

# THE CITY OF NEDERLAND

## BUILDING, PLUMBING, ELECTRICAL, MECHANICAL AND ENERGY CONSERVATION REQUIREMENTS (REVISED MARCH, 2005)

### NOTICE

**THE FOLLOWING INSPECTIONS MUST BE CALLED FOR WITHOUT EXCEPTION. FAILURE TO DO SO COULD RESULT IN A FINE UP TO \$500.00 PER DAY PER VIOLATION.**

#### PLUMBING INSPECTIONS

1. Rough-in
2. Sewer/Water service lines
3. Top Out/Rough Gas

#### BUILDING INSPECTIONS

1. Foundation
2. Framing
3. Final

#### ELECTRICAL INSPECTIONS

1. Temporary Pole
2. Rough-Cover up
3. Final

#### HVAC INSPECTIONS

1. Rough-in
2. Final

#### INSULATION INSPECTIONS

1. Rough-in
2. Final

**IF AN INSPECTION IS CALLED FOR AT OR AFTER A SPECIFIED TIME AND THE CONSTRUCTOR HAS NOT COMPLETED ALL OF THE REQUIREMENTS FOR THAT INSPECTION AT THE TIME THE INSPECTOR ARRIVES ON THE JOB, AN INSPECTION FEE WILL BE REQUIRED BEFORE ANY OTHER INSPECTIONS ARE MADE.**

The City of Nederland has adopted and is under the 2003 International Building Code, 2003 Plumbing, Mechanical, and Gas Codes published by the International Code Council, the 2005 National Electrical Code, the 2000 International Residential Code and the 2000 International Energy Conservation Code. ***Structures with a roof pitch greater than 7:12 and/or exterior wall greater than 10' in height must be designed, inspected, and approved by a registered professional engineer and meet the 120 mph requirements for Inland I in accordance with ASCE7-98.*** The following requirements are based on these codes and amendments to these codes as presented in the Nederland City Ordinances.

### BEFORE STARTING CONSTRUCTION

1. Display a sign with the street numbers on it.
2. **Contact the Director of Public Works for water and sewer service locations.**

### WINDSTORM INSPECTIONS

If you choose to take part in the Windstorm Inspection Program, their inspections are in addition to and not in place of City Inspections. **THE CITY INSPECTIONS ARE A**

**MUST! The State Board of Insurance Windstorm Inspection Program telephone number is 833-3756 or 832-7446.**

*CITY INSPECTIONS CALLED IN BEFORE 9:00 A.M. WILL NORMALLY BE MADE THAT MORNING. INSPECTIONS CALLED IN BEFORE 2:00 P.M. ARE NORMALLY MADE THAT DAY. ANY CALLS FOR INSPECTIONS AFTER 2:00 P.M. WILL BE MADE THE FOLLOWING WORKDAY. NO INSPECTIONS WILL BE MADE BEFORE 9:00 A.M. AND AFTER 4:00 P.M. OR ON WEEKENDS AND HOLIDAYS.*

The following information consists of **some** problem areas that we have had in the past and in **no way represent all of the code requirements**. Also, these are minimum requirements and many contractors go beyond these requirements in order to meet their own standards. If you have any questions that aren't answered in the following pages, please feel free to contact the Inspections Department at City Hall at 723-1502.

This handout is primarily for wood frame residential construction. **Metal structures are required to be engineered with stamped and sealed drawings** submitted to the Building Official for approval.

## PLUMBING ROUGH-IN INSPECTION

### HOUSE/BUILDING SEWER

1. All sewer and vent pipe shall be schedule 40 PVC.
2. Building sewer lines must have a 5' water head pressure test or a 5 psi air test.
3. There must be at least one 3" vent.
4. A 3" drain is required for all kitchen sinks with a garbage disposal.
5. Floor drains shall have a P-trap and drain into the building drain.
6. Washing machines must have a 2" drain and be trapped and vented separately.
7. The upper end of the building drain must have a clean out to the outside.

DO NOT COVER ANY PIPE OR FITTINGS UNTIL YOU HAVE RECEIVED A ROUGH-IN INSPECTION AND A GREEN INSPECTION TAG HAS BEEN PLACED ON THE PIPE.

### WATER LINES

1. Type K or Type L roll (soft) copper is allowed in or under the slab.
2. No fittings allowed in or under the slab.
3. Water lines must be sleeved where there is any possibility that the lines may come in contact with concrete.
4. The service line to the house can be copper or schedule 40 PVC and must have a cutoff valve on the house side of the water meter. **The water service pipe may *not* be placed in the same trench with the building sewer (service line) and must be located 5' away from the sewer line.**
5. All water lines exposed to freezing conditions must be insulated.

### REQUIREMENTS FOR NEW OR REPLACEMENT PLUMBING

1. All hot water lines shall be insulated.

2. All new swimming pools shall have recirculating filtration equipment.
3. All heated pools must have heating equipment with an on/off switch, must have a pool cover and must have a time clock.
4. The requirements of Chapter 421 of the Health and Safety Code, as adopted through Senate Bill 587 of the 72<sup>nd</sup> Legislature in 1991, shall govern any new or replacement plumbing to the extent that they are more strenuous than other requirements of this ordinance.

### FOUNDATION/SLAB INSPECTION

1. REMOVE ALL VEGETATION FROM THE SUBGRADE.
2. All exterior beams are to be at least 12" into undisturbed soil, interior beams should be at least setting on undisturbed soil.
3. On a one story building the exterior beam is 20" deep and 12" wide. A two story building requires a 24" grade beam depth and a 15" width.
4. Patio beams are to be at least 18" deep.
5. The slab must be at least 4" in depth and must be reinforced with at least 6-gauge wire mesh.
6. J-bolts 5/8" X 9" must be placed 6"-12" from each corner and 3' on centers with 3"X3" washers.

### SEWER INSPECTION

#### **CONTACT THE CITY OF NEDERLAND DIRECTOR OF PUBLIC WORKS FOR PROPERTY SEWER AND WATER SERVICE LOCATION.**

1. Service lines must be schedule 40 PVC.
2. Cleanouts must be within 3' of the building and no more than every 100' thereafter.
3. The sewer line should be tied into the sewer main before calling for an inspection
4. Pipe and fittings must be exposed for inspections.

TOP OUT, ROUGH GAS, FRAMING AND ROUGH ELECTRICAL SHOULD BE CALLED FOR AT THE SAME TIME IF AT ALL POSSIBLE.

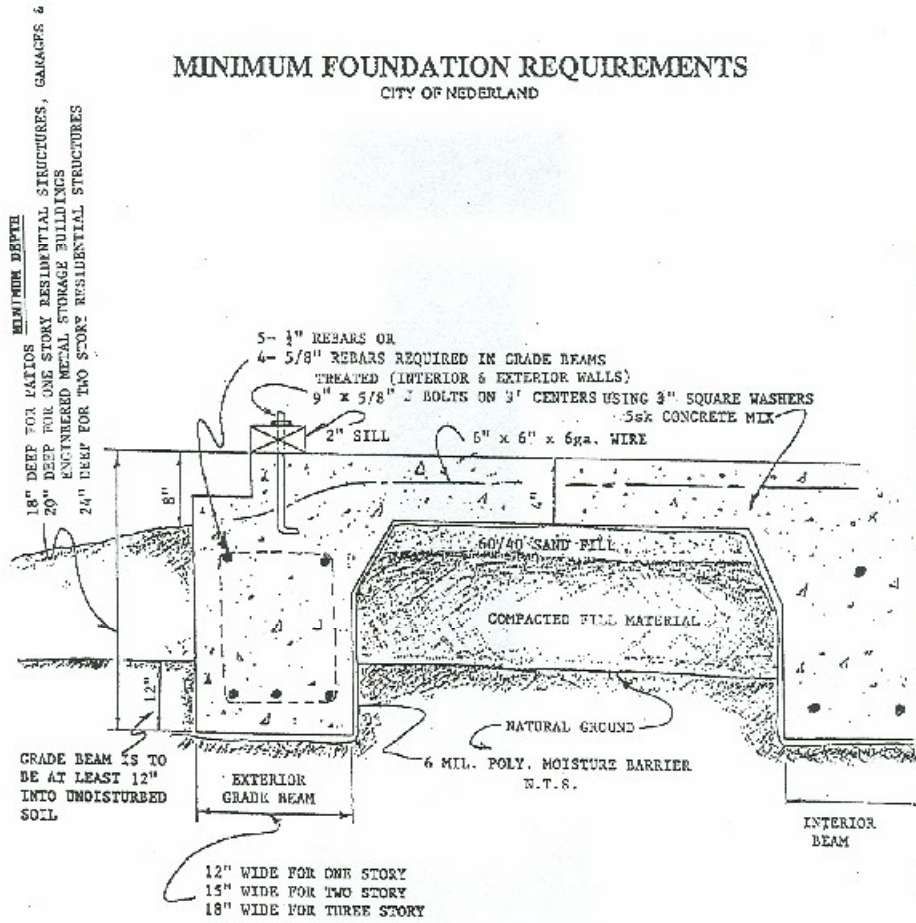
### TOP OUT INSPECTION

1. All vents must be extended through the roof.
2. There must be at least one 3" main vent.
3. Washing machine drains must be trapped and vented separately.
4. Water must be in the drain line and must be up to the highest second floor fitting that will carry water.
5. A 15 psi pressure test must be on the gas line for a rough gas pressure test.
6. City water pressure should be on the water lines if possible. Type K, Type L, or Type M rigid (hard) copper is allowed above the slab.
7. Nail guards must be placed over each stud, plate, or joist where there is less than 5/8" of wood between the water lines and/or vents and the edge of the stud, plate or joist.

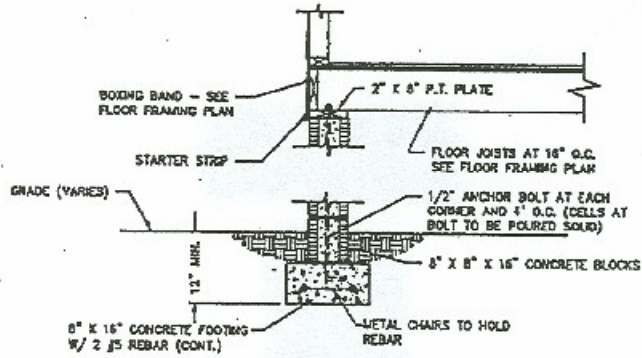


# MINIMUM FOUNDATION REQUIREMENTS

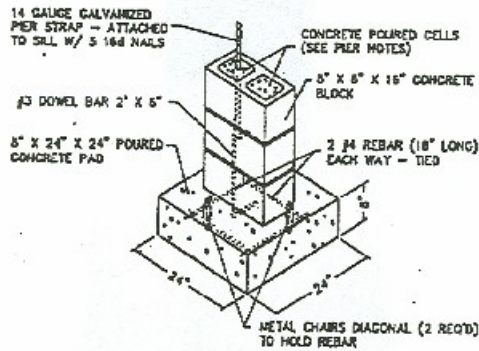
CITY OF NEDERLAND



NOTE: SEE TYPICAL WALL SECTION FOR DETAILS ABOVE FLOOR JOISTS.



### SOLID FOUNDATION DETAIL



### STANDARD PIER DESIGN

- 1) CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSL.
- 2) BOTTOM OF 8" X 24" X 24" CONCRETE PAD TO BE A MINIMUM OF 12" BELOW GRADE.
- 3) PIER NOTES:
  - a) THE CELL CONTAINING #3 DOWEL WILL BE FILLED WITH CONCRETE FROM FOOTING TO TOP.
  - b) CELL NOT CONTAINING #3 DOWEL WILL HAVE TOP COURSE ONLY FILLED WITH CONCRETE (USE CAVITY CAP TO PREVENT CONCRETE PASSAGE TO LOWER BLOCKS).
  - c) PIER STRAP TO BE EMBEDDED (MIN 10") IN CELL CONTAINING #3 DOWEL.

8. If the gas heater is located in the garage it must be elevated to a point where the burner is 18" above the garage floor.
9. The pressure and temperature valve must have a ¾" drain and must extend to the outside and within 6" of the ground level (must be copper, or galvanized if 90 degree fittings are used).
10. Copper tubing shall not be allowed for gas piping. Tin-lined copper tubing may be allowed buy only in lengths of 36" or less and only to connect the gas piping to the appliance it serves.
11. All hot water lines must be insulated.
- 12. Scald prevention valves are required in showers!**

## FRAMING

1. All bottom plates are to be treated wood.
2. Roof supports/rafters perkins are to be braced off of load bearing walls perpendicular to the rafters and not supported off of the ceiling joists.
3. All ceiling and floor joists are to be one piece without splices or overlaps.
4. Rafters up to 24' long must be one continual piece. If the rafter is longer and must be spliced, then a perlin must be positioned directly under the splices and supported off of a load bearing wall. The ridge board must be at least one size larger than the rafters.
5. Ceiling and floor joists not sitting directly on a wall or a header should be connected to the wall or header with joist hangers properly sized for the joist.
6. Any floor or ceiling joist that is cut to provide an opening for a ladder, recessed lighting, etc. must be strengthened by doubling the header that is connected to and doubling the joist that the header is connected to. Also, joist hangers must be used to secure the joist to the header.
- 7. All studs on exterior walls are to be clipped with appropriate hurricane clips to the bottom plate and the top plate. All rafters are to be clipped to the top plate.**
8. Headers over 12' in length, structures with external walls greater than 10' in height and/or roofs with a pitch greater than 7/12 shall be engineered to support the load.
9. All exterior walls are to be solid sheeted with OSB or plywood.
10. Section 305.2.3.3 of SSTD-10 required uplift connectors at the top and bottom of cripple studs, header studs, and at least one wall stud at each side of openings.
11. Two header studs are required at each end to support headers more than 6' in length.
12. The overall structure must meet the wind load requirements of SSTD-10 for this area. When the framing inspection is called for, *if the structure has a roof slope greater than 7/12 and/or if any exterior wall height is greater than 10', an affidavit must be presented to the inspection department signed and sealed by a **structural engineer** stating that the roof and/or the wall section in question meets the requirements of the Standard for Hurricane Resistant Residential Construction (SSTD 10).*

### STAIRWAYS

13. The rise cannot be more than 7 <sup>3</sup>/<sub>4</sub>". (2000 IRC, Section R314.2) The tread depth minimum is 10" (9" with 1" nosing).
14. STAIRWAYS THAT HAVE TURNS: "Windings shall have a minimum tread depth of 6" at the narrow edge and shall have a minimum tread of 11" at a point 12" from the narrow edge."

### FIREBLOCKING

15. Fireblocking shall be provided in all walls and partitions to cut off all concealed draft openings both horizontal and vertical and to form a fire barrier between floors and the upper room and the roof space. This requirement applies especially to openings around chimney penetrations.

### WALL INSULATION INSPECTION

Before the interior of any exterior walls can be covered, an insulation inspection must be made. The exterior wall is required to have insulation with an R-13 rating.

### FLOOR INSULATION

For structures on piers, floor insulation with a rating of R-11 is required and should be installed when the wall insulation is installed



**Table 1** SLEEPING ROOMS AND ATTICS: 50 PSF LIVE, 10 PSF DEAD

**Floor Joists**

|               |              | Maximum Allowable Span (ft.-in.) |       |       |      |       |       |      |       |        |       |       |       |        |      |       |       |
|---------------|--------------|----------------------------------|-------|-------|------|-------|-------|------|-------|--------|-------|-------|-------|--------|------|-------|-------|
|               |              | 2 x 6                            |       |       |      | 2 x 8 |       |      |       | 2 x 10 |       |       |       | 2 x 12 |      |       |       |
| Species Group | Spacing (in) | Sel.                             |       |       |      | Sel.  |       |      |       | Sel.   |       |       |       | Sel.   |      |       |       |
|               |              | Str.                             | No.1  | No.2  | No.3 | Str.  | No.1  | No.2 | No.3  | Str.   | No.1  | No.2  | No.3  | Str.   | No.1 | No.2  | No.3  |
| D.Fir-L       | 12           | 12-6                             | 12-3  | 11-10 | 9-11 | 16-6  | 15-10 | 15-7 | 12-7  | 21-0   | 20-3  | 19-10 | 15-5  | 25-7   | 24-8 | 23-4  | 17-10 |
|               | 16           | 11-4                             | 10-11 | 10-9  | 8-7  | 15-0  | 14-5  | 14-2 | 10-11 | 19-1   | 18-5  | 17-5  | 13-4  | 23-3   | 21-4 | 20-3  | 15-6  |
|               | 19.2         | 10-8                             | 10-4  | 10-1  | 7-10 | 14-1  | 13-7  | 13-0 | 10-0  | 18-0   | 16-9  | 15-11 | 12-2  | 21-10  | 19-6 | 18-6  | 14-1  |
|               | 24           | 9-11                             | 9-7   | 9-3   | 7-0  | 13-1  | 12-4  | 11-8 | 8-11  | 16-8   | 15-0  | 14-3  | 10-11 | 20-5   | 17-5 | 16-6  | 12-7  |
| Hem-Fir       | 12           | 11-10                            | 11-7  | 11-0  | 9-6  | 15-7  | 15-3  | 14-6 | 12-4  | 19-10  | 19-5  | 18-6  | 15-0  | 24-2   | 23-7 | 22-6  | 17-5  |
|               | 16           | 10-9                             | 10-6  | 10-0  | 8-5  | 14-2  | 13-10 | 13-2 | 10-6  | 18-0   | 17-8  | 16-10 | 13-0  | 21-1   | 21-1 | 19-8  | 15-1  |
|               | 19.2         | 10-1                             | 9-10  | 9-5   | 7-8  | 13-4  | 13-0  | 12-5 | 9-9   | 17-0   | 16-7  | 15-5  | 11-10 | 20-8   | 19-3 | 17-11 | 13-9  |
|               | 24           | 9-4                              | 9-2   | 8-9   | 6-10 | 12-4  | 12-1  | 11-4 | 8-8   | 15-9   | 14-10 | 13-10 | 10-7  | 19-2   | 17-2 | 16-1  | 12-4  |
| S. Pine       | 12           | 12-3                             | 12-0  | 11-10 | 10-5 | 16-2  | 15-10 | 15-3 | 13-3  | 23-8   | 20-3  | 19-10 | 15-8  | 25-1   | 24-8 | 24-2  | 19-9  |
|               | 16           | 11-2                             | 10-11 | 10-9  | 9-3  | 14-8  | 14-5  | 14-2 | 11-6  | 18-9   | 18-5  | 18-0  | 13-7  | 22-10  | 22-5 | 21-1  | 16-2  |
|               | 19.2         | 10-6                             | 10-4  | 10-1  | 8-9  | 13-10 | 13-7  | 13-4 | 10-6  | 17-8   | 17-4  | 16-5  | 12-5  | 21-6   | 21-1 | 19-9  | 14-9  |
|               | 24           | 9-9                              | 9-7   | 9-4   | 7-4  | 12-10 | 12-7  | 12-4 | 9-5   | 16-5   | 15-1  | 14-8  | 11-1  | 19-11  | 19-6 | 17-2  | 13-2  |

**Table 2** ALL ROOMS EXCEPT SLEEPING ROOMS AND ATTICS: 40 PSF LIVE, 10 PSF DEAD

**Floor Joists**

|               |              | Maximum Allowable Span (ft.-in.) |       |      |      |       |       |       |       |        |       |       |       |        |       |       |       |
|---------------|--------------|----------------------------------|-------|------|------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|
|               |              | 2 x 6                            |       |      |      | 2 x 8 |       |       |       | 2 x 10 |       |       |       | 2 x 12 |       |       |       |
| Species Group | Spacing (in) | Sel.                             |       |      |      | Sel.  |       |       |       | Sel.   |       |       |       | Sel.   |       |       |       |
|               |              | Str.                             | No.1  | No.2 | No.3 | Str.  | No.1  | No.2  | No.3  | Str.   | No.1  | No.2  | No.3  | Str.   | No.1  | No.2  | No.3  |
| D.Fir-L       | 12           | 11-4                             | 10-11 | 10-9 | 8-11 | 15-0  | 14-5  | 14-2  | 11-3  | 19-1   | 18-5  | 18-0  | 13-9  | 23-3   | 22-3  | 20-11 | 16-0  |
|               | 16           | 10-4                             | 9-11  | 9-5  | 7-5  | 13-7  | 13-1  | 12-9  | 9-9   | 17-4   | 16-5  | 15-7  | 11-11 | 21-1   | 19-1  | 18-1  | 13-10 |
|               | 19.2         | 9-8                              | 9-4   | 9-2  | 7-0  | 12-10 | 12-4  | 11-8  | 8-11  | 16-4   | 15-0  | 14-3  | 10-11 | 19-10  | 17-5  | 16-6  | 12-7  |
|               | 24           | 9-0                              | 8-5   | 8-3  | 6-3  | 11-11 | 11-0  | 10-5  | 8-0   | 15-2   | 13-5  | 12-9  | 9-9   | 13-5   | 15-7  | 14-9  | 11-3  |
| Hem-Fir       | 12           | 10-9                             | 10-6  | 10-0 | 8-8  | 14-2  | 13-10 | 13-2  | 11-0  | 18-0   | 17-8  | 16-10 | 13-5  | 21-11  | 21-6  | 20-4  | 15-7  |
|               | 16           | 9-9                              | 9-6   | 9-1  | 7-6  | 12-10 | 12-7  | 12-0  | 9-5   | 15-5   | 16-0  | 15-2  | 11-8  | 15-11  | 18-10 | 17-7  | 13-6  |
|               | 19.2         | 9-2                              | 9-0   | 8-7  | 6-10 | 12-1  | 11-10 | 11-3  | 8-8   | 15-5   | 14-10 | 13-10 | 10-7  | 16-9   | 17-2  | 16-1  | 12-4  |
|               | 24           | 8-6                              | 8-4   | 7-11 | 6-2  | 11-3  | 10-10 | 10-2  | 7-8   | 14-4   | 13-9  | 12-5  | 9-6   | 17-5   | 15-5  | 14-4  | 11-0  |
| S. Pine       | 12           | 11-2                             | 10-11 | 10-9 | 9-4  | 14-8  | 14-5  | 14-2  | 11-11 | 18-9   | 18-5  | 18-0  | 14-0  | 22-10  | 22-5  | 21-9  | 16-9  |
|               | 16           | 10-2                             | 9-11  | 9-9  | 8-1  | 13-4  | 13-1  | 12-10 | 10-3  | 17-0   | 16-9  | 15-1  | 12-2  | 20-9   | 20-4  | 18-10 | 14-5  |
|               | 19.2         | 9-5                              | 9-4   | 9-2  | 7-4  | 12-7  | 12-4  | 12-1  | 9-5   | 16-0   | 15-9  | 14-8  | 11-1  | 19-8   | 19-2  | 17-2  | 13-2  |
|               | 24           | 8-10                             | 8-8   | 8-6  | 6-7  | 11-8  | 11-5  | 11-0  | 8-5   | 14-11  | 14-7  | 13-1  | 9-11  | 18-1   | 17-5  | 15-5  | 11-10 |

**Table 3** OFFICE SPACE: 50 PSF LIVE, 10 PSF DEAD

**Floor Joists**

|               |              | Maximum Allowable Span (ft.-in.) |      |      |      |       |       |       |       |        |       |       |       |        |       |       |      |
|---------------|--------------|----------------------------------|------|------|------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|-------|------|
|               |              | 2 x 6                            |      |      |      | 2 x 8 |       |       |       | 2 x 10 |       |       |       | 2 x 12 |       |       |      |
| Species Group | Spacing (in) | Sel.                             |      |      |      | Sel.  |       |       |       | Sel.   |       |       |       | Sel.   |       |       |      |
|               |              | Str.                             | No.1 | No.2 | No.3 | Str.  | No.1  | No.2  | No.3  | Str.   | No.1  | No.2  | No.3  | Str.   | No.1  | No.2  | No.3 |
| D.Fir-L       | 12           | 10-6                             | 10-2 | 9-11 | 8-1  | 13-11 | 13-5  | 13-1  | 10-3  | 17-9   | 17-1  | 16-5  | 12-7  | 21-7   | 20-1  | 19-1  | 14-7 |
|               | 16           | 9-7                              | 9-3  | 9-1  | 7-0  | 12-7  | 12-2  | 11-8  | 8-11  | 16-1   | 15-0  | 14-3  | 10-11 | 19-7   | 17-5  | 16-6  | 12-7 |
|               | 19.2         | 9-0                              | 8-6  | 8-5  | 6-5  | 11-11 | 11-3  | 10-8  | 8-2   | 15-2   | 13-8  | 13-0  | 9-11  | 18-5   | 19-11 | 15-1  | 11-6 |
|               | 24           | 8-4                              | 7-11 | 7-6  | 5-9  | 11-0  | 10-0  | 9-6   | 7-3   | 14-1   | 12-3  | 11-8  | 8-11  | 17-1   | 14-3  | 13-6  | 10-4 |
| Hem-Fir       | 12           | 9-11                             | 9-9  | 9-3  | 7-11 | 13-1  | 12-10 | 12-3  | 10-0  | 18-5   | 18-5  | 15-7  | 12-3  | 23-4   | 19-10 | 18-5  | 14-3 |
|               | 16           | 9-1                              | 8-10 | 8-5  | 6-10 | 11-11 | 11-8  | 11-1  | 8-5   | 15-2   | 14-10 | 13-10 | 10-7  | 18-6   | 17-2  | 16-1  | 12-4 |
|               | 19.2         | 8-6                              | 8-4  | 7-11 | 6-3  | 11-3  | 11-0  | 10-4  | 7-11  | 14-4   | 13-6  | 12-8  | 9-8   | 17-5   | 15-8  | 14-8  | 11-8 |
|               | 24           | 7-11                             | 7-9  | 7-4  | 5-7  | 10-5  | 9-11  | 9-3   | 7-1   | 13-3   | 12-1  | 11-4  | 8-8   | 16-2   | 14-0  | 13-1  | 10-1 |
| S. Pine       | 12           | 10-4                             | 10-2 | 9-11 | 8-6  | 13-5  | 13-5  | 13-1  | 10-10 | 17-5   | 17-1  | 16-9  | 12-10 | 21-2   | 20-9  | 19-10 | 15-3 |
|               | 16           | 9-5                              | 9-3  | 9-1  | 7-4  | 12-5  | 12-2  | 11-11 | 9-5   | 15-10  | 15-6  | 14-8  | 11-1  | 19-3   | 18-10 | 17-2  | 13-2 |
|               | 19.2         | 8-10                             | 8-8  | 8-6  | 6-9  | 11-8  | 11-5  | 11-3  | 8-7   | 14-11  | 14-7  | 13-5  | 10-1  | 18-1   | 17-9  | 15-5  | 12-1 |
|               | 24           | 8-3                              | 8-1  | 7-9  | 6-0  | 10-10 | 10-8  | 10-0  | 7-8   | 13-10  | 13-4  | 12-0  | 9-1   | 16-10  | 15-11 | 14-0  | 10-9 |

**Table 6** DRYWALL - NO FUTURE ROOMS AND NO ATTIC STORAGE: 10 PSF LIVE, 5 PSF DEAD

**Ceiling Joists**

| Species Group | Spacing (ft) | Maximum Allowable Span (ft.-in.) |       |      |       |       |       |      |       |       |       |      |       |        |      |       |       |      |
|---------------|--------------|----------------------------------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|--------|------|-------|-------|------|
|               |              | 2 x 4                            |       |      |       | 2 x 6 |       |      |       | 2 x 8 |       |      |       | 2 x 10 |      |       |       |      |
|               |              | Sp.                              | No.1  | No.2 | No.3  | Sp.   | No.1  | No.2 | No.3  | Sp.   | No.1  | No.2 | No.3  | Sp.    | No.1 | No.2  | No.3  |      |
| D.F.L         | 12           | 10-2                             | 12-6  | 12-5 | 11-1  | 20-8  | 19-11 | 19-3 | 18-3  | 27-3  | 25-2  | 25-3 | 20-7  | 17-8   | 30-5 | 30-5  | 35-0  | 25-2 |
|               | 16           | 11-11                            | 11-8  | 11-9 | 9-7   | 18-0  | 18-1  | 17-5 | 14-1  | 24-8  | 23-10 | 23-4 | 17-10 | 31-5   | 30-0 | 28-5  | 21-3  |      |
|               | 19.2         | 11-2                             | 10-10 | 10-7 | 8-3   | 17-8  | 17-0  | 16-6 | 12-10 | 23-8  | 22-5  | 21-4 | 16-0  | 29-5   | 27-5 | 26-3  | 19-10 |      |
|               | 24           | 11-8                             | 10-3  | 9-10 | 7-10  | 16-4  | 15-9  | 15-0 | 11-6  | 21-7  | 20-1  | 19-1 | 14-7  | 27-8   | 24-8 | 23-3  | 17-1  |      |
| W.F.F         | 12           | 12-5                             | 12-2  | 11-7 | 10-10 | 16-8  | 16-1  | 15-2 | 13-0  | 25-9  | 25-2  | 24-0 | 21-1  | 32-5   | 32-1 | 30-7  | 24-6  |      |
|               | 16           | 11-3                             | 11-0  | 10-6 | 9-5   | 17-8  | 17-4  | 16-6 | 13-0  | 23-4  | 22-10 | 21-9 | 17-5  | 29-5   | 29-2 | 27-8  | 21-3  |      |
|               | 19.2         | 10-7                             | 10-4  | 9-1  | 8-7   | 17-8  | 16-4  | 15-7 | 12-6  | 21-11 | 21-5  | 20-6 | 15-10 | 25-0   | 27-1 | 25-3  | 19-5  |      |
|               | 24           | 9-10                             | 8-8   | 8-7  | 7-2   | 15-5  | 15-2  | 14-5 | 11-2  | 20-5  | 19-10 | 18-8 | 14-2  | 25-0   | 24-3 | 22-7  | 17-4  |      |
| S.P.W         | 12           | 12-11                            | 12-0  | 12-5 | 11-5  | 20-3  | 19-11 | 18-8 | 17-0  | 28-9  | 28-2  | 28-0 | 21-8  | 34-1   | 33-5 | 32-0  | 25-7  |      |
|               | 16           | 11-9                             | 11-8  | 11-3 | 10-0  | 18-5  | 18-1  | 17-8 | 16-8  | 24-3  | 23-10 | 23-4 | 18-9  | 31-0   | 30-5 | 29-4  | 22-2  |      |
|               | 19.2         | 11-0                             | 10-10 | 10-7 | 9-1   | 17-4  | 17-3  | 16-8 | 13-6  | 22-10 | 22-5  | 21-1 | 17-2  | 28-2   | 28-7 | 28-10 | 20-3  |      |
|               | 24           | 10-3                             | 10-0  | 9-10 | 8-2   | 16-7  | 16-3  | 15-5 | 12-0  | 21-2  | 20-10 | 20-1 | 15-0  | 27-1   | 26-6 | 25-11 | 19-1  |      |

**Table 7** DRYWALL - NO FUTURE ROOMS AND LIMITED ATTIC STORAGE: 20 PSF LIVE, 10 PSF DEAD

**Ceiling Joists**

| Species Group | Spacing (ft) | Maximum Allowable Span (ft.-in.) |      |      |      |       |      |       |      |       |       |       |       |        |       |       |      |
|---------------|--------------|----------------------------------|------|------|------|-------|------|-------|------|-------|-------|-------|-------|--------|-------|-------|------|
|               |              | 2 x 4                            |      |      |      | 2 x 6 |      |       |      | 2 x 8 |       |       |       | 2 x 10 |       |       |      |
|               |              | Sp.                              | No.1 | No.2 | No.3 | Sp.   | No.1 | No.2  | No.3 | Sp.   | No.1  | No.2  | No.3  | Sp.    | No.1  | No.2  | No.3 |
| D.F.L         | 12           | 10-5                             | 10-0 | 9-10 | 7-10 | 16-4  | 15-9 | 15-0  | 11-5 | 21-7  | 20-1  | 19-1  | 14-7  | 27-8   | 24-6  | 23-8  | 17-9 |
|               | 16           | 9-5                              | 9-1  | 9-10 | 6-10 | 14-1  | 13-8 | 13-0  | 9-11 | 19-7  | 17-5  | 16-5  | 12-7  | 26-0   | 21-3  | 20-2  | 15-5 |
|               | 19.2         | 9-11                             | 8-7  | 9-2  | 6-2  | 14-0  | 12-8 | 11-11 | 9-1  | 15-5  | 15-10 | 15-1  | 11-5  | 23-7   | 19-5  | 19-5  | 14-1 |
|               | 24           | 9-5                              | 7-8  | 7-3  | 5-7  | 12-0  | 11-2 | 10-3  | 6-1  | 14-2  | 14-2  | 13-3  | 10-3  | 21-5   | 17-4  | 15-5  | 12-7 |
| W.F.F         | 12           | 9-10                             | 9-8  | 9-2  | 7-8  | 15-6  | 15-2 | 14-5  | 11-2 | 20-5  | 19-10 | 18-8  | 14-2  | 26-0   | 24-0  | 22-7  | 17-4 |
|               | 16           | 8-11                             | 8-8  | 8-4  | 5-8  | 13-1  | 12-7 | 12-8  | 8-8  | 18-3  | 17-2  | 16-0  | 12-4  | 23-8   | 21-5  | 19-7  | 14-0 |
|               | 19.2         | 8-5                              | 8-3  | 7-10 | 5-1  | 13-3  | 12-4 | 11-7  | 8-10 | 17-5  | 15-8  | 14-8  | 11-3  | 22-3   | 19-2  | 17-10 | 13-8 |
|               | 24           | 7-10                             | 7-7  | 7-1  | 5-5  | 12-3  | 11-1 | 10-4  | 7-11 | 16-2  | 14-0  | 13-1  | 10-0  | 20-6   | 17-1  | 16-0  | 12-3 |
| S.P.W         | 12           | 10-2                             | 10-0 | 9-10 | 8-2  | 15-1  | 15-9 | 15-0  | 12-0 | 21-2  | 20-10 | 20-1  | 15-4  | 27-1   | 26-6  | 25-11 | 19-1 |
|               | 16           | 9-4                              | 9-1  | 8-11 | 7-1  | 14-7  | 14-4 | 13-8  | 10-5 | 19-3  | 18-11 | 17-5  | 13-8  | 24-7   | 23-1  | 20-9  | 15-5 |
|               | 19.2         | 8-9                              | 8-7  | 8-5  | 5-6  | 13-9  | 13-6 | 12-8  | 9-5  | 18-2  | 17-5  | 16-10 | 12-1  | 23-2   | 21-1  | 18-11 | 14-4 |
|               | 24           | 8-1                              | 8-0  | 7-8  | 5-8  | 12-8  | 12-6 | 11-0  | 6-5  | 16-10 | 15-10 | 14-2  | 10-10 | 21-5   | 19-10 | 18-11 | 12-0 |



Figure 1



Figure 2

**Table W**  
Conversion Factors for Rafters

| Slope (in 12) | Slope Factor | Slope (in 12) | Slope Factor |
|---------------|--------------|---------------|--------------|
| 3             | 1.031        | 12            | 1.414        |
| 4             | 1.054        | 13            | 1.474        |
| 5             | 1.083        | 14            | 1.537        |
| 6             | 1.118        | 15            | 1.601        |
| 7             | 1.158        | 16            | 1.667        |
| 8             | 1.202        | 17            | 1.734        |
| 9             | 1.25         | 18            | 1.803        |
| 10            | 1.302        | 19            | 1.873        |
| 11            | 1.357        | 20            | 1.944        |

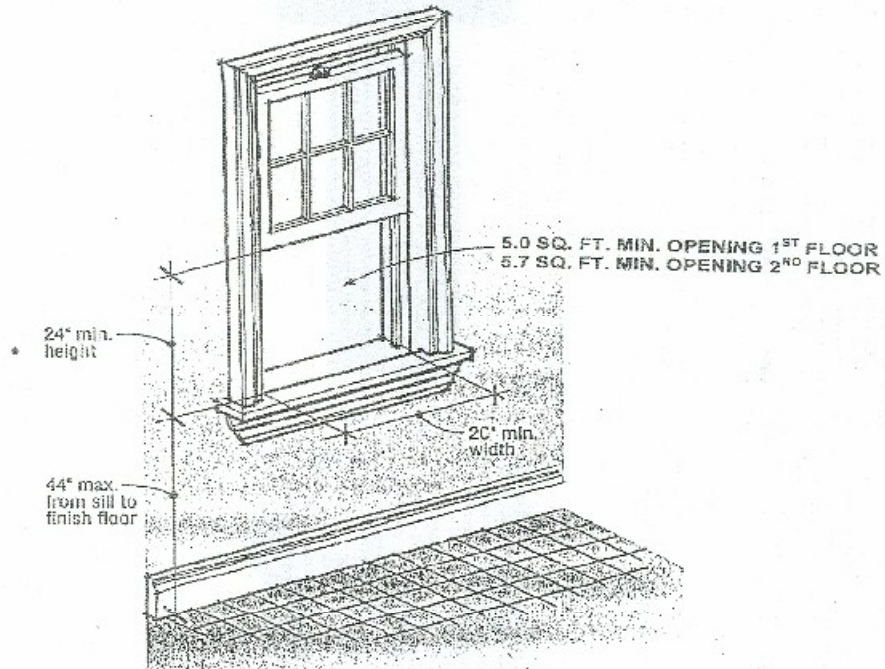
To convert "Rafter Span" to "Sloping Distance":  
 1) Select slope factor for given slope in table above.  
 2) Multiply Horizontal Span by "Slope Factor".

**Table 29** NON-SNOW REGION, HEAVY ROOF COVERING, DRYWALL, NO ATTIC SPACE: 20 PSF LIVE, 20 PSF DEAD  
Rafters

| Species Group | Spacing (in) | Maximum Allowable Horizontal Span (ft.-in.) |       |       |       |           |       |       |       |           |       |       |       |           |       |       |       |
|---------------|--------------|---|-------|-------|-------|-----------|-------|-------|-------|-----------|-------|-------|-------|-----------|-------|-------|-------|
|               |              | 2 x 6                                       |       |       |       | 2 x 8     |       |       |       | 2 x 10    |       |       |       | 2 x 12    |       |       |       |
|               |              | Sel. Str.                                   | No.1  | No.2  | No.3  | Sel. Str. | No.1  | No.2  | No.3  | Sel. Str. | No.1  | No.2  | No.3  | Sel. Str. | No.1  | No.2  | No.3  |
| D.Fir-L       | 12           | 10-4  | 15-4  | 14-7  | 11-1  | 21-7      | 15-5  | 10-5  | 14-1  | 27-6      | 23-9  | 22-6  | 17-2  | 33-6      | 27-6  | 26-1  | 18-11 |
|               | 16           | 14-11                                       | 13-3  | 12-7  | 8-0   | 19-7      | 15-10 | 10-0  | 12-2  | 25-0      | 20-7  | 19-8  | 14-11 | 29-2      | 23-10 | 22-7  | 17-3  |
|               | 19.2         | 14-0  | 12-2  | 11-6  | 8-3   | 18-5      | 15-4  | 14-7  | 11-2  | 23-0      | 18-8  | 17-10 | 13-7  | 28-0      | 21-9  | 20-8  | 15-9  |
|               | 24           | 13-0  | 10-10 | 10-4  | 7-10  | 16-10     | 13-3  | 13-0  | 10-0  | 20-7      | 15-8  | 15-11 | 12-2  | 25-10     | 19-6  | 18-6  | 14-1  |
| Hem-Fir       | 12           | 15-6  | 15-2  | 14-2  | 10-10 | 20-5      | 19-2  | 17-11 | 13-9  | 23-0      | 23-5  | 21-11 | 16-9  | 31-6      | 27-2  | 25-5  | 19-6  |
|               | 16           | 14-1  | 13-1  | 12-3  | 9-8   | 18-6      | 16-7  | 15-5  | 11-11 | 23-0      | 20-4  | 19-11 | 14-6  | 29-3      | 23-7  | 22-0  | 16-10 |
|               | 19.2         | 13-3  | 12-0  | 11-2  | 8-7   | 17-5      | 15-2  | 14-2  | 10-10 | 22-3      | 18-6  | 17-4  | 13-3  | 25-9      | 21-6  | 20-1  | 15-5  |
|               | 24           | 12-3  | 10-9  | 10-0  | 7-8   | 16-2      | 13-7  | 12-8  | 9-9   | 19-10     | 16-7  | 15-6  | 11-10 | 23-0      | 19-3  | 17-11 | 13-9  |
| S. Pine       | 12           | 13-1  | 15-3  | 15-1  | 11-3  | 21-2      | 20-0  | 19-5  | 14-10 | 27-1      | 25-10 | 23-2  | 17-8  | 32-11     | 30-10 | 27-2  | 20-11 |
|               | 16           | 14-7  | 14-4  | 13-0  | 10-1  | 19-3      | 18-0  | 16-0  | 12-0  | 24-7      | 22-4  | 20-1  | 15-2  | 29-11     | 26-8  | 23-7  | 18-1  |
|               | 19.2         | 13-9  | 13-8  | 11-11 | 9-3   | 18-2      | 17-2  | 15-4  | 11-9  | 23-2      | 20-5  | 18-4  | 13-10 | 28-1      | 24-4  | 21-6  | 16-6  |
|               | 24           | 12-9  | 12-3  | 10-6  | 8-3   | 16-10     | 15-4  | 13-9  | 10-6  | 21-5      | 18-3  | 16-5  | 12-5  | 26-1      | 21-9  | 19-3  | 14-9  |

## REQUIRED IN ALL BEDROOMS

### Egress Window Minimums



## BEDROOM WINDOW REQUIREMENTS

(see diagram above)

2003 IBC Section 1025.2 Minimum Size.  
Section 1025.2.1 Minimum Dimensions.  
Section 1025.3 Minimum Height from Floor.

## TRUSS SYSTEMS

16. Truss systems may be used but only if designed by a structural engineer and only if they are plant fabricated. A set of prints must be submitted to the City with the engineer's seal and notation that the truss system does meet the 2003 International Building Code and the wind load requirements for this area.
17. Exterior walls must have a R-13 insulation rating. All openings must be sealed.

## FINAL PLUMBING AND GAS INSPECTIONS

1. All fixtures are to be installed with valves on both the hot and cold water lines. Showers are required to have scald prevention valves. All sinks and lavatories are to be trapped.
2. City water is to be tied in and turned on.
3. The water heater(s) must be installed with a metal drain pan with the drain line extending out to the outside. Gas water heaters are not allowed in bedrooms or bathrooms and cannot get its supply air from either of these rooms.
4. A five pound pressure test must be on the gas line before the City will call the Texas Gas Service for service. In order to have the gas turned on you must have had your heating system installed and properly vented. Smoke detectors must be installed in each bedroom and hallway leading to each bedroom.
5. Venting for the gas water heater that has a gas heating system must have a double wall vent pipe and extend at least 24" above the high side of the roof where it passes thru.
6. Sanitary sewer cleanouts must be capped and visible.

## FINAL INSULATION INSPECTION

A final insulation inspection is required prior to receiving a Certificate of Occupancy. The attic insulation must be completed with the proper depth markers installed and the Insulation certificate placed in the attic.

## INSULATORS

Section 601.3.1 of the International Energy Conservation Code required that "a certification of the installed R-value shall be provided at the job site by the insulation installer. Where blown-in or sprayed insulation is applied in walls, the installer shall provide a certification of the installed density and R-value. Where blown-in or sprayed insulation is applied in the roof/ceiling assembly the installer shall provide a certificate of the initial installed thickness, settled thickness, coverage area, and the number of bags of insulation material installed. Markers shall be provided for every 300 square feet of area, attached to the trusses, rafters or joists, and indicated in 1" high numbers, of the installed thickness of the insulation.

## SAFETY PANS AND RELIEF VALVE WASTE

When water heaters are installed in such areas that leakage could cause water damage to the building or injury to the building occupants, the heater shall rest in a galvanized steel or other metal pan of equal corrosive resistance having a thickness

at least equal to 24 gauge galvanized sheet steel. (1/16" high impact plastic pans can be used under electric water heaters only).

Safety pans shall be no less than 1 ½" deep and shall be of sufficient size and shape to receive all drippings from the heater. The pan shall be drained by an indirect waste pipe no less than 1" diameter or the diameter of the outlet of the required relief valve, whichever is larger.

The pan drain shall extend full-size and terminate over a floor drain or extend to the exterior of the building and terminate no less than 6" nor more than 24" above grade.

The discharge from the relief valve shall be piped full-sized separately to the outside of the building or to another approved location so that any discharge can cause no personal injury or property damage and can be readily observed by the building occupants. This discharge pipe must extend downward and may extend horizontally but never upward.

### BUILDING FINAL

**IMPORTANT**-----LAYDOWN CURBS ARE NOT DESIGNED TO BE BROKEN OUT FOR DRIVEWAYS. **ANY CURB REMOVAL MUST FIRST BE APPROVED BY THE DIRECTOR OF PUBLIC WORKS** AND MUST MEET CITY SPECIFICATIONS. TO **AVOID FINES** OR OTHER LEGAL ACTION CONTACT THE PUBLIC WORKS DEPARTMENT AT 723-1541 OR **723-1565** BEFORE POURING THE DRIVEWAY.

1. If the curb has been damaged during construction, it must be repaired.
2. House numbers must be installed and visible from the street.
3. The final electrical inspection must have been made.

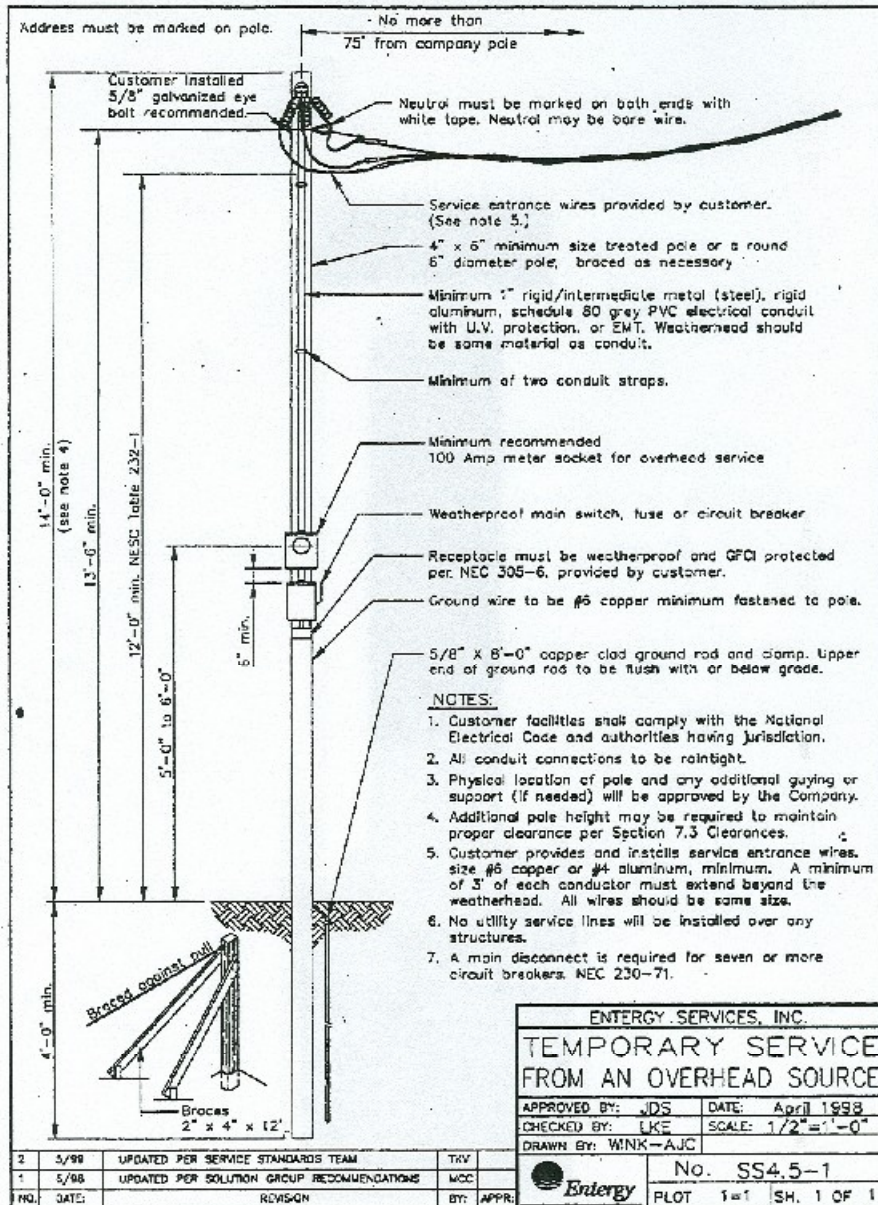
### FIREPLACE REQUIREMENTS

4. Fireplace chimneys must be complete and at least two feet higher than any part of the roof or building within 10' horizontally of such chimney.
5. The hearth in front of the fireplace must be at least 16" and at least 8" beyond each side of the fireplace opening. If the opening is 6 square feet or more the hearth must be 20" in front and at least 12" beyond each side.
6. Masonry chimneys shall be supported on properly designed foundations of masonry or reinforced concrete. Noncombustible material having a fire resistance rating of not less than 3 hours may be used to support masonry chimneys where such supports are independent of the floor construction and the load is transferred to the ground. (803.1) Masonry shall not be supported on combustible construction.

### HEATING EQUIPMENT

7. **Attic insulation.** "Every attic or furred space in which mechanical equipment is installed shall be accessible by an opening and passageway as large as the largest piece of the equipment and in no case less than 22"X36" continuous from the opening to the equipment and its controls. The opening to the passageway shall be located not more than 20' from the equipment measured along the

centerline of such passageway. Every passageway shall be unobstructed and shall have solid continuous flooring not less than 24" wide from the entrance opening to the equipment. On the control side and other sides where access is necessary for servicing the equipment a level working platform extending a minimum of 30" from the edge of the equipment with a 36" high clear working space shall be provided. Heating equipment in the attic must have a disconnect near the unit and a light fixture over the unit. A receptacle must be installed near the unit for service work.



ENTERGY SERVICES, INC.  
**TEMPORARY SERVICE FROM AN OVERHEAD SOURCE**

APPROVED BY: JDS DATE: April 1998  
 CHECKED BY: LKE SCALE: 1/2" = 1'-0"  
 DRAWN BY: WINK-AJC

No. SS4.5-1  
 PLOT 1 of 1 SH. 1 OF 1

| NO. | DATE | REVISION                                   | BY  | APPR. |
|-----|------|--|-----|-------|
| 2   | 5/98 | UPDATED PER SERVICE STANDARDS TEAM         | TKV |       |
| 1   | 5/98 | UPDATED PER SOLUTION GROUP RECOMMENDATIONS | WCC |       |





## RESIDENTIAL ELECTRICAL CODE REQUIREMENTS

1. Contact Entergy for meter location and meter can.
2. Take out electrical permit before starting.

Three inspections are required: temporary pole, rough-in, and final.

The rough-in inspection must be called for before adding insulation or before covering inside walls or ceiling.

The final inspection must include the following: All wiring should be completed with fixtures, receptacles and smoke alarms. The meter loop should be complete and ready for Entergy hook-up.

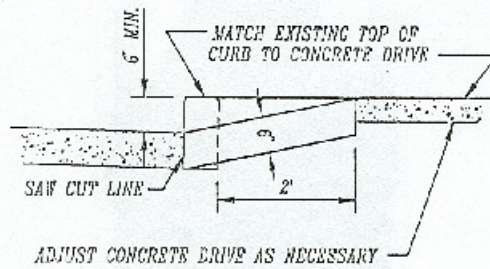
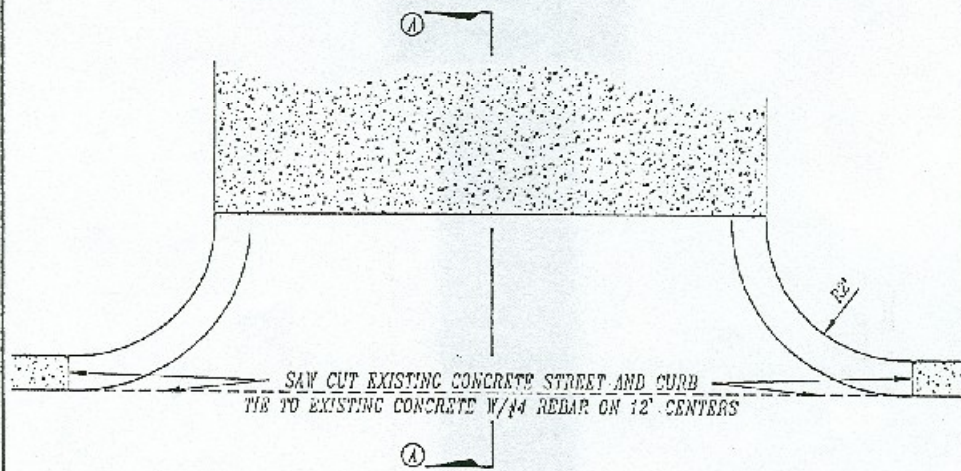
### GUIDELINES FOR RESIDENTIAL WIRING

1. All wires must be #12 or larger (12-2-w/ground) romex. No single wires unless in conduit.
2. Over current protection is as follows:

| <u>WIRE SIZE</u> | <u>MAX BREAKER SIZE</u> |
|------------------|-------------------------|
| #12 AWG          | 20 amp                  |
| #10 AWG          | 30 amp                  |
3. Two (2) 20 amp circuits in kitchen receptacles only. No kitchen lights on receptacle circuits. There should be one circuit for the dishwasher, one circuit for the garbage disposal and one circuit for a built-in microwave. Bathroom receptacles are to be on a 20 amp circuit.
4. Two circuits in laundry room; washer needs to be on a separate circuit.
5. No more than eight (8) outlets per circuit, lights and receptacles or combination. Switches do not count.
6. No junction boxes in inaccessible places (between ceiling and under floor, where you cannot get to them). You have to get to the junction boxes without removing any part of the structure, building, floor, wall, ceiling, etc.
7. Wires must be run within eighteen (18) inches clearance between joists and rafters or along the side of rafters, joist, or braces. **DO NOT CUT ACROSS UNLESS YOU DRILL THROUGH JOIST.**
8. Ground fault receptacles must be on bathroom outlets, outside outlets, garage outlets, and all kitchen receptacles. Garage appliances (freezer, refrigerators and garage door openers) do not have to be on G.F.C.I. One (1) ground fault receptacles will protect receptacles wired down from it. G.F.C.I. breakers are acceptable for a circuit. One GFI receptacle must be located outside in front and rear of the residence and near the AC unit. A receptacle must also be located near the heating unit in the attic. Arc-fault breakers are required for all bedroom circuits.
9. Metal boxes (equipment ground wire) must be connected to the ceiling box, outlet, switches and box.
10. Storage areas and attic must have at least one (1) light with a switch at the entrance of the attic.

11. **IMPORTANT!** The Building Code requires that in dwelling and dwelling units, smoke detectors shall be hard wired into an AC electrical power source and shall be equipped with a monitored battery backup in all new construction. Each bedroom and each hallway leading to the bedroom shall have a smoke detector that is wired in with all other smoke detectors so that if one activates they all activate. A monitored battery power source shall be permitted in existing construction.
12. Use romex connectors on the breaker box, recessed fan, recessed light fixtures and any metal that does not have a romex clamp. Use bushings on nipples where the wire comes through the wall into the breaker box.
13. Not over eight (8) outlets (receptacles and lights) on a 15 amp circuit.
14. **RUNNING WIRE FROM THE MAIN PANEL TO ANOTHER PANEL (BREAKER BOX)** Wire must be in electrical conduit or in cable form. If you use conduit, pull in an equipment ground wire. (Two hot wires, one neutral and one equipment) If you use cable, a three conductor cable with a ground is required. Example: 4/3 with ground.
15. **A BREAKER BOX (sub-panel) IS NOT ALLOWED IN A CLOSET!** Breaker boxes cannot be located in closets or in bathrooms.
16. Conduit risers through the roof must be 2" rigid metal conduit. The distance from the roof to the weatherhead should be a minimum of 18" and a maximum of 42".
17. An outside main disconnect is required for ALL new services.
18. No service can be smaller than 100 amp.
19. A new service requires a 5/8"X8' copper ground rod.
20. All romex run on the outside walls must be in conduit or thin wall tubing.
21. **NO SERVICE ENTRANCE CABLE (SEU)** or any other cable is allowed for services.
22. Owners cannot do their own work on commercial or rental property. The ordinance required a licensed and bonded electrical contractor to take out the permit and do the work.
23. Kitchen counter tops are required to have a GFI receptacle spaced so that no point along the wall line is more than 24" from a receptacle. Any counter space wider than 12" must have a receptacle.
24. Bedroom receptacles must be protected by arc-fault circuit interrupters (arc-fault breakers in the electrical panel).
25. No aluminum wiring is allowed on the house side of any new residential meter.

CITY OF NEDERLAND  
STANDARD CURB DETAIL



SECTION A-A