



# Table of Contents

<b>SECTION 1 - (GENERAL)</b> .....	<b>3</b>
1.1 Cover Sheet.....	3
1.2. Site plan .....	4
1.3. Scope/Light Frame .....	4
1.4. Unusable Drawings .....	4
<b>SECTION 2 - (BUILDING/FIRE/EGRESS)</b> .....	<b>5</b>
2.1. Load/Fire/Light/Ventilation .....	5
2.2. Sanitation .....	6
2.3. Glazing .....	7
2.4. Garage.....	7
2.5. Egress.....	8
2.6. Fire Sprinkler System .....	9
2.7. Smoke Alarm and CO Alarm.....	10
2.8. Insulation and Interior Finish .....	10
2.9. Dwelling Unit Separation .....	10
2.10. Moisture, Decay and Termite protection .....	11
<b>SECTION 3 - (FOUNDATION)</b> .....	<b>12</b>
3.1. FOUNDATION WALLS .....	12
3.2. Column.....	12
3.3. Under Floor Space.....	12
<b>SECTION 4 - (FOOTINGS AND SLAB ON GRADE)</b> .....	<b>14</b>
<b>4.1 FOOTINGS: Wall and Spread</b> .....	<b>14</b>
<b>4.2. Slab on Grade</b> .....	<b>15</b>
<b>SECTION 7 (WALL COVERING)</b> .....	<b>18</b>
7.2. Exterior Wall .....	18
<b>SECTION 8 (ROOF AND CEILING)</b> .....	<b>19</b>
8.2. Attic .....	19
<b>SECTION 10 – (CHIMNEY AND FIRE PLACE)</b> .....	<b>20</b>
<b>SECTION 9 – (ROOF COVERING)</b> .....	<b>21</b>
9.2. Specific Roof .....	21
10.2. Chimney.....	22
SECTION 11 – (ACCESSORY) .....	23
11.2. Pool.....	25
11.3. Retaining Wall.....	25
SECTION 12 – (PROFESSONALS) 12.1 Structural Engineers .....	26

# SECTION 1 - (GENERAL)

## 1.1 Cover Sheet

<p><b>1.1.1.</b> <i>Cover Sheet</i></p>	<p><b>General</b> <b>(COA, OOB checklist)</b></p>	<p>Provide the following information and criteria for all new building projects on the cover sheet:</p> <ul style="list-style-type: none"> <li>• Project Name</li> <li>• Project Address.</li> <li>• Type of Construction</li> <li>• Number of Stories</li> <li>• Building Height</li> <li>• New and or Existing Building Area Per Floor</li> <li>• New and or Existing Basement Area</li> <li>• New and or Existing Mezzanine Area</li> <li>• New and or Existing Garages</li> <li>• Porch, Deck and or Balcony Area</li> <li>• Total New Building Area</li> <li>• Existing Building Area</li> <li>• Total Building Area (new + existing)</li> <li>• Minimum font size 7pt or bold 6pt or legible.</li> </ul> <p>Provide a complete index of all submitted drawings. Indicate on the cover sheet the name, address, and phone number of the designer-of-record for each discipline. (Engineer, Architect, Draftsman, etc.)</p>
<p><b>1.1.2.</b> <i>Cover Sheet</i> <i>Applicable Codes</i></p>	<p><b>General</b> <b>(COA, OOB checklist)</b></p>	<p>Provide the following list of <b>applicable codes</b> that apply to the project on the cover sheet of the construction drawings:</p> <p>The Georgia State Minimum Standard Codes:</p> <ul style="list-style-type: none"> <li>• <b>International Building Code</b>, 2018 Edition, with Georgia Amendments (2020)</li> <li>• <b>International Residential Code</b>, 2018 Edition, with Georgia Amendments (2020)</li> <li>• <b>International Fire Code</b>, 2018 Edition, with Georgia Amendments (2020)</li> <li>• <b>International Plumbing Code</b>, 2018 Edition, with Georgia Amendments (2020)</li> <li>• <b>International Mechanical Code</b>, 2018 Edition, with Georgia Amendments (2020)</li> <li>• <b>International Fuel Gas Code</b>, 2018 Edition, with Georgia Amendments (2020)</li> <li>• <b>National Electrical Code</b>, 2017 Edition, with no Georgia Amendments (Effective 1/1/2018)</li> <li>• <b>International Energy Code</b>, 2015 Edition, with Georgia Supplements and Amendments (2020)</li> <li>• <b>2018 NFPA 101</b> - Life Safety Code with State Amendments (2020)</li> </ul>

## 1.2. Site plan

<p><b>1.2.1.</b> <i>Site Plan</i></p>	<p><b>IBC Section 107.2.6 and,</b> <b>IRC Section R106.2.</b></p>	<ul style="list-style-type: none"> <li>• Application for permit shall be accompanied by a site plan showing the size and location of new construction and existing structures on the site and distances from lot lines, the established street grades and the Proposed finished grades and, as applicable, flood hazard areas, floodways, and design flood elevations; and it shall be drawn in accordance with an accurate boundary line survey to ¼ inch scale.</li> <li>• In the case of demolition, the site plan shall show construction to be demolished and the location and size of existing structures and construction that are to remain on the site or plot.</li> <li>• The building official is authorized to waive or modify the requirement for a site plan when the application for permit is for alteration or repair or when otherwise warranted.</li> </ul> <p><b>Please clarify with the site plans in pursuant with the IBC section 107.2.5 and IRC section R106.2.</b></p>
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## 1.3. Scope/Light Frame

<p><b>1.3.1.</b> <i>Height limit</i></p>	<p><b>(IBC Sections: 2308.2, 2308.11, 2308.12, and 1609.3.1)</b> <b>(IRC Section 101.2, .....)</b></p>	<p>Buildings are permitted to be constructed in accordance with the provisions of conventional light-frame construction subject to the following limitations:</p> <ol style="list-style-type: none"> <li>a. Building shall be limited to a maximum of 3 stories above grade.</li> <li>b. Bearing wall height shall not exceed a stud height of 10 feet. Maximum floor to floor height shall not exceed 11 feet 7".</li> <li>c. Average dead loads shall not exceed 15 psf. for combined weight of roof &amp; ceiling, exterior walls, floors &amp; partitions.</li> <li>d. Roof trusses and rafters shall not span more than 40 feet between points of vertical supports.</li> <li>e. Wind speed Vsad shall not exceed 100 mph as determined in accordance with section 1609.3.1.</li> </ol>
<p><b>1.3.2.</b> <i>Professional</i></p>	<p><b>IBC Sections: 2308.2, 2308.11, 2308.12, and 1609.3.1</b> <b>IRC Section: 101.2, 106.1</b></p>	<p>Unless the plans are prepared using the requirements of conventional light-frame construction, structural plans must be designed by an Engineer or Architect licensed by the State of Georgia and the final set of plans prepared for permit issuance shall be stamped and signed by the design Engineer.</p>

## 1.4. Unusable Drawings

<p><b>1.2.1.</b> <i>Site Plan</i></p>	<p><b>Section R106.1.1 Information on construction documents</b></p>	<p>Clarify or delete details not used in the scope of work pursuant on the IRC section R106.1.1. Construction Documents shall be drawn upon suitable material and sufficient clarity, to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code, and relevant laws, ordinances, rules and regulations</p>
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## SECTION 2 - (BUILDING/FIRE/EGRESS)

### 2.1. Load/Fire/Light/Ventilation

<p style="text-align: center;"><b>2.1.1.</b> <b>Design Loads</b> <i>(DL, LL, Geographic, Climatic etc.)</i></p>	<p>IRC Tables R301.2 (1), R301.2(2), and R301.5. Fig: R301.2(1) through R301.2(7)</p>	<p>Residential buildings structures in Atlanta area should be designed with the following design load:</p> <ul style="list-style-type: none"> <li>• <b>Live load and dead loads</b> information should be on the plans.</li> <li>• Roof snow loads, <b>5 psf.</b></li> <li>• <b>Ultimate Wind speed 115 MPH</b></li> <li>• Seismic design <b>category B</b></li> <li>• Weathering is <b>moderate</b></li> <li>• Frost line depth <b>12 inch.</b></li> <li>• Termite area is <b>very heavy</b></li> <li>• Winter design temperature <b>22°F</b></li> <li>• <b>Flood hazard area</b> should be indicated on the plan (per 5/7/2001 record)</li> </ul>
<p style="text-align: center;"><b>2.1.2.</b> <b>Exterior wall rating</b></p>	<p>IRC Table R302.1; Sections R302.4.1 and R302.4.2</p>	<p>If the exterior walls are located <u>within 5 feet</u> from lot line, per <b>Table R302.1, Table R302.1.(2)</b> and section R302.4.2 and R302.4.2</p> <ul style="list-style-type: none"> <li>• <b>Walls:</b> 1-hour fire-resistive rating from both sides is required.</li> <li>• <b>Openings:</b> -Not permitted within 3feet...-25% permitted for 3 to 5feet of the lot line. (Except foundation vent and perpendicular wall to the lot line)</li> <li>• <b>Projections:</b> - Not permitted within 2 feet...-1-hour fire resistance rated on the underside, <b>or heavy timber, or fire-retardant-treated wood, or fire blocking or gable vents openings</b> are not installed for 2 to 5 feet lot line.</li> <li>• <b>Penetrations:</b> - <b>if less than 3 feet Comply with R302.4, if 3 feet or more not required</b></li> </ul>
<p style="text-align: center;"><b>2.1.3.</b> <b>Glazing for natural lighting</b></p>	<p>IRC Sections R303.1, R303.2, R303.3, and R303.6 <b>(Field verify)</b></p>	<p>Minimum glazing size:</p> <ul style="list-style-type: none"> <li>• All habitable rooms-----8% of the floor area.</li> <li>• Bathroom-----3 sq. (see exception at R303.1 and R303.3)</li> </ul>
<p style="text-align: center;"><b>2.1.4.</b> <b>Glazing for Artificial light</b></p>	<p>IRC Sections R303.1; R303.2, R303.3, and R303.6 <b>(Field verify)</b></p>	<p>Minimum glazing size:</p> <ul style="list-style-type: none"> <li>• All habitable rooms-----Average illumination 6 feet candles at a height of 30" above floor</li> <li>• Bathroom-----Adequate light for associated functions.</li> <li>• Interior stair way-----Adequate artificial light for stairs, including trades and landings.</li> <li>• Exterior stairway----- Adequate artificial light for stairs, including trades and landings.</li> </ul>
<p style="text-align: center;"><b>2.1.5. Ventilation</b></p>	<p>IRC Sections R303 and R305 <b>(Field verify)</b></p>	<p>Minimum Natural ventilation:</p> <ul style="list-style-type: none"> <li>• All habitable rooms-----minimum open able area-----4% of the floor area.</li> <li>• Bathroom -----1.5 square feet</li> </ul> <p>Minimum mechanical ventilation:</p> <ul style="list-style-type: none"> <li>• All habitable rooms-----15 cfm per occupants. (2 occupants at M-bedroom and one occupant for each bedroom.</li> <li>• Bathroom -----50 cfm.</li> </ul>

<b>2.1.6. Minimum Room sizes</b>	<b>IRC Section R304</b>	<b>Space</b>	<b>Minimum Area (Square feet)</b>	<b>Minimum Horizontal Dimension</b>
		At least one room	120	7 feet
		Other habitable rooms	70	7 feet
		Kitchen	N.A.	N.A.
		Bed rooms	70	7 feet
		Bathe rooms	N.A.	N.A.
<b>2.1.7. Minimum Ceiling Height</b>	<b>IRC Section R305</b>	Habitable rooms or space: <ul style="list-style-type: none"> <li>• Minimum <b>Ceiling height</b> -----7'-0"</li> <li>• Bathrooms, toilet rooms, laundry rooms, Minimum <b>Ceiling height</b>-----6'-8"</li> <li>• <b>Sloped Ceiling:</b> -----Minimum 50% should be 7'- 0" .....No portion of ceiling shall be &lt;5' height.</li> <li>• <b>Non-habitable basement:</b> -----Minimum ceiling height 6'-8"</li> <li>• <b>Beam, girders, ducts or other obstruction</b>..... 6'-4" (Below grade spaces that do not meet the above clearances are considered crawl spaces and should be labeled as such on the plans)</li> </ul>		

## 2.2. Sanitation

<b>2.2.1. Toilet Unit and Kitchen Unit</b>	<b>IRC Section R307</b>	<ul style="list-style-type: none"> <li>• At least one <b>Toilet room</b> shall have toilet facilities with water closet, lavatory, bathtub or shower.</li> <li>• <b>Kitchen</b> area shall have Sink and oven.</li> </ul>														
<b>2.2.2. Bathroom fixtures</b>	<b>IRC Section R307 (Field verify)</b>	Determine if bathroom fixtures have the required clearances for use per the following table: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Location</th> <th style="text-align: center;">Minimum clearances/Dimension</th> </tr> </thead> <tbody> <tr> <td>In front of water closet and lavatory</td> <td>21 inches</td> </tr> <tr> <td>In front of shower opening</td> <td>24 inches</td> </tr> <tr> <td>In front of tub</td> <td>21 inches</td> </tr> <tr> <td>Centerline of water closet to tub</td> <td>15 inches</td> </tr> <tr> <td>Center line of water closet and wall</td> <td>15 inches</td> </tr> <tr> <td>Shower</td> <td>30 inches X 30 inches</td> </tr> </tbody> </table>	Location	Minimum clearances/Dimension	In front of water closet and lavatory	21 inches	In front of shower opening	24 inches	In front of tub	21 inches	Centerline of water closet to tub	15 inches	Center line of water closet and wall	15 inches	Shower	30 inches X 30 inches
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<b>2.2.3. Accessory</b>	<b>IRC Section R307 (Field verify)</b>	<ul style="list-style-type: none"> <li>• Determine if utilities are available.</li> <li>• Required nonabsorbent wall surfaces height minimum 6 feet above floor for bathtub and shower spaces</li> </ul>														

## 2.3. Glazing

<p><b>2.3.1.</b> <i>Doors, windows, walls and any enclosure of shower, bathtub and whirlpool etc.</i></p>	<p>IRC Sections R308.1, R308.2, and R308.4 (Except)</p>	<p><b>Important: Tempered glazing may not meet the safety glazing standard. In that case it should indicate in the plans "CPSC 16-CFR, part 1201"</b></p> <table border="1"> <thead> <tr> <th>Location</th> <th>Description</th> <th>Require safety glazing or not</th> </tr> </thead> <tbody> <tr> <td>Doors, Windows and walls of Shower, bathtub or Whirlpool, sauna, steam room, ect.</td> <td>Bottom exposed edge of glazing is less than 60" above Standing or walking surface.</td> <td>Required</td> </tr> <tr> <td>Sidelight adjacent to door</td> <td>Glass with vertical edge within 24" arc of closed door and bottom edge is also less than 60" above the floor.</td> <td>Required</td> </tr> <tr> <td>Guardrails</td> <td>All</td> <td>Required</td> </tr> <tr> <td>Glazing in Swimming pool enclosures</td> <td>When the bottom edge of the glazing less than 60" above a walking surface and is also within 60" of water's edge.</td> <td>Required</td> </tr> <tr> <td>Glazing in Walls enclosing stairways, landings and ramps.</td> <td>Within 36" of a walking surface or within 60 inches of nosing of the bottom tread and the bottom edge is also less than 60" above walking surface.</td> <td>Required</td> </tr> <tr> <td>Glazing adjacent to the bottom tread of stairways.</td> <td>Glazing within 60" in any direction and the exposed edge is less than 36" above the nose of the tread.</td> <td>Required</td> </tr> </tbody> </table> <p><b>Note: Unless laminated glass is used structural glass baluster panels in guards now require an attached top rail or handrail.</b></p>	Location	Description	Require safety glazing or not	Doors, Windows and walls of Shower, bathtub or Whirlpool, sauna, steam room, ect.	Bottom exposed edge of glazing is less than 60" above Standing or walking surface.	Required	Sidelight adjacent to door	Glass with vertical edge within 24" arc of closed door and bottom edge is also less than 60" above the floor.	Required	Guardrails	All	Required	Glazing in Swimming pool enclosures	When the bottom edge of the glazing less than 60" above a walking surface and is also within 60" of water's edge.	Required	Glazing in Walls enclosing stairways, landings and ramps.	Within 36" of a walking surface or within 60 inches of nosing of the bottom tread and the bottom edge is also less than 60" above walking surface.	Required	Glazing adjacent to the bottom tread of stairways.	Glazing within 60" in any direction and the exposed edge is less than 36" above the nose of the tread.	Required
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<p><b>2.3.2. Screens and Skylights</b></p>	<p>IRC Sections R308.6.3, R308.6.4, R308.6.5, R308.6.6, and R308.6.7</p>	<table border="1"> <thead> <tr> <th>Location</th> <th>Description</th> <th>Require safety glazing or not</th> </tr> </thead> <tbody> <tr> <td>Single panels of laminated glass or rigid plastic are used.</td> <td></td> <td>Not Required</td> </tr> <tr> <td>Green house has a ridge height of 20 feet or less</td> <td></td> <td>Not Required</td> </tr> <tr> <td>The inboard pan of multiple, glazed skylights is laminated glass or rigid plastic</td> <td></td> <td>Not Required</td> </tr> <tr> <td>Fully tempered glass</td> <td></td> <td>Not Required</td> </tr> </tbody> </table> <p><b>Note:</b> If slope of skylight less than 3:12, check for a minimum 4" curb mounted above the plan of the roof unless otherwise specified in the manufacturer's installation instruction.</p>	Location	Description	Require safety glazing or not	Single panels of laminated glass or rigid plastic are used.		Not Required	Green house has a ridge height of 20 feet or less		Not Required	The inboard pan of multiple, glazed skylights is laminated glass or rigid plastic		Not Required	Fully tempered glass		Not Required						
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<h2>2.4. Garage</h2>																							
<p><b>2.4.1</b> <i>Openings, doors and separations.</i></p>	<p>IRC Sections R302.5 and R302.6</p>	<ul style="list-style-type: none"> <li><b>No direct openings</b> permitted between the garage and sleeping rooms.</li> <li><b>Doors</b> between garage and residence -----shall be at least 1-3/8" solid wood w/20-mins fire rated. Or-----Shall be honeycomb core steel.</li> <li><b>HVAC ducts</b> if penetrating wall or ceiling: ---Must not have opening into the garage. -----Must be composed of minimum No.26 gage sheet steel.</li> <li><b>Other voids penetrate</b> wall or ceiling: -----Must be filled with flame resistive materials.</li> </ul>																					
<p><b>2.4.2</b> <i>Garage floor, Wall and Ceiling.</i></p>	<p>IRC Sections R302.5 and R302.6</p>	<ul style="list-style-type: none"> <li><b>Floor surface:</b> ----- Must be noncombustible materials. -----Slopes must be toward a drain or vehicle entry door.</li> <li><b>Wall:</b> -----One hour fire separation or 1/2' thick gypsum board applied garage side.</li> <li><b>Ceiling:</b> ----- One hour fire separation or 5/8" thick gypsum board applied garage side.</li> </ul>																					

<p><b>2.4.3</b> <i>Carport</i></p>	<p>IRC Sections R302.5 and R302.6</p>	<ul style="list-style-type: none"> <li>• Open on at least two sides. If not open two sides, must comply with garage requirements.</li> <li>• Floor must be non-combustible except asphalt surface at grade.</li> <li>• Floor slopes must be toward a drain or vehicle entry door.</li> </ul>
<p><b>2.5. Egress</b></p>		
<p><b>2.5.1.</b> <i>Emergency Escape and Rescue</i></p>	<p>IRC Sections R310.1; R310.1.4; R310.2, and R310.4</p>	<p><b>Basement with habitable space and all sleeping rooms must have a means of emergency escape and rescue opening (door or window). (Not required for bedrooms in basements when the dwelling unit is protected with an automatic fire sprinkler system and other conditions are met.)</b></p> <p><b>Rescue Opening:</b></p> <ul style="list-style-type: none"> <li>• Minimum clear width, height and area respectively-----20"; 24" and 5.7 sq. ft.</li> <li>• Operable from inside without use of key, tool or special knowledge.</li> <li>• Top of Window sill maximum 44" from floor or finished grade.</li> <li>• If sill height below grade shall be provided with window well.</li> </ul> <p>(Prohibit obstructing the means of escape by bars, grills, covers and screens or similar devices.)</p> <p><b>Window well:</b></p> <ul style="list-style-type: none"> <li>• Minimum horizontal projection in any side and area respectively 36" and 9 sq. ft.</li> <li>• When Ladder or steps are required shall be permitted to encroach max. 6".</li> </ul> <p><b>Ladder and Steps;</b></p> <ul style="list-style-type: none"> <li>• Required when vertical depth &gt;44". Equipped with permanently affixed with the window in the fully open position.</li> </ul>
<p><b>2.5.2.</b> <i>Exit Door, Landings and Hallway.</i></p>	<p>IRC Sections R311.1; R311.2, and R311.6</p>	<p><b>Exit Door:</b></p> <ul style="list-style-type: none"> <li>• Side hinged minimum clear width 32" and Clear height 78".</li> <li>• Every dwelling shall have at least one exit door.</li> <li>• Exit door cannot be accessed by travelling through the garage.</li> </ul> <p><b>Landing:</b></p> <ul style="list-style-type: none"> <li>• Landings are to be at least width of egress door and 36 inches minimum measured in the direction of travel.</li> <li>• Walking surface both sides of doorway are required to be at approximately the same elevation.</li> <li>• Top of threshold to floor or landing at exit door maximum 1 ½".</li> </ul> <p><b>Hallway:</b></p> <ul style="list-style-type: none"> <li>• Finished minimum clear width of hallway is 3 feet.</li> </ul>



<p><b>2.5.3.</b> <i>Stairways</i></p>	<p>IRC Sections <b>R311.7;</b> <b>R311.7.8,</b> <b>R311.7.9,</b> <b>R303.7, and</b> <b>R1009.9.3</b></p>	<p><b>Handrail:</b></p> <ul style="list-style-type: none"> <li>• Height Minimum 34 inches and not more than 38 inches.</li> <li>• Required at least one side of each stairway having 4 or more risers.</li> <li>• Ends Return in newel posts or safety terminals.</li> <li>• Minimum clearance between wall and hand rail is 1 ½”.</li> <li>• If use type I or type II handrail should follow section R311.7.8.3.</li> </ul> <p><b>Headroom clearance:</b> -----Minimum 6’-8” (80”).</p> <p><b>Risers:</b> -----Maximum 7-3/4”.</p> <p><b>Tread depth:</b> -----Minimum tread depth 10”.</p> <p><b>Tread and Riser tolerance:</b> -----Maximum 3/8” (larger tread/riser-smaller tread/riser).</p> <p><b>Nosing:</b></p> <ul style="list-style-type: none"> <li>• Nosing required when risers are solid</li> <li>• Nosing not required when tread depth is a minimum 11”.</li> <li>• Nosing minimum ¾” and maximum 1 ¼”.</li> </ul> <p><b>Under stair protection:</b> -----Accessible space under stair, ½” gypsum board on wall and ceiling.</p> <p><b>Stairway Illumination: (Field verify)</b> -----In the immediate vicinity of each landing of stair or light directly over each stair section. Exterior stairs providing access to a basement from grade level shall have light in the immediate vicinity of bottom landing of stair.</p> <p><b>Maximum Vertical Rise:</b> Maximum vertical rise between landings for residential is 12’ – 7”</p>
<p><b>2.5.4.</b> <i>Circular stairs and Spiral stairs</i></p>	<p>IRC Section <b>R311.7.5.2.1;</b> <b>R311.7.10</b></p>	<p><b>Circular/Winder Stairways:</b></p> <ul style="list-style-type: none"> <li>• Clear width, headroom, riser height and nosing: ----- Same as regular staircase:</li> <li>• Minimum treads depth 6” within the clear width of the stair</li> <li>• Minimum at 10” tread depth measured between the vertical planes of adjacent treads.</li> </ul> <p><b>Spiral Stairways:</b></p> <ul style="list-style-type: none"> <li>• Minimum clear width 26”. -----Minimum headroom 78” -----Maximum Riser 9 ½”.</li> <li>• Minimum treads depth 6” at narrow edge and 7 ½” minimum at 12” from narrow end.</li> </ul> <p><b>Alternating Tread/Ship Ladders:</b> Permitted as a means of egress for lofts with an area that does not exceed 200 sq ft.</p>
<p><b>2.5.5.</b> <i>Ramp and Guard rail</i></p>	<p>IRC Section <b>R311.8 and</b> <b>R312</b></p>	<p><b>Ramps:</b></p> <ul style="list-style-type: none"> <li>• Maximum slope 1:12 except 1:8 where 1:12 technically infeasible.</li> <li>• Handrail require at least one side when slope &gt;1:12.</li> <li>• Minimum 3 ft. X3 ft. landings needed at top and bottom of ramp, where door open or ramp change direction.</li> </ul> <p><b>Guard Rail:</b></p> <ul style="list-style-type: none"> <li>• Required to install along all open-sided walking surfaces, including stairways, porches, balconies, ramps or raised floor surfaces more than 30 inches above floor or grade below.</li> <li>• Minimum height 36” for porches, balconies and landings. 34” for open side of stair.</li> <li>• Balusters or ornamental closures must not allow a 4” sphere to pass through.</li> <li>• Guards on open side of stairs must not allow a 4 3/8 inch sphere to pass through.</li> </ul>
<p><b>2.6. Fire Sprinkler System</b></p>		
<p><b>2.6.1.</b> <i>Application</i></p>	<p>Georgia <b>Amendments</b> <b>and NFPA</b> <b>13D</b></p>	<ul style="list-style-type: none"> <li>• Automatic fire sprinkler systems required to install all townhouses over 3 stories.</li> <li>• Automatic fire sprinkler systems are not required to install in one or two-family dwelling.</li> </ul>

## 2.7. Smoke Alarm and CO Alarm

<p><b>2.7.1.</b> <i>Smoke Alarm</i></p>	<p>IRC Sections R314 and R315</p>	<ul style="list-style-type: none"> <li>Require in each sleeping room.</li> <li>Outside of each sleeping area and in the immediate vicinity of each bedroom.</li> <li>At least one smoke alarm on each floor of dwelling including basement and cellars, but not included uninhabitable attics or crawl space.</li> <li>Require primary power from building electrical system; battery back-up and no disconnect switch.</li> <li>For addition, alteration and repair: ----- it require throughout the dwelling as for new construction.</li> <li>Combination smoke/carbon monoxide shall be listed in accordance with UL217 AND UL2034.</li> </ul>
<p><b>2.7.2.</b> <i>CO (carbon monoxide)</i></p>	<p>IRC Sections R314 and R315</p>	<ul style="list-style-type: none"> <li>Require outside of each sleeping area and in the immediate vicinity of each bedroom.</li> <li>CO detectors required within the bedroom where a fuel-burning appliance is located within a bedroom or its attached bathroom.</li> <li>CO detectors shall be installed not less than 3' horizontally from door or opening of bathroom that contains tub/shower.</li> <li>Combination smoke/carbon monoxide shall be listed in accordance with UL217 AND UL2034.</li> </ul>
<p><b>2.7.3.</b> <i>Interconnection</i></p>	<p>IRC Sections R314 and R315 <b>(Field verify)</b></p>	<ul style="list-style-type: none"> <li>All smoke alarms and CO detectors must be interconnected when more than one smoke alarm is required in individual dwelling.</li> <li>Device activation will activate all other smoke alarms and shall be audible in all sleeping areas w/all intervening doors closed.</li> <li>Smoke alarms are listed and installed in accordance with UL217, IRC and NFPA 72.</li> <li>Carbon monoxide detection system are listed and installed in accordance with UL2034, IRC and manufacturer's instruction.</li> <li>Interconnection not required if alarms are listed and wireless with actuation triggered by 1 alarm</li> </ul>

## 2.8. Insulation and Interior Finish

<p><b>2.8.2.</b> <i>Interior Finish</i></p>	<p>IECC-Section 402; IRC Sections R302 and R316. <b>(Field Verify)</b></p>	<ul style="list-style-type: none"> <li>Verify that the foam plastics or their packaging shall be labeled. Foam plastic, flame spread or other interior finishes shall be pursuant to IECC-Section 402; IRC Section R302. And R316.</li> <li>Must exhibit flame index not to exceed 25 and a smoke-developed index not to exceed 450 where tested in accordance with ASTM E84 or UL 723.</li> </ul>
<p><b>2.8.1.</b> <i>Insulation (Thermal Envelope)</i></p>	<p>IECC-Section 402; IRC Section R302 and R316.</p>	<p>Please see the thermal envelope examples and applicable locations with corresponding required R value. Exceptions also shall be pursuant to IECC-2009.</p>
<p><b>2.8.1.1</b> <i>Ceilings with Attic Spaces</i></p>	<p><b>N1102.2.1</b></p>	<p>Where Section R1102.1.2 requires R-38 insulation in the ceiling, installing R-30 insulation over 100 percent of the ceiling area requiring insulation shall satisfy the requirement for R-38 insulation wherever the full height of uncompressed R-30 insulation extends over the wall top plate at the eaves.</p>

## 2.9. Dwelling Unit Separation

<p><b>2.9.1.</b> <i>Two Family dwelling</i></p>	<p>IRC Section R302.3</p>	<p>Common Wall and or floor assemblies shall be constructed with 1hour separation (or1/2 hour with NFPA13 sprinkler) Must comply with ASTM E119, UL 263 or Section 703.3 of the International Building Code. Fire resistance-rated floor/ceiling and wall assemblies shall extend to and be tight against the exterior wall, and wall assemblies shall extend from the foundation to the underside of the roof sheathing.</p>
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<p>2.9.1. Adjacent Town houses</p>	<p>IRC Section R302.2</p>	<ul style="list-style-type: none"> <li>• Each townhouse shall be separated by two 1-hour fire-resistance-rated wall assemblies tested in accordance with ASTM E119, UL 263 or Section 703.3 of the International Building Code</li> <li>• Common walls separating townhouses <b>with sprinkler system</b> shall be not less than a 1-hour fire-resistance-rated wall assembly tested in accordance with ASTM E119, UL 263 or Section 703.3 of the International Building Code.</li> <li>• Common walls separating townhouses <b>withOUT sprinkler system</b> shall be not less than a 2-hour fire-resistance-rated wall assembly tested in accordance with ASTM E119, UL 263 or Section 703.3 of the International Building Code.</li> <li>• Common Wall and or floor assemblies shall be constructed with 2 hours separation.</li> <li>• Plumbing or mechanical equipment, ducts or vents are NOT permitted in the cavity of a common wall.</li> <li>• For electrical: only electrical raceway and electrical outlet boxes permitted, <b>must meet fire-resistance penetration requirements</b></li> <li>• Common walls are continuous from foundation to underside of roof.</li> <li>• Penetration through wall must be protected to maintain the required fire resistance rating.</li> <li>• If a parapet wall is required it must extend a minimum of 30 inch.</li> </ul>
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## 2.10. Moisture, Decay and Termite protection

<p>2.10.1. Moisture</p>	<p>IRC Sections R702.7 and R703.</p>	<ul style="list-style-type: none"> <li>• Maximum sawn lumber moisture content 19% and LVL moisture content 16%. In our area, sawn lumber construction wood shall be pressure treated (PT).</li> <li>• Exterior wall shall provide a weather resistance envelope.</li> <li>• In all framed walls <b>and detached accessory structures</b>, an approved class I or II vapor retarder (water resistive barrier) is required</li> <li>• <b>Other approved materials shall be installed in accordance with the water-resistive barrier manufacturer's installation instructions.</b></li> </ul>
<p>2.10.2. Decay and termite</p>	<p>IRC Sections R317 and R318</p>	<ul style="list-style-type: none"> <li>• Decay damage located structures wood members must need to be pressure treated.</li> <li>• In the drawing, it shall be indicated that lumber and plywood required to be pressure treated (PT).</li> </ul>

## SECTION 3 - (FOUNDATION)

### 3.1. FOUNDATION WALLS

<p><b>3.1.1.</b> <i>Sill plates and Anchors</i></p>	<p><b>IRC R403.1.6, and R404.3</b></p>	<ul style="list-style-type: none"> <li>Verify the anchor bolts connecting to the top of the foundation walls to the sill plates pursuant to IRC section R403.1.6.</li> <li>Verify anchor specifications per IRC section R403.1.6.</li> <li>Minimum sill plate size must be 2"X4" nominal per <del>section R404.3</del> (in accordance with sections (R403.1.6 and R602.11))</li> <li>Sill plate must be at least 6" above finished grade or pressure preservative treated.</li> </ul>
<p><b>3.1.2 Concrete</b></p>	<p><b>IRC Table R402.2</b></p>	<p>Minimum compressive strength 3000 psi. per IRC Table R402.2 based on the Climatic and Geographic Design Criteria for City of Atlanta for weathering potential of moderate.</p>
<p><b>3.1.3.</b> <i>Wall height, Backfill and thickness.</i></p>	<p><b>IRC: R404.1.4.1 to R404.1.6; Tables R404.1.1 (2) to R404.1.1 (4); Tables R404.1.2 (2) to R404.1.2 (9).</b></p>	<ul style="list-style-type: none"> <li>Concrete foundation walls and masonry foundation walls are limited to support only light frame residential buildings walls per section R404.1.4.1 and R404.1.4.2.</li> <li>Plain concrete or plain masonry wall height limited to 8' with minimum thickness 8" and 4' maximum backfill and require soil report or engineer's design to fall into this special category per section R404.1.4.1 and R404.1.4.2.</li> <li>Foundation wall shall extend above grade minimum 4" where brick veneer used and minimum of 6" elsewhere per section R404.1.6.</li> <li>Walls supporting more than 48" unbalanced fill shall have permanent lateral support at both the top and the bottom as per section <del>R404.1.2.2</del> (R404.1.1(2))</li> <li>Minimum thickness, backfill and vertical rebar's schedule of <b>Concrete basement wall</b> are from Table R404.1.2 (2) to table R404.1.2 (9).</li> <li>Minimum thickness, backfill and vertical rebar's schedule of <b>Masonry basement wall</b> are from Table R404.1.1 (2) to Table R404.1.1 (4).</li> <li>Wall thickness shall not be less than the thickness of the wall supported above.</li> <li>Per section R404.1.5.2 if the wall thickness is reduced, the reduced thickness shall be considered as the thickness of the wall and the vertical reinforcement shall be based on this thickness.</li> </ul>
<p><b>3.1.4.</b> <i>Foundation Drainage.</i></p>	<p><b>Section R405, Table R405.1</b></p>	<ul style="list-style-type: none"> <li>Provide drains around walls that retain earth and enclose useable space per section R405.</li> <li>Not required for well drained ground or sand gravel mixture soils as classified in Table R405.1</li> </ul>
<p><b>3.1.5. Damp proofing</b></p>	<p><b>Section R406.</b></p>	<p>Provide damp proofing around walls that retain earth and enclose useable space located below grade that are subject to high water table or other severe soil-water conditions per section R406.</p> <ul style="list-style-type: none"> <li><b>Masonry foundation:</b> Minimum 3/8" Portland cement purging in exterior face from top of the footing to finished grade. Parging must then be covered with bituminous coating.</li> <li><b>Concrete Foundation:</b> Coating consist of Bituminous coating, acrylic modified cement, surface bonding cement or any one of the prescribed water proofing materials coatings.</li> </ul>
<p><b>3.1.6.</b> <i>Reinforcement</i></p>	<p><b>Tables R401.1.2(1) to R404.1.2(9).</b></p>	<p>To use IRC tables tested soil classification should be per table R405.1</p> <ul style="list-style-type: none"> <li><b>Masonry basement walls:</b> Per TMS402/ACI530 or use Table R401.1 (2) to R401.1 (4) for vertical bars and Table R404.1.2 (1) for horizontal rebar.</li> <li><b>Concrete basement wall:</b> Use Table R404.1.2 (2) to Table R404.1.2 (9). For vertical bars and table R404.1.2 (1) for horizontal rebar.</li> </ul>

### 3.2. Column

<p><b>3.2.1</b> <i>Materials</i></p>	<p><b>Sections R407.1, R407.2, R317.1, and R317.1.4</b></p>	<p><b>WOOD:</b> Naturally decay resistance, Pressure-preservative-treated. Untreated wood at least 8 inches above concrete floor, 6' above exposed earth and separated from floor by moisture barrier. <b>STEEL:</b> Corrosion resistance steel (galvanized) corrosion resistance coated, rust inhibited coated.</p>
<p><b>3.2.2.</b> <i>Anchorage</i></p>	<p><b>IRC Section R407</b></p>	<p>Require column anchorage with nails, bolts, angles, plates and or embedment into the base or footing to prevent lateral displacement.</p>
<p><b>3.2.3. Size</b></p>	<p><b>Section R407.3</b></p>	<p><b>WOOD:</b> 4X4 inch nominal minimum. <b>STEEL:</b> Minimum 3-inch diameter schedule 40 pipe ASTM A 53 Grade or approved equivalent.</p>

### 3.3. Under Floor Space

<p><b>3.3.1. Crawl Space</b></p>	<p><b>IRC Sections R 408.1, R408.2 and R408.3.</b></p>	<p>Provide the vent and opening of the crawl space and or the conditioned crawl space pursuant to IRC Sections R 408.1, R408.2 and R408.3. [(R408.3(2.4))-Ventilation of the under-floor space is not required when an adequately sized dehumidifier is provided]</p>
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<p><b>3.3.2. Vent, Openings and Access</b></p>	<p><b>IRC Sections R408.1, R408.4, and R408.2.</b></p>	<ul style="list-style-type: none"> <li>• Minimum <b>Access openings</b> size 18" X 24".</li> <li>• Minimum <b>ventilation</b> area 1 sq. ft. for each 150-sq. ft. under floor area.</li> <li>• At least <u>one</u> ventilation opening shall be within 3 feet of each corner of the building.</li> </ul>
<p><b>3.3.3. Conditioned Crawl space</b></p>	<p><b>IRC Sections R408.2, R408.4, R408.2, and R506.23</b></p>	<ul style="list-style-type: none"> <li>• At least 6 mil Vapor retarders require to cover all exposed earth.</li> <li>• Minimum overlap 6" and sealed or taped.</li> <li>• Edge of vapor retarder extend at least 6" up the foundation walls and attached and sealed.</li> </ul>

# SECTION 4 - (FOOTINGS AND SLAB ON GRADE)

## 4.1 FOOTINGS: Wall and Spread

<p><b>4.1.1.</b> <i>Wall Footing concrete</i></p>	<p>Table R402.2; Table R301.2(1), Table R402.2</p>	<p>Minimum compressive strength 3000 psi. per IRC Table R402.2 based on the Climatic and Geographic Design Criteria for City of Atlanta for weathering potential of moderate.</p>
<p><b>4.1.2</b> <i>Soil bearing capacity</i></p>	<p>Section R401.4; Table R401.4.1</p>	<ul style="list-style-type: none"> <li>• State the soil bearing capacity and soil type or the soil investigation report.</li> <li>• If soil investigation report is not provided, bearing capacity of soil must be verified by field inspection of the excavated site in accordance with Table R401.4.1</li> <li>• Footing of buildings located on soil with a bearing capacity less than 1500 psf., must be designed by engineer.</li> </ul>
<p><b>4.1.3.</b> <i>Wall footing size</i></p>	<p>Table R403.1; Fig R403.1 (1) and, Section R403.1.1 Minimum size.</p>	<ul style="list-style-type: none"> <li>• Minimum width per Table R403.1 (based on soil bearing, number of story and type of wall).</li> <li>• Minimum thickness 6 inches per section R403.1.1. (If projection P, thickness T; (<math>2 \leq P \leq T</math>)) and if the footing on soil per ACI 318-Section 15.7.</li> <li>• Minimum 12 inches if the footing on piles per ACI 318-Section 15.7.</li> </ul>
<p><b>4.1.4.</b> <i>Wall footing depth</i></p>	<p>R403.1.4 Minimum depth Sections R403.1.4, R403.1.4.1, and R403.1.4.2</p>	<ul style="list-style-type: none"> <li>• All exterior footing shall be placed at least 12 inches below the undisturbed ground surface pursuant to IRC section R403.1.4</li> <li>• Footing shall not bear on frozen soil unless the frozen condition is permanent per section R403.1.4.1</li> <li>• Interior footing supporting bearing or bracing walls shall 12 inches below the top of the slab per section <del>R403.1.4.2</del> (R403.1.4.1)? <b>Pervious Section Deleted – No mention of Interior Footing</b></li> <li>• Foundations protected from frost in accordance with Figure R403.3(1) and Table R403.3(1) shall not be used for unheated spaces such as porches, utility rooms, garages and carports, and shall not be attached to basements or crawl spaces that are not maintained at a minimum <b>(Code Update Footnote C – Insulation thickness requirements for type 2 and 4 extruded polystyrene (EPS) have changed. The minimum R-value for specific types of EPS has been clarified while requirement for horizontal insulation were added)- Plan Reviewer question if this applies to the State of Georgia</b></li> <li>• Monthly mean temperature of 64°F (18°C).</li> </ul>
<p><b>4.1.5.</b> <i>Wall footing anchorage</i></p>	<p>Section R403.1.6 Foundation anchorage.</p>	<ul style="list-style-type: none"> <li>• Minimum ½ inch diameter and 6'-0" maximum spacing.</li> <li>• Maximum ½ inch diameter and 4'-0" maximum spacing for building over 2 story per section R403.1.6.1 item 4.</li> <li>• Within 12 inches or 7 bolt diameters from the ends or corner per section R403.1.6</li> <li>• Anchor bolts extend at least 7 inches into masonry or concrete per section R403.1.6.</li> <li>• Minimum two bolts per plate.</li> <li>• The anchor bolt must be within the middle third of the sole plate.</li> <li>• Interior bearing wall sole plates must be positively anchored.</li> <li>• Nut and washer must be tightened on each bolt to the plate.</li> <li>• For turned down slab "dowels and anchorage should be installed as per section R403.1.3 and fig. R403.1.3.2".</li> </ul>
<p><b>4.1.6.</b> <i>Stepped in footing</i></p>	<p>Section R403.1.5 Slope.</p>	<p>Require stepped footing if bottom surface slope more than 1V/10H per section R403.1.5</p>

<p><b>4.1.7.</b> <b>Bottom Reinforcement</b></p>	<p>IRC Section R403.1; ACI-332 Section 6.1.3 ACI-318 Sections: 7.12.2.1; 10.5.4; 15.4, and 15.7</p>	<ul style="list-style-type: none"> <li>Place 3 inches from bottom of the footing. And grade 60 bars.</li> <li>Longitudinal bottom bars shall be minimum <math>A_s=0.0018bh</math> or per table whichever greater and or per IRC</li> <li>transverse bottom bars shall be minimum <math>A_s=0.0018X12h @12"</math> oc. or per table whichever greater and or per IRC</li> </ul> <table border="1" data-bbox="638 289 1459 590"> <thead> <tr> <th></th> <th>Longitudinal Bottom bars</th> <th>Transverse bottom bars</th> </tr> </thead> <tbody> <tr> <td>1 or 2 story light-frame</td> <td>2#4 Continuous</td> <td>#4@12inch oc.</td> </tr> <tr> <td>3 story light-frame</td> <td>3#4 Continuous</td> <td>#4@10 inch oc. Or #5 @12inh oc.</td> </tr> <tr> <td>1 story CMU or concrete</td> <td>2#4 Continuous</td> <td>#4@12inch oc.</td> </tr> <tr> <td>2 story CMU or concrete</td> <td>3#4 continuous</td> <td>#4@10 inch oc. Or #5 @12inh oc.</td> </tr> <tr> <td>3 story CMU or concrete</td> <td>4#4 or 3#5 continuous</td> <td>#4@8inch oc. or #5@10inch oc.</td> </tr> </tbody> </table>		Longitudinal Bottom bars	Transverse bottom bars	1 or 2 story light-frame	2#4 Continuous	#4@12inch oc.	3 story light-frame	3#4 Continuous	#4@10 inch oc. Or #5 @12inh oc.	1 story CMU or concrete	2#4 Continuous	#4@12inch oc.	2 story CMU or concrete	3#4 continuous	#4@10 inch oc. Or #5 @12inh oc.	3 story CMU or concrete	4#4 or 3#5 continuous	#4@8inch oc. or #5@10inch oc.
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<p><b>4.1.8.</b> <b>Dowels Reinforcement</b></p>	<p>IRC Section R404.1.2; ACI-332; ACI-318 Sections 12.2 to 12.12</p>	<ul style="list-style-type: none"> <li>Standard hook and development length or splice shall be per ACI-318 Section 12.2 to 12.12.</li> <li>For CMU and concrete wall, the dowels should be hooked down to the footing just above the bottom bars.</li> <li>No. of bars and spacing are as required for the foundation.</li> </ul> <table border="1" data-bbox="940 800 1468 978"> <thead> <tr> <th>Bar size</th> <th>Splice or overlap length(inch)</th> <th>Hook length(inch)</th> </tr> </thead> <tbody> <tr> <td>#4</td> <td>24</td> <td>6</td> </tr> <tr> <td>#5</td> <td>30</td> <td>6</td> </tr> <tr> <td>#6</td> <td>36</td> <td>6</td> </tr> <tr> <td>#7</td> <td>40</td> <td>8</td> </tr> </tbody> </table>	Bar size	Splice or overlap length(inch)	Hook length(inch)	#4	24	6	#5	30	6	#6	36	6	#7	40	8			
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<p><b>4.1.9. Column footing</b></p>	<p>IRC Sections R403.1 to R403.3; ACI318-08 Section 15.2 to 15.7</p>	<ul style="list-style-type: none"> <li>Minimum depth 12". And thickness 6". For <math>A_T &gt; 50</math> sq. ft. thickness = 12" plus.</li> <li>Minimum footing area, <math>A = 0.05A_T</math> (<math>A_T</math>=Total Tributary load area).</li> <li>Minimum reinforcement (3) #4 each way 3" above the bottom faces (more than 30"X30" footing (4) #4 EW or 0.0018bh whichever is greater).</li> <li>Punching shear capacity shall be per ACI-318-08 (<math>\phi V_c = 4\phi db_o \lambda (f_c')^{1/2}</math>)</li> </ul>																		
<p><b>4.1.10. Professional</b></p>	<p>Georgia Board of Professional Engineers and Land Surveyors, Rule 180-12-.02</p>	<p>A professional Structural engineer registered in the state of Georgia shall prepare the structural drawings and or structural adequacy report with proper detailing and specification for any of the following Footings.</p> <ul style="list-style-type: none"> <li>Deep foundation footings, pile caps, combined footings, precast footings, tilt-up wall footings, more than two story concrete or CMU wall or pier footings.</li> <li>If the soil bearing capacity &lt;1500 psf.</li> <li>If steel column or concrete column carries load to the footing.</li> </ul>																		

## 4.2. Slab on Grade

<p><b>4.2.1. Thickness</b></p>	<p>IRC Section R506.1</p>	<p>Minimum Thickness 3.5 inches Confirm to Fig R403.1(1)  (IRC Section R506.1; Section R403.1.8; Section R402.2)</p>
<p><b>4.2.2. Concrete strength</b></p>	<p>Table R402.2; Table R301.2(1), and Section R402.2</p>	<p>Minimum compressive strength 3000 psi. per IRC Table R402.2 based on the Climatic and Geographic Design Criteria for City of Atlanta for weathering potential of moderate.  (Table R402.2; Table R301.2(1), Section R402.2)</p>

<p><b>4.2.3.</b> <i>Base Course</i></p>	<p><b>Section R506.2.2 Base.</b></p>	<p>Depth of base shall be 4-inch layer.  Type of materials: clean graded sand, gravel, crushed stone or crushed blast-furnace slag.  Size of materials: passes through 2-inch sieve placed on the prepared subgrade when slab on below grade.  Base course not required: if slab is placed on well-drained or sand gravel mixture soils, classified as Group I soil.    <b>(IRC Section R506.2.2 and Table R405.1)</b></p>
<p><b>4.2.4.</b> <i>Vapor Retarder</i></p>	<p><b>Section R506.2.3 Vapor retarder.</b></p>	<p>Provide vapor retarder 6mil polyethylene or approved vapor retarder  Joints lapped shall be minimum 6-inches.  Place between concrete floor slab and base course.  Not required: Garages, utility buildings and unheated accessory structures, carports, driveway and walkways.</p>
<p><b>4.2.5.</b> <i>Reinforcement</i></p>	<p><b>Section R506.2.4 Reinforcement supports.</b></p>	<p>Provide minimum reinforcement pursuant to ACI 318/Appendix E table; WRI standard wire reinforcement.  Minimum W10X10 which is 0.1in<sup>2</sup>/ft.</p>
<p><b>4.2.6.</b> <i>Professional</i></p>	<p><b>Georgia Board of Professional Engineers and Land Surveyors, Rule 180-12-.02</b></p>	<p>A professional Structural engineer registered in the state of Georgia shall prepare the structural drawings and or structural adequacy report with proper detailing and specification for any of the following slabs.  Any elevated slabs (RCC slabs, composite slabs, slab supported by steel members, precast slabs, post tension slabs etc.)  If the slab is functioning to resist any loads from vertical members where punching shear developing.  Slab on grade but engineering slabs (RCC slabs, post tension slab, slab supported by grade beam etc.).  If the slab on grade is the part of lateral load resisting system.</p>



# SECTION 5 – (FLOOR SYSTEM)

## 5.1 Joist and Girder

<p><b>5.1.1.</b> <i>Joist Size, Species, Space and Span</i></p>	<p><b>Section: R502.3.1; R502.3.2</b> <b>Tables R502.3.1(1), R502.3.1(2), R502.3.3(1), and R502.3.3(2)</b></p>	<ul style="list-style-type: none"> <li>• Provide joist size, Species, Grade, spacing and clear span.</li> <li>• Specify minimum design dead load (20 psf.) and live load (40 psf.) are not exceeded.</li> <li>• Joist under load bearing partitions (parallel) must be sized to support the actual load pursuant to the IRC section R502.4</li> </ul> <p><b>Span Tables:</b></p> <ul style="list-style-type: none"> <li>• Sleeping area ..... R502.3.1 (1).</li> <li>• Non-sleeping (living) area.....R502.3.1(2)</li> <li>• Cantilever (Supporting exterior bearing walls and roof) R502.3.3 (1)             <ul style="list-style-type: none"> <li>○ <b>Please read Table foot notes.</b></li> </ul> </li> <li>• Cantilever (Supporting balcony) .....R502.3.3 (2)             <ul style="list-style-type: none"> <li>○ <b>Please read Table foot notes.</b></li> </ul> </li> </ul>
<p><b>5.1.2.</b> <i>Girder Size, Species, Space and Span</i></p>	<p><b>IRC Tables: R502.5(1) and R502.5(2)</b> <b>Moved to Chapter 6 Table R602.5(1) and Table R602.5(2)</b></p>	<ul style="list-style-type: none"> <li>• Able to determine building width, clear span floor, girder span, grade, species, girder size, number of floors and snow load.</li> <li>• Girder under load bearing partitions (parallel) must be sized to support the actual load pursuant to the IRC section R502.4</li> <li>• Number of jack studs required to support each end of the girder/header provided in each Table</li> </ul> <p><b>Span Tables:</b></p> <p>Girders and headers in exterior bearing walls.....R502.5 (1). <b>(Table R602.5(1))</b></p> <p>Girders and headers in interior bearing walls.....R502.5 (2). <b>(Table R602.5(2))</b></p>
<p><b>5.1.3.</b> <i>End condition and Bearing</i></p>	<p><b>IRC Sections R502.6; R502.7, and R502.7.1</b></p>	<ul style="list-style-type: none"> <li>• Minimum bearing of joist or girder on wood or metal support 1.5 inches. Per section R502.6.</li> <li>• Minimum bearing of joist or girder on masonry or concrete support 3 inches. Per section R502.6.</li> <li>• <b>See Georgia State Amendments for revised section of ( R502.6) <i>Removed -The sill plate shall provide a minimum nominal bearing area of 48 square inches (30 865 mm2).</i></b></li> <li>• End of joist nailed or bolted to a header, band or rim joist or to an adjoining stud per section R502.7.</li> <li>• Full depth solid blocking with minimum 2 inches nominal at the ends and at intermediate supports.</li> <li>• Joist exceeding 2”X12” require full depth blocking, wood diagonal bridging or metal diagonal bridging per section R502.7.1.</li> </ul>
<p><b>5.1.4.</b> <i>Framing Around openings</i></p>	<p><b>IRC Section R502.10</b></p>	<p><b>Per Section R502.10:</b></p> <ul style="list-style-type: none"> <li>• Opening size ≤4’-0” .....Same size header of floor joist.</li> <li>• 4’-0”&lt; Opening size ≤ 6’-0” .....Double size header, sufficient header support cross section for joist.</li> <li>• <del>Opening size &gt;6’-0” .....Double size header and joist hanger for the joists. <b>(Deleted on the 2018 Code)</b></del></li> <li>• <del>Tail joist over 12’-0” .....Supported at header by framing anchors or on ledger strips ≥ 2”X2” . <b>(Deleted on the 2018 Code)</b></del></li> </ul>
<p><b>5.1.5.</b> <i>Wood floor trusses</i></p>	<p><b>IRC Section R502.11</b></p>	<ul style="list-style-type: none"> <li>• Pursuant to IRC Section R502.11:</li> <li>• The drawing should indicate that the wood trusses shall be prepared by a registered design professional.</li> <li>• No drilling, cutting, notching, splicing or altering of truss members is permitted unless so designed. <b>R502.11.3</b></li> <li>• Prohibited to attach deck in to the truss floor system (Truss members are not designed to carry any lateral load)</li> </ul>

## SECTION 7 (WALL COVERING)

### 7.1 Interior Wall

<p><b>7.1.1.</b> <i>Materials</i> <i>(Gypsum Board, plywood etc.)</i></p>	<p><b>IRC Sections R702.3.2; R702.5 and Table R702.3.5</b> <b>(Field verify)</b></p>	<ul style="list-style-type: none"> <li>-For gypsum board-----Wood support-----minimum 2' nominal.</li> <li>-Spacing, fastener and thickness-----Table R702.3.5</li> <li>-At wet location covering boards should be water proofing and or PT wood materials.</li> <li>-For wood veneer and hardboard paneling: -Minimum thickness 1/4 inches or minimum 3/8-inch gypsum board backer;             <ul style="list-style-type: none"> <li>o Apply directly on stud which;</li> <li>o Maximum spacing of stud @16" oc.</li> </ul> </li> </ul>
<p><b>7.1.2. Interior Plaster</b></p>	<p><b>IRC Section R702.2; R702.2.3 and, Table R702.1(1)</b> <b>(Field verify)</b></p>	<p><b>Support (plaster base):</b> (Per Section R702.2.3)</p> <ul style="list-style-type: none"> <li>Gypsum lath or metal lath.</li> <li>Gypsum lath: 3/8-inch lath----stud spacing 16" oc. maximum; -½ inch lath---- stud spacing 24" oc. maximum.</li> </ul> <p><b>Plaster and application:</b> (Per Section R702.2 and table R702.1(1))</p> <ul style="list-style-type: none"> <li>Gypsum or Portland cement: -----3 coats over metal lath; two coats over gypsum lath.</li> <li>Veneer-----thickness per table R702.1(1); maximum thickness per coat 3/16 inches.</li> </ul>

### 7.2. Exterior Wall

<p><b>7.2.1. Exterior plaster</b></p>	<p><b>IRC Sections R703.1; R703.2; R703.6 and, ASTM C296 and C1063</b> <b>(Field verify)</b></p>	<ul style="list-style-type: none"> <li>Provide weather resistance sheathing paper per section R703.1 and R703.2</li> <li><b>Per section R703.6 or ASTM C296 and ASTM C1063:</b> <ul style="list-style-type: none"> <li>o Wire or wire mesh corrosion-resistant lath.</li> <li>o -Weep screed or must allow moisture to drain to the exterior.</li> </ul> </li> </ul>
<p><b>7.2.2. Stone or Masonry veneer</b></p>	<p><b>IRC Section R703.7 and Tables R703.7(1) and R703.7.3.1</b></p>	<ul style="list-style-type: none"> <li>-Provide Allowable lintel span corresponding masonry veneer per IRC table R703.7.3.1</li> <li><b>Per IRC table R703.7(1): (height and thickness):</b> <ul style="list-style-type: none"> <li>o Maximum height 30 ft. above foundation.</li> <li>o Maximum weight 50psf. If veneer uses both faces of wall, the combined weight shall not exceed 50psf.</li> <li>o Maximum nominal thickness of veneer is 5";</li> </ul> </li> </ul>
<p><b>7.2.3. Stone or Masonry veneer attachment and construction</b></p>	<p><b>IRC Sections R703.7.4; R703.7.5; R703.7.6 R703.2; R703.6 and, ASTM C296 and C1063</b> <b>(Field verify)</b></p>	<ul style="list-style-type: none"> <li>Veneer separated from sheathing by an <b>air space</b> per table R703.7.4: -----Minimum 1"; ----- maximum 4.5 "</li> <li>If to fill the air space by grout or mortar, water resistive barrier shall be used per section R703.7.4.2.</li> <li><b>Tie</b> spacing shall be maximum 24" oc. EW and or supports maximum wall area 2.67 sq. ft.-----Section R703.7.4.1</li> <li><b>Additional ties</b> require around the opening within 12 inches from the opening-----Section R703.7.4.1.</li> <li>Per section R703.7.6: <b>Weep holes</b>-----Minimum diameter 3/16 inches and -----Maximum 33 inches oc.</li> <li>Per section R703.7.5: <b>Flashing</b>-----1<sup>st</sup> course of masonry above slab, foundation wall, structural floors or lintels.</li> </ul>
<p><b>7.2.4. Wood Hardboard and Wood structural panel</b></p>	<p><b>IRC Section R703.3.</b> <b>(Field verify)</b></p>	<ul style="list-style-type: none"> <li>Per section R703.3: Apply over framing members or over structural panel sheathing.</li> <li>Horizontal joints lapped: -----Minimum1 inch or shiplapped or z-flashing.</li> <li>Horizontal joints lapped: -----Shall be shiplapped or cover with batten.</li> </ul>

# SECTION 8 (ROOF AND CEILING)

## 8.1 Wood Roof Framing

<p><b>8.1.1. Rafter and ceiling-joist ties and bearing</b></p>	<p>IRC Sections R802.3 and R802.6 and Table R802.5.1(9) <b>(Field verify)</b></p>	<ul style="list-style-type: none"> <li>Bearing minimum 1.5" over wood and metal; minimum 3" over CMU or concrete per section R802.6</li> <li>Ceiling joist lapped at least 3 inches or butted over bearing partition and tie into.</li> <li><b>Rafters parallel to ceiling joist:</b> <ul style="list-style-type: none"> <li>At the end rafter and joist should tie together per section R802.3 (to resist rafter thrust).</li> <li>Ridge straps or minimum 1X4 collar ties connecting opposing rafters located upper 1/3<sup>rd</sup> of attic space maximum spacing @24" oc.</li> </ul> </li> <li><b>Rafters not parallel to ceiling joist:</b> <ul style="list-style-type: none"> <li>Rafter must ties shall be installed per IRC table R802.5.1(9)</li> <li>Minimum 2X4 nominal ties w/maximum space 4'-0" oc.</li> </ul> </li> </ul>
<p><b>8.1.2. Ridge, Valley, Hip and Roof-Pitch</b></p>	<p>IRC Section R802.3</p>	<ul style="list-style-type: none"> <li>When rafters fastened to a <b>ridge board</b> must be at least 1 inch thick and depth not less than cut end of rafters.</li> <li>Possible rafters fastened each other with a gusset plate.</li> <li><b>Valley and Hip</b> minimum 2" thick and depth not less than cut end of rafters. <ul style="list-style-type: none"> <li>Valley and Hip must be one end supported by ridge and other end by bearing partition.</li> </ul> </li> <li>Minimum <b>pitch</b> 3:12 or consider as a flat roof.</li> <li>If roof pitch less than 3:12; Ridge, valley and hips must be designed as a beam.</li> </ul>
<p><b>8.1.3. Rafters</b></p>	<p>Tables: R802.5.1(1); R802.5.1(3); R802.5.1(2) and table R802.5.1(5)</p>	<p>Wood rafters size, space, span and species should be as per following tables with appropriate load combination</p> <ul style="list-style-type: none"> <li>If ceiling is not attached to the rafters-----Table: R802.5.1(1) and table R802.5.1(3)</li> <li>If ceiling is attached to the rafters-----Table: R802.5.1(2) and table R802.5.1(5)</li> </ul>
<p><b>8.1.4. Ceiling joist</b></p>	<p>IRC Tables: R802.4(1); R802.4(2); R502.3.1(1) and Fig: R802.4(1); R802.4(1)</p>	<ul style="list-style-type: none"> <li>For CMU wall and concrete wall roof and or ceiling shall be connected per fig: R606.11(1) and R606.11(2)</li> </ul> <p>Wood Ceiling joist size, space, span and species should be as per following applicable tables:</p> <ul style="list-style-type: none"> <li>Attic without storage-----Table R802.4(1)</li> <li>Attic with storage-----Table R802.4(2)</li> <li>Attic with stair-----Table R502.3.1(1)</li> </ul>
<p><b>8.1.5. Trusses</b></p>	<p>IRC Section R802.10 and Table R802.11</p>	<ul style="list-style-type: none"> <li>Trusses shall be designed and stamped by Structural engineer from truss manufacturer.</li> <li>Truss package shall be provided prior to the building plan review process.</li> <li>Check the Truss package shall be designed for 20 psf. uplift wind pressure of tie down roof per table R802.11.</li> </ul>
<p><b>8.1.6. Openings</b></p>	<p>IRC Section R802.9</p>	<p>Opening and framing shall be installed per section R802.9:</p> <ul style="list-style-type: none"> <li>&lt;4'-0" -----Single header same size as the rafter and ceiling joist.</li> <li>4' to 6' -----Double header and double trimmer.</li> <li>&gt;6'-0" -----Double header and double trimmer and metal hanger must be used to connect.</li> </ul>
<p><b>8.1.7. Purlin braces/strut</b></p>	<p>IRC Sections R802.5.1; R802.3.2 and Fig: R802.5.1</p>	<ul style="list-style-type: none"> <li>If using <b>purlin</b> to reduce longer rafter span shall be installed per IRC section R802.5.1; R802.3.2 and Fig: R802.5.1</li> <li>If Rafter braces/struts shall be per IRC section R802.3.1 and fig R802.5.1.</li> <li>(2X4 @48" oc. maximum; minimum 45-degree angle and un-braced maximum length 8'-0")</li> </ul>

## 8.2. Attic

<p><b>8.2.1. Attic vent and accessible</b></p>	<p>IRC Sections R806; R807 and R806.5</p>	<ul style="list-style-type: none"> <li>If attic has a clear height 30" or more require minimum 22"X30" attic access per section R807.1.</li> <li><b>Minimum vent area per section R806:</b> <ul style="list-style-type: none"> <li>-If vapor barrier installed, vent area=Vented apace/150.</li> <li>-If NO vapor barrier installed, vent area=Vented apace/300.</li> </ul> </li> <li>Possible unvented attic shall be satisfied with the limitations per IRC section R806.5</li> </ul>
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# SECTION 10 – (CHIMNEY AND FIRE PLACE)

## 10.1 Fire Place

<p><b>10.1.1.</b> <i>Footings- foundations and walls</i></p>	<p><b>R1001.1; R1001.5; Table R1001.1 and Fig. R1001.1</b></p>	<ul style="list-style-type: none"> <li>• Minimum 12” thick, 12” below the finished grade.</li> <li>• Extending 6” beyond the face of the fireplace or support wall all sides.</li> <li>• Firebox walls minimum 10-inch (8-inch thickness plus 2-inch fire brick lining).</li> <li>• Regular walls minimum 8-inches.</li> </ul>
<p><b>10.1.2.</b> <i>Anchor, reinforcement and Bracing</i></p>	<p><b>R609; R1001.3 and R1001.4; Table R1001.1 and Fig. R1001.1</b></p>	<ul style="list-style-type: none"> <li>• (1) #4 dowel coming out from footing and continue to the top at each corner of the wall.</li> <li>• No horizontal reinforcements are required.</li> <li>• Provide bracing at each floor level to the floor.</li> </ul>
<p><b>10.1.3.</b> <i>Lintel, Throat and hearth</i></p>	<p><b>R1001.7; R1001.9 and R1001.10; Table R1001.1 and Fig. R1001.1</b></p>	<ul style="list-style-type: none"> <li>• <b>Lintel:</b> -----Noncombustible, extends minimum 4” each end from opening is the load bearing length.</li> <li>• <b>Throat:</b> -----Located minimum 8” above the top of fireplace opening.</li> <li>• <b>Hearth:</b> -----Minimum 4’ thick (concrete or masonry) supported by noncombustible materials to carry imposed load.               <ul style="list-style-type: none"> <li>○ Hearth Extension minimum 2” thick supported by noncombustible materials to carry imposed load.</li> <li>○ Hearth extension minimum 16” for opening &lt;6 sq. ft.; minimum 20” for opening ≥ 6 sq. ft.</li> </ul> </li> </ul>
<p><b>10.1.4.</b> <i>Steel Fireplace Units</i></p>	<p><b>R1001.5.1; Table R1001.1 and Fig. R1001.1</b></p>	<ul style="list-style-type: none"> <li>• Provide minimum ¼ inch thick steel firebox liner with 8” masonry (4” minimum solid masonry or concrete).</li> <li>• Ducted air chamber into interior of the building.</li> <li>• Circulating air duct shall be constructed metal or masonry.</li> </ul>
<p><b>10.1.5.</b> <i>Factory built fireplace</i></p>	<p><b>Sections R1004, R1006.1.1</b></p>	<p>Must be listed, labeled and constructed per manufacturer’s listed installation instruction accordance with <b>UL 1618.</b></p>
<p><b>10.1.6.</b> <i>Fireplace dimensions</i></p>	<p><b>Sections R1001.6; R1001.11; R1006; Table R1001.1 and, Fig. R1001.1 (Field verify)</b></p>	<ul style="list-style-type: none"> <li>• Masonry firebox depth at least 20”; throat at least 8” above opening; throat opening at least 4” in depth.</li> <li>• Rumford fireplace depth at least 12”; throat at least 12” above lintel.</li> <li>• Combustible materials shall not be in contact with wall less than 12” from inside surface to nearest firebox lining.</li> <li>• The air space shall not be filled except to provide required fire blocking.</li> <li>• Check masonry fire places for an exterior air supply as per section R1006.</li> </ul>

# SECTION 9 – (ROOF COVERING)

## 9.1 General Roof

<p><b>9.1.1.</b> <i>General Roof Materials</i></p>	<p><b>Section R904</b></p>	<ul style="list-style-type: none"> <li>• If the edge distance from property line less than 3 feet:             <ul style="list-style-type: none"> <li>○ Use fire classified roof coverings. OR</li> <li>○ Use metal, tile, clay, concrete shingles or concrete slab.</li> </ul> </li> <li>• If edge distance satisfies from fire limitations: Use Any specific materials.</li> </ul>
<p><b>9.1.2.</b> <i>Weather Protection and drainage</i></p>	<p><b>IRC Sections R903 and R904</b></p>	<ul style="list-style-type: none"> <li>• Provide flashing locations indicated and materials specified.</li> <li>• Coping at parapet walls.</li> <li>• Roof sloped to drain over roof edge or overflow drains or scuppers.</li> </ul>

## 9.2. Specific Roof

<p><b>9.2.1.</b> <i>Underlayment and flashing</i></p>	<p><b>Section R905 and Table R905.1.1(2) Table R905.2.8.2 (Field verify)</b></p>	<p><b>Underlayment:</b></p> <ul style="list-style-type: none"> <li>• When slope 2:12 to 4:12: -----Two layers of underlayment.</li> <li>• When slope 4:12 and over: -----One layer underlayment.</li> </ul> <p><b>Flashing:</b></p> <ul style="list-style-type: none"> <li>• Open roof valleys: ----- Use table R905.2.8.2</li> <li>• Open roof valleys of two layers of mineral-surfaced roll roofing; bottom layers must be 18" wide, top is 36"</li> <li>• Closed valleys: -----type II and type III roll roofing 36" wide over the underlayment.</li> <li>• Side wall flashing: -----base flashing continuous or step flashing per section r905.2.8.3</li> <li>• Other flashing: -----Per section R905.2.8.4.</li> </ul>
<p><b>9.2.2.</b> <i>Asphalt Shingle</i></p>	<p><b>IRC Section R905.2.4 IRC Section R905.2.5 IRC Section R905.2.6 (Field verify)</b></p>	<ul style="list-style-type: none"> <li>• Shingle Type: -----Self-sealing or interlocking.</li> <li>• Attachment: -----Minimum 3/8-inch diameter 12-gage galvanized steel, stainless steel, aluminum, and copper roofing nails.</li> <li>• Fasteners: -----Shall penetrate 3/4-inch or through the sheathing.</li> <li>• No. of fasteners: -----Slope ≤ 21:12 ----- 4 per strip shingle, or 2 per shingle             <ul style="list-style-type: none"> <li>○ Slope&gt;21:12----- Shall be installed in accordance with manufacturer's approved installation instructions.</li> </ul> </li> </ul>
<p><b>9.2.3.</b> <i>Metal roof shingles</i></p>	<p><b>IRC Section R905.4; Table R905.10.3(1)</b></p>	<ul style="list-style-type: none"> <li>• Deck requirements: -----3:12 slope or greater and applied to a solid or closely fitted deck.</li> <li>• Material Standard: -----Per IRC table R905.10.3(1).</li> <li>• Underlayment and flashing: -----Additional 36" wide underlayment required.             <ul style="list-style-type: none"> <li>○ Valley flashing Underlayment must be solid cemented, in January is 25 Degree Fahrenheit or less.</li> </ul> </li> </ul>
<p><b>9.2.4.</b> <i>Clay And Concrete Tile</i></p>	<p><b>IRC Section R905.3</b></p>	<ul style="list-style-type: none"> <li>• Roof slope: -----Minimum slope 2.5:12</li> <li>• Valley flashing: -----minimum 26 gage galvanized sheet metal. End lap 4 inches.</li> </ul>
<p><b>9.2.5.</b> <i>Metal roof panel</i></p>	<p><b>IRC Section R905.10; Tables R905.10.3(1) and R905.10.3(2)</b></p>	<ul style="list-style-type: none"> <li>• Application: -----On solid or spaced sheathing.</li> <li>• Materials: -----Metal roof coverings must comply with table R905.10.3(1) and R905.10.3(2)</li> <li>• Attachment: -----Stainless steel fastener for metal; galvanized for steel and 300 series Stainless Steel fasteners for copper roof.</li> </ul>
<p><b>9.2.6.</b> <i>Slate Shingles</i></p>	<p><b>IRC Section R905.6</b></p>	<ul style="list-style-type: none"> <li>• Slope: -----Minimum slope 4:12.</li> <li>• Fastened to the solidly sheathed deck.</li> </ul>
<p><b>9.2.7.</b> <i>Others</i></p>	<p><b>IRC Section R905.7</b></p>	<ul style="list-style-type: none"> <li>• Wood Shingle: -----Per IRC section R905.7</li> <li>• Wood Shakes; -----Per IRC section R905.8</li> <li>• Built-up roofs: -----Per IRC section R905.9</li> <li>• Thermoplastic Single-ply roofing: -----Per IRC section R 905.13</li> </ul>

## 10.2. Chimney

<p><b>10.2.1.</b> <i>Chimney termination.</i></p>	<p><b>Sections R1003.9, R1003.20</b></p>	<ul style="list-style-type: none"> <li>• Chimney shall extend at least 2 feet higher than any portion of a building within 10 feet.</li> <li>• Shall not be less than 3 feet above the highest point where the chimney passes through the roof.</li> <li>• Maximum height solid filled H=20t; for other kind H=18t (<b>Slenderness must be considered</b>)</li> </ul>
<p><b>10.2.2.</b> <i>Cricket, cap and Flues</i></p>	<p><b>Sections R1003.12; R1003.20; Table R1003.20, and; Fig R1003.20 and R1003.13</b> <b>(Field verify)</b></p>	<ul style="list-style-type: none"> <li>• Cricket; -----Per fig R1003.20 and table R1003.20.</li> <li>• Cap: -----Concrete, metal or stone; slope to shed water with drip edge. Free area under cap 4 times the free area of chimney.</li> <li>• Clay Flue: -----Materials and installation as per section R1003.12.</li> <li>• Multiple flue: ----- Multiple flues shall be constructed per section R1003.13.</li> </ul>
<p><b>10.2.3.</b> <i>Chimney clearance and fire blocking</i></p>	<p><b>Sections R1003.18, R1003.19;</b> <b>(Field verify)</b></p>	<p>Keep Chimney clearance per IRC section R1003.18 and provide fire blocking per section R1003.19</p>
<p><b>10.2.4.</b> <i>Footing-foundations and walls</i></p>	<p><b>Sections R1003.2; R1003.3; Table R1001.1 and, Fig. R1001.1</b></p>	<ul style="list-style-type: none"> <li>• Minimum 12" thick, 12" below the finished grade.</li> <li>• Extending 6" beyond the face of the fireplace or support wall all sides.</li> <li>• Regular walls minimum 8 inches w/4" grouted solid.</li> </ul>
<p><b>10.2.5.</b> <i>Additional load and corbel.</i></p>	<p><b>Sections R1003.5; R1003.8; and R1003.9</b></p>	<ul style="list-style-type: none"> <li>• Corbeling: -----Chimney shall not be corbelled more than half of the wall thickness from a wall or foundation. <ul style="list-style-type: none"> <li>○ Chimney shall not be corbelled from a wall or foundation that is less than 12' thick.</li> </ul> </li> <li>• Load: -----Chimney shall not support loads other than own weight.</li> <li>• Additional Load: -----Provide special design to support additional load.</li> </ul>

# SECTION 11 – (ACCESSORY)

## 11.1 Deck

<p>11.1.1. Footing</p>	<p>IRC chapter-5.</p>	<ul style="list-style-type: none"> <li>-Minimum concrete compressive strength 3000 psi. -----Minimum soil bearing capacity 2000 psf.</li> <li>-Bottom of footing shall be at least 12" below grade.</li> <li>-Do not construct footing over utility lines or service pipe.</li> <li>-Footing closer than 5'-0" to an existing house footing; must bear at the same elevation as the existing.</li> <li>-Footing required under steps, if deck &gt;30" above finished grade.</li> </ul> <p>Post attachment on footing:</p> <p>Footing size and thickness:</p>
<p>11.1.2. Structures</p>	<p>IRC chapter-5.</p>	<ul style="list-style-type: none"> <li>Connecting decks to cantilever floor joists is prohibited.</li> <li>Basement egress and or emergency escape can be fully-open with path 36" in height to exit.</li> <li>Post restrained against lateral displacement.</li> <li>Require lateral load connections and hold-downs for deck joists.</li> <li>Deck beams shall not be supported on ledgers or band joist.</li> <li>Ledger shall not fastened through brick veneer or stone veneer.</li> <li>Ledger shall not fastened through floor truss system.</li> </ul> <ul style="list-style-type: none"> <li>Deck, ramp and landing locations shall not interfere with any exhaust vent operation, nor shall exhaust openings for fireplaces, heaters or clothes dryers be located so as to create a hazardous or noxious situation. Exhaust air shall not be directed onto walkways.</li> </ul>
<p>11.1.1. Footing</p>	<p>IRC chapter-5.</p>	<ul style="list-style-type: none"> <li>-Minimum concrete compressive strength 3000psi. -----Minimum soil bearing capacity 2000 psf.</li> <li>-Bottom of footing shall be at least 12" below grade.</li> <li>-Do not construct footing over utility lines or service pipe.</li> <li>-Footing closer than 5'-0" to an existing house footing; must bear at the same elevation as the existing.</li> <li>-Footing required under steps, if deck &gt;30" above finished grade.</li> </ul> <p>Post attachment on footing:</p> <p>Footing size and thickness:</p>
<p>11.1.2. Structures</p>	<p>IRC chapter-5.</p>	<ul style="list-style-type: none"> <li>Connecting decks to cantilever floor joists is prohibited.</li> <li>Basement egress and or emergency escape can be fully-open with path 36" in height to exit.</li> <li>Post restrained against lateral displacement.</li> <li>Require lateral load connections and hold-downs for deck joists.</li> <li>Deck beams shall not be supported on ledgers or band joist.</li> <li>Ledger shall not fastened through brick veneer or stone veneer.</li> <li>Ledger shall not fastened through floor truss system.</li> </ul>

		<ul style="list-style-type: none"> <li>Deck, ramp and landing locations shall not interfere with any exhaust vent operation, nor shall exhaust openings for fireplaces, heaters or clothes dryers be located so as to create a hazardous or noxious situation.</li> <li>Exhaust air shall not be directed onto walkways.</li> </ul>
11.1.3. Stairs, Rails, Guard rails and Ramp	IRC chapter- 5.	<p><b>Staircase:</b> Required staircase at any openings with 4 or more steps, if deck &gt;30" above finished grade.</p> <ul style="list-style-type: none"> <li>Minimum tread depth 10"+1"; ---Maximum riser height 7-3/4". Other conditions shall be per regular staircase.</li> <li>Require 36" minimum High guardrail when deck is 30" above grade or surface. Shall not allow passage of a 4" diameter sphere. See Installation detail fig 27, 28 and 29.</li> </ul> <p><b>Ramp:</b> - Maximum slope 1:12. ---If tech. infeasible maximum allowable slope 1:8. - Require hand rail at least one side if the ramp is &gt;1:12.</p> <p><b>Landing:</b> Provide minimum 3'x3' landing at top, bottom, direction change and doors.</p> <p><b>Stair Stringer:</b> Shall be minimum 2X12s@18" oc. And the connection per fig34:</p> <p><b>Stair Stringer Footing:</b> Minimum Requirements shall be per fig</p> <ul style="list-style-type: none"> <li>For each stringer may be combined and poured as a 12" deep slab.</li> </ul>
11.1.4. Post, Beam and Joists	IRC chapter- 5.	<p><b>Post:</b></p> <ul style="list-style-type: none"> <li>Minimum post size shall be 6X6 with maximum height 14'-0".</li> <li>4X4 &amp; 4X6 posts can be used if tributary loading values are calculated by a structural Engineer.</li> <li>See post to beam connection detail at fig 10 and 11.</li> </ul> <p><b>Beam:</b> Beam span per table 2.</p> <ul style="list-style-type: none"> <li>Overhang maximum 25% of the span.</li> <li>Splice over interior post location.</li> </ul> <p><b>Joist:</b> Joist span per table 1.</p> <ul style="list-style-type: none"> <li>Overhang 25%z</li> <li>Joist hanger per fig 9</li> <li>Install per fig 2, 3 and or 4</li> </ul>
11.1.5. Ledger Attachment	IRC chapter- 5.	<ul style="list-style-type: none"> <li>Depth of a ledger board shall be greater than or equal to the depth of the joists.</li> <li>The attachment shall be per fig 14.</li> <li>The band board of the existing structure shall be capable of supporting the new deck.</li> <li>I-joist floor joist system is not capable for supporting the ledger and band board for deck attachment unless 1" minimum thickness of I-joist or engineering product.</li> <li>Any exception, require free standing deck.</li> </ul>
11.1.6. Lateral support and Free-Standing Deck	IRC chapter- 5.	<p><b>Lateral Support:</b></p> <ul style="list-style-type: none"> <li>All decks greater than 4'-0" above grade shall resist lateral loading by providing diagonal bracing.</li> <li>Diagonal bracing shall be 2X4 minimum.</li> <li>Deck shall have diagonal bracing installed at beam locations.</li> </ul> <p><b>Free Standing Deck:</b></p> <ul style="list-style-type: none"> <li>Shall have diagonal bracing installed parallel to joists at each post location per fig 23.</li> <li>Connection of diagonal bracing shall be per fig 24.</li> </ul>
11.1.7. General	IRC chapter- 5.	<ul style="list-style-type: none"> <li>Maximum length to width ratio is 2. <math>L/W \leq 2</math>.</li> <li>Lumber post, beam and joist shall be PT (pressure treated) SP#2 minimum.</li> <li>If Any structural member is not falling into these prescriptive requirements shall be designed and stamped by structural engineer.</li> </ul>



<b>11.2. Pool</b>		
<b>11.2.1. Pool Barriers</b>	ISPSC 2012	<p><b>Scope for Swimming pools, aquatic facilities, spas, hot tubs and related equipment.</b></p> <p>Physical barrier between the occupants and the aquatic vessel shall per following:</p> <ol style="list-style-type: none"> <li>Barrier shall be at least 4'-0" height. Opening of barrier shall not allow 4" sphere.</li> <li>Doors or operable windows with a sill height 48" or less shall have means of protection; such as; self-closing doors with self-latching devices.</li> <li>Doors or operable windows with a sill height 48" or less shall have an alarm.</li> <li>Maximum mesh size for chain link fences shall be a 2 1/4" square.</li> <li>Gate(s) must swing away from the pool</li> <li>Service/ utility gates must remain locked at all times when not in use</li> </ol>
<b>11.2.1.1 Pool Site Location</b>	ISPSC 2012	<p>When pool is located in a flood zone, the following shall apply:</p> <ol style="list-style-type: none"> <li>Applicant/Owner must provide documentation that pool will not increase design flood elevation at any point within jurisdiction</li> <li>All equipment must be elevated to or above design flood elevation and be protected from flooding</li> <li>If electrical equipment is below design flood elevation, equipment shall be installed with ground fault circuit interrupter protection for personnel</li> </ol>
<b>11.2.2. Concrete or shotcrete Pool</b>	ISPSC 2012; COA	<ul style="list-style-type: none"> <li>Minimum thickness of wall 3 1/2", with #3 bars@12" O.C. EW.</li> <li>More than 8 feet deep pool require to design by engineer.</li> <li>There shall be a pool side barrier setback of not less than 20" from the water's edge</li> <li>Shall be installed with slip resistant surfaces</li> <li>Shall be installed with suction entrapment protection</li> <li>Must provide equipotential bonding</li> <li>Shall be installed with a pool cover at all heated pools and spas</li> <li>Shall be installed with a strainer located between pool and circulation pump</li> <li>Shall be installed with a rope and float device at elevation changes in pool floor</li> <li>Shall be installed with a timer on all pumps</li> </ul>
<b>11.2.3. Inspection</b>	IRC Appendix G and ISPSC 2012; COA (Field verify)	Diving water envelopes, General equipment's, circulation systems, piping and fitting, hydrostatic pressure test, water velocity, filters, pump and motors, emergency shut-off switch, return inlets, sanitizing and waste water disposal etc. shall be installed per ISPSC-2012 and subject to inspector's approval.

### 11.3. Retaining Wall

<b>11.3.1. General Retaining wall (Any Height)</b>	COA	<ul style="list-style-type: none"> <li>Provided plan shall clearly indicates the location of each dwelling, property line and proposed wall with top elevation (TOW) and bottom elevation (BOW).</li> <li>Provide structural construction details for each retaining wall and or for each detention pond wall (dam) which specify required materials, wall and footing dimensions, reinforcing (type, size &amp; spacing), concrete design strength, drainage method for relief of hydrostatic pressure, type of backfill material, and slope of backfill finished grade. (For modular type retaining walls, details shall indicate the required types, spacing, and embedment length of all geogrid reinforcement.)</li> </ul> <p><b>Note:</b> Modular type construction is not suitable for dam walls which are penetrated by storm water outlet structures. (Height measure from top of footing)</p>
<b>11.3.1.1. Retaining wall &gt;2' height.</b>	IRC Section 404.4; IBC Section 1901.2; 1610.1;1807.2; ACI 318-11 sections 10.5; 14.1.2 and 14.3.3).	<ul style="list-style-type: none"> <li>Retaining walls exceeding 24 inches (610 mm) in height that resist lateral loads in addition to soil, shall be designed in accordance with accepted engineering practice to ensure stability against overturning, sliding, excessive foundation pressure and water uplift. Retaining walls shall be designed for a safety factor of 1.5 against lateral sliding and overturning.</li> </ul>

# SECTION 12 – (PROFESSIONALS)

## 12.1 Structural Engineers

*12.1.1. Structural Engineers Recommendation*

IRC section R-301

**Submit engineering documentation (Details, specifications, plans and or recommendation letter) sealed and signed by a professional structural engineer registered in the state of Georgia which substantiates the structural adequacy for the following:**

- 2nd story Addition on existing foundation or new building on existing foundation.
- Retaining wall more than 4'-0" height.
- Any AISC (Structural steel) materials is the part of structure.
- Any Reinforced concrete structures other than IRC-2012 prescribed.
- Any truss member, LVL or structural lumbers.
- Any beam or girder of any materials.

**Note:** Any members contain structural elements exceeding the limit of section R301 or otherwise not conforming to this code, these elements shall be designed by structural engineer.