



# City of Portland, Oregon - Bureau of Development Services

1900 SW Fourth Avenue • Portland, Oregon 97201 • 503-823-7300 • www.portlandoregon.gov/bds



## Deferred Submittal Requirements and Application

### Applicants will provide:

- A copy of this application
- Three (3) sets of plans
- One (1) set of calculations
- Two (2) sets of product information
- Drawings and calculations must be stamped and signed by an Engineer registered in Oregon and approved by the Architect/Engineer of record for the building.
- Permit fee (paid at time of submittal)
- If the DFS includes exterior elements, plan views and elevations identifying the location(s) as approved by the Architect and Engineer of Record must be submitted.
- One (1) copy of your main building permit approved plans (NOTE: Approved plans do not need to be submitted if your project has a development liaison assigned)

### Contractor submittal information:

Contact name DOUG DILLAVON

Address P.O. BOX 1692

City LAKE OSWEGO State OR Zip Code 97035

Phone 971 998 6982 E-mail \_\_\_\_\_

Value of deferred submittal \_\_\_\_\_ Issued main building permit # 13110409 RS

Description/Scope of work FIRE SPRINKLER SYSTEM

### Fees

Deferred submittal (DFS) fees are collected in addition to the standard building review fee paid on the main building permit. DFS fees cover the cost of the additional processing and review time associated with the design build element.

The DFS fee for processing and reviewing deferred plan submittals is 10 percent of the building permit fee calculated using the value of the particular deferred portion of the project.,

Minimum fee: Residential, one and two family dwelling ... \$123 for DFS with valuation of less than or equal to \$222,000

Commercial and all other projects ..... \$307 for DFS with valuation of less than or equal to \$680,000

The Bureau of Development Services (BDS) fee schedule is also available on the BDS web site at [www.portlandoregon.gov/bds](http://www.portlandoregon.gov/bds) | select the Fees tab.

### Helpful Information

Bureau of Development Services  
1900 SW 4th Avenue, Portland, OR 97201

#### Submit your plans to:

Development Services Center (DSC), First Floor,  
Tuesday - Friday:  
8:00 am - 12:00 pm  
Closed Mondays

#### Important Telephone Numbers

BDS main number ..... 503-823-7300

DSC automated information line ..... 503-823-7310

Building code information ..... 503-823-1456

BDS 24 hour inspection request line ..... 503-823-7000

Residential information for  
one and two family dwellings..... 503-823-7388

City of Portland TTY ..... 503-823-6868

### DEFERRED SUBMITTAL REQUIREMENTS AND APPLICATION

Hoodland Plumbing Inc  
 42320 SE Erickson RD CCB#148104  
 Sandy Ore. 97055

FIRE SPRINKLER CALCULATION

Combination system

JOB ADDRESS 3415 SW 57th

Main to meter. PIPE \_\_\_\_\_ FOOTAGE \_\_\_\_\_ FLOW RATE \_\_\_\_\_ =

1. Water pressure in street 100
2. Arbitrarily select pipe size 1 1/2
3. Deduct meter loss 1" meter 3 PSI
4. Deduct head loss for elevation  
 (30 ft x 0.434) 13.02

w/s

5. Friction loss in feet  
1 1/2 pipe 380 ft  
 \_\_\_\_\_ valves \_\_\_\_\_ ft  
 \_\_\_\_\_ elbows \_\_\_\_\_ ft  
 \_\_\_\_\_ tee \_\_\_\_\_ ft  
 Total 380 ft X flow rate .06 = 22.80

House

Friction loss in feet  
1 1/2 pipe 90' ft  
~~0~~ valves \_\_\_\_\_ ft  
4 elbows 16 ft  
3 tee 3 ft  
 Total 109 ft X flow rate .06 = 6.54

Friction loss in feet  
1" pipe 32' ft  
~~0~~ valves \_\_\_\_\_ ft  
~~0~~ elbows \_\_\_\_\_ ft  
3 tee 3 ft  
 Total 35' ft X flow rate .32 = 11.20

Friction loss in feet  
 \_\_\_\_\_ pipe \_\_\_\_\_ ft  
 \_\_\_\_\_ valves \_\_\_\_\_ ft  
 \_\_\_\_\_ elbows \_\_\_\_\_ ft  
 \_\_\_\_\_ tee \_\_\_\_\_ ft  
 Total \_\_\_\_\_ ft X flow rate \_\_\_\_\_ = \_\_\_\_\_

Friction loss in feet  
 \_\_\_\_\_ pipe \_\_\_\_\_ ft  
 \_\_\_\_\_ valves \_\_\_\_\_ ft  
 \_\_\_\_\_ elbows \_\_\_\_\_ ft  
 \_\_\_\_\_ tee \_\_\_\_\_ ft  
 TOTAL 56.56

6. Take the flow rate number from total PSI

PSI 100  
 Minus flow rate 56.56  
 Total 43.44 pressure remaining

Type of head RFC49  
 Max coverage 16 x 16  
 Number of heads installed 39  
 Two most demanding heads GREAT ROOM

Kent Blasidell cell 503-260-9968 TYPE OF PIPE Pex COMBO

13-110449-DFS-01-RS

# Reliable®

## Model RFC43 (SIN RA0612) Model RFC49 (SIN RA0616) Flat Concealed Residential Sprinklers

Bulletin 006 Rev.D

**A Concealed Residential Sprinkler engineered for a minimum design density of 0.05 gpm/ft<sup>2</sup> with low GPM requirements.**

### Features

1. Very low water flow requirements.
2. ½" (13mm) Total adjustment.
3. Thread-On/Thread-Off or Push-On/Thread Off cover attachment option.
4. Smooth aesthetic ceiling profile.
5. Available in brass, chrome and black plated or painted finishes.

### Listings & Approval

1. Listed by Underwriters Laboratories, and certified by UL for Canada (cULus)
2. NYC MEA 258-93-E

### UL Listing Categories

Residential Automatic Sprinklers

### UL Guide Number

VKKW

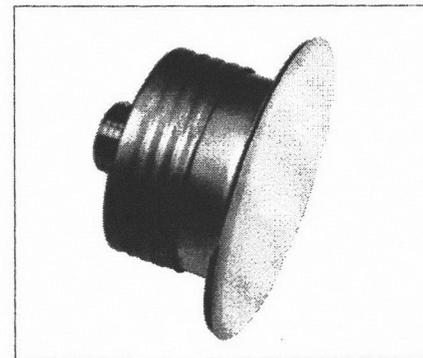
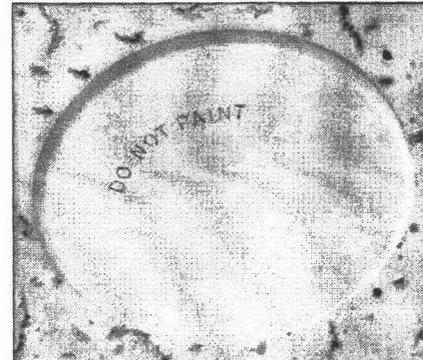
### Product Description

Model RFC43 and RFC49 Concealed Residential Sprinklers are fast response residential fusible solder link automatic sprinklers. Residential sprinklers differ from standard sprinklers primarily in their response time and water distribution patterns.

Model RFC43 and RFC49 sprinklers discharge water in a hemispherical pattern below the sprinkler deflector. Residential distribution patterns are higher and generally contain a finer droplet size than standard sprinkler patterns.

The combination of speed of operation and high discharge pattern required for residential sprinklers has demonstrated, in fire testing, an ability for controlling residential fires, and thereby providing significant evacuation time for occupants.

The RFC43 and RFC49 Sprinklers provide the best form of fire protection by combining an attractive appearance and ½" (13mm) of cover adjustment for ease of installation. The small diameter cover plate is easily and positively attached and blends into the ceiling, concealing the most dependable fire protection available, an automatic sprinkler system.



The RFC43 and RFC49 are UL Listed Residential Sprinklers to be installed in the residential portions of any occupancy in accordance with NFPA 13, 13R, & 13D.

The RFC43 and RFC49 can reduce the need for precise cutting of drop nipples. The threaded cover plate assembly can be adjusted without tools to fit accurately against the ceiling. The fire protection system need not be shut down to adjust or remove the cover plate assembly.

### Application and Installation

The RFC43 and RFC49, for residential installations, use a 165°F (74°C) fusible solder link in a tuning fork style sprinkler frame with a drop-down deflector. This assembly is recessed into the ceiling and concealed by a flat cover plate. The cover plate is attached to the skirt, using 135°F (57°C) ordinary temperature classification solder. When the ceiling temperature rises, the solder holding the cover plate releases the cover allowing the deflector to drop into position and

**The Reliable Automatic Sprinkler Co., Inc., 103 Fairview Park Drive, Elmsford, New York 10523**

## Maintenance

Model RFC43 and RFC49 Concealed Sprinklers should be inspected quarterly and the sprinkler system maintained in accordance with NFPA 25. Do not clean sprinklers with soap and water, ammonia or any other cleaning fluids. Remove dust by using a soft brush or gentle vacuuming. Remove any sprinkler cover plate assembly which has been painted (other than factory applied) or damaged in any way. A stock of spare sprinklers should be maintained to allow quick replacement of damaged or operated sprinklers. Prior to installation, sprinklers should be maintained in the original cartons and packaging until used to minimize the potential for damage to sprinklers that would cause improper operation or non-operation.

## Model RFC43 and RFC49 Residential Concealed Sprinkler Specification

Sprinklers shall be cULus Listed low flow residential concealed sprinklers with drop-down deflector and adjustable flat cover plate engineered for a minimum design density of 0.05 gpm/ft<sup>2</sup>. Sprinkler frame and deflector shall be of bronze frame construction having a 1/2" NPT thread. Thermal element shall consist of an approved black-painted beryllium-nickel fusible solder link with symmetric lever mechanism, maintaining a Teflon-coated Belleville spring washer and machined brass cap water seal assembly containing no plastic parts. Sprinkler K-factor shall be nominal 4.3 (62.4), having a 7/16" orifice. Temperature rating shall be Ordinary 165°F (74°C); cover plate temperature rating to be

135°F (57°C). Cover plate assembly shall consist of a brass cover plate and copper alloy retainer flange allowing a 1/2" cover plate adjustment. Any secure engagement between the cover plate and the cup will assure that the drop-down deflector is properly located below the ceiling. A plastic protective cap shall be provided and factory installed inside the sprinkler cup to protect the drop-down sprinkler deflector from damage, which could occur during construction before the cover plate is installed. Standard cover finish: [Chrome] [White] [Specialty - specify]. Residential concealed sprinklers shall be Reliable Model RFC43, SIN RA0612 (Bulletin 006) or Model RFC49, SIN RA0616 (Bulletin 006).

## Ordering Information Specify:

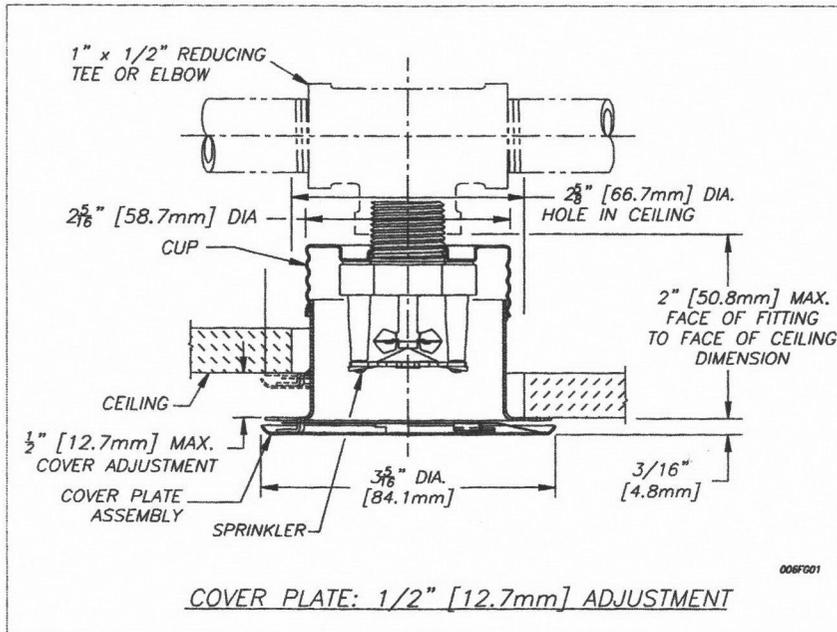
1. Sprinkler Model
2. Cover Plate Finish
3. Thread-On or Push-On Feature

## Cover Plate Finishes<sup>(1)</sup>

Standard Finishes
Chrome
White
Special Application Finishes
Bright Brass
Black Plating
Black Paint
Off White
Satin Chrome

<sup>(1)</sup> Other colors and finishes available. Consult factory for details.

**Note:** Paint or any other coatings applied over the factory finish will void all approvals and warranties.



exposing the sprinkler inside to ceiling temperature. The subsequent operation of the solder link opens the waterway and causes the deflector to drop into position to distribute the discharging water in a hemispherical pattern below the sprinkler deflector. Any adjustment of thread engagement between the cover plate and cup will assure that the drop-down deflector is properly located below the ceiling. The residential distribution pattern contains a finer droplet size than a standard sprinkler, and the pattern produces significantly higher wall wetting.

After a 2 5/8 inch diameter hole is cut in the ceiling, the sprinkler is to be installed with the Model FC Wrench. When installing a sprinkler, the wrench is first positioned into the sprinkler/cup assembly and around the hexagonal body of the sprinkler frame. The Wrench must bottom out against the cup in order to ensure proper, safe installation. The sprinkler is then tightened into the pipe fitting. When inserting or removing the wrench from the sprinkler/cup assembly, care

should be taken to prevent damage to the sprinkler. DO NOT WRENCH ON ANY OTHER PART OF THE SPRINKLER/CUP ASSEMBLY. MODEL RFC43 AND RFC49 CONCEALED SPRINKLERS MUST BE INSTALLED ONLY WITH 135°F RATED COVERS.

Cover assemblies provide up to 1/2" (13mm) of adjustment. Turn the cover clockwise until the flange is in contact with the ceiling. For the push-on/thread-off option, the cover assembly is pushed onto the cup and final adjustment is made by turning the cover clockwise until the skirt flange makes full contact with the ceiling. Cover removal requires turning in the counter-clockwise direction.

In ceilings that have a plenum space above the sprinkler, the plenum space may have neutral or negative pressurization but must not be positively pressurized. Inspect all sprinklers after installation to ensure that the gap between the cover plate and ceiling and the 4 slots in the cup are all open and free from any air flow impediment.

### Temperature Rating

Sprinkler	Cover Plate	Max. Ambient Temp.
165°F/74°C	135°F/57°C	100°F/38°C

### Installation Data: RFC43 (SIN RA0612)

Thread Size inch (mm)	K Factor	Sprinkler Spacing ft. (m)	Maximum Distance to Wall ft. (m)	Minimum Distance between sprinklers, ft. (m)	Minimum Required Sprinkler Discharge	
					Flow gpm (Lpm)	Press. psi (bar)
1/2" (15mm)	4.3	12 x 12 (3.6x3.6)	6 (1.83)	8 (2.43)	12 (45)	7.8 (0.54)
1/2" (15mm)	4.3	14 x 14 (4.3x4.3)	7 (2.13)	8 (2.43)	13 (49)	9.1 (0.63)
1/2" (15mm)	4.3	16 x 16 (4.9x4.9)	8 (2.43)	8 (2.43)	13 (49)	9.1 (0.63)
1/2" (15mm)	4.3	18 x 18 (5.5x5.5)	9 (2.74)	8 (2.43)	18 (68)	17.5 (1.21)
1/2" (15mm)	4.3	20 x 20 (6.0x6.0)	10 (3.05)	8 (2.43)	21 (79)	23.8 (1.64)

Note: 1 bar = 100 Kpa

### Installation Data: RFC49 (RA0616)

Thread Size inch (mm)	K Factor	Sprinkler Spacing ft. (m)	Maximum Distance to Wall ft. (m)	Minimum Distance between sprinklers, ft. (m)	Minimum Required Sprinkler Discharge	
					Flow gpm (Lpm)	Press. psi (bar)
1/2" (15mm)	4.9	12 x 12 (3.6x3.6)	6 (1.83)	8 (2.43)	13 (49)	7.0 (0.48)
1/2" (15mm)	4.9	14 x 14 (4.3x4.3)	7 (2.13)	8 (2.43)	13 (49)	7.0 (0.48)
1/2" (15mm)	4.9	16 x 16 (4.9x4.9)	8 (2.43)	8 (2.43)	13 (49)	7.0 (0.48)
1/2" (15mm)	4.9	18 x 18 (5.5x5.5)	9 (2.74)	8 (2.43)	17 (64.3)	12.0 (0.83)
1/2" (15mm)	4.9	20 x 20 (6.0x6.0)	10 (3.05)	8 (2.43)	20 (75.7)	16.7 (1.14)

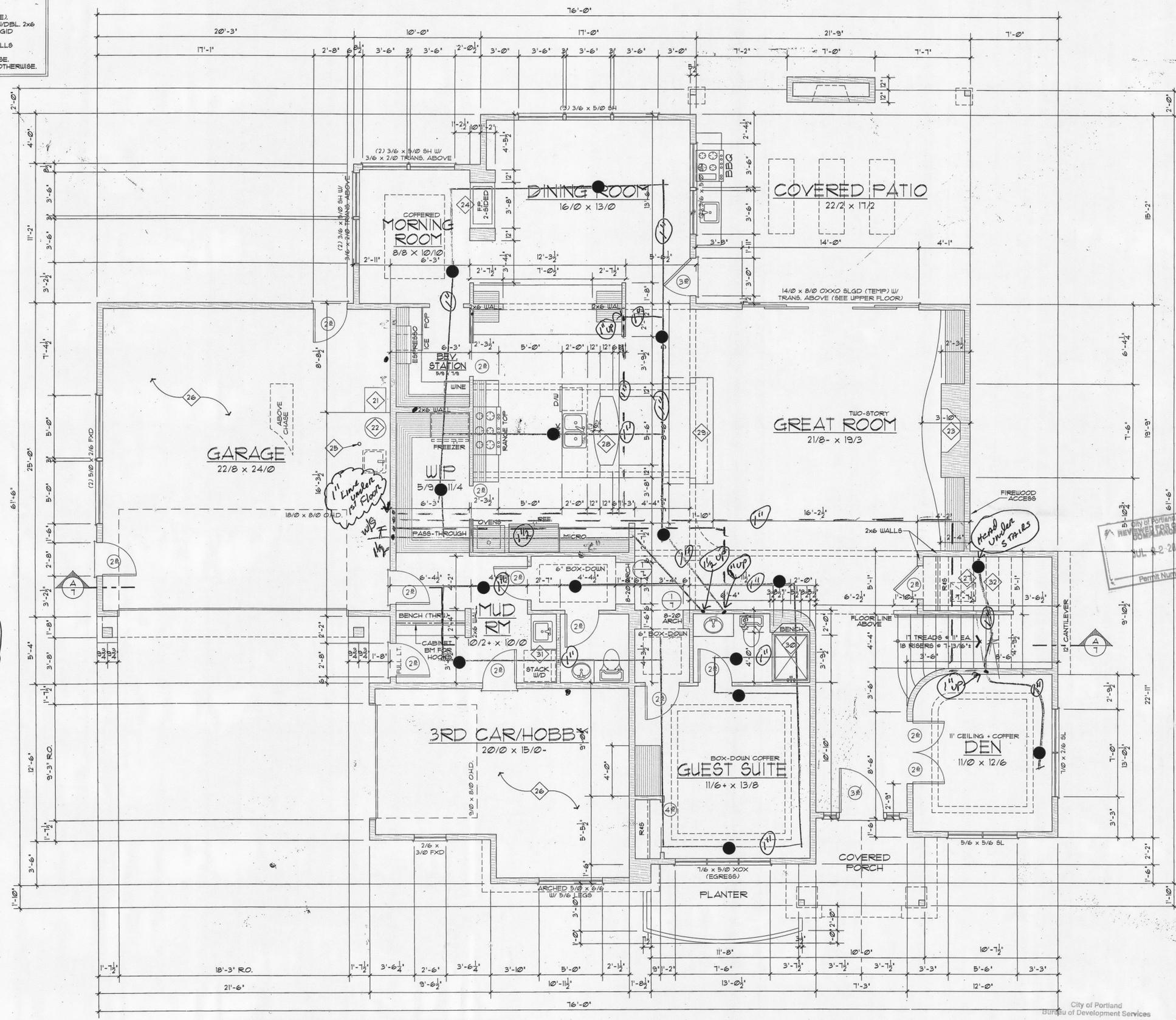
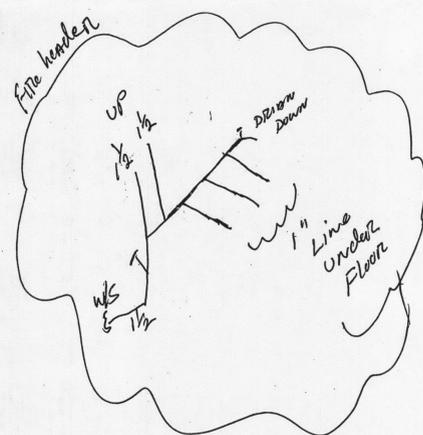
Note: 1 bar = 100 Kpa

**FOR SLOPED CEILING APPLICATIONS SEE RASCO BULLETIN 035.**

**FLOOR PLAN NOTES:**

- INDICATES INTERIOR BEARING WALLS.
- PROVIDE FULL BEARING, MINIMUM, AT BEAM SUPPORTS (UNLESS NOTED OTHERWISE).
- PROVIDE AT ALL EXTERIOR DOOR AND WINDOW HEADERS A MINIMUM 4X12 DFP W/DBL 2X6 TOP PLATES AND BLOCKING AT BOTTOM (UNLESS NOTED OTHERWISE). INSTALL RIGID INSULATION IN CAVITY.
- PROVIDE 2X6 STUDS AT 16" O.C. WITH R-21 BATT INSULATION AT ALL EXTERIOR WALLS (EXCEPT AT GARAGE OR UNLESS NOTED OTHERWISE).
- PROVIDE 2X4 STUDS AT 16" O.C. AT ALL INTERIOR WALLS UNLESS NOTED OTHERWISE.
- ALL WINDOWS AND GLASS DOORS TO BE VINYL 6X4H CLASS 40 UNLESS NOTED OTHERWISE.

- MAIN FLOOR PLAN KEYNOTES:**
- INSTALL MINIMUM 90% (AFUE) EFFICIENT GAS FURNACE WITH BACKDRAFT DAMPER. PREPARE SYSTEM FOR FUTURE AIR CONDITIONING.
  - GAS WATER HEATER WITH BACKDRAFT DAMPER. PROVIDE R-4 INSULATION AROUND WATER PIPES IN UNHEATED SPACES.
  - FIREPLACE: INSTALL 36" PREFABRICATED GAS DIRECT VENT (ZERO CLEARANCE), UL LISTED METAL FIREPLACE - REFER TO MANUF. SPECS.
  - FIREPLACE: INSTALL SEE-THRU GAS FIREPLACE. VERIFY OPENING SIZE ON SITE & REFER TO MANUF. SPECS.
  - EMBED 54" LONG 3" DIAMETER STEEL PIPE, 18" INTO 12" DIAMETER x 24" CONCRETE FOOTING. FILL PIPE WITH CONCRETE.
  - APPLY 1/2" GYPSUM BOARD TO ALL WALLS AND CEILING IN GARAGE. USE (2) LAYERS 5/8" TYPE 'X' ON GARAGE CEILING WHERE LIVING SPACE ABOVE. FINISH GARAGE WALLS AND CEILING.
  - PROVIDE MIN. 18"x24" CRAWL SPACE ACCESS. LOCATION TO BE VERIFIED BY SUPERVISOR.
  - LOWERED EATING BAR W/ WOOD TOP. BRING PLUMBING FOR ISLAND UP FROM FLOOR INTO BOTTOM OF CABINETS.
  - ENTERTAINING BAR W/ 2X6 HALF-WALL AND SUPPORT LEGS - HT. TO MATCH KITCHEN COUNTERTOPS.
  - INSTALL CLEAR FRAMELESS TEMPERED SLIDING OR SWINGING GLASS DOOR AT 48"x36" MUD-SET TILE SHOWER. SEE SITE SUPERVISOR FOR ADD'L INFO.
  - INSTALL RECESSED WASHER/DRYER HOOKUP IF APPLICABLE.
  - APPLY 1/2" GYPSUM BOARD TO UNDER SIDE OF STAIRS.



City of Portland  
 Bureau of Development Services  
 REVIEWED FOR CODE COMPLIANCE  
 JUL 12 2013  
 Permit Number

MAIN FLOOR PLAN- DESIGN



STREET OF DREAMS '12

MAIN LEVEL	2284 SQ.FT.
UPPER LEVEL	2148 SQ.FT.
TOTAL	4432 SQ.FT.
2 CAR GARAGE	578 SQ.FT.
3RD CAR/HOBBY	289 SQ.FT.
COVERED PORCH	63 SQ.FT.
COVERED REAR PATIO	374 SQ.FT.
GARAGE LEFT	

City of Portland  
 Bureau of Development Services  
 JUL 17 2013  
 Reviewed for Code Compliance with the  
 NFPA 13D Standard  
 for Residential Sprinkler Systems

PAHLISCH HOMES INC.

63088 N.E. 18TH STREET, SUITE 100, BEND, OR 97701 (541) 385-6762 (541) 385-6742 www.pahlischhomes.com

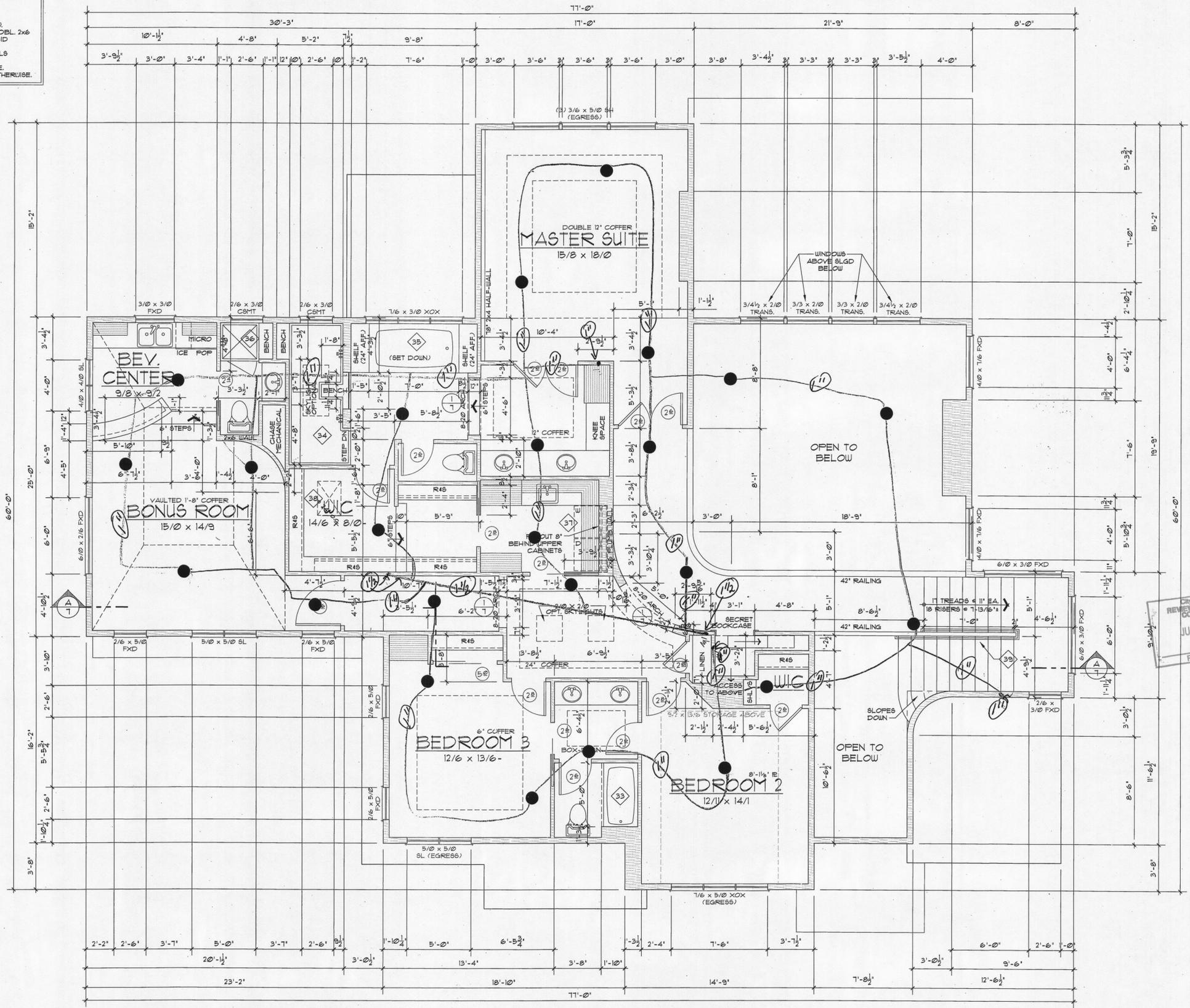
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- FLOOR PLAN NOTES:**
- INDICATES INTERIOR BEARING WALLS.
  - PROVIDE FULL BEARING, MINIMUM, AT BEAM SUPPORTS (UNLESS NOTED OTHERWISE).
  - PROVIDE AT ALL EXTERIOR DOOR AND WINDOW HEADERS A MINIMUM 4x12 D.F.2 W/D.B.L. 2x6 TOP PLATES AND BLOCKING AT BOTTOM (UNLESS NOTED OTHERWISE). INSTALL RIGID INSULATION IN CAVITY.
  - PROVIDE 2x6 STUDS AT 16" O.C. WITH R-21 BATT INSULATION AT ALL EXTERIOR WALLS (EXCEPT AT GARAGE OR UNLESS NOTED OTHERWISE).
  - PROVIDE 2x4 STUDS AT 16" O.C. AT ALL INTERIOR WALLS UNLESS NOTED OTHERWISE.
  - ALL WINDOWS AND GLASS DOORS TO BE VINYL SASH CL. 155.40 UNLESS NOTED OTHERWISE.

- UPPER FLOOR PLAN KEYNOTES:**
- INSTALL STANDARD 32"x66" FIBERGLASS TUB WITH SHOWER.
  - CUSTOM MID-SET TILE SHOWER W/ STEP-DOWN. SEE SITE SUPERVISOR FOR ADD'L INFO.
  - INSTALL STANDARD 36"x12" FIBERGLASS SOAKER TUB.
  - INSTALL CLEAR FRAMELESS TEMPERED SWINGING GLASS DOOR AT 36"x36" FIBERGLASS SHOWER PAN.
  - INSTALL RECESSED WASHER/DRYER HOOKUP IF APPLICABLE. WASHER TO BE ON THE LEFT.
  - PROVIDE 22"x34" ATTIC ACCESS W/ INSULATED "LID". PROVIDE INSULATION Baffle AROUND OPENING. LOCATION TO BE VERIFIED BY SUPERVISOR.
  - 34" HIGH CONTINUOUS TRADITIONAL HANDRAIL MOUNTED ON BRASS PLATED RAIL BRACKETS ON WALL. RETURN ENDS TO WALL OR NEWEL POST.



City of Portland  
 REVIEWED FOR CODE  
 COMPLIANCE  
 JUL 22 2013  
 Permit Number

UPPER FLOOR PLAN- DESIGN

1/4"=1'-0"

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MAIN LEVEL	2284 SQ.FT.
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