COMMUNITY DEVELOPMENT DEPARTMENT

45175 Ten Mile Road
Novi, MI 48375
(248) 347-0415 Phone
(248) 735-5600 Facsimile
www.cityofnovi.org

ZONING BOARD OF APPEALS STAFF REPORT

FOR: City of Novi Zoning Board of Appeals **ZONING BOARD APPEALS DATE:** April 13, 2021

REGARDING: **Ten Mile Road, Parcel # 50-22-28-101-023 (PZ21-0011)**

BY: Larry Butler, Deputy Director Community Development

I. GENERAL INFORMATION:

Applicant
Kensington Family Homes

Variance Type
Dimensional Variance

Property Characteristics

Zoning District:	Single Family Residential
Location:	East of Beck Road and South of Ten Mile Road
Parcel #:	50-22-28-101-023

Request
The applicant is requesting variance from the Novi Zoning Ordinance Section 3.1.2 for a proposed lot split of parcel 50-22-28-101-023 into two lots with widths of 110 and 113 feet respectively (120 feet minimum required by code, variance of 10 feet and 7 feet). This property is zoned Single Family Residential (R-1).

II. STAFF COMMENTS:

III. RECOMMENDATION:

The Zoning Board of Appeals may take one of the following actions:

1. I move that we ***grant*** the variance in Case No. **PZ21-0011**, sought by _____, for _____ because Petitioner has shown practical difficulty requiring _____.

   (a) Without the variance Petitioner will be unreasonably prevented or limited with respect to use of the property because_____
   _____.

   (b) The property is unique because_____
   _____.

   (c) Petitioner did not create the condition because_____

_____.

(d) The relief granted will not unreasonably interfere with adjacent or surrounding properties because_____
_____.

(e) The relief if consistent with the spirit and intent of the ordinance because _____
_____.

(f) The variance granted is subject to:

1._____.
2._____.
3._____.
4._____.

2. I move that we ***deny*** the variance in Case No. **PZ21-0011**, sought by _____, for_____ because Petitioner has not shown practical difficulty requiring _____.

(a) The circumstances and features of the property including_____ are not unique because they exist generally throughout the City.

(b) The circumstances and features of the property relating to the variance request are self-created because_____
_____.

(c) The failure to grant relief will result in mere inconvenience or inability to attain higher economic or financial return based on Petitioners statements that _____.

(d) The variance would result in interference with the adjacent and surrounding properties by_____.

(e) Granting the variance would be inconsistent with the spirit and intent of the ordinance to_____
_____.

Should you have any further questions with regards to the matter please feel free to contact me at (248) 347-0417.

Larry Butler
Deputy Director Community Development
City of Novi

CITY OF NOVI
cityofnovi.org

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ZONING BOARD OF APPEALS APPLICATION

APPLICATION MUST BE FILLED OUT COMPLETELY

Application Fee: $250.00
Meeting Date: 4/13/21
ZBA Case #: PZ 21-0011

I. PROPERTY INFORMATION (Address of subject ZBA Case)

PROJECT NAME / SUBDIVISION: Vacant Land SE corner of Beck Rd & Ten Mile Rd

ADDRESS: 10 Mile Rd | LOT/SIUTE/SPACE #:

SIDWELL #: 50-22-28-101-023 (May be obtain from Assessing Department (248) 347-0485)

CROSS ROADS OF PROPERTY: 10 + Beck

IS THE PROPERTY WITHIN A HOMEOWNER'S ASSOCIATION JURISDICTION? ☐ YES ☑ NO

REQUEST IS FOR: ☑ RESIDENTIAL ☐ COMMERCIAL ☐ VACANT PROPERTY ☐ SIGNAGE

DOES YOUR APPEAL RESULT FROM A NOTICE OF VIOLATION OR CITATION ISSUED? ☐ YES ☑ NO

II. APPLICANT INFORMATION

A. APPLICANT

NAME	EMAIL ADDRESS	CELL PHONE NO.
Julie Longo	Julie@KensingtonFamilyHomes.com	(734) 645-0231

TELEPHONE NO.:

ORGANIZATION/COMPANY: Kensington Family Homes | FAX NO.:

ADDRESS	CITY	STATE	ZIP CODE
28317 Beck Road, E17	Wixom,	MI	48393

B. PROPERTY OWNER ☐ CHECK HERE IF APPLICANT IS ALSO THE PROPERTY OWNER

Identify the person or organization that owns the subject property:	EMAIL ADDRESS	CELL PHONE NO.
NAME		TELEPHONE NO.
ORGANIZATION/COMPANY		FAX NO.

ADDRESS	CITY	STATE	ZIP CODE

III. ZONING INFORMATION

A. ZONING DISTRICT

☐ R-A ☑ R-1 ☐ R-2 ☐ R-3 ☐ R-4 ☐ RM-1 ☐ RM-2 ☐ MH
☐ I-1 ☐ I-2 ☐ RC ☐ TC ☐ TC-1 ☐ OTHER _____

B. VARIANCE REQUESTED

INDICATE ORDINANCE SECTION (S) AND VARIANCE REQUESTED:

1. Section 3.1.2 Variance requested Minimum Lot Width reduction from 120 to 110
2. Section _____ Variance requested _____
3. Section _____ Variance requested _____
4. Section _____ Variance requested _____

IV. FEES AND DRAWNINGS

A. FEES

☐ Single Family Residential (Existing) $200 ☐ (With Violation) $250 ☑ Single Family Residential (New) $250
☐ Multiple/Commercial/Industrial $300 ☐ (With Violation) $400 ☐ Signs $300 ☐ (With Violation) $400
☐ House Moves $300 ☐ Special Meetings (At discretion of Board) $600

B. DRAWINGS **1-COPY & 1 DIGITAL COPY SUBMITTED AS A PDF**

- Dimensioned Drawings and Plans
- Site/Plot Plan
- Existing or proposed buildings or addition on the property
- Number & location of all on-site parking, if applicable
- Existing & proposed distance to adjacent property lines
- Location of existing & proposed signs, if applicable
- Floor plans & elevations
- Any other information relevant to the Variance application

ZONING BOARD OF APPEALS APPLICATION

V. VARIANCE

A. VARIANCE (S) REQUESTED

☑ DIMENSIONAL ☐ USE ☐ SIGN

There is a five-(5) hold period before work/action can be taken on variance approvals.

B. SIGN CASES (ONLY)

Your signature on this application indicates that you agree to install a **Mock-Up Sign** ten-(10) days before the schedule ZBA meeting. Failure to install a mock-up sign may result in your case not being heard by the Board, postponed to the next schedule ZBA meeting, or cancelled. A mock-up sign is **NOT** to be actual sign. Upon approval, the mock-up sign must be removed within five-(5) days of the meeting. If the case is denied, the applicant is responsible for all costs involved in the removal of the mock-up or actual sign (if erected under violation) within five-(5) days of the meeting.

C. ORDINANCE

City of Novi Ordinance, Section 3107 – Miscellaneous

No order of the Board permitting the erection of a building shall be valid for a period longer than one-(1) year, unless a building permit for such erection or alteration is obtained within such period and such erection or alteration is started and proceeds to completion in accordance with the terms of such permit.

No order of the Board permitting a use of a building or premises shall be valid for a period longer than one-hundred and eighty-(180) days unless such use is establish within such a period; provided, however, where such use permitted is dependent upon the erection or alteration or a building such order shall continue in force and effect if a building permit for such erection or alteration is obtained within one-(1) year and such erection or alteration is started and proceeds to completion in accordance with the terms of such permit.

D. APPEAL THE DETERMINATION OF THE BUILDING OFFICIAL

PLEASE TAKE NOTICE:

The undersigned hereby appeals the determination of the Building Official / Inspector or Ordinance made

☒ CONSTRUCT NEW HOME/BUILDING ☐ ADDITION TO EXISTING HOME/BUILDING ☐ SIGNAGE

☐ ACCESSORY BUILDING ☐ USE ☐ OTHER _____

VI. APPLICANT & PROPERTY SIGNATURES

A. APPLICANT

_____ 2/8/2021

Applicant Signature Date

B. PROPERTY OWNER

If the applicant is not the owner, the property owner must read and sign below:

The undersigned affirms and acknowledges that he, she or they are the owner(s) of the property described in this application, and is/are aware of the contents of this application and related enclosures.

_____ _____

Property Owner Signature Date

VII. FOR OFFICIAL USE ONLY

DECISION ON APPEAL:

☐ GRANTED ☐ DENIED

The Building Inspector is hereby directed to issue a permit to the Applicant upon the following and conditions:

_____ _____

Chairperson, Zoning Board of Appeals Date

Community Development Department
45175 Ten Mile Road
Novi, MI 48375
(248) 347-0415 Phone
(248) 735-5600 Facsimile
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REVIEW STANDARDS
DIMENSIONAL VARIANCE

The Zoning Board of Appeals (ZBA) will review the application package and determine if the proposed Dimensional Variance meets the required standards for approval. In the space below, and on additional paper if necessary, explain how the proposed project meets each of the following standards. (Increased costs associated with complying with the Zoning Ordinance will not be considered a basis for granting a Dimensional Variance.)

Standard #1. Circumstances or Physical Conditions.

Explain the circumstances or physical conditions that apply to the property that do not apply generally to other properties in the same zoning district or in the general vicinity. Circumstances or physical conditions may include:

a. **Shape of Lot.** Exceptional narrowness, shallowness or shape of a specific property in existence on the effective date of the Zoning Ordinance or amendment.
☐ Not Applicable ☑ Applicable If applicable, describe below:

See attached

and/or

b. **Environmental Conditions.** Exceptional topographic or environmental conditions or other extraordinary situations on the land, building or structure.
☐ Not Applicable ☑ Applicable If applicable, describe below:

See attached

and/or

c. **Abutting Property.** The use or development of the property immediately adjacent to the subject property would prohibit the literal enforcement of the requirements of the Zoning Ordinance or would involve significant practical difficulties.
☑ Not Applicable ☐ Applicable If applicable, describe below:

Standard #2. Not Self-Created.

Describe the immediate practical difficulty causing the need for the Dimensional Variance, that the need for the requested variance is not the result of actions of the property owner or previous property owners (i.e., is not self-created).

See attached

Standard #3. Strict Compliance.

Explain how the Dimensional Variance in strict compliance with regulations governing area, setback, frontage, height, bulk, density or other dimensional requirements will unreasonably prevent the property owner from using the property for a permitted purpose, or will render conformity with those regulations unnecessarily burdensome.

See attached

Standard #4. Minimum Variance Necessary.

Explain how the Dimensional Variance requested is the minimum variance necessary to do substantial justice to the applicant as well as to other property owners in the district.

See attached

Standard #5. Adverse Impact on Surrounding Area.

Explain how the Dimensional Variance will not cause an adverse impact on surrounding property, property values, or the use and enjoyment of property in the neighborhood or zoning district.

See attached

The Zoning Board of Appeals (ZBA) will review the application package and determine if the proposed Dimensional Variance meets the required standards for approval. In the space below, and on additional paper if necessary, explain how the proposed project meets each of the following standards. (Increased costs associated with complying with the Zoning Ordinance will not be considered a basis for granting a Dimensional Variance.)

Standard #1. Circumstances or Physical Conditions.

Explain the circumstances or physical conditions that apply to the property that do not apply generally to other properties in the same zoning district or in the general vicinity. Circumstances or physical conditions may include:

a. **Shape of Lot.** Exceptional narrowness, shallowness or **shape of a specific property** in existence on the effective date of the Zoning Ordinance or amendment**. Applicable, described below:**

*The need for a variance is due to **unique shape and circumstances peculiar to this property.** These conditions create an unnecessary hardship that requires relief. The property is square and measures 49,731 sf., or 1.14 acres. A property with these dimensions could normally fit two conforming R-1 lots, minimum size 21,780 sf each. However, the **shape and configuration of the property is unusual** in that it is nearly a perfect square with frontage on both 10 Mile and Novi Roads. This configuration presents a unique challenge to comply with the "minimum lot width" of 120', while **all other standards of the R-1 district can be met or exceeded**, including **lot area** and **all yard setbacks** so as not to create a burden on neighboring properties.*

*The impact of the rights of way and future rights of way for two major collector streets affect the geometry of the property. Deducting the future 60' half right of way from the overall length of **either side** (283') leaves the required "minimum lot width" dimension for two lots (240') short by 17'. Because of the **unusual square shape** of the lot, orienting the "frontage" N-S or E-W **does nothing to solve the problem**. These two proposed lots will both **exceed all other requirements of the R-1 district**. It would be impractical to allow the irregular configuration of the property to detrimentally impact the applicant and would not serve the purpose intended for the minimum lot width requirement, as will be demonstrated in this narrative and exhibits to follow.*

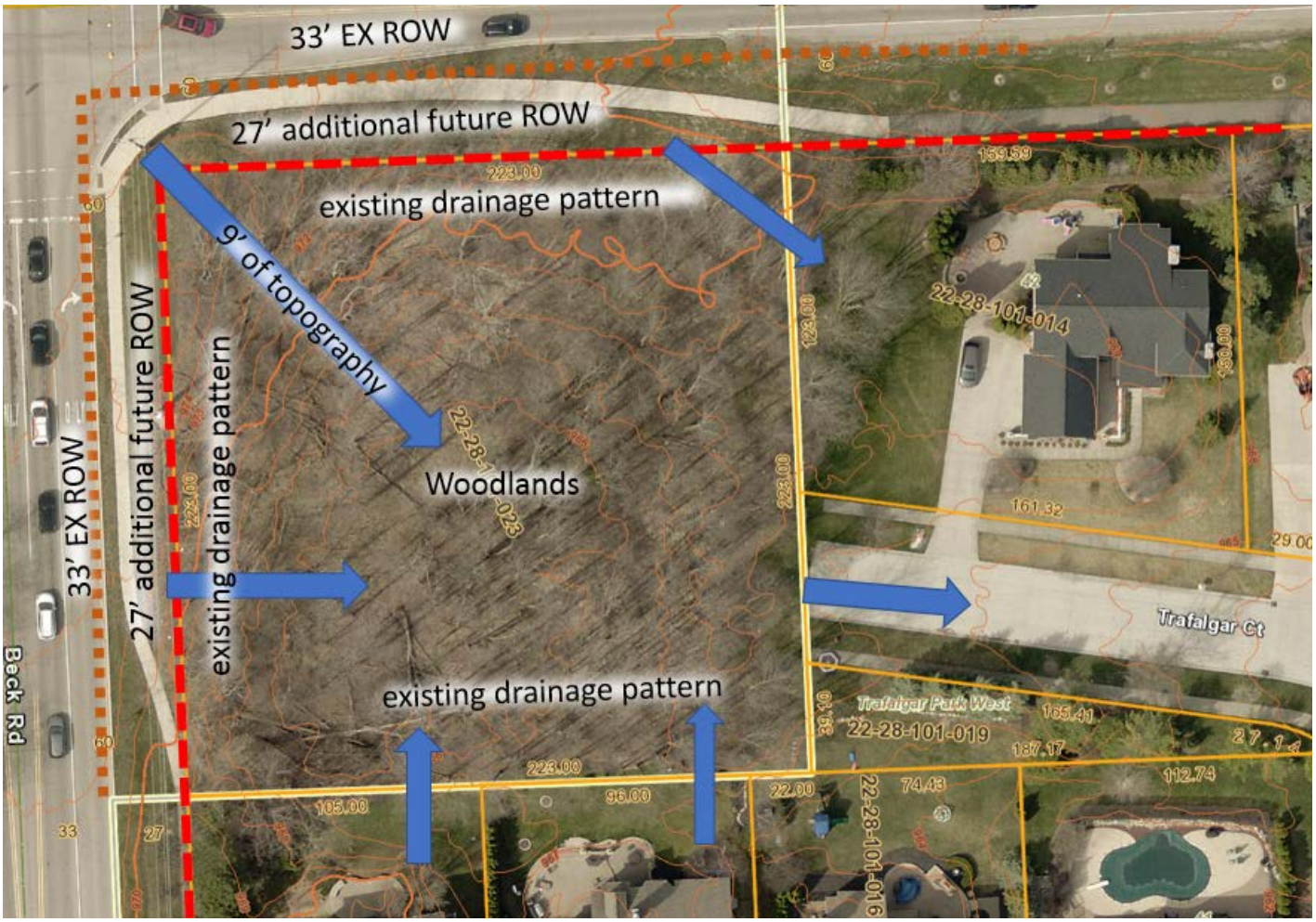
*The **City of Novi Ordinance Section 3104** allows the **Zoning board of Appeals** to permit **modification of the "minimum lot width" requirement** prescribed in the Zoning Ordinance because the property configuration clearly demonstrates that **the shape & circumstances of the property is unique and not generally applicable to other properties**, meeting the required legal standard to approve this variance request.*

Exhibit 1: Property location, zoning requirements, unusual shape, and relationship to ROW

b. **<u>Environmental Conditions.</u>** Exceptional topographic or environmental conditions or other **<u>extraordinary situations</u>** on the land, building or structure. **Applicable, described below:**

*The need for a variance is due to **unique circumstances particular to this property.** These conditions create an **unnecessary hardship that requires relief.** The site is **heavily wooded** and has **9' of elevation difference** across the relatively small 1.14-acre property. Because of the **unique topography** the property receives drainage runoff from both Beck Road and Ten Mile, which present **additional hardships** in engineering the grading plan for the two proposed homes. These **natural woodland features** are an important element of the property and the surrounding community. The variance would allow these properties to be developed while **minimizing the impact to the woodlands** and **maintaining drainage patterns** created by 10 Mile and Novi Roads. Substantial sections of the lot will remain undisturbed. The undisturbed area will act as a natural buffer. The existence of **the woodland features, the challenging topography,** and the **existing drainage patterns** constitute **environmental conditions and extraordinary situations** that require relief. The **City of Novi Ordinance Section 3104** allows the **Zoning board of Appeals** to permit **modification of the "minimum lot width" requirement** prescribed in the Zoning Ordinance **<u>because the natural features and extraordinary circumstances constitute Environmental Conditions on the property that do not apply generally to other properties,</u>** meeting the required legal standard to approve this variance request.*

Exhibit 2: Environmental Conditions



c. **Abutting Property.** The use or development of the property immediately adjacent to the subject property would prohibit the literal enforcement of the requirements of the Zoning Ordinance or would involve significant practical difficulties. **Not Applicable/Not Required.**

Standard #2. Not Self-Created.

Describe the immediate practical difficulty causing the need for the Dimensional Variance, that the need for the requested variance is not the result of actions of the property owner or previous property owners (i.e., is **not self-created**).

*The applicant's problem is **not self-created.** The problem is an **unnecessary hardship** on the property owner requiring relief. The applicant did not write the ordinance nor was the applicant involved in establishing the precedents surrounding the property. The intent of the ordinance was to create **similar lot sizes within the district to ensure compatibility.** In addition, the ordinance aims to **prevent an unwarranted increase in density** through dimensional control. The current situation presents neither problem. The proposed lot sizes will be **larger than the minimum district lot size** and can **comply with all the required setbacks,** including three front yard setbacks on each lot because of the unusual configuration noted in question 1. The adjacent **lots in Broadmoor Park** are in the same R-1 zoning district and **are 96' wide minimum/typical. The proposed two lots subject to this variance will be wider, measuring 110' & 113' wide.** The **Broadmoor Park lots are 15,000 sf typical. The proposed two lots subject to this variance will be larger, measuring 24,000 – 25,000 sf lots.** Unfortunately, not every possible situation can be anticipated when the ordinances are being written and the use of the word "minimum" makes this a ZBA matter. The City planner is in full support of the variance. The **City of Novi Ordinance Section 3104** allows the **Zoning board of Appeals** to permit **modification of the "minimum lot width" requirement** prescribed in the Zoning Ordinance because **the practical difficulty was not self-created,** and the legal standard has been met.*

Exhibit 3: minimum requirements & existing precedents not self-created

Standard #3. Strict Compliance.

Explain how the Dimensional Variance in **strict compliance** with regulations governing area, setback, frontage, height, bulk, density, or other dimensional requirements will unreasonably prevent the property owner from using the property for a permitted purpose or will render conformity with those regulations unnecessarily burdensome.

The property cannot be reasonably used for the purposes permitted (two R-1 sized lots) which creates an ***unnecessary hardship. Without ZBA approval*** *to permit modification of the "minimum lot width" requirement* ***the property owner will be unreasonably prevented from using the property for the intended purpose,*** *two lots proposed for residential development consistent with all other R-1 requirements.* ***Strict compliance with the 120' width requirement would reduce the property to a single lot significantly out of character with its surroundings.*** *The intent of the R-1 zoning bulk lot requirements* ***could not be achieved WITHOUT the variance. The City of Novi Ordinance Section 3104*** *allows the* ***Zoning board of Appeals*** *to permit* ***modification of the "minimum lot width" requirement*** *prescribed in the Zoning Ordinance because* ***strict compliance with the 120' minimum width requirement will unreasonably prevent use of the property in the intended manner, as two R-1 sized lots.*** *The legal standard has been met.*

Standard #4. Minimum Variance Necessary.

Explain how the Dimensional Variance requested is the minimum variance necessary to do substantial justice to the applicant as well as to other property owners in the district.

The variance requested is ***the minimum variance necessary.*** *The lot widths* ***(110' & 113' vs 120' required)*** *are the* ***largest lot possible*** *given the parcel dimensions and will be* ***wider than the 96' & 100' lots in Broadmoor Park. No other variances to the R-1 lot requirements are being requested, making this the minimum necessary to do substantial justice to the applicant****. The resulting lots will be* ***larger than the minimum district lot size and will comply with all the required setbacks.*** *The* ***City of Novi Ordinance Section 3104*** *allows the* ***Zoning board of Appeals*** *to permit* ***modification of the "minimum lot width" requirement*** *prescribed in the Zoning Ordinance because* ***the requested variance is the minimum variance necessary*** *and the legal standard has been met.*

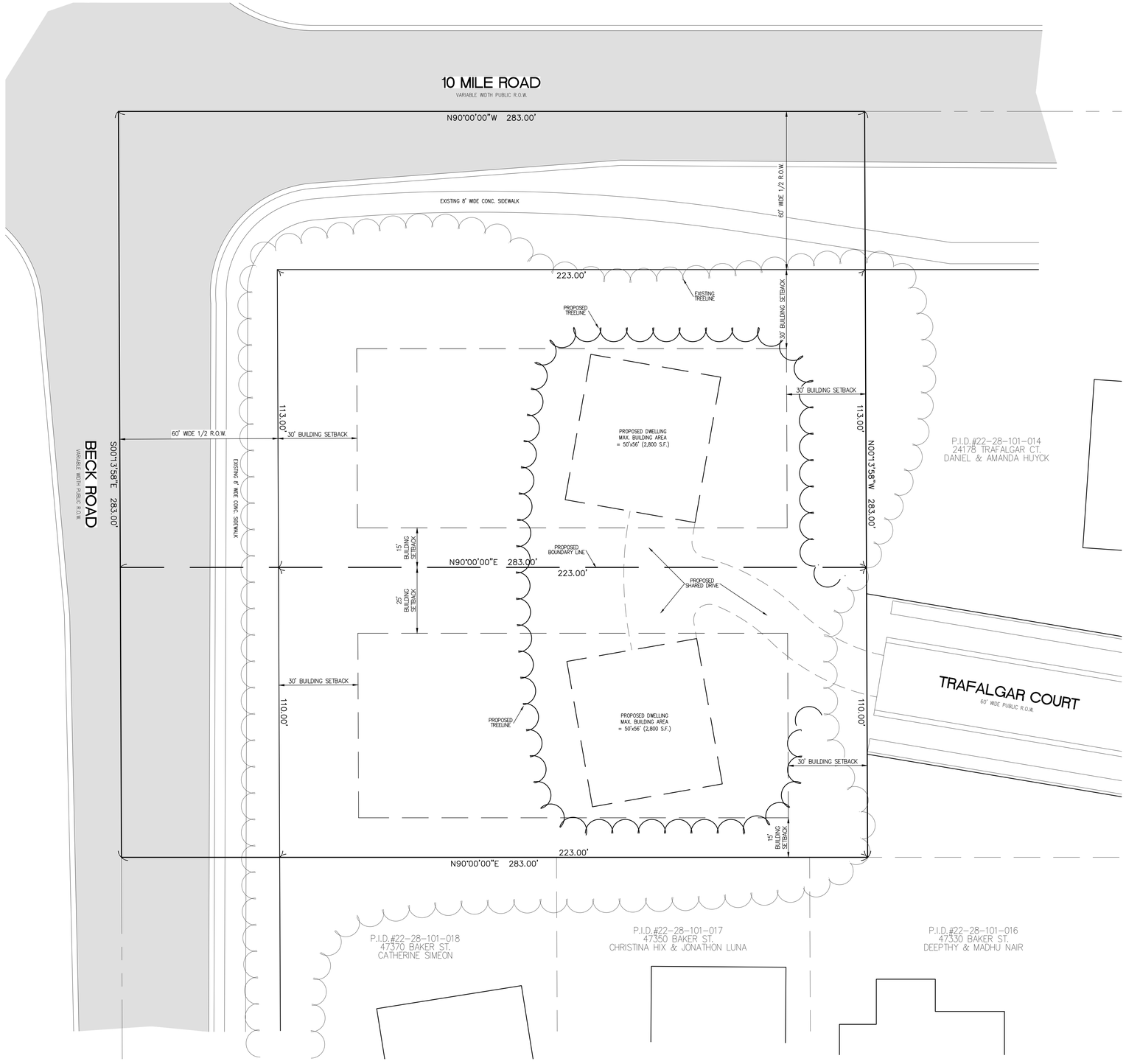
Standard #5. Adverse Impact on Surrounding Area.

Explain how the Dimensional Variance **will not cause an adverse impact** on surrounding property, property values, or the use and enjoyment of property in the neighborhood or zoning district.

The variance ***will not alter the character of the area.*** *The residential* ***lots to the north & west*** *of the site are zoned for* ***smaller and narrower lots****. (R-3 & PRO, respectively.) The* ***lots to the east and*** *south in Broadmoor Park are* ***smaller and typically narrower*** *than the requested variance. The Broadmoor* ***lots to the south are only 96' wide*** *minimum and are typically* ***14,200 square feet.*** *The Broadmoor* ***lot sizes to the east are smaller (16,450 – 23,000 sf) than the proposed two lots (24,000 – 25,000 sf.)*** *Approving the variance will allow* ***similar homes*** *to be built on the parcel* ***on wider and larger lots, providing substantial justice to the petitioner and surrounding property owners.*** *The* ***City of Novi Ordinance Section 3104*** *allows the* ***Zoning board of Appeals*** *to permit* ***modification of the "minimum lot width" requirement*** *prescribed in the Zoning Ordinance because* ***the variance will not cause an adverse impact,*** *and the legal standard has been met. (see Exhibit 4 next page)*

Petitioner has met all requirements set forth in the ordinance to grant the variance.
All the Elements of Practical Difficulty exist.
We respectfully request your support.

Exhibit 4: Proposed site configuration



EXISTING LEGAL DESCRIPTION AS PROVIDED

T1N–R8E, SECTION 28, PART OF THE NW 1/4, BEGINNING AT A POINT DISTANT EAST 60 FEET & S00°13'58"E 60 FEET FROM THE NW SECTION CORNER, THENCE EAST 223 FEET, THENCE S00°1358"E 223 FEET, THENCE WEST 223 FEET, THENCE N00°1358"W 223 FEET TO THE POINT OF BEGINNING. CONTAINS 1.14 ACRES.

BUILDER INFORMATION

KENSINGTON FAMILY HOMES
28317 BECK ROAD – E17
WIXOM, MI 48393
(248) 965–0123

NORTH

0 10 20 40 SCALE: 1 inch = 20 ft

PAPER SIZE: 24x36

The UMLOR Group
49287 WEST ROAD, WIXOM, MI 48393
PH: (248) 773–7656, FAX: (866) 690–4307

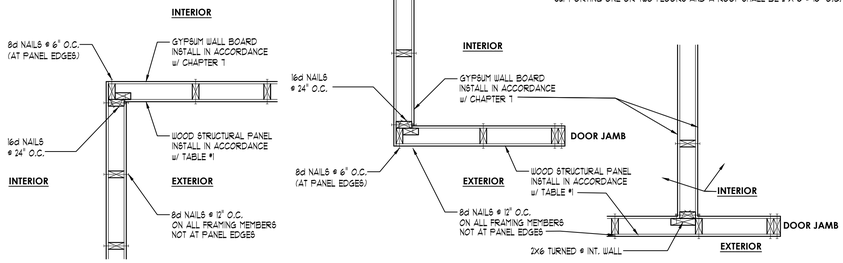
PROPOSED PARCEL LAYOUT
TRAFALGAR COURT

PART OF THE NW 1/4 SECTION 28
TOWN 1 NORTH - RANGE 8 EAST
CITY OF NOVI
OAKLAND COUNTY, MICHIGAN

Date: 02–05–2021
Project No.: 210108

LENGTH REQUIREMENTS FOR BRACED WALL PANELS IN A CONTINUOUSLY SHEATHED WALL TABLE #1				
LENGTH OF BRACED WALL PANEL (INCHES)				MAXIMUM OPENING HEIGHT NEXT TO BRACED WALL PANEL (% OF WALL HEIGHT)
8-FOOT WALL	9-FOOT WALL	10-FOOT WALL	12-FOOT WALL**	
48*	54*	60*	72*	100%
32*	36*	40*	48*	85%
24*	27*	30*	36*	65%

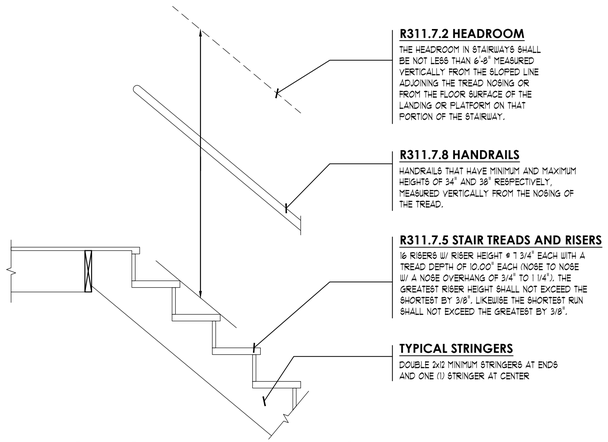
*THESE VALUES CAN BE REDUCED BY 50% IF SHEATHING IS PROVIDED ON INTERIOR AND EXTERIOR
**12 FOOT TALL STUDS SUPPORTING ONLY A ROOF MAY BE 2 X 4 @ 16" O.C. 12 FOOT TALL STUDS SUPPORTING ONE OR TWO FLOORS AND A ROOF SHALL BE 2 X 6 @ 16" O.C.



(B) INSIDE CORNER DETAIL (A) OUTSIDE CORNER DETAIL (C)INTERSECTION OF INTERIOR AND EXTERIOR WALLS

WALL BRACING DETAIL

NO SCALE



R311.7.2 HEADROOM
THE HEADROOM IN STAIRWAYS SHALL BE NOT LESS THAN 6'-8" MEASURED VERTICALLY FROM THE SLOPED LINE ADJOINING THE TREAD NOSING OR FROM THE FLOOR SURFACE OF THE LANDING OR PLATFORM ON THAT PORTION OF THE STAIRWAY.

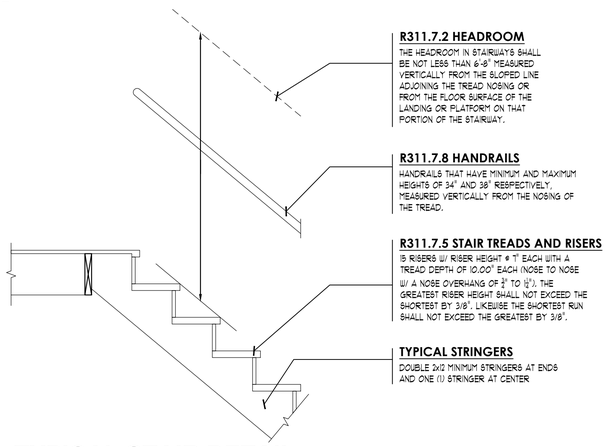
R311.7.8 HANDRAILS
HANDRAILS THAT HAVE MINIMUM AND MAXIMUM HEIGHTS OF 34" AND 38" RESPECTIVELY, MEASURED VERTICALLY FROM THE NOSING OF THE TREAD.

R311.7.5 STAIR TREADS AND RISERS
16 RISERS W/ RISER HEIGHT @ 7 3/4" EACH WITH A TREAD DEPTH OF 10.00" EACH (NOSE TO NOSE W/ A NOSE OVERHANG OF 3/4" TO 1 1/4"). THE GREATEST RISER HEIGHT SHALL NOT EXCEED THE SHORTEST BY 3/8". LIKEWISE THE SHORTEST RUN SHALL NOT EXCEED THE GREATEST BY 3/8".

TYPICAL STRINGERS
DOUBLE 2x12 MINIMUM STRINGERS AT ENDS AND ONE (1) STRINGER AT CENTER

TYPICAL STAIR DETAIL FIRST FLOOR TO SECOND FLOOR

SCALE: 3/4" = 1'-0"



R311.7.2 HEADROOM
THE HEADROOM IN STAIRWAYS SHALL BE NOT LESS THAN 6'-8" MEASURED VERTICALLY FROM THE SLOPED LINE ADJOINING THE TREAD NOSING OR FROM THE FLOOR SURFACE OF THE LANDING OR PLATFORM ON THAT PORTION OF THE STAIRWAY.

R311.7.8 HANDRAILS
HANDRAILS THAT HAVE MINIMUM AND MAXIMUM HEIGHTS OF 34" AND 38" RESPECTIVELY, MEASURED VERTICALLY FROM THE NOSING OF THE TREAD.

R311.7.5 STAIR TREADS AND RISERS
15 RISERS W/ RISER HEIGHT @ 7" EACH WITH A TREAD DEPTH OF 10.00" EACH (NOSE TO NOSE W/ A NOSE OVERHANG OF 3/4" TO 1 1/4"). THE GREATEST RISER HEIGHT SHALL NOT EXCEED THE SHORTEST BY 3/8". LIKEWISE THE SHORTEST RUN SHALL NOT EXCEED THE GREATEST BY 3/8".

TYPICAL STRINGERS
DOUBLE 2x12 MINIMUM STRINGERS AT ENDS AND ONE (1) STRINGER AT CENTER

TYPICAL STAIR DETAIL BASEMENT TO FIRST FLOOR

SCALE: 3/4" = 1'-0"

GENERAL NOTES

WOOD TRUSS SPECIFICATIONS

1. Designs shall conform with the latest versions of (NDS), "National Design Specification for Wood Construction" by the American Forest & Paper Association, and Design Standard for Metal Plate Connected Wood Truss Construction by the American Standard (ANSI) and the Truss Plate Institute (T.P.I.) and the local code jurisdiction.
2. Trusses shall be spaced as indicated on the plans unless the designer determines that different spacing is required to meet deflection requirements.
3. Maximum deflection of floor trusses shall be limited to l/360 for total load and l/480 for live load. Maximum deflection of roof trusses shall be limited to l/240 for total loads and l/360 for live load u.n.o.
4. Adequate camber shall be built into floor and parallel chord roof trusses to compensate for normal dead load deflection.
5. Design loads:

FLOOR JOIST LOADING CRITERIA

FIRST FLOOR LOADING:
LIVE LOAD 40 P.S.F.
DEAD LOAD 15 P.S.F.
TOTAL LOAD 55 P.S.F.
LIVE LOAD DEFLECTION L/480
TOTAL LOAD DEFLECTION L/240

SECOND FLOOR LOADING:
LIVE LOAD 40 P.S.F.
DEAD LOAD 10 P.S.F.
TOTAL LOAD 50 P.S.F.
LIVE LOAD DEFLECTION L/480
TOTAL LOAD DEFLECTION L/240

FLOOR W/CERAMIC TILE/MARBLE:
LIVE LOAD 40 P.S.F.
DEAD LOAD 25 P.S.F.
TOTAL LOAD 65 P.S.F.
LIVE LOAD DEFLECTION L/720
TOTAL LOAD DEFLECTION L/360

EXT. DECK JOIST LOADING CRITERIA

DECK LOADING:
LIVE LOAD 30 P.S.F.
DEAD LOAD 10 P.S.F.
TOTAL LOAD 60 P.S.F.
LIVE LOAD DEFLECTION L/360
TOTAL LOAD DEFLECTION L/240

ROOF TRUSS LOADING CRITERIA

TOP CHORD LIVE LOAD 20 P.S.F.
DEAD LOAD 7 P.S.F.

BOTT. CHORD LIVE LOAD 10 P.S.F.
(UNINHABITABLE ATTICS W/OUT STORAGE)

LIVE LOAD 20 P.S.F.
(UNINHABITABLE ATTICS WITH STORAGE)

DEAD LOAD 10 P.S.F.
WIND LOAD 115 MPH OR AS REQUIRED BY CODE

CONC. DECK JOIST LOADING CRITERIA

DECK LOADING:
LIVE LOAD 30 P.S.F.
DEAD LOAD 50 P.S.F.
TOTAL LOAD 100 P.S.F.
LIVE LOAD DEFLECTION L/360
TOTAL LOAD DEFLECTION L/240

- A 15% increase on allowable stresses for short term loading is allowed. Drift loading shall be accounted for per the current "Michigan Residential Code" requirements.
- Add additional attic storage live loads per the current "Michigan Residential Code" requirements.
- Tile, marble, or other special features shall be designed using the appropriate dead loads and deflection limitations. Partition loads shall also be considered where appropriate.
- All conventional framed floor decks shall be 2 x 10 #2 or 2 x 12 #2 Douglas Fir or better.

HANDLING AND ERECTION SPECIFICATIONS

1. Trusses are to be handled with particular care during fabrication, bundling, loading, delivery, unloading and installation in order to avoid damage and weakening of the trusses.
2. Temporary and permanent bracing for holding the trusses in a straight and plumb position is always required and shall be designed and installed by the erecting contractor. Temporary bracing during installation, includes cross bracing between the trusses to prevent toppling or "dominoing" of the trusses.
3. Permanent bracing shall be installed in accordance with the latest of the "National Design Standard", as published by the American Forest & Paper Association and H.I.B.-91 and D.S.B.-89 as published by the truss plate institute. Permanent bracing consists of lateral and diagonal bracing not to exceed spacing requirements of the truss fabricator. Top chords of trusses must be continuously braced by roof sheathing unless otherwise note on the truss shop drawings. Bottom chords must be braced at intervals not to exceed 10' o.c. or as noted on the truss fabricators drawings.
4. Construction loads greater than the design loads of the trusses shall not be applied to the trusses at any time.
5. No loads shall be applied to the truss until all fastening and required bracing is installed.
6. The supervision of the truss erecting shall be under the direct control of persons(s) experienced in the installation and proper bracing of wood trusses.
7. Field modification or cutting of pre-engineered roof trusses is strictly prohibited without expressed prior written consent and details from a licensed professional structural engineer experienced in wood truss design and modifications.

SOIL REQUIREMENTS & EARTH WORK AND CONCRETE

1. All top soil, organic and vegetative material should be removed prior to construction. Any required fill shall be clean, granular material compacted to at least 95% of maximun dry density as determined by ASTM D-1557.
2. Foundations bearing on existing soils have been designed for a minimum allowable soil bearing capacity of 3000 psf, u.n.o.
3. Notify the engineer/architect if the allowable soil bearing capacity is less than 3000 psf so that the foundations can be redesigned for the new allowable bearing capacity.

1. R404.1.7 Backfill placement.
Backfill shall not be placed against the wall until the wall has sufficient strength and has been anchored to the floor above or has been sufficiently braced to prevent damage by the backfill.

R506.2.1. Fill.
Fill material shall be free of vegetation and foreign material. The fill shall be compacted to assure uniform support of the slab and, except where approved, the fill depths shall not exceed 24 inches for clean sand or gravel and 8 inches for earth.

R506.2.3 Vapor retarder.
A 6 mil polyethylene or approved vapor retarder with joints lapped not less than 6 inches shall be placed between the concrete floor slab and the base course or the prepared subgrade where no base course exists.

1. Concrete work shall conform to the requirements of ACI 301-96, "Specifications for Structural Concrete for Buildings", except as modified as supplemental requirements.
2. Concrete shall have a minimun of 3000 psi, 28 day compressive strength, unless noted otherwise, (4 sacks) & a watercement ratio not to exceed 6 gallons per sack). Exterior concrete slabs shall have a minimun of 4000 psi, 28 day compressive strength, & 4½% air entrainment.
3. The use of additives such as fly ash or calcium chloride is not allowed without prior review from the architect.

R405.1 Concrete or masonry foundations.
Drains shall be provided around all concrete or masonry foundations that retain earth and enclose habitable or usable spaces located below grade. Drainage tiles, gravel or crushed stone drains, perforated pipe or other approved systems or materials shall be installed at or below the area to be protected and shall discharge by gravity or mechanical means into an approved drainage system. Gravel or crushed stone drains shall extend at least 1 foot beyond the outside edge of the footing and 6 inches above the top of the footing and be covered with an approved filter membrane material. The top of open joints of drain tiles shall be protected with strips of building paper, and the drainage tiles or perforated pipe shall be placed on a minimun of 2 inches of washed gravel or crushed rock at least one sieve size larger than the tile joint opening or perforation and covered with not less than 6 inches of the same material.
Exception:
A drainage system is not required when the foundation is installed on well-drained ground or sand-gravel mixture soils according to the Unified Soil

STRUCTURAL STEEL SPECIFICATIONS

1. Structural steel shapes, plates, bars, etc. are to be ASTM A-36 (unless noted other wise) designed and constructed per the 1989 AISC "Specifications For The Design, Fabrication, And Erection Of Steel For Buildings", and the latest edition of the AISC "Manual Of Steel Construction".
2. Steel columns shall be ASTM A-501, Fy36 KSI. Structural tubing shall be ASTM A500, grade B, Fy46 KSI.
3. Welds shall conform with the latest AWS D1.1 "Specifications For Welding In Building Construction", And shall utilize E70XX electrodes unless noted otherwise.
4. Bolted connections shall utilize ASTM A-325 bolts tightened to a "snug fit" condition (unless noted otherwise).

REINFORCING STEEL SPECIFICATIONS

1. Reinforcing bars, dowels and ties shall conform to ASTM-615 grade 60 requirements and shall be free of rust, dirt, and mud.
2. Welded wire fabric shall conform to ASTM A-185 and be positioned at the mid height of slabs U.N.O.
3. Reinforcing shall be placed and securely tied in place sufficiently ahead of placing of concrete to allow inspection and correction, if necessary without delaying the concrete placement.
4. Extend reinforcing bars a minimun of 36" around corners and lap bars at splices a minimun of 24" U.N.O.
5. Welding of reinforcing steel is not allowed.

STAIRWAYS AND HANDRAILS

R311.7.1 Width.
Stairways shall not be less than 36 inches (914 mm) in clear width at all points above the permitted handrail height and below the required headroom height. Handrails shall not projects more than 4.5 inches (114 mm) on either side of the stairway and the minimun clear width of the stairway at and below the handrail height, including treads and landings, shall not be less than 31/2 (787 mm) where a handrail is installed on one side and 27 inches (698 mm) where handrails are provided on both sides.
Exception: The width of spiral stairways shall be in accordance with Section R311.7.10.1.

R311.7.8 Handrails.
Handrails shall be provided on at least one side of each continuous run of treads or flight with four or more risers.

R311.7.8.1 Height.
Handrail height, measured vertically from the sloped plane adjoining the tread nosing, or finish surface of ramp slope, shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm).

Exceptions:
1. The use of a volute, turnout or starting easing shall be allowed over the lowest tread.
2. When handrail fittings or bendings are used to provide continuous transition between flights, the transition from handrail to guardrail, or used at the start of a flight, the handrail height at the fittings or bendings shall be permitted to exceed the maximun height.

SMOKE ALARMS

R314.3 Smoke Alarms
Smoke alarms shall be installed in the following locations:
1. In each sleeping room.
2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.
3. On each additional story of the dwelling, including basements and habitable attics but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

When more than one smoke alarm is required to be installed within an individual dwelling unit the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit.

CARBON MONOXIDE DETECTOR

A Carbon monoxide device shall be located in the vicinity of the bedrooms, which may include 1 device capable of detecting carbon monoxide near all adjacent bedrooms: In areas within the dwelling adjacent to an attached garage, and in areas adjacent to any fuel-burning appliances. Carbon Monoxide Detectors shall not be placed within fifteen feet of fuel-burning heating or cooking appliances such as gas stoves, furnaces, or fireplaces, or in or near very humid areas such as bathrooms.

FLASHING AND WEEPHOLES

R703.8.5 Flashing.
Flashing shall be located beneath the first course of masonry above finished ground level above the foundation wall or slab and at other points of support, including structural floors, shelf angles and lintels when masonry veneers are designed in accordance with Section R703.7. See Section R703.8 for additional requirements.

R703.8.6 Weepholes.
Weepholes shall be provided in the outside wythe of masonry walls at a maximun spacing of 33 inches (838 mm) on center. Weepholes shall not be less than 3/16 inch (5 mm) in diameter. Weepholes shall be located immediately above the flashing.

R703.4 Flashing.
Approved corrosion-resistant flashing shall be applied shingle-fashion in a manner to prevent entry of water into the wall cavity or penetration of water to the building structural framing components. Self-adhered membranes used as flashing shall comply with AAMA 711. The flashing shall extend to the surface of the exterior wall finish. Approved corrosion- resistant flashings shall be installed at all of the following locations:

1. Exterior window and door openings. Flashing at exterior window and door openings shall extend to the surface of the exterior wall finish or to the water-resistive barrier for subsequent drainage.
2. At the intersection of chimneys or other masonry construction with frame or stucco walls, with projecting lips on both sides under stucco copings.
3. Under and at the ends of masonry, wood or metal copings and sills.
4. Continuously above all projecting wood trim.
5. Where exterior porches, decks or stairs attach to a wall or floor assembly of wood-frame construction.
6. At wall and roof intersections. I.T. At built-in gutters.

FIREPLACES

R1001.10 Hearth extension dimensions.
Hearth extensions shall extend at least 16 inches (406 mmIn front of and at least 8 inches (203 mm) beyond each side of the fireplace opening.) or larger, 2 Where the fireplace opening is 6 square feet (0.6 m the hearth extension shall extend at least 20 inches (508 mm) in front of and at least 12 inches (305 mm) beyond each side of the fireplace opening.

EGRESS WINDOW REQUIREMENTS

- Min. net clear opening of 5.7 sq. ft. (second floor bedrooms)
- Min. net clear opening of 5.0 sq. ft. (first floor bedrooms only)
- Min. net clear opening ht. of 24 inches
- Min. net clear opening width of 20 inches
- Max. sill ht. above finish floor of 44 inches

AREAS THAT REQUIRE SAFETY GLAZING

R308.4 Hazardous locations.
The locations specified in Sections R308.4.1 through R308.4.7 shall be considered to be specific hazards for the purposes of glazing.

R308.4.1 Glazing in doors.
Glazing in fixed and operable panels of swinging, sliding and bifold doors considered to be a hazardous location.

Exceptions:
1. Glazed openings of a size through which a 3-inch diameter (76 mm) sphere is unable to pass.
2. Decorative glazing.

R308.4.2 Glazing adjacent to doors.
Glazing in an individual fixed or operable panel adjacent to a door shall be considered to be a hazardous location where the bottom exposed edge of the glazing is less than 60 inches (1524 mm) above the floor or walking surface and it meets either of the following conditions:

1. Where the glazing is within 24 inches (610 mm) of either side of the door in the plane of the door in a closed position.
2. Where the glazing is on a wall perpendicular to the plane of the door in a closed position and within 24 inches (610 mm) of the hinge side of an in-swinging door.

Exceptions:
1. Decorative glazing.
2. Where there is an intervening wall or other permanent barrier between the door and the glazing.
3. Where access through the door is to a closet or storage area 3 feet (914 mm) or less in depth. Glazing in this application shall comply with Section R308.4.3.
4. Glazing that is adjacent to the fixed panel of patio doors.

R308.4.3 Glazing in windows.
Glazing in an individual fixed or operable panel that meets all of the following conditions shall be considered to be a hazardous location:

1. The exposed area of an individual pane is larger than 9 square feet (0.836 m2)
2. The bottom edge of the glazing is less than 18 inches (457 mm) above the floor,
3. The top edge of the glazing is more than 36 inches (914 mm) above the floor; and
4. One or more walking surfaces are within 36 inches (914 mm), measured horizontally and in a straight line, of the glazing.

Exceptions:
1. Decorative glazing.
2. When a horizontal rail is installed on the accessible side(s) of the glazing 34 to 38 inches (864 to 965 mm) above the walking surface. The rail shall be capable of withstanding a horizontal load of 50 pounds per linear foot (730 N/m) without contacting the glass and be a minimun of 1-1/2 inches (38 mm) in cross sectional height.
3. Outboard panes in insulating glass units and other multiple glazed panels when the bottom edge of the glass is 25 feet (7620 mm) or more above grade, a roof, walking surfaces, or other horizontal (within 45 degrees (0.78 rad.) of horizontal) surface adjacent to the glass exterior.

R308.4.4 Glazing in guards and railings.
Glazing in guards and railings, including structural baluster panels and nonstructural in-fill panels, regardless of area or height above a walking surface shall be considered to be a hazardous location.

R308.4.5 Glazing and wet surfaces.
Glazing in walls, enclosures or fences containing or facing hot tubs, spas, whirlpools, saunas, steam rooms, bathtubs, showers and indoor swimming pools where the bottom exposed edge of the glazing is less than 60 inches (1524 mm) measured vertically above any standing or walking surface shall be considered to be a hazardous location. This shall apply to single glazing and each pane in multiple glazing.

Exceptions:
Glazing that is more than 60 inches (1524 mm), measured horizontally and in a straight line, from the water's edge of a bathtub, hot tub, spa, whirlpool or swimming pool or from the edge of a shower, sauna or steam room.

R308.4.6 Glazing adjacent to stairs and ramps.
Glazing where the bottom exposed edge of the glazing is less than 36 inches (914 mm) above the plane of the adjacent walking surface of stairways, landings between flights of stairs and ramps shall be considered to be a hazardous location.

Exceptions:
1. Where a rail is installed on the accessible side(s) of the glazing 34 to 38 inches (864 to 965 mm) above the walking surface. The rail shall be capable of withstanding a horizontal load of 50 pounds per linear foot (730 N/m) without contacting the glass and have a cross-sectional height of not less than 1 ½ inches (38 mm).
2. Glazing 36 inches (914 mm) or more measured horizontally from the walking surface.

R308.4.7 Glazing adjacent to the bottom stair landing.
Glazing adjacent to the landing at the bottom of a stairway where the glazing is less than 36 inches (914 mm) above the landing and within a 60-inch (1524 mm) horizontal arc less than 180 degrees from the bottom tread nosing shall be considered to be a hazardous location.
Exception:
The glazing is protected by a guard complying with Section R312 and the place of the glass is more than 18 inches (457 mm) from the ground.

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CLIENT / PROJECT

KENSINGTON FAMILY HOMES
AVA PLAN
GARAGE LEFT

JOB No.	WO 1428-18
DRAWN:	DM /AG
CHECKED:	DM
REVIEW	9-11-18
FINAL:	10-1-18
REVISION	-

SCALE: PER PLAN

SHEET #
GN1

TABLE R404.1.2(1)

MINIMUM HORIZONTAL REINFORCEMENT FOR CONCRETE BASEMENT WALLS[a,b]

MAXIMUM UNSUPPORTED HEIGHT OF BASEMENT WALL (feet)	LOCATION OF HORIZONTAL REINFORCEMENT
≤ 8	One N. 4 bar within 12 inches of the top of the wall story and one No. 4 bar near mid-height of the wall story
> 8	One N. 4 bar within 12 inches of the top of the wall story and one one No. 4 bar near third points in the wall story

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square inch = 6.895 kPa.

a. Horizontal reinforcement requirements are for reinforcing bars with a minimum yield strength of 40,000 psi and concrete with a minimum concrete compressive strength 2,500 psi.
b. See Section R404.1.2.2 for minimum reinforcement required for foundation walls supporting above-grade concrete walls.

TABLE R404.1.2(8)

MINIMUM VERTICAL REINFORCEMENT FOR 6-, 8-, 10-, 12 INCH NOMINAL FLAT CONCRETE BASEMENT WALLS[a,b,c,d,e,f,g,h,i,j,k,l,m,n,o]

MAXIMUM WALL HEIGHT (feet)	MAXIMUM UNBALANCED BACKFILL HEIGHT[g] (feet)	MINIMUM VERTICAL REINFORCEMENT - BAR SIZE AND SPACING (INCHES)											
		Soil classes[c] and design lateral soil (psf per foot of depth)											
		GW, GP, SW, SP 30				GM, GC, SM, SM-SC and ML 45				SC, ML-CL and incorganic CL 60			
		Minimum nominal wall thickness (inches)											
		6	8	10	12	6	8	10	12	6	8	10	12
5	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
6	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5	NR	NR	NR	NR	NR	NR[l]	NR	NR	4 @ 35	NR[l]	NR	NR
	6	NR	NR	NR	NR	5 @ 48	NR	NR	NR	5 @ 36	NR	NR	NR
7	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5	NR	NR	NR	NR	NR	NR	NR	NR	5 @ 47	NR	NR	NR
	6	NR	NR	NR	NR	5 @ 42	NR	NR	NR	6 @ 43	5 @ 48	NR[l]	NR
	7	5 @ 46	NR	NR	NR	6 @ 42	5 @ 46	NR[l]	NR	6 @ 34	6 @ 48	NR	NR
8	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5	NR	NR	NR	NR	4 @ 38	NR[l]	NR	NR	5 @ 43	NR	NR	NR
	6	4 @ 37	NR[l]	NR	NR	5 @ 37	NR	NR	NR	6 @ 37	5 @ 43	NR[l]	NR
	7	5 @ 40	NR	NR	NR	6 @ 37	5 @ 41	NR[l]	NR	6 @ 34	6 @ 43	NR	NR
	8	6 @ 43	5 @ 47	NR[l]	NR	6 @ 34	6 @ 43	NR	NR	6 @ 27	6 @ 32	6 @ 44	NR
9	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5	NR	NR	NR	NR	4 @ 35	NR[l]	NR	NR	5 @ 40	NR	NR	NR
	6	4 @ 34	NR[l]	NR	NR	6 @ 48	NR	NR	NR	6 @ 36	6 @ 39	NR[l]	NR
	7	5 @ 36	NR	NR	NR	6 @ 34	5 @ 37	NR	NR	6 @ 33	6 @ 38	5 @ 37	NR[l]
	8	6 @ 38	5 @ 41	NR[l]	NR	6 @ 33	6 @ 38	5 @ 37	NR[l]	6 @ 24	6 @ 29	6 @ 39	4 @ 48[m]
	9	6 @ 34	6 @ 46	NR	NR	6 @ 26	6 @ 30	6 @ 41	NR	6 @ 19	6 @ 23	6 @ 30	6 @ 39
10	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5	NR	NR	NR	NR	4 @ 33	NR[l]	NR	NR	5 @ 38	NR	NR	NR
	6	5 @ 48	NR[l]	NR	NR	6 @ 45	NR	NR	NR	6 @ 34	5 @ 37	NR	NR
	7	6 @ 47	NR	NR	NR	6 @ 34	6 @ 48	NR	NR	6 @ 30	6 @ 35	6 @ 48	NR[l]
	8	6 @ 34	5 @ 38	NR	NR	6 @ 30	6 @ 34	6 @ 47	NR[l]	6 @ 22	6 @ 26	6 @ 35	6 @ 45[m]
	9	6 @ 34	6 @ 41	4 @ 48	NR[l]	6 @ 23	6 @ 27	6 @ 35	4 @ 48[m]	DR	6 @ 22	6 @ 27	6 @ 34
	10	6 @ 28	6 @ 33	6 @ 45	NR	DR[l]	6 @ 23	6 @ 29	6 @ 38	DR	6 @ 22	6 @ 22	6 @ 28

For SI:1 foot = 304.8 mm; 1 inch = 25.4 mm; 1 pound per square foot per foot = 0.1571 kPa²/m, 1 pound per square inch = 6.895 kPa/mm.

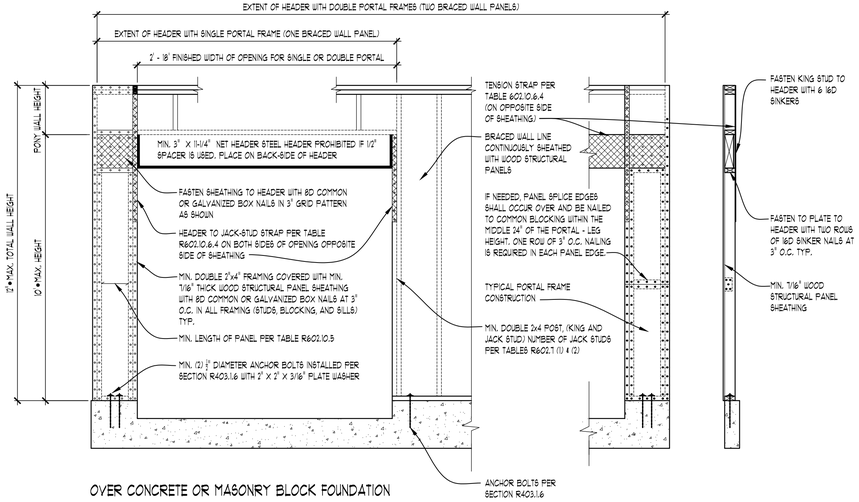
a. Soil classes are in accordance with the Unified Soil Classification System. Refer to Table R405.1.
b. Table values are based on reinforcing bars with a minimum yield strength of 60,000 psi.
c. Vertical reinforcement with a yield strength of less than 60,000 psi and/or bars of a different size than specified in the table are permitted in accordance with Section R404.1.2.3.7.6 and Table R404.1.2(9).
d. NR indicates no vertical reinforcement is required, except for 6-inch nominal walls formed with stay-in-place forming systems in which case vertical reinforcement shall be #4@48 inches on center.
e. Allowable deflection criterion is L/240, where L is the unsupported height of the basement wall in inches.
f. Interpolation is not permitted.
g. Where walls will retain 4 feet or more of unbalanced backfill, they shall be laterally supported at the top and bottom before backfilling.
h. Vertical reinforcement shall be located to provide a cover of 1.25 inches measured from the inside face of the wall. The center of the steel shall not vary form the specified location by more than the greater of 10 percent of the wall thickness or 3/8-inch.
i. Concrete cover for reinforcement measured from the inside face of the wall shall not be less than 3/4-inch. Concrete cover for reinforcement measure from the outside face of the wall shall not be less than 1 1/2 inches for No. 5 bars and smaller, and not less than 2 inches for larger bars.
j. DR means design is required in accordance with the applicable building code, or where there is no code in accordance with ACI 318.
k. Concrete shall have a specified compressive strength, f'_c, of not less than 2,500 psi at 28 days, unless a higher strength is required by footnote l or m.
l. The minimum thickness is permitted to be reduced 2 inches, provided the minimum specified compressive strength of concrete, f'_c, is 4,000 psi.
m. A plain concrete wall with a minimum nominal thickness of 12 inches is permitted, provided minimum specified compressive strength of concrete, f'_c is 3,500 psi.
n. See Table R608.3 for tolerance from nominal thickness permitted for flat walls.
o. The use of this table shall be prohibited for soil classifications not shown.

TABLE R602.10.6.4

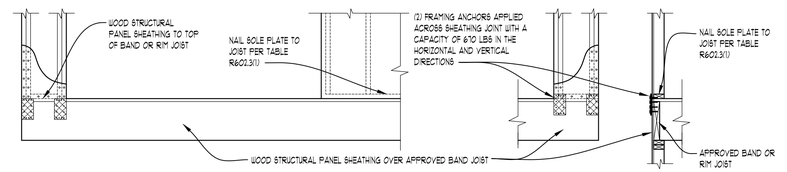
TENSION STRAP CAPACITY FOR RESISTING WIND PRESSURES PERPENDICULAR TO METHODS PFH, PFG AND CS-PF BRACED WALL PANELS

MINIMUM WALL STUD FRAMING NOMINAL SIZE AND GRADE	MAXIMUM PONY WALL HEIGHT (feet)	MAXIMUM TOTAL WALL HEIGHT (feet)	MAXIMUM OPENING WALL HEIGHT (feet)	TENSION STRAP CAPACITY REQUIRED (pounds)[a,b]					
				Ultimate Design Wind Speed V_{ult} (mph)					
				110	115	130	110	115	130
				Exposure B			Exposure C		
2 x 4 No. 2 Grade	0	10	18	1,000	1,000	1,000	1,000	1,000	1,050
	1	10	9	1,000	1,000	1,000	1,000	1,000	1,750
			16	1,000	1,025	2,050	2,075	2,500	3,950
			18	1,000	1,275	2,375	2,400	2,850	DR
	2	10	9	1,000	1,000	1,475	1,500	1,875	3,125
			16	1,775	2,175	3,525	3,550	4,125	DR
			18	2,075	2,500	3,950	3,975	DR	DR
	2	12	9	1,150	1,500	2,650	2,675	3,175	DR
			16	2,875	3,375	DR	DR	DR	DR
			18	3,425	3,975	DR	DR	DR	DR
	4	12	9	2,275	2,750	DR	DR	DR	DR
			12	3,225	3,775	DR	DR	DR	DR
2 x 6 Stud Grade	2	12	9	1,000	1,000	1,700	1,700	2,025	3,050
			16	1,825	2,150	3,225	3,225	3,675	DR
			18	2,200	2,550	3,725	3,750	DR	DR
	4	12	9	1,450	1,750	2,700	2,725	3,125	DR
			16	2,050	2,400	DR	DR	DR	DR
			18	3,350	3,800	DR	DR	DR	DR

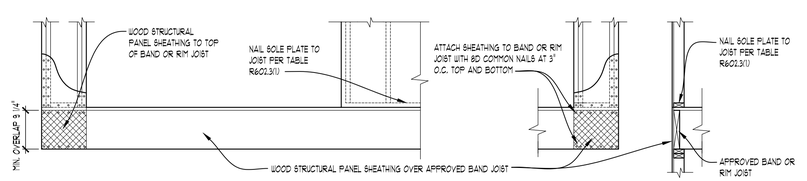
For SI: 1 inch = 25.4 mm, 1 mile per hour = 0.447 m/s.
a. DR = Design Required
b. Straps shall be installed in accordance with manufacturer's recommendations.



OVER CONCRETE OR MASONRY BLOCK FOUNDATION



OVER RAISED WOOD FLOOR - FRAMING ANCHOR OPTION
(WHERE PORTAL SHEATHING DOES NOT LAP OVER BAND OR RIM JOIST)



OVER RAISED WOOD FLOOR - OVERLAP OPTION
(WHERE PORTAL SHEATHING LAPS OVER BAND OR RIM BOARD)

FRONT ELEVATION SECTION

FIGURE R602.10.6.4
METHOD CS-PF: CONTINUOUSLY SHEATHED PORTAL FRAME PANEL CONSTRUCTION

FOR SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm NOT TO SCALE

TABLE R602.3.(5)

SIZE, HEIGHT AND SPACING OF WOOD STUDS a.

STUD SIZE (inches)	BEARING WALLS				NONBEARING WALLS	
	Laterally unsupported stud height 'a' (feet)	Maximum spacing when supporting roof-ceiling assembly or a habitable attic assembly, only (inches)	Maximum spacing when supporting a roof-ceiling assembly or a habitable attic assembly (inches)	Maximum spacing when supporting two floors, plus a roof-ceiling assembly or a habitable attic assembly (inches)	Maximum spacing when supporting one floor height 'a' (inches)	Laterally unsupported stud height 'a' (feet)	Maximum spacing (inches)
2x3 b	-	-	-	-	-	10	16
2x4	10	24 c	16 c	-	24	14	24
3x4	10	24	24	16	24	14	24
2x5	10	24	24	-	24	16	24
2x6	10	24	24	16	24	20	24

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

a. Listed heights are distances between points of lateral support placed perpendicular to the plan of the wall. Bearing walls shall be sheathed on not less than one side or bridging shall be installed not greater than 4 feet apart measured vertically from either end of the stud. Increases in unsupported height are permitted where in compliance with Exception 2 of Section R602.3.1 or designed in accordance with accepted engineering practice.
b. Shall not be used in exterior walls.
C. A habitable attic assembly supported by 2 x 4 studs is limited to a roof span of 32 feet. Where the roof span exceeds 32 feet, the wall studs shall be increased to 2 x 6 or the studs shall be designed in accordance with accepted engineering practice.

TABLE R703.8.3.1

ALLOWABLE SPANS FOR LINTELS SUPPORTING MASONRY VENEER a,b,c,d

SIZE OF STEEL ANGLE a,c,d (inches)	NO STORY ABOVE	ONE STORY ABOVE	TWO STORIES ABOVE	NO. OF 1/2" OR EQUIVALENT REINFORCING BARS b,d
3x3x1/4	6'-0"	4'-6"	3'-0"	1
4x3x1/4	8'-0"	6'-0"	4'-6"	1
5x3 1/2x5/16	10'-0"	8'-0"	6'-0"	2
6x3 1/2x5/16	14'-0"	9'-6"	7'-0"	2
2-6x3 1/2x5/16	20'-0"	12'-0"	9'-6"	4

a. Long leg of angle shall be placed in a vertical position.
b. Depth of reinforcing lintels shall not be less than 8 inches and all cells of hollow masonry lintels shall be grouted solid. Reinforcing bars shall extend not less than 8 inches into the support.
c. Steel members indicated are adequate typical examples; other steel members meeting structural design requirements shall be permitted to be used.
d. Either steel angle or reinforced lintel shall span opening.

TYPICAL CONVENTIONAL ROOF FRAMING

*** RIDGE BEAM SIZE WILL BE EQUAL TO THE RAFTER CUT EDGE ***

RAFTER SPANS	0'-0" - 4'-0"	4'-0" - 8'-0"	8'-0" - 12'-0"	12'-0" - 16'-0"
LUMBER SIZE	2x4	2x6	2x8	2x12

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CLIENT / PROJECT

KENSINGTON
FAMILY HOMES
AVA PLAN
GARAGE LEFT

JOB No.	WO 1428-18
DRAWN:	DM /AG
CHECKED:	DM
REVIEW	9-11-18
FINAL:	10-1-18
REVISION	-

SCALE:
PER PLAN

SHEET #
GN2

FOUNDATION NOTES

NOTE:

ALL FOOTINGS ARE DESIGNED FOR 3000 P.S.F. SOIL BRG. CAPACITY & 30 P.S.F. ROOF SNOW LOAD. FOR VARYING CONDITIONS REFER TO TABLE R403.1(1), R403.1(2) & R403.1(3) OF THE 2015 IRC.

1. ALL COLUMNS SHOWN SHALL BE 3" DIA. SCHEDULE 40 STANDARD STEEL PIPE COLUMN ON 30" X 30" X 18" DEEP CONC. FTG. TOP OF CONCRETE FTG. TO BE 4' BELOW FINISH BASEMENT SLAB. (TYPICAL UNLESS NOTED OTHERWISE)
2. WHERE STEEL BEAMS REST ON FOUNDATION WALLS, SIZE BEAM POCKET APPROPRIATELY AND SHIM AS REQUIRED.
3. AS REQUIRED DROP FOYER FLOOR SHEATHING 3/4" FOR MUDSET TILE INSTALLATION
4. VERIFY ALL UTILITY LOCATIONS W/ BUILDER.
5. PROVIDE GUARDRAIL AT STAIRS DURING CONSTRUCTION.
6. PROVIDE LADDERING UNDER ANY WALL RUNNING PARALLEL W/ JOIST THAT DOES NOT LAND DIRECTLY ON A JOIST
7. PROVIDE SQUASH BLOCKS UNDER ALL BEARING CONDITIONS.
8. GROUT SOLID @ BEARING CONDITIONS WHERE BLOCK IS USED.
9. PROVIDE 2" X 24" (MIN. R-10) RIGID PERIMETER INSULATION AT ALL BASEMENT SLABS THAT ARE LESS THAN 42" BELOW EXTERIOR FINISHED GRADE

NOTE:

PROVIDE MIN. (2) 2 X 4 HEADER AT ALL INTERIOR & EXTERIOR DOOR & WINDOW OPENINGS (UNLESS NOTED OTHERWISE).

NOTE:

PROVIDE MIN. (1) JACK STUD & (1) KING STUD AT EACH END OF ALL HEADERS (UNLESS NOTED OTHERWISE).

NOTE:

PROVIDE MIN. (1) JOIST OR LADDER FRAMING UNDER ALL UPPER FLOOR PARALLEL PARTITIONS

NOTE:

GROUT ALL CONCRETE BLOCK CORES SOLID THAT SUPPORT POINT LOADS FROM ABOVE (TYPICAL)

NOTE:

WOOD BEAM
STEEL BEAM

BRG. WALL
BRG. WALL ABOVE
BRG. WALL & BRG. WALL ABOVE

POINT LOAD
POINT LOAD FROM ABOVE

OPT. EGRESS WINDOW WELL DETAIL

SCALE: 1/4" = 1'-0"

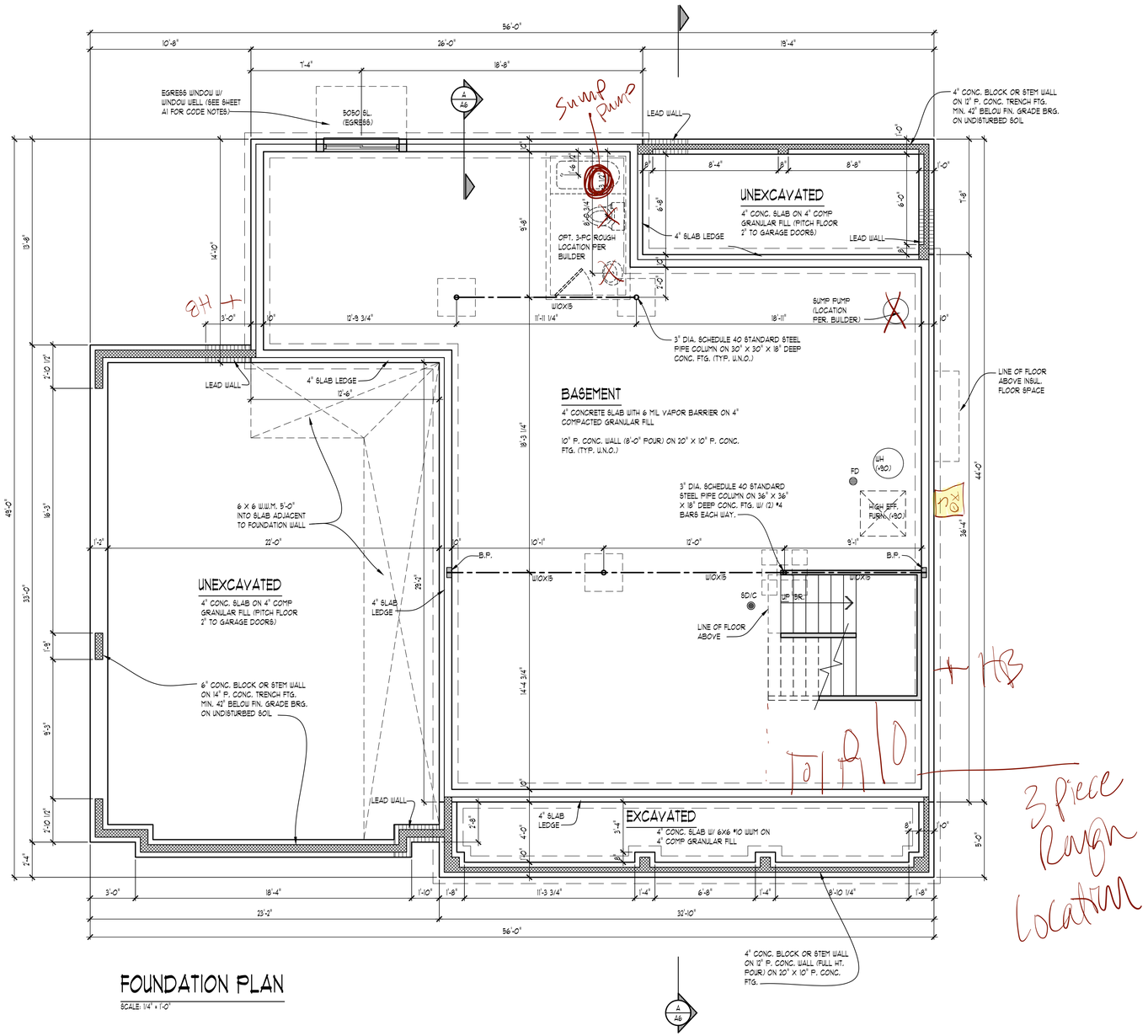
EGRESS WINDOW WELL

OPT. WINDOW WELL TO BE FILLED W/ PEA GRAVEL DOWN TO TOP OF HOUSE DRAIN TILE. TIE DRAIN INTO HOUSE DRAIN TILE FROM BOTTOM OF WINDOW WELL

RAILING OR METAL REMOVABLE GRATE & LADDER OVER TOP (AS CODE REQUIRES)

WINDOW WELLS WITH A DEPTH GREATER THAN 44" BELOW GRADE SHALL BE EQUIPPED WITH A PERMANENTLY AFFIXED LADDER OR STEPS USABLE WITH THE WINDOW IN THE FULLY OPEN POSITION.

WINDOW WELL SHALL HAVE HORIZONTAL DIMENSIONS THAT PROVIDE A MIN. NET CLEAR AREA OF 9 SQ. FT. WITH A MIN HORIZONTAL PROJECTION AND WIDTH OF 36".



FOUNDATION PLAN

SCALE: 1/4" = 1'-0"

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SCALE:
PER PLAN

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A1

NOTE:
PROVIDE MIN. (2) 2 X 4 HEADER AT ALL INTERIOR & EXTERIOR DOOR & WINDOW OPENINGS (UNLESS NOTED OTHERWISE).

NOTE:
PROVIDE MIN. (1) JACK STUD & (1) KING STUD AT EACH END OF ALL HEADERS (UNLESS NOTED OTHERWISE).

NOTE:
PROVIDE MIN. (1) JOIST OR LADDER FRAMING UNDER ALL UPPER FLOOR PARALLEL PARTITIONS

PLAN NOTES

INTERIOR WALLS:
1/2" GYPSUM WALL BOARD ON EACH SIDE OF 2x4 WOOD STUDS @ 16" O.C. 3 1/2" THICK TYPICAL (UNLESS NOTED OTHERWISE). ALL DIMENSION TAKEN FROM STUD EDGES

EXTERIOR WALLS:
SIDING AND/OR MASONRY WITH AIRSPACE, MOISTURE BARRIER PAPER (HOUSE WRAP) ON 7/16" O.S.B. SHEATHING ON 2X4 WOOD STUDS @ 16" O.C. OR AS NOTED, MIN. R-20 WALL CONSTRUCTION, 1/2" GYPSUM WALL BOARD (GLUE & SCREW). WALL TO BE 4" THICK WITH SIDING AND 8" THICK WITH MASONRY (TYPICAL UNLESS NOTED OTHERWISE). ALL DIMENSION TAKEN FROM FRAMING (FLOOR PLANS) OR FOUNDATION CORNERS (FOUNDATION PLAN)

1. OPENINGS BETWEEN THE GARAGE AND RESIDENCE SHALL BE EQUIPPED WITH 20-MINUTE FIRE RATED DOORS (OR EQUIVALENT PER 2015 MRC SECTION R302.5.1).
2. VENT ALL EXHAUST FANS TO EXTERIOR.
3. WHEN POSSIBLE DIRECT ALL FLUES AND VENTS THAT PENETRATE ROOF BEHIND MAIN RIDGE.
4. INSTALL WATER SUPPLY AND DRAIN BOX (GREY BOX) AT WASHING MACHINE LOCATION.
5. USE MOISTURE RESISTANT DRYWALL AT ALL AREAS SUSCEPTIBLE TO MOISTURE.
6. ALL FIRST FLOOR INTERIOR DOORS TO BE FRAMED 6'-8" TALL, ALL SECOND FLOOR INTERIOR DOORS TO BE FRAMED 6'-8" UNLESS NOTED OTHERWISE. VERIFY W/ BUILDER
7. PROVIDE GUARDRAIL AT STAIRS DURING CONSTRUCTION.
8. PROVIDE SQUASH BLOCKS UNDER ALL BEARING CONDITIONS.
9. GARAGE WALLS TO BE 2X6 STUDS IF OVER 10'-0" TALL.

NOTE:
S.D. ⊙
SD/C ◉

ALL SMOKE & CARBON MONOXIDE DETECTORS INTERCONNECTED W/ BATTERY BACK-UP PER CODE.

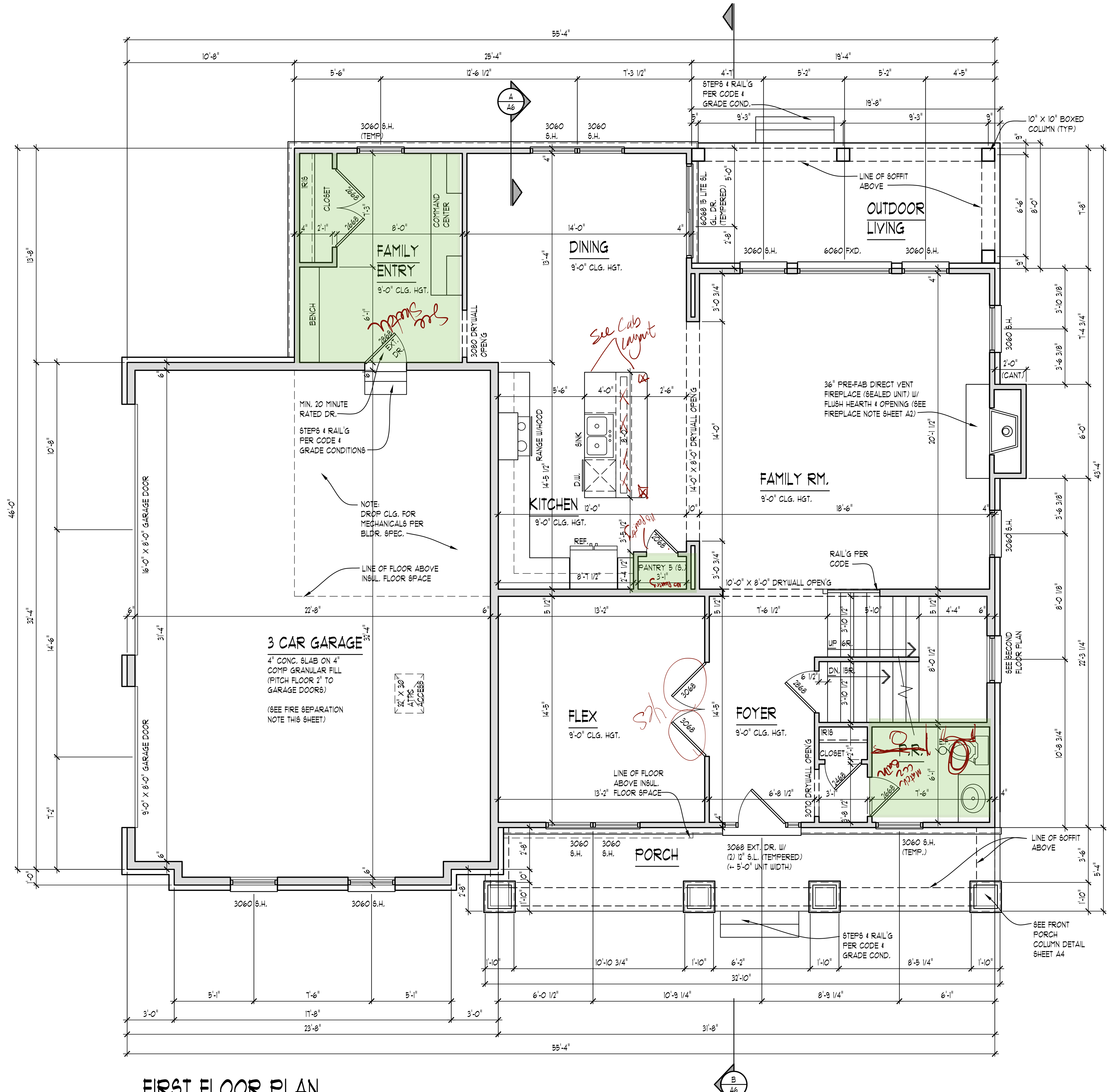
NOTE:
DOOR & WINDOW LOCATIONS:

ALL DOORS & WINDOWS ARE ASSUMED TO BE EITHER IN THE CENTER OF THE WALL MASS OR MIN. 4 INCHES FROM PERPENDICULAR WALL FOR CASING UNLESS NOTED OTHERWISE

NOTE:
VERIFY DROPPED FLOOR AREAS FOR TILE WITH BUILDER

FIREPLACE NOTE
ALL FIREPLACE DIMENSIONS & ROUGH OPENINGS TO BE VERIFIED W/ MANUFACTURER SPECS INCLUDING BUT NOT LIMITED TO WIDTH, DEPTH, HEIGHT, CHIMNEY CLEARANCES, ETC. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL SPECS TO CARPENTER PRIOR TO FRAMING

FIRE SEPARATION NOTE
FIRE SEPARATION (R302.6)
GARAGE SPACE BENEATH HABITABLE ROOMS SHALL BE SEPARATED FROM ALL HABITABLE ROOMS ABOVE BY NOT LESS THAN 5/8-INCH TYPE X GYPSUM BOARD OR EQUIVALENT. WHERE THE SEPARATION IS A FLOOR-CEILING ASSEMBLY, THE STRUCTURE SUPPORTING THE SEPARATION SHALL ALSO BE PROTECTED BY NOT LESS THAN 1/2-INCH GYPSUM BOARD OR EQUIVALENT. ALL OTHER GARAGE SPACE SHALL BE SEPARATED FROM THE RESIDENCE AND ITS ATTIC AREA BY NOT LESS THAN 1/2-INCH GYPSUM BOARD APPLIED TO THE GARAGE SIDE. DROP CLG. UNDER FLR. ABV. (ENCLOSE MECHANICAL AND STRUCTURAL ELEMENTS) VERIFY W/ BLDR.



FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"

AREA SUMMARY:
OVERALL FLOOR AREA:	
FIRST FLOOR	1478 S.F.
SECOND FLOOR	1671 S.F.
TOTAL AREA	3149 S.F.

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CLIENT / PROJECT
KENSINGTON FAMILY HOMES
AVA PLAN
GARAGE LEFT

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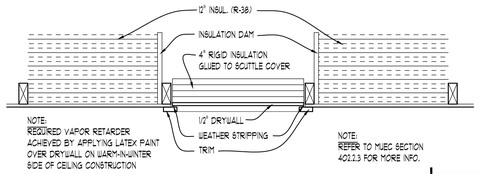
SCALE:
PER PLAN

SHEET #
A2



NOTE:
REQUIRED VAPOR RETARDER ACHIEVED BY APPLYING LATEX PAINT OVER DRYWALL ON WARM-WINTER SIDE OF CEILING CONSTRUCTION

NOTE:
REFER TO MUEC SECTION 402.2.3 FOR MORE INFO.

ATTIC ACCESS DETAIL

SCALE: 1" = 1'-0"

NOTE:
PROVIDE MIN. (2) 2 X 4 HEADER AT ALL INTERIOR & EXTERIOR DOOR & WINDOW OPENINGS (UNLESS NOTED OTHERWISE).

NOTE:
PROVIDE MIN. (1) JACK STUD & (1) KING STUD AT EACH END OF ALL HEADERS (UNLESS NOTED OTHERWISE).

NOTE:
PROVIDE MIN. (1) JOIST OR LADDER FRAMING UNDER ALL UPPER FLOOR PARALLEL PARTITIONS

PLAN NOTES

INTERIOR WALLS:
1/2" GYPSUM WALL BOARD ON EACH SIDE OF 2x4 WOOD STUDS @ 16" O.C. 3 1/2" THICK TYPICAL (UNLESS NOTED OTHERWISE). ALL DIMENSION TAKEN FROM STUD EDGES

EXTERIOR WALLS:
SIDING AND/OR MASONRY WITH AIRSPACE, MOISTURE BARRIER PAPER (HOUSE WRAP) ON 7/16" O.S.B. SHEATHING ON 2X4 WOOD STUDS @ 16" O.C. OR AS NOTED, MIN. R-20 WALL CONSTRUCTION, 1/2" GYPSUM WALL BOARD (GLUE & SCREW). WALL TO BE 4" THICK WITH SIDING AND 8" THICK WITH MASONRY (TYPICAL UNLESS NOTED OTHERWISE). ALL DIMENSION TAKEN FROM FRAMING (FLOOR PLANS) OR FOUNDATION CORNERS (FOUNDATION PLAN)

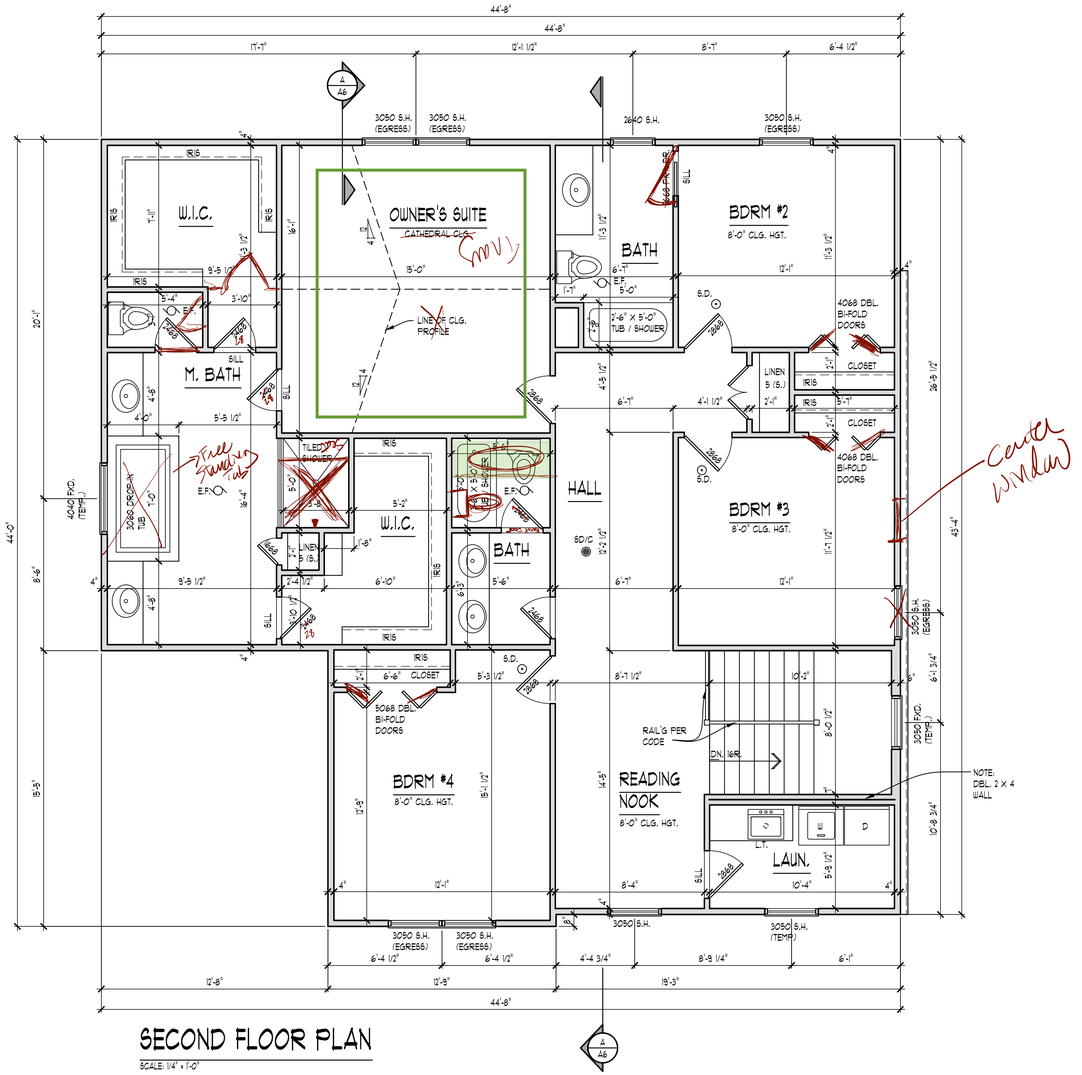
1. OPENINGS BETWEEN THE GARAGE AND RESIDENCE SHALL BE EQUIPPED WITH 20-MINUTE FIRE RATED DOORS (OR EQUIVALENT PER 2015 YRC SECTION R302.5.1).
2. VENT ALL EXHAUST FANS TO EXTERIOR.
3. WHEN POSSIBLE DIRECT ALL FLUES AND VENTS THAT PENETRATE ROOF BEHIND MAIN RIDGE.
4. INSTALL WATER SUPPLY AND DRAIN BOX (GREY BOX) AT WASHING MACHINE LOCATION.
5. USE MOISTURE RESISTANT DRYWALL AT ALL AREAS SUSCEPTIBLE TO MOISTURE.
6. ALL FIRST FLOOR INTERIOR DOORS TO BE FRAMED 6'-8" TALL, ALL SECOND FLOOR INTERIOR DOORS TO BE FRAMED 6'-8" UNLESS NOTED OTHERWISE. VERIFY W/ BUILDER
7. PROVIDE GUARDRAIL AT STAIRS DURING CONSTRUCTION.
8. PROVIDE SQUASH BLOCKS UNDER ALL BEARING CONDITIONS.
9. GARAGE WALLS TO BE 2X6 STUDS IF OVER 10'-0" TALL.

NOTE: S.D. ⊙ S.D/C ◉
ALL SMOKE & CARBON MONOXIDE DETECTORS INTERCONNECTED W/ BATTERY BACK-UP PER CODE.

NOTE:
DOOR & WINDOW LOCATIONS:

ALL DOORS & WINDOWS ARE ASSUMED TO BE EITHER IN THE CENTER OF THE WALL MASS OR MIN. 4 INCHES FROM PERPENDICULAR WALL FOR CASING UNLESS NOTED OTHERWISE

NOTE:
VERIFY DROPPED FLOOR AREAS FOR TILE WITH BUILDER



SECOND FLOOR PLAN

SCALE: 1/4" = 1'-0"

AREA SUMMARY:

OVERALL FLOOR AREA:	
FIRST FLOOR	1478 S.F.
SECOND FLOOR	1671 S.F.
TOTAL AREA	3149 S.F.

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CLIENT / PROJECT

KENSINGTON
FAMILY HOMES
AVA PLAN
GARAGE LEFT

JOB No.	WO 1428-18
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REVIEW	9-11-18
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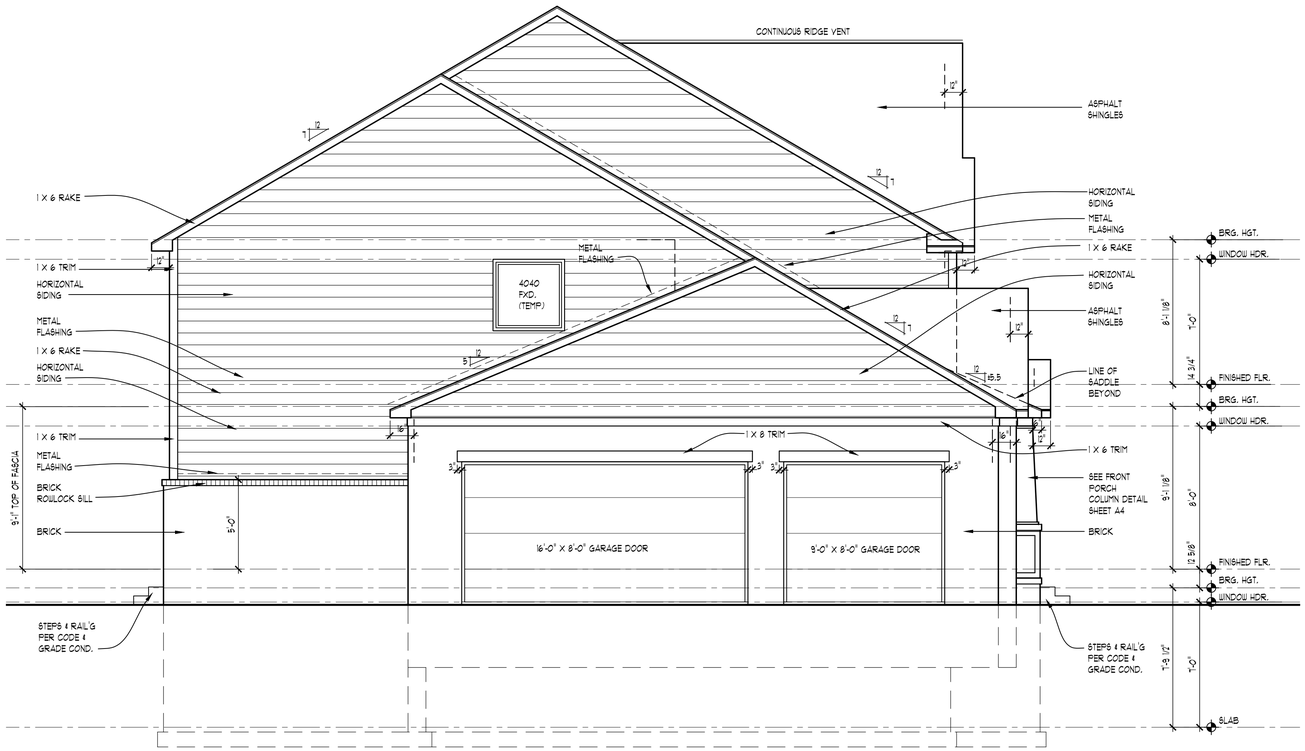
REVISION	-

SCALE:
PER PLAN

SHEET #
A3



LEFT ELEVATION

SCALE: 1/4" = 1'-0"

ELEVATION NOTES

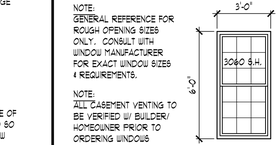
1. ALL ROOF SADDLES TO BE PLYWOOD SHEATHED WITH ICE & WATER SHIELD AND SHINGLES.
2. PROVIDE ICE & WATER SHIELD MIN. 6'-0" COVERAGE AT ALL VALLEYS
3. FIREPLACE FLUE TO BE DETERMINED PER MANUFACTURER'S SPECIFICATION
4. METAL FLASHING AS REQUIRED BY CODE.
5. ROOF & SOFFIT VENTS AS REQUIRED BY CODE.
6. PROVIDE GUTTERS & DOWNSPOUTS FOR DRAINAGE OF ROOF WATER. DOWNSPOUTS ARE TO BE LOCATED SO THAT THE DISCHARGE WILL NOT SPILL ON OR FLOW ACROSS ANY PORCHES, WALKS OR DRIVES.
7. CARPENTER TO VERIFY THICKNESS OF MASONRY PRIOR TO BUILDING BRICK RACK

TYPICAL WINDOW DESIGNATION

NOTE:
GENERAL REFERENCE FOR ROUGH OPENING SIZES ONLY. CONSULT WITH WINDOW MANUFACTURER FOR EXACT WINDOW SIZES & REQUIREMENTS.

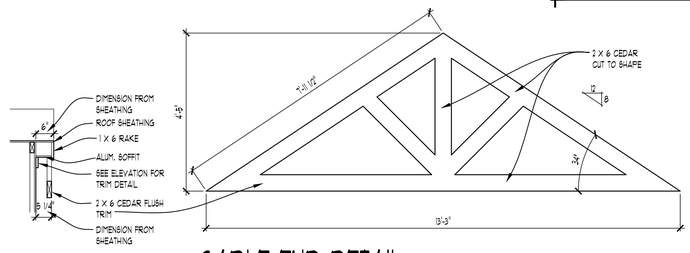
NOTE:
ALL "CASEMENT VENTING TO BE VERIFIED W/ BUILDER/ HOMEOWNER PRIOR TO ORDERING WINDOWS

NOTE:
WINDOW MANUFACTURER TO VERIFY ALL WINDOW GRID PATTERNS WITH HOME OWNER.



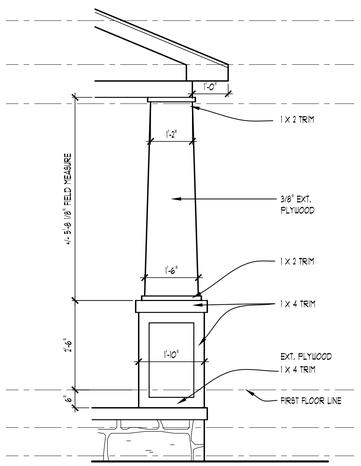
NOTE:
OVERHANG DIMENSIONS (O.H.) ARE FROM SHEATHING U.N.O.

NOTE:
ALL WINDOW SILLS OVER 6'-0" ABOVE EXTERIOR GRADE OR SURFACE BELOW TO BE MINIMUM 24" ABOVE FINISHED FLOOR OR HAVE SASH LIMITERS PER CODE REQUIRMENTS



GABLE END DETAIL

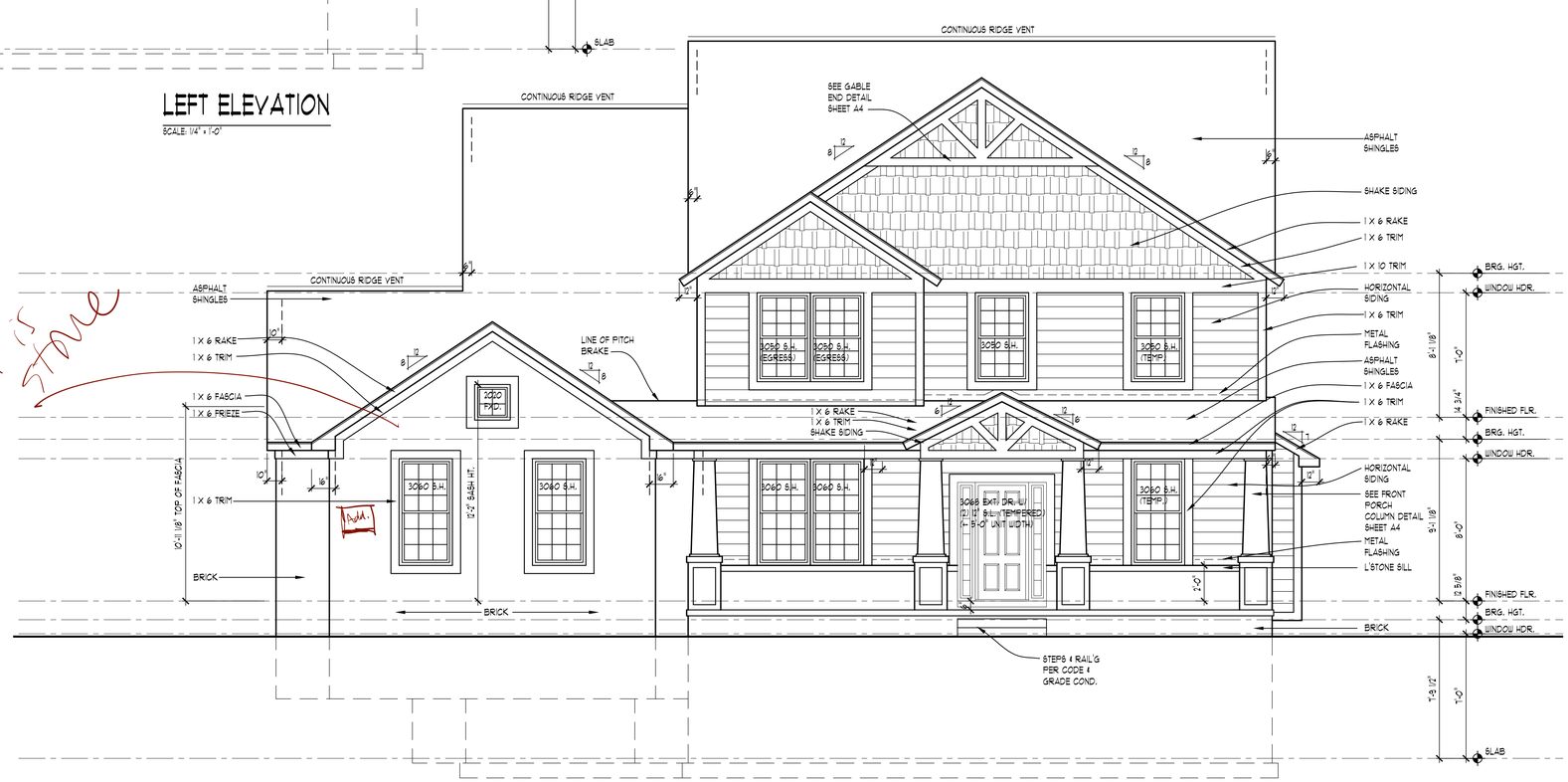
SCALE: 1/2" = 1'-0"



SECTION

FRONT PORCH COLUMN DETAIL

SCALE: 1/2" = 1'-0"



Front is stone

FRONT ELEVATION

SCALE: 1/4" = 1'-0"

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CLIENT / PROJECT

KENSINGTON
FAMILY HOMES
AVA PLAN
GARAGE LEFT

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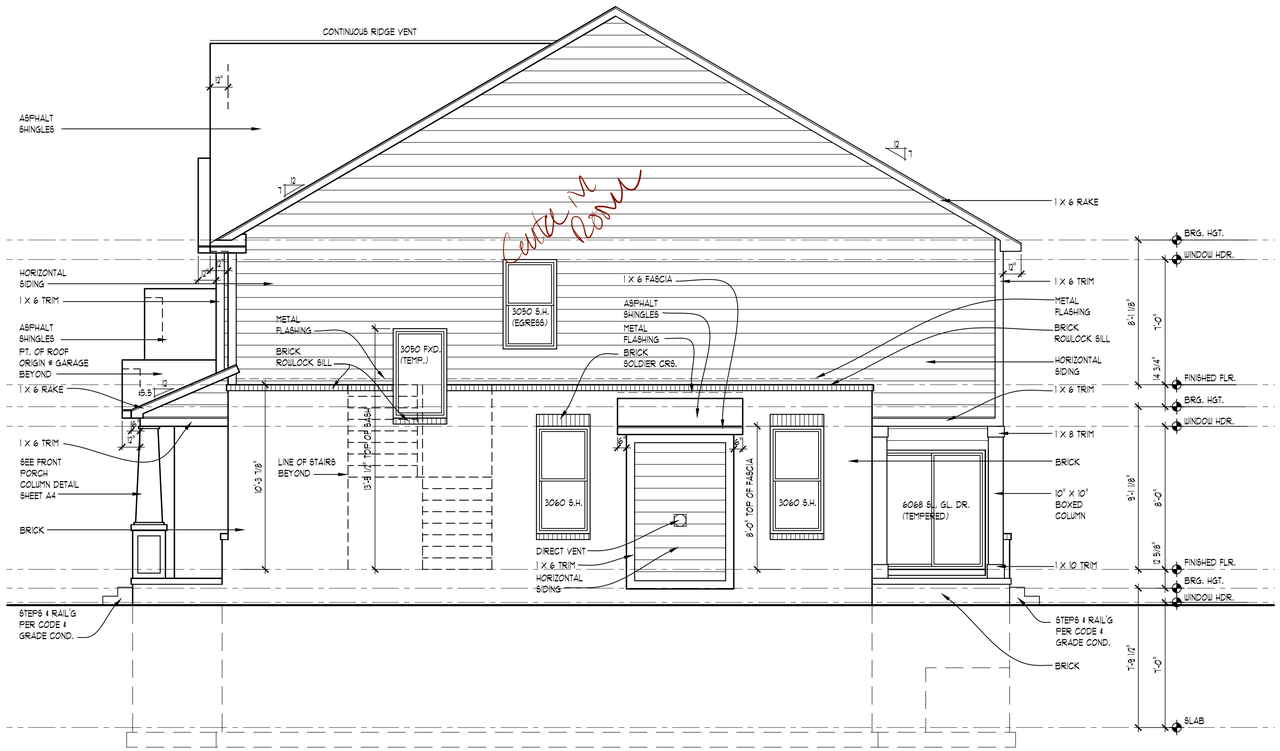
SCALE:
PER PLAN

SHEET #
A4



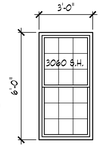
RIGHT ELEVATION

SCALE: 1/4" = 1'-0"

ELEVATION NOTES

1. ALL ROOF SADDLES TO BE PLYWOOD SHEATHED WITH ICE & WATER SHIELD AND SHINGLES.
2. PROVIDE ICE & WATER SHIELD MIN. 6'-0" COVERAGE AT ALL VALLEYS
3. FIREPLACE FLUE TO BE DETERMINED PER MANUFACTURER'S SPECIFICATION
4. METAL FLASHING AS REQUIRED BY CODE.
5. ROOF & SOFFIT VENTS AS REQUIRED BY CODE.
6. PROVIDE GUTTERS & DOWNSPOUTS FOR DRAINAGE OF ROOF WATER. DOWNSPOUTS ARE TO BE LOCATED SO THAT THE DISCHARGE WILL NOT SPILL ON OR FLOW ACROSS ANY PORCHES, WALKS OR DRIVES.
7. CARPENTER TO VERIFY THICKNESS OF MASONRY PRIOR TO BUILDING BRICK RACK

TYPICAL WINDOW DESIGNATION



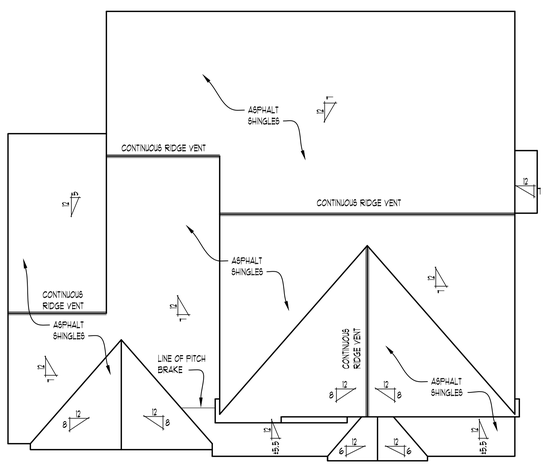
NOTE:
GENERAL REFERENCE FOR ROUGH OPENING SIZES ONLY. CONSULT WITH WINDOW MANUFACTURER FOR EXACT WINDOW SIZES & REQUIREMENTS.

NOTE:
ALL EASEMENT VENTING TO BE VERIFIED W/ BUILDER/ HOMEOWNER PRIOR TO ORDERING WINDOWS

NOTE:
WINDOW MANUFACTURER TO VERIFY ALL WINDOW GRID PATTERNS WITH HOME OWNER.

NOTE:
OVERHANG DIMENSIONS (O.H.) ARE FROM SHEATHING U.N.O.

NOTE:
ALL WINDOW SILLS OVER 6'-0" ABOVE EXTERIOR GRADE OR SURFACE BELOW TO BE MINIMUM 24" ABOVE FINISHED FLOOR OR HAVE SASH LIMITERS PER CODE REQUIRMENTS



ROOF PLAN

SCALE: 1/8" = 1'-0"

ATTIC VENTILATION CALCULATIONS:

AREA OF ATTIC OVER HEATED SPACE = 1665 SQ. FT.
1665/150 = 11.1 (SQ. FT. REQ'D)
11.1 X 144 = 1598" (SQ. INCH CONVERSION)
RIDGE VENTING:
1598" X 0.45 = 720" (SQ. INCHES REQ'D)
720" / 18 = 40' (LINEAR FT. OF RIDGE VENT REQ'D)
EAVE OR CORNICE VENTING:
1598" X 0.55 = 880" (SQ. INCHES REQ'D)

REAR ELEVATION

SCALE: 1/4" = 1'-0"

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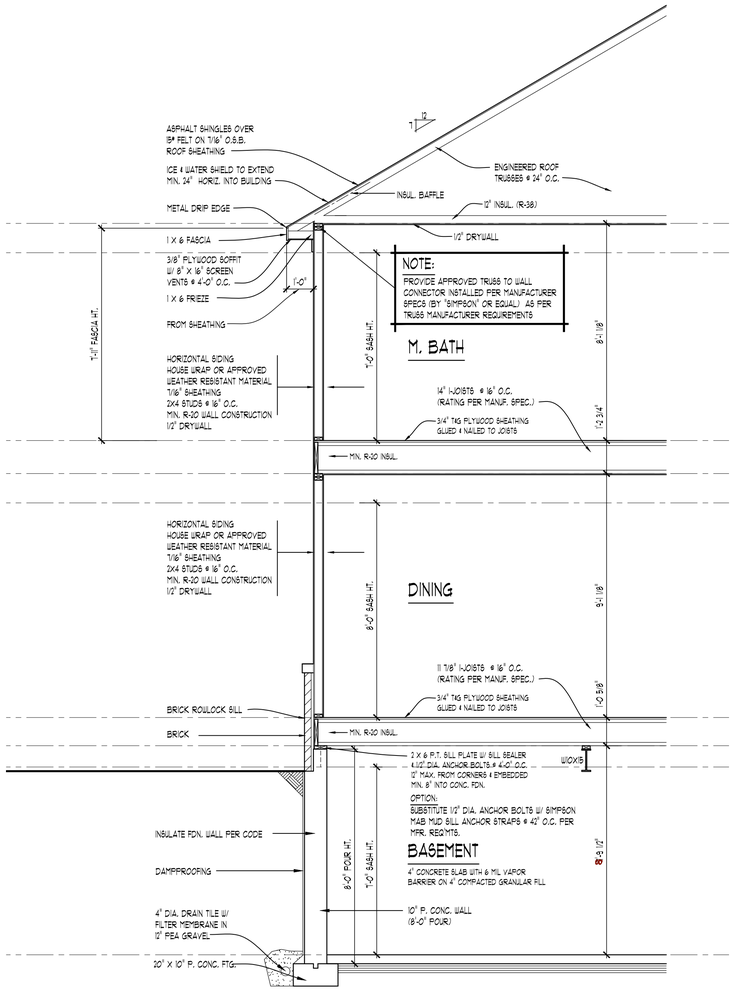
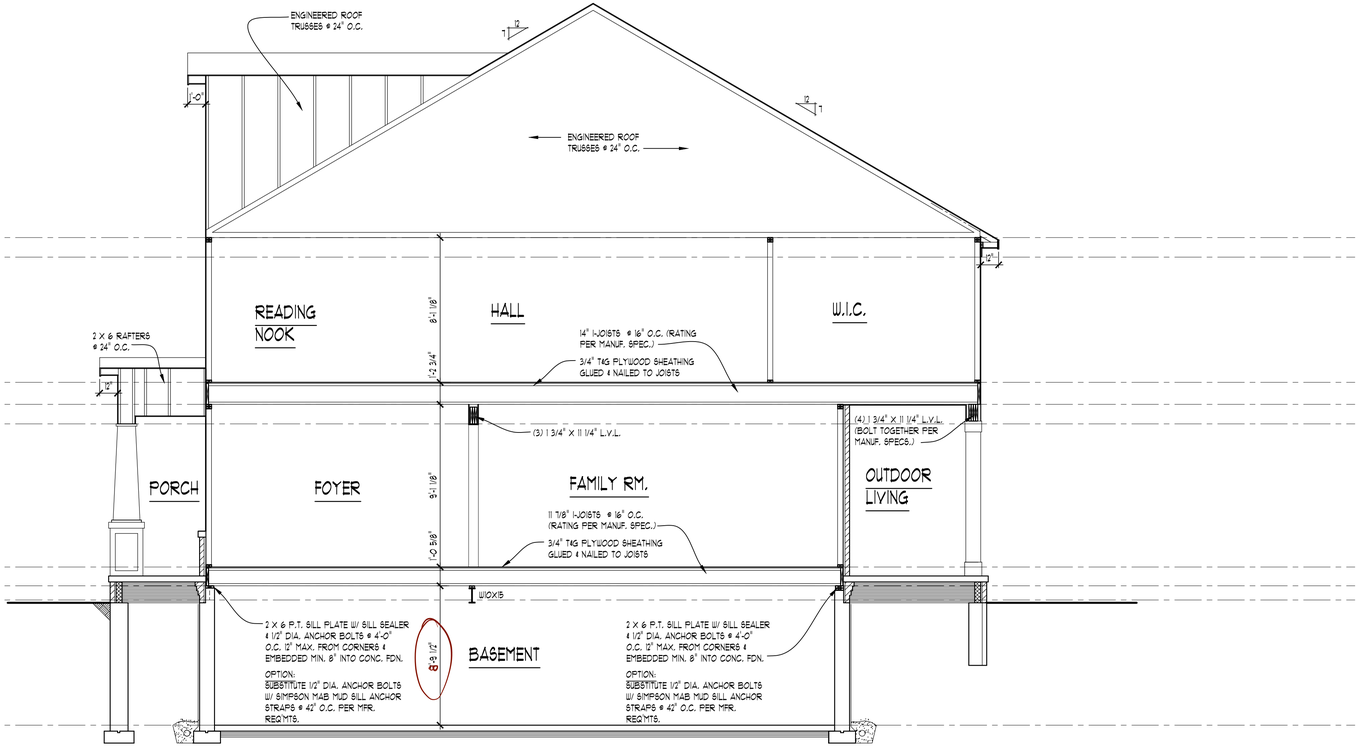
SHEET #
A5



WALL SECTION

SCALE: 3/8" = 1'-0"

A
A1-A3



BUILDING SECTION

SCALE: 1/4" = 1'-0"

B
A1-A3

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&
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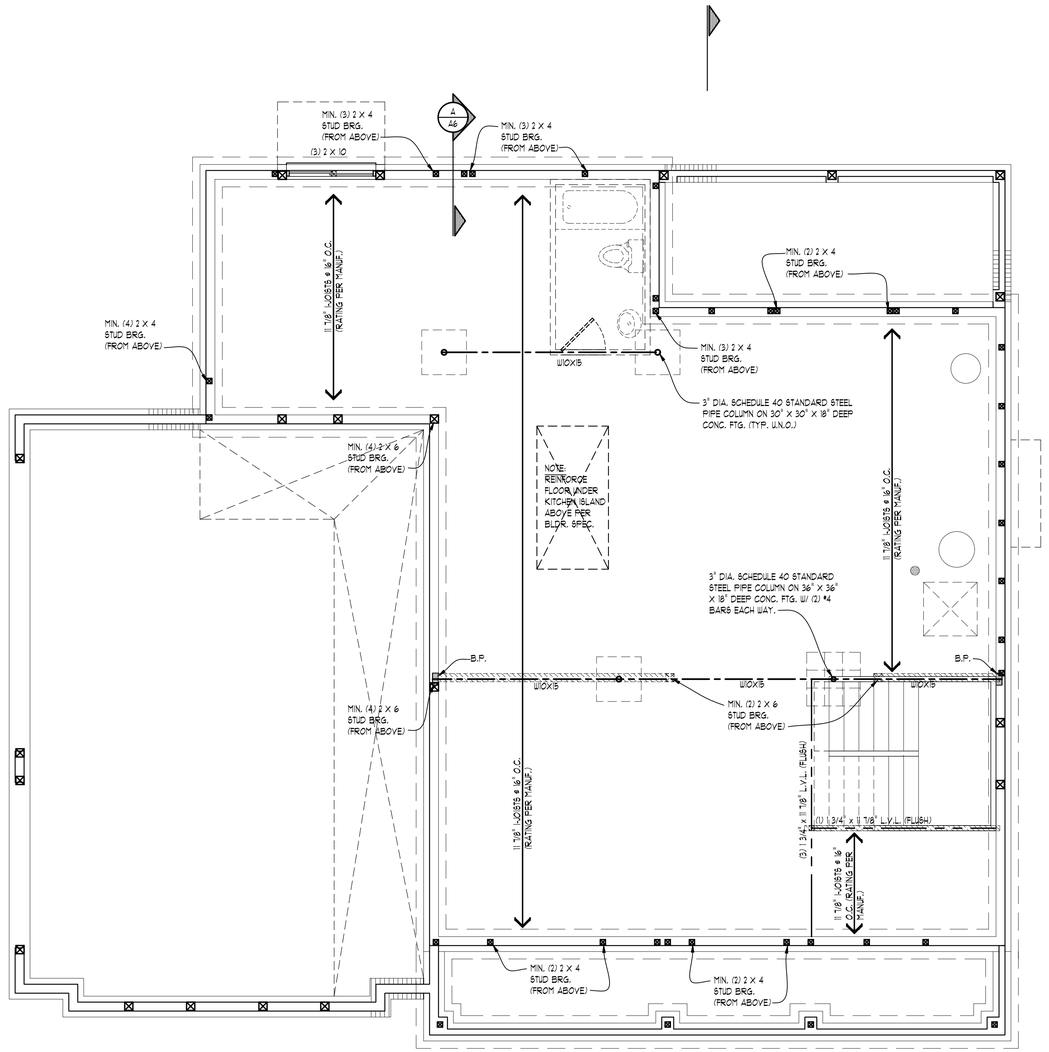

FOUNDATION PLAN STRUCTURE

SCALE: 1/4" = 1'-0"

NOTE:
PROVIDE MIN. (2) 2 X 4 HEADER AT ALL INTERIOR & EXTERIOR DOOR & WINDOW OPENINGS (UNLESS NOTED OTHERWISE).

NOTE:
PROVIDE MIN. (1) JACK STUD & (1) KING STUD AT EACH END OF ALL HEADERS (UNLESS NOTED OTHERWISE).

NOTE:
PROVIDE MIN. (1) JOIST OR LADDER FRAMING UNDER ALL UPPER FLOOR PARALLEL PARTITIONS

NOTE:
GROUT ALL CONCRETE BLOCK CORES SOLID THAT SUPPORT POINT LOADS FROM ABOVE (TYPICAL)

NOTE:

_____ WOOD BEAM

_____ STEEL BEAM

BRG. WALL

BRG. WALL ABOVE

BRG. WALL & BRG. WALL ABOVE

POINT LOAD

POINT LOAD FROM ABOVE

STRUCTURAL SHEATHING NOTES:

1. DESIGNED FOR SEISMIC ZONE A-C AND WIND SPEEDS OF 115 M.P.H. OR LESS
2. WALLS SHALL BE BRACED IN ACCORDANCE WITH SECTION R602.10 OF THE 2015 MRC CODE
3. BRACING REQUIREMENTS SHALL BE PER TABLE R602.10.1.3
4. EXTERIOR BRACED WALL PANELS (BWP) SHALL BE CONSTRUCTED IN ACCORDANCE WITH CS-WSP METHOD AS PRESCRIBED IN SECTION R602.10.4 (U.N.O.)
5. ALL SHEATHABLE SURFACES OF EXTERIOR WALLS (INCLUDING AREAS ABOVE AND BELOW OPENINGS AND GABLE END WALLS) SHALL BE CONTINUOUSLY SHEATHED WITH WOOD STRUCTURAL PANEL (WSP) SHEATHING WITH A MINIMUM THICKNESS OF 3/8". SHEATHING SHALL BE SECURED WITH MINIMUM 6d COMMON NAILS SPACED AT 6" O.C. AT PANEL EDGES AND SPACED AT 12" O.C. AT INTERMEDIATE SUPPORTS
6. LENGTH REQUIREMENTS FOR BRACED WALL PANELS WITH CS-WSP METHOD SHALL BE IN ACCORDANCE WITH TABLE R602.10.5

(1) PROVIDE 6D COMMON NAILS AT 6" O.C. SPACING AT PANEL EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS OR 16 GA. X 1 3/4" STAPLES AT 3" O.C. SPACING AT PANEL EDGES AND 6" SPACING AT INTERMEDIATE SUPPORTS.

(2) R403.1.6. WALLS 24" TOTAL LENGTH OR SHORTER CONNECTING OFFSET BRACED WALL PANELS SHALL BE ANCHORED TO THE FOUNDATION WITH A MINIMUM OF ONE ANCHOR BOLT LOCATED IN THE CENTER THIRD OF THE PLATE SECTION AND SHALL BE ATTACHED TO ADJACENT BRACED WALL PANELS AT CORNERS AS SHOWN IN ITEM 9 OF TABLE R602.3(1)

(3) SEE CONTINUOUS PORTAL FRAME PANEL CONSTRUCTION DETAIL (CS-PF) SHEET GN-2 FOR HEADER / CORNER FRAMING INFORMATION. HEADER PROVIDED MUST BE MINIMUM 3" X 11 1/4" SOLID SAWN OR LAMINATED VENEER LUMBER (L.V.L.)

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CLIENT / PROJECT

KENSINGTON
FAMILY HOMES
AVA PLAN
GARAGE LEFT

JOB No.	WO 1428-18
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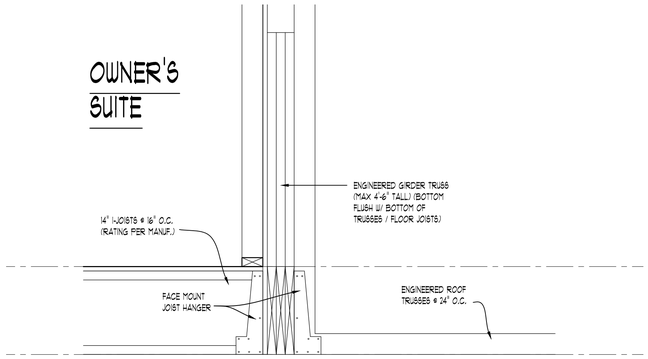
REVISION	-

SCALE:
PER PLAN

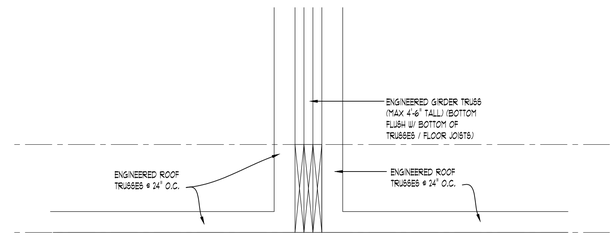
SHEET #
S1



FRAMING DETAIL

SCALE: 1" = 1'-0"

AA / S2



FRAMING DETAIL

SCALE: 1" = 1'-0"

BB / S2

NOTE:
PROVIDE MIN. (2) 2 X 4 HEADER AT ALL INTERIOR & EXTERIOR DOOR & WINDOW OPENINGS (UNLESS NOTED OTHERWISE).

NOTE:
PROVIDE MIN. (1) JACK STUD & (1) KING STUD AT EACH END OF ALL HEADERS (UNLESS NOTED OTHERWISE).

NOTE:
PROVIDE MIN. (1) JOIST OR LADDER FRAMING UNDER ALL UPPER FLOOR PARALLEL PARTITIONS

NOTE:
GROUT ALL CONCRETE BLOCK CORES SOLID THAT SUPPORT POINT LOADS FROM ABOVE (TYPICAL)

NOTE:
WOOD BEAM
STEEL BEAM
BRG. WALL
BRG. WALL ABOVE
BRG. WALL & BRG. WALL ABOVE
POINT LOAD
POINT LOAD FROM ABOVE

STRUCTURAL SHEATHING NOTES:
1. DESIGNED FOR SEISMIC ZONE A-C AND WIND SPEEDS OF 115 M.P.H. OR LESS
2. WALLS SHALL BE BRACED IN ACCORDANCE WITH SECTION R602.10 OF THE 2015 MRC CODE
3. BRACING REQUIREMENTS SHALL BE PER TABLE R602.10.1.3
4. EXTERIOR BRACED WALL PANELS (BWP) SHALL BE CONSTRUCTED IN ACCORDANCE WITH CS-WSP METHOD AS PRESCRIBED IN SECTION R602.10.4 (U.N.O.)
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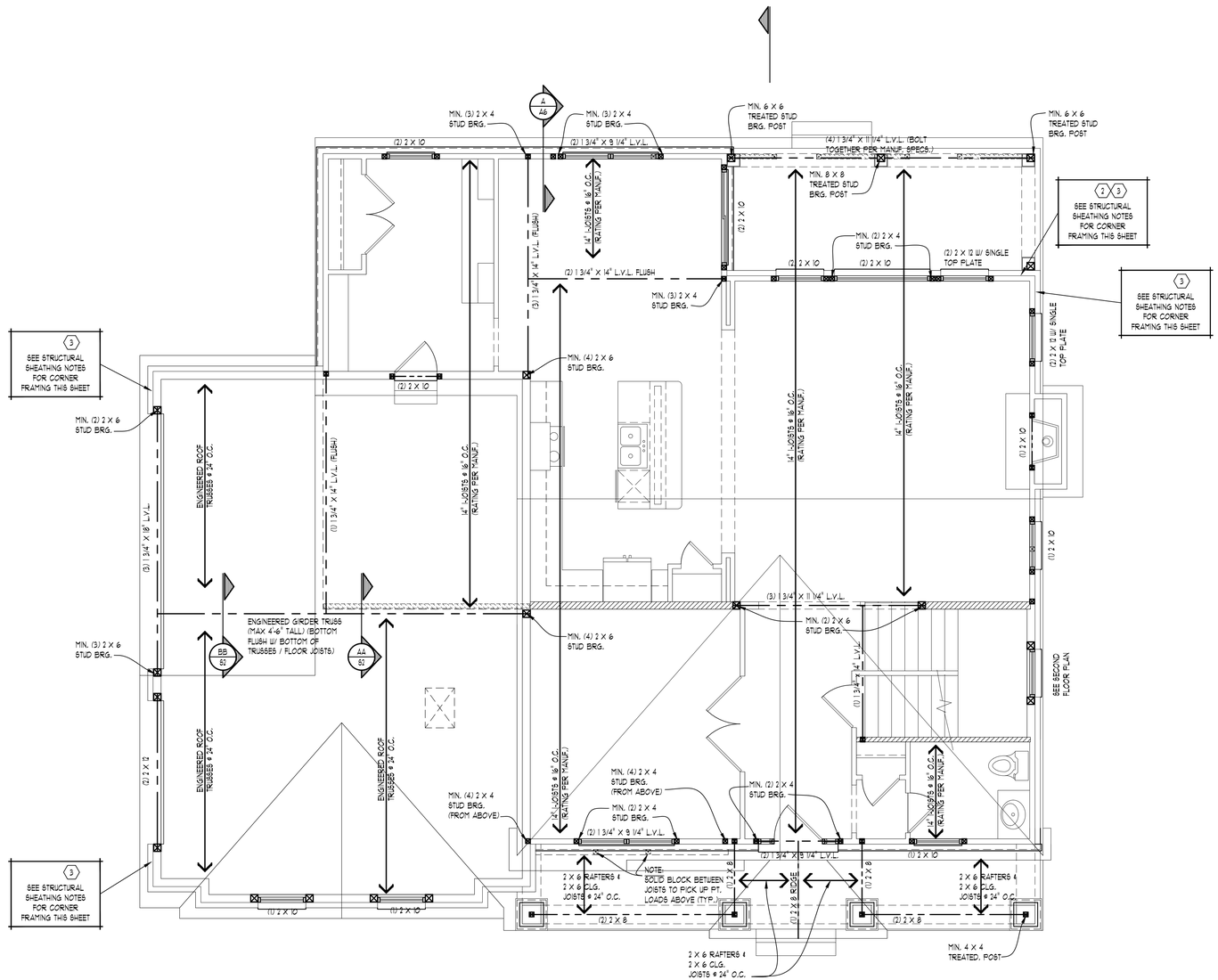

FIRST FLOOR PLAN STRUCTURE

SCALE: 1/4" = 1'-0"

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CLIENT / PROJECT

KENSINGTON FAMILY HOMES
AVA PLAN
GARAGE LEFT

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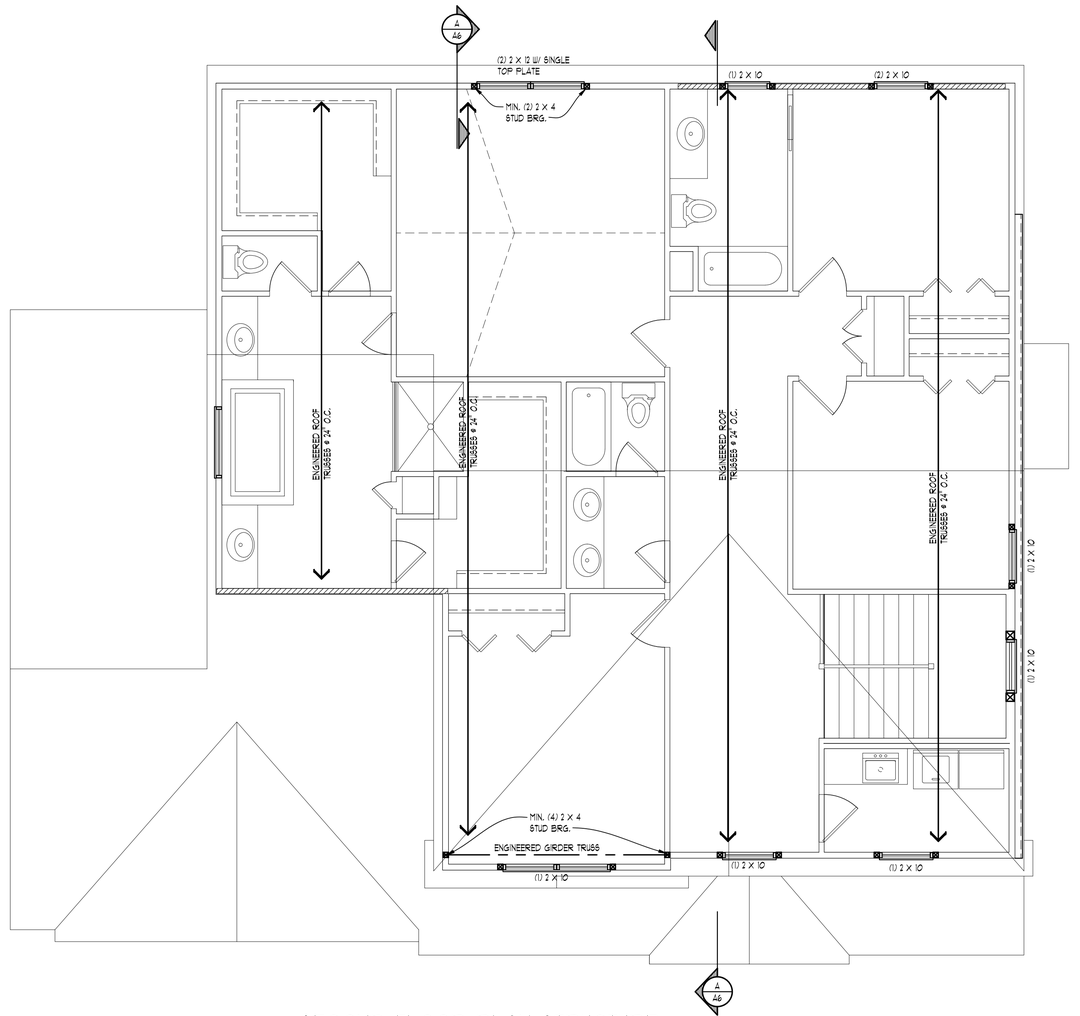
S2



SECOND FLOOR PLAN STRUCTURE

SCALE: 1/4" = 1'-0"

NOTE:
PROVIDE MIN. (2) 2 X 4 HEADER AT ALL INTERIOR & EXTERIOR DOOR & WINDOW OPENINGS (UNLESS NOTED OTHERWISE).

NOTE:
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NOTE:
PROVIDE MIN. (1) JOIST OR LADDER FRAMING UNDER ALL UPPER FLOOR PARALLEL PARTITIONS

NOTE:
GROUT ALL CONCRETE BLOCK CORES SOLID THAT SUPPORT POINT LOADS FROM ABOVE (TYPICAL)

NOTE:
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BRG. WALL
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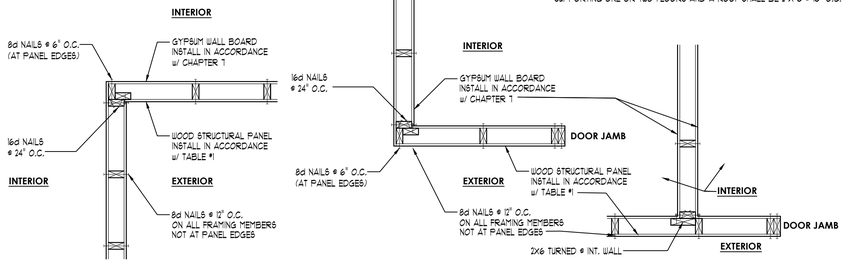
S3

LENGTH REQUIREMENTS FOR BRACED WALL PANELS IN A CONTINUOUSLY SHEATHED WALL TABLE #1				
LENGTH OF BRACED WALL PANEL (INCHES)				MAXIMUM OPENING HEIGHT NEXT TO BRACED WALL PANEL (% OF WALL HEIGHT)
8-FOOT WALL	9-FOOT WALL	10-FOOT WALL	12-FOOT WALL**	
48*	54*	60*	72*	100%
32*	36*	40*	48*	85%
24*	27*	30*	36*	65%

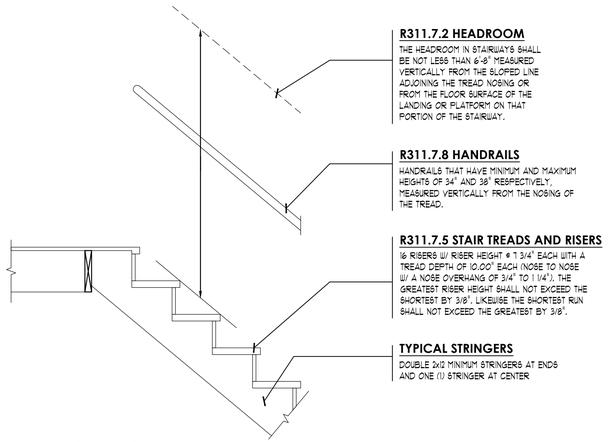
*THESE VALUES CAN BE REDUCED BY 50% IF SHEATHING IS PROVIDED ON INTERIOR AND EXTERIOR
**12 FOOT TALL STUDS SUPPORTING ONLY A ROOF MAY BE 2 X 4 @ 16" O.C. 12 FOOT TALL STUDS SUPPORTING ONE OR TWO FLOORS AND A ROOF SHALL BE 2 X 6 @ 16" O.C.



(B) INSIDE CORNER DETAIL (A) OUTSIDE CORNER DETAIL (C)INTERSECTION OF INTERIOR AND EXTERIOR WALLS

WALL BRACING DETAIL

NO SCALE



R311.7.2 HEADROOM
THE HEADROOM IN STAIRWAYS SHALL BE NOT LESS THAN 6'-8" MEASURED VERTICALLY FROM THE SLOPED LINE ADJOINING THE TREAD NOSING OR FROM THE FLOOR SURFACE OF THE LANDING OR PLATFORM ON THAT PORTION OF THE STAIRWAY.

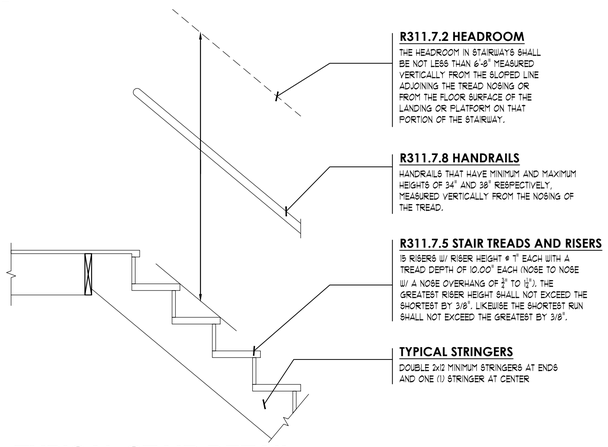
R311.7.8 HANDRAILS
HANDRAILS THAT HAVE MINIMUM AND MAXIMUM HEIGHTS OF 34" AND 38" RESPECTIVELY, MEASURED VERTICALLY FROM THE NOSING OF THE TREAD.

R311.7.5 STAIR TREADS AND RISERS
16 RISERS W/ RISER HEIGHT @ 7 3/4" EACH WITH A TREAD DEPTH OF 10.00" EACH (NOSE TO NOSE W/ A NOSE OVERHANG OF 3/4" TO 1 1/4"). THE GREATEST RISER HEIGHT SHALL NOT EXCEED THE SHORTEST BY 3/8". LIKEWISE THE SHORTEST RUN SHALL NOT EXCEED THE GREATEST BY 3/8".

TYPICAL STRINGERS
DOUBLE 2x12 MINIMUM STRINGERS AT ENDS AND ONE (1) STRINGER AT CENTER

TYPICAL STAIR DETAIL FIRST FLOOR TO SECOND FLOOR

SCALE: 3/4" = 1'-0"



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R311.7.8 HANDRAILS
HANDRAILS THAT HAVE MINIMUM AND MAXIMUM HEIGHTS OF 34" AND 38" RESPECTIVELY, MEASURED VERTICALLY FROM THE NOSING OF THE TREAD.

R311.7.5 STAIR TREADS AND RISERS
15 RISERS W/ RISER HEIGHT @ 7" EACH WITH A TREAD DEPTH OF 10.00" EACH (NOSE TO NOSE W/ A NOSE OVERHANG OF 3/4" TO 1 1/4"). THE GREATEST RISER HEIGHT SHALL NOT EXCEED THE SHORTEST BY 3/8". LIKEWISE THE SHORTEST RUN SHALL NOT EXCEED THE GREATEST BY 3/8".

TYPICAL STRINGERS
DOUBLE 2x12 MINIMUM STRINGERS AT ENDS AND ONE (1) STRINGER AT CENTER

TYPICAL STAIR DETAIL BASEMENT TO FIRST FLOOR

SCALE: 3/4" = 1'-0"

GENERAL NOTES

WOOD TRUSS SPECIFICATIONS

1. Designs shall conform with the latest versions of (NDS), "National Design Specification for Wood Construction" by the American Forest & Paper Association, and Design Standard for Metal Plate Connected Wood Truss Construction by the American Standard (ANSI) and the Truss Plate Institute (T.P.I.) and the local code jurisdiction.
2. Trusses shall be spaced as indicated on the plans unless the designer determines that different spacing is required to meet deflection requirements.
3. Maximum deflection of floor trusses shall be limited to l/360 for total load and l/480 for live load. Maximum deflection of roof trusses shall be limited to l/240 for total loads and l/360 for live load u.n.o.
4. Adequate camber shall be built into floor and parallel chord roof trusses to compensate for normal dead load deflection.
5. Design loads:

FLOOR JOIST LOADING CRITERIA

FIRST FLOOR LOADING:
LIVE LOAD 40 P.S.F.
DEAD LOAD 15 P.S.F.
TOTAL LOAD 55 P.S.F.
LIVE LOAD DEFLECTION L/480
TOTAL LOAD DEFLECTION L/240

SECOND FLOOR LOADING:
LIVE LOAD 40 P.S.F.
DEAD LOAD 10 P.S.F.
TOTAL LOAD 50 P.S.F.
LIVE LOAD DEFLECTION L/480
TOTAL LOAD DEFLECTION L/240

FLOOR W/CERAMIC TILE/MARBLE:
LIVE LOAD 40 P.S.F.
DEAD LOAD 25 P.S.F.
TOTAL LOAD 65 P.S.F.
LIVE LOAD DEFLECTION L/720
TOTAL LOAD DEFLECTION L/360

EXT. DECK JOIST LOADING CRITERIA

DECK LOADING:
LIVE LOAD 30 P.S.F.
DEAD LOAD 10 P.S.F.
TOTAL LOAD 60 P.S.F.
LIVE LOAD DEFLECTION L/360
TOTAL LOAD DEFLECTION L/240

ROOF TRUSS LOADING CRITERIA

TOP CHORD LIVE LOAD 20 P.S.F.
DEAD LOAD 7 P.S.F.

BOTT. CHORD LIVE LOAD 10 P.S.F.
(UNINHABITABLE ATTICS W/OUT STORAGE)

LIVE LOAD 20 P.S.F.
(UNINHABITABLE ATTICS WITH STORAGE)

DEAD LOAD 10 P.S.F.
WIND LOAD 115 MPH OR AS REQUIRED BY CODE

CONC. DECK JOIST LOADING CRITERIA

DECK LOADING:
LIVE LOAD 30 P.S.F.
DEAD LOAD 50 P.S.F.
TOTAL LOAD 100 P.S.F.
LIVE LOAD DEFLECTION L/360
TOTAL LOAD DEFLECTION L/240

- A 15% increase on allowable stresses for short term loading is allowed. Drift loading shall be accounted for per the current "Michigan Residential Code" requirements.
- Add additional attic storage live loads per the current "Michigan Residential Code" requirements.
- Tile, marble, or other special features shall be designed using the appropriate dead loads and deflection limitations. Partition loads shall also be considered where appropriate.
- All conventional framed floor decks shall be 2 x 10 #2 or 2 x 12 #2 Douglas Fir or better.

HANDLING AND ERECTION SPECIFICATIONS

1. Trusses are to be handled with particular care during fabrication, bundling, loading, delivery, unloading and installation in order to avoid damage and weakening of the trusses.
2. Temporary and permanent bracing for holding the trusses in a straight and plumb position is always required and shall be designed and installed by the erecting contractor. Temporary bracing during installation, includes cross bracing between the trusses to prevent toppling or "dominoing" of the trusses.
3. Permanent bracing shall be installed in accordance with the latest of the "National Design Standard", as published by the American Forest & Paper Association and H.I.B.-91 and D.S.B.-89 as published by the truss plate institute. Permanent bracing consists of lateral and diagonal bracing not to exceed spacing requirements of the truss fabricator. Top chords of trusses must be continuously braced by roof sheathing unless otherwise note on the truss shop drawings. Bottom chords must be braced at intervals not to exceed 10' o.c. or as noted on the truss fabricators drawings.
4. Construction loads greater than the design loads of the trusses shall not be applied to the trusses at any time.
5. No loads shall be applied to the truss until all fastening and required bracing is installed.
6. The supervision of the truss erecting shall be under the direct control of persons(s) experienced in the installation and proper bracing of wood trusses.
7. Field modification or cutting of pre-engineered roof trusses is strictly prohibited without expressed prior written consent and details from a licensed professional structural engineer experienced in wood truss design and modifications.

SOIL REQUIREMENTS & EARTH WORK AND CONCRETE

1. All top soil, organic and vegetative material should be removed prior to construction. Any required fill shall be clean, granular material compacted to at least 95% of maximun dry density as determined by ASTM D-1557.
2. Foundations bearing on existing soils have been designed for a minimum allowable soil bearing capacity of 3000 psf, u.n.o.
3. Notify the engineer/architect if the allowable soil bearing capacity is less than 3000 psf so that the foundations can be redesigned for the new allowable bearing capacity.

1. R404.1.7 Backfill placement.
Backfill shall not be placed against the wall until the wall has sufficient strength and has been anchored to the floor above or has been sufficiently braced to prevent damage by the backfill.

R506.2.1. Fill.
Fill material shall be free of vegetation and foreign material. The fill shall be compacted to assure uniform support of the slab and, except where approved, the fill depths shall not exceed 24 inches for clean sand or gravel and 8 inches for earth.

R506.2.3 Vapor retarder.
A 6 mil polyethylene or approved vapor retarder with joints lapped not less than 6 inches shall be placed between the concrete floor slab and the base course or the prepared subgrade where no base course exists.

1. Concrete work shall conform to the requirements of ACI 301-96, "Specifications for Structural Concrete for Buildings", except as modified as supplemental requirements.
2. Concrete shall have a minimun of 3000 psi, 28 day compressive strength, unless noted otherwise, (4 sacks) & a watercement ratio not to exceed 6 gallons per sack). Exterior concrete slabs shall have a minimun of 4000 psi, 28 day compressive strength, & 4½% air entrainment.
3. The use of additives such as fly ash or calcium chloride is not allowed without prior review from the architect.

R405.1 Concrete or masonry foundations.
Drains shall be provided around all concrete or masonry foundations that retain earth and enclose habitable or usable spaces located below grade. Drainage tiles, gravel or crushed stone drains, perforated pipe or other approved systems or materials shall be installed at or below the area to be protected and shall discharge by gravity or mechanical means into an approved drainage system. Gravel or crushed stone drains shall extend at least 1 foot beyond the outside edge of the footing and 6 inches above the top of the footing and be covered with an approved filter membrane material. The top of open joints of drain tiles shall be protected with strips of building paper, and the drainage tiles or perforated pipe shall be placed on a minimun of 2 inches of washed gravel or crushed rock at least one sieve size larger than the tile joint opening or perforation and covered with not less than 6 inches of the same material.
Exception:
A drainage system is not required when the foundation is installed on well-drained ground or sand-gravel mixture soils according to the Unified Soil

STRUCTURAL STEEL SPECIFICATIONS

1. Structural steel shapes, plates, bars, etc. are to be ASTM A-36 (unless noted other wise) designed and constructed per the 1989 AISC "Specifications For The Design, Fabrication, And Erection Of Steel For Buildings", and the latest edition of the AISC "Manual Of Steel Construction".
2. Steel columns shall be ASTM A-501, Fy36 KSI. Structural tubing shall be ASTM A500, grade B, Fy46 KSI.
3. Welds shall conform with the latest AWS D1.1 "Specifications For Welding In Building Construction", And shall utilize E70XX electrodes unless noted otherwise.
4. Bolted connections shall utilize ASTM A-325 bolts tightened to a "snug fit" condition (unless noted otherwise).

REINFORCING STEEL SPECIFICATIONS

1. Reinforcing bars, dowels and ties shall conform to ASTM-615 grade 60 requirements and shall be free of rust, dirt, and mud.
2. Welded wire fabric shall conform to ASTM A-185 and be positioned at the mid height of slabs U.N.O.
3. Reinforcing shall be placed and securely tied in place sufficiently ahead of placing of concrete to allow inspection and correction, if necessary without delaying the concrete placement.
4. Extend reinforcing bars a minimun of 36" around corners and lap bars at splices a minimun of 24" U.N.O.
5. Welding of reinforcing steel is not allowed.

STAIRWAYS AND HANDRAILS

R311.7.1 Width.
Stairways shall not be less than 36 inches (914 mm) in clear width at all points above the permitted handrail height and below the required headroom height. Handrails shall not projects more than 4.5 inches (114 mm) on either side of the stairway and the minimun clear width of the stairway at and below the handrail height, including treads and landings, shall not be less than 31/2 (787 mm) where a handrail is installed on one side and 27 inches (698 mm) where handrails are provided on both sides.
Exception: The width of spiral stairways shall be in accordance with Section R311.7.10.1.

R311.7.8 Handrails.
Handrails shall be provided on at least one side of each continuous run of treads or flight with four or more risers.

R311.7.8.1 Height.
Handrail height, measured vertically from the sloped plane adjoining the tread nosing, or finish surface of ramp slope, shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm).

Exceptions:
1. The use of a volute, turnout or starting easing shall be allowed over the lowest tread.
2. When handrail fittings or bendings are used to provide continuous transition between flights, the transition from handrail to guardrail, or used at the start of a flight, the handrail height at the fittings or bendings shall be permitted to exceed the maximun height.

SMOKE ALARMS

R314.3 Smoke Alarms
Smoke alarms shall be installed in the following locations:
1. In each sleeping room.
2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.
3. On each additional story of the dwelling, including basements and habitable attics but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

When more than one smoke alarm is required to be installed within an individual dwelling unit the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit.

CARBON MONOXIDE DETECTOR

A Carbon monoxide device shall be located in the vicinity of the bedrooms, which may include 1 device capable of detecting carbon monoxide near all adjacent bedrooms: In areas within the dwelling adjacent to an attached garage, and in areas adjacent to any fuel-burning appliances. Carbon Monoxide Detectors shall not be placed within fifteen feet of fuel-burning heating or cooking appliances such as gas stoves, furnaces, or fireplaces, or in or near very humid areas such as bathrooms.

FLASHING AND WEEPHOLES

R703.8.5 Flashing.
Flashing shall be located beneath the first course of masonry above finished ground level above the foundation wall or slab and at other points of support, including structural floors, shelf angles and lintels when masonry veneers are designed in accordance with Section R703.7. See Section R703.8 for additional requirements.

R703.8.6 Weepholes.
Weepholes shall be provided in the outside wythe of masonry walls at a maximun spacing of 33 inches (838 mm) on center. Weepholes shall not be less than 3/16 inch (5 mm) in diameter. Weepholes shall be located immediately above the flashing.

R703.4 Flashing.
Approved corrosion-resistant flashing shall be applied shingle-fashion in a manner to prevent entry of water into the wall cavity or penetration of water to the building structural framing components. Self-adhered membranes used as flashing shall comply with AAMA 711. The flashing shall extend to the surface of the exterior wall finish. Approved corrosion- resistant flashings shall be installed at all of the following locations:

1. Exterior window and door openings. Flashing at exterior window and door openings shall extend to the surface of the exterior wall finish or to the water-resistive barrier for subsequent drainage.
2. At the intersection of chimneys or other masonry construction with frame or stucco walls, with projecting lips on both sides under stucco copings.
3. Under and at the ends of masonry, wood or metal copings and sills.
4. Continuously above all projecting wood trim.
5. Where exterior porches, decks or stairs attach to a wall or floor assembly of wood-frame construction.
6. At wall and roof intersections. I.T. At built-in gutters.

FIREPLACES

R1001.10 Hearth extension dimensions.
Hearth extensions shall extend at least 16 inches (406 mmIn front of and at least 8 inches (203 mm) beyond each side of the fireplace opening.) or larger, 2 Where the fireplace opening is 6 square feet (0.6 m the hearth extension shall extend at least 20 inches (508 mm) in front of and at least 12 inches (305 mm) beyond each side of the fireplace opening.

EGRESS WINDOW REQUIREMENTS

- Min. net clear opening of 5.7 sq. ft. (second floor bedrooms)
- Min. net clear opening of 5.0 sq. ft. (first floor bedrooms only)
- Min. net clear opening ht. of 24 inches
- Min. net clear opening width of 20 inches
- Max. sill ht. above finish floor of 44 inches

AREAS THAT REQUIRE SAFETY GLAZING

R308.4 Hazardous locations.
The locations specified in Sections R308.4.1 through R308.4.7 shall be considered to be specific hazards for the purposes of glazing.

R308.4.1 Glazing in doors.
Glazing in fixed and operable panels of swinging, sliding and bifold doors considered to be a hazardous location.

Exceptions:
1. Glazed openings of a size through which a 3-inch diameter (76 mm) sphere is unable to pass.
2. Decorative glazing.

R308.4.2 Glazing adjacent to doors.
Glazing in an individual fixed or operable panel adjacent to a door shall be considered to be a hazardous location where the bottom exposed edge of the glazing is less than 60 inches (1524 mm) above the floor or walking surface and it meets either of the following conditions:

1. Where the glazing is within 24 inches (610 mm) of either side of the door in the plane of the door in a closed position.
2. Where the glazing is on a wall perpendicular to the plane of the door in a closed position and within 24 inches (610 mm) of the hinge side of an in-swinging door.

Exceptions:
1. Decorative glazing.
2. Where there is an intervening wall or other permanent barrier between the door and the glazing.
3. Where access through the door is to a closet or storage area 3 feet (914 mm) or less in depth. Glazing in this application shall comply with Section R308.4.3.
4. Glazing that is adjacent to the fixed panel of patio doors.

R308.4.3 Glazing in windows.
Glazing in an individual fixed or operable panel that meets all of the following conditions shall be considered to be a hazardous location:

1. The exposed area of an individual pane is larger than 9 square feet (0.836 m2)
2. The bottom edge of the glazing is less than 18 inches (457 mm) above the floor,
3. The top edge of the glazing is more than 36 inches (914 mm) above the floor; and
4. One or more walking surfaces are within 36 inches (914 mm), measured horizontally and in a straight line, of the glazing.

Exceptions:
1. Decorative glazing.
2. When a horizontal rail is installed on the accessible side(s) of the glazing 34 to 38 inches (864 to 965 mm) above the walking surface. The rail shall be capable of withstanding a horizontal load of 50 pounds per linear foot (730 N/m) without contacting the glass and be a minimun of 1-1/2 inches (38 mm) in cross sectional height.
3. Outboard panes in insulating glass units and other multiple glazed panels when the bottom edge of the glass is 25 feet (7620 mm) or more above grade, a roof, walking surfaces, or other horizontal (within 45 degrees (0.78 rad.) of horizontal) surface adjacent to the glass exterior.

R308.4.4 Glazing in guards and railings.
Glazing in guards and railings, including structural baluster panels and nonstructural in-fill panels, regardless of area or height above a walking surface shall be considered to be a hazardous location.

R308.4.5 Glazing and wet surfaces.
Glazing in walls, enclosures or fences containing or facing hot tubs, spas, whirlpools, saunas, steam rooms, bathtubs, showers and indoor swimming pools where the bottom exposed edge of the glazing is less than 60 inches (1524 mm) measured vertically above any standing or walking surface shall be considered to be a hazardous location. This shall apply to single glazing and each pane in multiple glazing.

Exceptions:
Glazing that is more than 60 inches (1524 mm), measured horizontally and in a straight line, from the water's edge of a bathtub, hot tub, spa, whirlpool or swimming pool or from the edge of a shower, sauna or steam room.

R308.4.6 Glazing adjacent to stairs and ramps.
Glazing where the bottom exposed edge of the glazing is less than 36 inches (914 mm) above the plane of the adjacent walking surface of stairways, landings between flights of stairs and ramps shall be considered to be a hazardous location.

Exceptions:
1. Where a rail is installed on the accessible side(s) of the glazing 34 to 38 inches (864 to 965 mm) above the walking surface. The rail shall be capable of withstanding a horizontal load of 50 pounds per linear foot (730 N/m) without contacting the glass and have a cross-sectional height of not less than 1 ½ inches (38 mm).
2. Glazing 36 inches (914 mm) or more measured horizontally from the walking surface.

R308.4.7 Glazing adjacent to the bottom stair landing.
Glazing adjacent to the landing at the bottom of a stairway where the glazing is less than 36 inches (914 mm) above the landing and within a 60-inch (1524 mm) horizontal arc less than 180 degrees from the bottom tread nosing shall be considered to be a hazardous location.
Exception:
The glazing is protected by a guard complying with Section R312 and the place of the glass is more than 18 inches (457 mm) from the ground.

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SCALE: PER PLAN

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TABLE R404.1.2(1)

MINIMUM HORIZONTAL REINFORCEMENT FOR CONCRETE BASEMENT WALLS[a,b]

MAXIMUM UNSUPPORTED HEIGHT OF BASEMENT WALL (feet)	LOCATION OF HORIZONTAL REINFORCEMENT
≤ 8	One N. 4 bar within 12 inches of the top of the wall story and one No. 4 bar near mid-height of the wall story
> 8	One N. 4 bar within 12 inches of the top of the wall story and one one No. 4 bar near third points in the wall story

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square inch = 6.895 kPa.

a. Horizontal reinforcement requirements are for reinforcing bars with a minimum yield strength of 40,000 psi and concrete with a minimum concrete compressive strength 2,500 psi.
b. See Section R404.1.2.2 for minimum reinforcement required for foundation walls supporting above-grade concrete walls.

TABLE R404.1.2(8)

MINIMUM VERTICAL REINFORCEMENT FOR 6-, 8-, 10-, 12 INCH NOMINAL FLAT CONCRETE BASEMENT WALLS[a,b,c,d,e,f,g,h,i,j,k,l,m,n,o]

MAXIMUM WALL HEIGHT (feet)	MAXIMUM UNBALANCED BACKFILL HEIGHT[g] (feet)	MINIMUM VERTICAL REINFORCEMENT - BAR SIZE AND SPACING (INCHES)											
		Soil classes[c] and design lateral soil (psf per foot of depth)											
		GW, GP, SW, SP 30				GM, GC, SM, SM-SC and ML 45				SC, ML-CL and incorganic CL 60			
		Minimum nominal wall thickness (inches)											
		6	8	10	12	6	8	10	12	6	8	10	12
5	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
6	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5	NR	NR	NR	NR	NR	NR[l]	NR	NR	4 @ 35	NR[l]	NR	NR
	6	NR	NR	NR	NR	5 @ 48	NR	NR	NR	5 @ 36	NR	NR	NR
7	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5	NR	NR	NR	NR	NR	NR	NR	NR	5 @ 47	NR	NR	NR
	6	NR	NR	NR	NR	5 @ 42	NR	NR	NR	6 @ 43	5 @ 48	NR[l]	NR
	7	5 @ 46	NR	NR	NR	6 @ 42	5 @ 46	NR[l]	NR	6 @ 34	6 @ 48	NR	NR
8	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5	NR	NR	NR	NR	4 @ 38	NR[l]	NR	NR	5 @ 43	NR	NR	NR
	6	4 @ 37	NR[l]	NR	NR	5 @ 37	NR	NR	NR	6 @ 37	5 @ 43	NR[l]	NR
	7	5 @ 40	NR	NR	NR	6 @ 37	5 @ 41	NR[l]	NR	6 @ 34	6 @ 43	NR	NR
	8	6 @ 43	5 @ 47	NR[l]	NR	6 @ 34	6 @ 43	NR	NR	6 @ 27	6 @ 32	6 @ 44	NR
9	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5	NR	NR	NR	NR	4 @ 35	NR[l]	NR	NR	5 @ 40	NR	NR	NR
	6	4 @ 34	NR[l]	NR	NR	6 @ 48	NR	NR	NR	6 @ 36	6 @ 39	NR[l]	NR
	7	5 @ 36	NR	NR	NR	6 @ 34	5 @ 37	NR	NR	6 @ 33	6 @ 38	5 @ 37	NR[l]
	8	6 @ 38	5 @ 41	NR[l]	NR	6 @ 33	6 @ 38	5 @ 37	NR[l]	6 @ 24	6 @ 29	6 @ 39	4 @ 48[m]
	9	6 @ 34	6 @ 46	NR	NR	6 @ 26	6 @ 30	6 @ 41	NR	6 @ 19	6 @ 23	6 @ 30	6 @ 39
10	4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5	NR	NR	NR	NR	4 @ 33	NR[l]	NR	NR	5 @ 38	NR	NR	NR
	6	5 @ 48	NR[l]	NR	NR	6 @ 45	NR	NR	NR	6 @ 34	5 @ 37	NR	NR
	7	6 @ 47	NR	NR	NR	6 @ 34	6 @ 48	NR	NR	6 @ 30	6 @ 35	6 @ 48	NR[l]
	8	6 @ 34	5 @ 38	NR	NR	6 @ 30	6 @ 34	6 @ 47	NR[l]	6 @ 22	6 @ 26	6 @ 35	6 @ 45[m]
	9	6 @ 34	6 @ 41	4 @ 48	NR[l]	6 @ 23	6 @ 27	6 @ 35	4 @ 48[m]	DR	6 @ 22	6 @ 27	6 @ 34
	10	6 @ 28	6 @ 33	6 @ 45	NR	DR[l]	6 @ 23	6 @ 29	6 @ 38	DR	6 @ 22	6 @ 22	6 @ 28

For SI:1 foot = 304.8 mm; 1 inch = 25.4 mm; 1 pound per square foot per foot = 0.1571 kPa²/m, 1 pound per square inch = 6.895 kPa/mm.

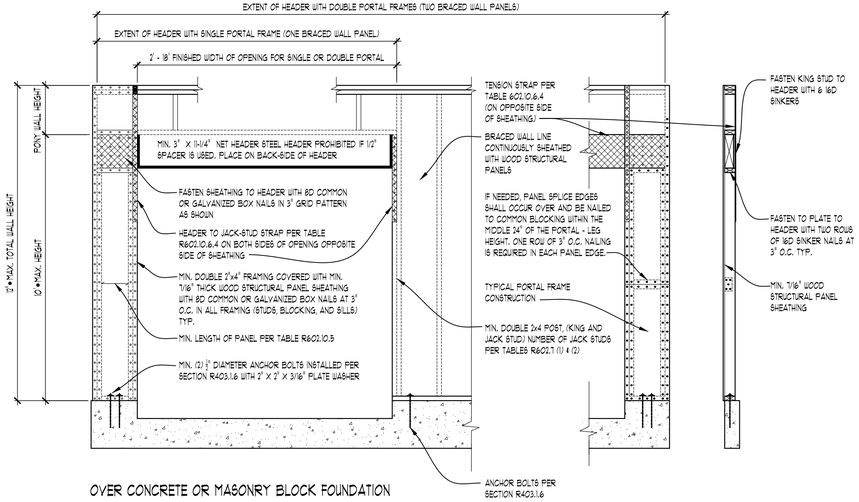
a. Soil classes are in accordance with the Unified Soil Classification System. Refer to Table R405.1.
b. Table values are based on reinforcing bars with a minimum yield strength of 60,000 psi.
c. Vertical reinforcement with a yield strength of less than 60,000 psi and/or bars of a different size than specified in the table are permitted in accordance with Section R404.1.2.3.7.6 and Table R404.1.2(9).
d. NR indicates no vertical reinforcement is required, except for 6-inch nominal walls formed with stay-in-place forming systems in which case vertical reinforcement shall be #4@48 inches on center.
e. Allowable deflection criterion is L/240, where L is the unsupported height of the basement wall in inches.
f. Interpolation is not permitted.
g. Where walls will retain 4 feet or more of unbalanced backfill, they shall be laterally supported at the top and bottom before backfilling.
h. Vertical reinforcement shall be located to provide a cover of 1.25 inches measured from the inside face of the wall. The center of the steel shall not vary form the specified location by more than the greater of 10 percent of the wall thickness or 3/8-inch.
i. Concrete cover for reinforcement measured from the inside face of the wall shall not be less than 3/4-inch. Concrete cover for reinforcement measure from the outside face of the wall shall not be less than 1 1/2 inches for No. 5 bars and smaller, and not less than 2 inches for larger bars.
j. DR means design is required in accordance with the applicable building code, or where there is no code in accordance with ACI 318.
k. Concrete shall have a specified compressive strength, f'_c, of not less than 2,500 psi at 28 days, unless a higher strength is required by footnote l or m.
l. The minimum thickness is permitted to be reduced 2 inches, provided the minimum specified compressive strength of concrete, f'_c, is 4,000 psi.
m. A plain concrete wall with a minimum nominal thickness of 12 inches is permitted, provided minimum specified compressive strength of concrete, f'_c is 3,500 psi.
n. See Table R608.3 for tolerance from nominal thickness permitted for flat walls.
o. The use of this table shall be prohibited for soil classifications not shown.

TABLE R602.10.6.4

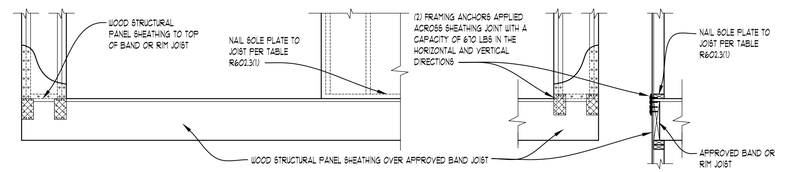
TENSION STRAP CAPACITY FOR RESISTING WIND PRESSURES PERPENDICULAR TO METHODS PFH, PFG AND CS-PF BRACED WALL PANELS

MINIMUM WALL STUD FRAMING NOMINAL SIZE AND GRADE	MAXIMUM PONY WALL HEIGHT (feet)	MAXIMUM TOTAL WALL HEIGHT (feet)	MAXIMUM OPENING WALL HEIGHT (feet)	TENSION STRAP CAPACITY REQUIRED (pounds)[a,b]					
				Ultimate Design Wind Speed V_{ult} (mph)					
				110	115	130	110	115	130
				Exposure B			Exposure C		
2 x 4 No. 2 Grade	0	10	18	1,000	1,000	1,000	1,000	1,000	1,050
	1	10	9	1,000	1,000	1,000	1,000	1,000	1,750
			16	1,000	1,025	2,050	2,075	2,500	3,950
			18	1,000	1,275	2,375	2,400	2,850	DR
	2	10	9	1,000	1,000	1,475	1,500	1,875	3,125
			16	1,775	2,175	3,525	3,550	4,125	DR
			18	2,075	2,500	3,950	3,975	DR	DR
	2	12	9	1,150	1,500	2,650	2,675	3,175	DR
			16	2,875	3,375	DR	DR	DR	DR
			18	3,425	3,975	DR	DR	DR	DR
	4	12	9	2,275	2,750	DR	DR	DR	DR
			12	3,225	3,775	DR	DR	DR	DR
2 x 6 Stud Grade	2	12	9	1,000	1,000	1,700	1,700	2,025	3,050
			16	1,825	2,150	3,225	3,225	3,675	DR
			18	2,200	2,550	3,725	3,750	DR	DR
	4	12	9	1,450	1,750	2,700	2,725	3,125	DR
			16	2,050	2,400	DR	DR	DR	DR
			18	3,350	3,800	DR	DR	DR	DR

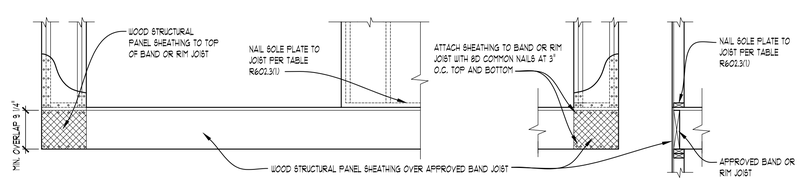
For SI: 1 inch = 25.4 mm, 1 mile per hour = 0.447 m/s.
a. DR = Design Required
b. Straps shall be installed in accordance with manufacturer's recommendations.



OVER CONCRETE OR MASONRY BLOCK FOUNDATION



OVER RAISED WOOD FLOOR - FRAMING ANCHOR OPTION
(WHERE PORTAL SHEATHING DOES NOT LAP OVER BAND OR RIM JOIST)



OVER RAISED WOOD FLOOR - OVERLAP OPTION
(WHERE PORTAL SHEATHING LAPS OVER BAND OR RIM BOARD)

FRONT ELEVATION SECTION

FIGURE R602.10.6.4
METHOD CS-PF: CONTINUOUSLY SHEATHED PORTAL FRAME PANEL CONSTRUCTION

FOR SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm NOT TO SCALE

TABLE R602.3.(5)

SIZE, HEIGHT AND SPACING OF WOOD STUDS a.

STUD SIZE (inches)	BEARING WALLS				NONBEARING WALLS	
	Laterally unsupported stud height 'a' (feet)	Maximum spacing when supporting roof-ceiling assembly or a habitable attic assembly, only (inches)	Maximum spacing when supporting a roof-ceiling assembly or a habitable attic assembly (inches)	Maximum spacing when supporting two floors, plus a roof-ceiling assembly or a habitable attic assembly (inches)	Maximum spacing when supporting one floor height 'a' (inches)	Laterally unsupported stud height 'a' (feet)	Maximum spacing (inches)
2x3 b	-	-	-	-	-	10	16
2x4	10	24 c	16 c	-	24	14	24
3x4	10	24	24	16	24	14	24
2x5	10	24	24	-	24	16	24
2x6	10	24	24	16	24	20	24

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

a. Listed heights are distances between points of lateral support placed perpendicular to the plan of the wall. Bearing walls shall be sheathed on not less than one side or bridging shall be installed not greater than 4 feet apart measured vertically from either end of the stud. Increases in unsupported height are permitted where in compliance with Exception 2 of Section R602.3.1 or designed in accordance with accepted engineering practice.
b. Shall not be used in exterior walls.
C. A habitable attic assembly supported by 2 x 4 studs is limited to a roof span of 32 feet. Where the roof span exceeds 32 feet, the wall studs shall be increased to 2 x 6 or the studs shall be designed in accordance with accepted engineering practice.

TABLE R703.8.3.1

ALLOWABLE SPANS FOR LINTELS SUPPORTING MASONRY VENEER a,b,c,d

SIZE OF STEEL ANGLE a,c,d (inches)	NO STORY ABOVE	ONE STORY ABOVE	TWO STORIES ABOVE	NO. OF 1/2" OR EQUIVALENT REINFORCING BARS b,d
3x3x1/4	6'-0"	4'-6"	3'-0"	1
4x3x1/4	8'-0"	6'-0"	4'-6"	1
5x3 1/2x5/16	10'-0"	8'-0"	6'-0"	2
6x3 1/2x5/16	14'-0"	9'-6"	7'-0"	2
2-6x3 1/2x5/16	20'-0"	12'-0"	9'-6"	4

a. Long leg of angle shall be placed in a vertical position.
b. Depth of reinforcing lintels shall not be less than 8 inches and all cells of hollow masonry lintels shall be grouted solid. Reinforcing bars shall extend not less than 8 inches into the support.
c. Steel members indicated are adequate typical examples; other steel members meeting structural design requirements shall be permitted to be used.
d. Either steel angle or reinforced lintel shall span opening.

TYPICAL CONVENTIONAL ROOF FRAMING

*** RIDGE BEAM SIZE WILL BE EQUAL TO THE RAFTER CUT EDGE ***

RAFTER SPANS	0'-0" - 4'-0"	4'-0" - 8'-0"	8'-0" - 12'-0"	12'-0" - 16'-0"
LUMBER SIZE	2x4	2x6	2x8	2x12

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FAMILY HOMES
AVA PLAN
GARAGE LEFT

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REVISION	-

SCALE:
PER PLAN

SHEET #
GN2

FOUNDATION NOTES

NOTE:

ALL FOOTINGS ARE DESIGNED FOR 3000 P.S.F. SOIL BRG. CAPACITY & 30 P.S.F. ROOF SNOW LOAD. FOR VARYING CONDITIONS REFER TO TABLE R403.1(1), R403.1(2) & R403.1(3) OF THE 2015 IRC.

1. ALL COLUMNS SHOWN SHALL BE 3" DIA. SCHEDULE 40 STANDARD STEEL PIPE COLUMN ON 30" X 30" X 18" DEEP CONC. FTG. TOP OF CONCRETE FTG. TO BE 4' BELOW FINISH BASEMENT SLAB. (TYPICAL UNLESS NOTED OTHERWISE)
2. WHERE STEEL BEAMS REST ON FOUNDATION WALLS, SIZE BEAM POCKET APPROPRIATELY AND SHIM AS REQUIRED.
3. AS REQUIRED DROP FOYER FLOOR SHEATHING 3/4" FOR MUDSET TILE INSTALLATION
4. VERIFY ALL UTILITY LOCATIONS W/ BUILDER.
5. PROVIDE GUARDRAIL AT STAIRS DURING CONSTRUCTION.
6. PROVIDE LADDERING UNDER ANY WALL RUNNING PARALLEL W/ JOIST THAT DOES NOT LAND DIRECTLY ON A JOIST
7. PROVIDE SQUASH BLOCKS UNDER ALL BEARING CONDITIONS.
8. GROUT SOLID @ BEARING CONDITIONS WHERE BLOCK IS USED.
9. PROVIDE 2" X 24" (MIN. R-10) RIGID PERIMETER INSULATION AT ALL BASEMENT SLABS THAT ARE LESS THAN 42" BELOW EXTERIOR FINISHED GRADE

NOTE:

PROVIDE MIN. (2) 2 X 4 HEADER AT ALL INTERIOR & EXTERIOR DOOR & WINDOW OPENINGS (UNLESS NOTED OTHERWISE).

NOTE:

PROVIDE MIN. (1) JACK STUD & (1) KING STUD AT EACH END OF ALL HEADERS (UNLESS NOTED OTHERWISE).

NOTE:

PROVIDE MIN. (1) JOIST OR LADDER FRAMING UNDER ALL UPPER FLOOR PARALLEL PARTITIONS

NOTE:

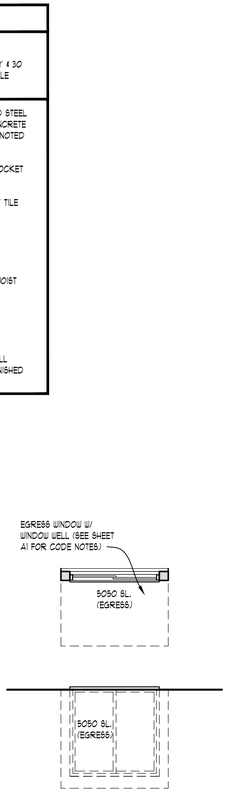
GROUT ALL CONCRETE BLOCK CORES SOLID THAT SUPPORT POINT LOADS FROM ABOVE (TYPICAL)

NOTE:

WOOD BEAM
STEEL BEAM

BRG. WALL
BRG. WALL ABOVE
BRG. WALL & BRG. WALL ABOVE

POINT LOAD
POINT LOAD FROM ABOVE



OPT. EGRESS WINDOW WELL DETAIL

SCALE: 1/4" = 1'-0"

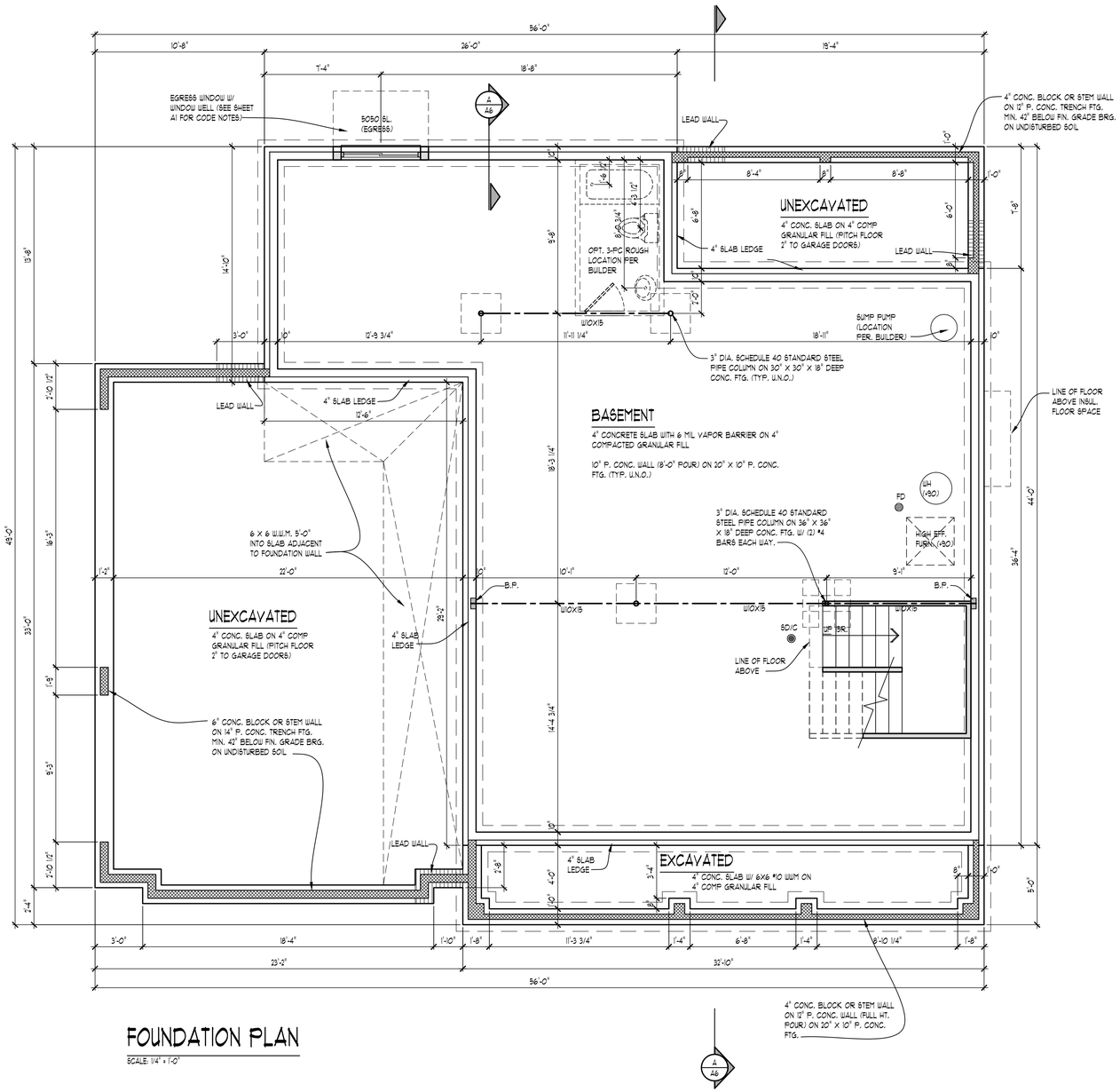
EGRESS WINDOW WELL

OPT. WINDOW WELL TO BE FILLED W/ PEA GRAVEL DOWN TO TOP OF HOUSE DRAIN TILE. TIE DRAIN INTO HOUSE DRAIN TILE FROM BOTTOM OF WINDOW WELL

RAILING OR METAL REMOVABLE GRATE & LADDER OVER TOP (AS CODE REQUIRES)

WINDOW WELLS WITH A DEPTH GREATER THAN 44" BELOW GRADE SHALL BE EQUIPPED WITH A PERMANENTLY AFFIXED LADDER OR STEPS USABLE WITH THE WINDOW IN THE FULLY OPEN POSITION.

WINDOW WELL SHALL HAVE HORIZONTAL DIMENSIONS THAT PROVIDE A MIN. NET CLEAR AREA OF 9 SQ. FT. WITH A MIN HORIZONTAL PROJECTION AND WIDTH OF 36".



FOUNDATION PLAN

SCALE: 1/4" = 1'-0"

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A1

PLAN NOTES

INTERIOR WALLS:
1/2" GYPSUM WALL BOARD ON EACH SIDE OF 2x4 WOOD STUDS @ 16" O.C. 3 1/2" THICK TYPICAL (UNLESS NOTED OTHERWISE). ALL DIMENSION TAKEN FROM STUD EDGES

EXTERIOR WALLS:
SIDING AND/OR MASONRY WITH AIRSPACE, MOISTURE BARRIER PAPER (HOUSE WRAP) ON 7/16" O.S.B. SHEATHING ON 2X4 WOOD STUDS @ 16" O.C. OR AS NOTED, MIN. R-20 WALL CONSTRUCTION, 1/2" GYPSUM WALL BOARD (GLUE & SCREW). WALL TO BE 4" THICK WITH SIDING AND 8" THICK WITH MASONRY (TYPICAL UNLESS NOTED OTHERWISE). ALL DIMENSION TAKEN FROM FRAMING (FLOOR PLANS) OR FOUNDATION CORNERS (FOUNDATION PLAN)

1. OPENINGS BETWEEN THE GARAGE AND RESIDENCE SHALL BE EQUIPPED WITH 20-MINUTE FIRE RATED DOORS (OR EQUIVALENT PER 2015 MRC SECTION R302.5.1).
2. VENT ALL EXHAUST FANS TO EXTERIOR.
3. WHEN POSSIBLE DIRECT ALL FLUES AND VENTS THAT PENETRATE ROOF BEHIND MAIN RIDGE.
4. INSTALL WATER SUPPLY AND DRAIN BOX (GREY BOX) AT WASHING MACHINE LOCATION.
5. USE MOISTURE RESISTANT DRYWALL AT ALL AREAS SUSCEPTIBLE TO MOISTURE.
6. ALL FIRST FLOOR INTERIOR DOORS TO BE FRAMED 6'-8" TALL, ALL SECOND FLOOR INTERIOR DOORS TO BE FRAMED 6'-8" UNLESS NOTED OTHERWISE. VERIFY W/ BUILDER
7. PROVIDE GUARDRAIL AT STAIRS DURING CONSTRUCTION.
8. PROVIDE SQUASH BLOCKS UNDER ALL BEARING CONDITIONS.
9. GARAGE WALLS TO BE 2X6 STUDS IF OVER 10'-0" TALL.

NOTE:
S.D. ⊙
SD/C ◉
ALL SMOKE & CARBON MONOXIDE DETECTORS INTERCONNECTED W/ BATTERY BACK-UP PER CODE.

NOTE:
DOOR & WINDOW LOCATIONS:
ALL DOORS & WINDOWS ARE ASSUMED TO BE EITHER IN THE CENTER OF THE WALL MASS OR MIN. 4 INCHES FROM PERPENDICULAR WALL FOR CASING UNLESS NOTED OTHERWISE

NOTE:
VERIFY DROPPED FLOOR AREAS FOR TILE WITH BUILDER

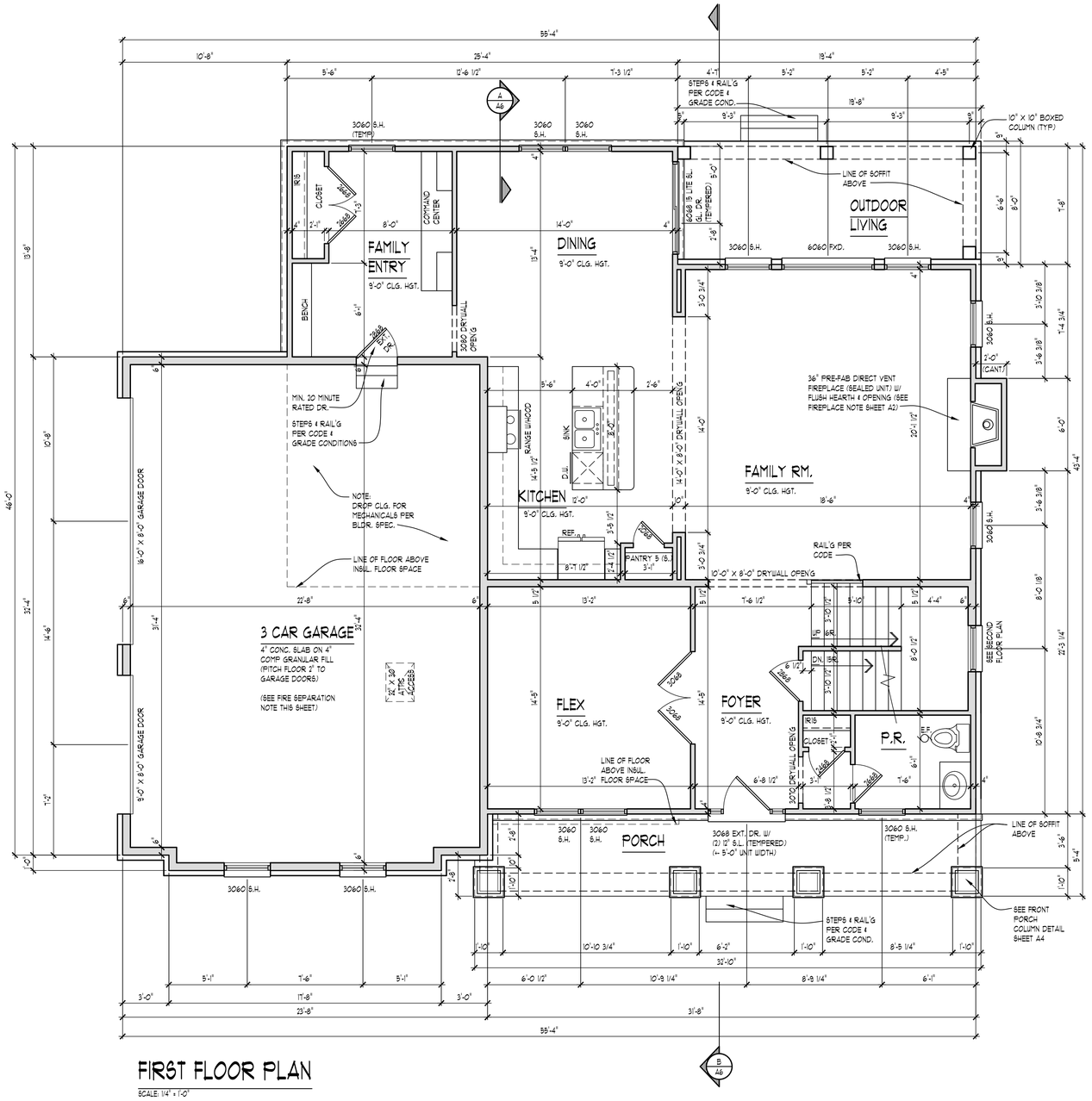
FIREPLACE NOTE
ALL FIREPLACE DIMENSIONS & ROUGH OPENINGS TO BE VERIFIED W/ MANUFACTURER SPECS INCLUDING BUT NOT LIMITED TO WIDTH, DEPTH, HEIGHT, CHIMNEY CLEARANCES, ETC. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL SPECS TO CARPENTER PRIOR TO FRAMING

FIRE SEPARATION NOTE
FIRE SEPARATION (R302.6)
GARAGE SPACE BENEATH HABITABLE ROOMS SHALL BE SEPARATED FROM ALL HABITABLE ROOMS ABOVE BY NOT LESS THAN 5/8-INCH TYPE X GYPSUM BOARD OR EQUIVALENT. WHERE THE SEPARATION IS A FLOOR-CEILING ASSEMBLY, THE STRUCTURE SUPPORTING THE SEPARATION SHALL ALSO BE PROTECTED BY NOT LESS THAN 1/2-INCH GYPSUM BOARD OR EQUIVALENT. ALL OTHER GARAGE SPACE SHALL BE SEPARATED FROM THE RESIDENCE AND ITS ATTIC AREA BY NOT LESS THAN 1/2-INCH GYPSUM BOARD APPLIED TO THE GARAGE SIDE. DROP CLG. UNDER FLR. ABV. (ENCLOSE MECHANICAL AND STRUCTURAL ELEMENTS) VERIFY W/ BLDR.

NOTE:
PROVIDE MIN. (2) 2 X 4 HEADER AT ALL INTERIOR & EXTERIOR DOOR & WINDOW OPENINGS (UNLESS NOTED OTHERWISE).

NOTE:
PROVIDE MIN. (1) JACK STUD & (1) KING STUD AT EACH END OF ALL HEADERS (UNLESS NOTED OTHERWISE).

NOTE:
PROVIDE MIN. (1) JOIST OR LADDER FRAMING UNDER ALL UPPER FLOOR PARALLEL PARTITIONS



FIRST FLOOR PLAN

SCALE: 1/4" = 1'-0"

AREA SUMMARY:

OVERALL FLOOR AREA:	
FIRST FLOOR	1478 S.F.
SECOND FLOOR	1671 S.F.
TOTAL AREA	3149 S.F.

TK DESIGN & ASSOCIATES
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FAX: (248)-446-1961

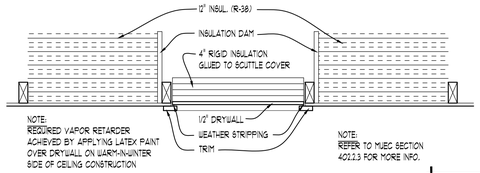
CLIENT / PROJECT

KENSINGTON
FAMILY HOMES
AVA PLAN
GARAGE LEFT

JOB No.	WO 1428-18
DRAWN:	DM /AG
CHECKED:	DM
REVIEW	9-11-18
FINAL:	10-1-18
REVISION	-

SCALE:
PER PLAN

SHEET #
A2



NOTE:
REQUIRED VAPOR RETARDER ACHIEVED BY APPLYING LATEX PAINT OVER DRYWALL ON WARM-WINTER SIDE OF CEILING CONSTRUCTION

NOTE:
REFER TO MUEC SECTION 402.2.3 FOR MORE INFO.

ATTIC ACCESS DETAIL

SCALE: 1" = 1'-0"

NOTE:
PROVIDE MIN. (2) 2 X 4 HEADER AT ALL INTERIOR & EXTERIOR DOOR & WINDOW OPENINGS (UNLESS NOTED OTHERWISE).

NOTE:
PROVIDE MIN. (1) JACK STUD & (1) KING STUD AT EACH END OF ALL HEADERS (UNLESS NOTED OTHERWISE).

NOTE:
PROVIDE MIN. (1) JOIST OR LADDER FRAMING UNDER ALL UPPER FLOOR PARALLEL PARTITIONS

PLAN NOTES

INTERIOR WALLS:
1/2" GYPSUM WALL BOARD ON EACH SIDE OF 2x4 WOOD STUDS @ 16" O.C. 3 1/2" THICK TYPICAL (UNLESS NOTED OTHERWISE). ALL DIMENSION TAKEN FROM STUD EDGES

EXTERIOR WALLS:
SIDING AND/OR MASONRY WITH AIRSPACE, MOISTURE BARRIER PAPER (HOUSE WRAP) ON 7/16" O.S.B. SHEATHING ON 2X4 WOOD STUDS @ 16" O.C. OR AS NOTED, MIN. R-20 WALL CONSTRUCTION, 1/2" GYPSUM WALL BOARD (GLUE & SCREW). WALL TO BE 4" THICK WITH SIDING AND 8" THICK WITH MASONRY (TYPICAL UNLESS NOTED OTHERWISE). ALL DIMENSION TAKEN FROM FRAMING (FLOOR PLANS) OR FOUNDATION CORNERS (FOUNDATION PLAN)

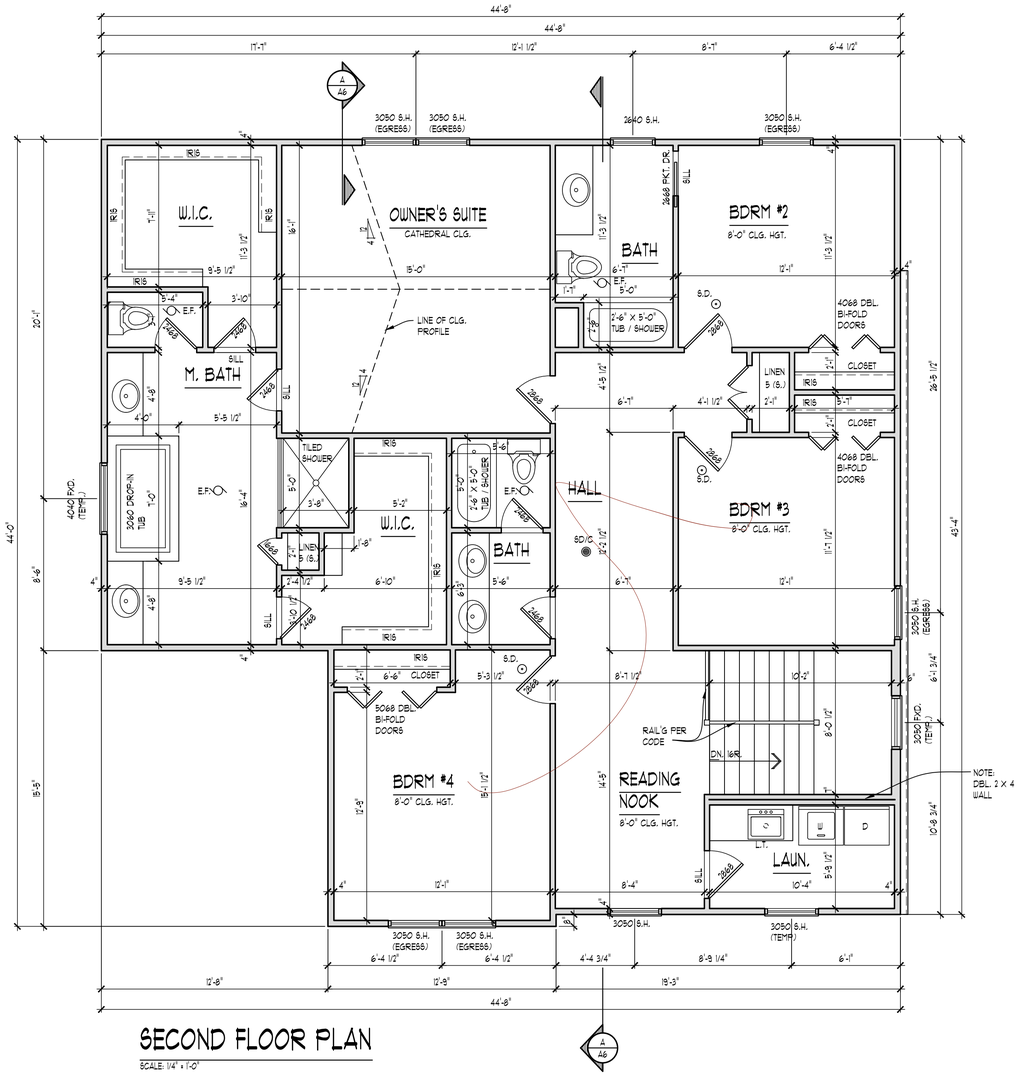
1. OPENINGS BETWEEN THE GARAGE AND RESIDENCE SHALL BE EQUIPPED WITH 20-MINUTE FIRE RATED DOORS (OR EQUIVALENT PER 2015 YRC SECTION R302.5.1).
2. VENT ALL EXHAUST FANS TO EXTERIOR.
3. WHEN POSSIBLE DIRECT ALL FLUES AND VENTS THAT PENETRATE ROOF BEHIND MAIN RIDGE.
4. INSTALL WATER SUPPLY AND DRAIN BOX (GREY BOX) AT WASHING MACHINE LOCATION.
5. USE MOISTURE RESISTANT DRYWALL AT ALL AREAS SUSCEPTIBLE TO MOISTURE.
6. ALL FIRST FLOOR INTERIOR DOORS TO BE FRAMED 6'-8" TALL, ALL SECOND FLOOR INTERIOR DOORS TO BE FRAMED 6'-8" UNLESS NOTED OTHERWISE. VERIFY W/ BUILDER
7. PROVIDE GUARDRAIL AT STAIRS DURING CONSTRUCTION.
8. PROVIDE SQUASH BLOCKS UNDER ALL BEARING CONDITIONS.
9. GARAGE WALLS TO BE 2X6 STUDS IF OVER 10'-0" TALL.

NOTE: S.D. ⊙ SD/C ◉
ALL SMOKE & CARBON MONOXIDE DETECTORS INTERCONNECTED W/ BATTERY BACK-UP PER CODE.

NOTE:
DOOR & WINDOW LOCATIONS:

ALL DOORS & WINDOWS ARE ASSUMED TO BE EITHER IN THE CENTER OF THE WALL MASS OR MIN. 4 INCHES FROM PERPENDICULAR WALL FOR CASING UNLESS NOTED OTHERWISE

NOTE:
VERIFY DROPPED FLOOR AREAS FOR TILE WITH BUILDER



SECOND FLOOR PLAN

SCALE: 1/4" = 1'-0"

AREA SUMMARY:

OVERALL FLOOR AREA:	
FIRST FLOOR	1478 S.F.
SECOND FLOOR	1671 S.F.
TOTAL AREA	3149 S.F.

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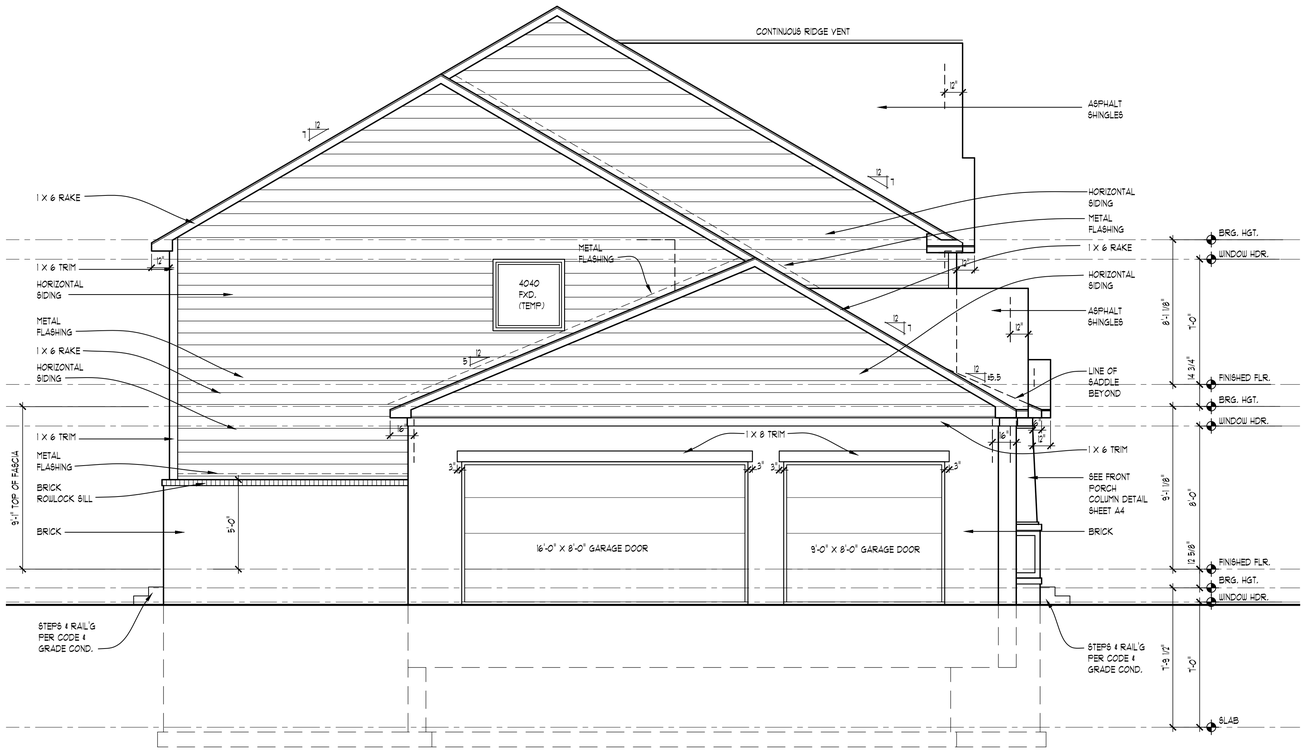
CLIENT / PROJECT

KENSINGTON
FAMILY HOMES
AVA PLAN
GARAGE LEFT

JOB No.	WO 1428-18
DRAWN:	DM /AG
CHECKED:	DM
REVIEW	9-11-18
FINAL:	10-1-18
REVISION	-

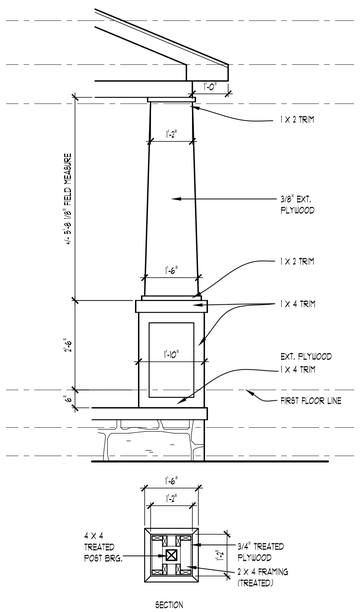
SCALE:
PER PLAN

SHEET #
A3



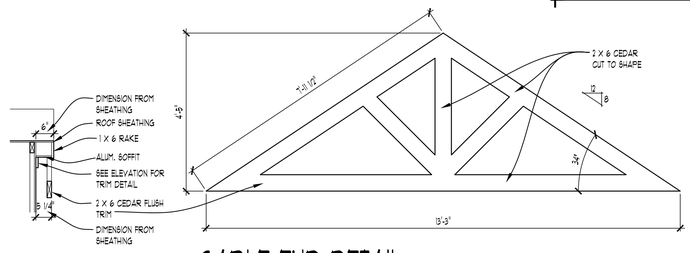
LEFT ELEVATION

SCALE: 1/4" = 1'-0"



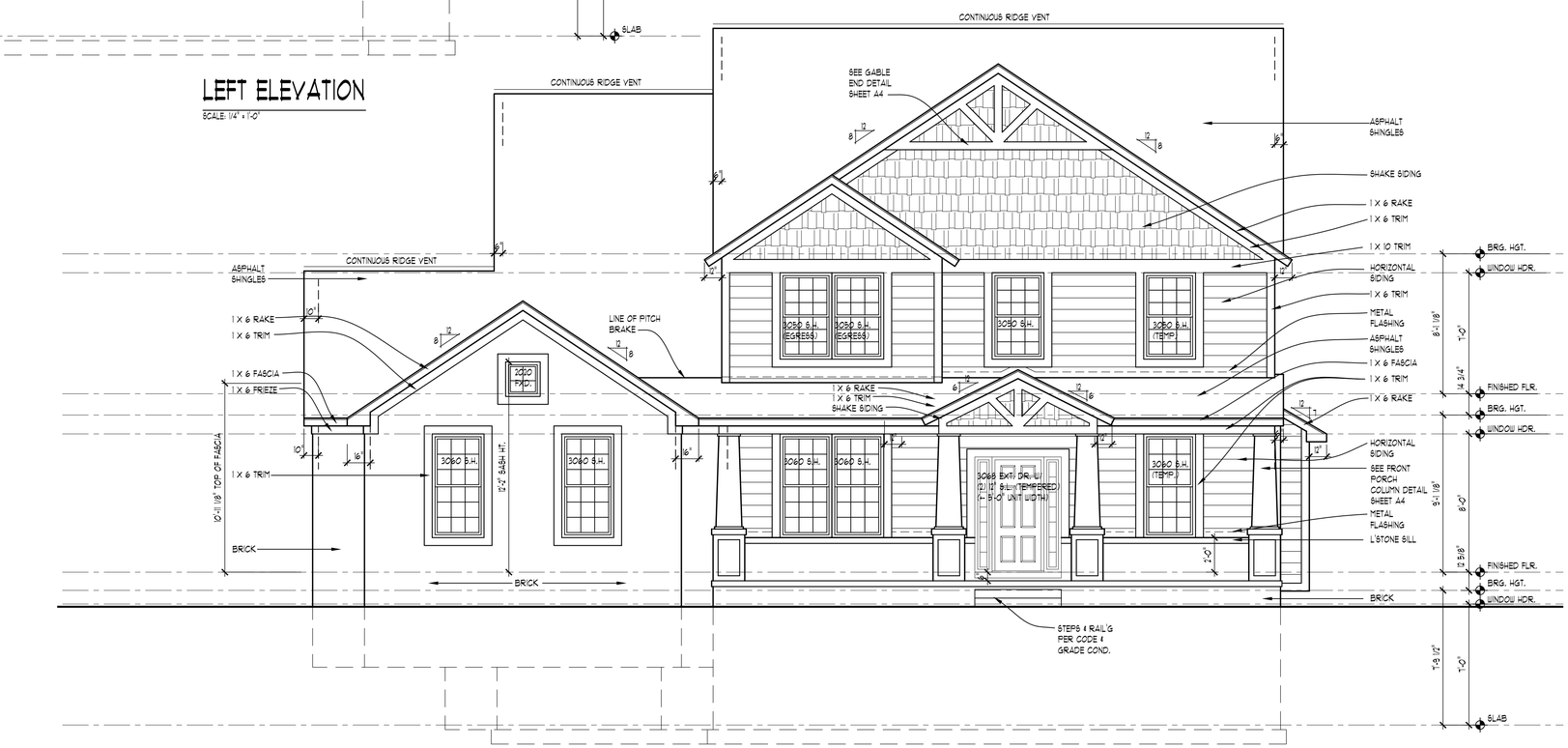
FRONT PORCH COLUMN DETAIL

SCALE: 1/2" = 1'-0"



GABLE END DETAIL

SCALE: 1/2" = 1'-0"



FRONT ELEVATION

SCALE: 1/4" = 1'-0"

ELEVATION NOTES

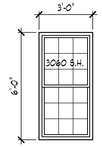
1. ALL ROOF SADDLES TO BE PLYWOOD SHEATHED WITH ICE & WATER SHIELD AND SHINGLES.
2. PROVIDE ICE & WATER SHIELD MIN. 6'-0" COVERAGE AT ALL VALLEYS
3. FIREPLACE FLUE TO BE DETERMINED PER MANUFACTURER'S SPECIFICATION
4. METAL FLASHING AS REQUIRED BY CODE.
5. ROOF & SOFFIT VENTS AS REQUIRED BY CODE.
6. PROVIDE GUTTERS & DOWNSPOUTS FOR DRAINAGE OF ROOF WATER. DOWNSPOUTS ARE TO BE LOCATED SO THAT THE DISCHARGE WILL NOT SPILL ON OR FLOW ACROSS ANY PORCHES, WALKS OR DRIVES.
7. CARPENTER TO VERIFY THICKNESS OF MASONRY PRIOR TO BUILDING BRICK RACK

TYPICAL WINDOW DESIGNATION

NOTE:
GENERAL REFERENCE FOR ROUGH OPENING SIZES ONLY. CONSULT WITH WINDOW MANUFACTURER FOR EXACT WINDOW SIZES & REQUIREMENTS.

NOTE:
ALL EASEMENT VENTING TO BE VERIFIED W/ BUILDER/ HOMEOWNER PRIOR TO ORDERING WINDOWS

NOTE:
WINDOW MANUFACTURER TO VERIFY ALL WINDOW GRID PATTERNS WITH HOME OWNER.



NOTE:
OVERHANG DIMENSIONS (O.H.) ARE FROM SHEATHING U.N.O.

NOTE:
ALL WINDOW SILLS OVER 6'-0" ABOVE EXTERIOR GRADE OR SURFACE BELOW TO BE MINIMUM 24" ABOVE FINISHED FLOOR OR HAVE SASH LIMITERS PER CODE REQUIRMENTS

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CLIENT / PROJECT

KENSINGTON
FAMILY HOMES
AVA PLAN
GARAGE LEFT

JOB No.	WO 1428-18
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REVIEW	9-11-18
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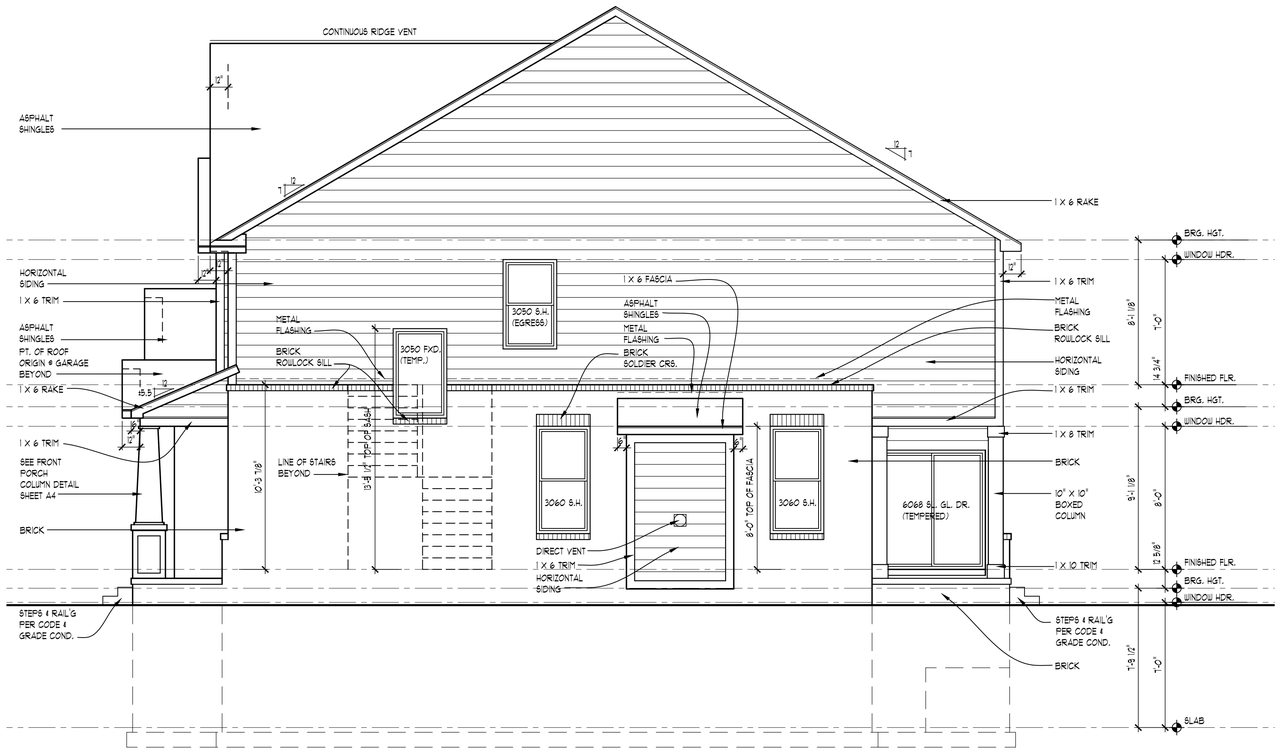
REVISION	-

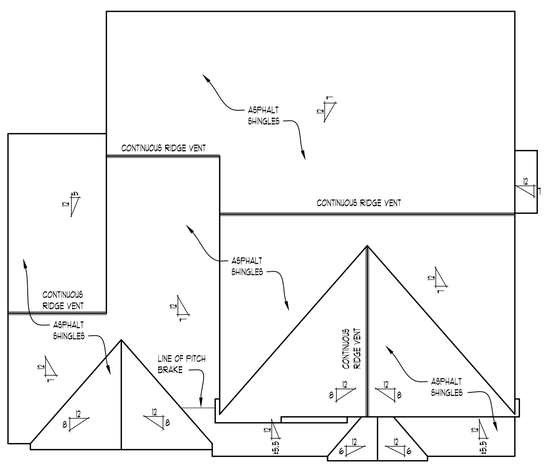
SCALE:
PER PLAN

SHEET #
A4



RIGHT ELEVATION

SCALE: 1/4" = 1'-0"



ROOF PLAN

SCALE: 1/8" = 1'-0"

ATTIC VENTILATION CALCULATIONS:

AREA OF ATTIC OVER HEATED SPACE = 1665 SQ. FT.
1665/150 = 11.1 (SQ. FT. REQ'D)
11.1 X 144 = 1598" (SQ. INCH CONVERSION)
RIDGE VENTING:
1598" X 0.45 = 720" (SQ. INCHES REQ'D)
720" / 18 = 40' (LINEAR FT. OF RIDGE VENT REQ'D)
EAVE OR CORNICE VENTING:
1598" X 0.55 = 880" (SQ. INCHES REQ'D)

REAR ELEVATION

SCALE: 1/4" = 1'-0"

ELEVATION NOTES

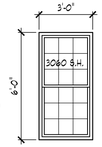
1. ALL ROOF SADDLES TO BE PLYWOOD SHEATHED WITH ICE & WATER SHIELD AND SHINGLES.
2. PROVIDE ICE & WATER SHIELD MIN. 6'-0" COVERAGE AT ALL VALLEYS
3. FIREPLACE FLUE TO BE DETERMINED PER MANUFACTURER'S SPECIFICATION
4. METAL FLASHING AS REQUIRED BY CODE.
5. ROOF & SOFFIT VENTS AS REQUIRED BY CODE.
6. PROVIDE GUTTERS & DOWNSPOUTS FOR DRAINAGE OF ROOF WATER. DOWNSPOUTS ARE TO BE LOCATED SO THAT THE DISCHARGE WILL NOT SPILL ON OR FLOW ACROSS ANY PORCHES, WALKS OR DRIVES.
7. CARPENTER TO VERIFY THICKNESS OF MASONRY PRIOR TO BUILDING BRICK RACK

TYPICAL WINDOW DESIGNATION

NOTE:
GENERAL REFERENCE FOR ROUGH OPENING SIZES ONLY. CONSULT WITH WINDOW MANUFACTURER FOR EXACT WINDOW SIZES & REQUIREMENTS.

NOTE:
ALL EASEMENT VENTING TO BE VERIFIED W/ BUILDER/ HOMEOWNER PRIOR TO ORDERING WINDOWS

NOTE:
WINDOW MANUFACTURER TO VERIFY ALL WINDOW GRID PATTERNS WITH HOME OWNER.



NOTE:
OVERHANG DIMENSIONS (O.H.) ARE FROM SHEATHING U.N.O.

NOTE:
ALL WINDOW SILLS OVER 6'-0" ABOVE EXTERIOR GRADE OR SURFACE BELOW TO BE MINIMUM 24" ABOVE FINISHED FLOOR OR HAVE SASH LIMITERS PER CODE REQUIRMENTS

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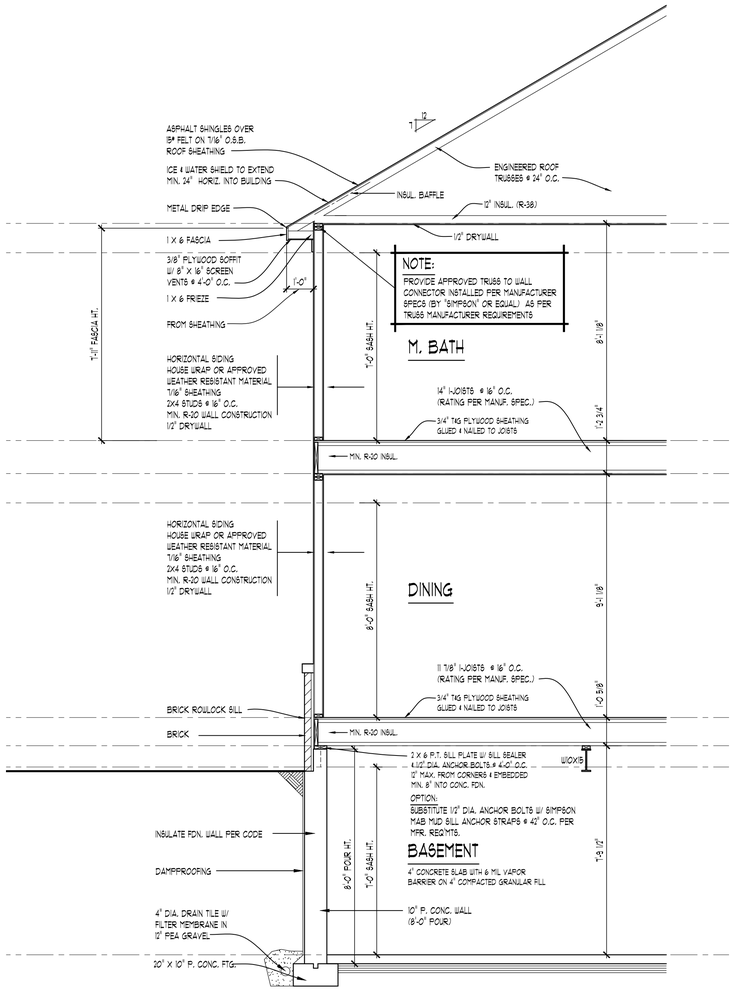
REVISION	-

SCALE:
PER PLAN

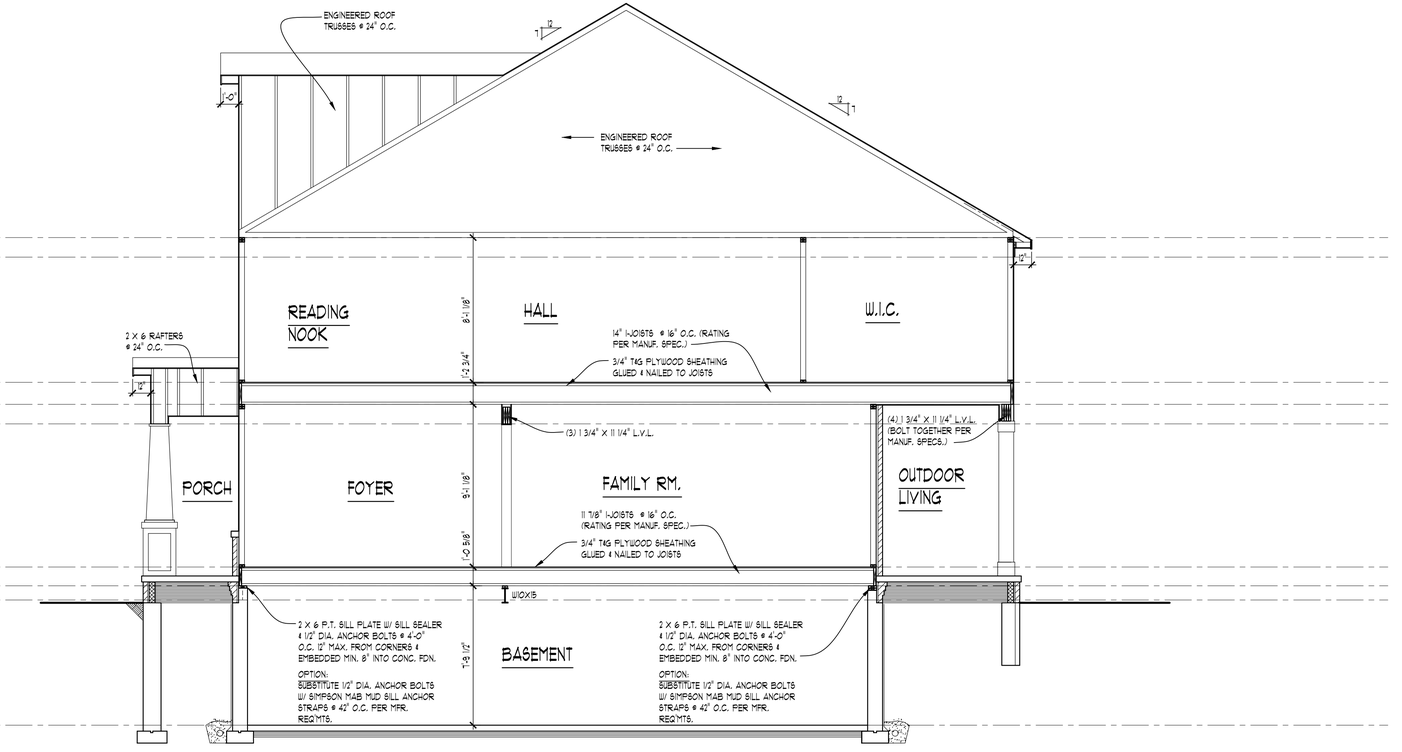
SHEET #
A5



WALL SECTION

SCALE: 3/8" = 1'-0"

A
A1-A3



BUILDING SECTION

SCALE: 1/4" = 1'-0"

B
A1-A3

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KENSINGTON
FAMILY HOMES
AVA PLAN
GARAGE LEFT

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CHECKED:	DM
REVIEW	9-11-18
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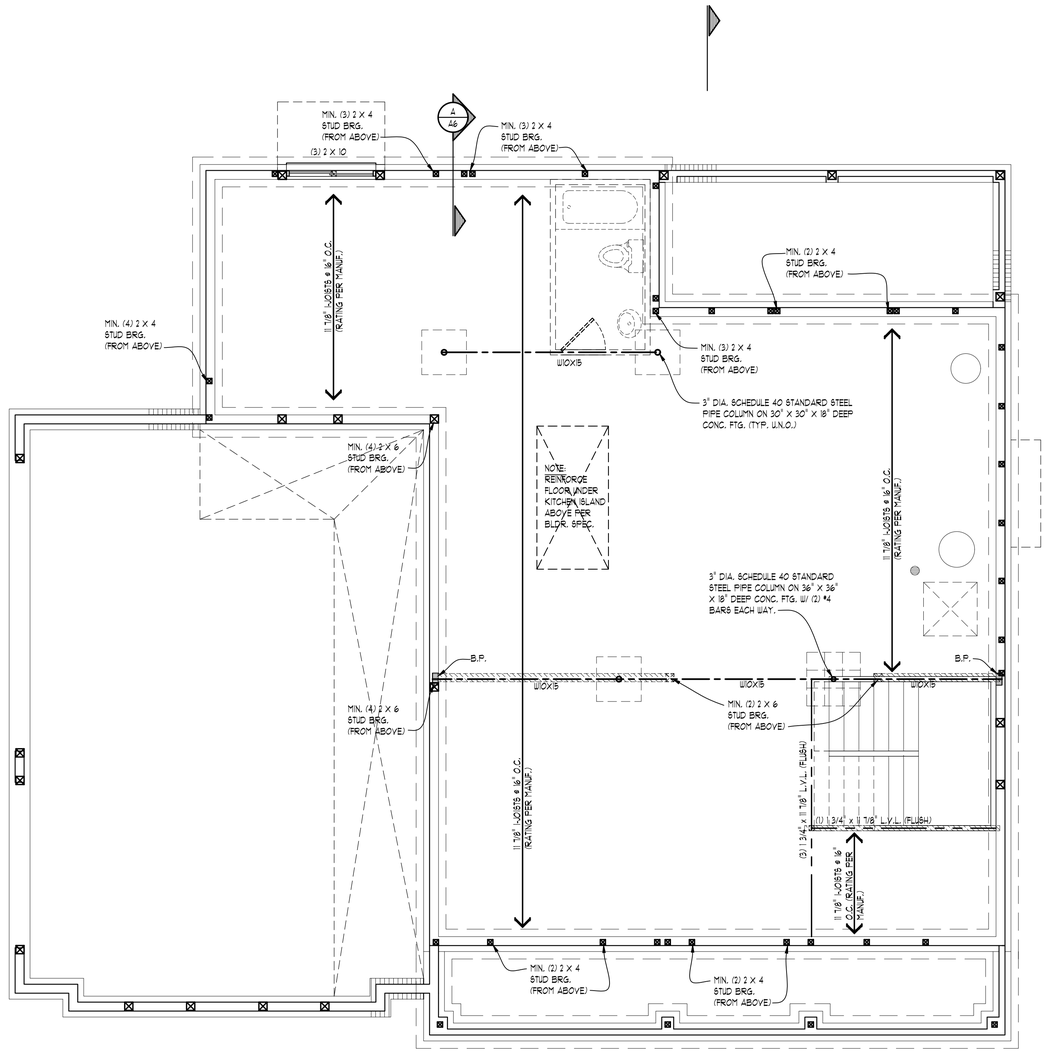
REVISION	-

SCALE:
PER PLAN

SHEET #
A6



FOUNDATION PLAN STRUCTURE

SCALE: 1/4" = 1'-0"

NOTE:
PROVIDE MIN. (2) 2 X 4 HEADER AT ALL INTERIOR & EXTERIOR DOOR & WINDOW OPENINGS (UNLESS NOTED OTHERWISE).

NOTE:
PROVIDE MIN. (1) JACK STUD & (1) KING STUD AT EACH END OF ALL HEADERS (UNLESS NOTED OTHERWISE).

NOTE:
PROVIDE MIN. (1) JOIST OR LADDER FRAMING UNDER ALL UPPER FLOOR PARALLEL PARTITIONS

NOTE:
GROUT ALL CONCRETE BLOCK CORES SOLID THAT SUPPORT POINT LOADS FROM ABOVE (TYPICAL)

NOTE:

_____ WOOD BEAM

_____ STEEL BEAM

BRG. WALL

BRG. WALL ABOVE

BRG. WALL & BRG. WALL ABOVE

POINT LOAD

POINT LOAD FROM ABOVE

STRUCTURAL SHEATHING NOTES:

1. DESIGNED FOR SEISMIC ZONE A-C AND WIND SPEEDS OF 115 M.P.H. OR LESS
2. WALLS SHALL BE BRACED IN ACCORDANCE WITH SECTION R602.10 OF THE 2015 MRC CODE
3. BRACING REQUIREMENTS SHALL BE PER TABLE R602.10.1.3
4. EXTERIOR BRACED WALL PANELS (BWP) SHALL BE CONSTRUCTED IN ACCORDANCE WITH CS-WSP METHOD AS PRESCRIBED IN SECTION R602.10.4 (U.N.O.)
5. ALL SHEATHABLE SURFACES OF EXTERIOR WALLS (INCLUDING AREAS ABOVE AND BELOW OPENINGS AND GABLE END WALLS) SHALL BE CONTINUOUSLY SHEATHED WITH WOOD STRUCTURAL PANEL (WSP) SHEATHING WITH A MINIMUM THICKNESS OF 3/8". SHEATHING SHALL BE SECURED WITH MINIMUM 6d COMMON NAILS SPACED AT 6" O.C. AT PANEL EDGES AND SPACED AT 12" O.C. AT INTERMEDIATE SUPPORTS
6. LENGTH REQUIREMENTS FOR BRACED WALL PANELS WITH CS-WSP METHOD SHALL BE IN ACCORDANCE WITH TABLE R602.10.5

(1) PROVIDE 6D COMMON NAILS AT 6" O.C. SPACING AT PANEL EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS OR 16 GA. X 1 3/4" STAPLES AT 3" O.C. SPACING AT PANEL EDGES AND 6" SPACING AT INTERMEDIATE SUPPORTS.

(2) R403.1.6. WALLS 24" TOTAL LENGTH OR SHORTER CONNECTING OFFSET BRACED WALL PANELS SHALL BE ANCHORED TO THE FOUNDATION WITH A MINIMUM OF ONE ANCHOR BOLT LOCATED IN THE CENTER THIRD OF THE PLATE SECTION AND SHALL BE ATTACHED TO ADJACENT BRACED WALL PANELS AT CORNERS AS SHOWN IN ITEM 9 OF TABLE R602.3(1)

(3) SEE CONTINUOUS PORTAL FRAME PANEL CONSTRUCTION DETAIL (CS-PF) SHEET GN-2 FOR HEADER / CORNER FRAMING INFORMATION. HEADER PROVIDED MUST BE MINIMUM 3" X 11 1/4" SOLID SAWN OR LAMINATED VENEER LUMBER (L.V.L.)

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GARAGE LEFT

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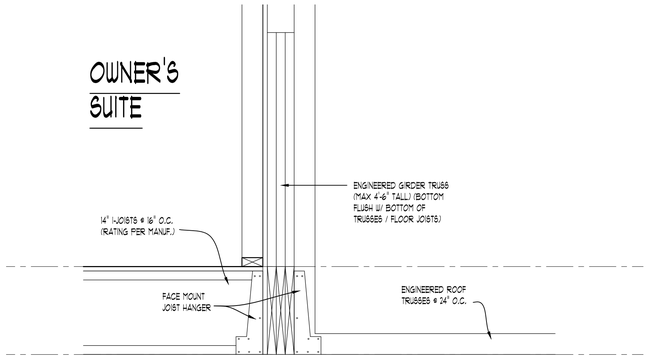
REVIEW	9-11-18
FINAL:	10-1-18
REVISION	-

SCALE:
PER PLAN

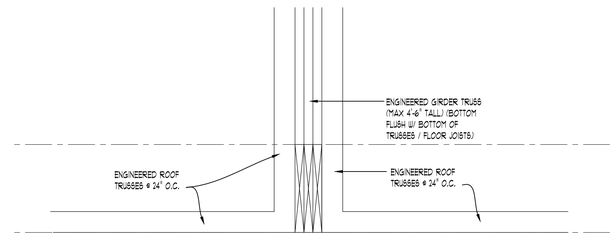
SHEET #
S1



FRAMING DETAIL

SCALE: 1" = 1'-0"

AA / S2



FRAMING DETAIL

SCALE: 1" = 1'-0"

BB / S2

NOTE:
PROVIDE MIN. (2) 2 X 4 HEADER AT ALL INTERIOR & EXTERIOR DOOR & WINDOW OPENINGS (UNLESS NOTED OTHERWISE).

NOTE:
PROVIDE MIN. (1) JACK STUD & (1) KING STUD AT EACH END OF ALL HEADERS (UNLESS NOTED OTHERWISE).

NOTE:
PROVIDE MIN. (1) JOIST OR LADDER FRAMING UNDER ALL UPPER FLOOR PARALLEL PARTITIONS

NOTE:
GROUT ALL CONCRETE BLOCK CORES SOLID THAT SUPPORT POINT LOADS FROM ABOVE (TYPICAL)

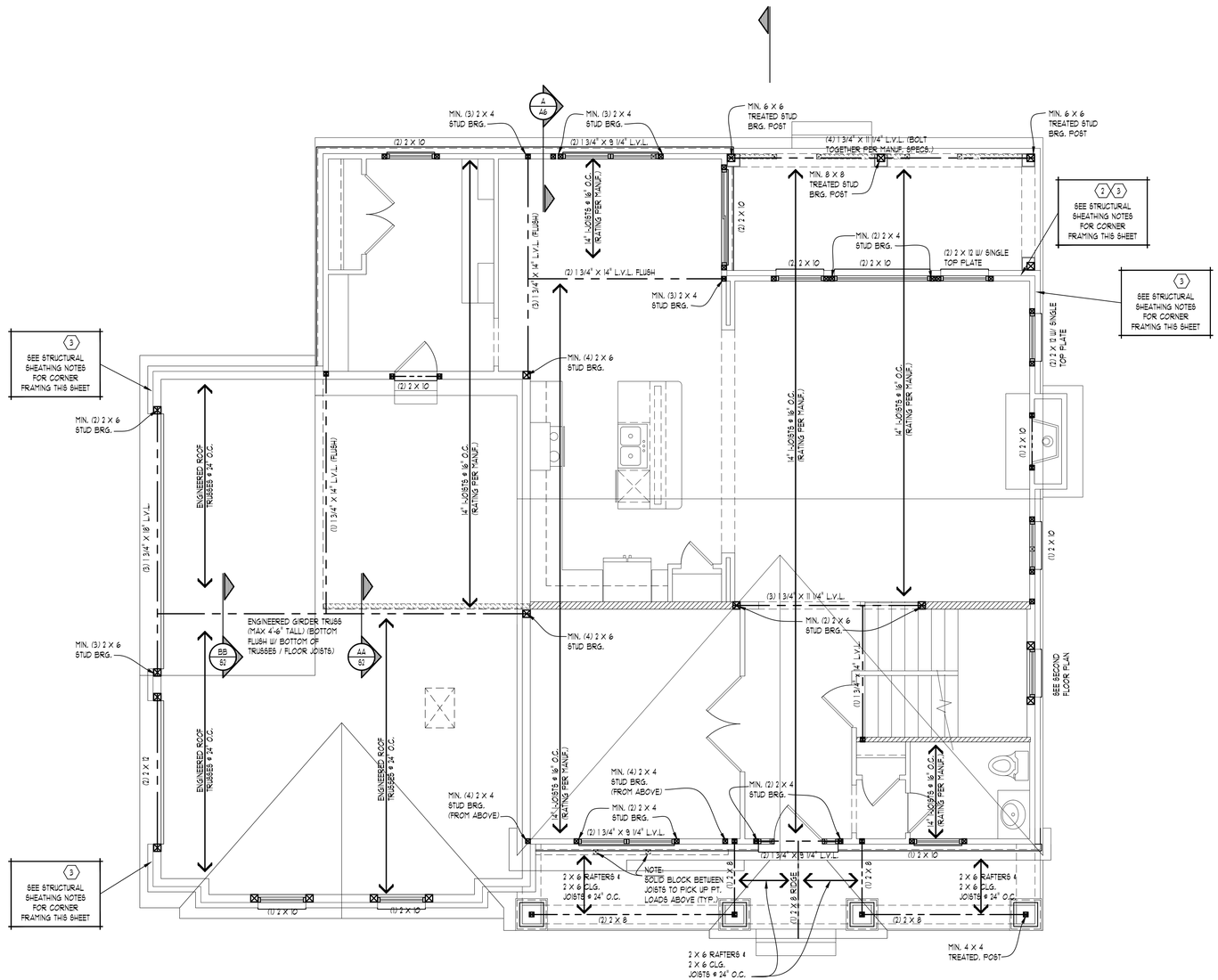
NOTE:
WOOD BEAM
STEEL BEAM
BRG. WALL
BRG. WALL ABOVE
BRG. WALL & BRG. WALL ABOVE
POINT LOAD
POINT LOAD FROM ABOVE

STRUCTURAL SHEATHING NOTES:
1. DESIGNED FOR SEISMIC ZONE A-C AND WIND SPEEDS OF 115 M.P.H. OR LESS
2. WALLS SHALL BE BRACED IN ACCORDANCE WITH SECTION R602.10 OF THE 2015 MRC CODE
3. BRACING REQUIREMENTS SHALL BE PER TABLE R602.10.1.3
4. EXTERIOR BRACED WALL PANELS (BWP) SHALL BE CONSTRUCTED IN ACCORDANCE WITH CS-WSP METHOD AS PRESCRIBED IN SECTION R602.10.4 (U.N.O.)
5. ALL SHEATHABLE SURFACES OF EXTERIOR WALLS (INCLUDING AREAS ABOVE AND BELOW OPENINGS AND GABLE END WALLS) SHALL BE CONTINUOUSLY SHEATHED WITH WOOD STRUCTURAL PANEL (WSP) SHEATHING WITH A MINIMUM THICKNESS OF 3/8". SHEATHING SHALL BE SECURED WITH MINIMUM 6d COMMON NAILS SPACED AT 6" O.C. AT PANEL EDGES AND SPACED AT 12" O.C. AT INTERMEDIATE SUPPORTS
6. LENGTH REQUIREMENTS FOR BRACED WALL PANELS WITH CS-WSP METHOD SHALL BE IN ACCORDANCE WITH TABLE R602.10.5

(1) PROVIDE 6D COMMON NAILS AT 6" O.C. SPACING AT PANEL EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS OR 16 GA. X 1 3/4" STAPLES AT 3" O.C. SPACING AT PANEL EDGES AND 6" SPACING AT INTERMEDIATE SUPPORTS.

(2) R403.1.6. WALLS 24" TOTAL LENGTH OR SHORTER CONNECTING OFFSET BRACED WALL PANELS SHALL BE ANCHORED TO THE FOUNDATION WITH A MINIMUM OF ONE ANCHOR BOLT LOCATED IN THE CENTER THIRD OF THE PLATE SECTION AND SHALL BE ATTACHED TO ADJACENT BRACED WALL PANELS AT CORNERS AS SHOWN IN ITEM 3 OF TABLE R602.3(1)

(3) SEE CONTINUOUS PORTAL FRAME PANEL CONSTRUCTION DETAIL (CS-PF) SHEET GN-2 FOR HEADER / CORNER FRAMING INFORMATION. HEADER PROVIDED MUST BE MINIMUM 3" X 11 1/4" SOLID SAWN OR LAMINATED VENEER LUMBER (L.V.L.)



FIRST FLOOR PLAN STRUCTURE

SCALE: 1/4" = 1'-0"

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CLIENT / PROJECT

KENSINGTON FAMILY HOMES
AVA PLAN
GARAGE LEFT

JOB No.	WO 1428-18
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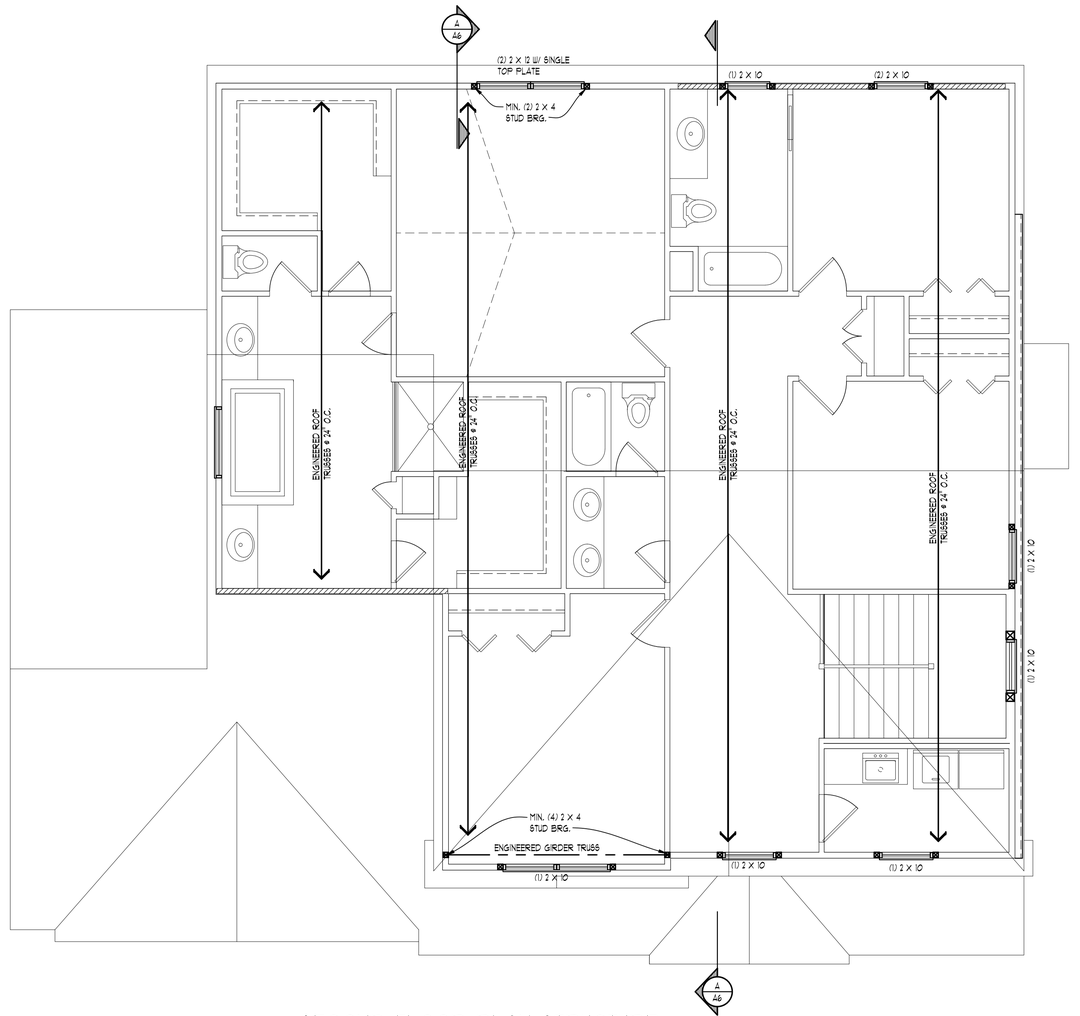
SCALE:
PER PLAN

SHEET #
S2



SECOND FLOOR PLAN STRUCTURE

SCALE: 1/4" = 1'-0"

NOTE:
PROVIDE MIN. (2) 2 X 4 HEADER AT ALL INTERIOR & EXTERIOR DOOR & WINDOW OPENINGS (UNLESS NOTED OTHERWISE).

NOTE:
PROVIDE MIN. (1) JACK STUD & (1) KING STUD AT EACH END OF ALL HEADERS (UNLESS NOTED OTHERWISE).

NOTE:
PROVIDE MIN. (1) JOIST OR LADDER FRAMING UNDER ALL UPPER FLOOR PARALLEL PARTITIONS

NOTE:
GROUT ALL CONCRETE BLOCK CORES SOLID THAT SUPPORT POINT LOADS FROM ABOVE (TYPICAL)

NOTE:
WOOD BEAM
STEEL BEAM

BRG. WALL
BRG. WALL ABOVE
BRG. WALL & BRG. WALL ABOVE

POINT LOAD
POINT LOAD FROM ABOVE

STRUCTURAL SHEATHING NOTES:

1. DESIGNED FOR SEISMIC ZONE A-C AND WIND SPEEDS OF 115 M.P.H. OR LESS
2. WALLS SHALL BE BRACED IN ACCORDANCE WITH SECTION R602.10 OF THE 2015 MRC CODE
3. BRACING REQUIREMENTS SHALL BE PER TABLE R602.10.1.3
4. EXTERIOR BRACED WALL PANELS (BWP) SHALL BE CONSTRUCTED IN ACCORDANCE WITH CS-WSP METHOD AS PRESCRIBED IN SECTION R602.10.4 (U.N.O.)
5. ALL SHEATHABLE SURFACES OF EXTERIOR WALLS (INCLUDING AREAS ABOVE AND BELOW OPENINGS AND GABLE END WALLS) SHALL BE CONTINUOUSLY SHEATHED WITH WOOD STRUCTURAL PANEL (WSP) SHEATHING WITH A MINIMUM THICKNESS OF 3/8". SHEATHING SHALL BE SECURED WITH MINIMUM 6d COMMON NAILS SPACED AT 6" O.C. AT PANEL EDGES AND SPACED AT 12" O.C. AT INTERMEDIATE SUPPORTS
6. LENGTH REQUIREMENTS FOR BRACED WALL PANELS WITH CS-WSP METHOD SHALL BE IN ACCORDANCE WITH TABLE R602.10.5

1. PROVIDE 6D COMMON NAILS AT 6" O.C. SPACING AT PANEL EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS OR 16 GA. X 1 3/4" STAPLES AT 3" O.C. SPACING AT PANEL EDGES AND 6" SPACING AT INTERMEDIATE SUPPORTS.
2. R403.1.6. WALLS 24" TOTAL LENGTH OR SHORTER CONNECTING OFFSET BRACED WALL PANELS SHALL BE ANCHORED TO THE FOUNDATION WITH A MINIMUM OF ONE ANCHOR BOLT LOCATED IN THE CENTER THIRD OF THE PLATE SECTION AND SHALL BE ATTACHED TO ADJACENT BRACED WALL PANELS AT CORNERS AS SHOWN IN ITEM 9 OF TABLE R602.3(1)
3. SEE CONTINUOUS PORTAL FRAME PANEL CONSTRUCTION DETAIL (CS-PF) SHEET GN2 FOR HEADER / CORNER FRAMING INFORMATION. HEADER PROVIDED MUST BE MINIMUM 3" X 11 1/4" SOLID SAWN OR LAMINATED VENEER LUMBER (L.V.L.)

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CLIENT / PROJECT

KENSINGTON
FAMILY HOMES
AVA PLAN
GARAGE LEFT

JOB No.	WO 1428-18
DRAWN:	DM /AG
CHECKED:	DM
REVIEW	9-11-18
FINAL:	10-1-18
REVISION	-

SCALE:
PER PLAN

SHEET #
S3