

ANN ARBOR BUILDING BOARD OF APPEALS

STAFF REPORT

Meeting Date: December 19, 2017

Type of Request: VARIANCE

Building Board of Appeals Request **BBA17-010** at 211 W. Davis, ANN ARBOR, MI 48104.

(Parcel Identification Number: **09-09-32-205-004**)

DESCRIPTION AND DISCUSSION

Property Owners Name and Address:

Donald and Patricia Roof
518 Brooks Hollow
Dundee, MI 48131

BACKGROUND

The applicant for the property at 211 W. Davis is appealing to the construction Board of Appeals that will allow the overhang projection a fire separation requirement to be less than two feet to the property line, which is not allowed per table 302.1(1) or 302.1(2) in the Michigan Residential Code 2015. The applicant has indicated that they would install a limited area sprinkler system for the garage and fire rate the soffit with blocking installed between the roof sheathing and top plate.

The history of this property shows a variance by zoning to get closer to the property line than typically allowed, which was not realized during the plan review process. The structure was built and the error was realized by a building inspector prior to a rough approval. The plans were also drawn by an Architect and the house is being built by a builder – all parties should be aware of the fire resistance requirements for structures.

The Architect has indicated that the wall was set back 2 feet with a 12 inch overhang and that this would be allowed as he believes that I have interpreted the code incorrectly. He believes that the projection is allowed if the wall was 2 feet from the lot line and the eave projection with the soffit being fire rated and blocking installed between the roof sheathing and the top plate. As additional information the neighboring property has a required 15 foot conflicting land use buffer.

Code Interpretation: The Code Section R302.1 “**Exterior Walls.** Construction, projections, openings and penetrations of exterior walls of dwellings and accessory building shall comply with Table R302.1(1); or dwellings equipped throughout with an automatic sprinkler system installed in accordance with SectionP2904 shall comply with Table R302.1(2)” with some exceptions. This code section directs you to table 302.1(1) which does not allow any projection to get closer than a fire separation distance of 2 foot to the property line, with exception only to a perpendicular wall. Both tables, 302.1(1) & 302.1(2) do not allow you to have a projection any closer than two foot to a property line.

Please see that attached code sections for reference – Section R302.

Standards for Approval:

PA 230 Section 125.15.15

Specific variance from code: breach of condition; permissible variance.

Sec. 15.

- (1) After a public hearing a board of appeals may grant a specific variance to a substantive requirement of the code if the literal application of the substantive requirement would result in an exceptional, practical difficulty to the applicant, and if both of the following requirements are satisfied:
 - a. The performance of the particular item or part of the building or structure with respect to which the variance is granted shall be adequate for its intended use and shall not substantially deviate from performance required by the code of that particular item or part for the health, safety and welfare of the people of this state.*
 - b. The specific condition justifying the variance shall be neither so general nor recurrent in nature as to make an amendment of the code with respect to the condition reasonably practical or desirable.**

- (2) A board of appeals may attach in writing any condition in connection with the granting of a variance that in its judgement is necessary to protect the health, safety and welfare of the people of this state. The breach of a condition shall automatically invalidate the variance and any permit, license and certificate granted on the basis of it. In no case shall more than a minimum variance from the code be granted than is necessary to alleviate the exceptional, practical difficulty.*

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R301.6 Roof load. The roof shall be designed for the live load indicated in Table R301.6 or the snow load indicated in Table R301.2(1), whichever is greater.

TABLE R301.6
MINIMUM ROOF LIVE LOADS IN POUNDS-FORCE
PER SQUARE FOOT OF HORIZONTAL PROJECTION

ROOF SLOPE	TRIBUTARY LOADED AREA IN SQUARE FEET FOR ANY STRUCTURAL MEMBER		
	0 to 200	201 to 600	Over 600
Flat or rise less than 4 inches per foot (1:3)	20	16	12
Rise 4 inches per foot (1:3) to less than 12 inches per foot (1:1)	16	14	12
Rise 12 inches per foot (1:1) and greater	12	12	12

For SI: 1 square foot = 0.0929 m², 1 pound per square foot = 0.0479 kPa, 1 inch per foot = 83.3 mm/m.

R301.7 Deflection. The allowable deflection of any structural member under the live load listed in Sections R301.5 and R301.6 or wind loads determined by Section R301.2.1 shall not exceed the values in Table R301.7.

TABLE R301.7
ALLOWABLE DEFLECTION OF STRUCTURAL MEMBERS^{b,c}

STRUCTURAL MEMBER	ALLOWABLE DEFLECTION
Rafters having slopes greater than 3:12 with finished ceiling not attached to rafters	L/180
Interior walls and partitions	H/180
Floors	L/360
Ceilings with brittle finishes (including plaster and stucco)	L/360
Ceilings with flexible finishes (including gypsum board)	L/240
All other structural members	L/240
Exterior walls—wind loads ^a with plaster or stucco finish	H/360
Exterior walls—wind loads ^a with other brittle finishes	H/240
Exterior walls—wind loads ^a with flexible finishes	H/120 ^d
Lintels supporting masonry veneer walls ^e	L/600

Note: L = span length. H = span height.

- a. For the purpose of the determining deflection limits herein, the wind load shall be permitted to be taken as 0.7 times the component and cladding (ASD) loads obtained from Table R301.2(2).
- b. For cantilever members, L shall be taken as twice the length of the cantilever.
- c. For aluminum structural members or panels used in roofs or walls of sunroom additions or patio covers, not supporting edge of glass or sandwich panels, the total load deflection shall not exceed L/60. For continuous aluminum structural members supporting edge of glass, the total load deflection shall not exceed L/175 for each glass lite or L/60 for the entire length of the member, whichever is more stringent. For sandwich panels used in roofs or walls of sunroom additions or patio covers, the total load deflection shall not exceed L/120.
- d. Deflection for exterior walls with interior gypsum board finish shall be limited to an allowable deflection of H/180.
- e. Refer to Section R703.8.2.

R301.8 Nominal sizes. For the purposes of this code, dimensions of lumber specified shall be deemed to be nominal dimensions unless specifically designated as actual dimensions.

SECTION R302
FIRE-RESISTANT CONSTRUCTION

R302.1 Exterior walls. Construction, projections, openings and penetrations of exterior walls of dwellings and accessory buildings shall comply with Table R302.1(1); or dwellings equipped throughout with an automatic sprinkler system installed in accordance with Section P2904 shall comply with Table R302.1(2).

Exceptions:

1. Walls, projections, openings or penetrations in walls perpendicular to the line used to determine the fire separation distance.
2. Walls of dwellings and accessory structures located on the same lot.
3. Detached tool sheds and storage sheds, playhouses and similar structures exempted from permits are not required to provide wall protection based on location on the lot. Projections beyond the exterior wall shall not extend over the lot line.
4. Detached garages accessory to a dwelling located within 2 feet (610 mm) of a lot line are permitted to have roof eave projections not exceeding 4 inches (102 mm).
5. Foundation vents installed in compliance with this code are permitted.

R302.2 Townhouses. Each townhouse shall be considered a separate building and shall be separated by a 2-hour fire-resistance-rated wall assembly tested in accordance with ASTM E119 or UL 263 with exposure from both sides.

Exception: Where the building is provided with an automatic fire sprinkler system installed in accordance with NFPA 13D or Section P2904.1, a common 1-hour fire-resistance-rated wall assembly tested in accordance with ASTM E119 or UL 263, as listed in Chapter 44, is permitted for townhouses if such walls do not contain plumbing or mechanical equipment, ducts, or vents in the cavity of the common wall. The wall shall be rated for fire exposure from both sides and shall extend to and be tight against exterior walls and the underside of the roof sheathing. Electrical installations shall be installed in accordance with Chapters 34 to 43. Penetrations of electrical outlet boxes shall be in accordance with Section R302.4.

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R302.2.1 Continuity. The fire-resistance-rated wall or assembly separating townhouses shall be continuous from the foundation to the underside of the roof sheathing, deck or slab. The fire-resistance rating shall extend the full length of the wall or assembly, including wall extensions through and separating attached enclosed accessory structures.

TABLE R302.1(1)
EXTERIOR WALLS

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	Fire-resistance rated	1 hour — tested in accordance with ASTM E119 or UL 263 with exposure from both sides	< 5 feet
	Not fire-resistance rated	0 hours	≥ 5 feet
Projections	Not allowed ^a	N/A	< 2 feet
	Fire-resistance rated	1 hour on the underside	≥ 2 feet to < 5 feet
	Not fire-resistance rated	0 hours	≥ 5 feet
Openings in walls	Not allowed	N/A	< 3 feet
	25% maximum of wall area	0 hours	3 feet
	Unlimited	0 hours	5 feet
Penetrations	All	Comply with Section R302.4	< 5 feet
		None required	5 feet

For SI: 1 foot = 304.8 mm.

N/A = Not Applicable.

a. Except as allowed as per Section R302.1 exceptions 3 and 4.

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TABLE R302.1(2)
EXTERIOR WALLS—DWELLINGS WITH FIRE SPRINKLERS

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	Fire-resistance rated	1 hour — tested in accordance with ASTM E119 or UL 263 with exposure from the outside	0 feet
	Not fire-resistance rated	0 hours	3 feet ^a
Projections	Not allowed	N/A	< 2 feet
	Fire-resistance rated	1 hour on the underside ^{b,c}	2 feet ^a
	Not fire-resistance rated	0 hours	3 feet
Openings in walls	Not allowed	N/A	< 3 feet
	Unlimited	0 hours	3 feet ^a
Penetrations	All	Comply with Section R302.4	< 3 feet
		None required	3 feet ^a

For SI: 1 foot = 304.8 mm.

N/A = Not Applicable

a. For residential subdivisions where all *dwelling*s are equipped throughout with an automatic sprinkler system installed in accordance with Section P2904, the *fire separation distance* for nonrated exterior walls and rated projections shall be permitted to be reduced to 0 feet, and unlimited unprotected openings and penetrations shall be permitted, where the adjoining *lot* provides an open setback *yard* that is 6 feet or more in width on the opposite side of the property line.

b. The roof eave fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave if fireblocking is provided from the wall top plate to the underside of the roof sheathing.

c. The roof eave fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave provided that gable vent openings are not installed.

R302.2.2 Parapets for townhouses. Parapets constructed in accordance with Section R302.2.3 shall be constructed for *townhouses* as an extension of exterior walls or common walls in accordance with the following:

1. Where roof surfaces adjacent to the wall or walls are at the same elevation, the parapet shall extend not less than 30 inches (762 mm) above the roof surfaces.
2. Where roof surfaces adjacent to the wall or walls are at different elevations and the higher roof is not more than 30 inches (762 mm) above the lower roof, the parapet shall extend not less than 30 inches (762 mm) above the lower roof surface.

Exception: A parapet is not required in the preceding two cases where the roof covering complies with a minimum Class C rating as tested in accordance with ASTM E108 or UL 790 and the roof decking or sheathing is of noncombustible materials or *approved* fire-retardant-treated wood for a distance of 4 feet (1219 mm) on each side of the wall or walls, or one layer of 5/8-inch (15.9 mm) Type X gypsum board is installed directly beneath the roof decking or sheathing, supported by not less than nominal 2-inch (51 mm) ledgers attached to the sides of the roof framing members, for a distance of not less than 4 feet (1219 mm) on each side of the wall or walls and any openings or penetra-

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tions in the roof are not within 4 feet (1219 mm) of the common walls.

3. A parapet is not required where roof surfaces adjacent to the wall or walls are at different elevations and the higher roof is more than 30 inches (762 mm) above the lower roof. The common wall construction from the lower roof to the underside of the higher roof deck shall have not less than a 1-hour fire-resistance rating. The wall shall be rated for exposure from both sides.

R302.2.3 Parapet construction. Parapets shall have the same fire-resistance rating as that required for the supporting wall or walls. On any side adjacent to a roof surface, the parapet shall have noncombustible faces for the uppermost 18 inches (457 mm), to include counterflashing and coping materials. Where the roof slopes toward a parapet at slopes greater than 2 units vertical in 12 units horizontal (16.7-percent slope), the parapet shall extend to the same height as any portion of the roof within a distance of 3 feet (914 mm), and the height shall be not less than 30 inches (762 mm).

R302.2.4 Structural independence. Each individual *townhouse* shall be structurally independent.

Exceptions:

1. Foundations supporting *exterior walls* or common walls.
2. Structural roof and wall sheathing from each unit fastened to the common wall framing.
3. Nonstructural wall and roof coverings.
4. Flashing at termination of roof covering over common wall.
5. *Townhouses* separated by a common wall as provided in Section R302.2, Item 1 or 2.

R302.3 Two-family dwellings. *Dwelling units* in two-family dwellings shall be separated from each other by wall and floor assemblies having not less than a 1-hour fire-resistance rating where tested in accordance with ASTM E119 or UL 263. Fire-resistance-rated floor/ceiling and wall assemblies shall extend to and be tight against the *exterior wall*, and wall assemblies shall extend from the foundation to the underside of the roof sheathing.

Exceptions:

1. A fire-resistance rating of $\frac{1}{2}$ hour shall be permitted in buildings equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13.
2. Wall assemblies need not extend through *attic* spaces where the ceiling is protected by not less than $\frac{3}{8}$ -inch (15.9 mm) Type X gypsum board, an *attic* draft stop constructed as specified in Section R302.12.1 is provided above and along the wall assembly separating the *dwellings* and the structural framing supporting the ceiling is protected by not less than $\frac{1}{2}$ -inch (12.7 mm) gypsum board or equivalent.

R302.3.1 Supporting construction. Where floor assemblies are required to be fire-resistance rated by Section

R302.3, the supporting construction of such assemblies shall have an equal or greater fire-resistance rating.

R302.4 Dwelling unit rated penetrations. Penetrations of wall or floor-ceiling assemblies required to be fire-resistance rated in accordance with Section R302.2 or R302.3 shall be protected in accordance with this section.

R302.4.1 Through penetrations. Through penetrations of fire-resistance-rated wall or floor assemblies shall comply with Section R302.4.1.1 or R302.4.1.2.

Exception: Where the penetrating items are steel, ferrous or copper pipes, tubes or conduits, the annular space shall be protected as follows:

1. In concrete or masonry wall or floor assemblies, concrete, grout or mortar shall be permitted where installed to the full thickness of the wall or floor assembly or the thickness required to maintain the fire-resistance rating, provided that both of the following are complied with:
 - 1.1. The nominal diameter of the penetrating item is not more than 6 inches (152 mm).
 - 1.2. The area of the opening through the wall does not exceed 144 square inches (92 900 mm²).
2. The material used to fill the annular space shall prevent the passage of flame and hot gases sufficient to ignite cotton waste where subjected to ASTM E119 or UL 263 time temperature fire conditions under a positive pressure differential of not less than 0.01 inch of water (3 Pa) at the location of the penetration for the time period equivalent to the fire-resistance rating of the construction penetrated.

R302.4.1.1 Fire-resistance-rated assembly. Penetrations shall be installed as tested in the *approved* fire-resistance-rated assembly.

R302.4.1.2 Penetration firestop system. Penetrations shall be protected by an *approved* penetration firestop system installed as tested in accordance with ASTM E814 or UL 1479, with a positive pressure differential of not less than 0.01 inch of water (3 Pa) and shall have an F rating of not less than the required fire-resistance rating of the wall or floor-ceiling assembly penetrated.

R302.4.2 Membrane penetrations. Membrane penetrations shall comply with Section R302.4.1. Where walls are required to have a fire-resistance rating, recessed fixtures shall be installed so that the required fire-resistance rating will not be reduced.

Exceptions:

1. Membrane penetrations of not more than 2-hour fire-resistance-rated walls and partitions by steel electrical boxes that do not exceed 16 square inches (0.0103 m²) in area provided that the aggregate area of the openings through the membrane does not exceed 100 square inches (0.0645 m²) in any 100 square feet (9.29 m²) of wall area. The annular space between the wall membrane and the

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box shall not exceed 1/8 inch (3.1 mm). Such boxes on opposite sides of the wall shall be separated by one of the following:

- 1.1. By a horizontal distance of not less than 24 inches (610 mm) where the wall or partition is constructed with individual noncommunicating stud cavities.
- 1.2. By a horizontal distance of not less than the depth of the wall cavity where the wall cavity is filled with cellulose loose-fill, rockwool or slag mineral wool insulation.
- 1.3. By solid fireblocking in accordance with Section R302.11.
- 1.4. By protecting both boxes with *listed* putty pads.
- 1.5. By other *listed* materials and methods.
2. Membrane penetrations by *listed* electrical boxes of any materials provided that the boxes have been tested for use in fire-resistance-rated assemblies and are installed in accordance with the instructions included in the *listing*. The annular space between the wall membrane and the box shall not exceed 1/8 inch (3.1 mm) unless *listed* otherwise. Such boxes on opposite sides of the wall shall be separated by one of the following:
 - 2.1. By the horizontal distance specified in the *listing* of the electrical boxes.
 - 2.2. By solid fireblocking in accordance with Section R302.11.
 - 2.3. By protecting both boxes with *listed* putty pads.
 - 2.4. By other *listed* materials and methods.
3. The annular space created by the penetration of a fire sprinkler provided that it is covered by a metal escutcheon plate.

R302.5 Dwelling-garage opening and penetration protection. Openings and penetrations through the walls or ceilings separating the *dwelling* from the garage shall be in accordance with Sections R302.5.1 through R302.5.3.

R302.5.1 Opening protection. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage and residence shall be equipped with solid wood doors not less than 1 3/8 inches (35 mm) in thickness, solid or honey-

comb-core steel doors not less than 1 3/8 inches (35 mm) thick, or 20-minute fire-rated doors.

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R302.5.2 Duct penetration. Ducts in the garage and ducts penetrating the walls or ceilings separating the *dwelling* from the garage shall be constructed of a minimum No. 26 gage (0.48 mm) sheet steel or other *approved* material and shall not have openings into the garage.

R302.5.3 Other penetrations. Penetrations through the separation required in Section R302.6 shall be protected as required by Section R302.11, Item 4.

R302.6 Dwelling-garage fire separation. The garage shall be separated as required by Table R302.6. Openings in garage walls shall comply with Section R302.5. Attachment of gypsum board shall comply with Table R702.3.5. The wall separation provisions of Table R302.6 shall not apply to garage walls that are perpendicular to the adjacent *dwelling unit* wall.

R302.7 Under-stair protection. Enclosed accessible space under stairs shall have walls, under-stair surface and any soffits protected on the enclosed side with 1/2-inch (12.7 mm) gypsum board.

R302.8 Foam plastics. For requirements for foam plastics, see Section R316.

R302.9 Flame spread index and smoke-developed index for wall and ceiling finishes. Flame spread and smoke developed indexes for wall and ceiling finishes shall be in accordance with Sections R302.9.1 through R302.9.4.

R302.9.1 Flame spread index. Wall and ceiling finishes shall have a flame spread index of not greater than 200.

Exception: Flame spread index requirements for finishes shall not apply to trim defined as picture molds, chair rails, baseboards and handrails; to doors and windows or their frames; or to materials that are less than 1/28 inch (0.91 mm) in thickness cemented to the surface of walls or ceilings if these materials exhibit flame spread index values not greater than those of paper of this thickness cemented to a noncombustible backing.

R302.9.2 Smoke-developed index. Wall and ceiling finishes shall have a smoke-developed index of not greater than 450.

R302.9.3 Testing. Tests shall be made in accordance with ASTM E84 or UL 723.

TABLE R302.6
DWELLING-GARAGE SEPARATION

SEPARATION	MATERIAL
From the residence and attics	Not less than 1/2-inch gypsum board or equivalent applied to the garage side
From habitable rooms above the garage	Not less than 5/8-inch Type X gypsum board or equivalent
Structure(s) supporting floor/ceiling assemblies used for separation required by this section	Not less than 1/2-inch gypsum board or equivalent
Garages located less than 3 feet from a dwelling unit on the same lot	Not less than 1/2-inch gypsum board or equivalent applied to the interior side of exterior walls that are within this area

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

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R302.9.4 Alternative test method. As an alternative to having a flame spread index of not greater than 200 and a smoke-developed index of not greater than 450 where tested in accordance with ASTM E84 or UL 723, wall and ceiling finishes shall be permitted to be tested in accordance with NFPA 286. Materials tested in accordance with NFPA 286 shall meet the following criteria:

The interior finish shall comply with the following:

1. During the 40 kW exposure, flames shall not spread to the ceiling.
2. The flame shall not spread to the outer extremity of the sample on any wall or ceiling.
3. Flashover, as defined in NFPA 286, shall not occur.
4. The peak heat release rate throughout the test shall not exceed 800 kW.
5. The total smoke released throughout the test shall not exceed 1,000 m².

R302.10 Flame spread index and smoke-developed index for insulation. Flame spread and smoke-developed index for insulation shall be in accordance with Sections R302.10.1 through R302.10.5.

R302.10.1 Insulation. Insulation materials, including facings, such as vapor retarders and vapor-permeable membranes installed within floor-ceiling assemblies, roof-ceiling assemblies, wall assemblies, crawl spaces and attics shall have a flame spread index not to exceed 25 with an accompanying smoke-developed index not to exceed 450 where tested in accordance with ASTM E84 or UL 723.

Exceptions:

1. Where such materials are installed in concealed spaces, the flame spread index and smoke-developed index limitations do not apply to the facings, provided that the facing is installed in substantial contact with the unexposed surface of the ceiling, floor or wall finish.
2. Cellulose fiber loose-fill insulation, that is not spray applied, complying with the requirements of Section R302.10.3, shall not be required to meet the smoke-developed index of not more than 450 and shall be required to meet a smoke-developed index of not more than 450 where tested in accordance with CAN/ULC S102.2.
3. Foam plastic insulation shall comply with Section R316.

R302.10.2 Loose-fill insulation. Loose-fill insulation materials that cannot be mounted in the ASTM E84 or UL 723 apparatus without a screen or artificial supports shall comply with the flame spread and smoke-developed limits of Section R302.10.1 where tested in accordance with CAN/ULC S102.2.

Exception: Cellulosic fiber loose-fill insulation shall not be required to be tested in accordance with CAN/

ULC S102.2, provided such insulation complies with the requirements of Sections R302.10.1 and R302.10.3.

R302.10.3 Cellulosic fiber loose-fill insulation. Cellulosic fiber loose-fill insulation shall comply with CPSC 16 CFR, Parts 1209 and 1404. Each package of such insulating material shall be clearly labeled in accordance with CPSC 16 CFR, Parts 1209 and 1404.

R302.10.4 Exposed attic insulation. Exposed insulation materials installed on attic floors shall have a critical radiant flux not less than 0.12 watt per square centimeter.

R302.10.5 Testing. Tests for critical radiant flux shall be made in accordance with ASTM E970.

R302.11 Fireblocking. In combustible construction, fireblocking shall be provided to cut off both vertical and horizontal concealed draft openings and to form an effective fire barrier between stories, and between a top story and the roof space.

Fireblocking shall be provided in wood-framed construction in the following locations:

1. In concealed spaces of stud walls and partitions, including furred spaces and parallel rows of studs or staggered studs, as follows:
 - 1.1. Vertically at the ceiling and floor levels.
 - 1.2. Horizontally at intervals not exceeding 10 feet (3048 mm).
2. At interconnections between concealed vertical and horizontal spaces such as occur at soffits, drop ceilings and cove ceilings.
3. In concealed spaces between stair stringers at the top and bottom of the run. Enclosed spaces under stairs shall comply with Section R302.7.
4. At openings around vents, pipes, ducts, cables and wires at ceiling and floor level, with an approved material to resist the free passage of flame and products of combustion. The material filling this annular space shall not be required to meet the ASTM E136 requirements.
5. For the fireblocking of chimneys and fireplaces, see Section R1003.19.
6. Fireblocking of cornices of a two-family dwelling is required at the line of dwelling unit separation.

R302.11.1 Fireblocking materials. Except as provided in Section R302.11, Item 4, fireblocking shall consist of the following materials.

1. Two-inch (51 mm) nominal lumber.
2. Two thicknesses of 1-inch (25.4 mm) nominal lumber with broken lap joints.
3. One thickness of ²³/₃₂-inch (18.3 mm) wood structural panels with joints backed by ²³/₃₂-inch (18.3 mm) wood structural panels.
4. One thickness of ³/₄-inch (19.1 mm) particleboard with joints backed by ³/₄-inch (19.1 mm) particleboard.
5. One-half-inch (12.7 mm) gypsum board.

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6. One-quarter-inch (6.4 mm) cement-based millboard.
7. Batts or blankets of mineral wool or glass fiber or other *approved* materials installed in such a manner as to be securely retained in place.
8. Cellulose insulation installed as tested in accordance with ASTM E119 or UL 263, for the specific application.

R302.11.1.1 Batts or blankets of mineral or glass fiber. Batts or blankets of mineral or glass fiber or other *approved* nonrigid materials shall be permitted for compliance with the 10-foot (3048 mm) horizontal fireblocking in walls constructed using parallel rows of studs or staggered studs.

R302.11.1.2 Unfaced fiberglass. Unfaced fiberglass batt insulation used as fireblocking shall fill the entire cross section of the wall cavity to a height of not less than 16 inches (406 mm) measured vertically. Where piping, conduit or similar obstructions are encountered, the insulation shall be packed tightly around the obstruction.

R302.11.1.3 Loose-fill insulation material. Loose-fill insulation material shall not be used as a fireblock unless specifically tested in the form and manner intended for use to demonstrate its ability to remain in place and to retard the spread of fire and hot gases.

R302.11.2 Fireblocking integrity. The integrity of fireblocks shall be maintained.

R302.12 Draftstopping. In combustible construction where there is usable space both above and below the concealed space of a floor-ceiling assembly, draftstops shall be installed so that the area of the concealed space does not exceed 1,000 square feet (92.9 m²). Draftstopping shall divide the concealed space into approximately equal areas. Where the assembly is enclosed by a floor membrane above and a ceiling membrane below, draftstopping shall be provided in floor-ceiling assemblies under the following circumstances:

1. Ceiling is suspended under the floor framing.
2. Floor framing is constructed of truss-type open-web or perforated members.

R302.12.1 Materials. Draftstopping materials shall be not less than 1/2-inch (12.7 mm) gypsum board, 3/8-inch (9.5 mm) wood structural panels or other *approved* materials adequately supported. Draftstopping shall be installed parallel to the floor framing members unless otherwise *approved* by the *building official*. The integrity of the draftstops shall be maintained.

302.13 Combustible insulation. Combustible insulation shall be separated a minimum of 3 inches (76 mm) from recessed lighting fixtures, fan motors, and other heat-producing devices.

Exception: When heat-producing devices are listed for lesser clearances, combustible insulation complying with the listing requirements shall be separated in accordance with the conditions stipulated in the listing.

Recessed lighting fixtures installed in the building thermal envelope shall be installed in accordance with the manufacturer's installation instructions.

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R302.14 Combustible insulation clearance. Combustible insulation shall be separated not less than 3 inches (76 mm) from recessed luminaires, fan motors and other heat-producing devices.

Exception: Where heat-producing devices are *listed* for lesser clearances, combustible insulation complying with the listing requirements shall be separated in accordance with the conditions stipulated in the listing.

Recessed luminaires installed in the *building thermal envelope* shall meet the requirements of Section N1102.4.5 of this code.

SECTION R303 LIGHT, VENTILATION AND HEATING

R303.1 Habitable rooms. Habitable rooms shall have an aggregate glazing area of not less than 8 percent of the floor area of such rooms. Natural *ventilation* shall be through windows, skylights, doors, louvers or other *approved* openings to the outdoor air. Such openings shall be provided with ready access or shall otherwise be readily controllable by the building occupants. The openable area to the outdoors shall be not less than 4 percent of the floor area being ventilated.

Exceptions:

1. The glazed areas need not be openable where the opening is not required by Section R310 and a whole-house mechanical *ventilation* system is installed in accordance with Section M1507.
2. The glazed areas need not be installed in rooms where Exception 1 is satisfied and artificial light is provided that is capable of producing an average illumination of 6 footcandles (65 lux) over the area of the room at a height of 30 inches (762 mm) above the floor level.
3. Use of sunroom and patio covers, as defined in Section R202, shall be permitted for natural *ventilation* if in excess of 40 percent of the exterior sunroom walls are open, or are enclosed only by insect screening.

R303.2 Adjoining rooms. For the purpose of determining light and *ventilation* requirements, any room shall be considered to be a portion of an adjoining room where not less than one-half of the area of the common wall is open and unobstructed and provides an opening of not less than one-tenth of the floor area of the interior room and not less than 25 square feet (2.3 m²).

Exception: Openings required for light or *ventilation* shall be permitted to open into a sunroom with thermal isolation or a patio cover, provided that there is an openable area between the adjoining room and the sunroom or patio cover of not less than one-tenth of the floor area of the interior room and not less than 20 square feet (2 m²). The

250. -

BBA 17-010

APPLICATION FOR VARIANCE
BUILDING BOARD OF APPEALS

Section 1: Applicant Information

Name of Applicant: MARC RUETER
Address of Applicant: 515 FIFTH ST ANN ARBOR, MI
Daytime Phone: 734 769 0070
Fax: 734 769 0167
Email: mrrueter@rueterarchitects.com
Applicant's Relationship to Property: ARCHITECT

Section 2: Property Information

Address of Property: 211 W. DAVIS ANN ARBOR, MI
Zoning Classification: R2C
Tax ID# (if known): 09-09-32-205-004

Section 3: Request Information

<input checked="" type="checkbox"/> Variance		
Chapter(s) and Section(s) from which a variance is requested:	REQUIRED dimension:	PROPOSED dimension:
<u>TABLE R302.1(2)</u>	<u>2'0"</u>	<u>2'0"</u>
<small>Example: 2003 Building Code, Sec 5:26</small>	<small>Example: 7' Ceiling Clearance</small>	<small>Example: 6'5" under landing</small>

Give a detailed description of the work you are proposing and why it will require a variance (attach additional sheets if necessary)
SEE ATTACHMENT

Section 4: Variance Request (If not applying for a variance, skip to section 5)

The City of Ann Arbor Building Board of Appeals has the powers granted by State law and Building Codes. A variance may be granted by the Building Board of Appeals only in cases involving practical difficulties or unnecessary hardships when **ALL** of the following is found **TRUE**. Please provide a complete response to each item below. These responses, together with the required materials in Section 5 of this application, will form the basis for evaluation of the request by staff and the Building Board of Appeals.

1. Are there hardships or practical difficulties to complying with the Code? Are these hardships or practical difficulties an exception or unique to the property compared to other properties in the City?
SEE ATTACHMENT
2. Are the hardships or practical difficulties more than mere inconvenience, inability to obtain a higher financial return, or both? (explain)
SEE ATTACHMENT

(continued)

3. What effect will granting the variance have on the neighboring properties? _____

SEE ATTACHMENT

4. What physical characteristics of your property in terms of size, shape, location or topography prevent you from using it in a way that is consistent with the Code?

SEE ATTACHMENT

5. Is the condition which prevents you from complying with the ordinance self-imposed? How did the condition come about?

SEE ATTACHMENT

Section 5: Required Materials

The following materials are required for all variance requests. Failure to provide these materials will result in an incomplete application and will delay staff review and Building Board of Appeals consideration of the request. The materials listed below must accompany the application and constitute an inseparable part of the application.

All materials must be provided on 8 1/2" by 11" sheets. If incomplete, you will be scheduled for the NEXT MEETING DATE ON THE FOLLOWING MONTH.

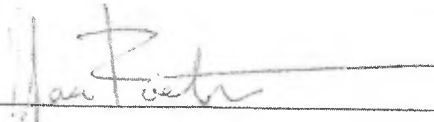
- State proposed use of the property, size of lot and size and type of proposed changes.
- Building floor plans showing interior rooms, including dimensions.
- Photographs of the property and any existing buildings involved in the request.
- Any other graphic or written materials that support the request.

Section 7: Acknowledgement

SIGNATURES

I, the applicant, request a variance from the above named Chapter(s) and Section(s) of the State of Michigan Building Residential/Commercial Code(s) for the stated reasons, in accordance with the materials attached hereto.

Phone Number



Signature

Email Address

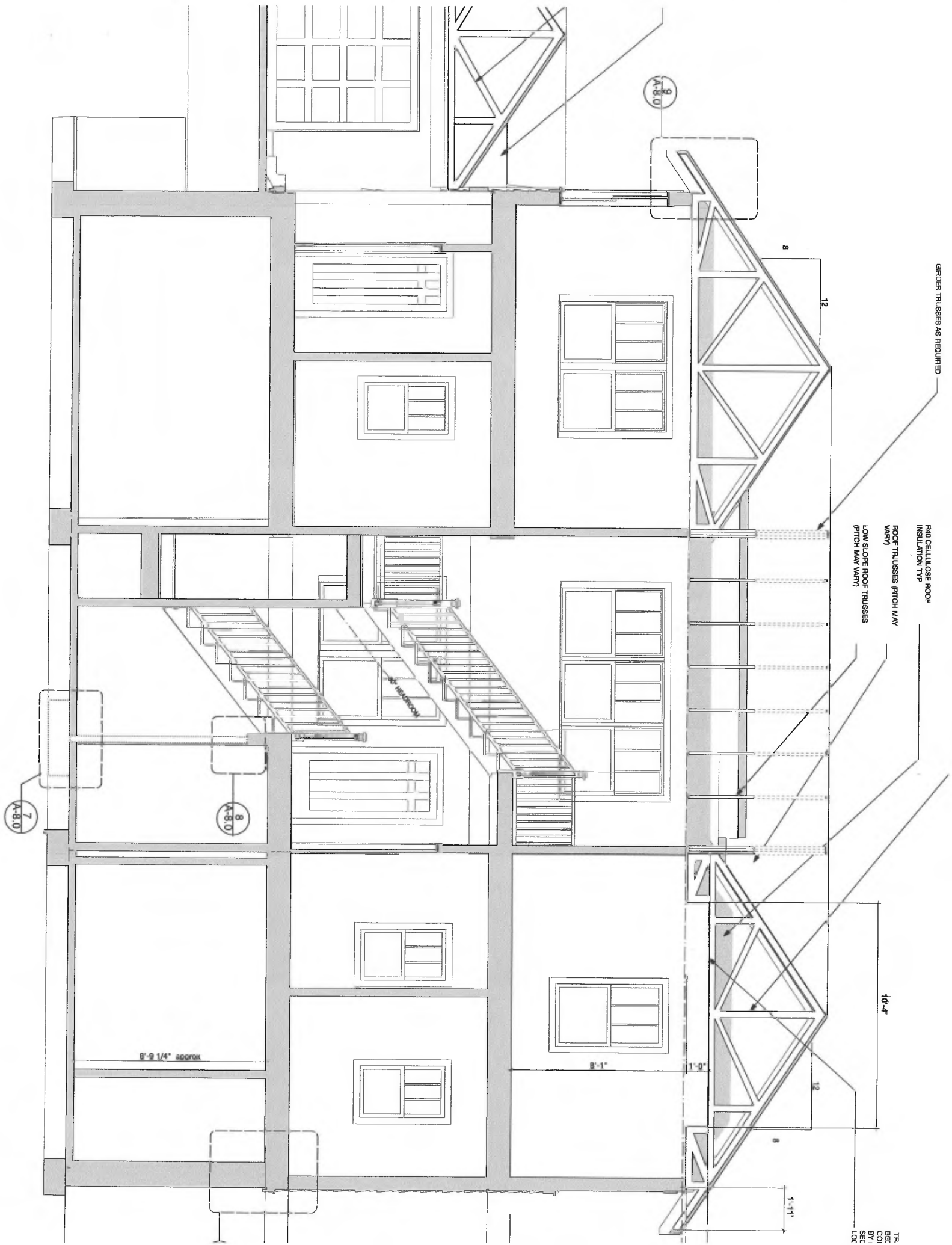
mruester@rueterarchitects.com

MARC RUETER

Print Name

STAFF USE ONLY

Date Submitted: _____ Fee Paid: _____



GIRDER TRUSSES AS REQUIRED

R40 CELLULOSE ROOF INSULATION TYP

ROOF TRUSSES (PITCH MAY VARY)

LOW SLOPE ROOF TRUSSES (PITCH MAY VARY)

10'-4"

12

8

1'-11"

TR

BEC

SD

SEC

LOC

9
A-B

8
A-B

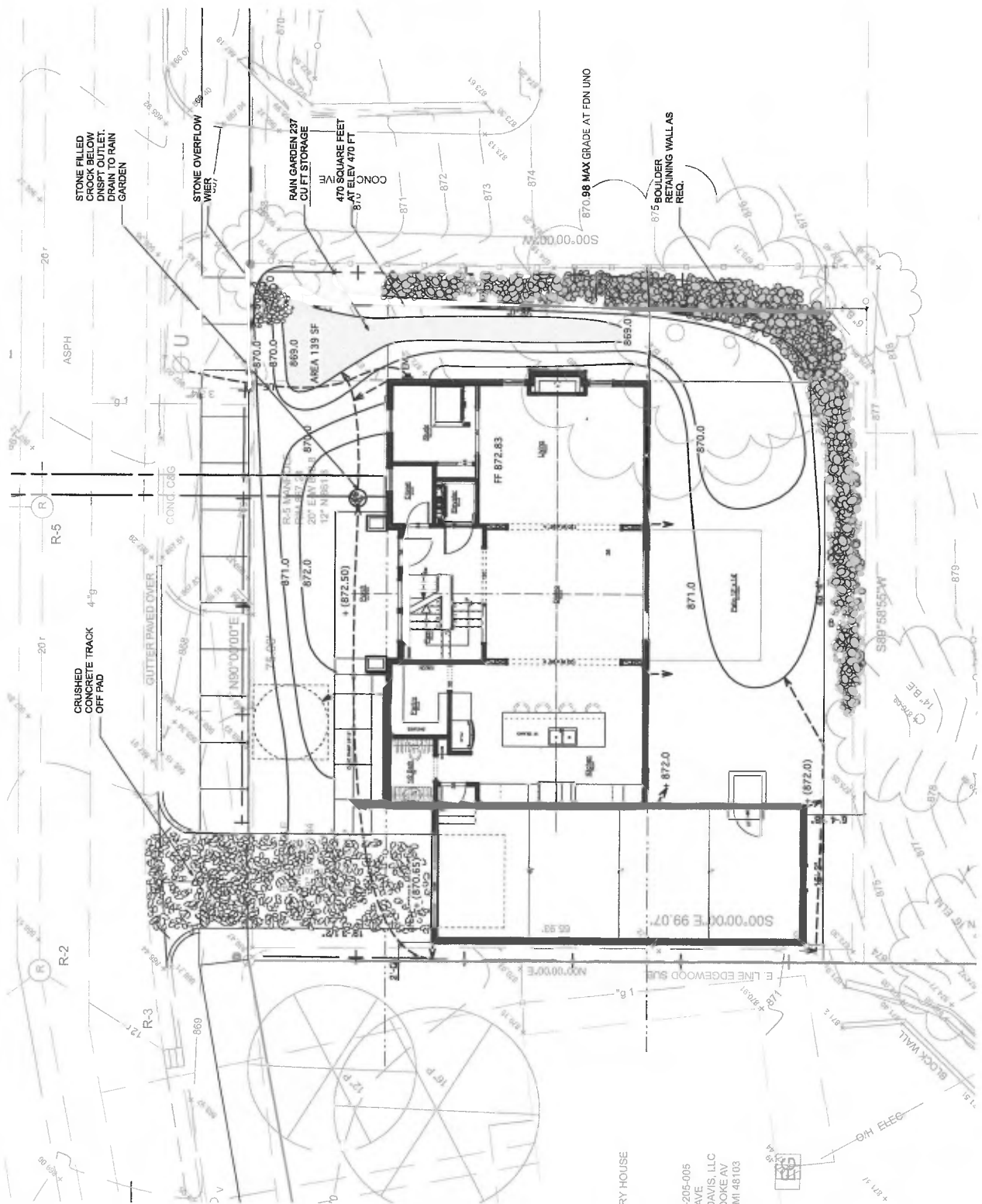
7
A-B

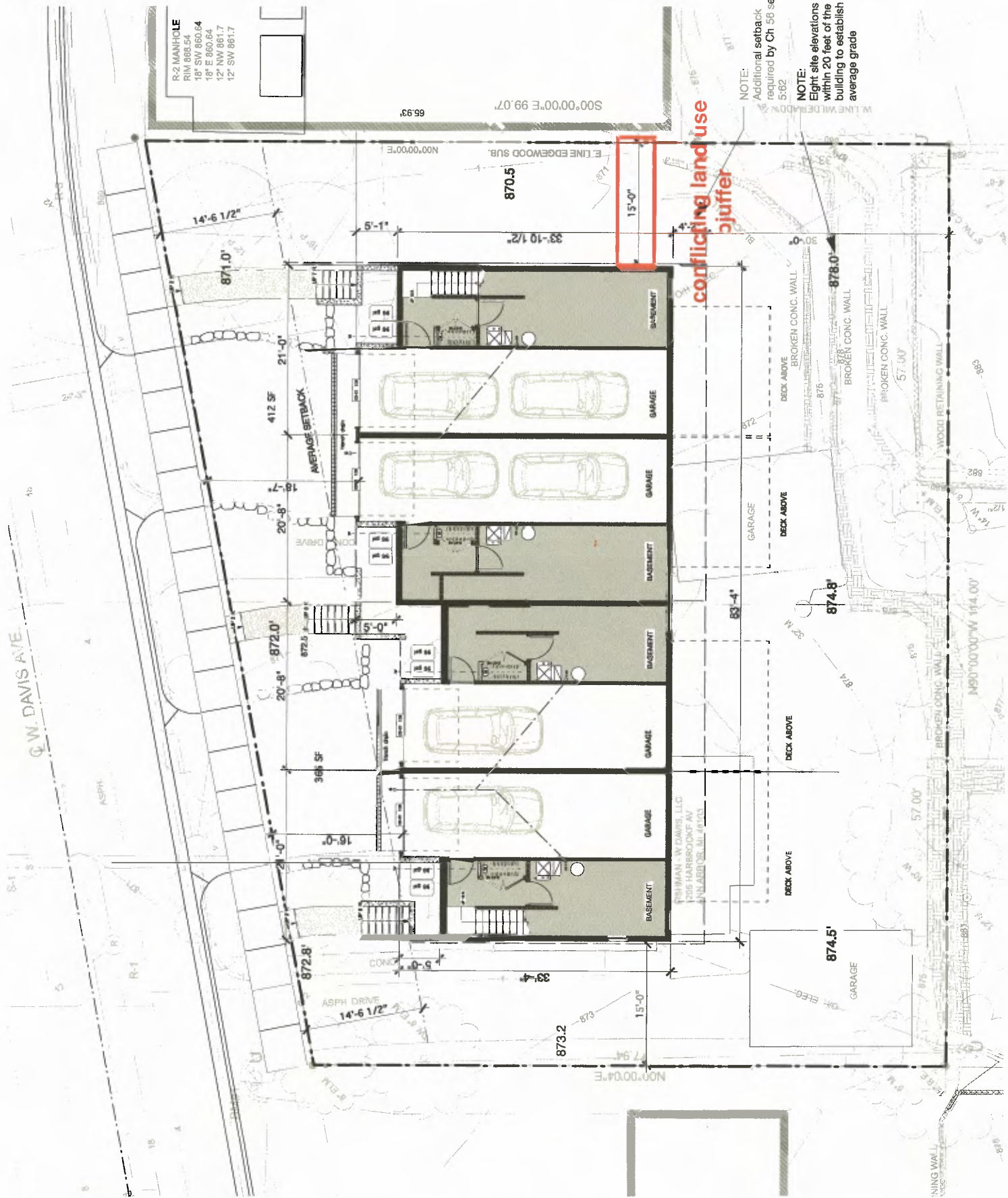
8'-9 1/4" approx

8'-1"

1'-0"

8





R-2 MANHOLE
 RIM 868.54
 18" SW 860.64
 18" E 860.64
 12" NW 861.7
 12" SW 861.7

**conflicting land use
 buffer**

NOTE:
 Additional setback
 required by Ch 56 section
 5.62

NOTE:
 Eight site elevations
 within 20 feet of the
 building to establish
 average grade

Site Plan and Basement
 Scale: 1/16" = 1'-0"

MEMORANDUM

DATE: December 12, 2017
TO: Glen Dempsey, Building Official City of Ann Arbor, Mi
FROM: Marc M Rueter AIA
PROJECT: 211 West Davis Street
RE: Roof Overhang
CC: Dan Williams, Maven Development

Attached are responses to Building Board of Appeals Questions

- 1. Are there hardships or practical difficulties to complying with the Code? Are these hardships or practical difficulties an exception or unique to the property compared to other properties in the City?**

The residence has been substantially completed and the code problem cannot be corrected without damage to the attached garage.

- 2. Are the hardships or practical difficulties more than mere inconvenience, inability to obtain a higher financial return, or both? (explain)**

If the eave were to be removed and no gutters installed, the garage walls would not be protected from the elements, water would run down the side of the garage walls and the adjacent property drainage could be impaired.

- 3. What effect will granting the variance have on the neighboring properties?**

There will be no harmful effects upon neighboring property.

- 4. What physical characteristics of your property in terms of size, shape, location or topography prevent you from using it in a way that is consistent with the Code?**

There are no physical characteristics of the property that prevent code compliance.

- 5. Is the condition which prevents you from complying with the ordinance self-imposed? How did the condition come about?**

The condition arose from a differing interpretation of the building code that was not identified during the plan review. The small lot (4865 square ft) was granted setback variances based upon a previously existing building footprint. The west side-yard setback was established as 1'5".

The new single-family residence's attached garage was set back from the side lot 2'0" with a 12" overhang. MRBC Table R302.1(1) was interpreted to allow projections into the wall setback if the wall was at least 2'0" from the lot line. While the MBC has a separate table for projections,

the MRBC places projections under the table for walls. This interpretation would allow for an eave projection if the soffit was fire rated and blocking installed between the roof sheathing and top plate. The building official disagreed with this interpretation.

A mitigating factor is the adjacent property to the west, a multifamily townhouse project developed under the conflicting land use provisions of the R4C zoning district. This measure establishes a permanent 15 foot setback from adjacent residential properties. This 15 feet plus the 2' setback on the subject property would create a 17 foot building separation or in effect an 8'6" fire separation distance. Within this setback no structures, trellises, accessory buildings or patios are allowed. Only green landscaping is permitted.

As a further measure of public safety, the builder has proposed a limited area sprinkler system for the garage. The garage wall on the lot side will have a one hour fire rating and the house / garage separation wall will have a one hour fire rating. The garage will be in effect a separate fire area protected by sprinklers.

MRBC Table 302.1(2) allows for the elimination of firewalls and allows for unlimited openings on lot lines when the adjacent property setbacks are six feet or more and the building is sprinkled. Our proposal is based upon the reasoning in this code provision.

Section 5: Required Materials

Proposed use of Property: Single family Residential

Lot Size: 75' wide x 65.91 deep

Proposed Change: allow for 12" attached garage overhang at property line

See Attachments:

1. 211 W Davis Site Plan
2. West Davis Townhomes Site Plan
3. 211 W Davis Cross Section
4. Photograph of 211 Davis North Elevation