

JC ENGINEERING, Inc.

**Civil & Environmental Engineering** 

2854 Cranberry Highway. East Wareham, Massachusetts 02538 Ph. 508-273-0377

March 5, 2024

**RECEIVED** By Bourne Health Department at 10:37 am, Mar 06, 2024

Bourne Board of Health 24 Perry Avenue Buzzards Bay, MA 02532

RE: Waiver Request for 405 Circuit Avenue, Pocasset, MA

Dear Members:

Please accept this letter of request to be heard before the Board of Health at their next meeting to discuss a waiver from Board of Health Regulations for the continued use of the existing septic system at 405 Circuit Avenue, Pocasset, MA to accommodate proposed renovations of the property. The existing septic system consists of a 1,000-gallon septic tank, a distribution box, and an SAS comprising 20 total ARC 36HC plastic chambers in a field configuration with inspection ports. The SAS does not meet 310 CMR 15.211 and the local Board of Health regulation of 150-ft minimum setback to wetlands (i.e Coastal Bank). The SAS is 116.1' away from the Coastal Bank at its closest point and 142.1' away from the Mean High-Water line at its closest point. See below a list of waivers and variances previously approved by the health department for the existing septic system back in 2011 under Permit No. 69-11.

# In accordance with 310 CMR 15.401 - 15.405, the following Local Upgrade Approvals were approved by the Bourne Health Department from 310 CMR 15.211:

- 1.) A 5.0' waiver (10.0' to 5.0') for the minimum setback distance from the SAS to the western & northern property line.
- 2.) A 2.8' waiver (10.0' to 7.2') for the minimum setback distance from the SAS to the existing shed.
- 3.) A 1.0' waiver (10.0' to 9.0') for the minimum setback distance from the SAS to the existing garage.

## The following local variance was approved by the Bourne Health Department from the 150-ft minimum setback to wetlands:

1.) A 33.9' variance (150.0' - 116.1') from the Coastal Bank to the SAS.

405 Circuit Avenue March 5, 2024 Page 2

The proposed project involves the construction of a  $2^{nd}$  floor balcony partially over the footprint of the existing enclosed porch; the removal of an 8'x1' section of the western side of the enclosed porch; the construction of a new dormer within the footprint of the existing home; and renovations to the enclosed porch. The porch work includes interior renovations and adding 5 concrete sonotubes underneath the existing footprint of the porch for improved structural support. No lateral expansion or net increase of bedrooms are proposed under this project. The existing home has three (3) total bedrooms, and the existing septic system was designed and approved for three (3) total bedrooms.

Enclosed are the completed application and Plot Plan dated February 16, 2024 (REV.1: 3-5-24). Thank you in advance for your consideration of this request.

Sincerely,

Michael Pimentel

Michael Pimentel, E.I.T., C.S.E. Senior Project Engineer



#### Bourne Board of Health Application for Septic Variance or Waiver Requests



In accordance with the established procedures of the Bourne Board of Health, this application is for septic variances and waivers which have not been approved administratively and require approval at a public meeting. Please use the following application form for guidance on how to apply for variances and waivers which serve new construction, changes in use, or increases in flow to on-site sewage disposal systems with design flows of less than 10,000 gallons/ day.

#### 1. Facility Name and Address:

Owner's Name Brent T. Warren, Trustee of the 405 Circuit Avenue Realty Trust						
Facility's Street Address 405 Circuit Avenue, Pocasset, MA						
Owner's Telephone Number 508-951-9701						
Owner's E-mail Address						
Owner's Mailing Address 519 Spring Street, West Bridgewater, MA 02379						

2. Applicant or Preparer's Name and Address (if different from above):

Preparer's Name	Preparer's Name Michael Pimentel, EIT, CSE										
Company JC	Company JC Engineering, Inc.										
Telephone Numbe	Telephone Number 508-273-0377										
E-mail Address	E-mail Address mpimentel@jceng.org										
Mailing Address	Mailing Address 2854 Cranberry Highway, East Wareham										
State/ Zip Code	MA 02538										
3. Type of Facility (check	all that apply):										
☑ Residential	🗆 Commercial 🛛 Institutional 🔲 School 🗖 Industrial										
4. Describe Facility (i.e. si	ingle-family dwelling, 45 seat restaurant):										
Existing 3-bedroc	om single family home.										

5. Type of System (check all that apply): ☑ Conventional Title 5 □ I/A System □ Pumped System ☑ Gravity System □ Pressure Dosed □ Tight Tank □ Other 6. Describe the existing/ proposed septic system components:

The existing septic system consists of a 1,000-gallon septic tank; a distribution box; and an SAS comprising 20 total ARC 36HC plastic chambers in a field configuration with inspection ports. Existing system is proposed to remain as is with this waiver request.

7. Design Flow per 310 CMR 15.203 (in gallons/ day):

Design flow of system: 330 gpd

Total design flow of facility: 355 gpd

8. Enclose a **letter of request for variances/ waivers** which makes reference to the specific provisions of Title 5 and/ or the Board Bourne of Health Regulations for which a variance is sought. Please use this opportunity to demonstrate compliance with 310 CMR 15.410, and to justify the relevant facts and circumstances of the individual case. Note that with regard to variances for new construction, enforcement of the provision from which a variance is sought must be shown to deprive the applicant of substantially all beneficial use of the subject property in order to be manifestly unjust. Be sure to explain why full compliance with the applicable regulations is not feasible, and how a level of environmental protection that is at least equivalent to that provided under Title 5 and the Board of Health Regulations can be achieved without strict application of said regulations.

9. In order for this Application to be deemed complete, it must be accompanied by the following:

- ☑ \$125 filing fee + any other applicable permit application fees paid to the Town of Bourne.
- □ Application for a Disposal System Construction Permit (may be filled out by installer)
- ☑ Six copies of Letter of request describing nature of variances (see samples)
- ☑ Six sets of complete engineered plans and specifications, one with original stamp of design engineer; plus, one electronic copy.
- ☑ Six sets of floor plans, existing and proposed.
- ☑ Six copies of Nitrogen Loading Calculation Worksheet \*required for all applications
- ☑ If abutter notification is required, one of each of the following must be submitted:
  - > A copy of the certified list of abutters from the Assessor's Department
  - Sample letter for abutter notification postmarked 10 days prior to meeting date
  - > Proof of certified mailing (receipts) meeting requirements of 310 CMR 15.405(2)
- □ Proposals for installation of Innovative/Alternative septic systems must be accompanied by:
  - > A copy of the Certification for Use including technology specific conditions
  - > Draft disclosure notice for the I/A technology to be recorded in the deed

□ Hydrogeologic data for all leaching facilities proposed within 100ft of a wetland/watercourse

Percentage of Increase Worksheet may be required for waivers or increases in flow

#### 10. Certification:

"I certify under penalty of law that this document and all attachments, to the best of my knowledge and belief, are true, accurate, and complete. I am aware that there may be significant consequences for submitting false information, including, but not limited to, penalties or fine and/or imprisonment for deliberate violations."

Facility Owner's Signature Brent 7. Warren	Date3-5-24
Print Name Brent T. Warren	
Signature of Preparer	Date <u>3-5-24</u>
Print Name Michael Pimentel	

For Office Use Only						
Reviewed By:						
_ Permit #:	_ Existing _ Proposed					
Floor Plans Dated:						
Drawn By:						
If yes, enclose copy of minutes. (Date						
Continued Disapproved	Other					
	For Office Use Only					



Terri A. Guarino Health Agent

#### TOWN OF BOURNE BOARD OF HEALTH

**24 Perry Avenue Buzzards Bay, MA 02532** www.townofbourne.com/health Phone (508) 759-0600 ext. 1513 330 gpd <sub>x</sub> (508) 759-0679



#### Percentage of Increase Worksheet

Date of Hearing: 3-13-24 Address of Hearing: 24 Perry Avenue, Buzzards Bay, MA 02532 Owners Mailing Address: 519 Spring Street, West Bridgewater, MA

Request for variances or waivers that include renovations, alterations, or additions to the existing dwelling, architecturals of the existing house and the proposed house must be submitted to the Board of health at the time of the variance or waiver request and shall include the following:

	EXISTING	PROPOSED	% INCREASE
Bedroom Square Footage (any labeled bedroom and or room which provides minimum seclusion as per Board of Health definition)	427 sf	377 sf	-11.7%
Non-Bedroom Space (living room, kitchen, bathrooms, closets, hallways etc.)	924 sf	1,125 sf	+21.8%
		11.00/	

Percentage of Total Increase \_\_\_\_\_\_\_

For the purpose of any variances or waiver requests for a reduction in the 150 foot setback to the wetlands/top of coastal bank, which includes a proposal for renovations, alterations or additions to the existing dwelling, the following guidelines shall apply:

For projects where the renovations, alterations or additions result in an increase of bedroom space by Board of Health definition, of 25% or greater, a septic system which includes nitrogen removal, i.e. some type of Alternative Technology System with pressure dosing shall be required

For projects where the renovations, alterations or additions result in an increase of non-bedroom space such as kitchen, living room, bathroom etc. of 50% or greater an Alternative Technology system may be required.

**Formula for total increase percentage:** Subtract existing from proposed = square footage added Divide square footage added by existing = % increase

**800 existing 1200 proposed** 1200 - 800 = 400 square footage added 400 / 800 = 50% increase

ity Address:	405 Circuit Avenue
arer's Name:	JC Engineering, Inc.
::	

The second secon	<b>Town of Bourne - Water F</b> See Cape Cod Commission Technical B	Resources Nitrogen I sulletin 91-001 for further details:	_oading and Mi	itigation Wor	ksheet			Facility A Preparer Date: Watershe	ddress: s Name: ed:	405 Circuit Ave JC Engineering	enue g, Inc.
Project Nitrogen	https://capecodcommission.org/resour	ce-library/file/?url=/dept/commission	New Construction/ Inc	ces/regulatory/Nitroge	enLoad lecht	or Repairs/ Upgrades		Existing	Conditions		
1. Place √ in a Yes	pplicable box: No X Will the project be connected to se	Project Title-5 wastewater flows: Actual wastewater flows: Average wastewater flows: ewer ?	330.0 gpd 175.0 * 252.5 gpd * Actual water use flow	(a)+(b) +2= s per unit in Bourne	(a) (b) (A)		Calculate (A') through (P') as w/ (A) through (F Tit Ac	c): cle-5 wastewater flo tual wastewater flo Avg. wastewater flo Place √ in app Yes №	ws: 330.0 ws: 175.0 ws: 252.5 blicable box:	gpd * j gpd	<mark>(A')</mark>
	X Is project litle-5 wastewater flow :	10,000 gpd or greater ?							Is existing dev (If 'Yes' then	relopment on sev	wer ?
Place	<ul> <li>V in applicable box and multiply unsevered and a standard Title-5 System (35-ppm-P)</li> <li>DEP-approved I/A System (25-ppm)</li> <li>DEP-approved I/A System (19-ppm)</li> <li>DEP-approved Enhanced I/A (12-pp)</li> </ul>	ered wastewater flow by applicable v) x h-N) x h-N) x pm-N) x Wastewater nitrogen load (	conversion factor: 0.048359 0.034542 0.026252 0.016580 Title-5 flows) =	Type of system 15.96 kg-N/yr	: (В)			X St. DB DB	andard Title-5 Syst P-approved I/A Sy P-approved I/A Sy P-approved enhar 15.96	em rstem (commerci rstem (residentia nced I/A 6] kg-N/yr	al) I) <b>(B')</b>
		Wastowator pitrogon load (	Actual flows) -	9.46 kg N/ur	(0)				9.46		(0)
		wastewater hitrogen load (		8.40 Kg-14/ yi	(0)				0.40	wastewater of	ífsets
	<b>Stormwate</b> Town of Bourne	er Runoff Recharge rate for Bo fr	ourne (inches; for natural om Technical Bulletin 91-	areas ·001)::	21 (RECH)					-	
		Project site area:	0.114 acres		(D)			Project site a	.ea: 0.114	acres	(D)
		Project site wetland area:	0.000 acres		(E)		Pro	oject site wetland a	rea: 0.000	) acres	(E)
		Project site upland area:	0.114 acres		(F)		Pi	roject site upland a	rea: 0.114	1 acres	(F)
		Pervious unpaved upland:	0.072 acres		(G)		Per	vious unpaved upla	and: 0.072	2 acres	(G')
	0 Factor may be adjusted for	% using LID Paved area:	583 s.f.		(H)			Paved a	rea: 583	3 s.f.	<mark>(H')</mark>
	LID = low in	npact development	= 0.0825	64347 kg-N/yr	(I)			Paving runoff off	set: 0.0825	ز kg-N/yr	(ľ)
		Roof area:	<b>1,260</b> s.f.		(J)			Roof a	rea: 1,260	) s.f.	<mark>(J')</mark>
		~	=	.0892 kg-N/yr	(K)			Roof runoff off	set: 0.0892	2 kg-N/yr	(K')
	Fertilizer	Previous unpaved upla Managed turf/ lawn area x	nd - roof area = 1,876 s.f. 3.4019E-04	0.638 kg-N/yr	(1)		 Ma	naged Turf/ lawn a	rea: 1,876	) s.f.	(L)
				1.6.00 NB 14/ 91	(=)			i crunzer on	0.036	ייז איי פיי ב	(~)
	Total Nitro	<b>gen Load</b> Total project nitrogen load	(Title-5 flows):	16.77 kg-N/yr	(M)=	(B)+(I)+(K)+(L)	Existing nitrog	gen load (Title-5 flo	ws): 16.77	7] kg-N/yr	(M')
		Total project nitrogen load	(Actual flows):	9.27 kg-N/yr	(N)=	(C)+(I)+(K)+(L)	Existing nitrog	gen load (Actual flo	ws): 9.27	/] kg-N/yr	(N')
		Nitrogen load per a	acre (Average): 1	14.21 kg-N/yr/acre	(O)=	(M)+(N) +2 +(D)	Ni	itrogen offset per a	cre: 114.21	I] kg-N/yr/acre	(0')
	Proposed	Nitrogen Loading Concentration					(44)	Existing r	<u>nitrogen loading c</u>	oncentrations:	
	Proj	ect nitrogen loading concentration	(Title-5 flows):	21.37 ppm-N	(P)=	(a)+723.76 -	<u>(M)</u> + (G)x(RECH)+9.7286 + (H)+10,594 + (K)+0.75	Title-5 fl	ows 21.37	' ppm-N	(P')
	Proje	ect nitrogen loading concentration	(Actual flows):	16.25 ppm-N	(Q)=	(b)+723.76 -	(N) + (G)x(RECH)+9.7286 + (H)+10,594 + (K)+0.75	Actual fl	ows 16.25	۶ ppm-N	(Q')
next page>		Project nitrogen loading concentra	tion (Average): 18	5 <b>.81</b> ppm-N	(R)=	(P)+(Q) +2		Aver	age <b>18.81</b>	] ppm-N	(R')
Resource/ Impact	Based Criteria										
Marine Water Red Yes 2. X	charge Areas / Coastal Embayments No Is the project located in any of the	following watersheds: <b>Buttermilk</b>	Bay Basins, Phinneys Har	rbor / Back River / Ee	l Pond, Poca	sset River Basin, Pocas	set Harbor / Hen Cove / Red Brook Harbor, Me	gansett / Squeteag	gue Harbors** ?		

Is the project located in any of the following watersheds: Buttermilk Bay Basins, Phinneys Harbor / Back River / Eel Pond, Pocasset River Basin, Pocasset Harbor / Hen Cove / Red Brook Harbor, Megansett / Squeteague Harbors\*\*? (If 'No', then go to line 3.)

2.

Name of Watershed (from Regional Policy Plan Data Viewer):

Critical Nitrogen-loading limit\*\* : 0.000 kg-N/year/acre (S)

Does project's nitrogen load (O) exceed the existing load (O') <u>AND</u> the critical nitrogen load (S) ? (If 'No', then go to line 3.)

Excess project nitrogen load to be mitigated: 0.00 kg-N/yr

(T)= LESSER OF (O)-(S) x(F) AND (O)-(O') x(F)

\*\* When a nitrogen-loading limit has been determined through either a Total Maximum Daily Load (TMDL), a Massachusetts Estuaries Project-accepted technical report, or specified by a Commission-approved comprehensive wastewater management plan pursuant to Objective WR3, or if impaired water quality has been documented for the receiving coastal waters, the nitrogen loading limit shall be 0 kg-N/yr per acre pursuant to Objective WR3.

Groundwater Quality Yes No Does the project's nitrogen loading concentration in groundwater (R) exceed the greater of 5 ppm or the existing concentration (R')? (If 'Yes', the project will need to provide an alternative strategy for meeting these thresholds by using another worksheet) Potential Public Water Supply Areas Yes <mark>No</mark>

7.	Yes	No	Will the project withdraw more than 20,000 gallons of water per day ? (If 'Yes', then the project must provide documentation demonstrating that there will not be significant impacts to water levels, surface waters and wetlands)									
Other P	otential l	Impact	S									
			Is the project located in a freshwater recharge area (FWRA) hydraulically upgradient of a stream or fresh surface water body? (If 'Yes', the project must provide an alternative strategy for meeting Objective WR2)									
6.		X	Is project wastewater disposed of within 300 feet of a stream or fresh surface water body? (If 'No', then go to line 7.)									
Fresh W	ater Red	charge	Areas									
		X	Does the project use, treat, generate, store or dispose of hazardous materials in excess of the greater of a) household quantities or b) existing quantities ? (If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)									
		X	Does the project's nitrogen loading concentration (R) exceed the greater of 5 ppm or the existing concentration (R') ? (If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)									
5.	Yes	No X	Is project in a Wellhead Protection Area (WHPA) ?									
			Wellhead Protection Areas									
			Does the project use, treat, generate, store or dispose of hazardous materials in excess of the greater of a) household quantities or b) existing quantities ? (If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)									
			Does the project's nitrogen loading concentration (R) exceed the greater of 1 ppm or the existing concentration (R') ? (If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)									
4.		X	Is project in a Potential Public Water Supply Area (PPWSA) ? (If 'No', then go to line 5.)									

The project must demonstrate compliance with Objective WR4, including use of Low Impact Development to mitigate impacts of stormwater runoff and O & M plans for maintaining stormwater infrastructure and landscaping. 8.

#### Nitrogen Loading Calculations

#### 3 Bedroom Conventional Septic System

405 Circ	cuit Avenue, Poo	case	set, MA				_						
	Number of Bedroom	S:	3 4 970 Square I	Foot		Water Recha	rge Fa	actor = 3 127 So	uare F	1.75 Geet	Feet	(Bourne @ 1	8" per year)
	Roof/Deck:		1,260 Square I	Feet		Lawn/Garden	n:	3,127 Sq	uare F	eet			
	Pavement/Gravel:		583 Square	Feet		Title V flow:		110 Ga	llons p	oer day per	bedroo	om	
WASTEW	ATER												
	Title V (2 people per	bec	lroom)										
	3 bedrooms	X	110 gpd bedroom	- X -	<u>3.785 L</u> gal =	1249.1 L/	/d <b>X</b> ·	<b>35</b> mg L	_ =	43,716.8	8 mg/d		
	Actual (2.5 people /	unit	average occupa	ncy	within the town)	)							
	3 bedrooms	X	110 gpd bedroom	х-	<u>3.785 L</u> gal <b>X</b>	<u>2.5</u> 6	= 5	20.4 L/o	d X	<u>35</u> L	<u>mg</u> =	18,215.3	mg/d
IMPERVIC	OUS SURFACES												
Roof Area =	1,260 Sq. Ft.	x	40 in. Year	- <b>x</b> -	<u>feet</u> 12 in. <b>X</b>	28.32 L cub. Ft.	— x -	1 yr 365 day	<u> </u>	325.9	L/d X	<u>0.75 mg</u> =	244.4 mg/d
Pave Area =	583 Sq. Ft.	x	40 in. Year	- X -	<u>feet</u> 12 in. <b>X</b>	28.32 L cub. Ft.	— x	1 yr 365 day	<u> </u>	150.8	L/d X	$\frac{1.5 \text{ mg}}{\text{L}} =$	226.2 mg/d
LAWN													
Lawn Area =	3,127 Sq. Ft.	x	3 lbs. 1000 s.f.*yr	<b>x</b> -	<u>1 yr</u> 365 d <b>X</b>	454,000 mỹ lb.	<u>g</u> x	0.25	=	2,917.1	mg/d		
NATURAI	L												
Natural Area =	3,127 Sq. Ft.	x	1.75 ft yr	<b>x</b> -	28.32 L cub. Ft. X	<u>1 yr</u> 365 d	=		424.6	L/d			
SUMMAR	<u>Y</u>												
Title V Flo	w <u>43716.8</u> 1249.1	++	244.4 325.9	+ +	226.2 <b>+</b> 150.8 <b>+</b>	2917.1 mg 424.6 lite	g ers	=		47104.4 2150.3	<u>mg</u> liters	= 21.91	ppm
Actual	18215.3	+	244.4	+	226.2 +	<u>2917.1 m</u>	g	=		21603.0	mg	= 15.20	ppm
	520.4	+	325.9	+	150.8 <b>+</b>	424.6 lite	ers			1421.7	liters		
	Final Calculation	n	( 21.91	+	15.20)/ 2	=		18.5	5 pp	m	]		
Printe	d:3/5/2024										с	alculations by	JC Engineering

Calculations by JC Engineering, Inc.

# **PROPOSED RENOVATION** TO THE EXISTING STRUCTURE LOCATED AT 405 CIRCUIT AVENUE, BOURNE, MA



C-0	COVER PAGE
GN-0	GENERAL NOTES
EX-1	EXISTING LAYOUTS & SECTIONS
EX-2	EXISTING ELEVATIONS
D-1	DEMOLITION PLANS
A-1	PROPOSED FLOOR PLANS
A-2	<b>PROPOSED BALCONY LAYOUT &amp; ELEVATIONS</b>
A-3	PROPOSED SECTIONS
A-4	PROPOSED KITCHEN ELEVATIONS
A-5	GROSS FLOOR AREAS
F-1	PROPOSED FOUNDATION PLAN & DETAILS
S-1	PROPOSED FRAMING PLANS
S-2	PROPOSED STRUCTURAL DETAILS



#### GENERAL NOTES

#### GENERAL

- THE GOVERNING BUILDING CODE FOR THE DESIGN AND CONSTRUCTION IS THE INTERNATIONA RESIDENTIAL (IRC 2015) WITH MASSACHUSETTS STATE BUILDING CODE AMENDMENTS (9TH EDITION).
- . ARCHITECTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH STRUCTURAL, MECHANICAL, ELECTRICAL, AND SHOP DRAWINGS.
- 3. THE CONTRACTOR SHALL CONFIRM ALL DIMENSIONS AND NOTIFY DESIGNER OF ANY DISCREPANCIES, AMBIGUITIES, OR INCONSISTENCIES PRIOR TO PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL ALSO NOTIFY THE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK IF ANY CONSTRUCTION NEEDS TO BE ADJUSTED DUE TO FIELD CONDITIONS
- ALL FLASHING IN CONTACT WITH PRESSURE TREATED LUMBER SHALL BE CORROSION RESISTANT.
- 5. ALL DUCTWORK AND HOT WATER PIPING SHALL BE INSULATED AND WHERE NECESSARY, A VAPOR BARRIER FOR THE DUCTWORK WILL BE PROVIDED TO PREVENT CONDENSATION
- 6. ALL CHIMNEYS TO BE CONSTRUCTED SO THE TOP OF THE FLUE IS 2'-0" ABOVE ANY ROOF/WALL WITHIN 10'-0".
- . PROVIDE CONTINUOUS PITCH BREAK VENTS AT ALL ROOF/WALL INTERSECTIONS WHERE SOFFIT VENTS ARE INSTALLED.

#### DIMENSIONS:

- . DIMENSIONING STANDARDS WITHIN THE DOCUMENTS ARE AS FOLLOWS UNLESS OTHERWISE NOTED: A) DIMENSIONS TO EXTERIOR WALLS ARE FROM OUTSIDE FACE OF A STUD
- OR CONCRETE WALL B) DIMENSIONING AT WINDOWS AND EXTERIOR DOORS REPRESENTS A DIMENSION TO THE CENTER OF THAT OPENING FROM THE CENTER OF ANOTHER OPENING OR THE OUTSIDE FACE OF A STUD OR CONCRETE WALL
- C) DIMENSIONS TO INTERIOR WALLS ARE FROM FACE OF FINISH. INTERIOR DIMENSIONING AT STAIRS REPRESENTS A DIMENSION TO THE
- FINISHED FACE OF THE STAIR. DIMENSIONS/LOCATIONS OF WALLS ENCLOSING TUB/SHOWER UNITS, PRE-MANUFACTURED FIREPLACES AND ALL OTHER BUILT-INS, MUST BE CONFIRMED WITH THE FIXTURE MANUFACTURER FOR THE REQUIRED R.O.
- AND ATTACHMENT. DIMENSIONS DEPICTING THE BUILDING HEIGHT, SHOWN OF THE ARCHITECTURAL AND STRUCTURAL DRAWINGS ARE FOR THE BUILDING AND BUILDING COMPONENTS ONLY. THE OVERALL BUILDING HEIGHT DEPICTED, IS FROM THE 1ST FLOOR DECK. THE OWNER/G.C. IS RESPONSIBLE FOR COORDINATING AND ESTABLISHING THE GRADE RELATIVE TO THE 1ST FLOOR, TO ENSURE COMPLIANCE WITH ZONING AND BUILDING CODE HEIGHT
- REQUIREMENTS . ALL DIMENSIONS FROM EXISTING SURFACES ARE FROM FACE OF EXISTING SURFACE.
- 5. CLOSET DOORS THAT ARE NOT DIMENSIONED ARE TYPICALLY CENTERED WITHIN THE CLOSET. ALL OTHER DOORS THAT ARE NOT DIMENSIONED ARE TYPICALLY 4" TO 6" (DEPENDING ON THE FINISH CASING WIDTH) FROM FACE FINISH TO THE

#### STAIRWAYS/BALCONIES:

DOOR OPENING ON THE BUTT SIDE.

- STAIRWAYS SHALL NOT BE LESS THAN 3'-0" IN CLEAR WIDTH AT ALL POINTS ABOVE THE PERMITTED HANDRAIL HEIGHT AND BELOW THE REQUIRED HEADROOM HEIGHT. MAXIMUM RISER HEIGHT SHALL BE 8 1/4". MINIMUM TREAD DEPTH SHALL BE 9" WITH NOSING NOT TO EXCEED 1 1/4" WINDER TREADS SHALL HAVE A MIN. DEPTH EQUAL TO THE STRAIGHT RUN TREAD DEPTH AT A DISTANCE OF 12" FROM THE NARROWER SIDE WITH A MIN. TREAD DEPTH OF 3" AT ANY POINT. MINIMUM HEADROOM SHALL BE 6'-6" MEASURED VERTICALLY FROM THE SLOPED PLANE ADJOINING THE TREAD
- NOSING OR FROM THE FLOOR SURFACE OF A LANDING OR PLATFORM. HANDRAILS SHALL BE PROVIDED ON AT LEAST ONE SIDE OF EACH CONTINUOS RUN OF TREADS OR FLIGHT OF STAIRS WITH 4 OR MORE RISERS. MINIMUM HEIGHT SHALL NOT BE LESS THAN 34" WITH A MAXIMUM NOT TO EXCEED 38". HANDRAILS SHALL BE CONTINUOUS FOR THE FULL LENGTH OF THE FLIGHT
- . GUARDRAILS, 36" MINIMUM IN HEIGHT, SHALL BE INSTALLED IN FLOOR, PORCH, AND/OR BALCONY AREA MORE THAN THIRTY (30) INCHES ABOVE A FLOOR OR GRADE BELOW. GUARDRAILS ON OPEN SIDES OF STAIRS, WITH A TOTAL RISE OF MORE THAN THIRTY (30) INCHES ABOVE A FLOOR OR GRADE BELOW. SHALL BE NOT LESS THAN 34" IN HEIGHT MEASURED VERTICALLY FROM THE NOSING OF THE TREADS. THE MAXIMUM CLEAR OPENING BETWEEN RAILS, BALUSTERS, AND FLOORS SHALL NOT EXCEED FOUR (4) INCHES.

#### EXCEPTION:

THE TRIANGULAR OPENINGS FORMED BY THE RISER. TREAD AND BOTTOM RAIL OF A GUARD AT THE OPEN SIDE OF A STAIRWAY MAY BE OF SUCH A SIZE THAT A SIX INCH (6) SPHERE CANNOT PASS THROUGH. OPENINGS FOR REQUIRED GUARDS ON THE SIDES OF STAIR TREADS SHALL NOT ALLOW A SPHERE 4-3/8 INCHES TO PASS THOUGH

#### EMERGENCY ESCAPE AND RESCUE OPENINGS / EXTERIOR WINDOWS AND DOORS:

- WINDOW SIZES SHOWN ON THE DRAWINGS ARE BASED GENERICALLY ON ANDERSEN AND THE OWNER OR (GENERAL CONTRACTOR WHERE APPLICABLE) SHALL CHOOSE THE FINAL MANUFACTURER. WINDOW SIZES SHALL BE VERIFIED BY THE GENERAL CONTRACTOR PRIOR TO ORDERING. ROUGH OPENING SIZES SHALL BE PROVIDED BY THE MANUFACTURER.
- BASEMENTS. HABITABLE ATTICS AND EVERY SLEEPING ROOM SHALL HAVE AT LEAST ONE OPERABLE EMERGENCY ESCAPE AND RESCUE OPENING. WHERE BASEMENTS CONTAIN MORE THAN ONE SLEEPING ROOM. EACH SHALL HAVE AN EMERGENCY ESCAPE AND RESCUE OPENING BUT ADJOINING AREAS SHALL NOT REQUIRE ONE. EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL MEET THE FOLLOWING CRITERIA:
- A) SILL HEIGHT SHALL NOT BE MORE THAN 44 INCHES ABOVE THE FLOOR. 3) WHERE A DOOR HAVING A THRESHOLD BELOW THE ADJACENT GROUND ELEVATION IS USED AS AN EMERGENCY ESCAPE AND RESCUE OPENING AND IS PROVIDED WITH A BULKHEAD ENCLOSURE, THE BULKHEAD SHALL PROVIDE DIRECT ACCESS TO THE BASEMENT AND WHEN THE BULKHEAD IS FULLY OPENED IT SHALL PROVIDE THE MINIMUM NET CLEAR OPENING OF 5.7 SQUARE FEET.
- C) EMERGENCY ESCAPE AND RESCUE OPENINGS WITH A SILL ELEVATION BELOW THE ADJACENT GROUND ELEVATION SHALL BE PROVIDED WITH A WINDOW WELL WITH A MINIMUM HORIZONTAL AREA OF 9 SQUARE FEFT AND A MINIMUM HORIZONTAL PROJECTION OF 36". THE WINDOW WELL SHALL ALLOW THE EMERGENCY ESCAPE AND EGRESS OPENING TO BE FULLY OPENED.
- D) ALL EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE A MINIMUM NET CLEAR OPENING OF 5.7 SQUARE FEET.

#### EXCEPTIONS:

EXCEPTIONS:

- GRADE FLOOR OPENINGS SHALL HAVE A MINIMUM NET CLEAR OPENING OF 5.0 SQUARE FEET
- DOUBLE HUNG WINDOWS USED FOR EMERGENCY ESCAPE SHALL BE PERMITTED TO HAVE A NET CLEAR OPENING OF 3.3 SQUARE FEET PROVIDED THAT AT LEAST ONE OPERABLE SASH MEETS THE MINIMUM HEIGHT AND WIDTH REQUIREMENTS AND OPERATIONAL CONSTRAINTS.
- E) THE MINIMUM NET CLEAR OPENING SHALL BE 24 INCHES X 20 INCHES IN EITHER DIRECTION G) EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL BE OPERATIONAL FROM THE INSIDE WITHOUT THE USE OF KEYS OR TOOLS
- 3) IN DWELLING UNITS, WHERE THE OPENING OF AN OPERABLE WINDOW IS LOCATED MORE THEN 72 INCHES ABOVE THE FINISHED GRADE OR SURFACE BELOW, THE LOWEST PART OF THE CLEAR OPENING OF THE WINDOW SHALL BE A MINIMUM OF 24 INCHES ABOVE THE FINISHED FLOOR OF THE ROOM IN WHICH THE WINDOW IS LOCATED. OPERABLE SECTIONS OF WINDOWS SHALL NOT PERMIT OPENINGS THAT ALLOW PASSAGE OF A 4 INCH DIAMETER SPHERE WHERE SUCH OPENINGS ARE LOCATED WITHIN 24 INCHES OF THE FINISHED FLOOR.

A) WINDOWS WHOSE OPENINGS WILL NOT ALLOW A 4 INCH DIAMETER SPHERE TO PASS THROUGH THE OPENING WHEN THE OPENING IS IN ITS LARGEST OPENED POSITION.

B) OPENINGS THAT ARE PROVIDED WITH WINDOW FALL PREVENTION DEVICES THAT COMPLY WITH SECTION R612.3

C) OPENINGS THAT ARE PROVIDED WITH FALL PREVENTION DEVICES THAT COMPLY WITH ASTM F 2090

D) WINDOWS THAT ARE PROVIDED WITH OPENING LIMITING DEVICES THAT COMPLY WITH SECTION R612.4.

- 1. STAIRWAYS, RAMPS, EXTERIOR EXIT BALCONIES, HALLWAYS AND DOORS SHALL MEET ALL MINIMUM EGRESS REQUIREMENTS. 2. ALL REQUIRED EXITS SHALL BE POSITIVELY ANCHORED TO THE PRIMARY
- STRUCTURE TO RESIST BOTH VERTICAL AND LATERAL FORCES. 3. ENCLOSED ACCESSIBLE SPACE UNDER STAIRS SHALL HAVE WALLS, UNDER STAIR SURFACE AND ANY SOFFITS PROTECTED ON THE ENCLOSED SIDE
- WITH 1/2" GYPSUM BOARD. HALLWAYS SHALL BE A MINIMUM OF 3 FEET CLEAR 5. EGRESS FROM DWELLING UNITS SHALL BE BY MEANS OF TWO EXIT DOORS THE MINIMUM NOMINAL WIDTH OF AT LEAST ONE OF THE REQUIRED EXIT DOORS SHALL BE NOT LESS THAN 36" WITH A NOMINAL HEIGHT SHALL O SIX FEET EIGHT INCHES AND SIDE HINGED. ALL OTHER REQUIRED EXIT
- DOORS SHALL BE NOT LESS THAN 32" IN NOMINAL WIDTH OR SIX FEET EIGHT INCHES IN NOMINAL HEIGHT AND MAY BE SLIDING OR SIDE-HINGED EGRESS THOUGH AN ATTACHED GARAGE IS PERMITTED PROVIDED THAT
- THE ATTACHED GARAGE IS ALSO PROVIDED WITH A 32" EXIT DOOR ALL OTHER EXTERIOR DOORS IN EXCESS OF THE TWO REQUIRED EXIT
- DOORS ARE NOT REQUIRED TO COMPLY WITH THESE MINIMUM DIMENSIONS. 8. ALL INTERIOR DOORS PROVIDING ACCESS TO HABITABLE ROOMS SHALL HAVE A NOMINAL WIDTH OF 30 INCHES AND NOMINAL HEIGHT OF SIX FEET 6 INCHES EXCEPT BATHROOMS WHICH ARE PERMITTED TO BE 24 INCHES IN NOMINAL WIDTH
- 9. A FLOOR OR LANDING SHALL BE PROVIDED ON EACH SIDE OF AN EXTERIOR DOOR. THE WIDTH OF EACH LANDING SHALL NOT BE LESS THAN THE DOOR SERVED AND HAVE A MINIMUM DIMENSION OF 36 INCHES MEASURED IN THE DIRECTION OF TRAVEL.
- MINIMUM ROOM REQUIREMENTS:
- 1. HABITABLE ROOMS, HALLWAYS, CORRIDORS, BATHROOMS, TOILET ROOMS, LAUNDRY ROOMS AND BASEMENTS SHALL HAVE A CEILING HEIGHT OF NOT LESS THAN SEVEN (7) FEET MEASURED FROM THE FINISH FLOOR TO THE LOWEST PROJECTION FROM THE CEILING

#### EXCEPTIONS:

- I. BEAMS AND GIRDERS SPACED NOT LESS THAN FOUR (4) FEET ON CENTER MAY PROJECT NOT MORE THAN SIX (6) INCHES BELOW THE REQUIRED CEILING HEIGHT
- 2. CEILINGS IN BASEMENTS WITHOUT HABITABLE SPACE MAY PROJECT TO WITHING SIX FEET EIGHT INCHES OF THE FINISHED FLOOR EXCEPT THAT BEAMS, GIRDERS, DUCTS AND OTHER OBSTRUCTIONS MAY PROJECT TO
- WITHIN SIX FEET FOUR INCHES OF THE FINISHED FLOOR. 3. NOT MORE THAN 50% OF THE REQUIRED FLOOR AREA OF A ROOM IS PERMITTED TO HAVE A SLOPED CEILING LESS THAN SEVEN FEET IN HEIGHT WITH NO PORTION OF THE REQUIRED FLOOR AREA LESS THAN FIVE FEET IN
- HFIGHT BATHROOMS SHALL HAVE A MINIMUM CEILING HEIGHT OF SIX FEET EIGHT INCHES OVER THE FIXTURE AND AT THE FRONT CLEARANCE AREA FOR THE FIXTURES. A SHOWER OR TUB WITH A SHOWERHEAD SHALL HAVE A MINIMUM CEILING HEIGHT OF SIX FEET EIGHT INCHES ABOVE A MINIMUM 30"X30" AREA AT THE SHOWERHEAD.
- 2. EVERY DWELLING SHALL HAVE AT LEAST ONE HABITABLE ROOM WITH A
- GROSS FLOOR AREA OF AT LEAST 150 SQUARE FEET 3. OTHER HABITABLE ROOMS SHALL HAVE A FLOOR AREA OF NOT LESS THAN
- **70 SQUARE FEET EXCEPT KITCHENS** 4. HABITABLE ROOMS SHALL NOT BE LESS THAN SEVEN FEET IN ANY HORIZONTAL EXCEPT KITCHENS
- 5. PORTIONS OF A ROOM WITH A SLOPING CEILING MEASURING LESS THAN FIVE (5) FEET OR A FURRED CEILING MEASURING LESS THAN SEVEN (7) SHALL NOT BE CONSIDERED AS CONTRIBUTING TO THE MINIMUM REQUIRED HABITABLE AREA FOR THAT ROOM.

#### **ROOFING AND SIDING**

- 1. PROVIDE CONTINUOUS 6'-0" WIDE FIBERGLASS REINFORCED, BITUTHENE ICE AND WATER SHIELD AT ALL ROOF EDGES. CENTERED ON ALL VALLEYS AND AT ROOF WALL INTERSECTIONS CARRIED 1'-0" UP THE WALL(REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS)
- 2. PROVIDE ALUMINUM STEP FLASHING AT ROOF/WALL AND ROOF/CHIMNEY INTERSECTIONS.
- 3. PROVIDE ALUMINUM FLASHING OVER ALL WINDOW AND DOORS HEAD TRIM
- AND AT THE CONNECTION BETWEEN ALL EXTERIOR WALLS AND EXTERIOR DECKS
- 4. PROVIDE CONTINUOUS SOFFIT VENTS OR CONTINUOUS VENTED DRIP EDGE AT ALL SOFFIT OVERHANGS.
- 5. PROVIDE 15# FELT UNDER ALL ROOF SHINGLES (UNLESS SPECIFIED OTHERWISE)
- 6. PROVIDE CONTINUOUS RIDGE VENTS (UNLESS SPECIFIED AS OTHERWISE).
- SEE BUILDING ELEVATION FOR EXTENT. 7. ALL GUTTERS AND DOWNSPOUTS TO BE PREFINISHED ALUM. COLOR TO BE
- SELECTED BY OWNER.

#### PLUMBING:

- 1. ALL SANITARY LINES WITHIN WALLS AND FLOORS ADJOINING LIVING SPACES ARE TO BE SOUND INSULATED.
- 2. ALL PLUMBING WITHIN WALL OR FLOOR CAVITIES WHICH BORDER UNCONDITIONED SPACES, ARE TO BE INSULATED AND ON THE WARM SIDE OF THE CAVITY INSULATION TO AVOID FREEZING.

#### SMOKE & CARBON MONOXIDE DETECTORS/ALARMS:

- 1. COMBINATION SMOKE AND CARBON MONOXIDE ALARMS ARE ACCEPTABLE PROVIDED SAID ALARMS HAVE SIMULATED VOICE AND TONE ALARMS THAT CLEARLY DISTINGUISH BETWEEN THE TWO TYPES OF EMERGENCIES. IF COMBINATION ALARMS ARE TO BE USED THAN ALL REQUIRED CRITERIA FOR SMOKE AND CARBON MONOXIDE DETECTORS NEED TO BE MET.
- 2. FIRE DEPARTMENTS ARE REQUIRED TO INSPECT, UPON SALE OR TRANSFER, ALL DWELLING UNITS FOR REQUIRED SMOKE AND CARBON MONOXIDE DETECTORS. 3. CONSUMERS SHALL CHECK WITH LOCAL BUILDING AND/OR FIRE OFFICIALS
- FOR ACCEPTED ALARM TYPES AND LOCATIONS FOR PROPER INSTALLATION IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS

#### CARBON MONOXIDE ALARMS/DETECTORS

- 1. ALL ONE AND TWO FAMILY DWELLINGS SHALL BE EQUIPPED WITH A HOUSEHOLD CARBON MONOXIDE WARNING SYSTEM. ALL DEVICES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH ALL APPLICABLE CODES, MANUFACTURERS INSTRUCTIONS AND LISTING CRITERIA.
- 2. CARBON MONOXIDE DETECTORS SHALL BE LOCATED ON EVERY LEVEL OF THE DWELLING UNIT INCLUDING BASEMENTS AND CELLARS (BUT NOT INCLUDING CRAWL SPACES AND UNINHABITABLE ATTICS). 3. ALL ALARM-SOUNDING APPLIANCES SHALL HAVE A MINIMUM RATING OF 85

#### SMOKE ALARMS/DETECTORS:

dBA at 10 FEET

- 1. ALL ONE AND TWO FAMILY SHALL BE EQUIPPED WITH A HOUSEHOLD FIRE WARNING SYSTEM. ALL DEVICES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH ALL APPLICABLE CODES, MANUFACTURERS INSTRUCTIONS AND LISTING CRITERIA.
- 2. SMOKE DETECTORS ARE REQUIRED TO BE PERMANENTLY WIRED TO AN AC PRIMARY POWER SOURCE AND SHALL HAVE SECONDARY (STANDBY) POWER SUPPLIED FROM MONITORED BATTERIES.
- 3. WHERE MORE THAN ONE SMOKE DETECTOR IS REQUIRED, ALL REQUIRED DETECTORS SHALL BE INSTALLED SO THAT THE ACTIVATION OF ANY DETECTOR SHALL CAUSE THE ALARM IN ALL REQUIRED SMOKE DETETORS IN THE DWELLING UNIT TO SOUND (MIN. 85 dBA AT 10 FEET, 75 dBA IN BEDROOMS)

- A) IN THE IMMEDIATE VICINITY OF BEDROOMS B) IN ALL BEDROOMS C) IN EACH STORY OF A UNIT (INCLUDING BASEMENTS & CELLARS) FOR EACH 1,000 SQ.FT. OR PART THEREOF.
- D) NEAR THE BASE OF ALL STAIRS WHERE SUCH STAIRS LEAD TO ANOTHER OCCUPIED FLOOR
- PHOTO ELECTRIC SMOKE DETECTORS ARE REQUIRED IF LOCATED WITHIN 20 FEET OF A KITCHEN OR BATHROOM
- WHEN ONE OR MORE SLEEPING ROOMS ARE ADDED OR CREATED TO AN EXISTING DWELLING, THE ENTIRE BUILDING SHALL BE PROVIDED WITH SMOKE DETECTORS DESIGNED AND LOCATED AS REQUIRED FOR NEW DWELLINGS.

#### IGHT/VENTILATION AND INSULATION:

ALL HABITABLE ROOMS SHALL BE PROVIDED WITH AGGREGATE GLAZING OF NOT LESS THAN 8% OF THE FLOOR AREA OF SUCH ROOMS. NATURAL VENTILATION SHALL BE THROUGH DOORS, WINDOWS, LOUVERS OR OTHER APPROVED OPENINGS TO THE OUTDOOR AIR. THE MINIMUM OPENABLE AREA TO THE OUTDOORS SHALL BE 4% OF THE FLOOR AREA BEING VENTILATED.

#### EXCEPTIONS:

- THE GLAZED AREAS NEED NOT BE OPENABLE WHEN THE OPENING IS NOT A REQUIRED TO BE AN EMERGENCY ESCAPE AND RESCUE OPENING AND AN APPROVED MECHANICAL VENTILATION SYSTEM IS PROVIDED CAPABLE OF PRODUCING 0.35 AIR EXCHANGE PER HOUR IN THE ROOM OR A WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM IS INSTALLED CAPABLE
- 2 FOR THE FIRST BEDROOM AND ONE FOR EVERY ADDITIONAL BEDROOM. THE GLAZED AREAS NEED NOT BE PROVIDED IN ROOMS WHERE THE ABOVE EXCEPTION IS MET AND ARTIFICIAL LIGHT IS PROVIDED CAPABLE OF PRODUCING AN AVERAGE ILLUMINATION OF SIX FOOTCANDLES OVER THE
- AREA OF THE ROOM AT A HEIGHT OF 30 INCHES ALL BATHROOMS, WATER CLOSET COMPARTMENTS AND OTHER SIMILAR ROOMS SHALL BE PROVIDED WITH AGGREGATE GLAZING AREA OF NOT LESS THAN THREE SQUARE FEET, 1/2 OF WHICH MUST BE OPENABLE

#### EXCEPTION:

- THE GLAZED AREA SHALL NOT BE REQUIRED WHERE ARTIFICIAL LIGHT AND A MECHANICAL VENTILATION SYSTEM ARE PROVIDED. VENTILATION AIR FROM THE SPACE SHALL BE EXHAUSTED DIRECTLY TO THE OUTSIDE.
- 3. ATTIC VENTILATION WITH A CEILING VAPOR BARRIER: PROVIDE AT LEAST ONE (1) SQUARE FOOT OF FREE AREA FOR EACH THREE HUNDRED (300) SQUARE FEET OF CEILING AREA.
- 4. ATTIC VENTILATION WITHOUT A CEILING VAPOR BARRIER: PROVIDE AT LEAST ONE (1) SQUARE FOOT OF FREE AREA FOR EACH ONE HUNDRED-FIFTY (150) SQUARE FEET OF CEILING AREA. 5. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE A MOISTURE BARRIER AND
- PROPERLY INSULATE ALL WALLS AND CEILINGS TO AIR LEAKAGE INTO UNCONDITIONED SPACES. 6. IF MECHANICAL, ELECTRICAL OR PLUMBING EQUIPMENT IS TO BE PLACED IN
- ATTICS, EVES, OVERHANGS AND OTHER SIMILAR UNCONDITIONED UNINSULATED SPACES, THE CONTRACTOR IS RESPONSIBLE TO PROVIDE A PROPER ENCLOSURE. INSULATION. DIRECT VENTILATION. ETC., TO AVOID MOISTURE, CONDENSATION, FREEZE THAW, ICE DAMMING, AND OTHER SIMILAR ISSUES.

#### STRUCTURAL/FRAMING NOTES GENERAL

- 1. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND SHOP DRAWINGS. THE GOVERNING BUILDING CODE FOR THE DESIGN AND CONSTRUCTION IS
- BUILDING CODE AMENDMENTS (9TH EDITION) 3. THE GENERAL CONTRACTOR SHALL PROVIDE A MINIMUM OF SIX (6) SETS OF SHOP DRAWINGS FOR THE FOLLOWING ITEMS: (STRUCTURAL STEEL AND

BEGINS IN THE AFFECTED AREAS

A DIFFERENT ENGINEERED LUMBER

RESPONSIBILITY OF THIS OFFICE.

SCHEMES (I.E FRAMING A ROOF

THE ARCHITECT'S ATTENTION

**RESULT IN THE ARCHITECT'S** 

CONSTRUCTION.

PREPARATION.

WATER.

ASTM D1557

FOUNDATION

SOIL HAS BEEN REMOVED.

ABOVE THE FINISHED GRADE.

CLASSIFICATION SYSTEM GROUP 1

BELOW GRADE.

CAPACITY OF 3,000 PSF.

4. SMOKE DETECTORS SHALL BE PROVIDED IN THE FOLLOWING LOCATIONS

- OF SUPPLYING OUTDOOR VENTILATION AIR OF 15 CFM PER OCCUPANT WITH
- THE INTERNATIONAL RESIDENTIAL (IRC 2015) WITH MASSACHUSETTS STATE
- REINFORCING STEEL), FOR APPROVAL BY THE ENGINEER BEFORE WORK 4. THE GENERAL CONTRACTOR SHALL NOTIFY THE ARCHITECT OR
- STRUCTURAL ENGINEER A MINIMUM OF 48 HOURS (NOT INCLUDING WEEK ENDS AND HOLIDAYS) PRIOR TO ANY AND ALL SITE OBSERVATION REQUIRED PER THE CONTRACT OR PER CONTROLLED CONSTRUCTION. ANY DEVIATION TO THE FRAMING PLANS INCLUDING, BUT NOT LIMITED TO,
- DESIGNATION, A CHANGE IN FRAMING DIRECTION, A CHANGE IN FRAMING
- DIFFERENTLY THAN SHOWN ON THE PLANS, ETC.) SHALL BE BROUGHT TO
- FOR REVIEW BEFORE BEGINNING CONSTRUCTION. FAILURE TO DO SO WILL RELEASE OF RESPONSIBILITY FOR ANY DELAYS AND/OR DEFICIENCIES IN
- CONTRACTOR NOTE: ANY DEVIATIONS TO THE JOIST MANUFACTURER'S REQUIREMENTS CONCERNING PENETRATIONS TO SAID JOIST SYSTEM WILL NEED TO BE APPROVED BY THE SUPPLIER BEFORE THIS OFFICE CAN APPROVE THE ROUGH FRAME. DELAYS IN CONSTRUCTION DUE TO FAILURE TO PROVIDE THE NECESSARY DOCUMENTATION NOTED IS NOT THE
- SOIL CONDITIONS AND STRUCTURAL FILL
- 1. ALL FOOTINGS SHALL BE CARRIED TO THE DEPTHS SHOWN AND DEEPER, IF REQUIRED, AND SHALL REST ON INDISTURBED SOIL HAVING A SAFE BEARING PRESSURE OF 3,000 PSF. IT IS RECOMMENDED THAT THE OWNER HIRE A GEOTECHNICAL ENGINEER REGISTERED IN THE STATE, TO ENSURE THAT THE ABOVE REQUIREMENTS ARE MET. THIS OFFICE IS NOT QUALIFIED TO DETERMINE SOIL BEARING CAPACITIES OR SUBSURFACE
- . NO FOOTING SHALL BE PLACED ON FROZEN SOIL OR IN STANDING
- 3. STRUCTURAL FILL SHALL BE WELL GRADED BANK RUN, SCREENED OR CRUSHED GRAVEL, AND SHALL BE PLACED IN 8" MAXIMUM LIFTS AND COMPACTED TO 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY
- 4. PROVIDE A MINIMUM OF 6" (OR GREATER IF REQUIRED BY THE GEOTECHNICAL ENGINEER) WELL COMPACTED, CLEAN, COARSE SAND AND GRAVEL UNDER ALL SLABS ON GRADE AFTER THE TOP
- 1. FOOTING/FOUNDATION DESIGN BASED ON A MINIMUM SOIL BEARING
- 2. ALL WOOD FRAMING (SILL PLATES, FLOOR SYSTEM, WALLS, ETC.) TO BE ANCHORED TO THE FOUDATION WITH 5/8"-INCH DIAMETER BOLTS PLACED FOUR FEET ON CENTER AND NOT MORE THAN 12 INCHES FROM CORNERS. BOLTS SHALL EXTEND A MINIMUM OF 15 INCHES INTO MASONRY OR EIGHT INCHES INTO CONCRETE.
- 3. A PERIMETER SILL SEAL SHALL BE PROVIDED UNDER ALL EXTERIOR SILLS OR WALLS ANCHORED TO CONCRETE.
- 4. BULKHEAD SIZE SHALL BE DETERMINED IN FIELD. 5. FOUNDATION WALLS SHALL EXTEND AT LEAST EIGHT INCHES ABOVE
- THE FINISHED GRADE WHERE IT ABUTS THE FOUNDATION. EXCEPTION: WHERE EXTERIOR MASONRY VENEER IS USED,
- FOUNDATION WALLS SHALL EXTEND A MINIMUM OF FOUR INCHES
- 6. DRAINS SHALL BE PROVIDED AROUND ALL CONCRETE OR MASONRY FOUNDATIONS ENCLOSING HABITABLE OR USABLE SPACES LOCATED
- 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

- CONCRETE
- 1. ALL CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH AS FOLLOWS, AT 28 DAYS: A.BASEMENT WALLS & FOUNDATIONS (NOT EXPOSED TO WEATHER) 2 500 PSI B.BASEMENT & INTERIOR SLABS ON GRADE 2,500 PSI.
- C.BASEMENT, FOUNDATION, EXT. & OTHER WALLS (EXPOSED TO WEATHER) 3.000 PSI D.PORCHES, STEPS, CAR PORTS & GARAGE SLABS (EXPOSED TO WEATHER) 3.500 PSI
- 2. ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 GRADE 60.
- 3. THE FOLLOWING MINIMUM COVER SHALL BE PROVIDED FOR REINFORCEMENT:
- CONCRETE AGAINST THE EARTH FORMED CONCRETE EXPOSED TO EARTH OR WEATHER #5 OR SMALLER 1 %"
- #6 OR LARGER CONCRETE NOT EXPOSED TO EARTH OR WEATHER
  - SLABS OR WALLS 3/4" BEAMS & COLUMNS 11/2"
- 4. ALL CONCRETE WORK AND DETAILING SHALL COMPLY WITH THE LATEST SPECIFICATIONS AND RECOMMENDATIONS OF THE ACI.
- 5. ALL CONTINUOUS REINFORCING BARS SHALL BE LAPPED 36 BAR DIAMETERS AT SPLICES AND AT CORNERS UNLESS OTHERWISE NOTED. TERMINATE CONTINUOUS BARS AT NON-CONTINUOUS ENDS WITH STANDARD HOOKS.
- 6. WALL REINFORCING SHALL FOLLOW THE MINIMUM REQUIREMENTS FOR UNSUPPORTED WALLS. A FOUNDATION WALL IS CONSIDERED UNSUPPORTED WHEN THE FIRST FLOOR FRAMING DOES NOT BEAR DIRECTLY ON THE TOP OF THE FOUNDATION.
- WALL REINFORCING SHALL FOLLOW THE MINIMUM REQUIREMENTS FOR UNSUPPORTED WALLS. A. FOR FOUNDATION WALLS LESS THAN OR EQUAL TO 8'-0", USE ONE #4 BAR WITHIN 12" OF THE TOP OF THE WALL AND ONE #4
- BAR NEAR THE MID-HEIGHT OF THE WALL. B. FOR FOUNDATION WALLS GREATER THAN 8'-0", USE ONE #4 BAR WITHIN 12" OF THE TOP AND ONE #4 BAR NEAR THE THIRD POINTS IN THE WALL.
- VERTICAL AND HORIZONTAL STEEL IS REQUIRED FOR ALL WALLS GREATER THAN 8 FEET IN HEIGHT.
- 1. ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 GRADE 50 EXCEPT THAT HSS SECTIONS SHALL CONFORM TO ASTM A500 GRADE
- 2. BOLTS SHALL CONFORM TO ASTM A325N AND SHALL BE 3/4" DIAMETER
- 3. ALL SHOP AND FIELD WELDING SHALL BE PERFORMED BY AN AWS
- CERTIFIED WELDER.
- ALL EXPOSED STEEL SHALL BE HOT DIPPED GALVANIZED. 5. STEEL HEADERS FOR LINTELS SHALL CONSIST OF THE FOLLOWING: (FOR EACH 4" WIDTH OF BLOCK)
- MASONRY OPENINGS UP TO 4' L4 X 3 1/2 X 5/16 MASONRY OPENINGS 4' TO 6' L6 X 3 1/2 X 5/16
- CONVENTIONAL WOOD FRAMING
- 1. ALL CONVENTIONAL/SAWN LUMBER FRAMING MEMBERS SHALL BE SPRUCE - PINE - FIR (AS GRADED BY NI GA), WITH A MINIMUM SPECIFIC GRAVITY = 0.42. MINIMUM PROPERTIES TO BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION" AND WITH THI FOLLOWING MINIMUM GRADE STANDARDS: TYPICAL UNLESS OTHERWISE NOTED.
- A. JOISTS, RAFTERS, SOLID AND BUILT-UP BEAMS AND LINTELS; NO. 2 OR BETTER. (FB=875PSI, E=1,400,000PSI)
- B. WALL STUDS, SILLS AND PLATES; NO. 2 OR BETTER. (FB=875PSI, E=1.400.000PSI)
- C. SOLID WOOD POSTS; NO. 1 OR BETTER (FC=700PSI, E=1,300,000PSI) D. BRIDGING, BLOCKING AND NAILERS; STUD GRADE.
- 2. ALL PRESERVATIVE PRESSURE TREATED LUMBER TO BE SOUTHERN YELLOW PINE NO. 2 OR BETTER.
- 3. ALL "MICROLLAM" AND "LVL" MEMBERS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:
- A. E = 2,000,00 PSI
- B. FB = 2.600 PSI C. FT = 1,555 PSI
- D. FC (PERPENDICULAR) = 750 PSI E. FC (PARALLEL) = 2,510 PSI
- F. FV = 285 PSI
- 4. ALL HORIZONTAL "PARALLAM" MEMBERS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:
- A. E = 2,000,000 PSI B. FB = 2.900 PSI
- C. FT = 2.025 PS D. FC (PERPENDICULAR) = 625 PSI
- E. FC (PARALLEL) = 2,900 PSI F. FV = 290 PSI
- 5. ALL VERTICAL "PARALLAM" MEMBERS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:
- A. E = 1,800,000 PSI
- B. FB = 2,400 PSI C. FT = 1.755 PS
- D. FC (PERPENDICULAR) = 545 PSI E. FC (PARALLEL) = 2,500 PSI
- F. FV = 190 PSI
- 6. ALL TIMBERSTRAND MEMBERS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:
- A. E = 1,550,000 PSI B. FB = 2,325 PSI
- C FT = 1.070 PSD. FC (PERPENDICULAR) = 900 PSI
- E. FC (PARALLEL) = 2,170 PSI F. F. FV = 310 PSI
- 7. FOR ALL NON-CONVENTIONAL LUMBER (I.E. LAMINATED VENEER LUMBER, I-JOISTS, ETC.), THE SIZES ARE BASED ON THE PROPERTIES STATED ABOVE. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO VERIFY AND COORDINATE ANY SUBSTITUTIONS NON-CONVENTIONAL LUMBER SHALL BE HANDLED AND INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
- 8. UNLESS OTHERWISE NOTED, ALL NAILING AND FASTENING SHALL BE IN ACCORDANCE TO THE GOVERNING BUILDING CODE. 9. ALL WOOD IN CONTACT WITH CONCRETE OR MASONRY AND ALL
- MEMBERS EXPOSED TO WEATHER OR MOISTURE SHALL BE PRESERVATIVE PRESSURE TREATED ACQ (ALKALINE COPPER QUAT) (IN ACCORDANCE WITH THE "AMERICAN WOOD PRESERVERS ASSOCIATION, STANDARD C1".
- 10. ALL LUMBER AND PLYWOOD NOTED IN THE CONTRACT DOCUMENTS AS FIRE RETARDANT TREATED (F.R.T.) SHALL BE SO TREATED IN ACCORDANCE WITH THE "AMERICAN WOOD PRESERVERS ASSOCIATION, STANDARDS C20 AND C27" AND EACH PIECE SHALL BEAR A U.L. LABEL INDICATING SUCH TREATMENT. TENED TO, THE LOWER WALL TO PLATE.

- 11. ALL NON-PRESSURE TREATED WOOD SHALL BE KILN DRIED TO A MOISTURE CONTENT OF 19 PERCENT OR LESS FOR LUMBER AND 15 PERCENT OR LESS FOR PLYWOOD AND OSB BEFORE INSTALLATION
- AND PRIOR TO THE APPLICATION OF ROOFING AND FINISHES. 12. ALL POSTS SHALL BE (VERTICALLY) BLOCKED THROUGH THE FLOOR CONSTRUCTION AT ALL LEVELS. TO THE TOP OF FOUNDATION WALL OR SUPPORTING BEAM BELOW THE POST.
- 13. ALL STUD WALLS, BEARING AND NON-BEARING, SHALL HAVE ONE ROW OF CONTINUOUS 2X SOLID BLOCKING BETWEEN STUDS AT MID-HEIGHT, AND AT LOCATIONS FOR PROPER ATTACHMENT OF CABINETS, COUNTERS, FIXTURES, APPLIANCES, ETC., UNLESS OTHERWISE NOTED. BLOCKING SIZE TO MATCH STUD SIZE.
- 14. ALL CONCEALED SPACES OF WOOD STUD WALLS, INCLUDING FURRED PARTITIONS ARE TO BE BLOCKED/FIRESTOPPED/DRAFTSTOPPED AS REQUIRED, AT THE CEILING AND FLOOR AND ROOF LEVELS, AT CONNECTIONS BETWEEN HORIZONTAL AND VERTICAL SPACES, SUCH AS SOFFITS OVER CABINETS, DROP CEILINGS, COVE CEILINGS ETC. WITHIN CONCEALED SPACES BETWEEN STAIR STRINGERS AT THE TOP AND BOTTOM OF THE RUN AND WITH NON-COMBUSTIBLE MATERIALS AT OPENINGS AROUND VENT PIPES, DUCTS, CHIMNEYS &
- FIREPLACES AT THE CEILING & FLOOR LEVELS. 15. RAFTERS SHALL NOT BE CUT OR NOTCHED TO ACCEPT KNEE WALLS. RAFTERS SHALL REMAIN FULL DEPTH AND THE TOP OF THE WALL SHALL RECEIVE TAPERED BLOCKING OR AN ANGLED TOP PLATE FOR ATTACHMENT TO THE RAFTERS. TYPICAL UNLESS NOTED.
- 16. ALL OTHER FRAMING MEMBERS SHALL NOT BE NOTCHED, CUT OR ALTERED IN THE FIELD WITHOUT THE SPECIFIC APPROVAL OF THE FNGINFFR
- 17. STRUCTURAL HEADERS, BEAMS, ETC., UNLESS OTHERWISE NOTED, SHALL BEAR ON THE FOLLOWING:
- 8. DOUBLE HEADERS SHALL BEAR ON 4X4 WOOD POSTS. TRIPLE HEADERS SHALL BEAR ON 4X6 WOOD POSTS. 10. STEEL BEAMS SHALL BEAR ON 3 1/2" O.D. STEEL PIPE COLUMNS.
- 18. WHERE REQUIRED BY THE CONTRACT DOCUMENTS, ALL METAL CONNECTORS FOR WOOD CONSTRUCTION, INCLUDING BUT NOT LIMITED TO; JOIST, BEAM AND SADDLE HANGERS, POST AND COLUMN BASES AND CAPS, BRIDGING, HOLDDOWNS, HINGE CONNECTORS AND STRAPPING, SHALL BE HOT-DIPPED GALVANIZED METAL SHAPES AS MANUFACTURED BY "SIMPSON STRONG-TIF COMPANY, INC." AND BE

- ATTACHED AS PER THE "SIMPSON STRONG-TIE" SPECIFICATIONS. 19. ALL BOLTS, NAILS, SCREWS, CONNECTORS ETC. EXPOSED TO MOISTURE, WEATHER OR IN CONTACT WITH PRESERVATIVE PRESSURE TREATED LUMBER, ARE TO BE STAINLESS STEEL OR HOT
- DIPPED GALVANIZED. 20. BEARING PLATES SHALL MATCH OR EXCEED THE WIDTH OF ALL BEAMS THAT BEAR UPON THEM.
- 21. ALL ROOF SHEATHING SHALL BE 19/32 INCH APA RATED PLYWOOD SHEATHING 40/20 PANELS OR OSB PANELS OF EQUAL OR GREATER STRENGTH AND STIFFNESS. USE EXPOSURE 1 PANELS, EXCEPT USE EXTERIOR GRADE PLYWOOD PANELS FOR STARTER STRIPS ALONG EAVES AND WHEN LONG CONSTRUCTION DELAYS ARE ANTICIPATED APPLY PANELS WITH THE LONG DIMENSION PERPENDICULAR TO THE RAFTERS, JOISTS, OR TRUSSES AND CONTINUOUS OVER TWO OR MORE SPANS. INSTALL PANEL CLIPS ALONG PANEL ENDS BETWEEN EACH RAFTER. JOIST. OR TRUSS. ATTACH PANELS WITH 8D COMMON NAILS AT 6 INCHES ON CENTER AT SUPPORTED PANEL EDGES AND 12 INCHES ON CENTER AT INTERMEDIATE SUPPORTS. LEAVE 1/4 INCH AT ALL PANEL EDGE JOINTS AND 1/8 INCH SPACE AT ALL PANEL END JOINTS UNLESS OTHERWISE RECOMMENDED BY THE
- MANUFACTURER. 22. ALL FLOOR SHEATHING SHALL BE 23/32 INCH APA RATED "STURD-I-FLOOR", 24 OC, TONGUE AND GROOVE, PLYWOOD PANELS. USE EXPOSURE 1 PLYWOOD PANELS, EXCEPT USE EXTERIOR GRADE PLYWOOD PANELS OR J.M. HUBER CORPORATION ADVANTECH BRAND PANELS WHEN LONG CONSTRUCTION DELAYS ARE ANTICIPATED. APPLY PANELS WITH THE LONG DIMENSION PERPENDICULAR TO THE JOISTS OR TRUSSES AND CONTINUOUS OVER TWO OR MORE SPANS. ATTACH PLYWOOD PANELS BY GLUE-NAILING AS FOLLOWS:
- A. SPREAD GLUE IN ACCORDANCE WITH RECOMMENDATIONS OF GLUE MANUFACTURER AND INDUSTRY PRACTICE. B. STAGGER END JOINTS IN EACH SUCCEEDING ROW, LEAVING 1/8
- INCH SPACE BETWEEN ALL END AND EDGE JOINTS, INCLUDING TONGUE AND GROOVE EDGES.

23. ALL ORIENTED STRAND BOARD (OSB) AND PLYWOOD SHALL BE APA

PERFORMANCE RATED AND SHALL BEAR THE APA PERFORMANCE

24. LEAD HOLES FOR WOOD SCREWS AND LAG BOLTS SHALL BE DRILLED

7/8 OF THE SHANK DIAMETER FOR THE DEPTH OF SHANK EMBEDMENT

AND 7/8 OF THE THREADED PORTION DIAMETER FOR THE DEPTH OF

25. AT LOCATIONS WHERE THERE IS NO FLOOR FRAMING AT ANY TYPICAL

FLOOR LEVEL (AT OPEN ATRIA AND OTHER AREAS GREATER THEN 1

26. AT LOCATIONS WHERE THERE IS NO FLOOR FRAMING AT ANY TYPICAL

CONSTRUCTED DIRECTLY ON, AND FASTENED TO, THE LOWER WALL

1. ALL WOOD I JOISTS AND ALL ENGINEERED WOOD LUMBER SHALL BE

AND INSTALLED BY THE GENERAL CONTRACTOR AS PER THE

"WEYERHAUSER SPECIFICATIONS" OR APPROVED EQUIVALENT.

2. ALL DESIGNS SHALL BE PREPARED IN ACCORDANCE WITH GENERAL

NOTE #2 HEREIN AND BE SUBMITTED TO THE ENGINEER FOR

STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE

PROTECTION CONTRACT DOCUMENTS SHALL BE PREFERRED TO FOR

ARCHITECTURAL CONTRACT DOCUMENTS SHALL BE REFERRED TO

FOR EXTENDS AND LOCATIONS OF OCCUPANCIES. SHOP DRAWINGS

AND CALCULATIONS SHALL INDICATE LOADS WHICH MEMBERS HAVE

BEEN DESIGNED FOR. DEFLECTION LIMITATIONS ARE AS FOLLOWS:

B.L/480; FLOOR LIVE LOAD (WITHOUT CONSIDERING THE

COMPOSITE ACTION OF THE GLUE/NAILED SHEATHING.)

4. SUBMIT W.I. JOIST DESIGN DOCUMENTS WHICH SHALL INCLUDE W.I.

JOIST PROPERTIES AND LOADING AND A DIMENSIONED ERECTION

STRUCTURAL ENGINEER REGISTERED IN THE STATE IN WHICH THE

FIRE PROTECTION CONTRACT DOCUMENTS SHALL BE REFERRED TO

FOR LAYOUT AND CONFIGURATION REQUIREMENTS NOT SHOWN ON

THE STRUCTURAL CONTRACT DOCUMENTS. ADDITIONAL W.I. JOISTS

SHALL BE PROVIDED UNDER ALL PARTITIONS OVER 3 FEET LONG,

HOLES IN W.I. JOISTS WEBS SHALL BE CREATED IN ACCORDANCE

WHICH RUN PARALLEL TO THE SPAN OF THE W.I. JOISTS.

WITH THE MANUFACTURER'S REQUIREMENTS.

6. W.I. JOIST FLANGES SHALL NOT BE NOTCHED, CUT OR ALTERED.

PLAN INDICATING THE LOCATION OF EACH TRUSS, ALL OF WHICH

SHALL BEAR THE STAMP AND SIGNATURE OF A PROFESSIONAL

5. THE ARCHITECTURAL, MECHANICAL, PLUMBING, ELECTRICAL, AND

DIMENSIONAL REVIEW AND RECORD PURPOSES ONLY.

3. THE GOVERNING BUILDING CODE AND THE ARCHITECTURAL

DETERMINING DEAD AND LIVE LOAD REQUIREMENTS.

A.L/240; TOTAL LOAD.

PROJECT IS LOCATED.

C.L/360; ROOF LIVE LOAD.

AS MANUFACTURED BY "WEYERHAUSER" OR APPROVED EQUIVALENT

STORY) THE WALLS SHALL BE CONSTRUCTED WITH FULL HEIGHT

FLOOR LEVEL (AT STAIR SHAFTS AND SIMILAR AREAS) AND THE

STUDS CAN NOT BE FULL HEIGHT, THE LOWER WALL IS TO BE

CONSTRUCTED SO THAT THE TOP PLATE IS FLUSH WITH THE

WOOD I JOISTS AND ENGINEERED WOOD LUMBER

PLYWOOD DECK BEYOND AND THE WALL ABOVE IS TO BE

SPECIFICATIONS AND REGISTERED TRADE MARK

THE THREAD EMBEDMENT

STUDS WHENEVER POSSIBLE

TO PLATE.

C. COMPLETE ALL NAILING OF EACH PANEL BEFORE GLUE SETS WITH 8D RING - OR SCREW-SHANK NAILS AT 6 INCHES ON CENTER AT SUPPORTED PANEL EDGES AND 12 INCHES ON CENTER INTERMEDIATE SUPPORTS.

		INSU	JLATIO	N SCł	HEDULE	- PRE	SCRIF	TIVE DI	ESIGN		
CLIMATE FENES ZONE U-FAC	STRATION S TOR (b), (i)	KYLIGHT(b U-FACTOR	) GLAZED FEN. SHGC	CEILING R-VALUE	WOOD WALL R-VALUE	MASS WALL R-VALUE	- FLOOR R-VALUE	BASEMENT WALL	SLAB (d) R-VALUE	) ( & SPA	
5 (	).30 (i)	0.55	0.40	60	30 or 20&5ci(h) or 13&10ci(h) or 0&20ci(h)	13/17	30	15ci or 19 or 13&5ci	10ci, 4 ft	150	i or 19 or 13&5ci
ci = continuous in a. R-values a insulation, b. The fenest c. "5ci or 13" R-13 cavity d. R-5 insulat table. The e. There are n f. Basement g. The first va h. Mass walls wall. i. A maximur 1) Abo 2) In v	sulation re minimums. the installed R ration U-factor means R-5 cc insulation o r on shall be pr slab-edge insu to SHGC required wall insulation lue is cavity ir shall be in ac n U-factor of ( ove 4,000 feet vindborne det	U-factors a R-value of the r column ex ontinuous in the interior rovided und ulation for h uirements in a is not requinsulation, the cordance w 0.32 shall ap in elevation oris regions	nd SHGC are n le insulation sha cluded skylights sulation (ci) on of the wall in a er the full slab a eated slabs sha the Marine Zon ired in Warm H e second is con vith Section R40 oply to vertical for above sea level where protection	naximums. N all not be les s. The SHG the interior of ddition to R- area of a he all not be rea ne. umid location ntinuous ins 02.2.5. The s renestration el, or on of opening	Where insulation i ss than the R-valu C column applies or exterior surface 5 continuous insu ated slab in additi quired to extend b ons as defined by ulation. second R-value a products installed gs is required by \$	is installed in a le specified in to all glazed f e of the wall; c ulation on the on to the requ below the slab Figure 301.1 pplies where n I in buildings h Section R301.	a cavity that i the table. fenestration. or R-19 cavity interior or ex uired slab edg and Table R3 more than ha ocated either .2.1.2.	is less than the la r insulation on th terior surface of ge insulation R-v 301.1. If of the insulation	abel or design e interior surf the wall. alue for slabs	n thicknes face of the s, as indic	s of the wall; or ated in the
RESIDENTIAL BUILDNG DESIGN CRITERIA					WALL OPE	NING FRAM	ING SCHEE	OULE			
780 CMR THE STATE OF MASSACHUSETTS STATE BUILDING CODE STAT	<sub>E</sub> HD	R SPAN	LOADBEARIN MINIMUM H	NG WALL IEADER	NON-LOADBE MINIMUM HE	ARING WAL	L OP	ENING LOCAT	10N #(	OF KING	# OF JACK STUD
BOARD OF BUILDING REGULATIONS & STANDARDS Ninth edition of the Massachusetts State Building Code (One and Two Family Dwelling Code)	,	2 FT	SIZE 2 - 2x	<u> </u>	1 - 2x4	(FLAT)	≤ 3'	-0" FROM OUT CORNER	SIDE	2	2
1.1 SCOPE Table 5301.2(4) Massachusetts Basic Wind Speeds Town : Bourne, Basic Wind Speed 110 mph 5301.2.1.4 Exposure Category 1 Exposure A: City	E	3 FT 4 FT 5 FT 6 FT	2 - 2x 2 - 2x 2 - 2x 2 - 2x 2 - 2x	24 24 24 26	1 - 2x4 1 - 2x4 1 - 2x4 2 - 2	(FLAT) (FLAT) (FLAT) 2x4		-0" FROM OUT CORNER	SIDE	2	1
2 Exposure B: Urban, Suburban 3 Exposure C: Open Terrain 4 Exposure D: Flat Unobstructed Exposure B: Bourne Table 5301.2(5) Massachusetts Ground Snow Loads	E	7 FT 8 FT 9 FT	2 - 2x 2 - 2x 3 - 2x	:8 12 10	2 - 2 2 - 2 2 - 2	2x4 2x4 2x6	/	ALL LOCATION	s	3	2
Town: Bourne, Snow Load; 30 psf 5301.2.1.2 Internal Pressure		10 F T 11 F T	3 - 2x <sup>2</sup> 4 - 2x <sup>2</sup>	12 10	2 - 2	2x6 2x6	/		S	4	2
Windows in wind borne debris regions shall have glazed openings pro- from wind borne debris In accordance with Large Missile Test of ASTM E 1996 and of ASTM Exception: Wood structural panels, 7/16" by 8'-0", shall be permitted f opening protection in one and two story buildings in accordance with 5301.2.1.2 and the IBC. Contractor to provide labeled, numbered, pre screwed wood structural panels; to be utilized in the case of a hurrica	tected = 1886. pr Fable - ne.			UNLES AND PN	SS OTHERWISE STAT	AILING	SCHE	<b>DULE</b> ARE COMMON WIF	S RE SIZES. BOX	5	
FEMA 543 Definitions Wind- borne debris regions. Areas within hHurricane- prone regions k 1 Within 1 mile of the coastal mean high water line where the basic wi speed	icated: nd		J	THE	SPECIFIED COMMO	N NAILS MAY BE	E SUBSTITUTEI NUMBER O COMMON NA	F NL ILS B	IMBER OF	NA	IL SPACING
Is equal to or greater than 120 mph and in Hawaii. 2. In areas where the basic wind speed is equal to or greater than 120	I mph.	В		RAMING			(2) 84		(2) 10d		
1.3 FRAMING General framing connections shall be in accordance with 780CMR 8th Edition unless noted.	J	R	IM BOARD TO RA	FTER (FOE-NA	AILED)	(2) 0d (2) 16d			(3) 16d EACH END		
Provide framing connections per General Nailing Schedule.		т	TOP PLATES AT INTERSECTIONS (FACE-NAILE				(4) 16d		(5) 16d	ŀ	AT JOINTS
Minimum uniformly distributed live loads, Table 5301.5: Attics with Storage; 20 psf Attics without storage: 10 psf		S H	TUD TO STUD (FA	ACE-NAILED) ER (FACE-NAI	ILED)		(2) 16d 16d		(2) 16d 16d	16" o/c	24" o/c ALONG EDGES
Decks; 40 psf Exterior Balconies; 40 psf Fire Escapes; 40 psf		ال	FLOOR F	<b>FRAMING</b> P PLATE OR G	GIRDER (TOE-NAILEE	))	(4) 8d		(4) 10d	F	PER JOIST
Guardrails, Handrails 200 psf. Guardrails in fill components; 50 psf Passenger vehicle garage: 50 psf		BLOCKING TO JOIST (TOE-NAILED) BLOCKING TO SILL OR TOP PLATE (TOE-N					(2) 8d (3) 16d	) 8d (2) 10c ) 16d (4) 16c		E EA	ACH END
Rooms other than sleeping; 40 psf Sleeping Rooms; 30 psf		LEDGER STRIP TO BEAM OR GIRDER (FACE-NAILED)					(3) 16d (3) 8d		(4) 16d E		ACH JOIST PER JOIST
5301.7 Deflection		B	AND JOIST TO JO	DIST (END-NAI		OE-NAILED)		(3) 16d (4) 16d (2) 16d (3) 16d		PER JOIST	
The allowable deflection shall not exceed Table 5301.7 Rafters greater than 3/12; L/180 Interior Walls: H/180			ROOF SI	HEATHING	(WOOD STRU	CTURAL PANEL	(2) 100 .S)	;)			ERFOOT
Floors/ Ceilings; L/360 Exterior Walls, stucco; H/360		R	AFTERS OR TRUS	SSES SPACEE SSES SPACEE	D UP TO 16" o/c D OVER 16" o/c	<sup>-</sup> O 16" o/c :R 16" o/c			10d 10d	6" ED 4" ED	GE / 6" FIELD
Exterior Walls, brittle; L/240 Exterior Walls, flexible; L/120		G	ABLE ENDWALL F WITHOUT GA	RAKE OR RAK ABLE OVERHA	E TRUSS		8d	8d 1		6" E[	)GE / 6" FIELD
2.1 FOUNDATION Concrete shall be a minimum 3,000 PSI at 28 days.		G	ABLE ENDWALL F STRUCTR	RAKE OR RAK RUAL OUTLOC	E TRUSS WITH KERS	TH 8d			10d	6" EDGE / 6" FIELD	
2.2 FOUNDATION ANCHORAGE Provide anchor bolts at all concrete columns as shown on sheet F-1.		G	ABLE ENDWALL F	RAKE OR RAK	E TRUSS w/LOOKOU	JT BLOCKS	8d	8d 10d		3 4" EDGE / 4" FIEL	
3.1 FLOORS The clear span of floor joist shall meet or exceed the values set forth i	n	G	GYPSUM WALLBO	ARD HEATHING			5d COOLEF	RS		7" ED	GE / 10" FIELD
780CMR 8th Edition. Floor openings shall not exceed the lesser of 12'-0" or 50% of the buil	ding	W 14			TUDS SPACED UP T	O 24" o/c	8d <sub>8d</sub> 1		10d	6" ED 3" Er	GE / 12" FIELD
3.2 FLOOR BRACING			" GYPSUM WALLI	BOARD	-		5d COOLEF	RS		7" ED	GE / 10" FIELD
Blocking and connections shall be provided at panel edges perpendic floor framing members in the first two truss or joist spaces and shall be 48" O.C. se Bracing Detail.	ılar to e Floor	1 G	FLOOR S OR LESS REATER THAN 1"	SHEATHING	(WOOD STR		8d 10d		10d 16d	6" ED 6" EI	GE / 12" FIELD )GE / 6" FIELD
4.1 WALLS Loadbearing walls shall not exceed 10'-10" in height.						, C A	CORROSION RE	EISISTANT 11 GAGE D, CHECK IBC FOR	E ROOFING NAI ADDITIONAL R	ILS AND 16 EQUIREME	GAGE STAPLES NTS.
Activity of the first state in the exceed 20 -0 in height. Activity of the first state in the exceed activity of the e	5 R 1 צ ד	5.1 ROOF Roof span shall n Roof openings sh 2'-0" or 50% of t Roof slope shall r 5.2 WOOD	ot exceed 36'-0" all not exceed the less ne building dimension. ot be greater than 12/ RAFTERS rafters shall meet or e	ser of , L/2 or W/2. /12. exceed the value	s set				JOHN CHURC	IN L. CHILL JR. IML 41807	A LETTS
Gable End Walls shall be braced for a distance of at least $\frac{1}{3}$ of the buil width with wood structural panels or at least 90% of the building width gypsum wall board.	ling fc with fr	orth in 780CMR naximum rafter s or the 20psf roof	Bth Edition. The pan shall be limited to live load	o¾ ofthe span pe	ermitted	2-19-24	4		A start		[/
Story to Story Uplift and Lateral Connections see Detail.	P P U	Provide Simpson Provide minimum pper third of the	H2.5 uplift connectors 1 by 8 collar/rafter tie attic space	s at each rafter or s at 32" located i	n the	Date	20P04		onal Engine	er A TI∩	 )N
4.3 EXTERIOR WALL SHEATHING	a <i>r</i>	5.3 ROOF	afters using 5-10d nail	ls at each end.					_, \ \ \ \ / \  \ \ \ \ \ \ \ \ \ \ \ \		TI ON I
Provide 7/16" wood structural panel sheathing on all exterior walls. P the minimum required percentage full-height sheathing see Tables 10 & 11 in the Wood Francisconstruction Manual 110	ovide P ne	5.4 ROOF E	BRACING ENE	eathing on all roo	fs.	FUR PERMIT/CONSTRUCTION					
MPH Ex. C. Exterior wall sheathing shall be nailed 3" O.C. edge and 12" O.C. field	B p , with n	Blocking and con erpendicular to r nembers in the fi	nections shall be provi oof framing rst two truss or rafter s	ided at panel edg spaces and shall	be 48" SCALE:	PER PLANS	APPROVE				awn by: MKV
8d common nails.	C	0.C. see Detail.			DATE:	10/4/2023			BY:	RE	VISED: 2/19/2
						JC	EN(	GINEEF	RING.	IN	C.

JOB NUMBER:

2007 - 1

405 CIRCUIT AVE.

BOURNE, MA

DRAWING NUMBER:

GN-C



WINDOW SCHEDULE											
LABEL	HARDWARE	DESCRIPTION	SIZE	ROUGH OPENING	MODEL #	AMOUNT					
EX	EXISTING WIND	OW TO REMAIN - UNL	ESS NOTED OTHE	ERWISE ON DEMOLITIO	N DRAWING D-1						

		DOOR S	SCHED	ULE
LABEL	HARDWARE	SIZE	FRAME	TYPE
EX	EXISTING	DOOR TO REMAIN - UNLESS NO	DTED OTHER	WISE ON DEMOLITION DRAWING D-1



AMOUNT

EXISTING STAIR DIMENSIONS SCALE: 1/2"=1'-0" 〔5〕



### 3 EXISTING LEFT SIDE ELEVATION SCALE: 1/4"=1'-0"



## 1 EXISTING FRONT ELEVATION SCALE: 1/4"=1'-0"







-

4 EXISTING REAR ELEVATION SCALE: 1/4"=1'-0" (EX)

EX-

EX. GRADE

		PROPOSED RENOVATION				
	and the second sec	FOR PERMIT/CONSTRUCTION				
	JOHN L.	EXISTING ELEVATIONS				
		SCALE: PER PLANS APPROVED BY: UC				
	B FGISTER STA	DATE: 10/4/2023 ULC REVISED: 2/19/2024				
	The second se	JC ENGINEERING, INC.				
2-19-24	÷ //	405 CIRCUIT AVE.				
Date	Professional Engineer	BOURNE, MA $ 200/-1 $ $EX-2$				









2 SECOND FLOOR DEMO PLAN SCALE: 1/4"=1'-0"

		PR	OPOSED I	RENOVATI	ON
	SEN. TH OF MASSA	FOR	PERMIT/C	CONSTRUC	CTION
	JOHN L. CHURCHILL JR. CIVIL	PROPOSED DEMO PLANS			
	NO. 41807	SCALE: PER PLANS	APPROVED BY:	$\frown$	drawn by: <b>MKV</b>
	Constant and the second second	DATE: 10/4/2023	J		REVISED: 2/19/2024
2-10-24	Providence 4	JC	ENGINE	ERING, II	VC.
Date	Professional Engineer	405 CIRCUIT BOURNE, MA	AVE.	2007-1	drawing number:









2 PROPOSED SECOND FLOOR LAYOUT SCALE: 1/4"=1'-0"

WALL TYPE SCHEDULE											
LABEL	STUD SIZE & SPACING			TYPE			FINIS	SHES	то	TOP PLATES	
	2x6 SPF #1/2 @ 16" o.c.			EXT. BEARING		7/16" CDX (or EQ.) @ EXTERIOR			DO	DOUBLE 2x6	
2	2x4 \$	SPF #1/2	@ 16" o.c.	INT. NON-BEAR	ING	1/2" GYPSUM BOARD @ BOTH FACES			SIN	SINGLE 2x4	
3	2x6 SPF #1/2 @ 16" o.c.			INT. NON-BEAR	ING	1/2" GYPSUM BOARD @ BOTH FACES			SIN	SINGLE 2x6	
WINDOW SCHEDULE											
LABE	LABEL MODEL #		DESCRIPTION		SIZE	А	MOUNT				
<b>EX</b>	$\rangle$	EXIS	FING WINDOW	/ TO REMAIN - U.N	.0 ON	DEMOI	LITION DRA	WING D-1			
A	ANDERSEN TW21032 (OR SIM.)		DOUBLE HUNG w	v/ REMOVAE	BLE INT. GRIL	LES	2'-11 5/8" x 3'-4 7/8" (EACH UNIT)		9		
B	$\rangle$	AND	ERSEN TW2032 (OR SIM.)	DOUBLE HUNG w	v/ REMOVAE	BLE INT. GRIL	LES	4'-8 1/2" x 3'-4 7/8"		1	
	ANDERSEN TW26310 (OR SIM.)		DOUBLE HUNG w	v/ REMOVAE	BLE INT. GRIL	LES	2'-7 5/8" x 4'-0 7/8"		6		
	ANDERSEN CTR2810 (OR SIM.)		TRANSOM w/ REMOVABLE INT. GRILLES		2'-7 1/2" x 1'-0"	-7 1/2" x 1'-0"					
E	ANDERSEN CTR6010           (OR SIM.)		TRANSOM w/ REMOVABLE INT. GRILLES		5'-11 7/8" x 1'-0"		1				
F	ANDERSEN OVL1824 (OR SIM.)		FIXED PANEL OVAL		5'-11 7/8" x 1'-0"		1				
G	G ANDERSEN 26210 (OR SIM.)		DOUBLE HUNG w/ TEMPERED GLASS & REMOVABLE INT. GRILLES		2'-7 5/8" x 3'-0 7/8"	"-7 5/8" x 3'-0 7/8"					
<pre>(H)</pre>	ANDERSEN 26410 (OR SIM.)		DOUBLE HUNG w/ TEMPERED GLASS & REMOVABLE INT. GRILLES		2'-7 5/8" x 5'-0 7/8"		2				
				DOOR S	SCH	IED	ULE				
LABEL	HARD	WARE	S	IZE	FRAME TYPE			AMOUNT			
EX	EX	ISTING	DOOR TO REI	MAIN - UNLESS NC	DTED C	DTHER\	WISE ON DE	EMOLITION DRAWING	G D-1		
1	TBD 6'-0"		' X 6'-8"	TE	3D	SLIDING DOOR w/ REMOVABLE INTERIOR GRILLES		E	1		
2	TBD 2'-8" 2		X 6'-8"	PI	INE	BEDROOM ENTRY DOOR & SIM.		M.	4		
3	TBD 2'-4" X 6'-		X 6'-8"	PI	INE	BATHROOM ENTRY DOOR & SI		SIM.	2		
4	Т	TBD 1'-8" X 6'-8"		X 6'-8"	PI	INE	BATHROOM CLOSET DOOR & SIM.		2		
5	TBD 2'-0" X 6'-8"		X 6'-8"	PI	INE	BI-FOLD CLOSET DOOR			1		
6	Т	BD	4'-0"	X 6'-8"	PI	INE	BI-FOLD (	CLOSET DOOR		2	
7	Т	BD	1'-4"	X 6'-8"	PI	INE	CLOSET [	DOOR		1	









6 PROPOSED REAR ELEVATION SCALE: 1/4"=1'-0"





EX. GRADE





		PROPOSED RENOVATION				
	JOHN L. CHURCHILL JR. CIVIL	FOR PERMIT/CONSTRUCTION				
		PROPOSED SECTIONS				
	NO. 41807	SCALE: PER PLANS	APPROVED BY:	drawn by: <b>MKV</b>		
	CONTERNAL AND	DATE: 10/4/2023	JLC	REVISED: 2/19/2024		
0.40.04	and the second of	JC	ENGINEERING,	INC.		
Date	Professional Engineer	405 CIRCUIT	AVE. $2007$	$1 \qquad \Delta - 3$		
	č	BOURNE, MA	2007			



EXISTING SOFFIT

CASED OPENING







Ū ОР

ഷ

HOOD TO BE EXHAUSTED THROUGH ROOF OR SIDEWALL

**ACTURER** 

EXISTING ELECTRIC PANEL TO BE RELOCATED

വ

5

Ц

 $\Box$ വ

	2-19-24 Date Professional Engineer
R EX. CLOSET (HW HEATER)	PROPOSED RENOVATION
	FOR PERMIT/CONSTRUCTION
	PROPOSED PLANS—KITCHEN ELEV.SCALE:PER PLANSDATE:10/4/2023DATE:10/4/2023PREPARED BY:ICJCENGINEERING, INC.405CIRCUIT AVE.BOURNE, MAJOB NUMBER:2007-1A-4



![](_page_17_Figure_1.jpeg)

EXISTING FIRST FLOOR GROSS FLOOR AREA 1 SCALE: 1/4"=1'-0"

## EXISTING GROSS FLOOR AREAS

EXISTING FLOOR AREAS TO BE COUNTED TOWARDS MAXIMUM GROSS FLOOR AREA (PER SECTION 2456 - TABLE)

EXISTING FIRST FLOOR - FLOOR AREA

- EXISTING ENCLOSED PORCH FLOOR AREA
- EXISTING SECOND FLOOR FLOOR AREA

EXISTING 1-STORY DETATCHED GARAGE - FLOOR AREA

TOTAL EXISTING FLOOR AREA = 1,435 SQUARE FEET

EXISTING GROSS FLOOR AREA = 28.9% (1,435 SQ. FT. / 4,970 SQ. FT.)

- 751 SQUARE FEET
- 205 SQUARE FEET
- 479 SQUARE FEET
- 0 SQUARE FEET (< 480 SQ. FT.)

## PROPOSED GROSS FLOOR AREAS

PROPOSED FLOOR AREA TO BE COUNTED TOWARDS MAXIMUM GROSS FLOOR AREA (PER SECTION 2456 - TABLE)

PROPOSED FIRST FLOOR - FLOOR AREA	751 SQUARE FEET (NO CHANGE)			
PROPOSED ENCLOSED PORCH - FLOOR AREA	0 SQUARE FEET (< 200 SQ. FT.)			
PROPOSED SECOND FLOOR - FLOOR AREA	616 SQUARE FEET			
EXISTING 1-STORY DETATCHED GARAGE - FLOOR AREA	0 SQUARE FEET (< 480 SQ. FT.)			
TOTAL PROPOSED FLOOR AREA = 1,367 SQUARE FEET				
PROPOSED GROSS FLOOR AREA = 27.5% (1,367 SQ. FT. / 4,970 SQ. FT.)				

![](_page_17_Figure_20.jpeg)

4 PROPOSED SECOND FLOOR GROSS FLOOR AREA SCALE: 1/4"=1'-0"

AREA NOT CONTRIBUTING TO GFA (PER TABLE IN SECTION 2456)	

	PROPOSED RENOVATION				
WINNER TH OF MASSACE	FOR PERMIT/CONSTRUCTION				
CHURCHILL JR. CHURCHILL JR. CIVIL NO. 41807	GROSS FLOOR AREAS				
3 SCISTERS STA	SCALE: PER PLANS	APPROVED BY:	•	drawn by: <b>MKV</b>	
A CAR BE SAT	DATE: 10/4/2023	JLC		REVISED: 2/19/2024	
A second se	JC	ENGINEER	ING, IN	IC.	
Professional Engineer	405 CIRCUIT A BOURNE, MA	VE. 20	јов NUMBER: 007—1	A-5	

![](_page_18_Figure_0.jpeg)

![](_page_18_Figure_3.jpeg)

2 TYPICAL PIER/FOOTING DETAIL (ALTERNATE TO EXISTING MIN. 20"x10" PERIMETER FOOTING)

![](_page_18_Figure_5.jpeg)

3 TYPICAL PIER/FOOTING DETAIL @ SCREENED PORCH

![](_page_18_Picture_7.jpeg)

![](_page_19_Figure_0.jpeg)

![](_page_19_Figure_3.jpeg)

![](_page_19_Figure_4.jpeg)

![](_page_20_Figure_0.jpeg)

![](_page_21_Figure_0.jpeg)

![](_page_21_Figure_1.jpeg)