

Preface

This document comprises the Residential Quick Check: a guide for conventional wood-frame residential construction and acceptable practices for the installation of some engineered assemblies. Information contained herein was developed by the City of North Las Vegas as a document to be adopted or enforced by policy. This document is not intended to prevent the use of any material or method of construction not specifically prescribed herein, provided any alternate has been approved and its use authorized by the Building Official. This document is available to be adopted as code or enforced by policy by any jurisdiction without permission or approval from the City of North Las Vegas.

We would like to acknowledge the time and effort of the Framing Contractors Association (FCA) and to those jurisdictions who took part in the FCA committees to establish minimum framing standards and details as illustrated or referenced in this manual.

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General Requirements for One and Two Family Dwellings

Purpose and Scope: This checklist is intended for use as a **GUIDE** to assist and promote consistency in the application of building codes and standard practices within the City of North Las Vegas (hereinafter referred to as “CNLV”). This document is currently in use by Building Safety staff as policy and is available to the general public. This checklist was designed to better prepare projects for inspection; its use by contractors and homeowners will result in a higher percentage of passed inspections, as well as improved workmanship. By offering this document we are affirming our commitment to customer service.

This checklist is intended for wood frame structures. The information in this checklist is not, nor was it ever intended to be, all-inclusive. It does not include all code or individual plan requirements. It is intended to reflect local policies, procedures, and practices for inspection. For policies and procedures regarding: hours of operation; contact numbers for inspection requests and services; permit and Certificate of Occupancy information; and other construction requirements, see the City of North Las Vegas Preconstruction Packet available from the Permit Application Center or any building inspector. This document does not waive any specific code requirement nor take precedence over any specific requirement of an engineered design.

Public Works Policy: Effective October 1, 1996:

Following footing excavation and prior to placement of reinforcing steel and/or underground systems (mechanical, plumbing, and electrical) the CNLV Construction Services Division shall perform a Geotechnical Review for all residential and commercial building pad areas. The review will need to be scheduled 48 hrs.* in advance. The building inspection card **will be signed** by the CNLV Soils/Foundation Engineer, or his designee, when compliance has been verified. Following review and sign off, inspections for footing (i.e., depth, width, rebar, etc.) and other underground systems can be scheduled.

* To schedule the CNLV Geotechnical Review, please call Construction Services Inspection Voice Mail at 390-4407.

The Building Inspection Division will not perform any inspection requests until:

- Construction Services has stamped and signed the Building Inspection Card.
- Fire Department has signed the Building Inspection Card approving access and hydrant coverage.
- Street names are posted (minimum 7' above grade).
- Temporary address posted: Numbers 6" high, in full view above vehicular traffic.
- Complete CNLV Plan Package to include: approved plans; Geotechnical Investigation Report, pad certification, structural calcs, truss calcs (unless deferred); and the approved plot and grading plans are available on site.

- Manufacturer's installation instructions for listed products available when applicable.
- The area of inspection shall be clear of all trash, debris or obstructions within the zone of inspection creating a clear, safe path of travel.

General Notes:

1. All code references are:
2006 International Residential Code (IRC),
2006 Uniform Mechanical Code (UMC);
2006 Uniform Plumbing Code (UPC);
2005 National Electrical Code (NEC);
and the Southern Nevada Code Amendments:
Southern Nevada Amendments to the 2006 International Residential Code (SNAIRC);
Southern Nevada Amendments to the 2006 Uniform Mechanical Code (SNAMC);
Southern Nevada Amendments to the 2006 Uniform Plumbing Code (SNAPC);
Southern Nevada Amendments to the 2005 National Electrical Code (SNAEC);
ANSI A117.1-2003,
and the 2006 International Energy Conservation Code (IECC), unless noted otherwise.
2. All revisions and addendum to any plans shall be permanently attached to the applicable page(s) of the approved job-site plans.
3. Truss repair(s): All truss repairs require engineered stamped fix.
4. Inspectors carry only Simpson product information for hold downs and other framing hardware. All other types require proof for equal value by permittee or superintendent.
5. The owner, permit holder or responsible person on any job site is responsible for establishing safe access to perform all inspections. In the event that ladders are necessary to perform inspections, all ladders and equipment shall meet minimum OSHA standards. Inspectors are not responsible for moving ladders from one location to another, within or to other buildings or structures.
6. It shall be the duty of the inspector to verify that each permit covers the full scope of work intended to be performed.

BLOCK WALLS (Perimeter and Interior):

Grade heights on *BOTH SIDES* of walls shall be established per the Civil Plans and/or the Grading and Drainage Plan. Compaction of soils and drainage away from walls shall be established on *BOTH SIDES* of all walls per the recommendations in the Geotechnical Investigation Report for that Development. These conditions still apply when property on only one side of the wall is being developed.

Verification of grades shall be performed at all wall footing inspections. Site conditions that indicate the need for additional engineering (i.e., retaining walls), shall be brought to the immediate attention of the Superintendent and the Building Official (or his designated representative), and remedial action shall be taken prior to proceeding.

Perimeter walls shall be engineered and "decorative." (See Title 17 of North Las Vegas Municipal Code). Interior walls shall be constructed per plan. Any wall not meeting the current zoning requirements of Title 17 of the North Las Vegas Municipal Code must receive approval from the Planning and Development Department.

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RESIDENTIAL TRACKING SHEET

- O Record information per Soils Report, approved plans and subcontractor's list.

TEMPORARY POWER

1. Except as specifically modified, all other requirements of the National Electrical Code for permanent wiring shall apply to temporary wiring installations. **NEC 590.2**
2. Center line of meter socket shall be located between 48" minimum and 75" maximum above grade. **'98 Nevada Power Electrical Service Requirements**
3. All electrical equipment shall be firmly secured to the surface on which it is mounted. Temp poles shall be firmly and securely set. **NEC110.13(A)**
4. All unused openings in boxes, raceways, auxiliary gutters, cabinets, equipment cases or housings shall be effectively closed. **NEC 110.12(A)**
5. All electrical equipment to be weatherproof. **NEC 110.3(B), NEMA 3R**
6. Interior parts of electrical equipment shall not be damaged or contaminated by foreign materials. **NEC 110.12(C)**
7. All receptacle outlets, including 240 volt outlets, shall have GFCI protection. **NEC 590.6**

BLOCK WALL INSPECTIONS (CMU)

1. Verify footing location (string lines set), size and reinforcement. Slope at bottom of footing not to exceed 10%; (step footing if necessary).
2. Pre-grout:
 - a. Verify reinforcement properly located *within* wall.
 - b. Verify tolerances (head/bed joints, plumb/true). **IRC R607.21**
 - c. Clear cells. (1/2" max mortar projection). **IRC R609.1.3**
3. Damp proofing. Required for all below grade portions of retaining walls.
Third party inspection required.
4. Perimeter walls: Check that decorative design matches elevation provided in plans.
5. Final:
 - a. Verify completion of grouted wall (No exposed rebar).
 - b. Properly compacted and graded soils on each side.
 - c. Third party report required for compaction of backfill and damp proofing at retaining walls.

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UNDERGROUND ELECTRICAL INSPECTION

- 1. Ufer: #4 rebar - 20' in footing (requires a bar longer than 20') located within 3" clearance to grade near bottom of footings. **NEC 250.52 A(3); Southern NV Amendments 250.50**
 Underground electrical service risers installed using approved conduit. **NEC 300.5(a)**
 No mounding of fill materials allowed in footing.
 Risers installed to allow concrete cover at exterior.

UNDERGROUND PLUMBING INSPECTION

General Notes

- ***If this inspection precedes the footing inspection,*** the CNLV Construction Services Division approval for geotechnical review must be recorded on the permit card prior to this inspection.
- Proper fittings for change of direction. **UPC 706.0**
- Piping wrapped or sleeved when run through or embedded in concrete. **UPC 313.2; 313.10.1**

Drain, Waste and Vent Piping

- 1. Test 10' minimum head of water above finished floor or 5 lbs. air pressure. **UPC 712.2; 712.3**
- 2. Minimum 1/4 inch per foot (2%) drainage. **UPC 708.0**
- 3. Piping in ground to be supported on firm bed for its entire length. **UPC 314.3; 718.2**
- 4. Proper compaction of backfill in thin layers. Material not to exceed 3/4" in diameter.
 Refer to soils report for additional requirements. **UPC 315.4**
- 5. Proper connection to public or private sewer. **UPC 305.0; 713.0**
 Septic Tank approved by Clark County Health District.
- 6. Clean outs required; two-way in front or one in front and one at end of line, kitchen sink, horizontal changes in direction exceeding 135 degrees, and horizontal drain lines more than 5' in length. **UPC 707.0; 719.0**
- 7. No piping shall be directly embedded in concrete. Pipe through slabs to be wrapped.
 Pipe not to be installed parallel to footing in zone defined by line down at 45° from bottom corner of footing. **UPC 313.2, UPC 313.3**
- 8. Tub boxes shall not be located so as to weaken or impair structural footings. **UPC 313.11**
 (Locate boxes minimum 2" away from post tension cables.) Refer to engineered Post Tension drawings.
- 9. Are backwater valves required? Drainage piping serving fixtures which have flood level rims located below the elevation of the next upstream manhole cover of the public sewer shall be protected from backflow of sewage by installing an approved type backwater valve. See Civil Drawings. **UPC 710.1**

Water Piping UPC Table 6-4

- 1. 12" minimum cover below finish grade. **UPC 609.1**
- 2. Protect copper from corrosive soils by sleeves or other approved methods (see Soils Report). **UPC 313.5**
- 3. Brass fittings must be wrapped if underground, 2 layers 10 mil tape.
- 4. Building supply: 1" minimum for two bathrooms, 1-1/4" minimum for three bathrooms. **UPC 610.8 ;Table 6-5**

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Gas Piping

General

- 1. Sizing. **UPC 1217.0; Table 12-3**

Underground Gas

Polyethylene (PE)

- 1. PE - 18" minimum cover to top of pipe. **UPC 1211.6**
- 2. Risers shall be metallic and coated to a point not less than 6" above grade and shall extend horizontally at least 30" before connecting to plastic pipe. **UPC 1211.6**
- 3. Can not be installed under any structures, unless in compliance with: **UPC sections 313.10, 1211.3, and Appendix I, IS 1210.0**
- 4. Yellow tracer wire attached - 18 gauge, terminated above ground at each end. **UPC1211.19**

Ferrous

- 1. Corrosion protection. Piping shall be factory wrapped or coated. **UPC 1211.6**
- 2. Joints wrapped with 40 mils of tape (4 wraps of 10 mil). **UPC 1211.6**
- 3. 12" minimum cover to top of pipe. **UPC 1211.6**
- 4. Check conduit sleeving beneath buildings; properly vented/sealed. **UPC 1211.4**

FOOTING INSPECTION

○ **Do not proceed** unless approval from CNLV **Construction Services Division** for geotechnical review has been recorded on Inspection Card.

- 1. Footings (including two-part pour footings):
All exterior wall lines of structure to be established by string lines.
 - a. Verify vertical/horizontal reinforcement per plan. (Z-bars for two-part pours to be on site.)
 - b. Verify placement and minimum clearances to earth (3"). Verify proper lap splice. **IRC R403.1.3**
 - c. Check plans for hold downs that are required to extend into the bottom pour and for additional reinforcement if applicable.
 - d. All footings to be cut to proper depth and width. Clean all loose material, debris, mud and standing water.

PRE-SLAB & POST-TENSION INSPECTION

- 1. Prior to inspection, check Special Inspection Report for: observation of cable placement; compaction of interior utility trenches extending 2' beyond footprint; pre-slab compaction per Geotechnical Report (if applicable); with reports referencing exact lot, block and address. . . **IRC R109.1.5**

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- 2. Check setbacks: Either A or B below:
 - A. Surveyor’s setback letter with wet stamp (required if no curb & sidewalk installed). Letter to verify compliance with approved plot plan. List lot, block and address.
 - B. Inspector measuring setback.
 - Front measured from back of sidewalk. Side yard property line: String line set to surveyors hubs. (Mandatory all inspections.) Inspector to verify per approved plot plan.
- 3. Verify all hold downs are properly installed with reinforcement through shear cone. Hold down bolts to be in place and verified for correct size, type, embedment and orientation.
- 4. String lines in numerous locations to verify slab thickness.
- 5. Post tension cables to be chaired in center of concrete slab (post tension cables require 2" minimum clearance from tub boxes and all vertical utility pipes).
- 6. All plumbing wrapped or sleeved when in concrete. **UPC 313.2**
- 7. Verify that vapor barrier is complete and intact (if applicable).
- 8. 2-pour systems: Verify clean surface of footings (top of first pour) and vertical reinforcement (z-bars) as per approved plans.
- 9. Verify all rebar is the correct size and grade and is secured in place with 3" clear to earth and 1-1/2" clear to form boards.

SHEATHING, SHEAR AND HOLD DOWN (SSHD) INSPECTION (See Appendices A & B)

General Notes

Verify all lumber grades and types. Plates, sills and sleepers shall be treated wood or foundation redwood, all marked or labeled by an approved agency.

HOLD DOWN INSPECTION -- 1st Floor

- 1. Hold down(s) attachment shall be visible for inspection. Check nail size if applicable.
- 2. Hold down(s) installed per approved plans, structural calcs and manufacturer’s installation instructions. If inspection reveals improper installation, either the hold downs in question shall be replaced and alternate hold downs installed per engineer of record, or the manufacturer’s representative will establish compliance and provide written notice on company letterhead and shall include exact location of hold down(s) in question and address of said structure.
- 3. Alternate hold down(s): Refer to approved plans for Special Inspection requirement(s).
- 4. Anchor bolts installed per approved plans, structural calcs, and Code requirements. (Minimum two ½" anchor bolts per sill plate with one bolt located not more than 12" or less than seven bolt diameter [3½ "] from each end of the piece and spaced not more than 6' apart for 1 and 2 story buildings and 4' apart for buildings over 3 story. **IRC R403.1.6.1**
Anchor bolts do not replace hold down(s); hold down(s) do not replace anchor bolts. All required anchor bolts to have 3" x 3" x .229" plate washers. If slotted washers are used, standard cut washer also to be used. **IRC R602.11.1**

HOLD DOWN INSPECTION -- 2nd Floor

- 1. Sill plate nailing per approved plans (16d at 16" o.c. minimum). **IRC Table R602.3(1)**
- 2. All hardware connections shall be installed per manufacturer’s installation instructions, approved plans and structural calcs.

SHEAR WALL INSPECTION

General Notes

Verify continuous shear diaphragm from foundation to roof sheathing, unless shown differently on approved plans.

1. Verify shear materials: type and thickness.
2. Verify shear nailing schedules; edges/field, blocked/unblocked.
3. Verify minimum shear wall length(s) and location. Length measured from hold down post to hold down post.
4. Verify truss drag/strapping or special nailing requirements.
5. Verify lumber grades and type.
6. Verify all headers and beams for correct sizing. All glu-lam materials and trusses require certs.
7. Verify all structural details per approved plans.
8. Insulation installed in areas to be covered or concealed before frame inspection.
9. Verify complete framing of all exterior soffits and architectural embellishments (maintain visibility of structural hardware attachment).
10. Verify draft stop at all exterior columns, soffits, etc.
11. Verify windows and exterior door jambs properly installed (flashed and shimmed). See manufacturer’s installation instructions.
12. Verify window ratings
 - U factor: .65 or lower or per calcs.
 - SHGC (Solar Heat Gain Coefficient): .40 or lower or per calcs. **IECC Table 402.1.1**
13. Verify bottom of all window openings are more than 24" above finished floor if exterior grade is more than 72" below sill, or guards required. **IRC R613.2**
14. Verify escape or rescue window requirements per: **IRC R310**
15. Verify at least one exterior door sized to minimum 3' x 6'8". **IRC R311.4.2**
16. Verify attic ventilation per approved plans and **IRC R806.2**
17. Verify all 1½" wide 16 gauge metal ties where plumbing, mechanical and electrical require protection due to cutting, notching or boring. **IRC R602.6.1**
18. Verify all tendons cut and packed.

SUB-FLOOR/ROOF SHEATHING INSPECTION

General Notes

Sub-floor nailing inspection is required prior to plating the sub-floor.

Subfloor to be clear of debris and materials at time of inspection.

SUB-FLOOR SHEATHING

- 1. Verify structural framing incorporated into sub-floor; i.e., panel blocking, drag straps, beams, etc. as per approved plans.
- 2. Verify floor joist truss span and orientation. Use truss calcs as per approved plans.
- 3. Verify span index and size of floor sheathing as per approved plans.
- 4. Verify sub-floor nailing as per approved plans or **IRC Table R602.3(I)**

ROOF SHEATHING

- 1. Verify structural framing incorporated into roof system; i.e., truss calcs, special shear transfer nailing, drag straps, etc. as per approved plans.
- 2. Verify span index.
- 3. Verify roof nailing; i.e., perimeter drag truss, over-builds, diagonal block, etc. as per approved plans and **IRC R602.3(I)**
 No unblocked panels less than 24" wide. **IRC Table R503.2.1.1**

SPRINKLER SYSTEM HYDRO (By Fire Department, if applicable)

- Residential fire sprinkler system, if required, must be approved by Fire Department before framing inspection.

ROUGH MECHANICAL INSPECTION

General Notes All mechanical equipment must be installed per manufacturer's instructions.

- 1. Verify HVAC equipment location per plan.
- 2. Confirm model number, manufacturer type, and BTU input/output rating per plan.
- 3. Verify clearances and approved use (indoor, outdoor, vertical or horizontal, etc.) per manufacturer's label & installation instructions.
- 4. Verify structural support per architect/engineer design or approved method. **UMC 304.4**
- 5. Properly sized attic opening for equipment removal (without disassembling the unit or the structure). Minimum size 22" x 30" **UMC 931**
- 6. Catwalk from attic access to FAU 24" wide with 30" vertical clearance. Working platform in front of unit 30" deep with 30" vertical clearance along entire working side. **UMC 931**
- 7. Gas shut-off accessible within 6' of equipment. **UMC 1312.4**
- 8. Verify combustion air requirements, if applicable. Size, sources, louvers: **UMC 701**
- 9. Line set: Welded to FAU, support within 6' of first bend, within 2' of subsequent bends, and not more than 15' o.c. **UMC 1111.2**
 It must exit exterior wall through well-supported flashing and be sealed at flashing (tape not allowed as only sealant). Line set to be continuously insulated.
- 10. Condensate waste lines: Terminate primary at exterior; secondary shall terminate at front or rear entries or garage entries for quick detection. Properly supported (4' o.c. for PVC). **UPC Table 3-2**
 and graded at 1% minimum. **UMC 310.1**
- 11. Check duct sizes and location per plan.

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- 12. Check flex duct for proper support (max. 4' o.c.), sags, kinks, bands and proper connections - UL 181 listed tape. **UMC 602.3-4
(See Appendix G)**
- 13. Supply opening support - 2 opposite sides minimum (short sides when rectangular); return opening support all 4 sides.
- 14. Proper insulation of ducts, wye branches, connections, fittings and metal plenums. (R-6 minimum for supply ducts in the attic or calculated per Energy Code). **IECC 403.2.1**

Vents

B-Vents

- 1. Mechanical draft systems shall be installed per appliance manufacturer's listing and installation instructions. **UMC 801.0, UMC 802.3.4**
- 2. Gravity vent size equivalent to size of appliance draft hood. **UMC 803.1.1(5)**
- 3. Clearances and support per listing and installation instructions.
- 4. Pitch: No offsets exceeding 45 degrees from vertical except one offset up to 60 degrees allowed. **UMC 802.6.1.1**

Environmental Air Ducts - Dryer vents. **.504.3**
 kitchen exhaust fans. **UMC 504.2**
 bathroom fans. **UMC 504**

- 1. Verify size, length and support. For dryer vents, minimum 4" diameter, a total combined length of 14' and two 90°bends. Ducts shall not be connected or installed with sheet metal screws or other fasteners which will obstruct flow **UMC 504.3.2**
 When length and bends are exceeded, engineered design required. **SNAMC 504.3.2.2**
- 2. Vent terminations to be 3' from opening into building. Back draft dampers required **UMC 504.3.1**
 Dryer vent: unscreened with back draft dampers **UMC 504.3.1**
 Back draft dampers are not required when terminating on roof. **SNAMC 504.3.1**
- 3. Provide natural ventilation for bath/water closet areas or provide exhaust fans. **IRC R303.3**

Manufactured Fireplaces

- 1. Fireplace shall be installed per manufacturer's installation instructions, including mantles, clearances and venting. **UMC 304.1, IRC R1004**
- 2. Check fire stopping **IRC R602.8**
- 3. Check combustion air supply per listing and **UMC Chapter 7**
- 4. Direct vent fireplaces: Verify special vent requirements; sealants, vent termination clearances, per manufacturer's listing. **UMC 304.1**
- 5. Remove all loose material from fireplace chase (wood, paper, sawdust, etc.), per listing for clearance to combustibles.

TOP-OUT PLUMBING

General Notes **(See Appendix D)**

- 1. Workmanship. **UPC 310.0**
- 2. Check facilities for the handicap clearances. (Model / multi-family) **UPC 407.7; ANSI A117.1**
- 3. Sizing Water (using pressure range 46-60 psi and 100' maximum length) **UPC 610.0**

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<u>Water Pipe Size</u>	<u>Maximum Fixture Units</u>
1/2"	5
3/4"	17
1"	36
1-1/4"	39

<u>Fixture</u>	<u>Pipe Size</u>	<u>Fixture Unit</u>
Bath/Shower	1/2	4
Clothes Washer	1/2	4
Dishwasher	1/2	1.5
Hose Bibb	1/2	2.5
Lavatory	1/2	1.0
Kitchen Sink	1/2	1.5
Lavatory Sink	1/2	1.5
Water Closet (Toilet)	1/2	2.5

Definition Fixture Unit: A quantity in terms of which the load-producing effects on the plumbing system of different kinds of plumbing fixtures are expressed on some arbitrarily chosen scale.

Drainage: **UPC 703.0**

<u>Plumbing Fixture</u>	<u>Trap Arm Size</u>	<u>Drain Size</u>
Bath Tub (comb. Shower)	1-1/2	1-1/2 vertical; 2" horizontal
Clothes Washer	2	2
Shower	2	2
Lavatory single	1-1/4	1-1/4
Lavatory (in sets of two)	1-1/2	1-1/2
Bar Sink	1-1/2	1-1/2
Kitchen Sink	1-1/2	2
Mop Sink	2	2
Water Closet	3	3

4. Pipe and fittings properly used.
 Water **UPC 606.0**
 Drainage **UPC 705.0; 706.0**
5. Support of piping: copper @ 6' o.c., plastic @ 4' o.c. **UPC 314 and Table 3-2**
6. Piping run through framing members within 1" of the edge shall be protected with 18 gauge nail plates. **UPC 313.9**
7. Any structural member weakened or impaired by cutting, notching, or boring shall be reinforced or replaced. **UPC 313.2 ;IRC R602.6**
8. Tub and shower pans installed per manufacturer's installation instructions. **UPC 310.4**
9. Tub boxes properly sealed. **UPC 313.1**
10. No water closet shall be set closer than 15" from its center to any finish side wall, vanity or tub. **UPC 407.6**
11. Clear space in front of any water closet shall not be less than 24". **UPC 407.6**
12. Joints at the roof around pipes to be water tight with proper flashing material. **UPC 906.5**

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Drain, Waste and Vent Piping

- 1. Test applied to the drainage and vent systems so that no joint or pipe in the building shall have been tested to less than a 10 foot head of water or 5 psi of air. **UPC 712.2; 712.3**
- 2. Water Test: check tubs/shower pans are filled with water for test. (All drainage and vent systems shall be tested by minimum 10' head of water.) **UPC 712.2**
- 3. Back to back fixtures may be served by a single vertical drainage pipe if approved double fixture fittings are used. **UPC 704.2**
- 4. Access panel (12" x 12") for concealed slip joints. **UPC 404.2**
- 5. Clothes washer stand-pipe shall be: 18" minimum to 30" maximum above trap. Trap to be 6" minimum to 18" maximum above floor (trap not permitted below floor). **UPC 804.0**
- 6. Dual port washer box must be piped to both sides, with primary drain to be straight run. Water softener back-wash line properly secured with a 1" air gap. **SNAPC 804.1**
- 7. Island sink drain installed with drain and vent to serve no other fixtures. **UPC 909.0**
(See Appendix D)
- 8. Venting
 - a. Aggregate vent area shall not be less than the area of the building drain. **UPC 904.1**
(See Appendix D)
 - b. All vents shall be level or grade back to the drainage pipe. **UPC 905.1**
 - c. Vents shall rise 6" above flood rim of the fixture served before any horizontal offset. **UPC 905.3**
 - d. Vents less than 6" below flood rim shall be installed with approved drainage fittings, material and grade to the drain. **UPC 905.3**
 - e. Vent pipe terminates 6" minimum above roof line and 12" from vertical surface. **UPC 906.1**
 - f. Vent opening shall not be below weir of trap, except for water closets. **UPC 1002.4**
 - g. Wet vent limited to one and two fixture units. **UPC 908.1**
 - h. Wet vent must be on same story as fixture served. **UPC 908.1**
 - i. Wet vent to be one pipe size larger than required waste. **UPC 908.2**
- 9. Cleanouts
 - a. Provide cleanout for each 100' of drain. **UPC 707.4**
 - b. Cleanouts may be omitted on horizontal drain line less than 5' in length unless such line is serving a sink **UPC 707.4 Exception 1** and
above first floor. **UPC 707.4 Exception 3**
 - c. Provide cleanout for each 135 degrees of horizontal change of direction. **UPC 707.5**
 - d. Cleanouts shall be installed vertically above flow line of the pipe except wye branch and end of line cleanouts **UPC 707.6**
 - e. All cleanouts shall be accessible (not below toe kick of cabinets or behind permanently placed equipment). **UPC 707.9; 707.10**
 - f. Cleanouts **Table 7-6;707.10**

<u>Size of Pipe</u>	<u>Size of Cleanout</u>	<u>Clearance</u>
1½	1½	12"
2	1½	12"
3	2½	18"
4	3½	18"

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10.	<u>Trap Arm Size</u>	<u>Distance of Trap to Vent</u>	UPC Table 10-1
	1½	3' 6"	
	2	5'	
	3	6'	

Water Piping:

1. Water line test. Working pressure or 50 psi air pressure for 15 minutes. **UPC 609.4**
2. All water piping to use same materials except valves (use dielectric insulators between copper and galvanized materials). **UPC 604.1**
3. All water piping shall be adequately supported. **UPC 314.0; 609.1**
4. Shower and tub/shower combination shall have individual control valves of the pressure balance or thermostatic mixing valve type. **UPC 418.0**
Shower valves and heads shall be located on the side wall. **UPC 411.10**
5. Unions installed in the water supply piping within 12" of regulating equipment water heaters and water conditioning tanks. **UPC 609.05**
6. A full-way valve shall be installed on the cold water supply pipe to the building and to each water heater. **UPC 605.2**
7. All water supply piping to have adequate protection against freezing (to be within the insulation of the walls and attics). **UPC 313.6**
8. Provide air chambers near quick acting valves, i.e, dishwashers and clothes washers. **UPC 609.10**
9. Water Heaters:
 - A. Thermal expansion: Most Pressure Regulator Valves have integral by passes so that pressure will go back into the main line. So only if the system has a check valve backflow preventer noted on the approved plans will an expansion tank be needed.
 - B. Water heaters shall be accessible for repair and replacement. **UPC 505.3**
 - C. Water heaters located on a floor - ceiling assembly shall have pan and 3/4" drain. **UPC 508.4**
 - D. Water heater in garage shall be elevated at least 18" above floor level. **UPC 508.14**
 - E. Water heater shall be protected from mechanical damage by adequate barriers, elevation or being out of path of vehicle. **UPC 508.14**
 - F. Pressure and temperature relief line (T&P) shall terminate 6" minimum to 24" maximum from grade and pointed down. **UPC 608.5**

Gas Piping

1. Check size of gas piping per plans.
2. Exposed gas piping to be 6" minimum above finish grade. **SNAPC 1211.1.6**
3. Support of Piping **UPC Table 12-3**

<u>Size of Piping</u>	<u>Support</u>
1/2"	6'
3/4"	8'
1"	8'
1-1/4" or larger	10'

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SOURCE

- 4. Each gas appliance shall have a shut-off valve which is accessible upstream of appliance connector, and within 6' of appliance. Valve at attic A/C to be above insulation and clear of work area. **UPC 1212.4**
- 5. Pressure test gas piping at 10 psi for 15 minutes. **SNAPC 1214.3.1**

ROUGH ELECTRICAL

Required Outlets

- 1. On any wall 2' or more, installed so that no point is more than 6' (measured horizontally) from a receptacle outlet location. **NEC 210-52 (A)(2)**
 On any kitchen or dining room counter 12" or wider, so that no point along the counter wall space is more than 2' (measured horizontally) from a receptacle outlet. **NEC 210-52(C)(1)**
 Except one for each 4' of island or peninsula counter space. **SNAEC 210.52**
 Hallways of 10' or more in length shall have at least one receptacle outlet. **NEC 210-52(H)**
 Stairwell landings 12' or more from a receptacle outlet shall have at least one receptacle outlet. **SNAEC 210-52(I)**
 Service receptacle and light shall be located in the attic or crawl space at air handler(s).
 Switch for light located at point of entry. **UMC 904.11.5**
- 2. Two or more 20 ampere small appliance circuits shall serve the kitchen, pantry, breakfast room, dining room, or similar areas of a dwelling. **NEC 210-11(C)(1); NEC 210-52(B)(1)**
- 3. Receptacles serving kitchen counter tops shall be supplied by at least two 20 amp circuits, with no more than 5 receptacles on each circuit. **NEC 210-52(B)(3), SNAEC 210-23(E)(3)**
- 4. 20 ampere dedicated circuits shall be provided for each disposal, dishwasher, microwave, and range hood: (20 amp receptacle. **SNAEC 210-23(E)(4)**
- 5. Maximum number of lighting outlets on a 15 ampere, 125 volt circuit shall be 12 and contain no receptacle outlets. **SNAEC 210-23(E)(1)**
 Maximum number of outlets (receptacles and/or lighting fixtures) on a 20 ampere, 125 volt circuit shall be 12. **SNAEC 210-23(E)(2)**

Smoke alarms required: **IRC R313.2**

- 1. In each bedroom.
- 2. Outside of each separate sleeping area in the immediate vicinity of the bedrooms.
- 3. On each story and in basements.
- 4. Install detector between the kitchen and return air intake.
- 5. All smoke detectors to sound when any one is activated.

General

- 1. Ceiling boxes intended for the sole support of ceiling fans or having 3 conductor cable shall be fan rated type boxes. **NEC 314.27(D)**
- 2. Recessed type light fixtures in contact with insulation shall be IC rated. **NEC 410-66(A)(2)**
- 3. Non-metallic sheathed cable (romex) shall be secured within 12" of all boxes and not more than 4'6" thereafter. (Exception: 8" and no clamp on single gang plastic boxes only.) **NEC 334.30, 314.17(C)**
- 4. Non-metallic sheathed cable (romex) run within 6' of nearest edge of scuttle hole or attic access shall be protected. **NEC 334.23**

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- 5. Wiring 1-1/4" or closer from nearest edge of framing member shall be protected by nail plates. **NEC 300-4(A)**
or provide standoffs.
- 6. Ufer, phone, and T.V. grounds installed, secured and accessible. **NEC 800.40, NEC 820.100**
(Ufer to be clean and free of contaminates).
- 7. Center line of meter socket: 48" to 75" above grade, highest disconnect at 6'7". **NEC 240-24(A)**

FRAMING INSPECTION (See Appendices A & B)

General Notes: Framing inspection is performed after *sprinkler system hydro (by Fire Dept.)*, plumbing, mechanical, fireplace and electrical inspections are approved, and the roof is loaded and lath installed.

- 1. All interior doorways properly secured and sills cut out.
- 2. All trimmers tight fitting to headers.
- 3. All walls plumb and true.
- 4. Verify cutting, notching and boring of framing members is within code limits. **IRC R502.8; R602.6**
(See Appendix B)
- 5. All points of bearing continuous to foundation.
- 6. Seal sole plate at foundation slab. (All gaps at weep screed). **IECC 402.4**
- 7. All vertical and horizontal backing properly installed.
- 8. Verify continuity of required lateral truss bracing and bridging and that no truss bottom chords bear at other than design locations.
- 9. Eave vent baffles: A minimum of 1" of air space shall be provided between the insulation and roof sheathing where eave or cornice vents are installed. **IRC R806.3**
- 10. Verify fire blocking installed so there is no air connection between walls and horizontal assemblies at both ceiling and floor lines; and every 10 ft. horizontally in wall spaces (including popouts, soffits, etc.) **IRC R602.8**
- 11. Draft stopping of floor/ceiling assemblies required at all areas greater than 1000 square feet. . . . **IRC R502.12**
- 12. Remove all debris, sawdust and combustibles from fireplace and B-vent enclosure.
- 13. Attic ventilation per approved plans. **IRC R806**
- 14. Attic access (minimum 22" x 30") or per approved plans.
- 15. Stairways - 7-3/4" maximum riser height; 10" minimum tread depth. 3/8" maximum difference between riser heights or tread depths. **IRC R311.5.3**
- 16. Verify tempered glass adjacent to stairways and landings, in tub and shower enclosures, within 24" arc of closed doors, etc. **IRC R308.4**

INSULATION INSPECTION

- 1. Verify R-values per approved plans/2006 IECC worksheet.
- 2. All insulation to be secured in place by stapling or nailing 18" o.c. maximum or by strapping located within 6" from ends and 18" o.c. Friction fit acceptable with wall covering both sides. Paper facing must be in contact with wall covering. **IRC R316.1**

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- 3. Walls:
Insulation installed in all voids around doors, windows, channels, behind tub, showers, etc.
Insulation installed in concealed spaces (i.e., around fireplace and columns).
- 4. Knee walls: Secured 18 o.c. or strapping within 6" from ends and 18" o.c. For blown-in insulation, ensure "dams" in place (barriers installed to maintain full R value with blown-in insulation) at ceiling elevation changes and height markers - 1 for each 300 ft. sq.
- 5. Attic: Batts installed without voids.
- 6. Proper clearances to all B-vents (except non-combustible). **IRC R808.1**
- 7. Proper clearances from eave vent baffles. A minimum of 1" of air space shall be provided between the insulation and roof sheathing. **IRC R806.3**
- 8. Thermal barriers installed for foam plastic insulation unless tested for heat exposure. **IRC R314.4**

GYPSUM WALLBOARD INSPECTION

- 1. Install drywall only after all roughs, frame and insulation are inspected and passed.
- 2. Application per IRC Table R702.3.5 (nails: 7" o.c. ceilings, 8" o.c. walls) and manufacturer's requirements.
- 3. Where used behind adhesive-applied ceramic tile, drywall must be water-resistant (green board). **IRC R702.3.8**
Cement board or glass mat gypsum board required behind tile in tub and shower areas. **IRC R702.4.2**
- 4. Garage side of garage/house walls shall be minimum 1/2" drywall. Garage ceilings under habitable rooms shall be 5/8" Type X. **IRC R309.2**

LATH INSPECTION

General Note: For three coat system/application, see. **IRC 703.6** For one coat system/application, see. **Evaluation Services Report from manufacturer**
Lath inspection shall not occur prior to drywall nail inspection.

- 1. Paper lap - 2" minimum on horizontal. 6" minimum for vertical. **IRC R703.2, R703.9.1**
- 2. Lath lap - minimum one mesh width or 1" lap at sides and ends.
- 3. Use only corrosion resistant lath and fasteners.
- 4. Install wire perpendicular to framing members, except at roof eave line, which may follow roof rake.
- 5. Fasten lath at 6" o.c. into framing members. **IRC R703.6.1**
- 6. 1" minimum penetration into framing for one coat applications with foam backing. A tolerance of +/- 1/8" for over/under penetration of fasteners into foam will be given. Field or random nailing through wood sheathing only that results in less than the minimum penetration is not acceptable.
- 7. 3½" x .26 gauge galvanized weep screed shall be provided at or below the foundation plate line on all exterior stud walls. The screed shall be placed a minimum of 4" above earth and 2" above paved areas. **IRC R703.6.2.1**
- 8. High rib lath installed on all horizontal areas wider than 12", and fastened at each rib 24" o.c. Where laps occur, metal shall lap metal 1/2" minimum. 2" paper-free end laps.
- 9. Lath may not be in contact with dissimilar metals.
- 10. Cover electrical boxes and equipment. **NEC 110.12 (A-C)**
- 11. Foam or decorative plant-ons shall be fastened into framing members at 6" o.c.
- 12. All windows and doors to have architectural detailing (popouts, recesses, etc.) **NLV Municipal Code 17.24.210.G.10**

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SOURCE

GAS TAG INSPECTION

- 1. Pressure test gas piping at 10 psi for 15 minutes. **SNAPC 1214.3.1**
- 2. Shut-off valves (or cap) accessible and installed outside of the appliance. **UPC 1212.4**
- 3. Gas piping inlet to be installed on right side of service riser
- 4. Working gas gauge (max. 20 lb. gauge) with glass cover. **UPC 319.0**

ELECTRICAL TAG INSPECTION

- 1. All wiring in panel landed to correct locations. **NEC 110.7; 110.14(A)**
- 2. Nolox (anti-oxidant) on all aluminum conductors. **NEC 110.3(B)**
- 3. Correct size over current devices for size conductor. **NEC 240.4**
- 4. Over current devices listed for use in that panel. **NEC 110.3(B)**
- 5. All over current devices specifically identified and labeled. **NEC 110.22**
- 6. Service dead fronts and covers installed. **NEC 408.38**
- 7. All electrical devices installed or equal protection provided. **NEC 110.14(B)**
- 8. Interior parts of electrical equipment shall be undamaged by foreign materials. **NEC 110.12(C)**
- 9. All bar and fluorescent light fixtures open for inspection. **NEC 110.3(B); 110.12; 300.15**

FINAL MECHANICAL INSPECTION

- 1. Equipment with ignition sources in garages shall have ignition sources 18" above garage floor. **UMC 308.1**
- 2. Ducts penetrating garage/house wall shall be 26 guage minimum thickness with no openings into garage. **IRC R309.1.1**
- 3. Condensers installed at grade shall be on level slab 3" above grade level. **UMC 1106.2**
No more than 3 ft. encroachment into required side yard setback. **NLVMC**
- 4. Verify disconnect installed within sight of each piece of equipment. **UMC 309**
- 5. Verify all registers and filters installed.
- 6. All decorative gas appliances shall be installed per mfg. installation requirements, with logs, glass doors, etc. If damper installed, it shall be permanently blocked open. **UMC 907.2(3)**
- 7. Check gas appliances for shut-off valves within 6' and approved connector. **UMC 1312.4**
- 8. Verify vent terminations for clearances with approved vent caps. **UMC 802.6.2 Fig. 8-2**
- 10. Verify vent connectors for clearance (6" for single wall vent), slope ($\geq 1/4$ " per foot), support and attachment. **UMC 802.10.5, 802.10.8 and Table 8-2**
- 11. Horizontal run of vent plus vent connector cannot be more than 75% of height of vent. **UMC 802.6.1.1**
- 12. Termination of vents: must be at least 4' from vertical wall. **SNAMC**
Distance above roof **UMC Figure 8-2**

Figure 8-2 Minimum Height from Roof to Lowest Discharge Opening					
Roof Slope, Inches		Feet - Inches		Roof Slope, Inches	Feet - Inches
Flat to 6/12		1-0		Over 11/12 to 12/12	4-0
Over 6/12 to 7/12		1-3		Over 12/12 to 14/12	5-0
Over 7/12 to 8/12		1-6		Over 14/12 to 16/12	6-0
Over 8/12 to 9/12		2-0		Over 16/12 to 18/12	7-0
Over 9/12 to 10/12		2-6		Over 18/12 to 20/12	7-6
Over 10/12 to 11/12		3-3		Over 20/12 to 21/12	8-0

- 13. Verify operation of back draft dampers at environmental air duct terminations. **UMC 504**
Back draft dampers not required on roof for dryer exhaust ducts. **SNAMC**
- 14. Verify combustion air requirements for appliances. **UMC Chapter 7**
- 15. Verify protection of equipment in garage by bumper blocks, bollards or by location outside path of vehicular travel. **UMC 308.1**
- 16. In attic verify B-vent connection to FAU and B-vent clearance to wood.

FINAL PLUMBING/IRRIGATION INSPECTION

Water Piping

- 1. All backflow prevention devices installed. **UPC 603.0 (See Appendix C)**
Hose bibb backflow assembly installed. **UPC 603.4.7**
Pressure vacuum breaker (PVB) devices installed a minimum of 12" above all downstream piping. **UPC Table 6-2**
Atmospheric vacuum breaker (AVB) valve 6" above all downstream piping.
No valves downstream. **UPC Table 6-2**
- 2. Pressure regulator valve (PRV) and strainer to be within the 35-80 psi range, readily accessible, and not in contact with soils. **UPC 608.2**
- 3. Main shut-off valve to be accessible and not in contact with soils. **UPC 605.2; 605.6**
- 4. Protection of piping from physical damage and freezing. **UPC 313.6**
- 6. Identification: "This building has non-metallic interior water piping" shall be permanently marked on the inside of the electric service panel. See installation instructions for non-metallic piping.

Drain, Waste and Vent Piping

- 1. Locate all cleanouts; if on wall, provide square or recessed cap. Must be usable without damage to stucco. Also check front, rear, laundry, kitchen sink, foot vent cleanouts. (Jim cap OK in yard box). **UPC 707.1; 719.0**
- 2. Cleanouts accessible: cleanouts less than 2" require 12" of clearance; cleanouts larger than 2" require 18" of clearance. **UPC 707.9; 707.10**
- 3. Cleanouts in driveway or garage to be installed in yard boxes or cast-iron body with brass cap. **UPC 719.5**

Cleanouts installed in sidewalks shall be in yard boxes or extend flush with countersunk rectangular slots in caps. **UPC 707.1**

4. All plastic drain/waste vents to be 6" above roof line and 1 foot from vertical surface and painted. **UPC 906.0**
Installation standards for PVC and ABS

5. No double traps at dishwasher drain line (drain to garbage disposal) **UPC 1004.0**

6. 1" air gap at water softener backwash line. Line to be secured. **UPC 801.1**

7. Dishwasher air gap to be above flood rim of sink. **UPC 807.4**

Water Heaters

1. Water heaters strapped per **UPC 508.2**

2. Pressure and temperature relief line clear of debris and 6" to 24" above grade or the flood level area receiving the discharge and pointing downward. **UPC 608.5**

3. Draft hood securely attached to water heater and vent connector securely supported per the manufacturer's installation instructions. **UPC 510.10.10; 510.12.1**

4. Check combustion air requirements. **UPC 507.0**

5. Unions in water piping installed within 12" of water heater. **UPC 609.5**

6. Verify required 1st hour rating of water heater per Table 5.1 below. (1st hour rating found on yellow Energy Guide label).

TABLE 5-1 ¹											
Number of Bathrooms	1 to 1.5			2 to 2.5				3 to 3.5			
Number of Bedrooms	1	2	3	2	3	4	5	3	4	5	6
First Hour Rating ² , Gallons	42	54	54	54	67	67	80	67	80	80	80

Notes:

¹The first hour rating is found on the "Energy Guide" label.

²Non-storage and solar water heaters shall be sized to meet the appropriate first hour rating as shown in the table.

Fixtures

1. HOT on left from the sight of water containment. **UPC 416.0**

2. Water closet to be sealed at floor; tub and shower valves sealed; sinks and lavatories sealed to countertops. **UPC 407.2**

3. Shower and tub/shower combination shall have individual control valves of the pressure balance or thermostatic mixing valve type. **UPC 418.0**

4. Maximum water temperature from tub faucets shall be limited to 120° F. **UPC 414.5**

5. Jacuzzis: Access panel to pump. **UPC 414.1.** Pump and service outlet GFCI protected. **NEC 680 VII**

6. Gas shut-off valves shall be accessible and installed outside of the appliance. Valve at attic A/C to be above insulation and clear of work area. **UPC 1212.4**

Vent Connectors

1. Single wall metal pipe cannot be in attic or concealed space. **UPC 510.10.2.3**

2. Single wall metal vent connectors shall have 6" minimum to combustibles or per listing. **UPC Table 5-3**

3. Every vent connector shall have continuous rise of 1/4" per foot. **UPC 510.10.8**
4. Three sheet-metal screws or other approved means to connect collar and single wall vent connector to B-vent. **UPC 510.10.7**

FINAL ELECTRIC INSPECTION

1. Match over current protection for air conditioning unit(s) with name plate rating. **NEC 440-52**
2. Test all GFCI protected receptacles required by. **NEC 210.8**
 - a. All bathroom receptacles. (No other outlets on circuit unless circuit serves single bathroom only. **NEC 210-11(C)(3)**
 - b. Garage receptacles (except dedicated space or not readily accessible).
 - c. Exterior receptacles (minimum one front and one rear.) **NEC 210-52(E)**
 - d. All kitchen counter receptacles installed to serve the counter-top surface. (Maximum number on one circuit is 5.). **SNAEC 210-23(E)(3)**
 - e. All receptacles within 6 feet of water at wet bar, utility and laundry sinks. **NEC 210.8(A)**
3. Verify bathroom lights within 3 feet horizontally and 8 feet vertically of tub or shower rim are GFCI protected. **SNAEC 410.4(D)**
4. Test smoke alarms in normal and battery mode for correct operation. All smoke alarms to sound together. **IRC 313.2**
5. Verify all receptacles, switches, disconnects, lights and covers are properly installed.
6. Check power and switching.
7. Verify hall light switch within 6 feet of every bedroom door. **SNAEC 210.70(a)(2)(b)**
8. Verify all keyed exterior doors have switch controlling interior light within 6 feet of door latch. **SNAEC 210.70(A)(2)(b)**
9. Verify grounding of switches. **NEC 404.9(B)**
10. Verify arc-fault circuit breakers protect all bedroom outlets (luminaires, receptacles, and smoke alarms.). **NEC 210.12(B)**
11. Verify minimum 30-inch wide, 36-inch deep working space at disconnect for HVAC condenser.
12. Verify level working platform 30 inches wide and 36 inches dep in front of service equipment. . . . **NEC 110.26**

FINAL BUILDING INSPECTION

General Notes

Required paperwork to be received prior to final approval:

1. Certification of finish floor and final grading and drainage with wet stamps from Engineer on City of North Las Vegas Post Construction Certification Form (PCC I; and PCC II or PCC III)
2. All special inspection reports per CNLV requirements.
On-site utility trench compaction per the Geotechnical Report. The percentage of compaction required shall be noted.

Post Tension (placement and elongation)
Concrete cylinder tests (if applicable)
Epoxy bolting (if applicable)

3. Blown-in Insulation Certificate. One copy to building inspector and one copy stapled to truss at attic access (if applicable).
4. Building Inspection Card - sign off on Final Mechanical, Plumbing and Electrical
5. Building Inspection Card - sign off from Public Works
6. Building Inspection Card - sign off from Fire Department (when applicable: i.e., fire sprinklers).

Exterior

1. Verify correct address on structure - illumination required.NLVMC 12.04.010
(Size - 3-1/2" if less than 50' from street; 6" if more.) Contrasting color.
2. All property lines permanently established by curb cut, hubs, monuments.
Perimeter block walls permanently marked with pins.
3. Verify Positive Type A Drainage around the entire structure, including block walls and
condenser pads, per the original Geotech Soils Report. (See Appendix I)
Verify proper placement of soil materials.
Finish grade should be approximately 6" below finish floor or 4" below stucco weep screed
and slope away from house at 1/2" per foot minimum. IRC R404.1.6
4. Masonry walls are complete including grout. No exposed rebar.
5. All roofing systems are in place. Any broken or defective materials shall be replaced.
Excess materials removed from rooftop. Tile roofs: all hips, ridges, and rakes must
be weatherproof with an approved bedding material or per manufacturer's recommendation.
6. All exterior surfaces and penetrations are weather protected.IRC 703.1
7. Check that all vents are operable and unobstructed by stucco, insulation, etc.
8. Check landings at exterior doors. IRC R311.4.3
9. Check riser height (7-3/4" maximum) and tread depth (10" minimum) of exterior stairs. IRC R311.5.3
10. Verify landscaping per approved plans and Geotech Soils Report.
11. Energy compliance certificate posted in conspicuous place listing R-values, window U
and SHGC values, HVAC equipment SEER and AFUE. SNA IECC 401.3

Interior

1. Check that door from garage to house is: self closing, 1-3/8" solid core wood or
20-minute rated.SNAIRC 309.1
2. Recheck locations requiring safety glazing, including shower/tub enclosures IRC 308.4
3. Verify bottom of all window openings more than 24" above finished floor if exterior grade
is more than 72" below sill. Or guards required. IRC R613.7
4. Check stair handrails (required one side if 4 or more risers.) Height 34-38". IRC R311.5.6.1
5. Guard 36" high minimum required at stairs, landings, balconies, etc. more than 30"
above floor or grade below. IRC R312.1
6. Attic access gasketed or weather stripped. IECC 4024.1
7. All penetrations in ceiling drywall below unconditioned attic and drywall at house/garage
wall sealed. IECC 402.4.1
8. Verify that the attic access opening is free from obstructions such as wires, etc.
9. Check that the Blown-in Insulation Certificate is posted on a truss adjacent to the attic access
opening. Proper depth of insulation visually observed from attic access. Check for any
damage to HVAC duct system or any unacceptable conditions which might be present.
10. Signed permit card posted in garage as Certification of Occupancy.

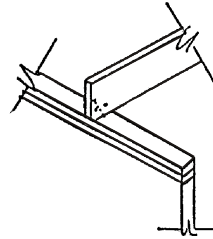
APPENDIX A
Framing details for nailing schedule

Joist to sill or girder (toenailed)

Item #	Connection	Nailing
1	Joist to sill or girder, toenail	3- 8d

Joist or truss to mudsill or upper top plate:

Nail with (3) minimum 8d nails, (2) nails drive-in at a $\pm 30^\circ$ angle approximately $\frac{1}{2}$ " to $\frac{3}{4}$ " from each edge of plate and (1) back nail on opposite side of joist or truss between the (2) toenails

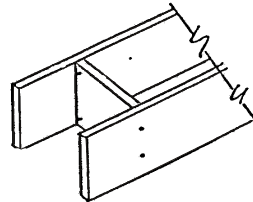


Bridging to joists

Item #	Connection	Nailing
2	Bridging to joist, toenail each end	2- 8d

Block to joist or truss: Nail with (2) minimum 8d nails at a $\pm 30^\circ$ angle at end

Industry Standard: End nail with (2) minimum 10d nails



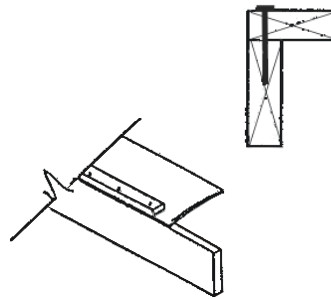
APPENDIX A

Framing details for nailing schedule

Sole plate to joist or blocking at braced panels

Item #	Connection	Nailing
6	Sole plate to joist or blocking, typical face nail Sole plate to joist or blocking, at braced wall panels	16d at 16" o.c. 3-16d per 16"

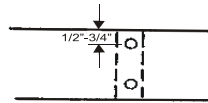
Attach sole plate to perimeter of joist or truss: Face nail sole plate to joist or truss with nailing at 1/2" minimum from edge of joist or truss per spacing indicated



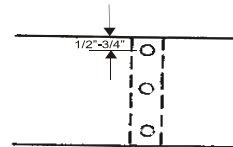
7 & 8 Industry Standard Note

Top and sole plate to stud, end nail

2 x 4 (2-16d sinkers)
2 x 4 (3- 131 gun nails)



2 x 6 (3- 16d sinkers)
2 x 6 (4- 131 gun nails)

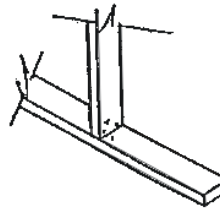


APPENDIX A
Framing details for nailing schedule

Top or sole plate to stud (face nail)

Item #	Connection	Nailing
7 & 8a	Top plate to stud, stud to sole plate, end nail	4 - 8d toenail or 2 - 16d, end nail

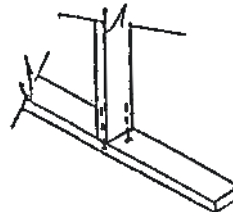
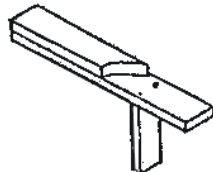
Lower top plate or sole plate to stud: Face nail with (2) 16d nails approximately $\frac{1}{2}$ " to $\frac{3}{4}$ " from each edge of plate or (4) 8d toenails, (2) on each side of stud approximately $\frac{1}{2}$ " to $\frac{3}{4}$ " from each edge



Top or sole plate to stud (face nail)

Item #	Connection	Nailing
7 & 8b	Top plate to stud, stud to sole plate, end nail	4-8d toenail or 2-16d, end nail

Lower top plate to stud:: Face nail with (2) 16d nails approx. $\frac{1}{2}$ " to $\frac{3}{4}$ " from each edge of plate or (4) 8d toenails, (2) on each side of stud approx. $\frac{1}{2}$ " to $\frac{3}{4}$ " from each edge

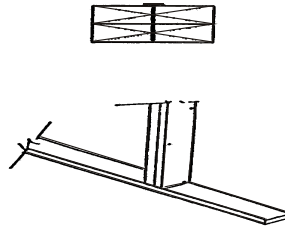


APPENDIX A
Framing details for nailing schedule

Double studs

Item #	Connection	Nailing
9	Double studs, face nail	16d at 24" o.c.

Double studs or built-up studs: Face nail with 16d nails staggered at 24" o.c.

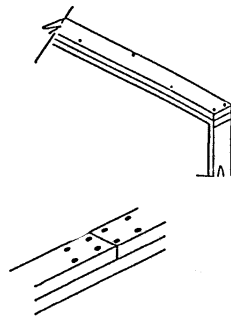


Double top plates, lap splice

Item #	Connection	Nailing
10	Double top plates, typ face nail Double top plates, lap splice	16d at 16" o.c. 8-16d

Double top plate face nailing: Face nail with 16d nails staggered at 16" o.c.

Double top plate lap splice nailing: Face nail with (4) 16d nails at each side of splice, nailing is to be short stagger

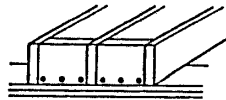


APPENDIX A
Framing details for nailing schedule

Blocking between joist or rafter to top plate

Item #	Connection	Nailing
11	Blocking between joist or rafters to top plate , toenail	3- 8d

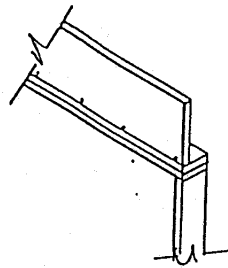
Block to be toenailed at +- 30° angle to outside edge of top plate with (3) 8d nails equally spaced in block



Rim joist to top plate (toenailed)

Item #	Connection	Nailing
12	Rim joist to top plate, toenail	8d at 6" o.c.

Rim joist to upper top plate or mudsill: Toenail at a +- 30° angle with 8d nails at 6" o.c.



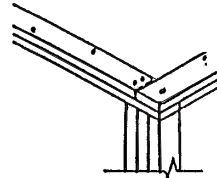
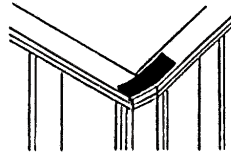
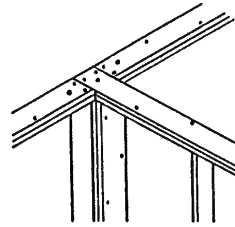
APPENDIX A

Framing details for nailing schedule

Cap/top plate laps & intersections

Item #	Connection	Nailing
13	top plate, lap & intersections, face nail	2- 16d

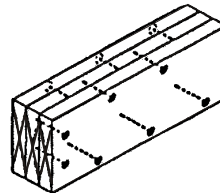
Face nail with (3) 16d sinker nails approximately $\frac{1}{2}$ " to $\frac{3}{4}$ " from each edge of top plate
industry standard rake and balloon walls: Add TP37 at intersections where top plates cannot lap



Built-up girder and beams

Item #	Connection	Nailing
14	Continuous header, two pieces	16d at 16" o.c. Along each edge

Built-up header made from two pieces of 2" nominal lumber: Parallel face nail each end of built-up header with (2) 16d nails and stagger nail between ends with 16d nails at 16" o.c.

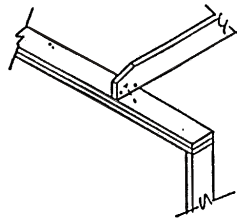


APPENDIX A
Framing details for nailing schedule

Ceiling joist to plate

Item #	Connection	Nailing
15	ceiling joist to plate, toenail	3-8d

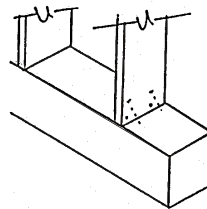
Nail with (3) minimum 8d nails, (2) driven in at a $\pm 30^\circ$ angle approximately $\frac{1}{2}$ " to $\frac{3}{4}$ " from each edge of plate and (1) back nail on opposite side of joist between the (2) toenails



Continuous header to stud, toenail

Item #	Connection	Nailing
16	continuous header to stud, toenail	4-8d

Toenail cripple or stud to header with (2) 8d nails on each side at a $\pm 30^\circ$ angle

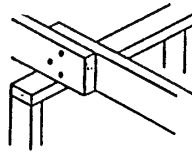


APPENDIX A
Framing details for nailing schedule

Ceiling joists, laps over partitions

Item #	Connection	Nailing
17	ceiling joists, lap over partition, face nail	3- 16d

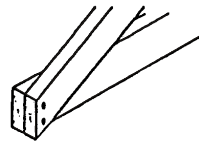
Face nail with (3)
staggered 16d nails at
lap over wall or
partition



Ceiling joist to parallel rafter

Item #	Connection	Nailing
18	ceiling joist to parallel rafter, face nail	3- 16d

Face nail with (3)
staggered 16d nails to
rafter

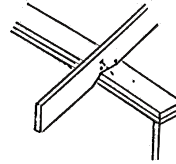


APPENDIX A
Framing details for nailing schedule

Roof rafter to plate (toenailed)

Item #	Connection	Nailing
19	rafter to plate, toenail	3- 8d

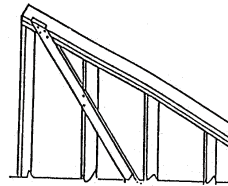
Nail with (3) minimum 8d nails, (2) nails driven at +- 30° angle approximately ½" to ¾" from each edge of plate and (1) back nail on opposite side of rafter between the (2) toenails



Diagonal bracing

Item #	Connection	Nailing
20	1" brace to each stud and plate, face nail	2- 8d

45 to 60° let-in brace to studs and plate: Nail with (2) 8d nails approximately ½" to ¾" from each edge of brace into a ¾" deep notch in stud and plate



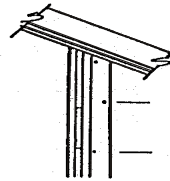
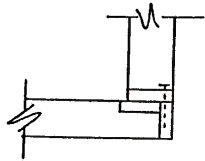
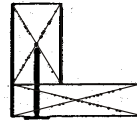
APPENDIX A Framing details for nailing schedule

Built-up corner studs

Item #	Connection	Nailing
23	Built-up corner studs	16d at 24" o.c.

Face nail with 16d nails staggered at 24" o.c.

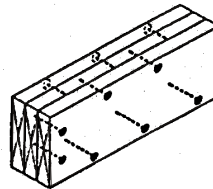
Industry standard: Blocked corners: blocks must be of length to meet 24" o.c. nailing



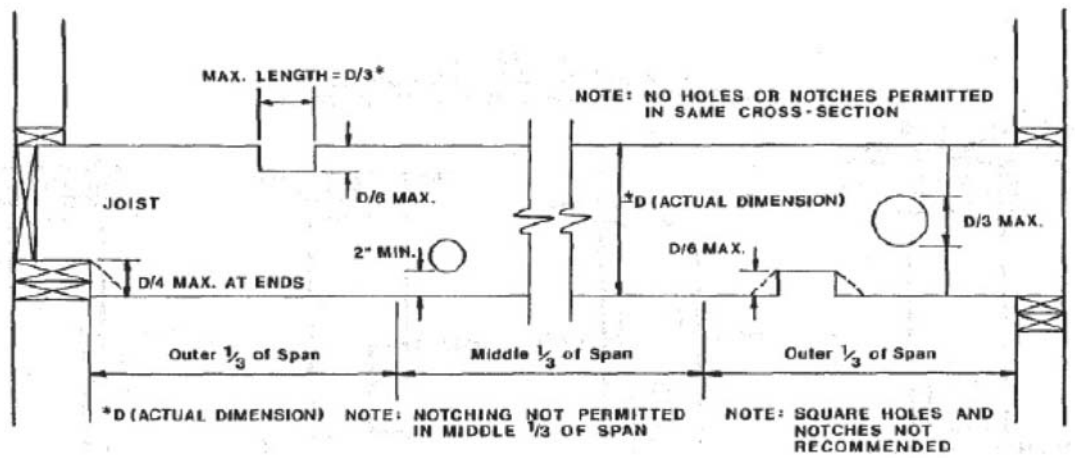
Built-up girders and beams

Item #	Connection	Nailing
24	Built-up girders and beams	20d at 32" o.c. at top & bottom & staggered 2-20d at ends and at each splice

Made from three pieces of 2" nominal lumber: parallel face nail each end of built-up header with (2) 20d nails and stagger nail between ends with 20d nails at 32" o.c.



Placement of Cuts in Floor Joists

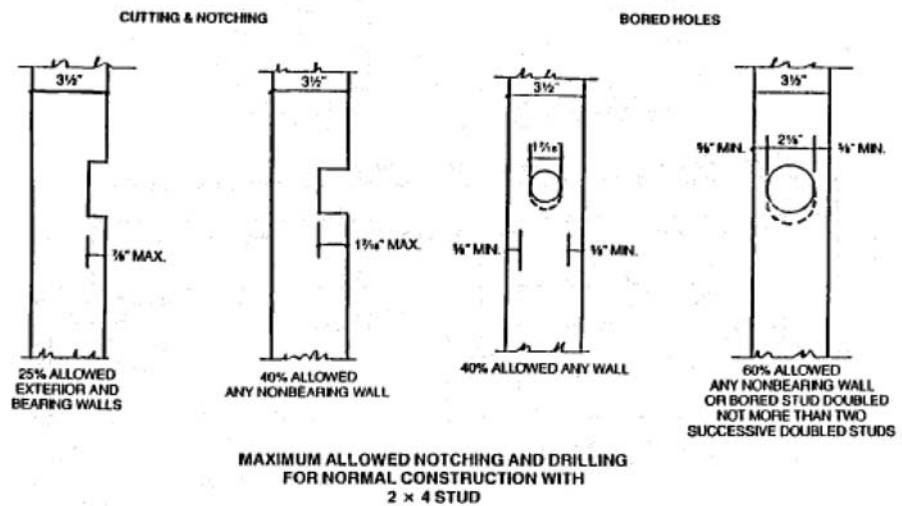


Maximum Sizes for Cuts in Floor Joists

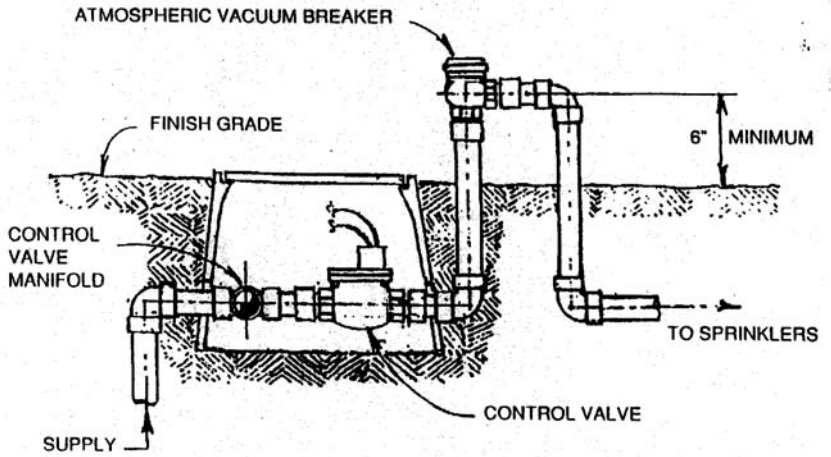
Joist Size	Max. Hole	Max. Notch Depth	Max. End Notch
2x4	NONE	NONE	NONE
2x6	$1\frac{1}{2}$	$\frac{7}{8}$	$1\frac{3}{8}$
2x8	$2\frac{3}{8}$	$1\frac{1}{4}$	$1\frac{7}{8}$
2x10	3	$1\frac{1}{2}$	$2\frac{3}{8}$
2x12	$3\frac{3}{4}$	$1\frac{7}{8}$	$2\frac{7}{8}$

Notches in 2X4 Stud

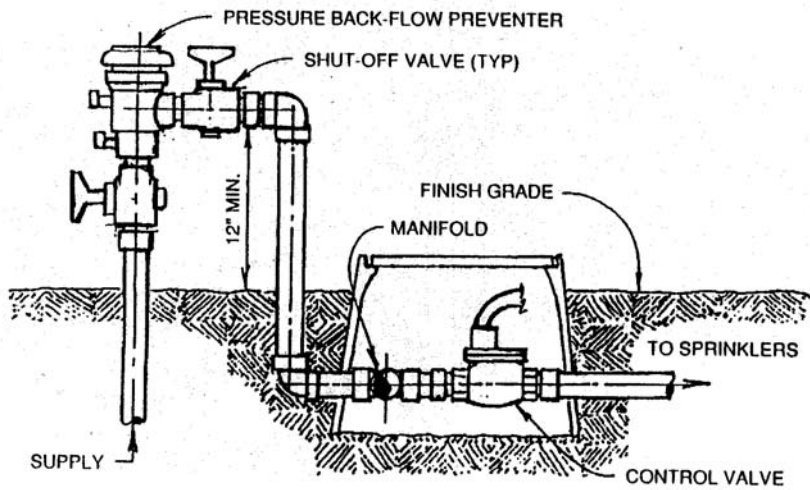
Bored Holes in 2X4 Stud



APPENDIX C
Backflow Prevention



ATMOSPHERIC VACUUM BREAKER



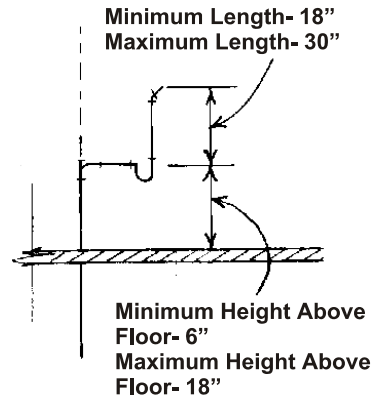
PRESSURE BACK-FLOW PREVENTER

APPENDIX D
Top Out Plumbing

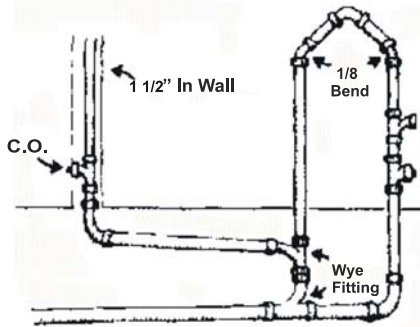
Back to Back Fittings



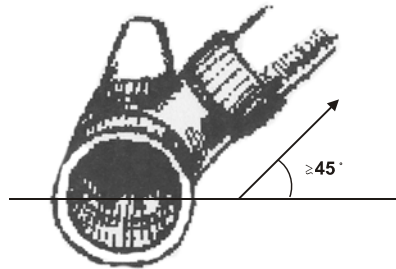
Clothes Washer Standpipe



Special Venting for Island Fixtures



No Flat Venting



Aggregate Vent Area Must = Building Drain

Required building drain of 4" = 12.6 sq. in. of cross sectional area.

Example:

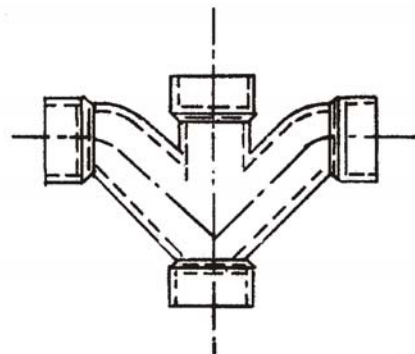
Three 2" vents (3X3) = 9.0 sq. in.
plus One 1 1/4" vent = 1.2 sq. in.
10.2 sq. in.

Total venting does not meet building drain requirement of 12.6 sq. in.

Pipe Diameter/Area in sq. in.

4"	12.6 sq. in.
3"	7
2 1/2"	5
2"	3
1 1/2"	1.7
1 1/4"	1.2

Double Fixture Fitting
Allowed only in vertical position



Double Combination Wye 1/8 Bend

APPENDIX F HVAC Furnace Installation (Attic Mounted)

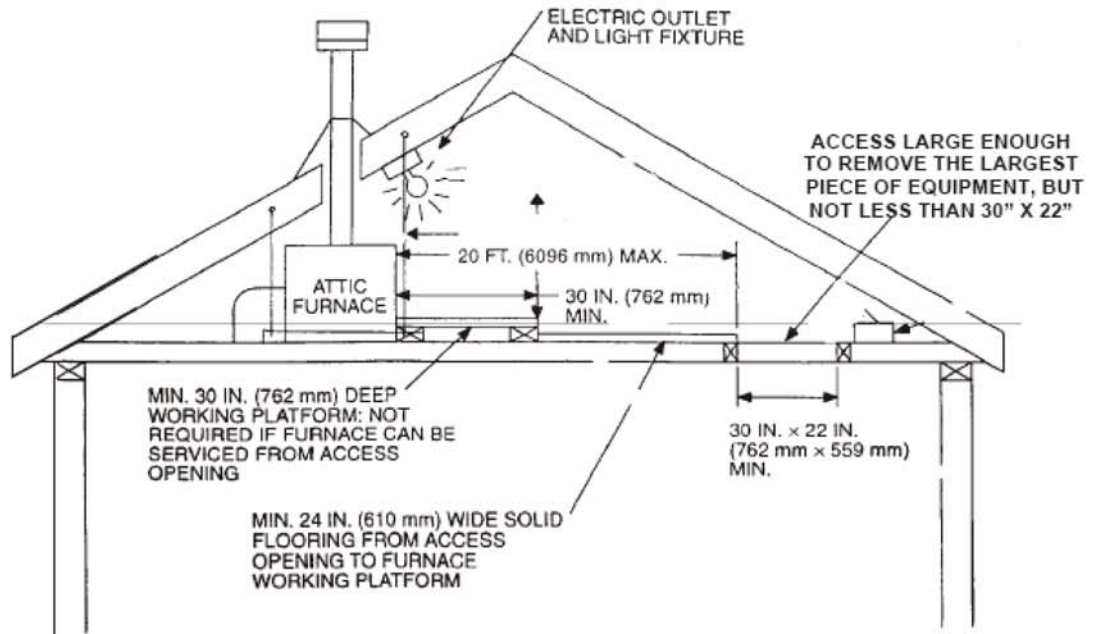
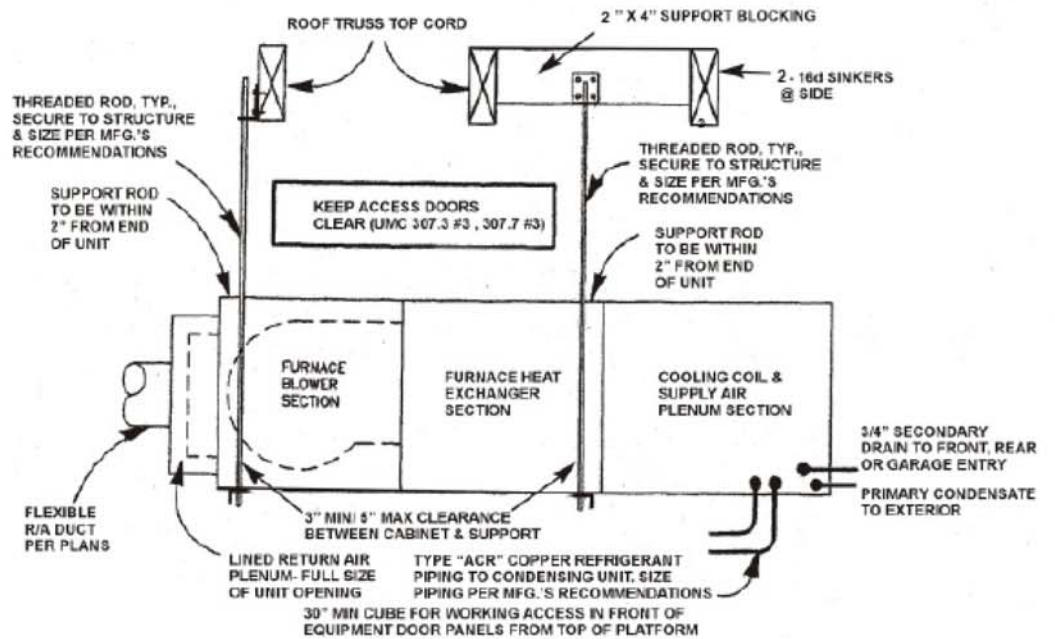
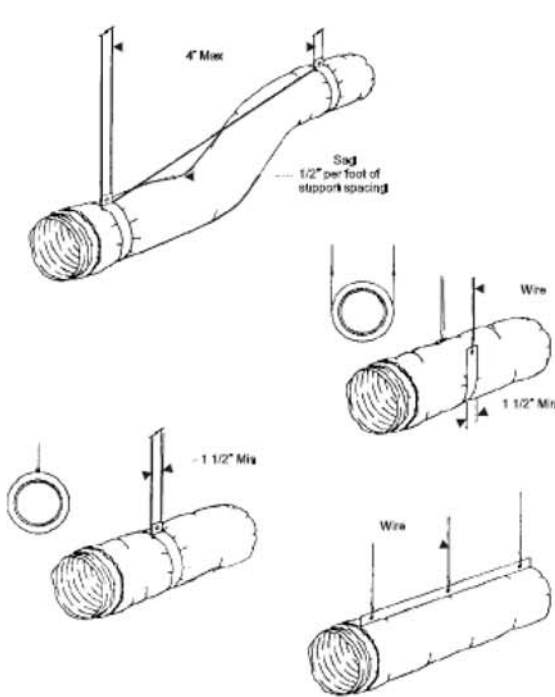


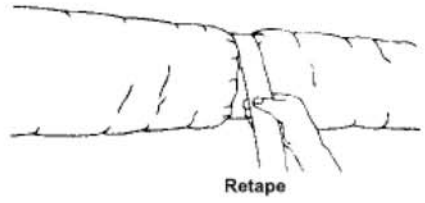
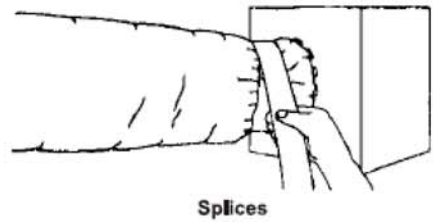
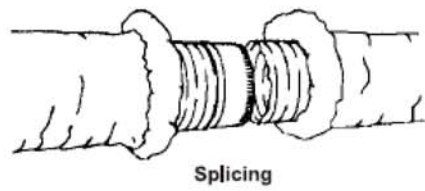
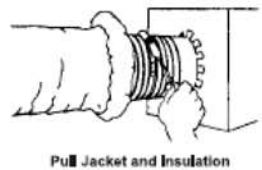
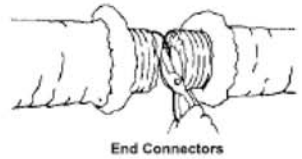
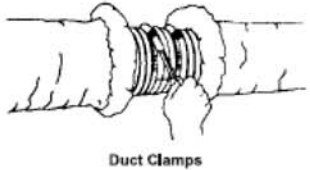
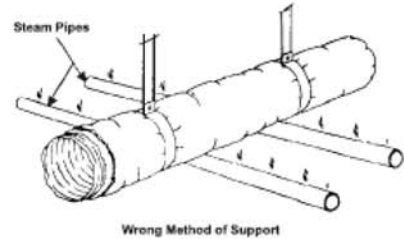
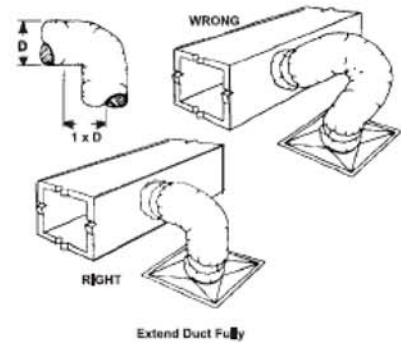
FIGURE M1



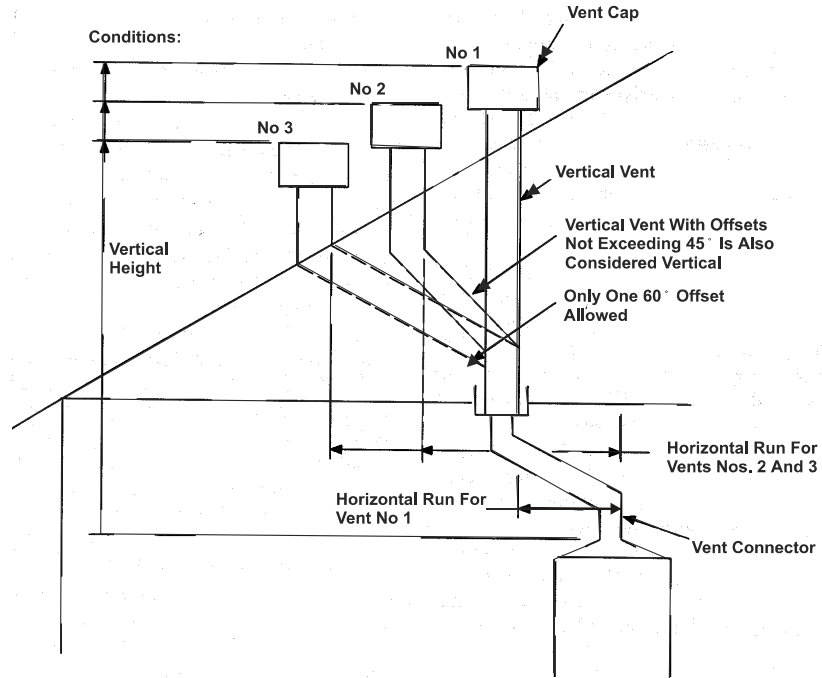
APPENDIX G Installation of Flexible Duct



Factory made air ducts are required to be listed and installed in accordance with the terms of their listing.



APPENDIX H Venting of Appliances



APPENDIX I
Type "A" Drainage

