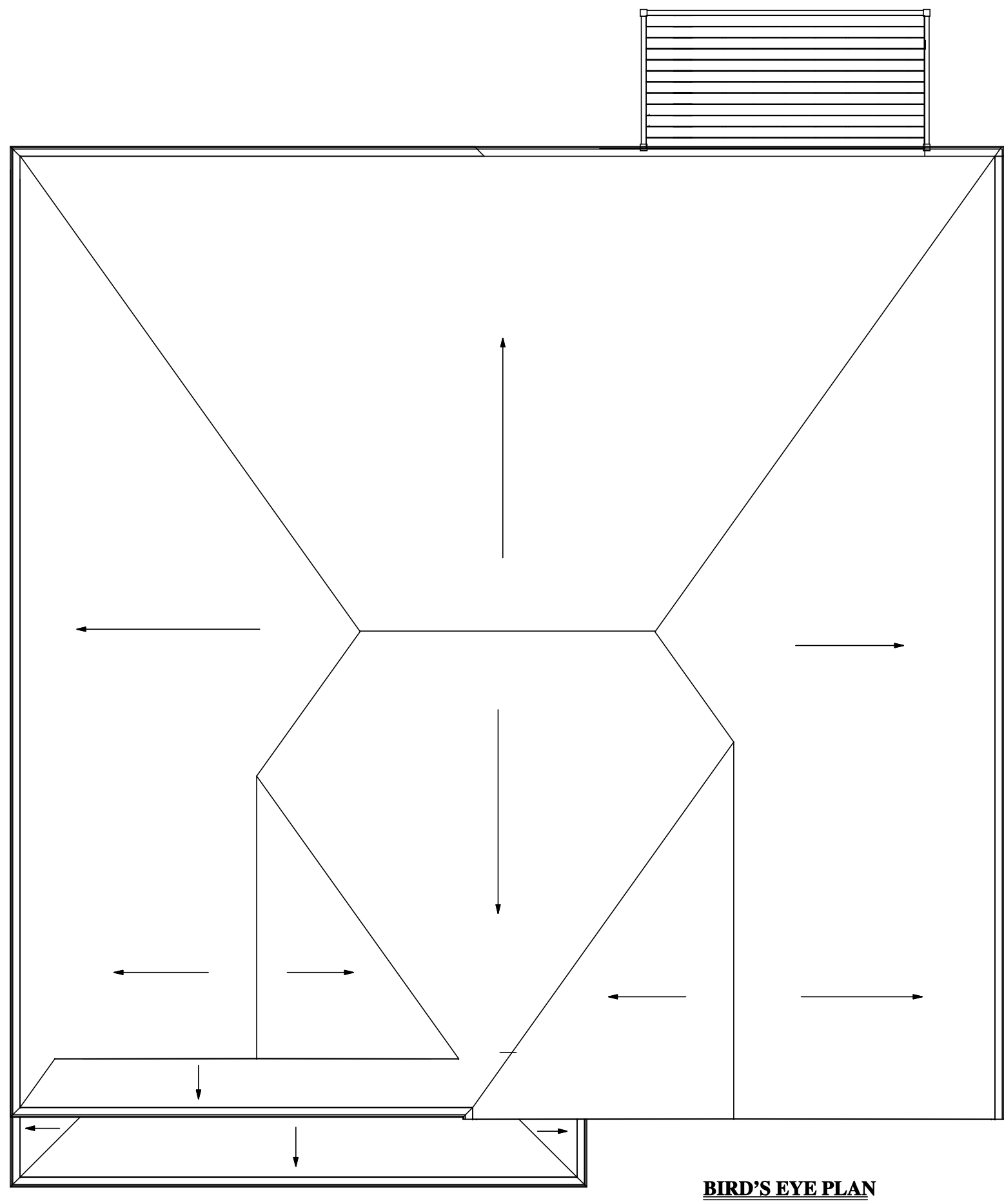
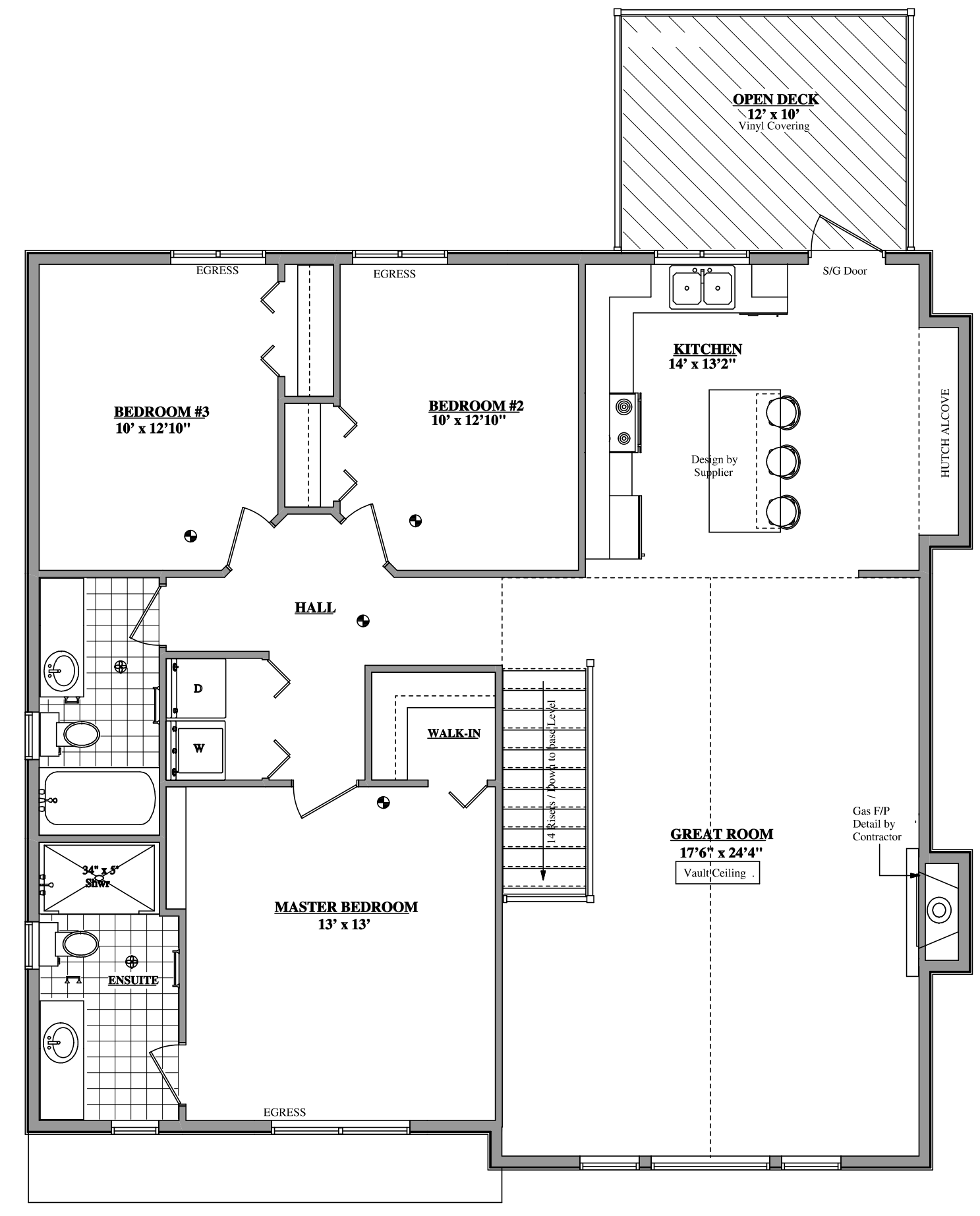
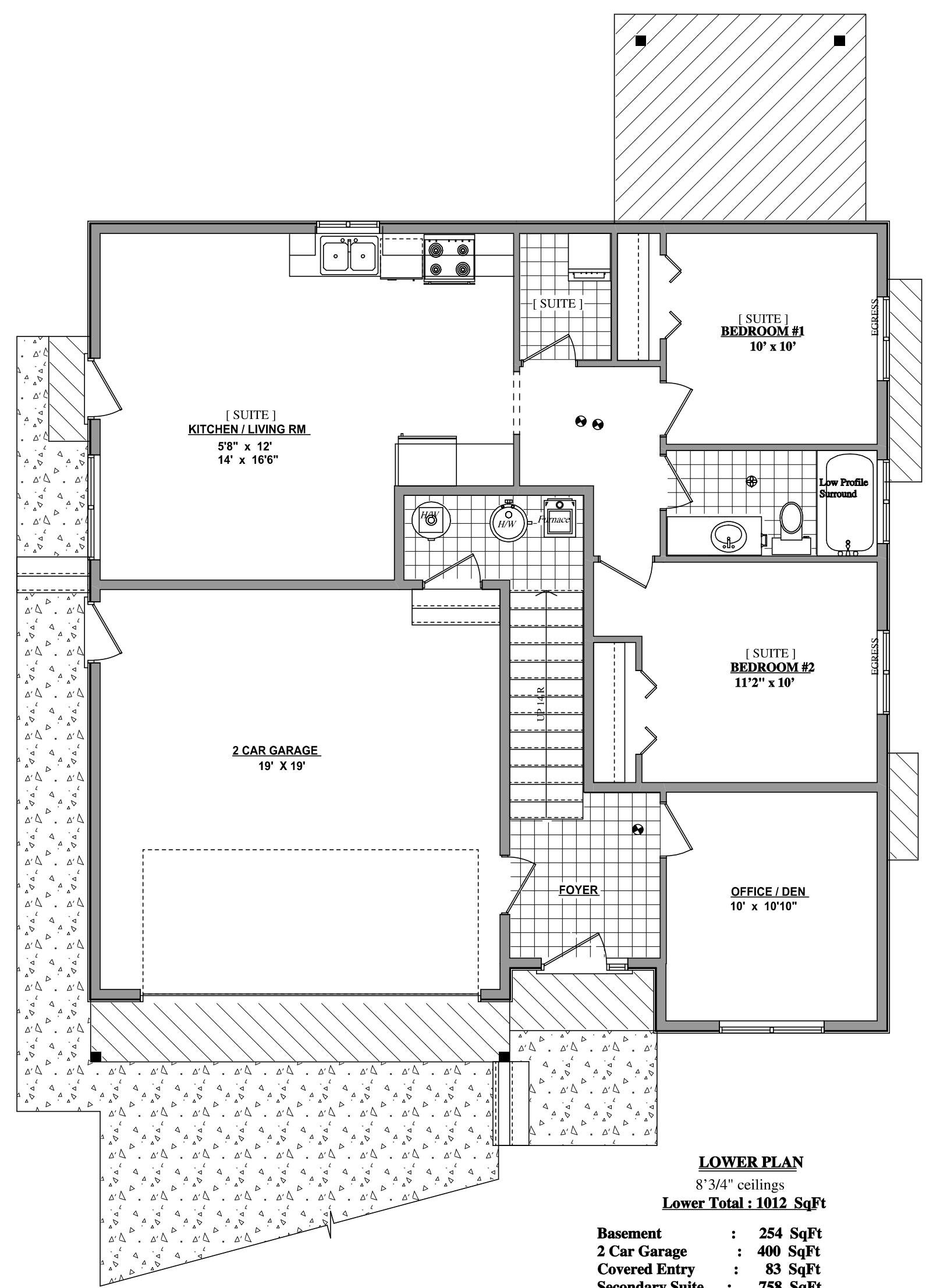


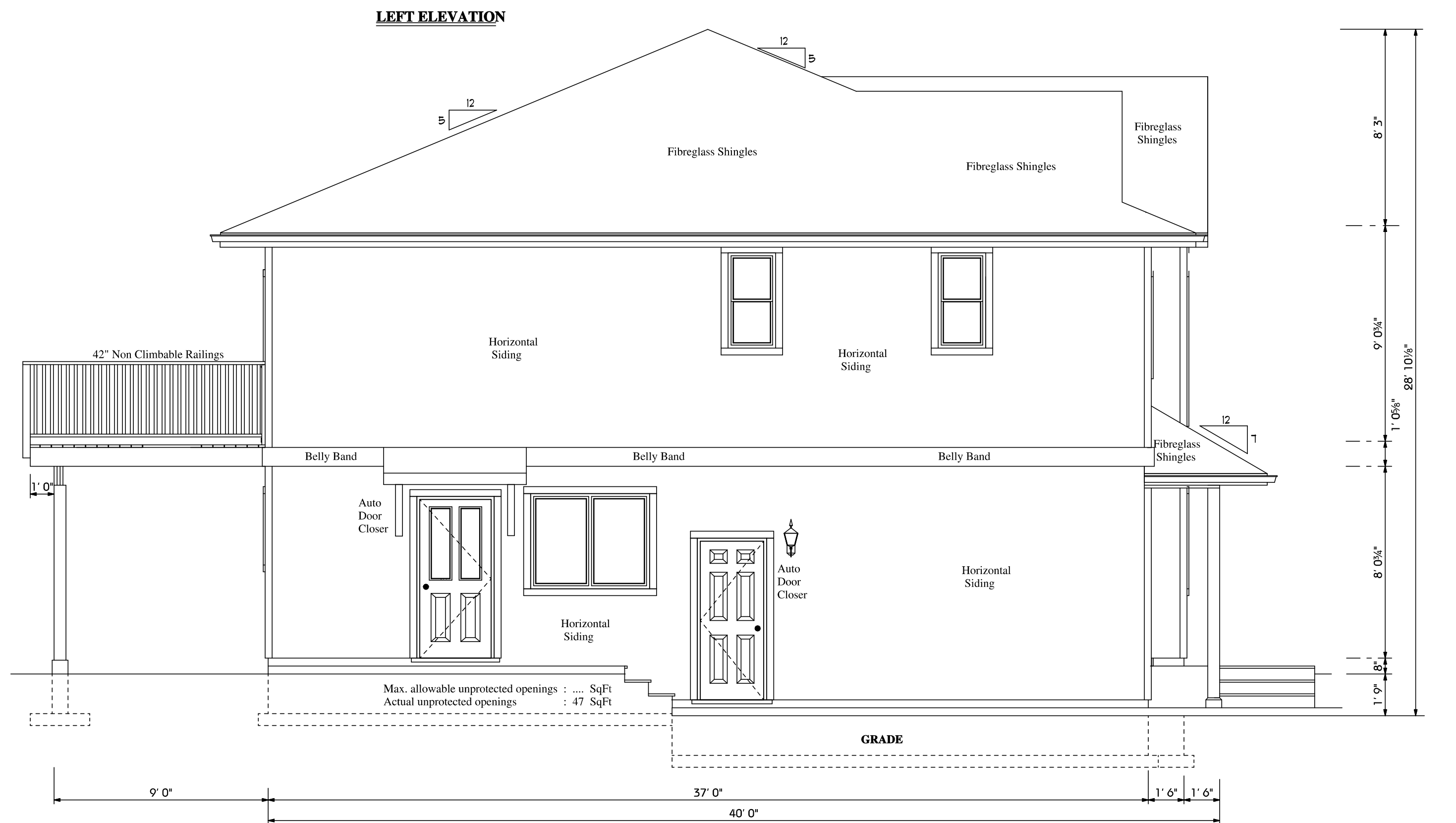
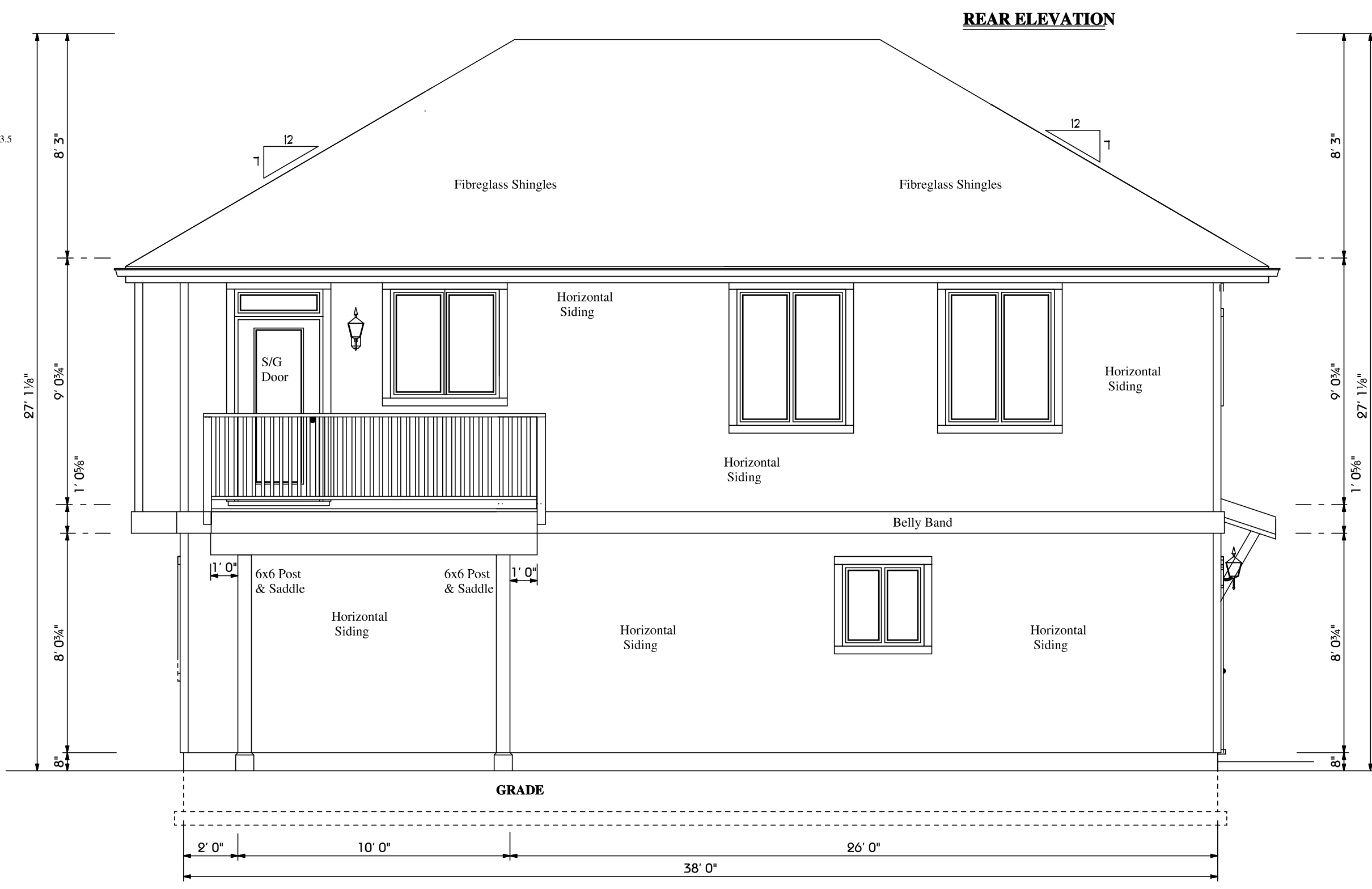
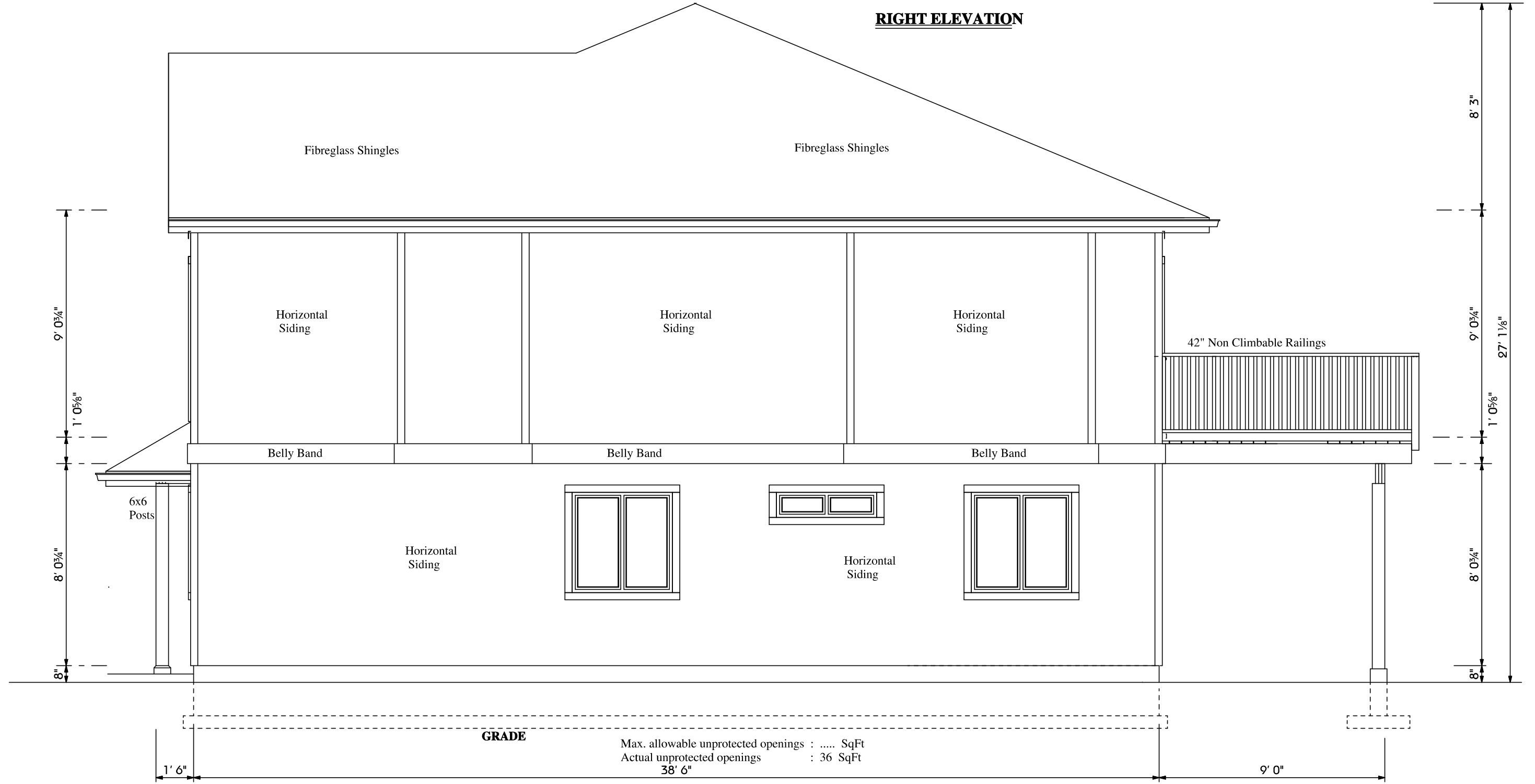
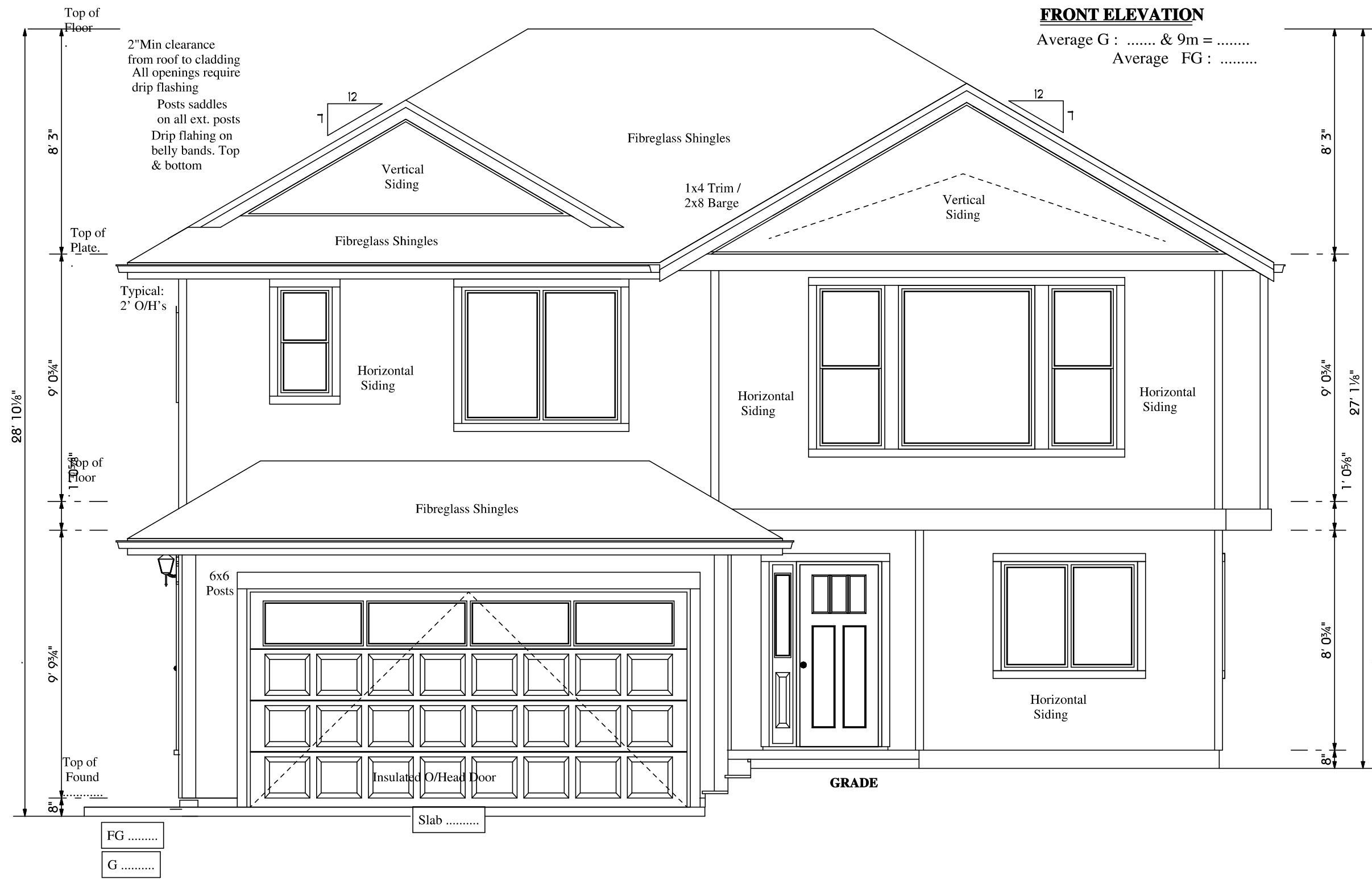


**LOWER PLAN**  
8' 3/4" ceilings  
Lower Total : 1012 SqFt  
Basement : 254 SqFt  
2 Car Garage : 400 SqFt  
Covered Entry : 83 SqFt  
Secondary Suite : 758 SqFt  
Lower Coverage : 1626 SqFt

**MAIN FLOOR PLAN**  
9' 0 3/4" Ceilings  
Main Floor : 1430 SqFt  
[ Excluding 37 SqFt Stairwell ]  
Open Deck : 120 SqFt



CITY MAX ALLOWABLE HEIGHT .



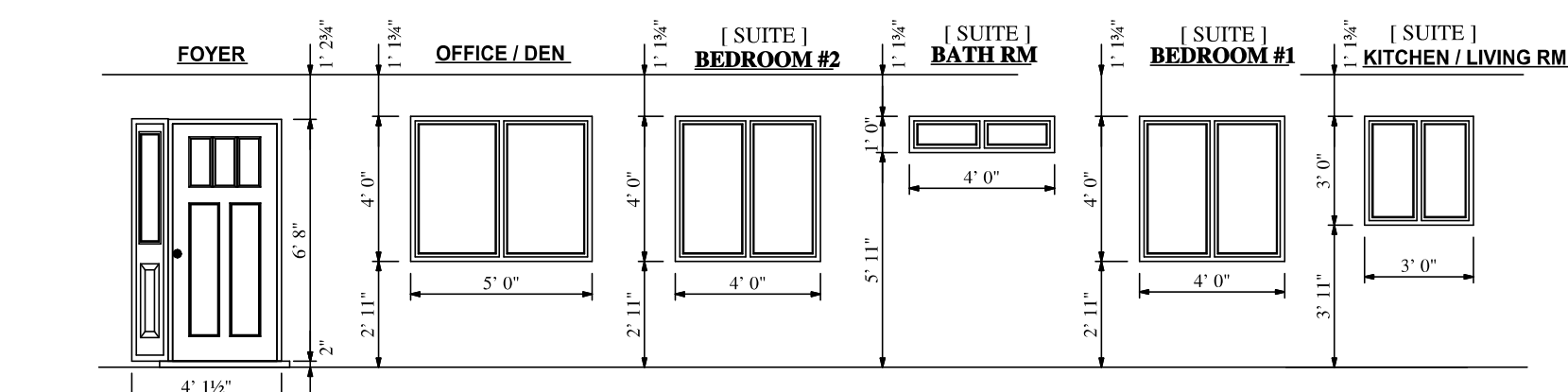
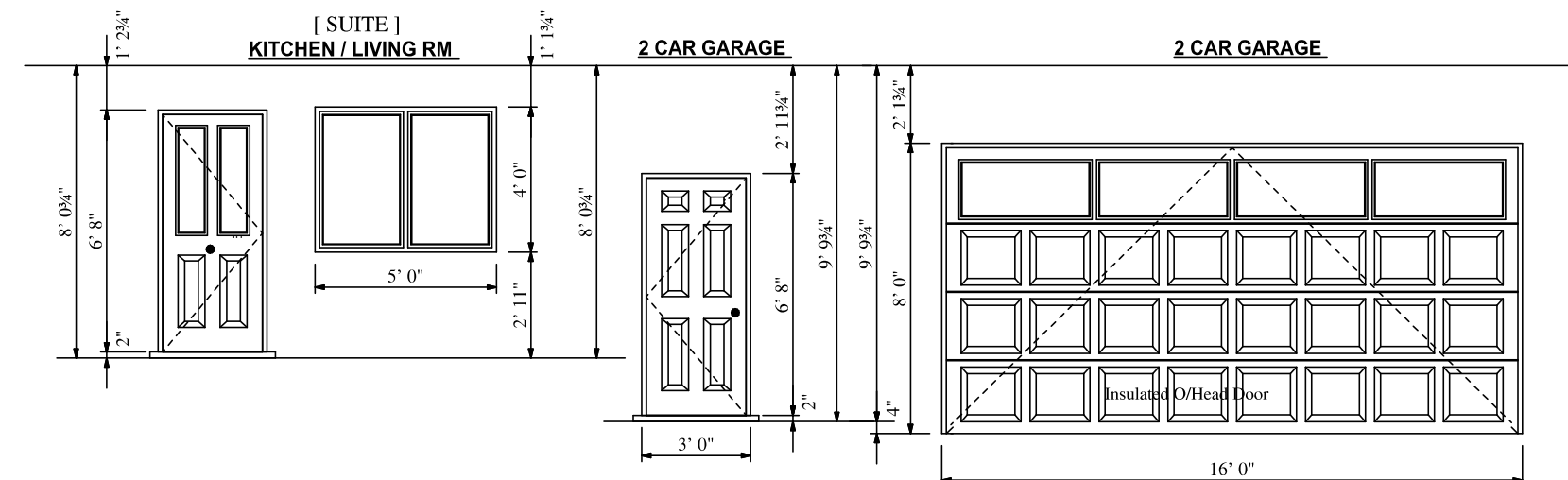
**\*Disclaimer\***  
 The attached drawings have been drawn by Sea Swan Est. for construction purposes and every effort has been made to make these plans accurate and authoritative. Sea Swan Est. does not warrant responsibility (financial or otherwise) for its accuracy or completeness. The attached plan design is considered a guide only and may be subject to change at any time, due to building codes, municipal bylaws and restrictions, natural surroundings, engineering requirements, construction practices and requirements. It is the responsibility of the user to apply their professional knowledge to the use of the information provided in these plans.

**\*Contractor\***  
 The Contractor shall be responsible for ensuring that construction complies with the British Columbia Building Code as well as all National and local Municipal regulations. It is highly recommended that the Contractor acquire the services of a Structural Engineer and a Geotech. It is the sole responsibility of the Contractor to verify the structural integrity of this building prior to any construction. Sea Swan Est. has design these drawings based on the info supplied and excepts no financial or otherwise liabilities pertaining to these drawings. The Contractor shall verify all dimensions, materials, equipment and components prior to construction. Commencement of construction by Contractor shall imply acceptance of responsibility of all specifications, dimensions and requirements as well as all surfaces and conditions as being suitable to receive said work.

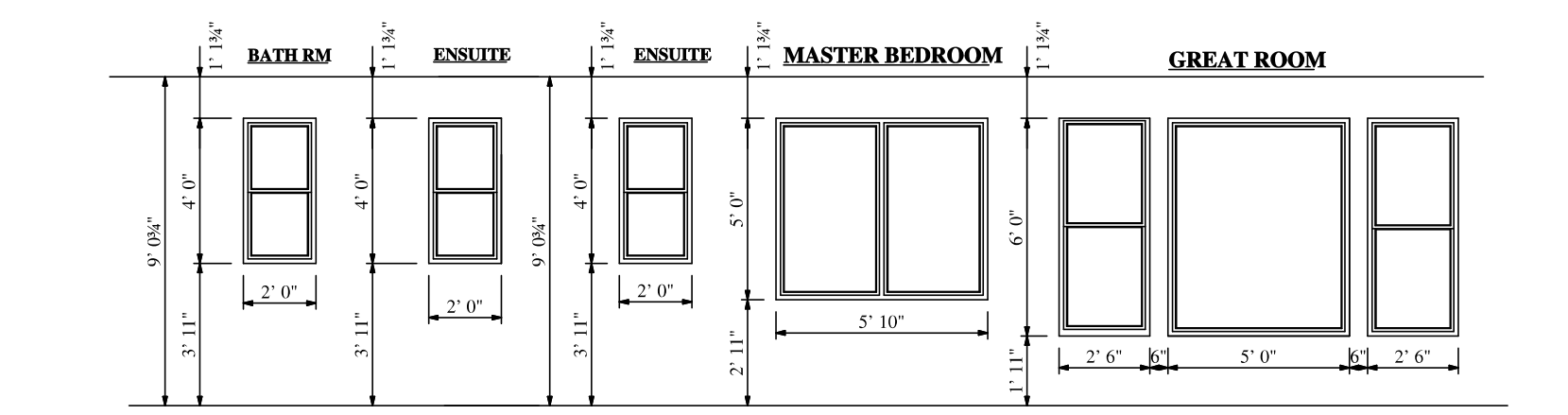
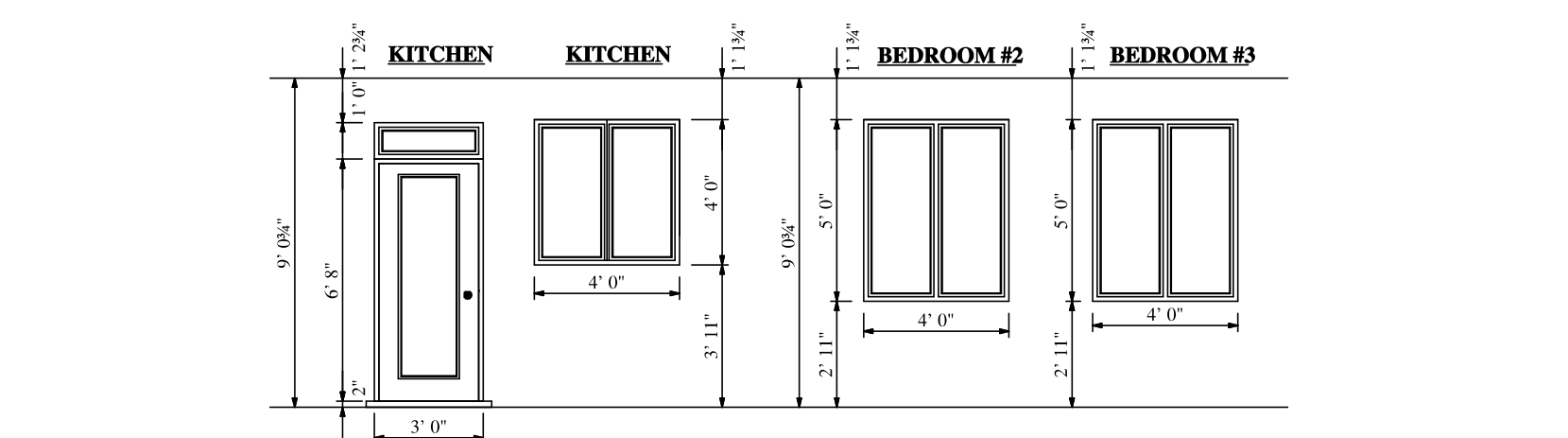
**\*Excavation & Foundation\***  
 Excavation for footing structure shall extend to undisturbed soil. Excavation shall be kept free of standing water. Building grades are to be sloped a min. of 2% away from dwelling and structures. Retaining walls are to be built according to good construction practices and may require a structural engineer. Footings are to be constructed on a soil bearing capacity of 2000 p.s.f. or greater. Footings shall be placed on undisturbed soil at an elevation below frost line. Footings being stepped the vertical rise between horizontal portions may not exceed 2". Horizontal distances between the rises may not be less than 2". Reinforcing of concrete must be designed by a Structural Engineer. Waterproofing and damp proofing as per Sec. 9.13.1.3(1) BCBC 2006. Concrete shall conform to Section 9.5.1. of BCBC 2018. Concrete shall have a min. compressive strength of 25 MPa after 28 days. Concrete used for garages, curbs and exterior stairs shall have a min. compressive strength of 32 MPa at 28 days.

**\*Wood Framing & Construction\***  
 Beams shall not have less than 3/12" length of leg; at end support. Load bearing interior & exterior timbers are to be a min. 2x10's unless otherwise specified or engineered. Wood columns must have a bearing support equal to size. Kneeing or bracing of wood framing shall comply with Section 9.23.5 of the BC Building Code 2018. All wood products to concrete must have damp proofing with an approved sill gasket. Pressure treated wood required anywhere wood contacts concrete. Floor joists may not have less than 1/12" of leg. support. All structural members beyond Part 9 of the Bldg. Code (i.e. Manufactured Roof & Floor Trusses, LVL, Beams, supporting hangers must be designed by a professional Engineer. All Electrical & Plumbing is to be done by qualified trades and adhering to current codes and restrictions. Windows, Doors, Siding, Roofing & Flashings are to adhere to current codes.

Plan has been designed to meet client's requirements and adhere to Engineering Guide for Wood Frame Construction CWC 2004.1. It is the responsibility of the Contractor to verify this with a Structural Engineer and adjust to their required recommendations.



Note: All window sizes, colors, egress etc. must be verified by supplier with Contractor prior to any manufacturing



TYPICAL:  
6" POURED CONCRETE FOUNDATION WALL  
2" R-12 RIGID INSULATION  
16" WIDE x 8" DEEP CONCRETE FOOTING  
MAX. 4" BACKFILL

TYPICAL CONCRETE PAD:  
w/ 30"x30"x8" CONCRETE FOOTING  
DAMP-PROOF FOUNDATION COVERING

4" DIA. WEAVING TILE IN 6" CRUSHED STONE (CLEAR) CONNECTED TO STORM DRAIN

TYPICAL SILL ASSEMBLY:  
1/2" DIA. ANCHOR BOLT @ 72" o.c.  
2x6 SILL PLATE  
1/4" SILL GASKET

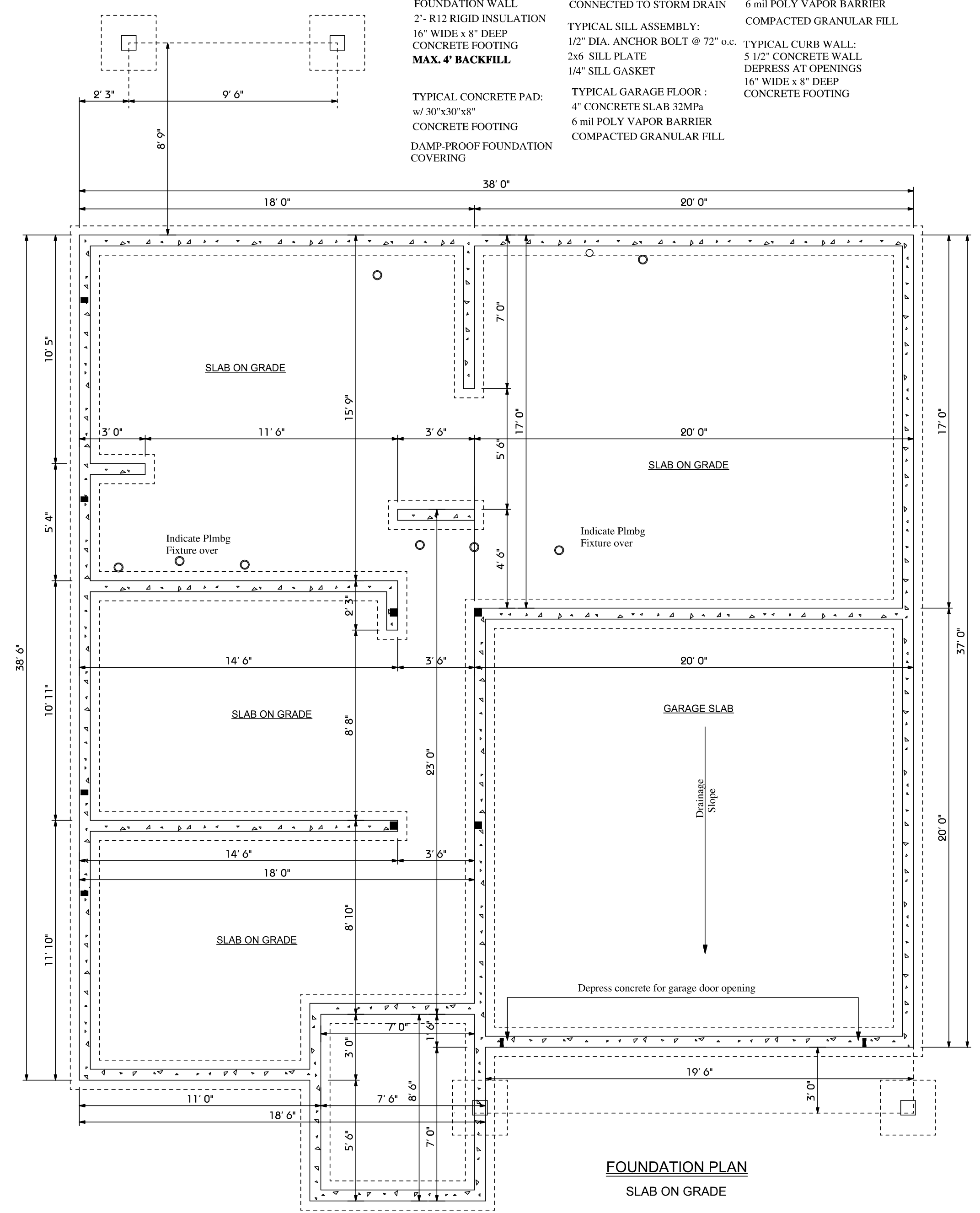
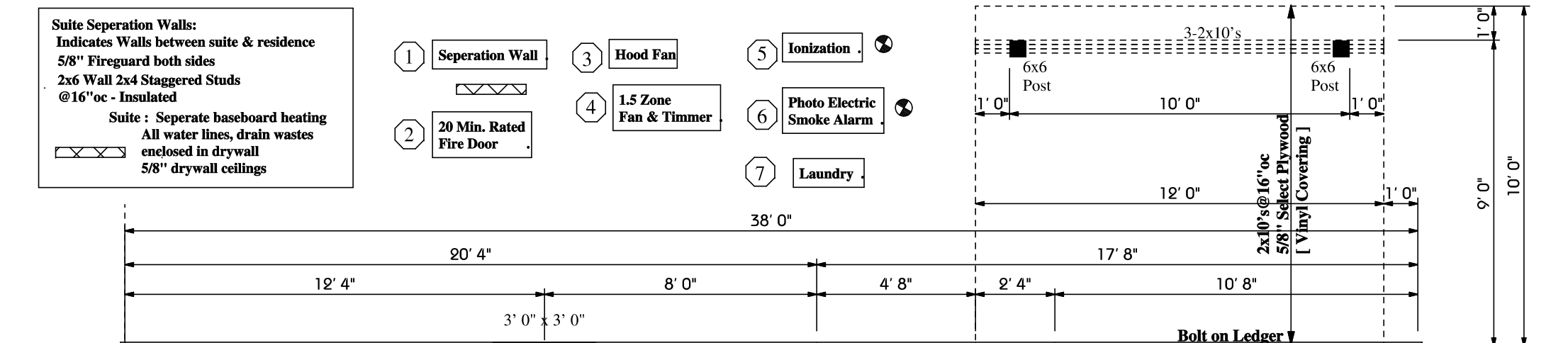
TYPICAL GARAGE FLOOR:  
4" CONCRETE SLAB 32MPa  
6 mil POLY VAPOR BARRIER  
COMPACTED GRANULAR FILL

TYPICAL BASEMENT FLOOR:  
4" CONCRETE SLAB c/w 6 mil POLY VAPOR BARRIER  
COMPACTED GRANULAR FILL

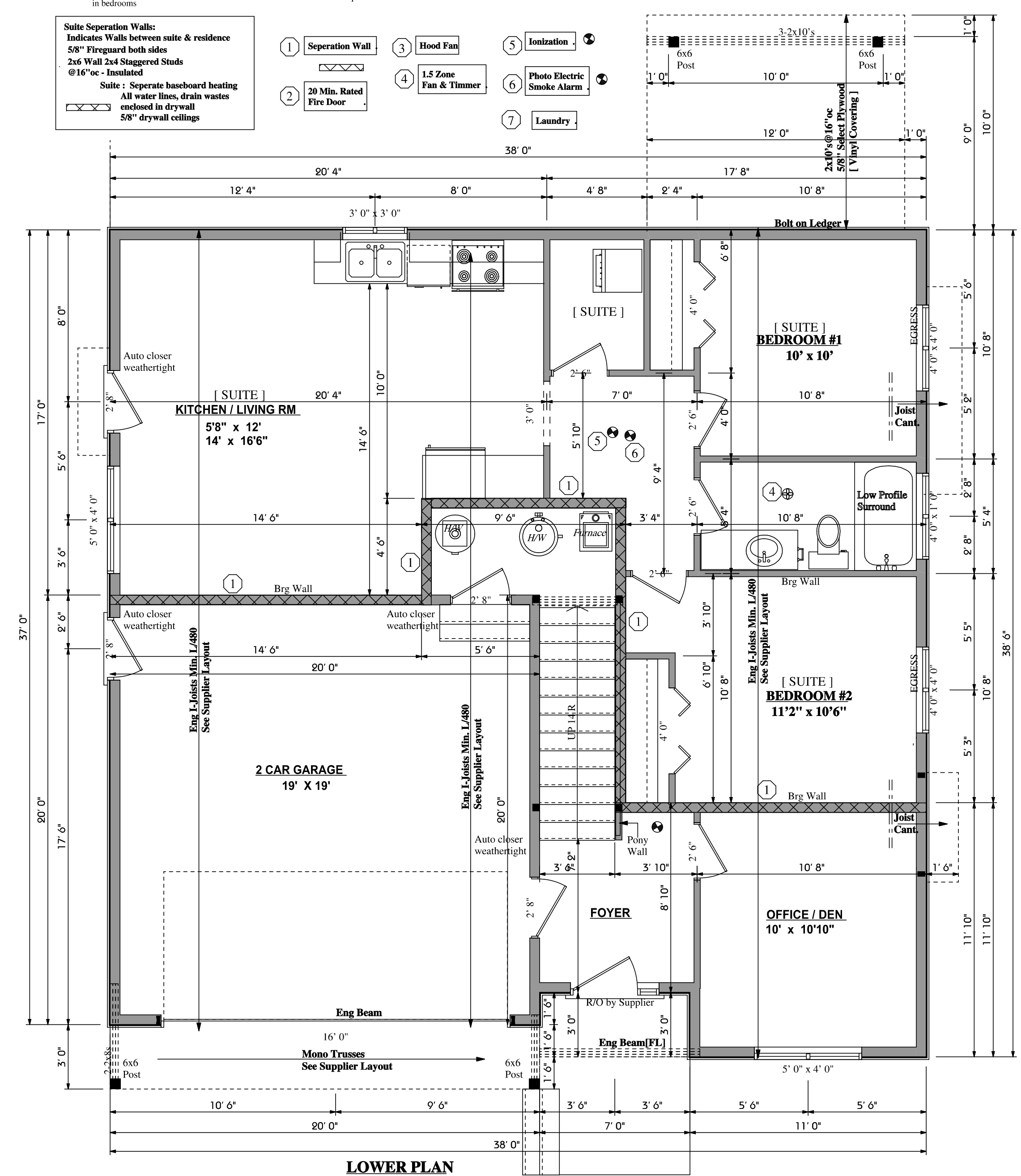
TYPICAL CURB WALL:  
5 1/2" CONCRETE WALL  
DEPRESS AT OPENINGS  
16" WIDE x 8" DEEP CONCRETE FOOTING

**Suite Info**

- Shut-Offs shall be installed where water supply enters each dwelling unit, so that when one suite is shut off, the water supply to the remainder of Bldg is not interrupted.
- Windows require unobstructed openings in bedrooms
- Exhaust Fan with timer set to 4 hr cycles per day, Max. 1.5 Zone and have a separate manual switch
- Non-removable pins on all outswinging exterior doors
- Hardwired CO2 Alarm required
- 20 Min. Rated door with self closer
- Stove exhaust fan to outside
- Interconnected Photo Electric type smoke alarm



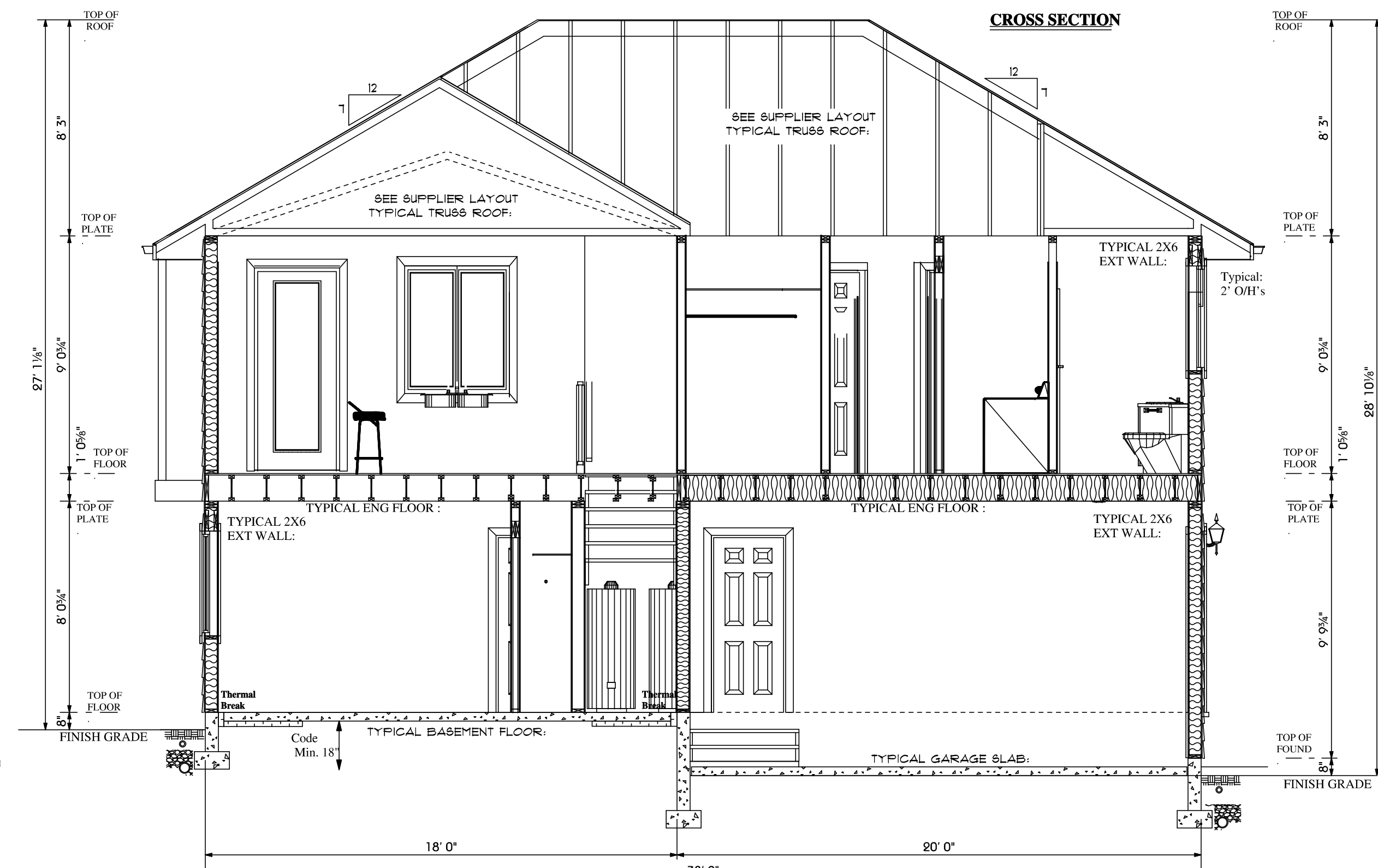
FOUNDATION PLAN  
SLAB ON GRADE



**LOWER FLOOR**  
8'3/4" ceilings  
Lower Total : 1012 SqFt

Basement : 254 SqFt  
2 Car Garage : 400 SqFt  
Covered Entry : 83 SqFt  
Secondary Suite : 758 SqFt

Lower Coverage : 1626 SqFt



**General Notes**

- Artificial stone must be installed over a 2" air space when applied over wood frame walls. (Max. height 5m)
- French Doors to be left open.
- Concrete stoop can not be poured against wood framing. Concrete foundation to be cast on top of ring beam system in stoop area.
- Max. Height of Backfill Against 8" thick concrete wall. To be laterally supported at top 40" if laterally unsupported. Special review by Professional Engineer if backfill height exceeded or the total height of walls is more than 10'.
- Exterior walls - 2 layers of 30 min bag paper.
- Double drain requires.
- Solid pipe system for roof water.
- Perforated pipe system for foundation water.
- All footings to be placed on solid bearing at a min. 8" below grade.
- Foundation walls - Damp-proofing of concrete walls below grade. Moisture barrier between foundation walls and mud seal. Thermostat drains required as per municipal Bldg. Codes. Concrete footings shall be on solid undisturbed firm ground below frost line. Grables on plan the settlement determined by contractor unless indicated by a document provided by a BC Surveyor.
- Exterior doors are to be solid core type 4 weather stripped.
- Flashing is required to current codes in all horizontal changes in exterior framing. Caulking required around all exterior openings. Flashing over all up-roofed openings. Flashing to be installed to meet current BC Bldg. Codes. Vapor barrier on top of and at end of walls & over beams against exterior walls & also spaces. Interior railings are to be 500mm in height and exterior railings are to be 1000mm. Connected to code requirements. Safety glass if applicable. Bldg heights must be verified to meet municipal requirements.

**Electrical & Plumbing**

To be performed by a qualified tradesman and to meet BCBC2018 / Municipal Codes. (Information not supplied by Designer)

**Windows BCBC2018 / Doors / Finishes**

All products to be applied must be verified by suppliers with contractor prior to any manufacturing or ordering.

**General Notes**

Attached plan has been designed to the clients specifications and must meet the current BC Bldg. Codes and local / Municipal Codes.

Construction is to be performed by a qualified contractor. It is the responsibility of the contractor to verify all measurements, sizes, details etc. prior to any construction.

Any structural design required must be performed by a certified structural engineer. Foundation is to be approved by the local Bldg. Dept. authorities or by a Structural Engineer. Timber Framing (if applicable) is to be designed by others.

**Designer Notes & Recommendations**

- Designer assumes no liability for omissions or errors on attached plan.
- Qualify established Contractor to perform construction.
- Engineered Joist Floor Systems (L480 min. design)
- Manufactured roof truss 4 floor joists prior to construction.
- Structural & Geotechnical Engineers (if applicable)
- Contractor to verify with client all windows, doors, finishing (Exterior & Interior) prior to construction.

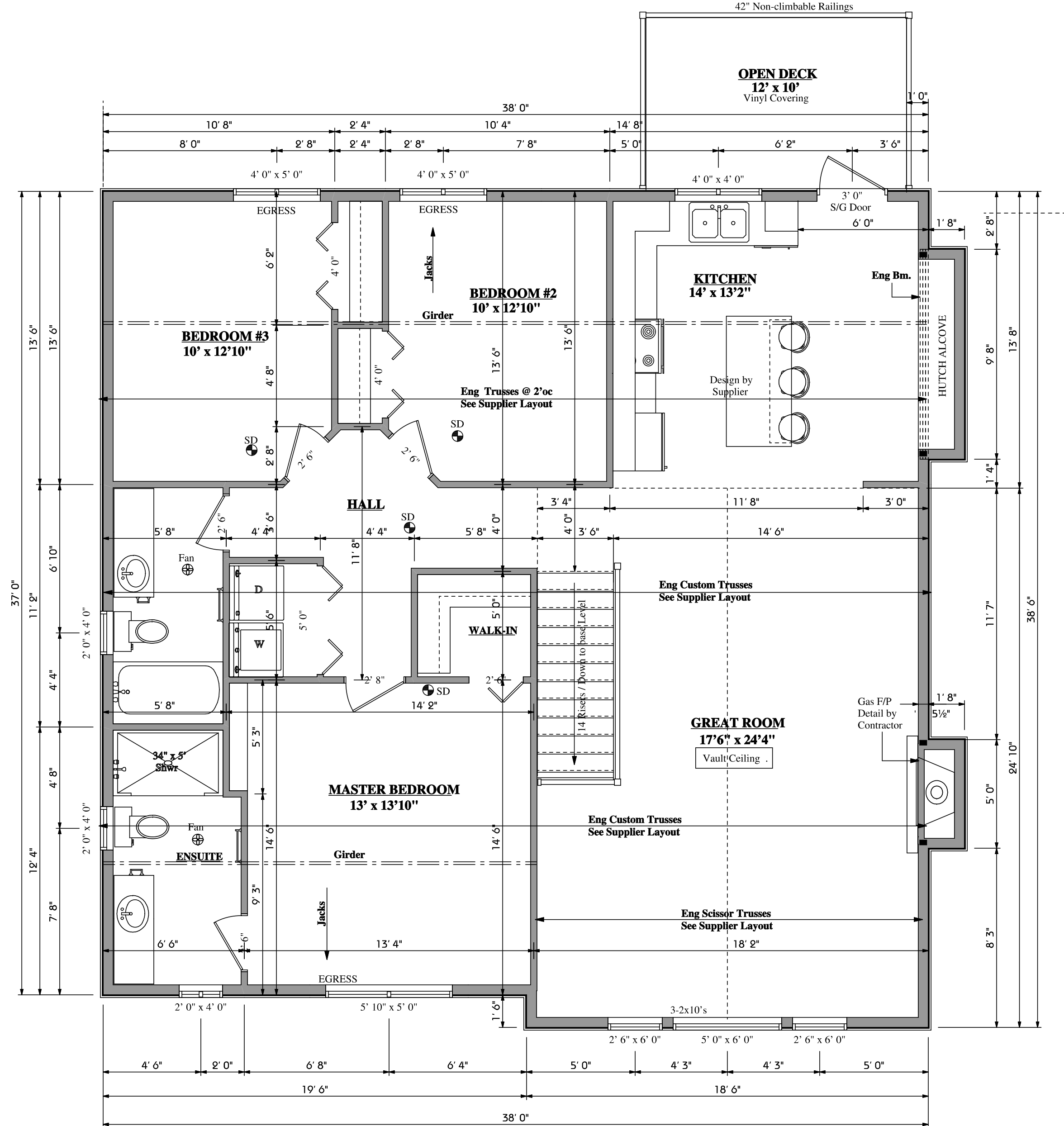
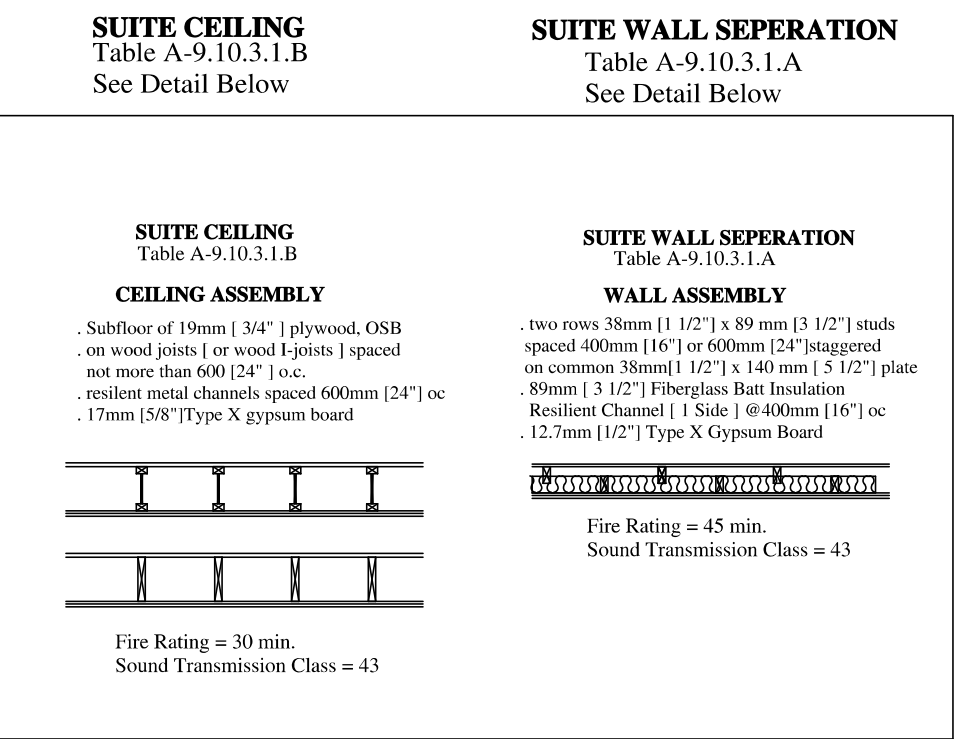
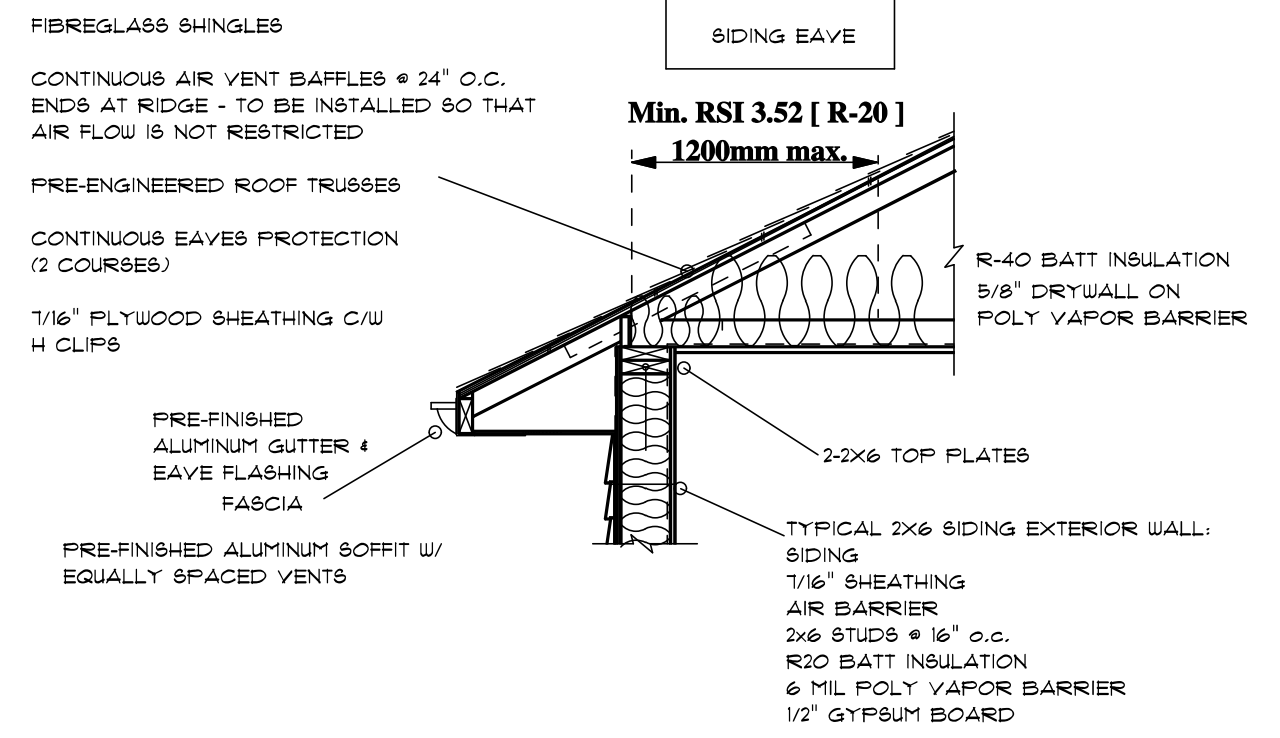
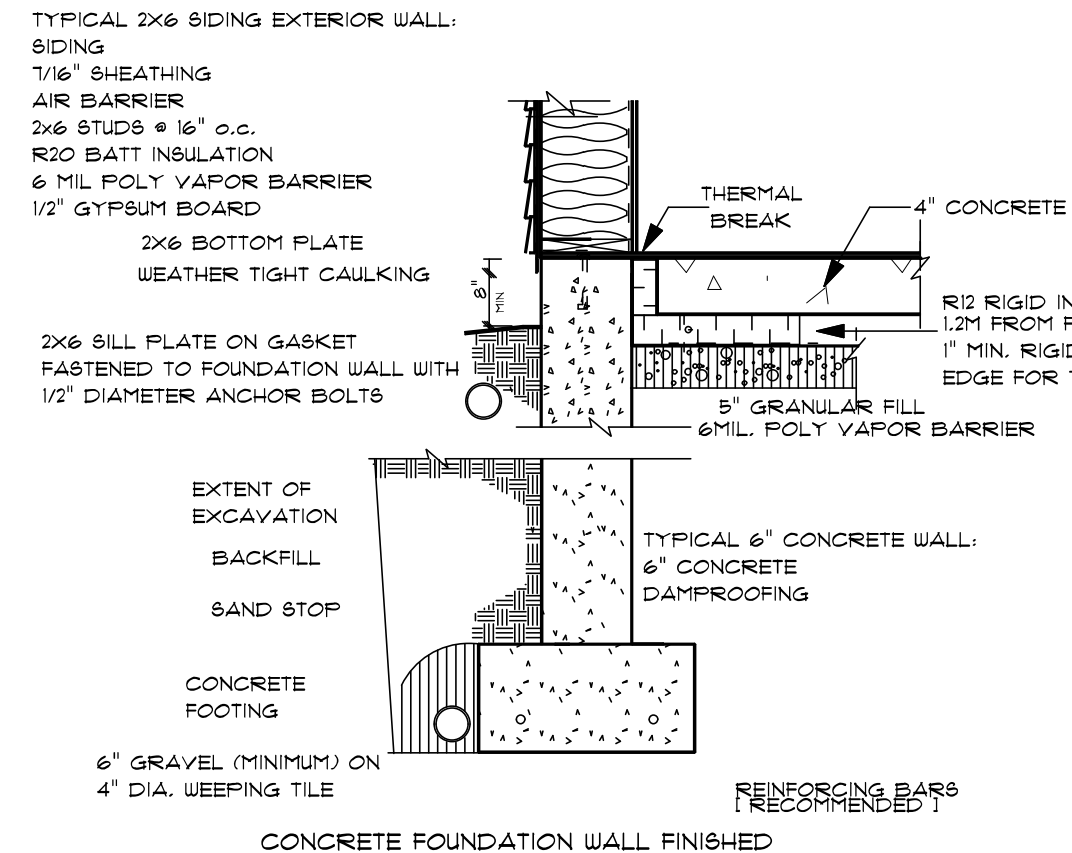
Note: Contractor must adhere to all the new Codes - BCBC2018

- TYPICAL 8" FOURED CONCRETE FOUNDATION WALL**
- 2" RIGID INSULATION 12M MIN.
- 16" WIDE x 8" DEEP CONCRETE FOOTING REBAR RECOMMENDED MAX. 7'6" BACKFILL
- TYPICAL 6" FOURED CONCRETE FOUNDATION WALL**
- 2" RIGID INSULATION 12M MIN.
- 16" WIDE x 8" DEEP CONCRETE FOOTING REBAR RECOMMENDED MAX. 4' BACKFILL
- TYPICAL CONCRETE PAD:** 30"x30"x8" CONCRETE FOOTING DAMP-PROOF FOUNDATION COVERING 4" DIA. WEEPING TILE IN 6" CRUSHED STONE (CLEAR) CONNECTED TO STORM DRAIN
- TYPICAL BILL ASSEMBLY:** 1/2" DIA. ANCHOR BOLT @ 12" o.c. 2x6 SILL PLATE 1/4" SILL GASKET
- TYPICAL GARAGE FLOOR:** 4" CONCRETE SLAB 30MPa 6 mil POLY VAPOR BARRIER COMPACTED GRANULAR FILL
- TYPICAL BASEMENT FLOOR:** 4" CONCRETE SLAB c/w 6 mil POLY VAPOR BARRIER COMPACTED GRANULAR FILL
- TYPICAL CURB WALL:** 5 1/2" CONCRETE WALL 16" WIDE x 6" DEEP CONCRETE FOOTING
- TYPICAL ENG FLOOR:** 3/4" TAG SUBFLOOR SCREWBED 4 GLEUED 2x4 STUDS @ 16" o.c. 1/2" DRYWALL TAPED & BANDED
- TYPICAL 2x6 WALL:** 1/2" DRYWALL TAPED & BANDED 2x4 STUDS @ 16" o.c. 1/2" DRYWALL TAPED & BANDED
- TYPICAL 2x6 SIDING EXT WALL:** SIDING (VERIFY) 1/16" PLYWOOD SHEATHING 2 LAYERS 30MIN BLDG PAPER RAIN SCREEN DETAIL (if applicable) 2x6 STUDS @ 16" o.c. R20 BATT INSULATION 6 mil POLY V.B. 1/2" DRYWALL TAPED & BANDED
- TYPICAL TRUSS ROOF:** FIBREGLASS SHINGLES 1/16" ROOFING PLYWOOD c/w 1" CLIPS 2x6 BLOCKING AT PEAK FIRE-ENG. TRUSSES @ 24" o.c. 2x4 TRUSS BRACING R40 BATT INSULATION 6 mil POLY V.B. 5/8" CEILING BOARD TAPED & BANDED SEE SUPPLIER LAYOUT
- NOTE: VENTILATE ROOF TO 1/300TH OF INSULATED CEILING AREA

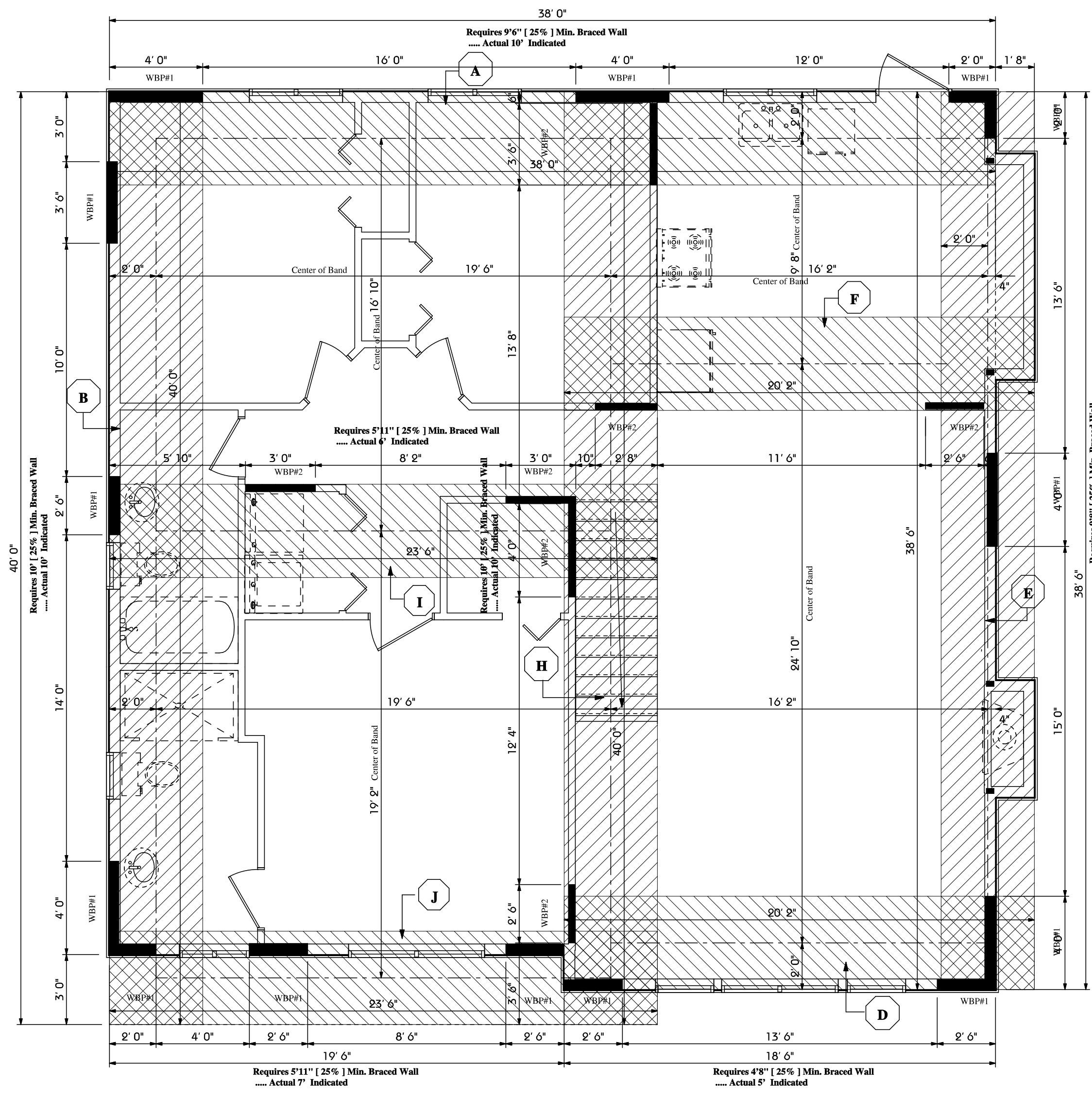
**Climate Zone 4 Section 9.36. of the BC Bldg Code**

Typical Roofs	RSI 6.91 [R-39.2]	Typical Windows & Doors	US1 1.80 [U-0.32]
Typical Cathedral Ceilings & Flat Roofs	RSI 4.67 [R-26.5]	Typical Door to Garage	RSI 1.1 [R-6.25]
Typical Skylights	USI 2.90 [U-0.52]	Typical Access Hatch	RSI 2.6 [U-0.46]
Typical Skylights Shafts	RSI 2.78 [R15.8]	Typical Front Door	USI 2.6 [U-0.46]
Typical Ext. Walls	RSI 3.5 [R-20]	Typical Glass Block	USI 2.9 [U-0.51]
Typical Floors over Unheated Spaces	RSI 4.67 [R-26.5]		
Typical Foundation Walls	RSI 1.99 [R-11.3]	Contractor must adhere to the new Energy Efficiency Requirement Climate Zone 4 Section 9.36. of the BC Bldg Code	
Typical Heated Floors	RSI 2.32 [R-13.2]		
Typical Unheated Floors above frost line	RSI 1.96 [R-11.1]		
Typical Unheated Floors below frost line	Insulation not required		

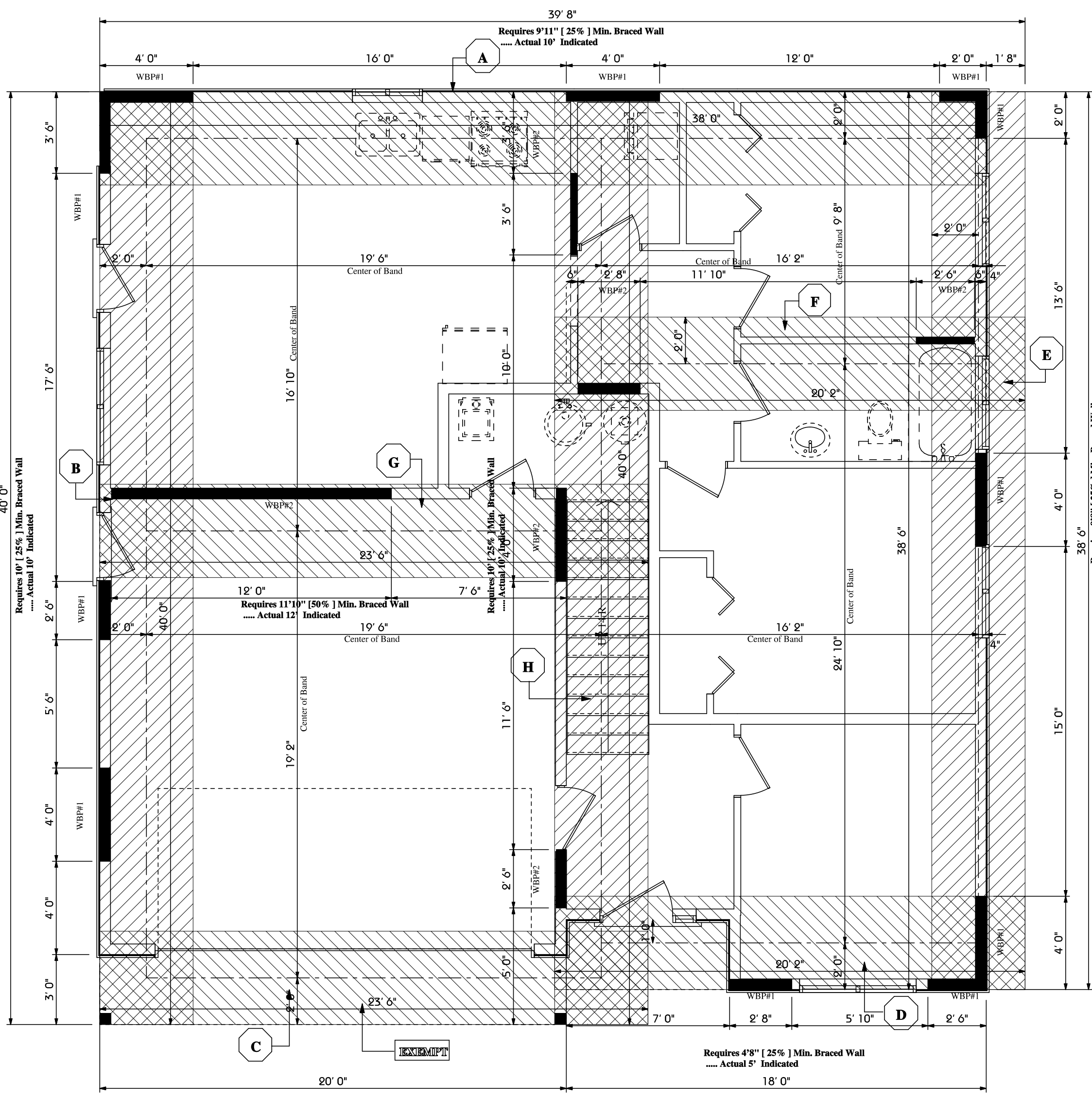
**Thermal Characteristics of Building Assemblies (9.36.2.6 - 9.36.2.8)**



**MAIN FLOOR PLAN**  
9' 0 3/4" Ceilings  
Main Floor : 1430 SqFt  
[ Excluding 37 SqFt Stairwell ]  
Open Deck : 120 SqFt



**MAIN FLOOR PLAN**  
 [WALL BANDING & PANELS]

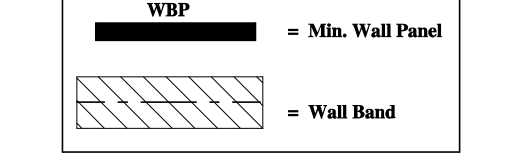


**LOWER FLOOR PLAN**  
 [WALL BANDING & PANELS]

WALL BANDING & PANELS		LIGHT CONSTRUCTION	
WALL PANEL	LOCATION	MIN. LENGTH	TYPE
WBP#1	MAIN	25% AS PER PLAN	SHEATHING
WBP#2	MAIN	25% AS PER PLAN	Sheath 1 Side
			Double Fasteners
			Option: DRYWALL 2 Sides
WBP#1	LOWER	25% AS PER PLAN	SHEATHING
WBP#2	LOWER	25% AS PER PLAN	Sheath 1 Side
			Double Fasteners
			Option: DRYWALL 2 Sides

SNOW LOAD:  $S_s = 2.3kPa$ ,  $S_r = 0.4kPa$   
 SEISMIC:  $S_a(0.2) = 1.02$   
 WIND:  $q(150) = 0.5 kPa$   
 ANY CHANGES MUST BE REVIEWED BY AUTHORITIES HAVING JURISDICTION OR A P.E.N.G.

MATERIALS & SUPPORTS  
 [See Table 9.23.13.16 BCBC 2012 Pg. 415]  
 FASTENING & WALL ANCHORING  
 [See 9.23.6 BCBC 2012 Pg. 406]



NOTE: THE BRACED WALL PANELS DRAWING IS BASED ON MIN. CODE STANDARDS.  
 NOTE: AREAS INDICATED AS WALL BRACED PANEL SHEATHING MAY NOT BE DRILLED, CUT OR ALTERED OR IN ANY WAY BE COMPROMISED.

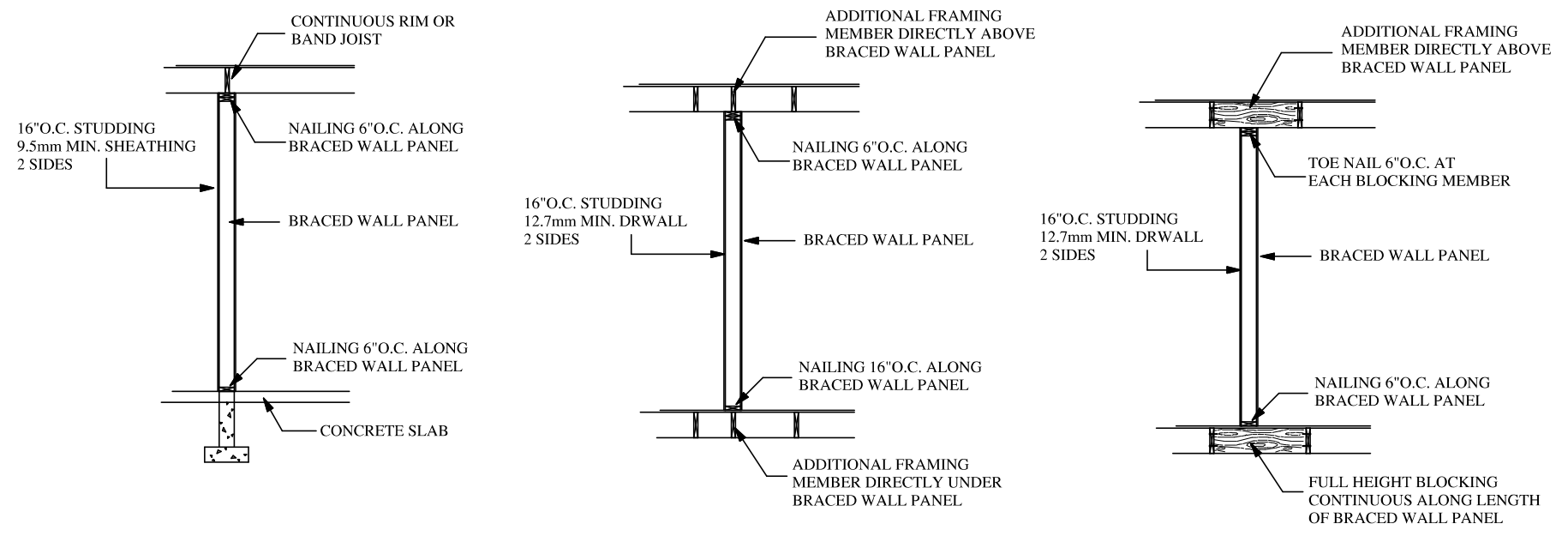
NOTE: IT IS MANDATORY THAT CONTRACTOR COORDINATE WITH ALL TRADES THE LOCATION OF WALL PANELS & ADJUST IF NEEDED [THIS ONLY A GUIDE LINE TO MEET CURRENT CODE] BUT MUST ADHERE TO BC B.C. CODE 2012 REGULATIONS ON LATERAL BRACING

**GENERAL SEISMIC INFORMATION**

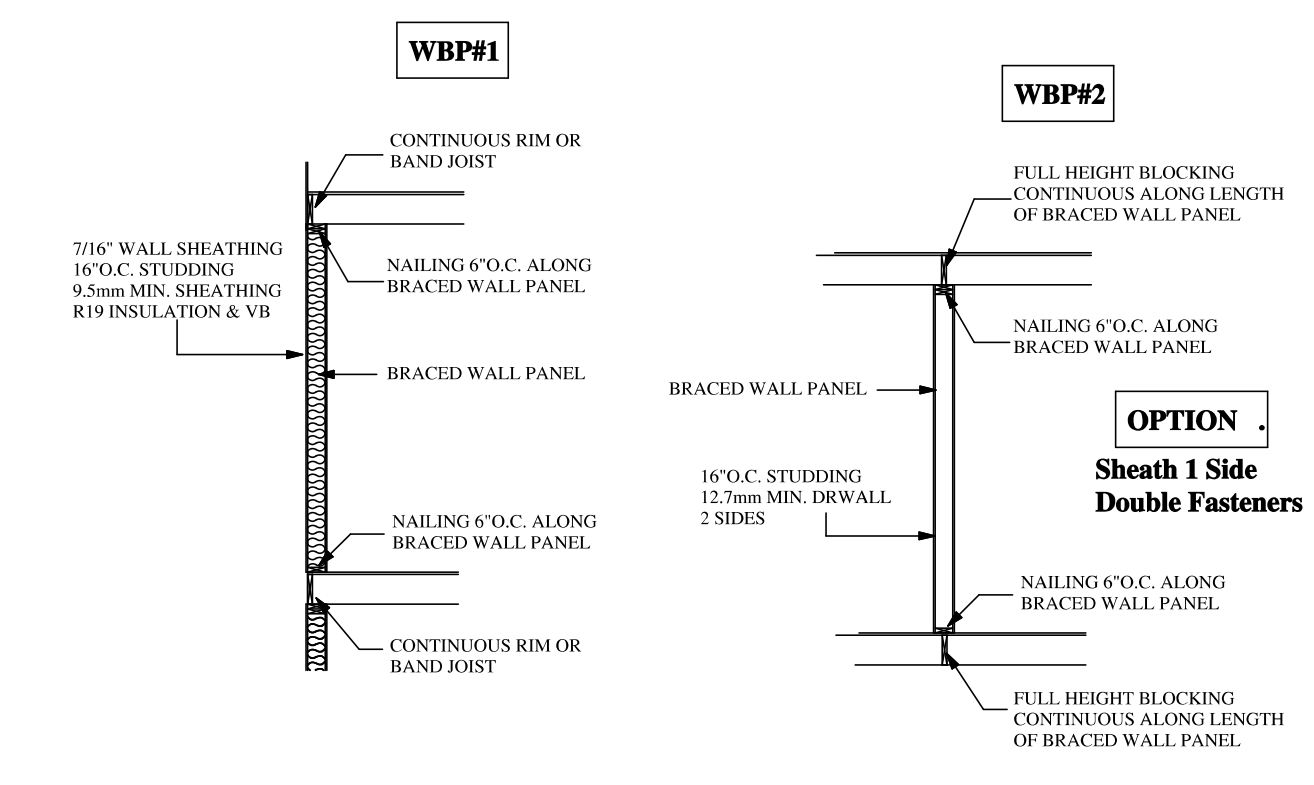
PLAN SUBMISSION	CITY OF NANAIMO
LOCATION OF CONSTRUCTION	LOT 12 ..... HARBAN RD
SEISMIC REGION	1.02 < $S_a(0.2)$ < 2.0
TYPE OF CONSTRUCTION	LIGHT CONSTRUCTION
DESIGN STANDARD	BCBC PART 9
TRADE OFFS	10.6m OPEN CONCEPT

**SEISMIC BANDING AND PANEL LEGEND**

BAND	MATERIAL	BAND LENGTH	PANEL BUMP	ACTUAL
A	WOOD	39'8"	9'6"	10'
B	WOOD	40'	10'	10'
C	EXEMPT	23'6"	.	.
D	WOOD	18'6"	4'8"	5'
E	WOOD	38'6"	9'8"	10'
F	DRYWALL	20'2"	5'1"	9'2"
G	DRYWALL	23'6" (80%)	11'0"	12'
H	DRYWALL	40'	10'	10'
I	DRYWALL	23'6"	5'11"	6'
J	WOOD	23'6"	5'11"	T



[See Table 9.23.13.16 BCBC 2012 Pg. 415]  
 [See 9.23.6 BCBC 2012 Pg. 406]



Light Construction  
 Minimum Thickness of Sheathing or Interior Finish for Braced Wall Panels

Panel Type: Cladding, Sheathing or Interior Finish	With Supports	Min. Thickness
Gypsum board interior finish	400 mm o.c.	12.7 mm
	600 mm o.c.	15.9 mm
Sheathing [CAN/CSA-0325]	400 mm o.c.	W24
	600 mm o.c.	W24
OSB O-1 and O-2 grades	400 mm o.c.	11 mm
	400 mm o.c.	12.5 mm
	600 mm o.c.	11 mm
Plywood	600 mm o.c.	12.5 mm

Fasteners for Subflooring & Sheathing	Fasteners	Min.# or Max. Spacing	Min. Length of Fasteners, mm
			0.2 = $S_a(0.2) \leq 1.0$ 0.4 = $S_a(0.4) \leq 1.2$
Board lumber $\leq 184$ mm wide	Common, spiral or Ring Nails	2 per support	63
	Screws		51
Board lumber $> 184$ mm wide	14-gauge staples	3 per support	63
	Screws		51
Plywood, OSB or Waferboard $\leq 20$ mm	Common, spiral or Ring Nails	150 mm o.c. along edges and 300mm oc along intermediate supports	63
	Screws		51
Plywood, OSB or Waferboard $\leq 20$ mm	Common, spiral or Ring Nails	75 mm o.c. along edges and 300mm oc along intermediate supports	63
	Screws		51
20mm x Plywood, OSB or Waferboard $\leq 20$ mm	Common, spiral or Ring Nails	3	63
	Screws		51

Anchor Bolt Spacing	Number of floors Supported	Max. Spacing along Brace Wall Band
Anchor Bolt Diameter 12.7mm	1	2.4
	2	2.2
	3	1.8
Anchor Bolt Diameter 15.9mm	1	2.4
	2	2.4
	3	2.2

Number of nails each side of double plate	1	2	3
1	2	3	3
2	5	7	7
3	8	11	11

**OPTION**  
 Sheath 1 Side  
 Double Fasteners