk has settled with noticeable void under sidewalk.



Photo #7 – Basement wall at corner shows no indications of settlement or active movement.

Photos #5 & #6 above show significant movement and bowing of the existing stone veneer at the front of the house adjacent to the entry door. Past patching of the joints with additional cracking is an indication that the movement of the veneer is active. Photo #7 is directly below the corner and shows no indication of settlement or active cracking. In my opinion, the veneer cracking is non-structural. The veneer, however, should be removed and re-laid around the corner as it is possible that the stone has fallen off the ledge. The cracking/open joints likely let water behind the veneer and freeze/thaw has likely bowed/moved the stone. The downspout should be assessed to assure proper flow underground and the adjacent sidewalk mud-jacked to fill any voids. All stone/wood wall transitions should be properly sealed and flashed to assure water does not enter the wall.

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Floors/Joists

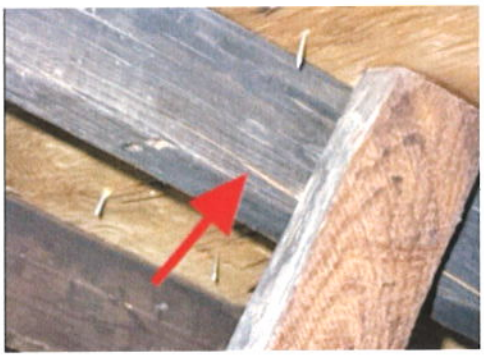




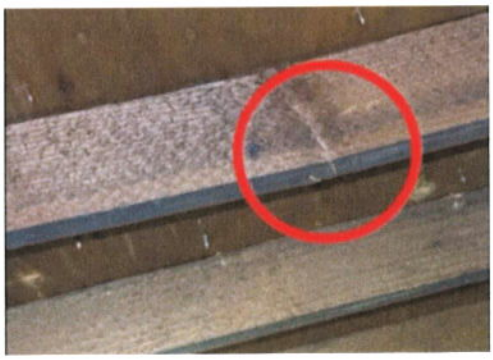
Photos from home inspection report show 2x10 floor joists that were cut for ductwork. These floor joists have been compromised and should be reinforced with an additional 2x10 nailed into the existing 2x10.

Roof Framing/Rafters/Trusses









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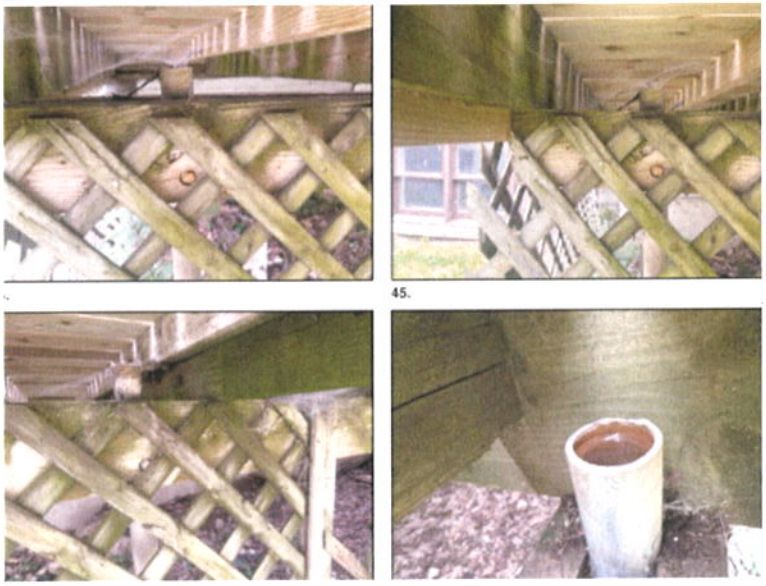
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Photos from the home inspection report show splitting and cracking of the 2x top chords/roof rafters. The rafters could not be closely evaluated due to limited access of the attic space. However, any splitting and cracking of the members constitute a loss of capacity and justify reinforcement. The rafters should be reinforced with an additional 2x4 nailed into the existing member. Reinforcement should extend a minimum of 2'-0" past the extent of the crack or split.

Exterior Deck Framing



The deck has some atypical framing, however it appears to be stable at this time. The steel pipe columns appear to extend into a poured concrete pier, however, it is unknown whether the pier or footing extends to frost depth. A couple of the posts have tipped over time, which would indicate some movement of the foundation. In my opinion, the deck framing should be monitored.

If you have any questions, or would like to discuss this letter, please call me.

Sincerely,

Kevin Jankowski, P.E.
Structural Engineer, Briohn Design Group, LLC

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Appendix C
Foundation Repair Details

BASEMENT WALL REINFORCEMENT DESIGN TABLES
(Tables based on 90 PCF equivalent soil pressure)

WALL HEIGHT* - UP TO 6'-10"				
STEEL SIZE, SPACING and BLOCK SIZE	**SINGLE JOIST SIDE MOUNT**	**DOUBLE JOIST** Or 2x8 min. nailed to side of joist.	**SINGLE JOIST With SADDLE**	**TJI JOIST**
4" X 2"X 1/4" 36" Max. Spacing 8", 10" or 12"	(2) 1" Dia. Bolts See Details 2-5 on S2-A (4) 1/2" Dia. Bolts See Details 1-5 on S2-B	(2) 5/8" Dia. Bolts See Details 10-13 on S4-A	(2)1/2" Dia. Bolts See Details 24-28 on S7	(2) 1" Dia. Bolts See Details 6-9 on S3-A
5" X 2"X 3/16" 50" Max. Spacing 10" or 12"	(4) 5/8" Dia. Bolts See Details 1-5 on S2-B	(2) 3/4" Dia. Bolts See Details 10-13 on S4-A (4) 1/2" Dia. Bolts See Details 12-15 on S4-B	(2) 5/8" Dia. Bolts See Details 24-28 on S7	(4) 5/8" Dia. Bolts See Details 9-11on S3-B
WALL HEIGHT* > 6'-10" UP TO 7'-6"				
STEEL SIZE, SPACING and BLOCK SIZE	**SINGLE JOIST SIDE MOUNT**	**DOUBLE JOIST** Or 2x8 min. nailed to side of joist.	**SINGLE JOIST With SADDLE**	**TJI JOIST**
5" X 2"X 3/16" 36" Max. Spacing 8", 10", or 12"	(2) 1" Dia. Bolts See Details 2-5 on S2-A (4) 1/2" Dia. Bolts See Details 1-5 on S2-B	(2) 5/8" Dia. Bolts See Details 10-13 on S4-A	(2) 5/8" Dia. Bolts See Details 24-28 on S7	(2) 1" Dia. Bolts See Details 6-9 on S3-A
6" X 2"X 3/16" or 5" X 3"X 1/4" 50" Max. Spacing 10", or 12"	(4) 3/4" Dia. Boltsd See Details 1-5 on S2-B	(2) 1" Dia. Bolts See Details 10-13 on S4-A (4) 1/2" Dia. Bolts See Details 12-15 on S4-B	(2) 3/4" Dia. Bolts See Details 24-28 on S7	(4) 3/4" Dia. Bolts See Details 9-11 on S3-B
WALL HEIGHT* > 7'-6" UP TO 8'-2"				
STEEL SIZE, SPACING and BLOCK SIZE	**SINGLE JOIST SIDE MOUNT**	**DOUBLE JOIST** Or 2x8 min. nailed to side of joist.	**SINGLE JOIST With SADDLE**	**TJI JOIST**
5" X 3"X 1/4" 36" Max. Spacing 8", 10", or 12"	(4) 5/8" Dia. Bolts See Details 1-5 on S2-B	(2) 3/4" Dia. Bolts See Details 10-13 on S4-A (4) 1/2" Dia. Bolts See Details 12-15 on S4-B	(2) 5/8" Dia. Bolts See Details 24-28 on S7	(4) 5/8" Dia. Bolts See Details 9-11 on S3-B
6" X 3"X 1/4" 50" Max. Spacing 10", or 12"	(4) 7/8" Dia. Bolts See Details 1-5 on S2-B	(2) 1" Dia. Bolts See Details 10-13 on S4-A (4) 5/8" Dia. Bolts See Details 12-15 on S4-B	(2) 1" Dia. Bolts See Details 24-28 on S7	(4) 7/8" Dia. Bolts See Details 9-11 on S3-B

*Wall Height is top of floor to bottom of joist (Field measurements can be rounded to the nearest 1/2")

**Bottom Anchors : Min. (2) 5/8" dia. x 7" long expansion bolts into footing
Or (2) 3/4" dia. x 4" long expansion bolts min. 3" into slab

See Pages S5 thru S12 for Additional Connection and Wall reinforcing Details