

NEW
MESH

Taxlot Selection | Map Detail | **GARTH 2.9.2**

Aerial Photo Year: 2007 True-Color | 1: 67' | Change ID | Taxlot State-id

Boundaries | Environment | Places/LURs | Code Overlays | Transit/TSP | PDC

Scale 1"=67' | X:7,637,227 Y:689,301 | 9:56 AM 6/28/2012



MECHANICAL PERMIT APPLICATION

City of Portland, Oregon - Bureau of Development Services

1900 SW 4th Avenue, Portland, Oregon 97201 • 503-823-7363 • TTY 503-823-6868 • www.portlandoregon.gov/bds

Type of work

New construction Addition/alteration/replacement

Demolition Other:

Category of construction

1 & 2 family dwelling Commercial/industrial Accessory building

Multifamily Master builder Other:

Job site information and location

Job no.: 5036 Job address: 2544 NW Upshur St.

City/State/ZIP: Portland 97210

Suite/bldg./apt. no.: Project name: Upshur TI

Cross street/directions to job site:

Subdivision: Lot no. Tax map/parcel no.

Description of work (example: upstairs bath fan/dryer exhaust)

1 7.5 T RTU - ductwork / gas piping

Reference RS / Combination Permit no.

Property owner **Tenant**

Name:

Address:

City/State/ZIP:

Phone: FAX:

Owner installation: This installation is being made on property that I own, which is not intended for sale, lease, rent, or exchange.

Owner signature: Date:

Contractor **Subcontractor**

Business name: HVAC INC

Address: 5188 SE International way

City/State/ZIP: Milwaukie OR 97222

Phone: 503 462 4822 FAX: 503 462 6555

Lic. no. CCB lic. no. 50897

Authorized signature: *Jody Deffen*

Print name: Jody Deffen Date: 6/28/12

Applicant **Contact Person**

Business name: HVAC INC

Contact name: Jody Deffen

Address: Same as above

City/State/ZIP: Same as above

Phone: FAX:

E-mail:

Commercial Fee* Schedule - Use Checklist

Mechanical permit fees* are based on the value of the work performed. Indicate the value (rounded to the nearest dollar of all mechanical materials, equipment, labor, overhead and profit.

Value: \$ 19,500-

Residential Equipment / Systems Fees*

For special information use checklist

Description	Qty.	Fee	Total
Heating / cooling			
Air conditioner (site plan required)		\$ 23	
Furnace / burner including duct work / vent / liner		\$ 48	
Heat pump (site plan required)		\$ 45	
Air handling unit		\$ 23	
Hydronic hot water system		\$ 28	
Residential boiler (radiator or hydronic) includes piping		\$ 28	
Unit heaters (fuel type, not electric) in-wall, in-duct, suspended, etc.		\$ 23	
Vent for appliance other than furnace		\$ 19	
Alteration of existing HVAC system		\$ 28	

Other fuel appliances

Decorative gas fireplace		\$ 23	
Flue vent for water heater or gas fireplace		\$ 19	
Wood / pellet stove		\$ 50	
Gas or wood fireplace / insert		\$ 50	
Chimney / liner / flue / vent		\$ 19	
Other:		\$ 28	

Environmental exhaust and ventilation

Range hood / other kitchen equipment		\$ 12	
Clothes dryer exhaust		\$ 12	
Single-duct exhaust (bathrooms, toilet compartments, utility rooms)		\$ 12	
Attic / crawl space fans		\$ 12	
Other:		\$ 28	

Gas fuel piping

\$13 for the first four, \$2.38 for each additional. Please indicate number of fuel gas piping outlets below:

Furnace, etc.			
Gas heat pump			
Wall / suspended / unit heater			
Water heater / boiler			
Fireplace			
Range			
Barbecue			
Clothes dryer			
Other:			

Other appliances

Including oil tanks, gas and diesel generators, gas and electric kilns, gas appliances / equipment not included above		\$ 28	
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Mechanical permit fees

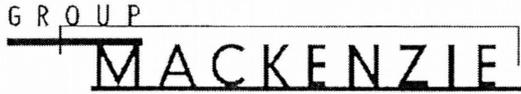
	Subtotal	
	Minimum permit fee (\$70)	
	Commercial plan review (60% of permit fee)	
	State surcharge (12% of permit fee)	
	TOTAL PERMIT FEE	

* Fee methodology set by Tri-County Building Industry Service Board

This permit application expires if a permit is not obtained within 180 days after it has been accepted as complete

RS Permit/No Fees Due

Contractor information can be faxed to 503-823-7693.



1515 SE Water Ave, Suite 100 | Portland, OR 97214
Tel: 503.224.9560 Net: www.groupmackenzie.com Fax: 503.228.1285

Structural Calculations

Rooftop Mechanical Unit

For Building Located At:
2544 NW Upshur St.

Portland, OR

GROUP MACKENZIE
PROJECT NUMBER 2110013.03
Date: 06/22/2012

Mechanical Unit Details

A - B

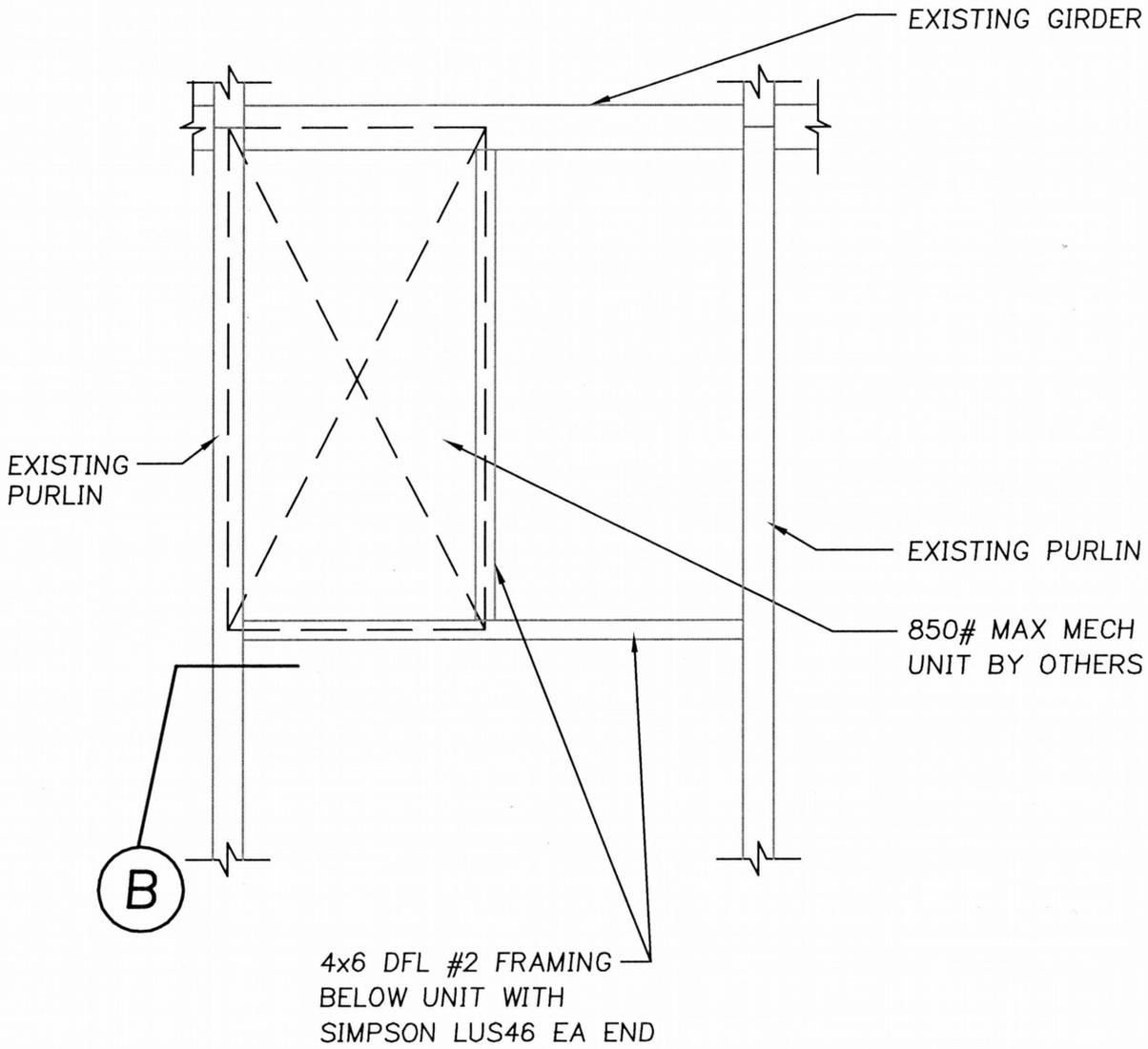
Mechanical Unit Calculations

MU-1 - MU-7

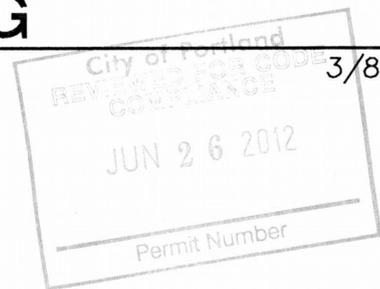


EXPIRES: 12/31/12





A MECH UNIT FRAMING
850# MAX UNIT



3/8" = 1'-0"

MU-01

GROUP
MACKENZIE

Portland OR 503.224.9580
Vancouver WA 360.695.7879
Seattle WA 206.749.9993

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PROJECT:
RTU FRAMING
2544 NW UPSHUR ST.

ORIGINAL SHEET TITLE:

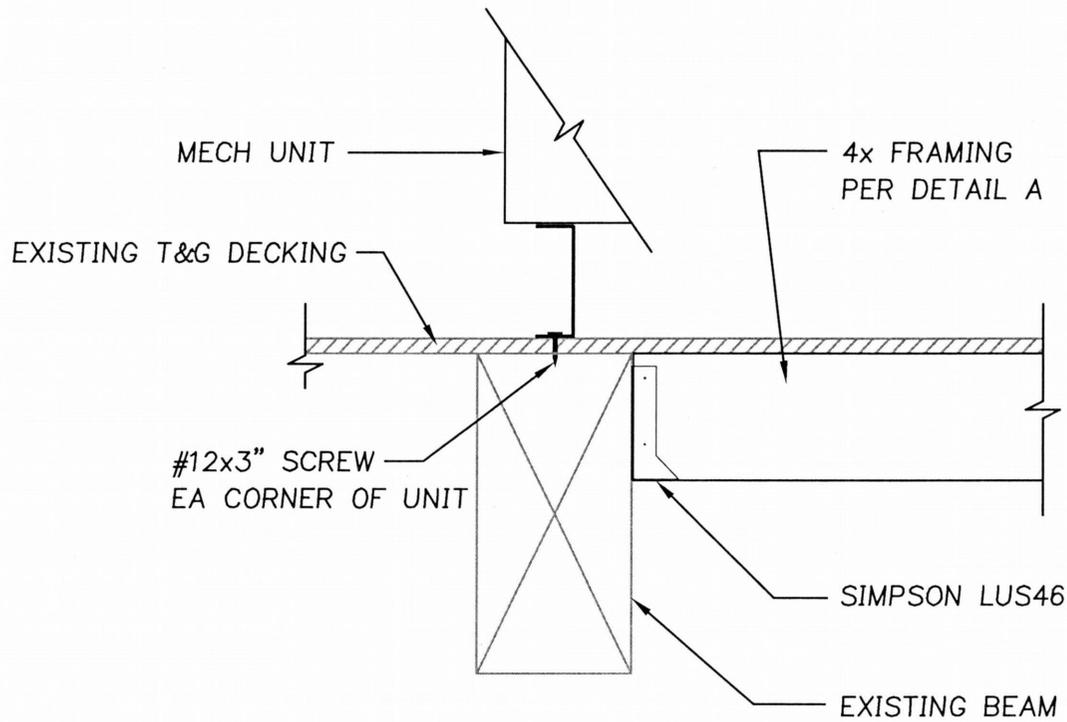
DATE: 6/22/2012
DRAWN BY: CRR
CHECKED BY: NKH

JOB NO:
2110013.03

ORIGINAL SHEET:

SUPPLEMENTAL DRAWING:

A



B MECH FRAMING AT BEAM

City of Portland 1 1/2"=1'-0"
 REVIEWED FOR CODE
 COMPLIANCE
 JUN 26 2012
 Permit Number

MU-02

GROUP
MACKENZIE
 Portland OR 503.224.9580 Vancouver WA 360.895.7879 Seattle WA 206.749.9993

PROJECT:
 RTU FRAMING
 2544 NW UPSHUR ST.

ORIGINAL SHEET TITLE:

DATE: 6/12/2012
 DRAWN BY: CRR
 CHECKED BY: NKH

JOB NO:
 2110013.03

ORIGINAL SHEET:

SUPPLEMENTAL DRAWING:

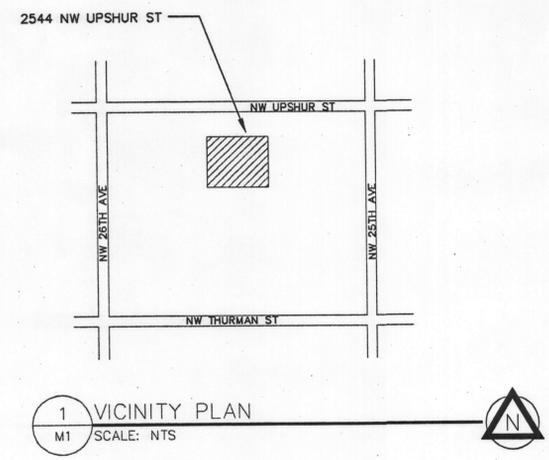
B

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GENERAL NOTES

- DO NOT SCALE DRAWINGS. FIELD VERIFY DIMENSIONS PRIOR TO FABRICATION AND INSTALLATION OF COMPONENTS.
- DRAWINGS ARE DIAGRAMMATIC ONLY. ACTUAL SIZE AND LOCATION OF EQUIPMENT, DUCT WORK AND PIPING MAY VARY DUE TO MANUFACTURER OR FIELD CONDITIONS. COORDINATE INSTALLATION OF MECHANICAL SYSTEMS WITH OTHER TRADES TO PROVIDE ADEQUATE CLEARANCE AND ACCESSIBILITY AS REQUIRED BY MANUFACTURERS.
- INSTALLATION SHALL COMPLY WITH THE GOVERNING CODES AND REGULATIONS.
- CONCEAL ALL DUCTWORK INSIDE WALLS AND/OR ABOVE CEILINGS, UNO.
- ALL SHARP RADIUS (R<1.5) ELBOWS SHALL BE FURNISHED WITH TURNING VANES.
- DUCTWORK SHALL BE FABRICATED AND INSTALLED PER SMACNA STANDARDS. SUPPORT DUCT WORK PER OMSC 603.10. SEAL DUCTWORK PER RS-18, 1/2" SP TO 1" SP SEAL TRANSVERSE JOINTS.
- ALL SUPPLY, RETURN AND OUTSIDE AIR DUCTS SHALL BE INSULATED AND SEALED PER 2010 OREGON ENERGY EFFICIENCY STANDARDS, SECTION 503.2.7. INTERIOR DUCTS SHALL BE INSULATED ABOVE THE BUILDING BARRIER.
- INSTALL VOLUME DAMPERS IN ALL DUCT RUNS TO FINAL SUPPLY TERMINALS.
- ALL ROUND DUCTS SHALL BE RIGID, EXCEPT THE LAST 5'0" WHICH MAY BE FLEX ABOVE A T-BAR CEILING.
- ALL MOTORIZED OUTDOOR AND EXHAUST DAMPERS SHALL HAVE A MAXIMUM LEAK RATE OF 4 CFM PER SQFT @ 1" WG PER AMCA 500-1998, EXCEPT PACKAGED EQUIPMENT SHALL BE 20 CFM/FT @ 1" WG.
- ALL BRANCH DUCTS FEEDING INDIVIDUAL DIFFUSERS SHALL HAVE DAMPERS AT TAKE-OFFS FOR BALANCING. PROVIDE ACCESS PANELS TO DAMPERS.
- LINE FIRST 10 FT OF SUPPLY, RETURN AND EXHAUST DUCTS FOR SOUND.
- SMOKE DETECTORS SHALL BE INSTALLED IN RETURN DROP AND SHALL DEACTIVATE THE EQUIPMENT UPON SENSING SMOKE. INSTALL SMOKE DETECTOR IN SUPPLY AIR DUCT ONLY WHERE REQUIRED BY LOCAL AUTHORITY. SMOKE DETECTORS REQUIRED IN ALL SYSTEMS >2000 CFM. OMSC 606.2. ALL AIR MOVING SYSTEMS >2000 CFM SHALL BE EQUIPPED WITH AUTOMATIC SHUTOFF PER OMSC 606.2.1
- FIRE SMOKE DETECTOR INDICATOR SHALL BE INSTALLED WHERE SHOWN. INSTALL INNOVAIR SSK451 WITH PS24LO AND PS12/24LW. REQUIRED WHERE CFM >2000 AND NO BUILDING ALARM SYSTEM (B.A.S.) IS PRESENT. (OMSC 606.4.1)
- INSTALL HVAC UNITS ON LEVEL CURBS. SECURE ALL UNITS >400 LBS WITH SEISMIC RESTRAINT. SEE PLANS FOR DETAILS.
- ALL OUT SIDE AIR INTAKES SHALL BE A MINIMUM OF 10 FT FROM EXHAUST FANS OR PLUMBING VENTS.
- PROVIDE PROTECTIVE GUARDS FOR ALL HVAC UNITS LOCATED WITHIN 10 FT OF A ROOF EDGE OR LEDGE GREATER THAN 30 INCHES FROM THE FLOOR.
- OUTDOOR AIR SUPPLY AND EXHAUST SYSTEMS SHALL HAVE MOTORIZED DAMPERS THAT CLOSE WHEN THE SYSTEM IS SHUT OFF, DURING BUILDING WARM-UP, COOL DOWN AND/OR SETBACK.
- ALL INDIVIDUAL HVAC SYSTEMS SHALL HAVE (1) HONEYWELL VISION PRO 8000 PROGRAMMABLE THERMOSTAT UNLESS NOTIFIED OTHERWISE. MOUNT STAT AT 48" A.F.F., EXCEPTIONS:
19A) FOR TEMP HEAT UNITS (SHELL BUILDINGS) USE HONEYWELL T810D1136;
19B) FOR UNIT HEATERS (FREEZE PROTECTION ONLY) USE TEMP STAT MODEL T541. SET AT 41 DEG F AND MOUNTED NO LOWER THAN THE UNIT HEATER.
- ELECTRICAL CONTRACTORS SHALL COORDINATE ELECTRICAL REQUIREMENTS WITH THE MOST RECENT REVISION OF THESE PLANS AND THE SUBMITTALS PRIOR TO CONSTRUCTION. HVAC INC SHALL NOT BE RESPONSIBLE FOR ELECTRICAL CONTRACTORS FAILURE TO REVIEW AND CLARIFY ANY DISCREPANCIES PRIOR TO ANY CONSTRUCTION.



HVAC LEGEND		ABBREVIATIONS	
	SUPPLY AIR	ACC	ACCESSORIES
	RETURN AIR	AFF	ABOVE FINISHED FLOOR
	OUTSIDE AIR	AHU	AIR HANDLING UNIT
	TERMINAL	AMB	AMBIENT
	UNIT CONTROLLED	AMP	AMPERE
	ROOM THERMOSTAT OR SENSOR	BTU	BRITISH THERMAL UNITS
	EQUIPMENT NUMBER	CAP	CAPACITY
	EQUIPMENT SYMBOL	CD	CEILING DIFFUSER
	RECTANGULAR DUCT	CFH	CUBIC FEET PER HOUR
	ROUND DUCT	CFM	CUBIC FEET PER MINUTE
	RECTANGULAR DUCT RISER	COND	CONDENSER
	ROUND DUCT RISER	CR	CEILING RETURN DIFFUSER
	RECTANGULAR DUCT DROP	CTG	CEILING TRANSFER DIFFUSER
	ROUND DUCT DROP	CU	CONDENSING UNIT
	DUCT HEATER	DH	DUCT HEATER
	DUCT DIAMETER DOWN	DN	DOWN
	EXISTING FAN	E	EXISTING
	EXHAUST FAN ELEVATION	EF	EXHAUST FAN
	FAN COIL UNIT	FC	FAN COIL UNIT
	FIRE DAMPER	FD	FIRE DAMPER
	FEET PER MINUTE	FPM	FEET PER MINUTE
	FEET PER SECOND	FPS	FEET PER SECOND
	FIRE SMOKE DAMPER	FSD	FIRE SMOKE DAMPER
	HORSE POWER HEATER	HP	HORSE POWER
	GAUGE	HTR	HEATER
	GALLONS PER HOUR	GA	GAUGE
	GALLONS PER HOUR	GAL	GALLONS PER HOUR
	GALLONS PER HOUR	GPH	GALLONS PER HOUR
	POUNDS	LB	POUNDS
	LINEAR SLOT DIFFUSER	LS	LINEAR RETURN DIFFUSER
	LINEAR RETURN DIFFUSER	LR	LINEAR RETURN DIFFUSER
	BTU PER HOUR (THOUSAND)	MBH	BTU PER HOUR (THOUSAND)
	MOTORIZED DAMPER MANUFACTURER MOUNT	MD	MOTORIZED DAMPER
	MOTORIZED DAMPER MOUNT	MFG	MOUNT
	NEW	MT	MOUNT
	NEW	N	NEW
	OPPOSED BLADE DAMPER ON CENTER OPERATING OUTSIDE AIR	OBD	OPPOSED BLADE DAMPER
	OPPOSED BLADE DAMPER ON CENTER OPERATING OUTSIDE AIR	OC	ON CENTER OPERATING OUTSIDE AIR
	PHASE BELOW WINDOW HEAT PUMP	OSA	OUTSIDE AIR
	RETURN AIR HUMIDITY REFRIGERANT LIQUID LINE REFRIGERANT SUCTION LINE	PH	PHASE
	RETURN AIR HUMIDITY REFRIGERANT LIQUID LINE REFRIGERANT SUCTION LINE	PTAC	BELOW WINDOW HEAT PUMP
	RETURN AIR HUMIDITY REFRIGERANT LIQUID LINE REFRIGERANT SUCTION LINE	PSI	POUNDS PER SQUARE INCH
	SMOKE DETECTOR	RA	RETURN AIR
	SUPPLY AIR	RH	HUMIDITY
	SIDEWALL EXHAUST GRILLE	RL	REFRIGERANT LIQUID LINE
	SIDEWALL SUPPLY REGISTER	RS	REFRIGERANT SUCTION LINE
	STATIC PRESSURE SQUARE FOOT	SA	SUPPLY AIR
	SOFT	SWE	SIDEWALL EXHAUST GRILLE
	SURFACE RETURN GRILLE	SWS	SIDEWALL SUPPLY REGISTER
	SURFACE RETURN GRILLE	SWR	STATIC PRESSURE SQUARE FOOT
	SURFACE RETURN GRILLE	SWT	SOFT
	THROUGH TIE IN POINT	SURF	SURFACE RETURN GRILLE
	THROUGH TIE IN POINT	SWR	SIDEWALL RETURN GRILLE
	THROUGH TIE IN POINT	SWT	SIDEWALL TRANSFER GRILLE
	THERMOSTAT TYPICAL	THRU	THROUGH
	THERMOSTAT TYPICAL	TIE	TIE IN POINT
	VARIABLE VOLUME VOLTS	TSTAT	THERMOSTAT TYPICAL
	UNDER CUT DOOR 1"	TYP	TYPICAL
	WEIGHT	VAV	VARIABLE VOLUME
	WEIGHT	V	VOLTS
	WEIGHT	WT	WEIGHT

G/R/D SCHEDULE				
MARK-#	MFG	MODEL	FACE	NOTES
CD1	TITUS	PCS	22/22	2
	PRICE	PDC		
CD2	TITUS	MCD	VARIES	1, 2, 3
	PRICE	SMCD		
CR1	TITUS	PAR	22/22	2
	PRICE	PDDR		
CR2	TITUS	50F	VARIES	2
	PRICE	530		
SWS	TITUS	300RS	VARIES	2, 3
	PRICE	520S		
SWR	TITUS	350RL	VARIES	2, 3
	PRICE	530		
CE1	TITUS	PAR	22/22	2
	PRICE	PDDR		
CE2	TITUS	50F	VARIES	2
	PRICE	530		
SWE	TITUS	350RL	VARIES	2, 3
	PRICE	530		
SWT	TITUS	350RL	VARIES	2, 3
	PRICE	530		
LD	TITUS	TBDI-80	VARIES	4
	PRICE	TBDI		
LD-1	TITUS	ML-39	VARIES	4
	PRICE	SDS		

NOTES: 1) MINIMUM SIZE 8X8
2) MINIMUM SIZE 12X12 FOR FIRE DAMPER
3) W/ OBD
4) TWO- 1" SLOTS

EQUIPMENT SCHEDULE														
MARK	MFG	MODEL	TONNAGE	HEATING CAPACITY (MBTU)	COOLING CAPACITY (MBTU)	EER (SEER)	SUPPLY CFM	ESP	OSA CFM MIN	MCA/MOCP	MOTOR HP	VOLTAGE /PHASE	OPR WT (LB)	NOTES
RTU-1	CARRIER	48TCD008A2A5	7.5	125	90.1	11.0	2960	0.5	343	41.1/50	2	208/3	850	1, 3, 4, 5

NOTES: 1) FACTORY CURB
2) FACTORY ISOLATION CURB
3) ECONOMIZER
4) AIR SMOKE DETECTOR
5) BAROMETRIC RELIEF
6) POWER EXHAUST
7) CO2 SENSOR
8) WIRELESS REMOTE THERMOSTAT

HEATING CAPACITY= INPUT
SEE GENERAL NOTE #20

OSA VENTILATION SCHEDULE														
RM ID	ROOM NAME	AREA (SQ FT) (Az)	OCC LOAD (P/1000 SQ FT)	FIXTURES	CALCULATED OCC. LOAD (Pz)	OSA REQ'T		BREATHING ZONE OSA REQ'D (Vbz)	ZONE EFFECT. (Ez)	ZONE OSA (CFM) (Voz)	SUPPLY AIR (CFM) (Ppz)	RETURN AIR (CFM)	EXH AIR (CFM)	SYSTEM
						CFM/FIXT (CFM/P)	CFM/FT2 (Ro)							
103	OPEN OFFICE	675	5	---	4	5	0.06	61	0.8	76	880	804	---	RTU-1
---	OPEN OFFICE	2475	5	---	13	5	0.06	214	0.8	267	2080	1813	---	RTU-1
TOTAL		3150			17			275		343	2960	2617		

DESIGN OSA INTAKE (Vot): 343

City of Portland
REVISED PERMITS
JUN 26 2012
Permit Number

RELEASED FOR PERMIT
PROJ MGR *[Signature]*

SHEET TITLE: HVAC SCHEDULES

REVISION: N/A

FILE NAME: 5036 UPSHUR

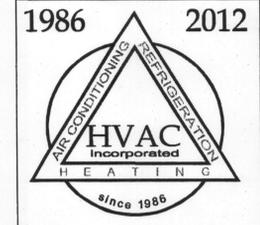
PROJECT MANAGER: D. GARDNER

DESIGNER: R. RUSSELL

DATE: 18 JUNE 2012

SHEET #: M1 OF 2

UPSHUR
TENANT IMPROVEMENT
2544 NW UPSHUR ST
PORTLAND, OREGON



1986 2012

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WA HVACI **125J6

12-155994-017

