2003 CBECS

Building Characteristics and Consumption and Expenditures for All Buildings (Including Malls)

Public Use Files

This document contains all the file layouts and format codes for the 2003 Commercial Buildings Energy Consumption Survey (CBECS) building characteristics and consumption and expenditures public use files.

The files themselves can be downloaded in CSV (comma separated values) files from the CBECS web site: http://www.eia.doe.gov/emeu/cbecs. The files contain building-level records for 5,215 cases. Mall buildings comprise 395 of these cases. For the mall buildings, a limited number of variables were collected, which is the reason behind the many blank fields in the files for the mall cases. The information for malls is limited to: Census region and division; square footage; year constructed; climate zone; number of establishments; the presence of heating, cooling, or water heating in the mall and which energy source (electricity, natural gas, fuel oil, or district steam) is used to perform the end use; and consumption for the four energy sources just mentioned.

The file layouts give, for each variable on a file: the variable name, a description, the position on the file and the corresponding format. To determine what each value of a variable means, find its corresponding format on the alphabetical list of the format codes found following the file layouts (ignoring the first words "VALUE" or "PICTURE" for each).

Layout for File 1: General Building Information and Energy End Uses

PUBLID Building identifier	Variable Name	Variable Description	Pos	ition	<u>Format</u>
REGIONS Census region 7- 7 SREGIONIV. CENDIV8 Census division 9- 9 SCENDIV. SQFTCB Square footage category 11- 20 325 25 SCENDIV. YERONC8 Year of construction category 22- 23 SSCETCX. PBA8 Principal building activity 28- 29 SPEA. BUSSEDB Pleatricity used 31- 31 SYESNO. RGUSEDB Natural gas used 33- 35 SYESNO. FRUSEDB Bottled gas/LPG/propane used 37- 37 SYESNO. FUNDEDB District hat water used 41- 41 SYESNO. STUSEDB District hat water used 41- 41 SYESNO. CLIMATES Climate zone (30-year average) 43- 43 SCLIMATE. FUNDESBB District hat water used 41- 41 SYESNO. CLIMATES Freestanding building 45- 45- SYESNO. RFERESTBB Fr	PUBID8	Building identifier	1-	5	
CENDIVS Census division 9- SCENDIV. SQFTC8 Square footage 11- 20 33 SQFTCX. SQFTC8 Square footage category 22- 23 SQFTCX. YRCONC8 Year of construction category 25- 26 SYEARCAT. PBA8 Principal building activity 28- 29 SYESNO. EUSEDB Electricity used 33- 33 33 SYESNO. FKUSED8 Fuel oil/diesel/kerosene used 35- 35 SYESNO. FKUSED8 District tot water used 39- 39 SYESNO. STUSED8 District tot water used 41- 41 SYESNO. STUSED8 District tot water used 41- 41 SYESNO. STUSED8 District tot water used 41- 41 SYESNO. STUSED8 District steam used 41- 41 SYESNO. STUSED8 District steam used 41- 41 SYESNO. STUSED8 District steam used <t< td=""><td></td><td></td><td></td><td></td><td>SREGION.</td></t<>					SREGION.
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SOFTCR Square footage category 22- 23 \$SOFTCX. YRCONC8 Year of construction category 25- 26 \$SPEAR.T. PBA8 Principal building activity 28- 29 \$PEAR. ELUSED8 Electricity used 31- 31 \$YESNO. NGUSED8 Natural gas used 35- 35 \$YESNO. FKUSED8 Fuel oil/diesel/kerosene used 35- 35 \$YESNO. STUSED8 District steam used 39- 39 \$YESNO. STUSED8 District steam used 41- 41 \$YESNO. STUSED8 District thot water used 41- 41 \$YESNO. CLIMATE8 Climate zone (30-year average) 43- 43 \$CLIMATE CLIMATE8 Climate zone (30-year average) 44- 41 \$YESNO. MICANSA Wall construction material 45- 45 \$YES. MLCNSA Mall construction material 47- 48 \$WINCNS. RECNSR Roof construction material 50- 51 \$RFCNS. GLSSECB Epecent exterior glass 52- 55 \$SESCO. <t< td=""><td></td><td>Square footage</td><td>11-</td><td>20</td><td></td></t<>		Square footage	11-	20	
YEARCONCE	SOFTC8	Square footage category	22-		\$SOFTCX.
PBA8			25-	26	
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CLIMATE8	HWUSED8	District hot water used	41-	41	\$YESNO.
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MONCON8 Month ready for occupancy in 2003 83-84 \$MONTH. RENOV8 Renovations since 1980 86-86 \$YESNO. RENADD8 Addition or annex 88-88 \$YESNO. RENRDC8 Reduction of floorspace 90-90 \$YESNO. RENCOS8 Cosmetic improvements 92-92 \$YESNO. RENEXT8 Exterior replacement 94-94 \$YESNO. RENINT8 Interior wall re-configuration 96-96 \$YESNO. RENINT8 HVAC equipment upgrade 98-98 \$YESNO. RENIGT8 Lighting upgrade 100-100 \$YESNO. RENIGT8 Lighting upgrade 102-102 \$YESNO. RENIGT8 Plumbing system upgrade 104-104 \$YESNO. RENIUS8 Insulation upgrade 106-106 \$YESNO. RENOTH8 Other renovation 108-108 \$YESNO. GOVOWN8 Government owned 110-110 \$YESNO. GOVTYP8 Type of government 112-112 \$GOVTYP. OWNOC8 Owner occupies space <td>YRCON8</td> <td>Year of construction</td> <td>78-</td> <td>81</td> <td>YEAR4CH.</td>	YRCON8	Year of construction	78-	81	YEAR4CH.
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RENCOS8 Cosmetic improvements 92- 92 \$YESNO. RENEXT8 Exterior replacement 94- 94 \$YESNO. RENINT8 Interior wall re-configuration 96- 96 \$YESNO. RENHVC8 HVAC equipment upgrade 98- 98 \$YESNO. RENLGT8 Lighting upgrade 100- 100 \$YESNO. RENWIN8 Window replacement 102- 102 \$YESNO. RENVIN8 Plumbing system upgrade 104- 104 \$YESNO. RENINS8 Insulation upgrade 106- 106 \$YESNO. RENOTH8 Other renovation 108- 108 \$YESNO. GOVOWN8 Government owned 110- 110 \$YESNO. GOVTYP8 Type of government 112- 112 \$GOVTYP. OWNER8 Owner 114- 115 \$OWNER. OWNOCC8 Owner occupies space 117- 117 \$YESNO. NOCCAT Number of businesses 119- 123 MISS5CH. NOCCATS Months in use past 12 months 128- 129 MISS2CH. POPNAC8 Space vacant 3 mont	RENADD8	Addition or annex	88-	88	\$YESNO.
RENEXT8 Exterior replacement 94-94 \$YESNO. RENINT8 Interior wall re-configuration 96-96 \$YESNO. RENHVC8 HVAC equipment upgrade 98-98 \$YESNO. RENLGT8 Lighting upgrade 100-100 \$YESNO. RENWIN8 Window replacement 102-102 \$YESNO. RENPLB8 Plumbing system upgrade 104-104 \$YESNO. RENINS8 Insulation upgrade 106-106 \$YESNO. RENOTH8 Other renovation 108-108 \$YESNO. GOVOWN8 Government owned 110-110 \$YESNO. GOVTYP8 Type of government 112-112 \$GOVTYP. OWNER8 Owner 114-115 \$OWNER. OWNOCC8 Owner occupies space 117-117 \$YESNO. NOCCAT8 Number of businesses category 125-126 \$NOCCAT. MONUSE8 Months in use past 12 months 128-129 MISS2CH. PORVAC8 Space vacant 3 months in row 131-131 \$YESNO. OPEN248 Open during wee	RENRDC8	Reduction of floorspace	90-	90	\$YESNO.
RENINT8 Interior wall re-configuration 96- 96 \$YESNO. RENHVC8 HVAC equipment upgrade 98- 98 \$YESNO. RENLGT8 Lighting upgrade 100- 100 \$YESNO. RENWIN8 Window replacement 102- 102 \$YESNO. RENPLB8 Plumbing system upgrade 104- 104 \$YESNO. RENINS8 Insulation upgrade 106- 106 \$YESNO. RENOTH8 Other renovation 108- 108 \$YESNO. GOVOWN8 Government owned 110- 110 \$YESNO. GOVTYP8 Type of government 112- 112 \$GOVTYP. OWNER8 Owner 114- 115 \$OWNER. OWNOCC8 Owner occupies space 117- 117 \$YESNO. NOCC8 Number of businesses 119- 123 MISS5CH. NOCCAT8 Number of businesses category 125- 126 \$NOCCAT. MONUSE8 Months in use past 12 months 128- 129 MISS2CH. PORVAC8 Space vacant 3 months in row 131- 131 \$YESNO. OPEN248 Open 24 hours a day 133- 133 \$YESNO. OPEN248 Open during week 135- 135 \$DAYSOPN. OPNWE8 Open on weekend 137- 137 \$YESNO.	RENCOS8	Cosmetic improvements	92-	92	\$YESNO.
RENHVC8 HVAC equipment upgrade 98 - 98 \$YESNO. RENLGT8 Lighting upgrade 100 - 100 \$YESNO. RENWIN8 Window replacement 102 - 102 \$YESNO. RENPLB8 Plumbing system upgrade 104 - 104 \$YESNO. RENINS8 Insulation upgrade 106 - 106 \$YESNO. RENOTH8 Other renovation 108 - 108 \$YESNO. GOVOWN8 Government owned 110 - 110 \$YESNO. GOVTYP8 Type of government 112 - 112 \$GOVTYP. OWNER8 Owner 114 - 115 \$OWNER. OWNOCC8 Owner occupies space 117 - 117 \$YESNO. NOCC8 Number of businesses 119 - 123 MISS5CH. NOCCAT8 Number of businesses category 125 - 126 \$NOCCAT. MONUSE8 Months in use past 12 months 128 - 129 MISS2CH. PORVAC8 Space vacant 3 months in row 131 - 131 \$YESNO. OPEN248 Open 24 hours a day 133 - 133 \$YESNO. OPNWE8	RENEXT8	Exterior replacement	94-	94	\$YESNO.
RENLGT8 Lighting upgrade 100- 100 \$YESNO. RENWIN8 Window replacement 102- 102 \$YESNO. RENPLB8 Plumbing system upgrade 104- 104 \$YESNO. RENINS8 Insulation upgrade 106- 106 \$YESNO. RENOTH8 Other renovation 108- 108 \$YESNO. GOVOWN8 Government owned 110- 110 \$YESNO. GOVTYP8 Type of government 112- 112 \$GOVTYP. OWNER8 Owner 114- 115 \$OWNER. OWNOCC8 Owner occupies space 117- 117 \$YESNO. NOCC8 Number of businesses 119- 123 MISS5CH. NOCCAT8 Number of businesses category 125- 126 \$NOCCAT. MONUSE8 Months in use past 12 months 128- 129 MISS2CH. PORVAC8 Space vacant 3 months in row 131- 131 \$YESNO. OPEN248 Open 24 hours a day 133- 133 \$YESNO. OPNWE8 Open during week 135- 135 \$DAYSOPN. OPNWE8 Open on weekend 137- 137 \$YESNO.	RENINT8	Interior wall re-configuration	96-	96	\$YESNO.
RENWIN8 Window replacement 102- 102 \$YESNO. RENPLB8 Plumbing system upgrade 104- 104 \$YESNO. RENINS8 Insulation upgrade 106- 106 \$YESNO. RENOTH8 Other renovation 108- 108 \$YESNO. GOVOWN8 Government owned 110- 110 \$YESNO. GOVTYP8 Type of government 112- 112 \$GOVTYP. OWNER8 Owner 114- 115 \$OWNER. OWNOCC8 Owner occupies space 117- 117 \$YESNO. NOCC8 Number of businesses 119- 123 MISS5CH. NOCCAT8 Number of businesses category 125- 126 \$NOCCAT. MONUSE8 Months in use past 12 months 128- 129 MISS2CH. PORVAC8 Space vacant 3 months in row 131- 131 \$YESNO. OPEN248 Open 24 hours a day 133- 133 \$YESNO. OPNMF8 Open during week 135- 135 \$DAYSOPN. OPNWE8 Open on weekend 137- 137 \$YESNO.	RENHVC8	HVAC equipment upgrade	98-	98	\$YESNO.
RENPLB8 Plumbing system upgrade 104-104 \$YESNO. RENINS8 Insulation upgrade 106-106 \$YESNO. RENOTH8 Other renovation 108-108 \$YESNO. GOVOWN8 Government owned 110-110 \$YESNO. GOVTYP8 Type of government 112-112 \$GOVTYP. OWNER8 Owner 114-115 \$OWNER. OWNOCC8 Owner occupies space 117-117 \$YESNO. NOCC8 Number of businesses 119-123 MISS5CH. NOCCAT8 Number of businesses category 125-126 \$NOCCAT. MONUSE8 Months in use past 12 months 128-129 MISS2CH. PORVAC8 Space vacant 3 months in row 131-131 \$YESNO. OPEN248 Open 24 hours a day 133-133 \$YESNO. OPNMF8 Open during week 135-135 \$DAYSOPN. OPNWE8 Open on weekend 137-137 \$YESNO.	RENLGT8	Lighting upgrade	100-	100	\$YESNO.
RENPLB8 Plumbing system upgrade 104-104 \$YESNO. RENINS8 Insulation upgrade 106-106 \$YESNO. RENOTH8 Other renovation 108-108 \$YESNO. GOVOWN8 Government owned 110-110 \$YESNO. GOVTYP8 Type of government 112-112 \$GOVTYP. OWNER8 Owner 114-115 \$OWNER. OWNOCC8 Owner occupies space 117-117 \$YESNO. NOCC8 Number of businesses 119-123 MISS5CH. NOCCAT8 Number of businesses category 125-126 \$NOCCAT. MONUSE8 Months in use past 12 months 128-129 MISS2CH. PORVAC8 Space vacant 3 months in row 131-131 \$YESNO. OPEN248 Open 24 hours a day 133-133 \$YESNO. OPNMF8 Open during week 135-135 \$DAYSOPN. OPNWE8 Open on weekend 137-137 \$YESNO.	RENWIN8	Window replacement	102-	102	\$YESNO.
RENOTH8 Other renovation 108-108 \$YESNO. GOVOWN8 Government owned 110-110 \$YESNO. GOVTYP8 Type of government 112-112 \$GOVTYP. OWNER8 Owner 114-115 \$OWNER. OWNOCC8 Owner occupies space 117-117 \$YESNO. NOCC8 Number of businesses 119-123 MISS5CH. NOCCAT8 Number of businesses category 125-126 \$NOCCAT. MONUSE8 Months in use past 12 months 128-129 MISS2CH. PORVAC8 Space vacant 3 months in row 131-131 \$YESNO. OPEN248 Open 24 hours a day 133-133 \$YESNO. OPNMF8 Open during week 135-135 \$DAYSOPN. OPNWE8 Open on weekend 137-137 \$YESNO.	RENPLB8		104-	104	\$YESNO.
GOVOWN8 Government owned 110- 110 \$YESNO. GOVTYP8 Type of government 112- 112 \$GOVTYP. OWNER8 Owner 114- 115 \$OWNER. OWNOCC8 Owner occupies space 117- 117 \$YESNO. NOCC8 Number of businesses 119- 123 MISS5CH. NOCCAT8 Number of businesses category 125- 126 \$NOCCAT. MONUSE8 Months in use past 12 months 128- 129 MISS2CH. PORVAC8 Space vacant 3 months in row 131- 131 \$YESNO. OPEN248 Open 24 hours a day 133- 133 \$YESNO. OPNMF8 Open during week 135- 135 \$DAYSOPN. OPNWE8 Open on weekend 137- 137 \$YESNO.	RENINS8	Insulation upgrade	106-	106	\$YESNO.
GOVTYP8 Type of government 112- 112 \$GOVTYP. OWNER8 Owner 114- 115 \$OWNER. OWNOCC8 Owner occupies space 117- 117 \$YESNO. NOCC8 Number of businesses 119- 123 MISS5CH. NOCCAT8 Number of businesses category 125- 126 \$NOCCAT. MONUSE8 Months in use past 12 months 128- 129 MISS2CH. PORVAC8 Space vacant 3 months in row 131- 131 \$YESNO. OPEN248 Open 24 hours a day 133- 133 \$YESNO. OPNMF8 Open during week 135- 135 \$DAYSOPN. OPNWE8 Open on weekend 137- 137 \$YESNO.	RENOTH8	Other renovation	108-	108	\$YESNO.
OWNER8 Owner OWNOCC8 Owner occupies space 117- 117 \$YESNO. NOCC8 Number of businesses 119- 123 MISS5CH. NOCCAT8 Number of businesses category 125- 126 \$NOCCAT. MONUSE8 Months in use past 12 months 128- 129 MISS2CH. PORVAC8 Space vacant 3 months in row 131- 131 \$YESNO. OPEN248 Open 24 hours a day 133- 133 \$YESNO. OPNMF8 Open during week 135- 135 \$DAYSOPN. OPNWE8 Open on weekend 137- 137 \$YESNO.	GOVOWN8	Government owned	110-	110	\$YESNO.
OWNOCC8 Owner occupies space 117- 117 \$YESNO. NOCC8 Number of businesses 119- 123 MISS5CH. NOCCAT8 Number of businesses category 125- 126 \$NOCCAT. MONUSE8 Months in use past 12 months 128- 129 MISS2CH. PORVAC8 Space vacant 3 months in row 131- 131 \$YESNO. OPEN248 Open 24 hours a day 133- 133 \$YESNO. OPNMF8 Open during week 135- 135 \$DAYSOPN. OPNWE8 Open on weekend 137- 137 \$YESNO.	GOVTYP8	Type of government	112-	112	\$GOVTYP.
NOCC8Number of businesses119- 123MISS5CH.NOCCAT8Number of businesses category125- 126\$NOCCAT.MONUSE8Months in use past 12 months128- 129MISS2CH.PORVAC8Space vacant 3 months in row131- 131\$YESNO.OPEN248Open 24 hours a day133- 133\$YESNO.OPNMF8Open during week135- 135\$DAYSOPN.OPNWE8Open on weekend137- 137\$YESNO.	OWNER8	Owner	114-	115	\$OWNER.
NOCCAT8 Number of businesses category MONUSE8 Months in use past 12 months PORVAC8 Space vacant 3 months in row OPEN248 Open 24 hours a day OPENME8 OPEN OPEN OPEN OPEN OPEN OPEN OPEN OPEN	OWNOCC8	Owner occupies space	117-	117	\$YESNO.
MONUSE8 Months in use past 12 months 128-129 MISS2CH. PORVAC8 Space vacant 3 months in row 131-131 \$YESNO. OPEN248 Open 24 hours a day 133-133 \$YESNO. OPNMF8 Open during week 135-135 \$DAYSOPN. OPNWE8 Open on weekend 137-137 \$YESNO.	NOCC8	Number of businesses	119-	123	MISS5CH.
PORVAC8 Space vacant 3 months in row 131- 131 \$YESNO. OPEN248 Open 24 hours a day 133- 133 \$YESNO. OPNMF8 Open during week 135- 135 \$DAYSOPN. OPNWE8 Open on weekend 137- 137 \$YESNO.	NOCCAT8	Number of businesses category	125-	126	\$NOCCAT.
OPEN248 Open 24 hours a day 133-133 \$YESNO. OPNMF8 Open during week 135-135 \$DAYSOPN. OPNWE8 Open on weekend 137-137 \$YESNO.	MONUSE8	Months in use past 12 months	128-	129	MISS2CH.
OPNMF8 Open during week 135-135 \$DAYSOPN. OPNWE8 Open on weekend 137-137 \$YESNO.	PORVAC8	Space vacant 3 months in row	131-	131	\$YESNO.
OPNWE8 Open on weekend 137-137 \$YESNO.	OPEN248	Open 24 hours a day	133-	133	\$YESNO.
	OPNMF8	Open during week	135-	135	\$DAYSOPN.
WKHRS8 Total weekly operating hours 139- 141 MTSS3CH	OPNWE8	Open on weekend	137-	137	\$YESNO.
Total "conty of creating mounts"	WKHRS8	Total weekly operating hours	139-	141	MISS3CH.

(File 1 continued)

WKHRSC8	Total weekly operating hours category	143- 143	\$HRSCAT.
NWKER8	Number of employees during main shift	145- 150	MISS6CH.
NWKERC8	Number of employees main shift category	152- 153	\$WORKCAT.
HT18	Energy used for main heating	155- 155	\$YESNO.
HT28	Energy used for secondary heating	157- 157	\$YESNO.
COOL8	Energy used for cooling	159- 159	\$YESNO.
WATR8	Energy used for water heating	161- 161	\$YESNO.
COOK8	Energy used for cooking	163- 163	\$YESNO.
MANU8	Energy used for manufacturing	165- 165	\$YESNO.
GENR8	Energy used for electricity generation	167- 167	\$YESNO.
ADJWT8	Final full sample building weight	169- 176	
STRATUM8	Variance stratum	178- 180	
PAIR8	Variance unit	182- 182	

Layout for File 2: Building Activities and Special Measures of Size

PUBID8Building identifier1- 5REGION8Census region7- 7 \$REGION.CENDIV8Census division9- 9 \$CENDIV.
REGION8 Census region 7- 7 \$REGION. CENDIV8 Census division 9- 9 \$CENDIV.
CENDIV8 Census division 9- 9 \$CENDIV.
SOFT8 Square footage 11- 20 MISS10CH
SQFTC8 Square footage category 22- 23 \$SQFTCX.
YRCONC8 Year of construction category 25- 26 \$YEARCAT
PBA8 Principal building activity 28- 29 \$PBA.
ELUSED8 Electricity used 31- 31 \$YESNO.
NGUSED8 Natural gas used 33-33 \$YESNO.
FKUSED8 Fuel oil/diesel/kerosene used 35- 35 \$YESNO.
PRUSED8 Bottled gas/LPG/propane used 37- 37 \$YESNO.
STUSED8 District steam used 39- 39 \$YESNO.
HWUSED8 District hot water used 41- 41 \$YESNO.
ONEACT8 One activity in building 43-43 \$YESNO.
ACT18 First activity in building 45- 46 \$PBAX.
ACT28 Second activity in building 48- 49 \$PBAX.
ACT38 Third activity in building 51- 52 \$PBAX.
ACT1PCT8 Percent used for first activity 54- 56 MISS3CH.
ACT2PCT8 Percent used for second activity 58- 60 MISS3CH.
ACT3PCT8 Percent used for third activity 62- 64 MISS3CH.
PBAPLUS8 More specific building activity 66- 67 \$PBAPLUS
VACANT8 Completely vacant 69- 69 \$YESNO.
RWSEAT8 Religious worship seating capacity 71- 76 MISS6CH.
PBSEAT8 Assembly seating capacity 78-83 MISS6CH.
EDSEAT8 Number of classroom seats 85- 90 MISS6CH.
FDSEAT8 Food service seating capacity 92- 97 MISS6CH.
HCBED8 Licensed bed capacity 99-104 HCBED.
NRSBED8 Licensed bed capacity 106-111 MISS6CH.
LODGRM8 Number of guest rooms 113-118 MISS6CH.
FACIL8 On a multibuilding complex 120-120 \$YESNO.
FEDFAC8 Federal complex 122-122 \$YESNO.
FACACT8 Type of multibuilding complex 124-125 \$FACACT.
MANIND8 Manufacturing industrial complex 127-127 \$YESNO.
PLANT8 Central physical plant on complex 129-129 \$YESNO.
FACDST8 Plant produces district steam 131-131 \$YESNO.
FACDHW8 Plant produces district hot water 133-133 \$YESNO.
FACDCW8 Plant produces district chilled water 135-135 \$YESNO.
FACELC8 Plant produces electricity 137-137 \$YESNO.
BLDPLT8 Central plant in building 139-139 \$YESNO.
ADJWT8 Final full sample building weight 141- 148
STRATUM8 Variance stratum 150- 152
PAIR8 Variance unit 154- 154

Layout for File 3: Heating and Cooling Equipment and Conservation Features

<u>Variable Name</u>	Variable Description	Posi	tion	Format
PUBID8	Building identifier	1-	5	
REGION8	Census region	7-	7	\$REGION.
CENDIV8	Census division	9 –	9	\$CENDIV.
SQFT8	Square footage	11-	20	MISS10CH.
SQFTC8	Square footage category	22-	23	\$SQFTCX.
YRCONC8	Year of construction category	25-	26	\$YEARCAT.
PBA8	Principal building activity	28-	29	\$PBA.
ELUSED8	Electricity used	31-	31	\$YESNO.
NGUSED8	Natural gas used	33-	33	\$YESNO.
FKUSED8	Fuel oil/diesel/kerosene used	35-	35	\$YESNO.
PRUSED8	Bottled gas/LPG/propane used	37-	37	\$YESNO.
STUSED8	District steam used	39-	39	\$YESNO.
HWUSED8	District hot water used	41-	41	\$YESNO.
HEATP8	Percent heated	43-	45	MISS3CH.
HTLS508	Heated to less than 50 degrees	47-	47	\$YESNO.
FURNAC8	Furnaces that heat air directly	49-	49	\$YESNO.
BOILER8	Boilers inside the building	51-	51	\$YESNO.
PKGHT8	Packaged heating units	53-	53	\$YESNO.
SLFCON8	Individual space heaters	55-	55	\$YESNO.
HTPMPH8	Heat pumps for heating	57-	57	\$YESNO.
STHW8	District steam or hot water piped in	59-	59	\$YESNO.
OTHTEQ8	Other heating equipment	61-	61	\$YESNO.
FURNP8	Percent heated by furnace	63-	65	MISS3CH.
BOILP8	Percent heated by boilers	67-	69	MISS3CH.
PKGHP8	Percent heated by packaged heating	71-	73	MISS3CH.
SLFCNP8	Percent heated by indiv space heaters	75-	77	MISS3CH.
HTPHP8	Percent heated by heat pumps	79-	81	MISS3CH.
STHWP8	Percent heated by dist steam/hot water	83-	85	MISS3CH.
OTHTP8	Percent heated by other heating equip	87-	89	MISS3CH.
MAINHT8	Main heating equipment	91-	91	\$HTEQP.
PKGHPS8	Packaged unit heat pump for heating	93-	93	\$YESNO.
SPLHPS8	Split system heat pump for heating	95-	95	\$YESNO.
RMHPS8	Individual room heat pump for heating	97-	97	\$YESNO.
AIRHPT8	Air source heat pump for heating	99-	99	\$YESNO.
GRDHPT8	Ground source heat pump for heating	101-	101	\$YESNO.
WTRHPT8	Water loop heat pump for heating	103-	103	\$YESNO.
NWMNHT8	Main heating replaced since 1990	105-	105	\$YESNO.
RDHTNF8	Heating reduced during 24 hour period	107-	107	\$YESNO.
HWRDHT8	How reduce heating	109-	109	\$HOWRDC.
COOLP8	Percent cooled	111-	113	MISS3CH.
PKGCL8	Packaged air conditioning units	115-	115	\$YESNO.
RCAC8	Residential-type central A/C	117-	117	\$YESNO.
ACWNWL8	Individual room air conditioners	119-	119	\$YESNO.
HTPMPC8	Heat pumps for cooling	121-	121	\$YESNO.
CHWT8	District chilled water piped in	123-	123	\$YESNO.
CHILLR8	Central chillers inside the building	125-	125	\$YESNO.
EVAPCL8	Evaporative or swamp coolers	127-	127	\$YESNO.
OTCLEQ8	Other cooling equipment	129-	129	\$YESNO.
PKGCP8	Percent cooled by packaged A/C	131-	133	MISS3CH.
RCACP8	Percent cooled by central A/C	135-	137	MISS3CH.
ACWNWP8	Percent cooled by individual room A/C	139-	141	MISS3CH.
HTPCP8	Percent cooled by heat pumps	143-	145	MISS3CH.

(File 3 continued)

CHILP8 Percent cooled by central chillers 151- 153 MISS3CH. EVAPP8 Percent cooled by swamp coolers 155- 157 MISS3CH. OTCLP8 Percent cooled by other cooling equip 159- 161 MISS3CH. MAINCL8 Main cooling equipment 163- 164 \$CLEQP. PKGCPS8 Packaged unit heat pump for cooling 166- 166 \$YESNO.
OTCLP8 Percent cooled by other cooling equip 159-161 MISS3CH. MAINCL8 Main cooling equipment 163-164 \$CLEQP.
MAINCL8 Main cooling equipment 163-164 \$CLEQP.
5 1 1
DECCESS Dackaged unit heat numb for gooling 166-166 SYESNO
riderso rachaged unit heat pump for cooring 100-100 \$15500.
SPLCPS8 Split system heat pump for cooling 168-168 \$YESNO.
RMCPS8 Individual room heat pump for cooling 170-170 \$YESNO.
AIRCPT8 Air source heat pump for cooling 172-172 \$YESNO.
GRDCPT8 Ground source heat pump for cooling 174-174 \$YESNO.
WTRCPT8 Water loop heat pump for cooling 176-176 \$YESNO.
NWMNCL8 Main cooling replaced since 1990 178-178 \$YESNO.
RDCLNF8 Cooling reduced during 24 hour period 180-180 \$YESNO.
HWRDCL8 How reduce cooling 182-182 \$HOWRDC.
VAV8 VAV system 184-184 \$YESNO.
ECN8 Economizer cycle 186-186 \$YESNO.
MAINT8 Regular HVAC maintenance 188-188 \$YESNO.
EMCS8 Energy management and control system 190-190 \$YESNO.
ADJWT8 Final full sample building weight 192-199
STRATUM8 Variance stratum 201- 203
PAIR8 Variance unit 205- 205

Layout for File 4: Water Heating, Refrigeration, and Office Equipment; and Special Space Uses

<u>Variable Name</u>	Variable Description	Pos	<u>ition</u>	Format
PUBID8	Building identifier	1-	5	
REGION8	Census region	7-	7	\$REGION.
CENDIV8	Census division	9-	9	\$CENDIV.
SQFT8	Square footage	11-	20	MISS10CH.
SQFTC8	Square footage category	22-	23	\$SQFTCX.
YRCONC8	Year of construction category	25-	26	\$YEARCAT.
PBA8	Principal building activity	28-	29	\$PBA.
ELUSED8	Electricity used	31-	31	\$YESNO.
NGUSED8	Natural gas used	33-	33	\$YESNO.
FKUSED8	Fuel oil/diesel/kerosene used	35-	35	\$YESNO.
PRUSED8	Bottled gas/LPG/propane used	37-	37	\$YESNO.
STUSED8	District steam used	39-	39	\$YESNO.
HWUSED8	District hot water used	41-	41	\$YESNO.
WTHTEQ8	Water heating equipment	43-	43	\$WATREQP.
INSTWT8	Instant hot water	45-	45	\$YESNO.
FDRM8	Commercial food preparation area	47-	47	\$YESNO.
SNACK8	Snack bar	49-	49	\$YESNO.
FASTFD8	Fast food or small restaurant	51-	51	\$YESNO.
CAF8	Cafeteria or large restaurant	53-	53	\$YESNO.
FDPREP8	Food preparation area	55-	55	\$YESNO.
KITCHN8	Small kitchen area	57-	57	\$YESNO.
OTFDRM8	Other food prep area	59-	59	\$YESNO.
HWTRM8	Large amounts of hot water used	61-	61	\$YESNO.
LAUNDR8	Laundry onsite	63-	63	\$LAUND.
MEDEQP8	Medical diagnostic equipment used	65-	65	\$YESNO.
LABEQP8	Laboratory equipment used	67-	67	\$YESNO.
MCHEQP8	Machine equipment used	69-	69	\$YESNO.
POOL8	Indoor pool	71-	71	\$YESNO.
HTPOOL8	Heated indoor pool	73-	73	\$YESNO.
PLSRC8	Energy source used to heat pool	75-	75	\$POOLSRC.
RFGEQP8	Refrigeration equipment used	77-	77	\$YESNO.
RFGWI8	Walk-in refrigeration units	79-	79	\$YESNO.
RFGOP8	Open case refrigeration units	81-	81	\$YESNO.
RFGCL8	Closed case refrigeration units	83-	83	\$YESNO.
RFGRES8	Residential-type refrigerators	85-	85	\$YESNO.
RFGVEN8	Refrigerated vending machines	87-	87	\$YESNO.
RFGWIN8	Number of walk-in refrigeration units	89-	92	MISS4CH.
RFGOPN8	Number of open refrigerated cases		97	MISS4CH.
RFGRSN8	Number of residential refrigerators		102	MISS4CH.
RFGCLN8	Number of closed refrigerated cases	104-	107	MISS4CH.
RFGVNN8	Number of vending machines	109-		MISS4CH.
PCTERM8	Computers used	114-		\$YESNO.
SERVER8	Dedicated servers used	116-	116	\$YESNO.
MNFRM8	Mainframe computer room	118-	118	\$YESNO.
SRVFRM8	Server farm	120-	120	\$YESNO.
TRNGRM8	Computer-based training room	122-		\$YESNO.
STDNRM8	Student or public computer center	124-		\$YESNO.
OTPCRM8	Other computer area	126-		\$YESNO.
PCRMP8	Computer area percent	128-		MISS3CH.
SRVNUM8	Number of servers	132-		MISS8CH.
SRVRC8	Number of servers category	141-		\$PCCAT.
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(File 4 continued)

PCNUM8	Number of computers	144- 151	MISS8CH.
PCTRMC8	Number of computers category	153- 154	\$PCCAT.
FLAT8	Flat screen monitors	156- 156	\$YESNO.
FLATC8	Flat screen monitors category	158- 158	\$FLAT.
PRNTRN8	Number of printers	160- 167	MISS8CH.
PRNTYP8	Type of printers	169- 169	\$PRNTR.
RGSTRN8	Number of cash registers	171- 175	MISS5CH.
COPIER8	Photocopiers	177- 177	\$YESNO.
COPRN8	Number of photocopiers	179- 183	MISS5CH.
FAX8	FAX machines	185- 185	\$YESNO.
RDOFEQ8	Equipment turned off during off hours	187- 187	\$EQPOFF.
ADJWT8	Final full sample building weight	189- 196	
STRATUM8	Variance stratum	198- 200	
PAIR8	Variance unit	202- 202	

Layout for File 5: End Uses of Major Energy Sources; Electricity Generation; and Purchasing of Electricity and Natural Gas

Variable Name	Variable Description	Posi	<u>ition</u>	Format
PUBID8	Building identifier	1-	5	
REGION8	Census region	7-	7	\$REGION.
CENDIV8	Census division	9-	9	\$CENDIV.
SQFT8	Square footage	11-	20	MISS10CH.
SQFTC8	Square footage category	22-	23	\$SQFTCX.
YRCONC8	Year of construction category	25-	26	\$YEARCAT.
PBA8	Principal building activity	28-	29	\$PBA.
ELUSED8	Electricity used	31-	31	\$YESNO.
NGUSED8	Natural gas used	33-	33	\$YESNO.
FKUSED8	Fuel oil/diesel/kerosene used	35-	35	\$YESNO.
PRUSED8	Bottled gas/LPG/propane used	37-	37	\$YESNO.
STUSED8	District steam used	39-	39	\$YESNO.
HWUSED8	District hot water used	41-	41	\$YESNO.
CAPGEN8	Electricity generation capability	43-	43	\$YESNO.
FKTYPE8	Specify fuel oil, diesel, or kerosene	45-	45	\$FKTYP.
ELHT18	Electricity used for main heating	47-	47	\$YESNO.
NGHT18	Natural gas used for main heating	49-	49	\$YESNO.
FKHT18	Fuel oil used for main heating	51-	51	\$YESNO.
PRHT18	Propane used for main heating	53-	53	\$YESNO.
STHT18	District steam used for main heating	55-	55	\$YESNO.
HWHT18	District hot water used for main heating	57-	57	\$YESNO.
ELHT28	Electricity used for secondary heating	59-	59	\$YESNO.
NGHT28	Natural gas used for secondary heating	61-	61	\$YESNO.
FKHT28	Fuel oil used for secondary heating	63-	63	\$YESNO.
PRHT28	Propane used for secondary heating	65-	65	\$YESNO.
STHT28	Dist steam used for secondary heating	67-	67	\$YESNO.
HWHT28	Dist hot water for secondary heating	69-	69	\$YESNO.
ELCOOL8	Electricity used for cooling	71-	71	\$YESNO.
NGCOOL8	Natural gas used for cooling	73-	73	\$YESNO.
FKCOOL8	Fuel oil used for cooling	75-	75	\$YESNO.
PRCOOL8	Propane used for cooling	77-	77	\$YESNO.
STCOOL8	District steam used for cooling	79-	79	\$YESNO.
HWCOOL8	District hot water used for cooling	81-	81	\$YESNO.
ELWATR8	Electricity used for water heating	83-	83	\$YESNO.
NGWATR8	Natural gas used for water heating	85-	85	\$YESNO.
FKWATR8	Fuel oil used for water heating	87-	87	\$YESNO.
PRWATR8	Propane used for water heating	89-	89	\$YESNO.
STWATR8	District steam used for water heating	91-	91	\$YESNO.
HWWATR8	Dist hot water used for water heating	93-	93	\$YESNO.
ELCOOK8	Electricity used for cooking	95-	95	\$YESNO.
NGCOOK8	Natural gas used for cooking	97-	97	\$YESNO.
FKCOOK8	Fuel oil used for cooking	99-	99	\$YESNO.
PRCOOK8	Propane used for cooking	101-	101	\$YESNO.
STCOOK8	District steam used for cooking	103-	103	\$YESNO.
HWCOOK8	District hot water used for cooking	105-	105	\$YESNO.
ELMANU8	Electricity used for manufacturing	107-		\$YESNO.
NGMANU8	Natural gas used for manufacturing	109-		\$YESNO.
FKMANU8	Fuel oil used for manufacturing	111-		\$YESNO.
PRMANU8	Propane used for manufacturing	113-		\$YESNO.
STMANU8	District steam used for manufacturing	115-		\$YESNO.
HWMANU8	Dist hot water used for manufacturing	117-		\$YESNO.

(File 5 continued)

NGGENR8	Natural gas used for elec generation	119- 119	\$YESNO.
FKGENR8	Fuel oil used for electricity generation	121- 121	\$YESNO.
PRGENR8	Propane used for electricity generation	123- 123	\$YESNO.
PHOTVL8	Photovoltaic cells used to generate elec	125- 125	\$YESNO.
FUELCL8	Fuel cells used to generate electricity	127- 127	\$YESNO.
MCROTB8	Microturbines used to generate elec	129- 129	\$YESNO.
GENUSE8	Use of generated electricity	131- 131	\$GENUSE.
COGEN8	Cogeneration system	133- 133	\$YESNO.
GRID8	Deliver electricity to grid	135- 135	\$YESNO.
NGOTH8	Natural gas used for some other use	137- 137	\$YESNO.
FKOTH8	Fuel oil used for some other use	139- 139	\$YESNO.
PROTH8	Propane used for some other use	141- 141	\$YESNO.
STOTH8	District steam used for some other use	143- 143	\$YESNO.
HWOTH8	Dist hot water used for some other use	145- 145	\$YESNO.
ELLOCUT8	Electricity from local utility	147- 147	\$YESNO.
ELNONLU8	Elec from IPP/non-local utility	149- 149	\$YESNO.
ELOTSRC8	Electricity from someone else	151- 151	\$YESNO.
ELLUPCT8	Percent of elec from local utility	153- 155	MISS3CH.
NGLOCUT8	Natural gas from local utility	157- 157	\$YESNO.
NGOTSRC8	Natural gas from non-utility or broker	159- 159	\$YESNO.
NGSRC8	How purchase natural gas	161- 161	\$NGSRC.
ADJWT8	Final full sample building weight	163- 170	
STRATUM8	Variance stratum	172- 174	
PAIR8	Variance unit	176- 176	

Layout for File 6: Minor Energy Sources and End Uses for Minor Energy Sources

Variable Name	Variable Description	Posi	tion	Format
PUBID8	Building identifier	1-	5	
REGION8	Census region	7-	7	\$REGION.
CENDIV8	Census division	9-	9	\$CENDIV.
SQFT8	Square footage	11-	20	MISS10CH.
SQFTC8	Square footage category	22-	23	\$SQFTCX.
YRCONC8	Year of construction category	25-	26	\$YEARCAT.
PBA8	Principal building activity	28-	29	\$PBA.
ELUSED8	Electricity used	31-	31	\$YESNO.
NGUSED8	Natural gas used	33-	33	\$YESNO.
FKUSED8	Fuel oil/diesel/kerosene used	35-	35	\$YESNO.
PRUSED8	Bottled gas/LPG/propane used	37-	37	\$YESNO.
STUSED8	District steam used	39-	39	\$YESNO.
HWUSED8	District hot water used	41-	41	\$YESNO.
CWUSED8	District chilled water used	43-	43	\$YESNO.
WOUSED8	Wood used	45-	45	\$YESNO.
COUSED8	Coal used	47-	47	\$YESNO.
SOUSED8	Solar used	49-	49	\$YESNO.
OTUSED8	Other energy source used	51-	51	\$YESNO.
WOHT18	Wood used for main heating	53-	53	\$YESNO.
COHT18	Coal used for main heating	55-	55	\$YESNO.
SOHT18	Solar used for main heating	57-	57	\$YESNO.
OTHT18	Other source used for main heating	59-	59	\$YESNO.
WOHT28	Wood used for secondary heating	61-	61	\$YESNO.
COHT28	Coal used for secondary heating	63-	63	\$YESNO.
SOHT28	Solar used for secondary heating	65-	65	\$YESNO.
OTHT28	Other source used for secondary heating	67-	67	\$YESNO.
CWCOOL8	District chilled water used for cooling	69-	69	\$YESNO.
OTCOOL8	Other source used for cooling	71-	71	\$YESNO.
WOWATR8	Wood used for water heating	73-	73	\$YESNO.
COWATR8	Coal used for water heating	75-	75	\$YESNO.
SOWATR8	Solar used for water heating	77-	77	\$YESNO.
OTWATR8	Other energy source for water heating	79-	79	\$YESNO.
WOCOOK8	Wood used for cooking	81-	81	\$YESNO.
COCOOK8	Coal used for cooking	83-	83	\$YESNO.
SOCOOK8	Solar used for cooking	85-	85	\$YESNO.
OTCOOK8	Other energy source used for cooking	87-	87	\$YESNO.
WOMANU8	Wood used for manufacturing	89-	89	\$YESNO.
COMANU8	Coal used for manufacturing	91-	91	\$YESNO.
SOMANU8	Solar used for manufacturing	93-	93	\$YESNO.
OTMANU8	Other energy source for manufacturing	95-	95	\$YESNO.
WOGENR8	Wood used for electricity generation	97-	97	\$YESNO.
COGENR8	Coal used for electricity generation	99-	99	\$YESNO.
SOGENR8	Solar used for electricity generation	101-	101	\$YESNO.
OTGENR8	Other energy source for elec generation	103-	103	\$YESNO.
WOOTH8	Wood used for some other use	105-	105	\$YESNO.
COOTH8	Coal used for some other use	107-	107	\$YESNO.
SOOTH8	Solar used for some other use	109-	109	\$YESNO.
OTOTH8	Other energy source for some other use	111-	111	\$YESNO.
PRAMTC8	Bottled gas amount	113-	113	\$PRAMT.
PRUNIT8	Bottled gas units	115-	115	\$PRUNIT.
WOAMT8	Amount wood burned	117-		\$WOAMT.
WOSRC8	How obtain wood	119-	119	\$WOSRC.

(File 6 continued)

WOEXP8	Expenditures for wood	121- 126	MISS6CH.
WOEXPC8	Wood expenditures category	128- 128	\$WODOLS.
ADJWT8	Final full sample building weight	130- 137	
STRATUM8	Variance stratum	139- 141	
PAIR8	Variance unit	143- 143	

Layout for File 7: Lighting Percents, Equipment, and Conservation Features

<u>Variable Name</u>	Variable Description	Posi	tion	<u>Format</u>
PUBID8	Building identifier	1-	5	
REGION8	Census region	7 –	7	\$REGION.
CENDIV8	Census division	9 –	9	\$CENDIV.
SQFT8	Square footage	11-	20	MISS10CH.
SQFTC8	Square footage category	22-	23	\$SQFTCX.
YRCONC8	Year of construction category	25-	26	\$YEARCAT.
PBA8	Principal building activity	28-	29	\$PBA.
ELUSED8	Electricity used	31-	31	\$YESNO.
NGUSED8	Natural gas used	33-	33	\$YESNO.
FKUSED8	Fuel oil/diesel/kerosene used	35-	35	\$YESNO.
PRUSED8	Bottled gas/LPG/propane used	37-	37	\$YESNO.
STUSED8	District steam used	39-	39	\$YESNO.
HWUSED8	District hot water used	41-	41	\$YESNO.
LTOHRP8	Percent lit when open	43-	45	MISS3CH.
LOHRPC8	Lit when open category	47-	47	\$LIT1CAT.
LTNHRP8	Percent lit when closed	49-	51	MISS3CH.
LNHRPC8	Lit when closed category	53-	53	\$LIT2CAT.
RDLTNF8	Lighting reduced during off hours	55-	55	\$YESNO.
BULB8	Incandescent bulbs	57-	57	\$YESNO.
FLUOR8	Fluorescent bulbs	59-	59	\$YESNO.
CFLR8	Compact fluorescent bulbs	61-	61	\$YESNO.
HID8	High intensity discharge (HID) bulbs	63-	63	\$YESNO.
HALO8	Halogen bulbs	65-	65	\$YESNO.
OTLT8	Other type of bulbs	67-	67	\$YESNO.
FLUORP8	Percent lit by fluorescent	69-	71	MISS3CH.
CFLRP8	Percent lit by compact fluorescent	73-	75	MISS3CH.
BULBP8	Percent lit by incandescent	77-	79	MISS3CH.
HALOP8	Percent lit by halogen	81-	83	MISS3CH.
HIDP8	Percent lit by HID	85-	87	MISS3CH.
OTLTP8	Percent lit by other lighting	89-	91	MISS3CH.
SREF8	Specular reflectors	93-	93	\$YESNO.
HEB8	Electronic ballasts	95-	95	\$YESNO.
EMCSLT8	EMCS controls lighting	97-	97	\$YESNO.
WINTYP8	Window glass type	99-	99	\$WINDTYP.
TINT8	Tinted window glass	101-		\$YESNO.
REFL8	Reflective window glass	103-		\$YESNO.
AWN8	External overhangs or awnings	105-		\$YESNO.
SKYLT8	Skylights/atriums designed for lighting	107-		\$YESNO.
AUTOLT8	Auto controls or sensors on lighting	109-		\$YESNO.
DAYLTP8	Percent daylight	111-		MISS3CH.
ADJWT8	Final full sample building weight	115-		
STRATUM8	Variance stratum	124-		
PAIR8	Variance unit	128-	128	

Layout for File 8: Imputation Flags for File 1

Variable Name	Variable Description	Pos	ition	<u>Format</u>
PUBID8	Building identifier	1-	5	
REGION8	Census region	7-	7	\$REGION.
CENDIV8	Census division	9-	9	\$CENDIV.
SQFT8	Square footage	11-	20	MISS10CH.
SQFTC8	Square footage category	22-	23	\$SQFTCX.
YRCONC8	Year of construction category	25-	26	\$YEARCAT.
PBA8	Principal building activity	28-	29	\$PBA.
ELUSED8	Electricity used	31-	31	\$YESNO.
NGUSED8	Natural gas used	33-	33	\$YESNO.
FKUSED8	Fuel oil/diesel/kerosene used	35-	35	\$YESNO.
PRUSED8	Bottled gas/LPG/propane used	37-	37	\$YESNO.
STUSED8	District steam used	39-	39	\$YESNO.
HWUSED8	District hot water used	41-	41	\$YESNO.
ZSQFT8	Imputed square footage	43-	43	\$ZVAR.
ZSQFTC8	Imputed square footage category	45-	45	\$ZVAR.
ZYRCONC8	Imputed year of construction category	47-	47	\$ZVAR.
ZWLCNS8	Imputed wall construction material	49-	49	\$ZVAR.
ZRFCNS8	Imputed roof construction material	51-	51	\$ZVAR.
ZGLSSPC8	Imputed percent exterior glass	53-	53	\$ZVAR.
ZEQGLSS8	Imputed equal glass on all sides	55-	55	\$ZVAR.
ZSUNGLS8	Imputed glass sides most sunlight	57-	57	\$ZVAR.
ZBLDSHP8	Imputed building shape	59-	59	\$ZVAR.
ZNFLOOR8	Imputed number of floors	61-	61	\$ZVAR.
ZELEVTR8	Imputed elevators	63-	63	\$ZVAR.
ZESCLTR8	Imputed escalators	65-	65	\$ZVAR.
ZNELVTR8	Imputed number of elevators	67-	67	\$ZVAR.
ZNESLTR8	Imputed number of escalators	69-	69	\$ZVAR.
ZYRCON8	Imputed year of construction	71-	71	\$ZVAR.
ZRENOV8	Imputed renovations since 1980	73-	73	\$ZVAR.
ZRENADD8	Imputed addition or annex	75-	75	\$ZVAR.
ZRENRDC8	Imputed reduction of floorspace	77-	77	\$ZVAR.
ZRENCOS8	Imputed cosmetic improvements	79-	79	\$ZVAR.
ZRENEXT8	Imputed exterior replacement	81-	81	\$ZVAR.
ZRENINT8	Imputed interior wall reconfiguration	83-	83	\$ZVAR.
ZRENHVC8	Imputed HVAC equipment upgrade	85-	85	\$ZVAR.
ZRENLGT8	Imputed lighting upgrade	87-	87	\$ZVAR.
ZRENWIN8	Imputed window replacement	89-	89	\$ZVAR.
ZRENPLB8	Imputed plumbing system upgrade	91-	91	\$ZVAR.
ZRENINS8	Imputed insulation upgrade	93-	93	\$ZVAR.
ZRENOTH8	Imputed other renovation	95-	95	\$ZVAR.
ZGOVOWN8	Imputed government owned	97-		\$ZVAR.
ZGOVTYP8	Imputed type of government	99-	99	\$ZVAR.
ZOWNER8	Imputed type of owner	101-		\$ZVAR.
ZOWNOCC8	Imputed owner occupies space	103-		\$ZVAR.
ZNOCC8	Imputed number of businesses	105-		\$ZVAR.
ZNOCCAT8	Imputed number of businesses category	107-		\$ZVAR.
ZMONUSE8	Imputed months in use	109-		\$ZVAR.
ZPORVAC8	Imputed space vacant 3 months in row	111-		\$ZVAR.
ZOPEN248	Imputed open 24 hours a day	113-		\$ZVAR.
ZOPNMF8	Imputed open during week	115-		\$ZVAR.
ZOPNWE8	Imputed open on weekend	117-		\$ZVAR.
ZWKHRS8	Imputed total hours open per week	119-	TTA	\$ZVAR.

(File 8 continued)

ZWKHRSC8 ZNWKER8 ZNWKERC8	Imputed weekly hours category Imputed number of employees Imputed number of employees category	121- 121 123- 123 125- 125	\$ZVAR. \$ZVAR. \$ZVAR.
ZELUSED8	Imputed electricity used	127- 127	\$ZVAR.
ZNGUSED8	Imputed natural gas used	129- 129	\$ZVAR.
ZFKUSED8	Imputed fuel oil/diesel/kerosene used	131- 131	\$ZVAR.
ZPRUSED8	Imputed bottled gas/LPG/propane used	133- 133	\$ZVAR.
ZSTUSED8	Imputed district steam used	135- 135	\$ZVAR.
ZHWUSED8	Imputed district hot water used	137- 137	\$ZVAR.
ZHT18	Imputed energy used for main heating	139- 139	\$ZVAR.
ZHT28	Imputed energy used for 2nd heating	141- 141	\$ZVAR.
ZCOOL8	Imputed energy used for cooling	143- 143	\$ZVAR.
ZWATR8	Imputed energy used for water heating	145- 145	\$ZVAR.
ZCOOK8	Imputed energy used for cooking	147- 147	\$ZVAR.
ZMANU8	Imputed energy used for manufacturing	149- 149	\$ZVAR.
ZGENR8	Imputed energy used for elec generation	151- 151	\$ZVAR.
ADJWT8	Final full sample building weight	153- 160	
STRATUM8	Variance stratum	162- 164	
PAIR8	Variance unit	166- 166	

Layout for File 9: Imputation Flags for File 2

Variable Name	Variable Description	Posi	tion	Format
PUBID8	Building identifier	1-	5	
REGION8	Census region	7 –	7	\$REGION.
CENDIV8	Census division	9 –	9	\$CENDIV.
SQFT8	Square footage	11-	20	MISS10CH.
SQFTC8	Square footage category	22-	23	\$SQFTCX.
YRCONC8	Year of construction category	25-	26	\$YEARCAT.
PBA8	Principal building activity	28-	29	\$PBA.
ELUSED8	Electricity used	31-	31	\$YESNO.
NGUSED8	Natural gas used	33-	33	\$YESNO.
FKUSED8	Fuel oil/diesel/kerosene used	35-	35	\$YESNO.
PRUSED8	Bottled gas/LPG/propane used	37-	37	\$YESNO.
STUSED8	District steam used	39-	39	\$YESNO.
HWUSED8	District hot water used	41-	41	\$YESNO.
ZVACANT8	Imputed completely vacant	43-	43	\$ZVAR.
ZFACIL8	Imputed on a multibuilding complex	45-	45	\$ZVAR.
ZFEDFAC8	Imputed Federal complex	47-	47	\$ZVAR.
ZFACACT8	Imputed type of multibuilding complex	49-	49	\$ZVAR.
ZMANIND8	Imputed manufacturing industrial complex	51-	51	\$ZVAR.
ZPLANT8	Imputed central plant on complex	53-	53	\$ZVAR.
ZFACDST8	Imputed plant produces district steam	55-	55	\$ZVAR.
ZFACDHW8	Imputed plant produces dist hot water	57-	57	\$ZVAR.
ZFACDCW8	Imputed plant produces dist chill water	59-	59	\$ZVAR.
ZFACELC8	Imputed plant produces electricity	61-	61	\$ZVAR.
ZBLDPLT8	Imputed central plant in building	63-	63	\$ZVAR.
ZRWSEAT8	Imputed relig worship seating capacity	65-	65	\$ZVAR.
ZPBSEAT8	Imputed assembly seating capacity	67-	67	\$ZVAR.
ZEDSEAT8	Imputed number of classroom seats	69-	69	\$ZVAR.
ZFDSEAT8	Imputed food service seating capacity	71-	71	\$ZVAR.
ZHCBED8	Imputed licensed bed capacity	73-	73	\$ZVAR.
ZNRSBED8	Imputed licensed bed capacity	75-	75	\$ZVAR.
ZLODGRM8	Imputed number of guest rooms	77-	77	\$ZVAR.
ADJWT8	Final full sample building weight	79-	86	
STRATUM8	Variance stratum	88-	90	
PAIR8	Variance unit	92-	92	

Layout for File 10: Imputation Flags for File 3

PUBIDS	Variable Name	Variable Description	Pos	<u>ition</u>	Format
CENDIVE Census division 9- 9 SCENDIV SQFTC8 Square footage 11- 20 33 SQFTCX. YRCONC8 Year of construction category 25- 26 SYEARCA. PBA8 Principal building activity 28- 29 PPBA. ELUSEDB Electricity used 31- 31 SYESNO. FKUSEDB Fuel oil/diesel/kerosene used 35- 35 SYESNO. FKUSEDB Fuel oil/diesel/kerosene used 37- 37 37 SYESNO. STUSEDB District steam used 39- 39 SYESNO. STUSEDB District bot water used 41- 41 SYESNO. STUSEDB Imputed privated private used 45- 45 SZVAR. SHEATH Impu	PUBID8	Building identifier	1-	5	
SOFT® Square footage 11 - 20 MISSICH. SOFTC8 Square footage category 22 - 23 \$SQFTCX. YRCONC8 Year of construction category 25 - 26 \$YEARCAT. PBA8 Principal building activity 28 - 29 \$PBA. BLUSED8 Electricity used 31 - 31 31 - 31 \$YESNO. NSUSED8 Fuel oil/diesel/kerosene used 35 - 35 \$YESNO. PRUSED8 Bottled gas/LPG/propane used 37 - 37 \$YESNO. STUSED8 District to water used 41 - 41 \$YESNO. STUSED8 District to water used 41 - 41 \$YESNO. SHEATD8 Imputed percent heated 43 - 43 \$ZVAR. ZHURATD8 Imputed berted to less than 50 degrees 45 - 45 \$ZVAR. ZHURNAG8 Imputed berted to less than 50 degrees 45 - 45 \$ZVAR. ZHURNAG8 Imputed bridge to less than 50 degrees 45 - 45 \$ZVAR. ZHURNAG8 Imputed bridge to less than 50 degrees 45 - 45 \$ZVAR. ZHURDAG Imputed bridge to less tha	REGION8	Census region	7 –	7	\$REGION.
SQFTC8 Square footage category 22- 23 SSOFTCX. YRCONC8 Year of construction category 25- 26 SYEARCAT. PBA8 Principal building activity 28- 29 SPBA. BLUSEDB Electricity used 31- 31 SYESNO. RUSEDB Natural gas used 35- 35 SYESNO. FKUSEDB Bottled gas/LPG/propane used 35- 35 SYESNO. RUSEDB District to twater used 41- 41 SYESNO. HWUSEDB District hot water used 41- 41 SYESNO. HWUSEDB Imputed percent heated 41- 41 SYESNO. HWINGEDB Imputed percent heated 47- 47 27 SZVAR. ZHILS508 Imputed furnaces that heat air directly 47- 47 27 SZVAR. ZHURNACS Imputed boilers inside building 49- 49 \$ZVAR. ZBVAR. ZBOLLER8 Imputed boilers inside building 49- 49 \$ZVAR. ZSTEWCNB Imputed individual space heaters 53- 53 \$ZVAR. SSTEWRHTB Imputed individual sp	CENDIV8	Census division	9-	9	\$CENDIV.
VRCONCS Year of construction category 25- 26 SYEARCAT. PBA8 Principal building activity 28- 29 \$PBA. ELUSEDB Electricity used 31- 31 31- 31 \$YESNO. NGUSEDB Natural gas used 33- 35 \$YESNO. PRUSEDB Bottled gas/LPG/propane used 37- 37 \$YESNO. RUSEDB District to water used 41- 41 \$YESNO. ZHEATDB Imputed percent heated 41- 41 \$YESNO. ZHEATDB Imputed percent heated 43- 43 \$ZVAR. ZHEATDB Imputed furnaces that heat air directly 47- 47 \$ZVAR. ZFURNAC8 Imputed furnaces that heat air directly 47- 47 \$ZVAR. ZBOILERB Imputed packaged heating units 51- 51 \$ZVAR. ZBULLERB Imputed packaged heating units 51- 51 \$ZVAR. SHTPMPHB Imputed packaged heating 55- 55 \$ZVAR. ZSTHWB Imputed packaged heating 55- 55 \$ZVAR. ZSTHWB Imputed packaged heating 66- 65	SQFT8	Square footage	11-	20	MISS10CH.
PBA8	SQFTC8	Square footage category	22-	23	\$SQFTCX.
ELUSED8	YRCONC8	Year of construction category	25-	26	\$YEARCAT.
NGUSED8 Natural gas used 33-33 \$YESNO. FKUSED8 Fuel oil/diesel/kerosene used 35-35 \$YESNO. STUSED8 Bottled gas/LPG/propane used 37-37 \$YESNO. STUSED8 District steam used 39-39 \$YESNO. LWISED8 District hot water used 41-41 \$YESNO. ZHEATP8 Imputed percent heated 43-43 \$ZVAR. ZHILS508 Imputed heated to less than 50 degrees 45-45 \$ZVAR. ZHILS508 Imputed heated to less than 50 degrees 45-45 \$ZVAR. ZHILS508 Imputed heated to less than 50 degrees 45-45 \$ZVAR. ZHILS508 Imputed heated by less than 50 degrees 45-45 \$ZVAR. ZHURDA Imputed betheated by colled the set set set menter 55-51 \$ZVAR. ZBOLLER8 Imputed betheated pet set set on the water 57-57 \$ZVAR. ZOTHTEQ8 Imputed pet heated by furnace 61-61 \$ZVAR. ZBOLLP8 Imputed pet heated by packaged heating 65-65 \$ZVAR. ZBCHPB98 Imputed pet h	PBA8	Principal building activity	28-	29	\$PBA.
FKUSEDB Fuel oil/diesel/kerosene used 35- 35 \$YESNO. PRUSEDB Bottled gas/LPG/propane used 37- 37 \$YESNO. STUSEDB District steam used 39- 39 \$YESNO. HWUSEDB District bot water used 41- 41 41 \$YESNO. ZHEATPB Imputed percent heated 43- 43 \$ZVAR. ZHTLS508 Imputed heated to less than 50 degrees 45- 45 \$ZVAR. ZFURNACS Imputed heated to less than 50 degrees 45- 45 \$ZVAR. ZFURNACS Imputed furnaces that heat air directly 47- 47 \$ZVAR. ZFURNACS Imputed furnaces that heat air directly 47- 47 \$ZVAR. ZFURNACS Imputed furnaces that heat air directly 47- 47 \$ZVAR. ZFURNACS Imputed piters individual space heaters 51- 51 \$ZVAR. ZFECONB Imputed packaged heating 55- 55 \$ZVAR. ZSTHWB Imputed district steam or hot water 57- 57 \$ZVAR. ZSTHWBB Imputed pt heated by furnace 61- 61 \$ZVAR. ZBOTHTEQB	ELUSED8	Electricity used	31-	31	\$YESNO.
PRUISED8 Bottled gas/LPG/propane used 37- 37 \$YESNO. STUSED8 District steam used 39- 39 \$YESNO. ZHEATP8 Imputed percent heated 41- 41 \$YESNO. ZHEATP8 Imputed percent heated 43- 43 \$ZVAR. ZFURNAC8 Imputed percent heated 47- 47 \$ZVAR. ZFURNAC8 Imputed furnaces that heat air directly 47- 47 \$ZVAR. ZBOILER8 Imputed boilers inside building 49- 49 \$ZVAR. ZBKGHT8 Imputed bistrict steam or hot water 51- 52 \$ZVAR. ZSLFCON8 Imputed individual space heaters 53- 53 \$ZVAR. ZSTHMPH8 Imputed heat pumps for heating 55- 55 \$ZVAR. ZSTHRWB Imputed bother heating equipment 59- 59 \$ZVAR. ZOTHTEQ8 Imputed pct heated by furnace 61- 61 \$ZVAR. ZPKGHP8 Imputed pct heated by boilers 63- 63 \$ZVAR. ZPKGHP8 Imputed pct heated by heat pumps 69- 69 \$ZVAR. ZHTPHP8 Imputed pct heated by heat pumps 69- 69 \$ZVAR. ZHTPHP8 Imputed pct heated by other ht equip 73- 73 \$ZVAR. ZYKGHP8 Imputed packaged nuit heat pum	NGUSED8	Natural gas used	33-	33	\$YESNO.
STUSED8 District steam used 39- 39 \$YESNO. HHUSED8 District hot water used 41- 41 \$YESNO. HHUSED8 District hot water used 41- 41 \$YESNO. HHUSED8 Imputed percent heated 43- 43 \$ZVAR. ZHILESTOR Imputed heated to less than 50 degrees 45- 45 \$ZVAR. ZFURNAC8 Imputed furnaces that heat air directly 47- 47 \$ZVAR. ZFURNAC8 Imputed boilers inside building 49- 49 \$ZVAR. ZPKGHT8 Imputed packaged heating units 51- 51 \$ZVAR. ZPKGHT8 Imputed individual space heaters 53- 53 \$ZVAR. ZHTPMPH8 Imputed heat pumps for heating 55- 55 \$ZVAR. ZSTHW8 Imputed district steam or hot water 57- 57 \$ZVAR. ZSTHW8 Imputed other heating equipment 59- 59 \$ZVAR. ZFURNP8 Imputed pct heated by furnace 61- 61 \$ZVAR. ZBOILP8 Imputed pct heated by furnace 61- 61 \$ZVAR. ZBOILP8 Imputed pct heated by boilers 63- 63 \$ZVAR. ZSTHWB Imputed pct heated by indiv space htrs 67- 67 \$ZVAR. ZSTHWB Imputed pct heated by indiv space htrs 67- 67 \$ZVAR. ZSTHWB Imputed pct heated by heat pumps 69- 69 \$ZVAR. ZSTHWB Imputed pct heated by other ht equip 73- 73 \$ZVAR. ZSTHWB Imputed pct heated by other ht equip 73- 73 \$ZVAR. ZSTHWB Imputed pct heated by other ht equip 73- 73 \$ZVAR. ZSTHWB Imputed main heating equipment 75- 75 \$ZVAR. ZSTHWB Imputed pct heated by other ht equip 73- 73 \$ZVAR. ZSTHWB Imputed pct heated by other ht equip 73- 73 \$ZVAR. ZSTHWB Imputed split system ht pump for heating 79- 79 \$ZVAR. ZSPLHESS Imputed split system ht pump for heating 81- 81 \$ZVAR. ZSPLHESS Imputed split system ht pump for heating 81- 81 \$ZVAR. ZGRDHFT8 Imputed air source heat pump for heating 83- 83 \$ZVAR. ZGRDHFT8 Imputed water loop heat pump for heating 83- 83 \$ZVAR. ZGRDHFT8 Imputed water loop heat pump for heating 87- 87 \$ZVAR. ZMRNHNHT8 Imputed how reduce heating 91- 91 \$ZVAR. ZMRNHTHFT8 Imputed how reduce heating 91- 91 \$ZVAR. ZMRNHTHFT8 Imputed how reduce heating 93- 95 \$ZVAR. ZMRNHTHFT8 Imputed individual room air conditi	FKUSED8	Fuel oil/diesel/kerosene used	35-	35	\$YESNO.
HNUSED8 ZHEATP8 Imputed percent heated ZHEATP8 Imputed percent heated ZHEATP8 Imputed percent heated ZHILS508 Imputed furnaces than 50 degrees ZEVURNAC8 Imputed furnaces that heat air directly ZBOILER8 Imputed boilers inside building ZBOILER8 Imputed packaged heating units ZSLFCON8 Imputed individual space heaters ZSLFCON8 Imputed heat pumps for heating ZSTHW8 Imputed district steam or hot water ZSTHW8 Imputed other heating equipment ZSURDES ZSTHW8 Imputed other heating equipment ZFURNP8 Imputed pct heated by furnace Imputed pct heated by boilers ZSLFCNP8 Imputed pct heated by boilers ZSLFCNP8 Imputed pct heated by heat pumps ZSLFCNP8 Imputed pct heated by did space heaters ZSTHWB8 Imputed pct heated by did space heaters ZSLFCNP8 Imputed pct heated by heat pumps Imputed pct heated by heat pumps ZSLFCNP8 Imputed pct heated by did space heaters ZSTHWB8 Imputed pct heated by did space heater ZSTHWB8 Imputed pct heated by did space heater ZSTHWB8 Imputed pct heated by did space heater ZSTHWB8 Imputed pct heated by heat pumps Imputed pct heated by did space heater ZSTHWB8 Imputed main heating equipment ZSTHWB8 Imputed main heating equipment ZSPCHGBS8 Imputed split system ht pump for heating ZSPLHPS8 Imputed split system ht pump for heating ZSAIRHPT8 Imputed ground source ht pmp for heating ZAIRHPT8 Imputed air source heat pump for heating ZAIRHPT8 Imputed air source heat pump for heating ZSTHRPT8 Imputed water loop heat pump for heating ZSTHRPT8 Imputed water loop heat pump for heating ZHWRDHT8 Imputed how reduce heating ZWAR. ZHWRDHT8 Imputed how reduce heating ZCOOLP8 Imputed percent cooled ZHWRDHT8 Imputed how residential-type air conditioner	PRUSED8	Bottled gas/LPG/propane used	37-	37	\$YESNO.
ZHEATP8 Imputed percent heated	STUSED8	District steam used	39-	39	\$YESNO.
ZHTLS508 Imputed heated to less than 50 degrees 45 47 47 \$ZVAR. ZFURNACS Imputed furnaces that heat air directly 47 47 \$ZVAR. ZSOILER8 Imputed boilers inside building 49 49 \$ZVAR. ZPKGHT8 Imputed packaged heating units 51 51 \$ZVAR. ZSLFCONS Imputed individual space heaters 53 53 \$ZVAR. ZSTHWB Imputed heat pumps for heating 55 55 \$ZVAR. ZSTHWB Imputed district steam or hot water 57 57 \$ZVAR. ZSTHWB Imputed other heating equipment 59 59 \$ZVAR. ZSTHWB Imputed other heating equipment 59 59 \$ZVAR. ZSTHWB Imputed pct heated by furnace 61 61 61 \$ZVAR. ZBOILP8 Imputed pct heated by furnace 61 61 61 \$ZVAR. ZBOILP8 Imputed pct heated by boilers 63 63 \$ZVAR. ZBKGHPB Imputed pct heated by boilers 67 67 \$ZVAR. ZHTPHPB Imputed pct heated by heat pumps 69 69 \$ZVAR. ZHTPHPB Imputed pct heated by heat pumps 69 69 \$ZVAR. ZHTPHPB Imputed pct heated by dist steam/HW 71 71 \$ZVAR. ZHTPHPB Imputed pct heated by dist steam/HW 71 71 \$ZVAR. ZHAINHTB Imputed main heating equipment 75 75 \$ZVAR. ZHAINHTB Imputed main heating equipment 75 75 \$ZVAR. ZHAINHTB Imputed split system ht pump for heating 77 77 \$ZVAR. ZHAINHTB Imputed split system ht pump for heating 81 81 \$ZVAR. ZHAINHTB Imputed indiv room heat pump for heating 81 81 \$ZVAR. ZHAINHTB Imputed ground source ht pump for heating 82 83 \$ZVAR. ZHAINHTB Imputed water loop heat pump for heating 83 83 \$ZVAR. ZHAINHTB Imputed water loop heat pump for heating 87 87 \$ZVAR. ZHAINHTB Imputed main heating replaced 89 89 \$ZVAR. ZHAINHTB Imputed main heating replaced 89 89 \$ZVAR. ZHAINHTB Imputed main heating replaced 89 95 \$ZVAR. ZHAINHTB Imputed packaged air conditioner 99 99 \$ZVAR. ZHAINHTB Imputed packaged air conditioners 101 101 \$ZVAR. ZHAINHTB Imputed heat reduced over 24 hr period 91 91 \$ZVAR. ZHAINHTB Imputed percent cooled 99 99 \$ZVAR. ZHAINHTB Imputed heat pumps for cooling 103 103 \$ZVAR. ZHAINHTB Imputed heat pumps for cooling 103 103 \$ZVAR. ZHAINHTB Imputed central chillers inside building 107 107 \$ZVAR. ZHAINHTB Imputed heat pumps for cooling 100 100 90 \$ZVAR. ZHAINHTB Imputed central	HWUSED8	District hot water used	41-	41	\$YESNO.
ZPURNAC8 Imputed furnaces that heat air directly 47- 47 \$ZVAR. ZBOILER8 Imputed boilers inside building 49- 49 \$ZVAR. ZPKGHT8 Imputed packaged heating units 51- 51 \$ZVAR. ZSLFCON8 Imputed individual space heaters 53- 53 \$ZVAR. ZHTPMPH8 Imputed heat pumps for heating 55- 55 \$ZVAR. ZHTPMPH8 Imputed district steam or hot water 57- 57 \$ZVAR. ZOTHTEO8 Imputed other heating equipment 59- 59 \$ZVAR. ZFURNP8 Imputed pct heated by furnace 61- 61 \$ZVAR. ZFURNP8 Imputed pct heated by furnace 61- 63- 63 \$ZVAR. ZFURNP8 Imputed pct heated by boilers 63- 63 \$ZVAR. ZFURGHP8 Imputed pct heated by ackaged heating 65- 65 \$ZVAR. ZFURGHP8 Imputed pct heated by indiv space htrs 67- 67 \$ZVAR. ZFURDHP8 Imputed pct heated by heat pumps 69- 69 \$ZVAR. ZSTHVP8 Imputed pct heated by heat pumps 69- 69 \$ZVAR. ZSTHVP8 Imputed pct heated by other ht equip 73- 73 \$ZVAR. ZFURGHP8 Imputed pct heated by other ht equip 73- 73 \$ZVAR. ZFURGHP8 Imputed pct heated by other ht equip 73- 75 \$ZVAR. ZFURGHP8 Imputed pct heated by other ht equip 73- 75 \$ZVAR. ZFURGHP8 Imputed pct heated by other ht equip 73- 75 \$ZVAR. ZFURGHP8 Imputed pct heated pump for heating 77- 77 \$ZVAR. ZFURGHP8 Imputed split system ht pump for heating 79- 79 \$ZVAR. ZFURGHP8 Imputed indiv room heat pump for heating 81- 81 \$ZVAR. ZAIRHPT8 Imputed air source heat pump for heating 81- 81 \$ZVAR. ZMTRHPT8 Imputed air source heat pump for heating 82- 83 \$ZVAR. ZMTRHPT8 Imputed water loop heat pump for heating 83- 83 \$ZVAR. ZMTRHPT8 Imputed main heating replaced 89- 89 \$ZVAR. ZMTRHPT8 Imputed main heating replaced 89- 89 \$ZVAR. ZMTRHPT8 Imputed how reduce heating 93- 93 \$ZVAR. ZMTRHPT8 Imputed packaged air conditioner 93- 94 \$ZVAR. ZMTRHPTP8 Imputed how reduce heating 93- 93 \$ZVAR. ZMTRHPTPP Imputed percent cooled 95- 95 \$ZVAR. ZMTRHPTPP Imputed how reduce heating 93- 93 \$ZVAR. ZMTRHPTPP Imputed heat pumps for cooling 105- 105 \$ZVAR. ZMTRHPTPP Imputed heat pumps for cooling 105- 105 \$ZVAR. ZMTRHPTPP Imputed heat pumps for cooling 105- 105 \$ZVAR. ZMTRHPTPP Imputed central chillers inside build	ZHEATP8	Imputed percent heated	43-	43	\$ZVAR.
ZBOILER8 Imputed boilers inside building 49- 49 \$ZVAR. ZPKGHT8 Imputed packaged heating units 51- 51 \$ZVAR. ZSLFCON8 Imputed individual space heaters 53- 53 \$ZVAR. ZHTPMPH8 Imputed heat pumps for heating 55- 55 \$ZVAR. ZSTHW8 Imputed district steam or hot water 57- 57 \$ZVAR. ZSTHW8 Imputed other heating equipment 59- 59 \$ZVAR. ZFURNP8 Imputed pct heated by furnace 61- 61 \$ZVAR. ZBOILP8 Imputed pct heated by furnace 61- 61 \$ZVAR. ZBOILP8 Imputed pct heated by boilers 63- 63 \$ZVAR. ZSLFCNP8 Imputed pct heated by indiv space htrs 67- 67 \$ZVAR. ZSLFCNP8 Imputed pct heated by indiv space htrs 67- 67 \$ZVAR. ZSTHWP8 Imputed pct heated by indiv space htrs 67- 67 \$ZVAR. ZHTPHP8 Imputed pct heated by dist steam/HW 71- 71 \$ZVAR. ZOTHTP8 Imputed pct heated by other ht equip 73- 73 \$ZVAR. ZNAN.NHT8 Imputed main heating equipment 75- 75 \$ZVAR. ZMAINHT8 Imputed main heating equipment 75- 75 \$ZVAR. ZNAN. ZNAN.HPS8 Imputed split system ht pump for heating 79- 79 \$ZVAR. ZNAN.HPS8 Imputed sindiv room heat pump for heating 79- 79 \$ZVAR. ZNAN.HPS8 Imputed air source heat pump for heating 81- 81 \$ZVAR. ZNAN.HPS8 Imputed air source heat pump for heating 85- 85 \$ZVAR. ZNAN.HPS8 Imputed water loop heat pump for heating 87- 87 \$ZVAR. ZNAN.HPS8 Imputed main heating replaced 89- 89 \$ZVAR. ZNAN.HPS8 Imputed main heating replaced 89- 89 \$ZVAR. ZNAN.HPS8 Imputed main heating replaced 89- 89 \$ZVAR. ZNAN.HPS8 Imputed main heating replaced 89- 95 \$ZVAR. ZNAN.HPS8 Imputed main heating replaced 89- 95 \$ZVAR. ZNAN.HPS8 Imputed how reduce heating 93- 93 \$ZVAR. ZNAN.HPS8 Imputed heat reduced over 24 hr period 91- 91 \$ZVAR. ZNAN.HPS8 Imputed heat reduced over 24 hr period 91- 91 \$ZVAR. ZNAN.HPS8 Imputed heat reduced over 24 hr period 91- 91 \$ZVAR. ZNAN.HPS8 Imputed heat pump for heating 97- 97 \$ZVAR. ZNAN.HPS8 Imputed heat pump for heating 99- 99 \$ZVAR. ZNAN.HPS8 Imputed district chilled water piped in 105- 105 \$ZVAR. ZNAN.HPPS8 Imputed district chilled water piped in 105- 105 \$ZVAR. ZNAN.HPPS8 Imputed central chillers inside building 107- 107 \$ZVAR.	ZHTLS508	Imputed heated to less than 50 degrees	45-	45	\$ZVAR.
ZPKGHT8 Imputed packaged heating units ZSLFCON8 Imputed individual space heaters S3- 53 \$ZVAR. ZSTHW8 Imputed heat pumps for heating ZSTHW8 Imputed district steam or hot water ZOTHTEQ8 Imputed other heating equipment S9- 59 \$ZVAR. ZOTHTEQ8 Imputed pct heated by furnace EMPOUNTS EMPOUNTS EMPOUNTS EMPOUNTS Imputed pct heated by furnace Imputed pct heated by boilers EMPOUNTS EMPOUN			47-	47	
ZPKGHT8 Imputed packaged heating units ZSLFCON8 Imputed individual space heaters S3- 53 \$ZVAR. ZSTHW8 Imputed heat pumps for heating ZSTHW8 Imputed district steam or hot water ZOTHTEQ8 Imputed other heating equipment S9- 59 \$ZVAR. ZOTHTEQ8 Imputed pct heated by furnace EMPOUNTS EMPOUNTS EMPOUNTS EMPOUNTS Imputed pct heated by furnace Imputed pct heated by boilers EMPOUNTS EMPOUN	ZBOILER8	Imputed boilers inside building	49-	49	\$ZVAR.
ZSLFCON8 Imputed individual space heaters 53-53 \$ZVAR. ZHTPMPHB Imputed heat pumps for heating 55-55 \$ZVAR. ZSTHW8 Imputed district steam or hot water 57-57 \$ZVAR. ZOTHTEQ8 Imputed other heating equipment 59-59 \$ZVAR. ZFURNP8 Imputed pct heated by furnace 61-61 \$ZVAR. ZFURNP8 Imputed pct heated by boilers 63-63 \$ZVAR. ZPKGHP8 Imputed pct heated by packaged heating 65-65 \$ZVAR. ZSLFCNP8 Imputed pct heated by indiv space htrs 67-67 \$ZVAR. ZHTPHP8 Imputed pct heated by heat pumps 69-69 \$ZVAR. ZSTHWP8 Imputed pct heated by dist steam/HW 71-71 \$ZVAR. ZOTHTP8 Imputed pct heated by other ht equip 73-73 \$ZVAR. ZMAINHT8 Imputed main heating equipment 75-75 \$ZVAR. ZPKGHP88 Imputed pkgd unit heat pump for heating 77-77 \$ZVAR. ZPKGHP88 Imputed split system ht pump for heating 77-77 \$ZVAR. ZPKHPS8 Imputed split system ht pump for heating 79-79 \$ZVAR. ZRMHPS8 Imputed indiv room heat pump for heating 83-83 \$ZVAR. ZATRHPT8 Imputed air source heat pump for heating 83-83 \$ZVAR. ZMTHPT8 Imputed water loop heat pump for heating 83-85 \$ZVAR. ZWTRHPT8 Imputed main heating replaced 89-89 \$ZVAR. ZNMMNHT8 Imputed main heating replaced 89-89 \$ZVAR. ZRHPDHF8 Imputed how reduce heating 93-93 \$ZVAR. ZHRHTMF8 Imputed pcreent cooled 91-91 \$ZVAR. ZRCOLP8 Imputed pcreent cooled 93-95 \$ZVAR. ZRCAC8 Imputed pcreent cooled 93-97 \$ZVAR. ZRCAC8 Imputed district chilled water piped in 105-105 \$ZVAR. ZCHWT8 Imputed district chilled water piped in 105-105 \$ZVAR. ZCHWT8 Imputed central chillers inside building 107-107 \$ZVAR. ZCHWT8 Imputed central chillers inside building 107-107 \$ZVAR. ZCHWT8 Imputed other cooling equipment 111-111 \$ZVAR. ZPKGCP8 Imputed pct cooled by packaged A/C 113-113 \$ZVAR. ZPKGCP8 Imputed pct cooled by central A/C 115-115 \$ZVAR.	ZPKGHT8		51-	51	\$ZVAR.
ZHTPMPH8 Imputed heat pumps for heating 55- 55 \$ZVAR. ZSTHW8 Imputed district steam or hot water 57- 57 \$ZVAR. ZOTHTEQ8 Imputed other heating equipment 59- 59 \$ZVAR. ZFURNP8 Imputed pct heated by furnace 61- 61 \$ZVAR. ZBOILP8 Imputed pct heated by boilers 63- 63 \$ZVAR. ZPKGHP8 Imputed pct heated by packaged heating 65- 65 \$ZVAR. ZSLFCNP8 Imputed pct heated by indiv space htrs 67- 67 \$ZVAR. ZHTPHP8 Imputed pct heated by heat pumps 69- 69 \$ZVAR. ZSTHWP8 Imputed pct heated by dist steam/HW 71- 71 \$ZVAR. ZOTHTP8 Imputed pct heated by other ht equip 73- 73 \$ZVAR. ZMAINHT8 Imputed main heating equipment 75- 75 \$ZVAR. ZPKGHPS8 Imputed pkgd unit heat pump for heating 77- 77 \$ZVAR. ZSPLHPS8 Imputed split system ht pump for heating 81- 81 \$ZVAR. ZAIRHPT8 Imputed air source heat pump for heating 81- 81 \$ZVAR. ZAIRHPT8 Imputed air source heat pump for heating 83- 83 \$ZVAR. ZGROHPT8 Imputed water loop heat pump for heating 83- 85 \$ZVAR. ZWWRNHT8 Imputed main heating replaced 89- 89 \$ZVAR. ZRMHPNB Imputed beat reduced over 24 hr period 91- 91 \$ZVAR. ZHWRDHT8 Imputed heat reduced over 24 hr period 91- 91 \$ZVAR. ZHWRDHT8 Imputed heat reduced over 24 hr period 91- 91 \$ZVAR. ZHWRDHT8 Imputed percent cooled 95- 95 \$ZVAR. ZRCAC8 Imputed percent cooled 95- 95 \$ZVAR. ZHTPMPC8 Imputed percent cooled 95- 95 \$ZVAR. ZHTPMPC8 Imputed individual room air conditioners 99- 99 \$ZVAR. ZHTPMPC8 Imputed district chilled water piped in 105- 105 \$ZVAR. ZHTPMPC8 Imputed district chilled water piped in 107- 107 \$ZVAR. ZCHILLR8 Imputed central chillers inside building 107- 107 \$ZVAR. ZEVARCL8 Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZHTPMPC8 Imputed other cooling equipment 111- 111 \$ZVAR. ZEVARCL8 Imputed pct cooled by packaged A/C 113- 113 \$ZVAR. ZEVARCL8 Imputed pct cooled by packaged A/C 113- 115 \$ZVAR. ZEVARCURB Imputed pct cooled by indiv room A/C 117- 117 \$ZVAR.	ZSLFCON8		53-	53	\$ZVAR.
ZSTHW8 Imputed district steam or hot water 57- 57 \$ZVAR. ZOTHTEQ8 Imputed other heating equipment 59- 59 \$ZVAR. ZFURNP8 Imputed pct heated by furnace 61- 61 \$ZVAR. ZBOILP8 Imputed pct heated by boilers 63- 63 \$ZVAR. ZPKGHP8 Imputed pct heated by packaged heating 65- 65 \$ZVAR. ZSLFCNP8 Imputed pct heated by indiv space htrs 67- 67 \$ZVAR. ZSLFCNP8 Imputed pct heated by heat pumps 69- 69 \$ZVAR. ZSTHPHP8 Imputed pct heated by dist steam/HW 71- 71 \$ZVAR. ZSTHWP8 Imputed pct heated by dist steam/HW 71- 71 \$ZVAR. ZSTHWP8 Imputed pct heated by other ht equip 73- 73 \$ZVAR. ZMAINHT8 Imputed main heating equipment 75- 75 \$ZVAR. ZPKGHPS8 Imputed pkgd unit heat pump for heating 77- 77 \$ZVAR. ZSPLHPS8 Imputed split system ht pump for heating 79- 79 \$ZVAR. ZRHPPS8 Imputed sindiv room heat pump for heating 81- 81 \$ZVAR. ZAIRHPT8 Imputed air source heat pump for heating 83- 83 \$ZVAR. ZMAINHT8 Imputed air source heat pump for heating 85- 85 \$ZVAR. ZMTRHPT8 Imputed water loop heat pump for heating 87- 87 \$ZVAR. ZMTRHPT8 Imputed main heating replaced 89- 89 \$ZVAR. ZMTRHPT8 Imputed heat reduced over 24 hr period 91- 91 \$ZVAR. ZMTRHPT8 Imputed how reduce heating 93- 93 \$ZVAR. ZMTRHPT8 Imputed how reduce heating 93- 93 \$ZVAR. ZMTRHPT8 Imputed how reduce heating 93- 93 \$ZVAR. ZMTRHPT8 Imputed packaged air conditioning units 27- 97 \$ZVAR. ZMTRHPT8 Imputed packaged air conditioner 97- 97 \$ZVAR. ZMTRHPT8 Imputed how reduce heating 93- 93 \$ZVAR. ZMTRHPT8 Imputed individual room air conditioner 97- 97 \$ZVAR. ZMTHPMPC8 Imputed individual room air conditioner 101- 101 \$ZVAR. ZHTPMPC8 Imputed individual room air conditioner 101- 101 \$ZVAR. ZHTPMPC8 Imputed central chillers inside building 107- 107 \$ZVAR. ZHTPMPC8 Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZHTPMPCB Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZHTPMPCB Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZHTPMPCB Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZHTPMPCB Imputed cooled by packaged A/C 113- 115 \$ZVAR. ZHTPMPCB Imputed pct cooled by packaged	ZHTPMPH8		55-	55	\$ZVAR.
ZOTHTEQ8 Imputed other heating equipment 59- 59 \$ZVAR. ZFURNP8 Imputed pct heated by furnace 61- 61 \$ZVAR. ZBOILP8 Imputed pct heated by boilers 63- 63 \$ZVAR. ZPKGHP8 Imputed pct heated by packaged heating 65- 65 \$ZVAR. ZSLFCNP8 Imputed pct heated by packaged heating 65- 65 \$ZVAR. ZSLFCNP8 Imputed pct heated by indiv space htrs 67- 67 \$ZVAR. ZHTPHP8 Imputed pct heated by dist steam/HW 71- 71 \$ZVAR. ZSTHWP8 Imputed pct heated by other ht equip 73- 73 \$ZVAR. ZOTHTP8 Imputed main heating equipment 75- 75 \$ZVAR. ZPKGHPS8 Imputed main heating equipment 75- 75 \$ZVAR. ZSPLHPS8 Imputed split system ht pump for heating 79- 79 \$ZVAR. ZRMHPS8 Imputed indiv room heat pump for heating 79- 79 \$ZVAR. ZATRHPT8 Imputed air source heat pump for heating 81- 81 \$ZVAR. ZATRHPT8 Imputed air source heat pump for heating 85- 85 \$ZVAR. ZWTRHPT8 Imputed water loop heat pump for heating 85- 85 \$ZVAR. ZNWINNHT8 Imputed main heating replaced 89- 89 \$ZVAR. ZNWINNHT8 Imputed heat reduced over 24 hr period 91- 91 \$ZVAR. ZHWRDHT8 Imputed how reduce heating 93- 93 \$ZVAR. ZCOOLP8 Imputed percent cooled 95- 95 \$ZVAR. ZPKGCL8 Imputed percent cooled 95- 95 \$ZVAR. ZRCAC8 Imputed residential-type air conditioner 99- 99 \$ZVAR. ZHTPMPC8 Imputed district chilled water piped in 105- 105 \$ZVAR. ZHTPMPC8 Imputed district chilled water piped in 105- 107 \$ZVAR. ZCHILLR8 Imputed district chiller sinside building 107- 107 \$ZVAR. ZEVAPCLE Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZEVARCUB Imputed central chillers inside building 107- 107 \$ZVAR. ZEVAPCLE Imputed cooled by packaged A/C 115- 115 \$ZVAR. ZPKACOB Imputed pct cooled by central A/C 115- 115 \$ZVAR. ZRCACOB Imputed pct cooled by central A/C 115- 115 \$ZVAR.	ZSTHW8		57-	57	\$ZVAR.
ZFURNP8 Imputed pct heated by furnace 61- 61 \$ZVAR. ZBOILP8 Imputed pct heated by boilers 63- 63 \$ZVAR. ZPKGHP8 Imputed pct heated by packaged heating 65- 65 \$ZVAR. ZSLFCNP8 Imputed pct heated by indiv space htrs 67- 67 \$ZVAR. ZSLFCNP8 Imputed pct heated by heat pumps 69- 69 \$ZVAR. ZSTHPHP8 Imputed pct heated by heat pumps 69- 69 \$ZVAR. ZSTHWP8 Imputed pct heated by other ht equip 73- 73 \$ZVAR. ZOTHTP8 Imputed main heating equipment 75- 75 \$ZVAR. ZMAINHT8 Imputed main heating equipment 75- 75 \$ZVAR. ZPKGHPS8 Imputed split system ht pump for heating 79- 79 \$ZVAR. ZSPLHPS8 Imputed split system ht pump for heating 81- 81 \$ZVAR. ZATRHPT8 Imputed air source heat pump for heating 81- 81 \$ZVAR. ZGRDHPT8 Imputed ground source ht pmp for heating 85- 85 \$ZVAR. ZWTRHPT8 Imputed water loop heat pump for heating 85- 85 \$ZVAR. ZWTRHPT8 Imputed main heating replaced 89- 89 \$ZVAR. ZRHWDHT8 Imputed heat reduced over 24 hr period 91- 91 \$ZVAR. ZHWRDHT8 Imputed heat reduced over 24 hr period 91- 91 \$ZVAR. ZHWRDHT8 Imputed percent cooled 95- 95 \$ZVAR. ZPKGCL8 Imputed packaged air conditioning units 97- 77 \$ZVAR. ZRCAC8 Imputed residential-type air conditioner 99- 99 \$ZVAR. ZHTPMPC8 Imputed heat pumps for cooling 103- 103 \$ZVAR. ZCHUTLR8 Imputed central chilled water piped in 105- 105 \$ZVAR. ZCHUTLR8 Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZCHILLR8 Imputed central chillers inside building 107- 107 \$ZVAR. ZCHILLR8 Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZCHILLR8 Imputed other cooling equipment 111- 111 \$ZVAR. ZEVAPCL8 Imputed central chillers inside building 107- 107 \$ZVAR. ZEVAPCL8 Imputed central chillers inside building 107- 107 \$ZVAR. ZEVAPCL8 Imputed other cooling equipment 111- 111 \$ZVAR. ZEVAPCL8 Imputed other cooled by packaged A/C 115- 115 \$ZVAR. ZPKGCP8 Imputed other cooled by central A/C 115- 115 \$ZVAR.	ZOTHTEO8		59-	59	\$ZVAR.
ZBOILP8 Imputed pct heated by boilers 63-63 \$ZVAR. ZPKGHP8 Imputed pct heated by packaged heating 65-65 \$ZVAR. ZSLFCNP8 Imputed pct heated by indiv space htrs 67-67 \$ZVAR. ZHTPHP8 Imputed pct heated by heat pumps 69-69 \$ZVAR. ZSTHWP8 Imputed pct heated by heat pumps 69-69 \$ZVAR. ZSTHWP8 Imputed pct heated by dist steam/HW 71-71 \$ZVAR. ZOTHTP8 Imputed pct heated by other ht equip 73-73 \$ZVAR. ZMAINHT8 Imputed main heating equipment 75-75 \$ZVAR. ZPKGHPS8 Imputed pkgd unit heat pump for heating 77-77 \$ZVAR. ZSPLHPS8 Imputed split system ht pump for heating 79-79 \$ZVAR. ZRMHPS8 Imputed indiv room heat pump for heating 81-81 \$ZVAR. ZATRHPT8 Imputed air source heat pump for heating 83-83 \$ZVAR. ZGRDHPT8 Imputed ground source ht pmp for heating 85-85 \$ZVAR. ZWTRHPT8 Imputed water loop heat pump for heating 87-87 \$ZVAR. ZNWNNHT8 Imputed main heating replaced 89-89 \$ZVAR. ZNWNNHT8 Imputed heat reduced over 24 hr period 91-91 \$ZVAR. ZHURDHT8 Imputed how reduce heating 93-93 \$ZVAR. ZCOOLP8 Imputed percent cooled 95-95 \$ZVAR. ZPKGCL8 Imputed packaged air conditioner 99-99 \$ZVAR. ZRCAC8 Imputed residential-type air conditioner 99-99 \$ZVAR. ZHTPMPC8 Imputed heat pumps for cooling 103-103 \$ZVAR. ZHTPMPC8 Imputed district chilled water piped in 105-105 \$ZVAR. ZCHILLR8 Imputed central chillers inside building 107-107 \$ZVAR. ZEVAPCL8 Imputed evaporative or swamp coolers 109-109 \$ZVAR. ZEVAPCL8 Imputed other cooling equipment 111-111 \$ZVAR. ZEVAPCL8 Imputed pct cooled by packaged A/C 113-113 \$ZVAR. ZHYGCP8 Imputed pct cooled by central A/C 115-115 \$ZVAR. ZACWNWP8 Imputed pct cooled by indiv room A/C 117-117 \$ZVAR.	-		61-		\$ZVAR.
ZPKGHP8 Imputed pct heated by packaged heating ZSLFCNP8 Imputed pct heated by indiv space htrs ZSLFCNP8 Imputed pct heated by indiv space htrs ZSTHPHP8 Imputed pct heated by heat pumps GP- GP- SZVAR. ZSTHWP8 Imputed pct heated by dist steam/HW 71- 71 SZVAR. ZSTHWP8 Imputed pct heated by other ht equip 73- 73 SZVAR. ZOTHTP8 Imputed main heating equipment 75- 75 SZVAR. ZMAINHT8 Imputed main heating equipment 75- 75 SZVAR. ZPKCHPS8 Imputed split system ht pump for heating 79- 79 SZVAR. ZSPLHPS8 Imputed split system ht pump for heating 81- 81 SZVAR. ZSPLHPS8 Imputed indiv room heat pump for heating 83- 83 SZVAR. ZAIRHPT8 Imputed air source heat pump for heating 83- 83 SZVAR. ZGRDHPT8 Imputed ground source ht pmp for heating 85- 85 SZVAR. ZWTRHPT8 Imputed water loop heat pump for heating 87- 87 SZVAR. ZNWNNHT8 Imputed main heating replaced 89- 89 SZVAR. ZRDHTNF8 Imputed heat reduced over 24 hr period 91- 91 SZVAR. ZHWRDHT8 Imputed how reduce heating 93- 93 SZVAR. ZCOOLP8 Imputed packaged air conditioning units 97- 97 SZVAR. ZPKGCL8 Imputed packaged air conditioner 99- 99 SZVAR. ZRCAC8 Imputed residential-type air conditioner 99- 99 SZVAR. ZCHUNNL8 Imputed individual room air conditioners 101- 101 SZVAR. ZCHUTLR8 Imputed district chilled water piped in 105- 105 SZVAR. ZCHUTLR Imputed central chillers inside building 107- 107 SZVAR. ZCHUTLR8 Imputed central chillers inside building 107- 107 SZVAR. ZCHUTLLR9 Imputed coher cooling equipment 111- 111 SZVAR. ZCHOCLEQ8 Imputed other cooled by packaged A/C 113- 113 SZVAR. ZPKGCP8 Imputed pct cooled by packaged A/C 115- 115 SZVAR. ZRCACNNWP8 Imputed pct cooled by indiv room A/C 117- 117 SZVAR.	ZBOILP8		63-		
ZSLFCNP8 Imputed pct heated by indiv space htrs ZHTPHP8 Imputed pct heated by heat pumps ZSTHWP8 Imputed pct heated by dist steam/HW ZSTHWP8 Imputed pct heated by dist steam/HW ZOTHTP8 Imputed pct heated by other ht equip ZOTHTP8 Imputed main heating equipment ZPKGHPS8 Imputed pkgd unit heat pump for heating ZPKGHPS8 Imputed split system ht pump for heating ZPKGHPS8 Imputed split system ht pump for heating ZAIRHPS8 Imputed air source heat pump for heating ZAIRHPT8 Imputed air source heat pump for heating ZGRDHPT8 Imputed ground source ht pmp for heating ZGRDHPT8 Imputed water loop heat pump for heating ZRWHRPT8 Imputed main heating replaced ZRWHNHT8 Imputed main heating replaced ZRWHRHPT8 Imputed how reduce heating ZCOOLP8 Imputed percent cooled ZPKGCL8 Imputed packaged air conditioning units ZCOCLP8 Imputed residential-type air conditioner ZHTPMPC8 Imputed heat pumps for cooling ZCHWTT8 Imputed sindividual room air conditioners ZCHWTT8 Imputed heat pumps for cooling ZCHWTT8 Imputed district chilled water piped in ZCHWTT8 Imputed district chilled water piped in ZCHWTT8 Imputed central chillers inside building ZCHWT8 Imputed central chillers inside building ZCHUT8 Imputed central chillers inside building ZCHUT8 Imputed other cooling equipment ZCHUT8 Imputed pct cooled by packaged A/C IMPUTED SEVAR. ZVAR. ZVAR	ZPKGHP8			65	
ZHTPHP8 Imputed pct heated by heat pumps ZSTHWP8 Imputed pct heated by dist steam/HW ZOTHTP8 Imputed pct heated by other ht equip ZMAINHT8 Imputed main heating equipment ZPKGHPS8 Imputed pkgd unit heat pump for heating ZPKGHPS8 Imputed split system ht pump for heating ZPKGHPS8 Imputed indiv room heat pump for heating ZPKGHPS8 Imputed air source heat pump for heating ZAIRHPT8 Imputed air source heat pump for heating ZAIRHPT8 Imputed ground source ht pmp for heating ZHTRHPT8 Imputed water loop heat pump for heating ZHTRHPT8 Imputed main heating replaced ZHTRHPT8 Imputed heat reduced over 24 hr period ZHTMRDHT8 Imputed how reduce heating ZHWRDHT8 Imputed percent cooled ZHWRDHT8 Imputed packaged air conditioning units ZHWRGCL8 Imputed packaged air conditioner ZHCAC8 Imputed individual room air conditioner ZHCHWNULS ZHTPMPC8 Imputed district chilled water piped in ZHTPMPC8 Imputed central chillers inside building ZHVAR. ZHVAR. ZHVAR. ZHVAR. ZHURB Imputed central chillers inside building ZHVAR. ZHVAR. ZHURB Imputed per cooled by packaged A/C ZHURB Imputed pct cooled by packaged A/C ZHYAR. Z	ZSLFCNP8		67-	67	\$ZVAR.
ZSTHWP8 Imputed pct heated by dist steam/HW 71- 71 \$ZVAR. ZOTHTP8 Imputed pct heated by other ht equip 73- 73 \$ZVAR. ZMAINHT8 Imputed main heating equipment 75- 75 \$ZVAR. ZPKGHPS8 Imputed pkgd unit heat pump for heating 77- 77 \$ZVAR. ZSPLHPS8 Imputed split system ht pump for heating 79- 79 \$ZVAR. ZSPLHPS8 Imputed indiv room heat pump for heating 81- 81 \$ZVAR. ZAIRHPT8 Imputed air source heat pump for heating 83- 83 \$ZVAR. ZGRDHPT8 Imputed ground source ht pmp for heating 85- 85 \$ZVAR. ZWTRHPT8 Imputed water loop heat pump for heating 87- 87 \$ZVAR. ZNWMNHT8 Imputed main heating replaced 89- 89 \$ZVAR. ZRDHTNF8 Imputed heat reduced over 24 hr period 91- 91 \$ZVAR. ZHWRDHT8 Imputed how reduce heating 93- 93 \$ZVAR. ZCOOLP8 Imputed percent cooled 95- 95 \$ZVAR. ZPKGCL8 Imputed packaged air conditioning units 97- 97 \$ZVAR. ZRCACS Imputed residential-type air conditioner 99- 99 \$ZVAR. ZHTPMPC8 Imputed individual room air conditioners 101- 101 \$ZVAR. ZHTPMPC8 Imputed heat pumps for cooling 103- 103 \$ZVAR. ZCHWT8 Imputed district chilled water piped in 105- 105 \$ZVAR. ZCHILLR8 Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZCHILLR8 Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZPKGCP8 Imputed pct cooled by packaged A/C 113- 113 \$ZVAR. ZPKGCP8 Imputed pct cooled by central A/C 115- 115 \$ZVAR. ZACWNWP8 Imputed pct cooled by indiv room A/C 117- 117 \$ZVAR.	ZHTPHP8		69-	69	\$ZVAR.
ZOTHTP8 Imputed pct heated by other ht equip 73- 73 \$ZVAR. ZMAINHT8 Imputed main heating equipment 75- 75 \$ZVAR. ZPKGHPS8 Imputed pkgd unit heat pump for heating 77- 77 \$ZVAR. ZSPLHPS8 Imputed split system ht pump for heating 79- 79 \$ZVAR. ZRMHPS8 Imputed indiv room heat pump for heating 81- 81 \$ZVAR. ZAIRHPT8 Imputed air source heat pump for heating 83- 83 \$ZVAR. ZGRDHPT8 Imputed ground source ht pmp for heating 85- 85 \$ZVAR. ZWTRHPT8 Imputed water loop heat pump for heating 87- 87 \$ZVAR. ZWTRHPT8 Imputed main heating replaced 89- 89 \$ZVAR. ZNWMNHT8 Imputed heat reduced over 24 hr period 91- 91 \$ZVAR. ZHWRDHT8 Imputed how reduce heating 93- 93 \$ZVAR. ZCOOLP8 Imputed percent cooled 95- 95 \$ZVAR. ZRACC8 Imputed percent cooled 95- 95 \$ZVAR. ZRACC8 Imputed residential-type air conditioner 99- 99 \$ZVAR. ZACWNWL8 Imputed individual room air conditioners 101- 101 \$ZVAR. ZHTPMPC8 Imputed district chilled water piped in 105- 105 \$ZVAR. ZCHUT8 Imputed central chillers inside building 107- 107 \$ZVAR. ZCHILLR8 Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZOTCLEQ8 Imputed other cooling equipment 111- 111 \$ZVAR. ZPKGCP8 Imputed pct cooled by packaged A/C 113- 113 \$ZVAR. ZRCACP8 Imputed pct cooled by indiv room A/C 117- 117 \$ZVAR.	ZSTHWP8			71	\$ZVAR.
ZMAINHT8 Imputed main heating equipment ZPKGHPS8 Imputed pkgd unit heat pump for heating T7- ZPKGHPS8 Imputed split system ht pump for heating T9- T9 ZVAR. ZRMHPS8 Imputed indiv room heat pump for heating ZAIRHPT8 Imputed air source heat pump for heating ZGRDHPT8 Imputed ground source ht pmp for heating ZGRDHPT8 Imputed water loop heat pump for heating ZWAR. ZWAR. ZWTRHPT8 Imputed main heating replaced ZRDHTNF8 Imputed heat reduced over 24 hr period ZHWRDHT8 Imputed how reduce heating ZPKGCL8 Imputed percent cooled ZPKGCL8 Imputed packaged air conditioning units ZRCAC8 Imputed residential-type air conditioner ZACWNWL8 Imputed individual room air conditioners ZHTPMPC8 Imputed district chilled water piped in Imputed evaporative or swamp coolers ZPKAR. ZPKAR. ZPKAR. ZPKAR. ZPKAR. ZPKAR. ZPVAR. ZEVAR. Imputed evaporative or swamp coolers Imputed pct cooled by packaged A/C Imputed pct cooled by indiv room A/C Imputed pct cooled by indiv room A/C Imputed pct cooled by indiv room A/C Imputed Imputed pct cooled by indiv room A/C Imputed pct cooled by indiv room A/C Imputed Imputed pct cooled by indiv room A/C Imputed pct cooled by indiv room A/C Imputed pct cooled by indiv room A/C	ZOTHTP8		73-	73	\$ZVAR.
ZPKGHPS8 Imputed pkgd unit heat pump for heating 77- 77 \$ZVAR. ZSPLHPS8 Imputed split system ht pump for heating 79- 79 \$ZVAR. ZRMHPS8 Imputed indiv room heat pump for heating 81- 81 \$ZVAR. ZAIRHPT8 Imputed air source heat pump for heating 83- 83 \$ZVAR. ZGRDHPT8 Imputed ground source ht pmp for heating 85- 85 \$ZVAR. ZWTRHPT8 Imputed water loop heat pump for heating 87- 87 \$ZVAR. ZWTRHPT8 Imputed main heating replaced 89- 89 \$ZVAR. ZRDHTNF8 Imputed heat reduced over 24 hr period 91- 91 \$ZVAR. ZHWRDHT8 Imputed how reduce heating 93- 93 \$ZVAR. ZCOOLP8 Imputed percent cooled 95- 95 \$ZVAR. ZRCAC8 Imputed packaged air conditioning units 97- 97 \$ZVAR. ZRCAC8 Imputed residential-type air conditioner 99- 99 \$ZVAR. ZHTPMPC8 Imputed heat pumps for cooling 103- 103 \$ZVAR. ZCHWT8 Imputed district chilled water piped in 105- 105 \$ZVAR. ZCHWT8 Imputed central chillers inside building 107- 107 \$ZVAR. ZEVAPCL8 Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZPKGCP8 Imputed pct cooled by packaged A/C 113- 113 \$ZVAR. ZRCACP8 Imputed pct cooled by central A/C 115- 115 \$ZVAR. ZRCACP8 Imputed pct cooled by indiv room A/C 117- 117 \$ZVAR.	ZMAINHT8		75-	75	\$ZVAR.
ZSPLHPS8 Imputed split system ht pump for heating 79- 79 \$ZVAR. ZRMHPS8 Imputed indiv room heat pump for heating 81- 81 \$ZVAR. ZAIRHPT8 Imputed air source heat pump for heating 83- 83 \$ZVAR. ZGRDHPT8 Imputed ground source ht pmp for heating 85- 85 \$ZVAR. ZWTRHPT8 Imputed water loop heat pump for heating 87- 87 \$ZVAR. ZNWMNHT8 Imputed main heating replaced 89- 89 \$ZVAR. ZRDHTNF8 Imputed heat reduced over 24 hr period 91- 91 \$ZVAR. ZHOHTNF8 Imputed how reduce heating 93- 93 \$ZVAR. ZCOOLP8 Imputed percent cooled 95- 95 \$ZVAR. ZRCAC8 Imputed packaged air conditioning units 97- 97 \$ZVAR. ZRCAC8 Imputed residential-type air conditioner 99- 99 \$ZVAR. ZHOHTNPC8 Imputed individual room air conditioners 101- 101 \$ZVAR. ZHOHTNPC8 Imputed district chilled water piped in 105- 105 \$ZVAR. ZCHWT8 Imputed district chilled water piped in 105- 105 \$ZVAR. ZEVAPCL8 Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZEVAPCL8 Imputed other cooling equipment 111- 111 \$ZVAR. ZPKGCP8 Imputed pct cooled by packaged A/C 113- 113 \$ZVAR. ZRCACP8 Imputed pct cooled by central A/C 115- 115 \$ZVAR. ZRCACP8 Imputed pct cooled by indiv room A/C 117- 117 \$ZVAR.	ZPKGHPS8		77-	77	\$ZVAR.
ZRMHPS8 Imputed indiv room heat pump for heating 81- 81 \$ZVAR. ZAIRHPT8 Imputed air source heat pump for heating 83- 83 \$ZVAR. ZGRDHPT8 Imputed ground source ht pmp for heating 85- 85 \$ZVAR. ZWTRHPT8 Imputed water loop heat pump for heating 87- 87 \$ZVAR. ZNWMNHT8 Imputed main heating replaced 89- 89 \$ZVAR. ZRDHTNF8 Imputed heat reduced over 24 hr period 91- 91 \$ZVAR. ZHWRDHT8 Imputed how reduce heating 93- 93 \$ZVAR. ZCOOLP8 Imputed percent cooled 95- 95 \$ZVAR. ZPKGCL8 Imputed packaged air conditioning units 97- 97 \$ZVAR. ZRCAC8 Imputed residential-type air conditioner 99- 99 \$ZVAR. ZHYPMPC8 Imputed individual room air conditioners 101- 101 \$ZVAR. ZHYPMPC8 Imputed heat pumps for cooling 103- 103 \$ZVAR. ZCHWT8 Imputed district chilled water piped in 105- 105 \$ZVAR. ZCHWT8 Imputed central chillers inside building 107- 107 \$ZVAR. ZEVAPCL8 Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZOTCLEQ8 Imputed other cooling equipment 111- 111 \$ZVAR. ZPKGCP8 Imputed pct cooled by packaged A/C 113- 113 \$ZVAR. ZRCACP8 Imputed pct cooled by central A/C 115- 115 \$ZVAR. ZACWNWP8 Imputed pct cooled by indiv room A/C 117- 117 \$ZVAR.	ZSPLHPS8		79-	79	\$ZVAR.
ZAIRHPT8 Imputed air source heat pump for heating 83-83 \$ZVAR. ZGRDHPT8 Imputed ground source ht pmp for heating 85-85 \$ZVAR. ZWTRHPT8 Imputed water loop heat pump for heating 87-87 \$ZVAR. ZNWMNHT8 Imputed main heating replaced 89-89 \$ZVAR. ZRDHTNF8 Imputed heat reduced over 24 hr period 91-91 \$ZVAR. ZHWRDHT8 Imputed how reduce heating 93-93 \$ZVAR. ZCOOLP8 Imputed percent cooled 95-95 \$ZVAR. ZPKGCL8 Imputed packaged air conditioning units 97-97 \$ZVAR. ZRCAC8 Imputed residential-type air conditioner 99-99 \$ZVAR. ZHYPPHC8 Imputed heat pumps for cooling 101-101 \$ZVAR. ZHTPMPC8 Imputed district chilled water piped in 105-105 \$ZVAR. ZCHWT8 Imputed central chillers inside building 107-107 \$ZVAR. ZEVAPCL8 Imputed evaporative or swamp coolers 109-109 \$ZVAR. ZOTCLEQ8 Imputed other cooling equipment 111-111 \$ZVAR. ZPKGCP8 Imputed pct cooled by packaged A/C 113-113 \$ZVAR. ZRCACP8 Imputed pct cooled by indiv room A/C 117-117 \$ZVAR.	ZRMHPS8		81-	81	\$ZVAR.
ZGRDHPT8 Imputed ground source ht pmp for heating 85- 85 \$ZVAR. ZWTRHPT8 Imputed water loop heat pump for heating 87- 87 \$ZVAR. ZNWMNHT8 Imputed main heating replaced 89- 89 \$ZVAR. ZRDHTNF8 Imputed heat reduced over 24 hr period 91- 91 \$ZVAR. ZHWRDHT8 Imputed how reduce heating 93- 93 \$ZVAR. ZCOOLP8 Imputed percent cooled 95- 95 \$ZVAR. ZPKGCL8 Imputed packaged air conditioning units 97- 97 \$ZVAR. ZRCAC8 Imputed residential-type air conditioner 99- 99 \$ZVAR. ZHTPMPC8 Imputed individual room air conditioners 101- 101 \$ZVAR. ZHTPMPC8 Imputed heat pumps for cooling 103- 103 \$ZVAR. ZCHUT8 Imputed district chilled water piped in 105- 105 \$ZVAR. ZCHILLR8 Imputed central chillers inside building 107- 107 \$ZVAR. ZEVAPCL8 Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZOTCLEQ8 Imputed other cooling equipment 111- 111 \$ZVAR. ZPKGCP8 Imputed pct cooled by packaged A/C 113- 113 \$ZVAR. ZRCACP8 Imputed pct cooled by indiv room A/C 117- 117 \$ZVAR.	ZAIRHPT8		83-	83	\$ZVAR.
ZWTRHPT8 Imputed water loop heat pump for heating 87- 87 \$ZVAR. ZNWMNHT8 Imputed main heating replaced 89- 89 \$ZVAR. ZRDHTNF8 Imputed heat reduced over 24 hr period 91- 91 \$ZVAR. ZHWRDHT8 Imputed how reduce heating 93- 93 \$ZVAR. ZCOOLP8 Imputed percent cooled 95- 95 \$ZVAR. ZPKGCL8 Imputed packaged air conditioning units 97- 97 \$ZVAR. ZRCAC8 Imputed residential-type air conditioner 99- 99 \$ZVAR. ZACWNWL8 Imputed individual room air conditioners 101- 101 \$ZVAR. ZHTPMPC8 Imputed heat pumps for cooling 103- 103 \$ZVAR. ZCHWT8 Imputed district chilled water piped in 105- 105 \$ZVAR. ZCHILLR8 Imputed central chillers inside building 107- 107 \$ZVAR. ZEVAPCL8 Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZOTCLEQ8 Imputed other cooling equipment 111- 111 \$ZVAR. ZPKGCP8 Imputed pct cooled by packaged A/C 113- 113 \$ZVAR. ZRCACP8 Imputed pct cooled by central A/C 115- 115 \$ZVAR. ZACWNWP8 Imputed pct cooled by indiv room A/C 117- 117 \$ZVAR.	ZGRDHPT8		85-	85	
ZNWMNHT8 Imputed main heating replaced 89-89 \$ZVAR. ZRDHTNF8 Imputed heat reduced over 24 hr period 91-91 \$ZVAR. ZHWRDHT8 Imputed how reduce heating 93-93 \$ZVAR. ZCOOLP8 Imputed percent cooled 95-95 \$ZVAR. ZPKGCL8 Imputed packaged air conditioning units 97-97 \$ZVAR. ZRCAC8 Imputed residential-type air conditioner 99-99 \$ZVAR. ZACWNWL8 Imputed individual room air conditioners 101-101 \$ZVAR. ZHTPMPC8 Imputed heat pumps for cooling 103-103 \$ZVAR. ZCHUT8 Imputed district chilled water piped in 105-105 \$ZVAR. ZCHILLR8 Imputed central chillers inside building 107-107 \$ZVAR. ZEVAPCL8 Imputed evaporative or swamp coolers 109-109 \$ZVAR. ZOTCLEQ8 Imputed other cooling equipment 111-111 \$ZVAR. ZPKGCP8 Imputed pct cooled by packaged A/C 113-113 \$ZVAR. ZRCACP8 Imputed pct cooled by central A/C 115-115 \$ZVAR. ZACWNWP8 Imputed pct cooled by indiv room A/C 117-117 \$ZVAR.	ZWTRHPT8		87-	87	\$ZVAR.
ZRDHTNF8 Imputed heat reduced over 24 hr period 91- 91 \$ZVAR. ZHWRDHT8 Imputed how reduce heating 93- 93 \$ZVAR. ZCOOLP8 Imputed percent cooled 95- 95 \$ZVAR. ZPKGCL8 Imputed packaged air conditioning units 97- 97 \$ZVAR. ZRCAC8 Imputed residential-type air conditioner 99- 99 \$ZVAR. ZACWNWL8 Imputed individual room air conditioners 101- 101 \$ZVAR. ZHTPMPC8 Imputed heat pumps for cooling 103- 103 \$ZVAR. ZCHUT8 Imputed district chilled water piped in 105- 105 \$ZVAR. ZCHILLR8 Imputed central chillers inside building 107- 107 \$ZVAR. ZEVAPCL8 Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZOTCLEQ8 Imputed other cooling equipment 111- 111 \$ZVAR. ZPKGCP8 Imputed pct cooled by packaged A/C 113- 113 \$ZVAR. ZRCACP8 Imputed pct cooled by central A/C 115- 115 \$ZVAR. ZACWNWP8 Imputed pct cooled by indiv room A/C 117- 117 \$ZVAR.	ZNWMNHT8		89-	89	\$ZVAR.
ZHWRDHT8 Imputed how reduce heating 93- 93 \$ZVAR. ZCOOLP8 Imputed percent cooled 95- 95 \$ZVAR. ZPKGCL8 Imputed packaged air conditioning units 97- 97 \$ZVAR. ZRCAC8 Imputed residential-type air conditioner 99- 99 \$ZVAR. ZACWNWL8 Imputed individual room air conditioners 101- 101 \$ZVAR. ZHTPMPC8 Imputed heat pumps for cooling 103- 103 \$ZVAR. ZCHWT8 Imputed district chilled water piped in 105- 105 \$ZVAR. ZCHILLR8 Imputed central chillers inside building 107- 107 \$ZVAR. ZEVAPCL8 Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZOTCLEQ8 Imputed other cooling equipment 111- 111 \$ZVAR. ZPKGCP8 Imputed pct cooled by packaged A/C 113- 113 \$ZVAR. ZRCACP8 Imputed pct cooled by central A/C 115- 115 \$ZVAR. ZACWNWP8 Imputed pct cooled by indiv room A/C 117- 117 \$ZVAR.	ZRDHTNF8		91-	91	\$ZVAR.
ZCOOLP8 Imputed percent cooled 95- 95 \$ZVAR. ZPKGCL8 Imputed packaged air conditioning units 97- 97 \$ZVAR. ZRCAC8 Imputed residential-type air conditioner 99- 99 \$ZVAR. ZACWNWL8 Imputed individual room air conditioners 101- 101 \$ZVAR. ZHTPMPC8 Imputed heat pumps for cooling 103- 103 \$ZVAR. ZCHWT8 Imputed district chilled water piped in 105- 105 \$ZVAR. ZCHILLR8 Imputed central chillers inside building 107- 107 \$ZVAR. ZEVAPCL8 Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZOTCLEQ8 Imputed other cooling equipment 111- 111 \$ZVAR. ZPKGCP8 Imputed pct cooled by packaged A/C 113- 113 \$ZVAR. ZRCACP8 Imputed pct cooled by central A/C 115- 115 \$ZVAR. ZACWNWP8 Imputed pct cooled by indiv room A/C 117- 117 \$ZVAR.	ZHWRDHT8		93-	93	\$ZVAR.
ZPKGCL8 Imputed packaged air conditioning units 97- 97 \$ZVAR. ZRCAC8 Imputed residential-type air conditioner 99- 99 \$ZVAR. ZACWNWL8 Imputed individual room air conditioners 101- 101 \$ZVAR. ZHTPMPC8 Imputed heat pumps for cooling 103- 103 \$ZVAR. ZCHWT8 Imputed district chilled water piped in 105- 105 \$ZVAR. ZCHILLR8 Imputed central chillers inside building 107- 107 \$ZVAR. ZEVAPCL8 Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZOTCLEQ8 Imputed other cooling equipment 111- 111 \$ZVAR. ZPKGCP8 Imputed pct cooled by packaged A/C 113- 113 \$ZVAR. ZRCACP8 Imputed pct cooled by central A/C 115- 115 \$ZVAR. ZACWNWP8 Imputed pct cooled by indiv room A/C 117- 117 \$ZVAR.	ZCOOLP8		95-	95	\$ZVAR.
ZRCAC8 Imputed residential-type air conditioner 99- 99 \$ZVAR. ZACWNWL8 Imputed individual room air conditioners 101- 101 \$ZVAR. ZHTPMPC8 Imputed heat pumps for cooling 103- 103 \$ZVAR. ZCHWT8 Imputed district chilled water piped in 105- 105 \$ZVAR. ZCHILLR8 Imputed central chillers inside building 107- 107 \$ZVAR. ZEVAPCL8 Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZOTCLEQ8 Imputed other cooling equipment 111- 111 \$ZVAR. ZPKGCP8 Imputed pct cooled by packaged A/C 113- 113 \$ZVAR. ZRCACP8 Imputed pct cooled by central A/C 115- 115 \$ZVAR. ZACWNWP8 Imputed pct cooled by indiv room A/C 117- 117 \$ZVAR.	ZPKGCL8	Imputed packaged air conditioning units	97-	97	
ZACWNWL8 Imputed individual room air conditioners 101- 101 \$ZVAR. ZHTPMPC8 Imputed heat pumps for cooling 103- 103 \$ZVAR. ZCHWT8 Imputed district chilled water piped in 105- 105 \$ZVAR. ZCHILLR8 Imputed central chillers inside building 107- 107 \$ZVAR. ZEVAPCL8 Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZOTCLEQ8 Imputed other cooling equipment 111- 111 \$ZVAR. ZPKGCP8 Imputed pct cooled by packaged A/C 113- 113 \$ZVAR. ZRCACP8 Imputed pct cooled by central A/C 115- 115 \$ZVAR. ZACWNWP8 Imputed pct cooled by indiv room A/C 117- 117 \$ZVAR.			99-	99	\$ZVAR.
ZHTPMPC8 Imputed heat pumps for cooling 103- 103 \$ZVAR. ZCHWT8 Imputed district chilled water piped in 105- 105 \$ZVAR. ZCHILLR8 Imputed central chillers inside building 107- 107 \$ZVAR. ZEVAPCL8 Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZOTCLEQ8 Imputed other cooling equipment 111- 111 \$ZVAR. ZPKGCP8 Imputed pct cooled by packaged A/C 113- 113 \$ZVAR. ZRCACP8 Imputed pct cooled by central A/C 115- 115 \$ZVAR. ZACWNWP8 Imputed pct cooled by indiv room A/C 117- 117 \$ZVAR.	ZACWNWL8	Imputed individual room air conditioners	101-	101	
ZCHWT8 Imputed district chilled water piped in 105- 105 \$ZVAR. ZCHILLR8 Imputed central chillers inside building 107- 107 \$ZVAR. ZEVAPCL8 Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZOTCLEQ8 Imputed other cooling equipment 111- 111 \$ZVAR. ZPKGCP8 Imputed pct cooled by packaged A/C 113- 113 \$ZVAR. ZRCACP8 Imputed pct cooled by central A/C 115- 115 \$ZVAR. ZACWNWP8 Imputed pct cooled by indiv room A/C 117- 117 \$ZVAR.	ZHTPMPC8		103-	103	
ZEVAPCL8 Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZOTCLEQ8 Imputed other cooling equipment 111- 111 \$ZVAR. ZPKGCP8 Imputed pct cooled by packaged A/C 113- 113 \$ZVAR. ZRCACP8 Imputed pct cooled by central A/C 115- 115 \$ZVAR. ZACWNWP8 Imputed pct cooled by indiv room A/C 117- 117 \$ZVAR.	ZCHWT8	Imputed district chilled water piped in	105-	105	\$ZVAR.
ZEVAPCL8 Imputed evaporative or swamp coolers 109- 109 \$ZVAR. ZOTCLEQ8 Imputed other cooling equipment 111- 111 \$ZVAR. ZPKGCP8 Imputed pct cooled by packaged A/C 113- 113 \$ZVAR. ZRCACP8 Imputed pct cooled by central A/C 115- 115 \$ZVAR. ZACWNWP8 Imputed pct cooled by indiv room A/C 117- 117 \$ZVAR.	ZCHILLR8	Imputed central chillers inside building	107-	107	
ZOTCLEQ8 Imputed other cooling equipment 111- 111 \$ZVAR. ZPKGCP8 Imputed pct cooled by packaged A/C 113- 113 \$ZVAR. ZRCACP8 Imputed pct cooled by central A/C 115- 115 \$ZVAR. ZACWNWP8 Imputed pct cooled by indiv room A/C 117- 117 \$ZVAR.					•
ZPKGCP8 Imputed pct cooled by packaged A/C 113-113 \$ZVAR. ZRCACP8 Imputed pct cooled by central A/C 115-115 \$ZVAR. ZACWNWP8 Imputed pct cooled by indiv room A/C 117-117 \$ZVAR.					•
ZRCACP8 Imputed pct cooled by central A/C 115- 115 \$ZVAR. ZACWNWP8 Imputed pct cooled by indiv room A/C 117- 117 \$ZVAR.			113-	113	\$ZVAR.
ZACWNWP8 Imputed pct cooled by indiv room A/C 117- 117 \$ZVAR.	ZRCACP8				
	ZHTPCP8		119-	119	

(File 10 continued)

ZCHWTP8	Imputed pct cooled by dist chilled water	121- 121	\$ZVAR.
ZCHILP8	Imputed pct cooled by central chillers	123- 123	\$ZVAR.
ZEVAPP8	Imputed pct cooled by swamp coolers	125- 125	\$ZVAR.
ZOTCLP8	Imputed pct cooled by other A/C equip	127- 127	\$ZVAR.
ZMAINCL8	Imputed main cooling equipment	129- 129	\$ZVAR.
ZPKGCPS8	Imputed pkgd unit heat pump for cooling	131- 131	\$ZVAR.
ZSPLCPS8	Imputed split system ht pump for cooling	133- 133	\$ZVAR.
ZRMCPS8	Imputed indiv room heat pump for cooling	135- 135	\$ZVAR.
ZAIRCPT8	Imputed air source heat pump for cooling	137- 137	\$ZVAR.
ZGRDCPT8	Imputed ground source ht pmp for cooling	139- 139	\$ZVAR.
ZWTRCPT8	Imputed water loop heat pump for cooling	141- 141	\$ZVAR.
ZNWMNCL8	Imputed main cooling replaced	143- 143	\$ZVAR.
ZRDCLNF8	Imputed A/C reduced during 24 hr period	145- 145	\$ZVAR.
ZHWRDCL8	Imputed how reduce cooling	147- 147	\$ZVAR.
ZVAV8	Imputed VAV system	149- 149	\$ZVAR.
ZECN8	Imputed economizer cycle	151- 151	\$ZVAR.
ZMAINT8	Imputed regular HVAC maintenance	153- 153	\$ZVAR.
ZEMCS8	Imputed EMCS	155- 155	\$ZVAR.
ADJWT8	Final full sample building weight	157- 164	
STRATUM8	Variance stratum	166- 168	
PAIR8	Variance unit	170- 170	

Layout for File 11: Imputation Flags for File 4

Variable Name	Variable Description	Pos	<u>ition</u>	Format
PUBID8	Building identifier	1-	5	
REGION8	Census region	7 –	7	\$REGION.
CENDIV8	Census division	9-	9	\$CENDIV.
SQFT8	Square footage	11-	20	MISS10CH.
SQFTC8	Square footage category	22-	23	\$SQFTCX.
YRCONC8	Year of construction category	25-	26	\$YEARCAT.
PBA8	Principal building activity	28-	29	\$PBA.
ELUSED8	Electricity used	31-	31	\$YESNO.
NGUSED8	Natural gas used	33-	33	\$YESNO.
FKUSED8	Fuel oil/diesel/kerosene used	35-	35	\$YESNO.
PRUSED8	Bottled gas/LPG/propane used	37-	37	\$YESNO.
STUSED8	District steam used	39-	39	\$YESNO.
HWUSED8	District hot water used	41-	41	\$YESNO.
ZWTHTEQ8	Imputed water heating equipment	43-	43	\$ZVAR.
ZINSTWT8	Imputed instant hot water	45-	45	\$ZVAR.
ZFDRM8	Imputed commercial food preparation	47-	47	\$ZVAR.
ZSNACK8	Imputed snack bar	49-	49	\$ZVAR.
ZFASTFD8	Imputed fast food or small restaurant	51-	51	\$ZVAR.
ZCAF8	Imputed cafeteria or large restaurant	53-	53	\$ZVAR.
ZFDPREP8	Imputed food preparation area	55-	55	\$ZVAR.
ZKITCHN8	Imputed small kitchen area	57-	57	\$ZVAR.
ZOTFDRM8	Imputed other food prep area	59-	59	\$ZVAR.
ZHWTRM8	Imputed large amounts of hot water	61-	61	\$ZVAR.
ZLAUNDR8	Imputed laundry onsite	63-	63	\$ZVAR.
ZMEDEQP8	Imputed medical equipment	65-	65	\$ZVAR.
ZLABEQP8	Imputed laboratory equipment	67-	67	\$ZVAR.
ZMCHEQP8	Imputed machine equipment	69-	69	\$ZVAR.
ZPOOL8	Imputed indoor pool	71-	71	\$ZVAR.
ZHTPOOL8	Imputed heated pool	73-	73	\$ZVAR.
ZPLSRC8	Imputed pool energy source	75-	75	\$ZVAR.
ZRFGEQP8	Imputed refrigeration equipment used	77-	77	\$ZVAR.
ZRFGWI8	Imputed walk-in refrigeration units	79-	79	\$ZVAR.
ZRFGOP8	Imputed open case refrigeration units	81-	81	\$ZVAR.
ZRFGCL8	Imputed closed cased refrigeration units	83-	83	\$ZVAR.
ZRFGRES8	Imputed residential type refrigerators	85-	85	\$ZVAR.
ZRFGVEN8	Imputed refrigerated vending machines	87-	87	\$ZVAR.
ZRFGWIN8	Imputed number of walk-in units	89-	89	\$ZVAR.
ZRFGOPN8	Imputed number of open cases	91-	91	\$ZVAR.
ZRFGCLN8	Imputed number of closed cases	93-	93	\$ZVAR.
ZRFGRSN8	Imputed number of resid-type refrig	95-	95	\$ZVAR.
ZRFGVNN8	Imputed number of refr vending machines	97-	97	\$ZVAR.
ZPCTERM8	Imputed computers used	99-	99	\$ZVAR.
ZSERVER8	Imputed dedicated servers	101-		\$ZVAR.
ZMNFRM8	Imputed mainframe computer room	103-	103	\$ZVAR.
ZSRVFRM8	Imputed server farm	105-		\$ZVAR.
ZTRNGRM8	Imputed computer-based training room	107-		\$ZVAR.
ZSTDNRM8	Imputed student/public computer center	109-		\$ZVAR.
ZOTPCRM8	Imputed other computer area	111-		\$ZVAR.
ZSRVNUM8	Imputed number of servers	113-		\$ZVAR.
ZSRVRC8	Imputed number of servers category	115-		\$ZVAR.
ZPCNUM8	Imputed number of computers	117-		\$ZVAR.
ZPCTRMC8	Imputed number of computers category	119-	119	\$ZVAR.

(File 11 continued)

ZFLAT8	Imputed flat screen monitors	121- 121	\$ZVAR.
ZFLATC8	Imputed flat screen monitors category	123- 123	\$ZVAR.
ZPRNTRN8	Imputed number of printers	125- 125	\$ZVAR.
ZPRNTYP8	Imputed type of printers	127- 127	\$ZVAR.
ZRGSTRN8	Imputed number of cash registers	129- 129	\$ZVAR.
ZCOPIER8	Imputed photocopiers	131- 131	\$ZVAR.
ZCOPRN8	Imputed number of photocopiers	133- 133	\$ZVAR.
ZFAX8	Imputed FAX machines	135- 135	\$ZVAR.
ZRDOFEQ8	Imputed equip turned off during off hrs	137- 137	\$ZVAR.
ADJWT8	Final full sample building weight	139- 146	
STRATUM8	Variance stratum	148- 150	
PAIR8	Variance unit	152- 152	

Layout for File 12: Imputation Flags for File 5

PUBID8	Variable Name	Variable Description	Pos	<u>ition</u>	Format
CENDIVB Census division 9- 9 SCENDIV SQFTC8 Square footage 11- 20 MISSIOCH. SQFTC8 Square footage category 22- 23 SSQFTCX. YRCONC8 Year of construction category 25- 26 SYEARCAT. PEBAS Principal building activity 28- 29 SPBA. ELUSED8 Electricity used 31- 31 SYESNO. FKUSED8 Fuel oil/diesel/kerosene used 35- 35 SYESNO. FKUSED8 Bottled gas/LPG/propane used 37- 37 SYESNO. STUSED8 District but water used 41- 41 SYESNO. STUSED8 District but water used 41- 41 SYESNO. ZCAPGEN8 Imputed elec for main space heating 45- 45 SZVAR. ZEHHT18 Imputed nat gas for main space heating 47- 47 25 SZVAR. ZFKHT18 Imputed dist HW for main space heating 51- 52 52 52 SZVAR. <th>PUBID8</th> <th>Building identifier</th> <th>1-</th> <th>5</th> <th></th>	PUBID8	Building identifier	1-	5	
SQFTCB Square footage 11- 20 MISSICCH. SQFTCCS Square footage category 22- 23 SSQFTCX. YRCONC8 Year of construction category 25- 26 SYBARCAT. PBA8 Principal building activity 28- 29 SPBA. ELUSEDB Electricity used 31- 31 31- 31 31- 31 31- 33 SYESNO. NGUSEDB Natural gas used 35- 35 SYESNO. SYESNO. FRUSEDB Fuel oil/diesel/kerosene used 39- 39 SYESNO. STUSEDB District steam used 39- 39 SYESNO. HWUSEDB District bot water used 39- 39 SYESNO. ZCAPGENB Imputed elec for main space heating 41- 41 YESTNO. ZCAPGENB Imputed elec for main space heating 45- 45 SZVAR. ZNHT118 Imputed nat gas for main space heating 47- 47 SZVAR. ZFEHT18 Imputed propane for main space heating 51- 51 SZVAR. ZFHT118 Imputed dist steam for main space heating 55- 53 SZVAR.	REGION8	Census region	7-	7	\$REGION.
SOFTCR YRCONC8 Year of construction category YRCONC8 Year of construction category Year of construction category Year of construction category 25- 26 SYBARCAT. PRABA Principal building activity 28- 29 SPBA. ELUSED8 Electricity used 31- 31 SYESNO. NGUSED8 Natural gas used 33- 35 SYESNO. FKUSED8 Fuel oil/diesel/kerosene used 35- 35 SYESNO. STUSED8 Bottled gas/LPG/propane used 37- 37 SYESNO. STUSED8 District steam used 41- 41 SYESNO. HWUSED8 Imputed elec generation capability 43- 43 SZVAR. ZELHT18 Imputed elec for main space heating ZCAPGEN8 Imputed elec for main space heating XFHIT18 Imputed fuel oil for main space heating XFHIT18 Imputed propane for main space heating XFHIT18 Imputed dist steam for main space heating XFHIT18 Imputed dist HW for main space heating XFHIT18 Imputed dist HW for main space heating XFHIT28 Imputed elec for Znd space heating XFHIT28 Imputed fuel oil for Znd space heating XFHIT28 Imputed fuel oil for 2nd space heating XFHIT28 Imputed dist HW for Znd space heating XFHIT28 Imputed district Steam used for cooling XFHIT28 Imputed district Steam for Znd space heating XFHIT28 Imputed district Steam for Znd space heating XFHIT28 Imputed district Steam used for cooling XFHIT29 XFHIT28 Imputed district Steam for Znd space heating XFHIT28	CENDIV8	Census division	9 –	9	\$CENDIV.
YEAR Year of construction category 25- 26 SYEARCAT. PBA8 Principal building activity 28- 29 SPBA. ELUSED8 Electricity used 31- 31 31- 31 31- 31 31- 31 31- 31 31- 31 31- 31 31- 31 31- 31 31- 31 35- 35 SYESNO. FKUSED8 Fuel oil/diesel/kerosene used 35- 35 SYESNO. SYESNO. FRUSED8 Bottled gas/LPG/propane used 37- 37 SYESNO. STUSED8 District bot water used 41- 41 41- 41 YESNO. ZCAPGEN8 Imputed elec generation capability 43- 43 \$ZVAR. ZCAPGEN8 Imputed elec for main space heating 45- 45 \$ZVAR. ZEHHT18 Imputed nat gas for main space heating 47- 47 \$ZVAR. ZFKHT18 Imputed propane for main space heating 51- 51 \$ZVAR. ZFKHT18 Imputed dist HW for main space heating 51- 55 \$ZVAR. ZEHHT18 Imputed dist HW for main space heating 57- 57 \$ZVAR. ZEHHT18 Imputed elec fo	SQFT8	Square footage	11-	20	MISS10CH.
PBA8	SQFTC8	Square footage category	22-	23	\$SQFTCX.
ELUSED8	YRCONC8	Year of construction category	25-	26	\$YEARCAT.
NGUSED8 Natural gas used 33-33 \$YESNO. FKUSED8 Fuel oil/diesel/kerosene used 35-35 \$YESNO. PRUSED8 Bottled gas/LPG/propane used 37-37 \$YESNO. STUSED8 District steam used 41-41 \$YESNO. STUSED8 District hot water used 41-41 \$YESNO. CAPGEN8 Imputed elec generation capability 43-43 \$ZVAR. ZELHT18 Imputed elec for main space heating 45-45 \$ZVAR. ZEHHT18 Imputed nat gas for main space heating 47-47 \$ZVAR. ZFRHT18 Imputed fuel oil for main space heating 51-51 \$ZVAR. ZFRHT18 Imputed dist steam for main space heating 51-51 \$ZVAR. ZFRHT18 Imputed dist HW for main space heating 55-55 \$ZVAR. ZEHT18 Imputed dist steam for 2nd space heating 57-57 \$ZVAR. ZELHT28 Imputed dist fuel oil for 2nd space heating 57-57 \$ZVAR. ZFRHT28 Imputed propane for 2nd space heating 65-65 \$ZVAR. ZHHT18 Imputed d	PBA8	Principal building activity	28-	29	\$PBA.
FKUSED8 Fuel oil/diesel/kerosene used 35- 35 \$YESNO. PRUSED8 Bottled gas/LPG/propane used 37- 37 37 \$YESNO. STUSED8 District steam used 39- 39 \$YESNO. HWUSED8 District hot water used 41- 41 41 \$YESNO. ZCAPGEN8 Imputed elec generation capability 43- 43 \$ZVAR. ZELHT18 Imputed elec for main space heating 45- 45 \$ZVAR. ZNGHT18 Imputed nat gas for main space heating 47- 47 \$ZVAR. ZPRHT18 Imputed propane for main space heating 51- 51 \$ZVAR. ZSTHT18 Imputed dist steam for main space heating 51- 51 \$ZVAR. ZSTHT18 Imputed dist HW for main space heating 55- 55 \$ZVAR. ZEHHT28 Imputed elec for 2nd space heating 57- 57 \$ZVAR. ZEHHT28 Imputed fuel oil for 2nd space heating 59- 59 \$ZVAR. ZEPRHT28 Imputed fuel oil steam for 2nd space heating 67- 67 \$ZVAR. ZENHT28 Imputed dist HW for 2nd space heating 67- 65 \$ZVAR.	ELUSED8	Electricity used	31-	31	\$YESNO.
PRUSED8 District steam used 37- 37 \$YESNO. STUSED8 District steam used 39- 39 \$YESNO. STUSED8 District hot water used 41- 41 \$YESNO. ZCAPGEN8 Imputed elec generation capability 43- 43 \$ZVAR. ZELHT18 Imputed elec for main space heating 45- 45 \$ZVAR. ZNGHT18 Imputed nat gas for main space heating 47- 47 \$ZVAR. ZFKHT18 Imputed fuel oil for main space heating 49- 49 \$ZVAR. ZFKHT18 Imputed fuel oil for main space heating 51- 51 \$ZVAR. ZFKHT18 Imputed dist steam for main space heating 51- 51 \$ZVAR. ZSTHT18 Imputed dist HW for main space heating 55- 55 \$ZVAR. ZHHT18 Imputed dist HW for main space heating 55- 55 \$ZVAR. ZHHT18 Imputed dist HW for main space heating 55- 55 \$ZVAR. ZHHT18 Imputed dist HW for main space heating 55- 55 \$ZVAR. ZHHT18 Imputed elec for 2nd space heating 59- 59 \$ZVAR. ZHHT18 Imputed nat gas for 2nd space heating 59- 59 \$ZVAR. ZHHT18 Imputed propane for 2nd space heating 61- 61 \$ZVAR. ZHHT18 Imputed fuel oil for 2nd space heating 61- 61 \$ZVAR. ZHHT18 Imputed dist steam for 2nd space heating 65- 65 \$ZVAR. ZHHT18 Imputed propane for 2nd space heating 65- 65 \$ZVAR. ZHHT18 Imputed dist HW for 2nd space heating 65- 65 \$ZVAR. ZHHT18 Imputed dist HW for 2nd space heating 67- 67 \$ZVAR. ZHHT18 Imputed dist HW for 2nd space heating 67- 67 \$ZVAR. ZHHT18 Imputed dist HW for 2nd space heating 67- 67 \$ZVAR. ZHCOOLB Imputed district steam used for cooling 77- 71 \$ZVAR. ZHCOOLB Imputed fuel oil used for cooling 77- 77 \$ZVAR. ZHCOOLB Imputed fuel oil used for cooling 77- 77 \$ZVAR. ZHCOOLB Imputed propane used for water heating 81- 81 \$ZVAR. ZHCOOLB Imputed propane used for water heating 83- 83 \$ZVAR. ZHCOOLB Imputed nat gas used for water heating 85- 85 \$ZVAR. ZHCOOLB Imputed propane used for water heating 87- 87 \$ZVAR. ZHCOOLB Imputed propane used for water heating 89- 89 \$ZVAR. ZHCOOLB Imputed propane used for water heating 89- 89 \$ZVAR. ZHCOOLB Imputed propane used for cooking 99- 99 \$ZVAR. ZHCOOLB Imputed propane used for cooking 99- 99 \$ZVAR. ZHCOOLB Imputed district steam used for cooking 99- 99 \$ZVAR. ZHCO	NGUSED8	Natural gas used	33-	33	\$YESNO.
STUSED8 District steam used District steam used District hot water used ZCAPGEN8 Imputed elec generation capability 41-41 SYESNO. ZELHT18 Imputed elec generation capability ZFKHT18 Imputed nat gas for main space heating ZFKHT18 Imputed nat gas for main space heating ZFKHT18 Imputed propane for main space heating ZFKHT18 Imputed propane for main space heating ZFKHT18 Imputed gelec for main space heating ZFKHT18 Imputed dist steam for main space heating ZFKHT18 Imputed dist STEAM FOR MAIN SYMAR. ZFRHT18 Imputed dist STEAM FOR MAIN SYMAR. ZFHT18 Imputed dist STEAM FOR MAIN SYMAR. ZFHT18 Imputed dist STEAM FOR MAIN SYMAR. ZFHT18 Imputed dist STEAM SYMAR. ZFHT18 Imputed elec for 2nd space heating ZFKHT18 Imputed nat gas for 2nd space heating ZFKHT18 Imputed nat gas for 2nd space heating ZFKHT18 Imputed propane for 2nd space heating ZFKHT18 Imputed dist STEAM SYMAR. ZFKHT18 Imputed dist STEAM SYMAR. ZFKHT18 Imputed dist STEAM SYMAR. ZFHT18 Imputed dist STEAM SYMAR. ZFHT28 Imputed dist STEAM SYMAR. ZFHT28 Imputed electricity used for cooling ZFKCOOLB Imputed natural gas used for cooling ZFKCOOLB Imputed natural gas used for cooling ZFKCOOLB Imputed district STEAM Used for cooling ZFKCOOLB Imputed district STEAM Used for cooling ZFT 75 ZZVAR. ZFRCOOLB Imputed district STEAM Used for cooling ZFT 75 ZZVAR. ZFRCOOLB Imputed Propane used for water heating ZFKMARB Imputed elect used for water heating ZFKMARB Imputed fuel oil used for water heating ZFKMATRB Imputed fiel oil used for water heating ZFKMATRB Imputed dist STEAM STEAM SYMAR. ZFKMATRB Imputed dist STEAM STEAM SYMAR. ZFKMATRB Imputed dist STEAM STEAM SYMAR. ZFKMATRB Imputed dist STEAM STEAM STEAM SYMAR. ZFKMATRB Imputed Amount STEAM STEAM SYMAR. ZFKMATRB Imputed dist STEAM STEAM STEAM SYMAR. ZFKMATRB Imputed dist STEAM STEAM STE	FKUSED8	Fuel oil/diesel/kerosene used	35-	35	\$YESNO.
HWUSED8 District hot water used ZCAPGEN8 Imputed elec generation capability A3 43 52VAR. ZELHT18 Imputed elec for main space heating ZFKHT18 Imputed nat gas for main space heating ZFKHT18 Imputed fuel oil for main space heating ZFKHT18 Imputed fuel oil for main space heating ZFKHT18 Imputed propane for main space heating ZFKHT18 Imputed propane for main space heating ZFKHT18 Imputed dist steam for main space heating ZZFKHT18 Imputed dist steam for main space heating ZZFKHT18 Imputed dist HW for main space heating ZZFKHT18 Imputed dist HW for main space heating ZZFKHT28 Imputed dist steam for land space heating ZZFKHT28 Imputed nat gas for 2nd space heating ZZFKHT28 Imputed propane for 2nd space heating ZZFKHT28 Imputed fuel oil for 2nd space heating ZZFKHT28 Imputed dist steam for 2nd space heating ZZFKHT28 Imputed district wased for cooling ZZFKHT28 Imputed natural gas used for cooling ZZFKHT28 Imputed district steam used for cooling ZZFKHT28 Imputed propane used for cooling ZZFKHT28 Imputed propane used for water heating ZZFKHT28 Imputed nat gas used for water heating ZZFKHT28 Imputed district steam for water heating ZZFKHT28 Imputed dist HW used for cooking ZZFKHT28 Imputed dist HW used for cooking ZZFKHT28 Imputed district steam used for cooking ZZFKHT28 Imputed propane used for cooking ZZFKHT28 Imputed district steam used for cooking ZZFKHT28 Imputed district steam used for cooking ZZFKHT28 Imputed elec used for manufacturing ZZFKHT28 Imputed Propane used for manufacturing	PRUSED8	Bottled gas/LPG/propane used	37-	37	\$YESNO.
ZCAPGEN8 Imputed elec generation capability 43- 43 SZVAR. ZELHT18 Imputed elec for main space heating 45- 45 SZVAR. ZNGHT18 Imputed nat gas for main space heating 47- 47 SZVAR. ZFKHT18 Imputed fuel oil for main space heating 49- 49 SZVAR. ZFKHT18 Imputed propane for main space heating 51- 51 SZVAR. ZSTHT18 Imputed dist steam for main space heating 51- 51 SZVAR. ZSTHT18 Imputed dist HW for main space heating 55- 55 SZVAR. ZHWHT18 Imputed dist HW for main space heating 55- 55 SZVAR. ZHWHT18 Imputed elec for 2nd space heating 57- 57 SZVAR. ZELHT28 Imputed elec for 2nd space heating 59- 59 SZVAR. ZFKHT28 Imputed fuel oil for 2nd space heating 61- 61 SZVAR. ZFKHT28 Imputed propane for 2nd space heating 63- 63 SZVAR. ZSTHT28 Imputed dist steam for 2nd space heating 65- 65 SZVAR. ZHWHT28 Imputed dist HW for 2nd space heating 65- 65 SZVAR. ZHWHT28 Imputed dist HW for 2nd space heating 67- 67 SZVAR. ZHWHT28 Imputed electricity used for cooling 69- 69 SZVAR. ZFKCOOLB Imputed fuel oil used for cooling 71- 71 SZVAR. ZFKCOOLB Imputed fuel oil used for cooling 71- 71 SZVAR. ZFRCOOLB Imputed district steam used for cooling 75- 75 SZVAR. ZHWCOOLB Imputed district HW used for cooling 79- 79 SZVAR. ZHWCOOLB Imputed elect used for water heating 81- 81 SZVAR. ZFKWATRB Imputed act used for water heating 81- 81 SZVAR. ZFKWATRB Imputed fuel oil used for water heating 83- 83 SZVAR. ZFKWATRB Imputed fuel oil used for water heating 89- 89 SZVAR. ZFKWATRB Imputed dist Steam for water heating 89- 89 SZVAR. ZFKWATRB Imputed dist HW used for cooking 91- 91 SZVAR. ZFKCOOKB Imputed fuel oil used for cooking 91- 97 SZVAR. ZFKCOOKB Imputed district steam used for cooking 91- 97 SZVAR. ZFKCOOKB Imputed district steam used for cooking 91- 97 SZVAR. ZFKCOOKB Imputed district steam used for cooking 91- 97 SZVAR. ZFKCOOKB Imputed district steam used for cooking 91- 99 SZVAR. ZFKCOOKB Imputed district steam used for cooking 91- 97 SZVAR. ZFKCOOKB Imputed district steam used for cooking 91- 97 SZVAR. ZFKCOOKB Imputed district steam used for cooking 91	STUSED8	District steam used	39-	39	\$YESNO.
ZELHT18 Imputed elec for main space heating 45- 45 \$ZVAR. ZNGHT18 Imputed nat gas for main space heating 47- 47 \$ZVAR. ZFKHT18 Imputed fuel oil for main space heating 49- 49 \$ZVAR. ZFKHT18 Imputed fuel oil for main space heating 51- 51 \$ZVAR. ZFKHT18 Imputed dist steam for main space heating 51- 51 \$ZVAR. ZSTHT18 Imputed dist HW for main space heating 51- 55 \$ZVAR. ZEHT18 Imputed dist HW for main space heating 55- 55 \$ZVAR. ZEHT128 Imputed elec for 2nd space heating 57- 57 \$ZVAR. ZEHT128 Imputed nat gas for 2nd space heating 59- 59 \$ZVAR. ZFKHT28 Imputed fuel oil for 2nd space heating 61- 61 \$ZVAR. ZFKHT28 Imputed fuel oil for 2nd space heating 63- 63 \$ZVAR. ZFKHT28 Imputed dist steam for 2nd space heating 63- 63 \$ZVAR. ZFKHT28 Imputed dist HW for 2nd space heating 65- 65 \$ZVAR. ZHWHT28 Imputed dist HW for 2nd space heating 67- 67 \$ZVAR. ZHWHT28 Imputed dist HW for 2nd space heating 67- 67 \$ZVAR. ZHWHT28 Imputed dist steam for 2nd space heating 67- 67 \$ZVAR. ZHWCOOLB Imputed natural gas used for cooling 69- 69 \$ZVAR. ZHWCOOLB Imputed fuel oil used for cooling 71- 71 \$ZVAR. ZHWCOOLB Imputed fuel oil used for cooling 73- 73 \$ZVAR. ZHWCOOLB Imputed district steam used for cooling 75- 75 \$ZVAR. ZHWCOOLB Imputed district Steam used for cooling 79- 79 \$ZVAR. ZHWCOOLB Imputed district HW used for water heating 81- 81 \$ZVAR. ZHWATRB Imputed elect used for water heating 81- 81 \$ZVAR. ZHWATRB Imputed fuel oil used for water heating 83- 83 \$ZVAR. ZHWATRB Imputed fuel oil used for water heating 89- 89 \$ZVAR. ZHWATRB Imputed dist steam for water heating 89- 89 \$ZVAR. ZHWATRB Imputed dist steam for water heating 89- 89 \$ZVAR. ZHWATRB Imputed dist steam for water heating 91- 91 \$ZVAR. ZHWATRB Imputed fuel oil used for cooking 93- 93 \$ZVAR. ZHWATRB Imputed fuel oil used for cooking 93- 93 \$ZVAR. ZHWATRB Imputed district Steam used for cooking 93- 93 \$ZVAR. ZHWATRB Imputed district Steam used for cooking 99- 99 \$ZVAR. ZHWCOOKB Imputed district Steam used for cooking 99- 99 \$ZVAR. ZHWCOOKB Imputed district Steam used for manufac	HWUSED8	District hot water used	41-	41	\$YESNO.
ZNGHT18 Imputed nat gas for main space heating 47- 47 \$ZVAR. ZFKHT18 Imputed fuel oil for main space heating 49- 49 \$ZVAR. ZPKHT18 Imputed propane for main space heating 51- 51 \$ZVAR. ZSTHT18 Imputed dist steam for main space heating 51- 51 \$ZVAR. ZSTHT18 Imputed dist steam for main space ht 53- 53 \$ZVAR. ZHWHT18 Imputed dist HW for main space heating 55- 55 \$ZVAR. ZHWHT18 Imputed elec for 2nd space heating 55- 55 \$ZVAR. ZNGHT28 Imputed nat gas for 2nd space heating 59- 59 \$ZVAR. ZNGHT28 Imputed fuel oil for 2nd space heating 61- 61 \$ZVAR. ZFKHT28 Imputed propane for 2nd space heating 63- 63 \$ZVAR. ZSTHT28 Imputed dist steam for 2nd space heating 65- 65 \$ZVAR. ZSTHT28 Imputed dist steam for 2nd space heating 65- 65 \$ZVAR. ZSTHT28 Imputed dist steam for 2nd space heating 67- 67 \$ZVAR. ZNGCOOL8 Imputed electricity used for cooling 69- 69 \$ZVAR. ZNGCOOL8 Imputed electricity used for cooling 69- 69 \$ZVAR. ZNGCOOL8 Imputed fuel oil used for cooling 71- 71 \$ZVAR. ZSTCOOL8 Imputed fuel oil used for cooling 73- 73 \$ZVAR. ZNGCOOL8 Imputed district steam used for cooling 75- 75 \$ZVAR. ZNGCOOL8 Imputed district HW used for cooling 77- 77 \$ZVAR. ZHWCOOL8 Imputed elect used for water heating 81- 81 \$ZVAR. ZNGWATR8 Imputed nat gas used for water heating 81- 81 \$ZVAR. ZNGWATR8 Imputed fuel oil used for water heating 85- 85 \$ZVAR. ZNGWATR8 Imputed propane used for water heating 85- 85 \$ZVAR. ZNGWATR8 Imputed propane used for water heating 89- 89 \$ZVAR. ZNGWATR8 Imputed electricity used for cooking 93- 93 \$ZVAR. ZNGWATR8 Imputed dist steam for water heating 89- 89 \$ZVAR. ZNGWATR8 Imputed electricity used for cooking 93- 93 \$ZVAR. ZNGCOOK8 Imputed electricity used for cooking 93- 93 \$ZVAR. ZNGCOOK8 Imputed electricity used for cooking 93- 93 \$ZVAR. ZNGCOOK8 Imputed fuel oil used for manufacturing 105- 105 \$ZVAR. ZNGCOOK8 Imputed fuel oil used for manufacturing 105- 105 \$ZVAR. ZNGCOOK8 Imputed electricity used for cooking 103- 103 \$ZVAR. ZNGCOOK8 Imputed elect used for manufacturing 105- 105 \$ZVAR. ZNGCOOK8 Imputed fuel oil used	ZCAPGEN8	Imputed elec generation capability	43-	43	\$ZVAR.
ZFKHT18 Imputed fuel oil for main space heating	ZELHT18	Imputed elec for main space heating	45-	45	\$ZVAR.
ZPRHT18 Imputed propane for main space heating ZSTHT18 Imputed dist steam for main space ht S3 53 \$ZVAR. ZSTHT18 Imputed dist HW for main space ht S5 55 \$ZVAR. ZEHHT28 Imputed elec for 2nd space heating ZELHT28 Imputed elec for 2nd space heating ZFKHT28 Imputed nat gas for 2nd space heating ZFKHT28 Imputed fuel oil for 2nd space heating ZFKHT28 Imputed propane for 2nd space heating ZFKHT28 Imputed propane for 2nd space heating ZFRHT28 Imputed dist steam for 2nd space heating ZSTHT28 Imputed dist steam for 2nd space heating ZFKHT28 Imputed dist steam for 2nd space heating ZFKHT28 Imputed dist HW for 2nd space heating ZFKCOL8 Imputed electricity used for cooling ZFKCOL8 Imputed electricity used for cooling ZFKCOL8 Imputed natural gas used for cooling ZFKCOL8 Imputed fuel oil used for cooling ZFCCOL8 Imputed district steam used for cooling ZFCCOL8 Imputed propane used for cooling ZFCCOL8 Imputed district HW used for water heating ZFCCOL8 Imputed fuel oil used for water heating ZFCCOL8 Imputed dist HW used for cooking ZFCCOL8 Imputed dist HW used for cooking ZFCCOL8 Imputed electricity used for cooking ZFCCOL8 Imputed fuel oil used for manufacturing ZFCCOL8 Imputed fuel oil used for manufacturing ZFCCOL8 Imputed fuel oil used for manufacturing ZFCCOL8 Imputed fuel oil used	ZNGHT18	Imputed nat gas for main space heating	47-	47	\$ZVAR.
ZPRHT18 Imputed propane for main space heating ZSTHT18 Imputed dist steam for main space ht S3 53 \$ZVAR. ZSTHT18 Imputed dist HW for main space ht S5 55 \$ZVAR. ZEHHT28 Imputed elec for 2nd space heating ZELHT28 Imputed elec for 2nd space heating ZFKHT28 Imputed nat gas for 2nd space heating ZFKHT28 Imputed fuel oil for 2nd space heating ZFKHT28 Imputed propane for 2nd space heating ZFKHT28 Imputed propane for 2nd space heating ZFRHT28 Imputed dist steam for 2nd space heating ZSTHT28 Imputed dist steam for 2nd space heating ZFKHT28 Imputed dist steam for 2nd space heating ZFKHT28 Imputed dist HW for 2nd space heating ZFKCOL8 Imputed electricity used for cooling ZFKCOL8 Imputed electricity used for cooling ZFKCOL8 Imputed natural gas used for cooling ZFKCOL8 Imputed fuel oil used for cooling ZFCCOL8 Imputed district steam used for cooling ZFCCOL8 Imputed propane used for cooling ZFCCOL8 Imputed district HW used for water heating ZFCCOL8 Imputed fuel oil used for water heating ZFCCOL8 Imputed dist HW used for cooking ZFCCOL8 Imputed dist HW used for cooking ZFCCOL8 Imputed electricity used for cooking ZFCCOL8 Imputed fuel oil used for manufacturing ZFCCOL8 Imputed fuel oil used for manufacturing ZFCCOL8 Imputed fuel oil used for manufacturing ZFCCOL8 Imputed fuel oil used	ZFKHT18	Imputed fuel oil for main space heating	49-	49	\$ZVAR.
ZSTHT18 Imputed dist steam for main space hat S3- S3 \$ZVAR. ZHWHT18 Imputed dist HW for main space heating S5- S5 \$ZVAR. ZELHT28 Imputed elec for 2nd space heating S7- S7 \$ZVAR. ZNGHT28 Imputed nat gas for 2nd space heating S9- S9 \$ZVAR. ZFKHT28 Imputed fuel oil for 2nd space heating S9- S9 \$ZVAR. ZFKHT28 Imputed fuel oil for 2nd space heating S7- S7 \$ZVAR. ZFKHT28 Imputed dist steam for 2nd space heating S7- S5 \$ZVAR. ZSTHT28 Imputed dist steam for 2nd space heating S7- S7 \$ZVAR. ZSTHT28 Imputed dist HW for 2nd space heating S7- S7 \$ZVAR. ZELCOL8 Imputed electricity used for cooling S7- SZVAR. ZFKCOL8 Imputed natural gas used for cooling S7- SZVAR. ZFKCOL8 Imputed fuel oil used for cooling S7- SZVAR. ZSTCOL8 Imputed fuel oil used for cooling S7- SZVAR. ZFKCOL8 Imputed district steam used for cooling SZVAR. ZFKCOL8 Imputed district steam used for cooling SZVAR. ZFKCOL8 Imputed district HW used for cooling SZVAR. ZFKCOL8 Imputed district HW used for cooling SZVAR. ZFKCOL8 Imputed district HW used for cooling SZVAR. ZFKWARR8 Imputed elect used for water heating S7- SZVAR. ZFKWARR8 Imputed propane used for water heating S8- SZVAR. ZFKWARR8 Imputed propane used for water heating S8- SZVAR. ZFKWARR8 Imputed propane used for water heating S7- SZVAR. ZFKWARR8 Imputed dist steam for water heating S7- SZVAR. ZFKWARR8 Imputed dist HW used for water heating S7- SZVAR. ZFKCOK8 Imputed electricity used for cooking S7- SZVAR. ZFKCOK8 Imputed electricity used for cooking S7- SZVAR. ZFKCOK8 Imputed district steam used for cooking S7- SZVAR. ZFKCOK8 Imputed district HW used for cooking S7- SZVAR. ZFKCOK8 Imputed district HW used for cooking SZVAR. ZFKCOK8 Imputed elec used for manufacturing S7- SZVAR. ZFKMANU8 Imputed nat gas used for manufacturing SZVAR. ZFKMANU8 Imputed nat gas used for manufacturing SZVAR. ZFKMANU8 Imputed fuel oil used for manufacturing SZVAR. ZFKMANU8 Imputed dist steam for manufacturing SZVAR. ZFKMANU8 Imputed dist steam for manufacturing SZVAR. ZFKMANU8 Imputed dist steam for manufacturing SZVAR. ZFWAR.	ZPRHT18		51-	51	\$ZVAR.
ZHWHT18 Imputed dist HW for main space heating 55- 55 \$ZVAR. ZELHT28 Imputed elec for 2nd space heating 57- 57 \$ZVAR. ZNGHT28 Imputed nat gas for 2nd space heating 59- 59 \$ZVAR. ZFKHT28 Imputed fuel oil for 2nd space heating 61- 61 \$ZVAR. ZFKHT28 Imputed fuel oil for 2nd space heating 61- 61 \$ZVAR. ZFKHT28 Imputed dist steam for 2nd space heating 63- 63 \$ZVAR. ZSTHT28 Imputed dist steam for 2nd space heating 65- 65 \$ZVAR. ZHWHT28 Imputed dist HW for 2nd space heating 67- 67 \$ZVAR. ZELCOOL8 Imputed electricity used for cooling 69- 69 \$ZVAR. ZFKCOOL8 Imputed natural gas used for cooling 71- 71 \$ZVAR. ZFKCOOL8 Imputed fuel oil used for cooling 73- 73 \$ZVAR. ZFKCOOL8 Imputed district steam used for cooling 75- 75 \$ZVAR. ZFKCOOL8 Imputed propane used for cooling 77- 77 \$ZVAR. ZFKCOOL8 Imputed district HW used for cooling 79- 79 \$ZVAR. ZHWCOOL8 Imputed district HW used for cooling 79- 79 \$ZVAR. ZHWCOOL8 Imputed nat gas used for water heating 83- 83 \$ZVAR. ZKWATR8 Imputed nat gas used for water heating 83- 83 \$ZVAR. ZFKWATR8 Imputed fuel oil used for water heating 83- 83 \$ZVAR. ZFKWATR8 Imputed fuel oil used for water heating 87- 87 \$ZVAR. ZHWWATR8 Imputed dist steam for water heating 89- 89 \$ZVAR. ZHWWATR8 Imputed dist steam for water heating 91- 91 \$ZVAR. ZHWWATR8 Imputed dist steam for water heating 91- 91 \$ZVAR. ZHWCOOK8 Imputed electricity used for cooking 93- 93 \$ZVAR. ZHKCOOK8 Imputed propane used for cooking 93- 93 \$ZVAR. ZHKCOOK8 Imputed propane used for cooking 93- 95 \$ZVAR. ZHKCOOK8 Imputed propane used for cooking 93- 99 \$ZVAR. ZHKCOOK8 Imputed district steam used for cooking 93- 99 \$ZVAR. ZHKCOOK8 Imputed district steam used for cooking 93- 99 \$ZVAR. ZHKCOOK8 Imputed elec used for manufacturing 105- 105 \$ZVAR. ZHKCOOK8 Imputed nat gas used for cooking 103- 103 \$ZVAR. ZHKCOOK8 Imputed nated propane used for manufacturing 105- 107 \$ZVAR. ZHKCOOK8 Imputed nated fuel oil used for manufacturing 105- 107 \$ZVAR. ZHKANNU8 Imputed steam for manufacturing 111- 111 \$ZVAR. ZHKMANU8 Imputed dist steam for manufacturin	ZSTHT18		53-	53	\$ZVAR.
ZELHT28 Imputed elec for 2nd space heating 57- 57 \$ZVAR. ZNGHT28 Imputed nat gas for 2nd space heating 59- 59 \$ZVAR. ZFKHT28 Imputed fuel oil for 2nd space heating 61- 61 \$ZVAR. ZPRHT28 Imputed propane for 2nd space heating 63- 63 \$ZVAR. ZSTHT28 Imputed dist steam for 2nd space heating 65- 65 \$ZVAR. ZSTHT28 Imputed dist HW for 2nd space heating 65- 65 \$ZVAR. ZHWHT28 Imputed electricity used for cooling 67- 67 \$ZVAR. ZELCOOL8 Imputed natural gas used for cooling 71- 71 \$ZVAR. ZFKCOOL8 Imputed fuel oil used for cooling 71- 71 \$ZVAR. ZFKCOOL8 Imputed district steam used for cooling 75- 75 \$ZVAR. ZSTCOOL8 Imputed district steam used for cooling 77- 77 \$ZVAR. ZPRCOOL8 Imputed district HW used for cooling 77- 77 \$ZVAR. ZHWCOOL8 Imputed district HW used for cooling 79- 79 \$ZVAR. ZELWATR8 Imputed elect used for water heating 81- 81 \$ZVAR. ZNGWATR8 Imputed nat gas used for water heating 83- 83 \$ZVAR. ZFKWATR8 Imputed fuel oil used for water heating 85- 85 \$ZVAR. ZFWATR8 Imputed fuel oil used for water heating 87- 87 \$ZVAR. ZSTWATR8 Imputed dist steam for water heating 89- 89 \$ZVAR. ZSTWATR8 Imputed dist steam for water heating 89- 89 \$ZVAR. ZSTWATR8 Imputed dist steam for water heating 89- 89 \$ZVAR. ZSTWATR8 Imputed dist steam for water heating 91- 91 \$ZVAR. ZSTWATR8 Imputed dist HW used for cooking 93- 93 \$ZVAR. ZHWWATR8 Imputed fuel oil used for cooking 93- 93 \$ZVAR. ZSTCOOK8 Imputed propane used for cooking 95- 95 \$ZVAR. ZFKCOOK8 Imputed propane used for cooking 97- 97 \$ZVAR. ZSTCOOK8 Imputed fuel oil used for cooking 99- 99 \$ZVAR. ZSTCOOK8 Imputed district steam used for cooking 101- 101 \$ZVAR. ZSTMANU8 Imputed elec used for manufacturing 105- 105 \$ZVAR. ZFKMANU8 Imputed fuel oil used for manufacturing 107- 107 \$ZVAR. ZFKMANU8 Imputed dist steam for manufacturing 109- 109 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR.	ZHWHT18		55-	55	\$ZVAR.
ZNGHT28 Imputed nat gas for 2nd space heating 59- 59 \$ZVAR. ZFKHT28 Imputed fuel oil for 2nd space heating 61- 61 \$ZVAR. ZPRHT28 Imputed propane for 2nd space heating 65- 65 \$ZVAR. ZSTHT28 Imputed dist steam for 2nd space heating 65- 65 \$ZVAR. ZSTHT28 Imputed dist steam for 2nd space heating 65- 65 \$ZVAR. ZHWHT28 Imputed dist HW for 2nd space heating 67- 67 \$ZVAR. ZELCOOL8 Imputed electricity used for cooling 69- 69 \$ZVAR. ZNGCOOL8 Imputed natural gas used for cooling 71- 71 \$ZVAR. ZFKCOOL8 Imputed fuel oil used for cooling 73- 73 \$ZVAR. ZSTCOOL8 Imputed district steam used for cooling 75- 75 \$ZVAR. ZPRCOOL8 Imputed propane used for cooling 77- 77 \$ZVAR. ZHWCOOL8 Imputed district HW used for cooling 79- 79 \$ZVAR. ZHWCOOL8 Imputed district water heating 81- 81 \$ZVAR. ZNGWATR8 Imputed nat gas used for water heating 81- 81 \$ZVAR. ZFKWATR8 Imputed nat gas used for water heating 83- 83 \$ZVAR. ZFKWATR8 Imputed fuel oil used for water heating 85- 85 \$ZVAR. ZFWATR8 Imputed fuel oil used for water heating 87- 87 \$ZVAR. ZSTWATR8 Imputed dist steam for water heating 89- 89 \$ZVAR. ZHWWATR8 Imputed dist HW used for water heating 89- 89 \$ZVAR. ZHWWATR8 Imputed dist HW used for cooking 91- 91 \$ZVAR. ZELCOOK8 Imputed electricity used for cooking 93- 93 \$ZVAR. ZFKCOOK8 Imputed fuel oil used for cooking 95- 95 \$ZVAR. ZFKCOOK8 Imputed fuel oil used for cooking 97- 97 \$ZVAR. ZFKCOOK8 Imputed fuel oil used for cooking 99- 99 \$ZVAR. ZHWCOOK8 Imputed district steam used for cooking 99- 99 \$ZVAR. ZHWCOOK8 Imputed district steam used for cooking 101- 101 \$ZVAR. ZHWCOOK8 Imputed district steam used for cooking 103- 103 \$ZVAR. ZHWCOOK8 Imputed at gas used for manufacturing 105- 105 \$ZVAR. ZHWCOOK8 Imputed nat gas used for manufacturing 109- 109 \$ZVAR. ZHWANU8 Imputed fuel oil used for manufacturing 109- 109 \$ZVAR. ZHWANU8 Imputed dist steam for manufacturing 111- 111 \$ZVAR. ZHWANU8 Imputed dist HW used for manufacturing 113- 113 \$ZVAR.	ZELHT28		57-	57	\$ZVAR.
ZFKHT28 Imputed fuel oil for 2nd space heating 61- 61 \$ZVAR. ZPRHT28 Imputed propane for 2nd space heating 63- 63 \$ZVAR. ZSTHT28 Imputed dist steam for 2nd space heating 65- 65 \$ZVAR. ZSTHT28 Imputed dist steam for 2nd space heating 67- 67 \$ZVAR. ZHWHT28 Imputed dist HW for 2nd space heating 67- 67 \$ZVAR. ZELCOOL8 Imputed electricity used for cooling 69- 69 \$ZVAR. ZNGCOOL8 Imputed natural gas used for cooling 71- 71 \$ZVAR. ZFKCOOL8 Imputed fuel oil used for cooling 73- 73 \$ZVAR. ZSTCOOL8 Imputed district steam used for cooling 75- 75 \$ZVAR. ZPRCOOL8 Imputed propane used for cooling 77- 77 \$ZVAR. ZHWCOOL8 Imputed district HW used for cooling 79- 79 \$ZVAR. ZELWATR8 Imputed elect used for water heating 81- 81 \$ZVAR. ZNGWATR8 Imputed nat gas used for water heating 83- 83 \$ZVAR. ZFKWATR8 Imputed fuel oil used for water heating 85- 85 \$ZVAR. ZFWATR8 Imputed fuel oil used for water heating 87- 87 \$ZVAR. ZSTWATR8 Imputed dist steam for water heating 89- 89 \$ZVAR. ZHWATR8 Imputed dist HW used for water heating 91- 91 \$ZVAR. ZHWATR8 Imputed dist HW used for cooking 93- 93 \$ZVAR. ZHWATR8 Imputed natural gas used for cooking 93- 93 \$ZVAR. ZHKATR8 Imputed fuel oil used for cooking 95- 95 \$ZVAR. ZFKCOOK8 Imputed natural gas used for cooking 95- 95 \$ZVAR. ZFKCOOK8 Imputed propane used for cooking 97- 97 \$ZVAR. ZFKCOOK8 Imputed propane used for cooking 99- 99 \$ZVAR. ZFKCOOK8 Imputed district steam used for cooking 101- 101 \$ZVAR. ZHWCOOK8 Imputed district HW used for cooking 103- 103 \$ZVAR. ZHWCOOK8 Imputed district HW used for cooking 101- 101 \$ZVAR. ZHWCOOK8 Imputed elec used for manufacturing 105- 105 \$ZVAR. ZKWANU8 Imputed elec used for manufacturing 107- 107 \$ZVAR. ZFKMANU8 Imputed fuel oil used for manufacturing 109- 109 \$ZVAR. ZFKMANU8 Imputed fuel oil used for manufacturing 111- 111 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 115- 115 \$ZVAR.	ZNGHT28	-	59-	59	\$ZVAR.
ZPRHT28 Imputed propane for 2nd space heating 63-63 \$ZVAR. ZSTHT28 Imputed dist steam for 2nd space heating 65-65 \$ZVAR. ZHWHT28 Imputed dist HW for 2nd space heating 67-67 \$ZVAR. ZHWHT28 Imputed electricity used for cooling 69-69 \$ZVAR. ZELCOOL8 Imputed natural gas used for cooling 71-71 \$ZVAR. ZFKCOOL8 Imputed fuel oil used for cooling 73-73 \$ZVAR. ZSTCOOL8 Imputed district steam used for cooling 75-75 \$ZVAR. ZSTCOOL8 Imputed propane used for cooling 77-77 \$ZVAR. ZHWCOOL8 Imputed district HW used for cooling 79-79 \$ZVAR. ZHWCOOL8 Imputed district HW used for cooling 79-79 \$ZVAR. ZELWATR8 Imputed alect used for water heating 81-81 \$ZVAR. ZNGWATR8 Imputed fuel oil used for water heating 83-83 \$ZVAR. ZFKWATR8 Imputed fuel oil used for water heating 85-85 \$ZVAR. ZSTWATR8 Imputed for water heating 87-87 \$ZVAR. ZSTWATR8 Imputed dist steam for water heating 89-89 \$ZVAR. ZSTWATR8 Imputed dist steam for water heating 91-91 \$ZVAR. ZHWWATR8 Imputed dist HW used for cooking 93-93 \$ZVAR. ZHWWATR8 Imputed natural gas used for cooking 95-95 \$ZVAR. ZFKCOOK8 Imputed natural gas used for cooking 97-97 \$ZVAR. ZFKCOOK8 Imputed fuel oil used for cooking 99-99 \$ZVAR. ZFKCOOK8 Imputed district steam used for cooking 99-99 \$ZVAR. ZHWCOOK8 Imputed district HW used for cooking 101-101 \$ZVAR. ZHWCOOK8 Imputed district steam used for cooking 103-103 \$ZVAR. ZHWCOOK8 Imputed district HW used for manufacturing 105-105 \$ZVAR. ZHWANU8 Imputed fuel oil used for manufacturing 109-109 \$ZVAR. ZFKMANU8 Imputed fuel oil used for manufacturing 109-109 \$ZVAR. ZFMANU8 Imputed dist steam for manufacturing 111-111 \$ZVAR. ZHWMANU8 Imputed dist steam for manufacturing 111-111 \$ZVAR. ZHWMANU8 Imputed dist steam for manufacturing 111-111 \$ZVAR.	ZFKHT28		61-		\$ZVAR.
ZSTHT28 Imputed dist steam for 2nd space heating 65- 65 \$ZVAR. ZHWHT28 Imputed dist HW for 2nd space heating 67- 67 \$ZVAR. ZELCOOL8 Imputed electricity used for cooling 69- 69 \$ZVAR. ZNGCOOL8 Imputed natural gas used for cooling 71- 71 \$ZVAR. ZFKCOOL8 Imputed fuel oil used for cooling 73- 73 \$ZVAR. ZSTCOOL8 Imputed district steam used for cooling 75- 75 \$ZVAR. ZSTCOOL8 Imputed propane used for cooling 75- 75 \$ZVAR. ZPRCOOL8 Imputed propane used for cooling 77- 77 \$ZVAR. ZHWCOOL8 Imputed district HW used for cooling 79- 79 \$ZVAR. ZHWCOOL8 Imputed elect used for water heating 81- 81 \$ZVAR. ZHWATR8 Imputed nat gas used for water heating 81- 81 \$ZVAR. ZFKWATR8 Imputed fuel oil used for water heating 85- 85 \$ZVAR. ZFRWATR8 Imputed fuel oil used for water heating 87- 87 \$ZVAR. ZSTWATR8 Imputed dist steam for water heating 89- 89 \$ZVAR. ZHWATR8 Imputed dist HW used for cooking 91- 91 \$ZVAR. ZHWATR8 Imputed electricity used for cooking 93- 93 \$ZVAR. ZHWATR8 Imputed natural gas used for cooking 95- 95 \$ZVAR. ZFKCOOK8 Imputed fuel oil used for cooking 97- 97 \$ZVAR. ZFKCOOK8 Imputed fuel oil used for cooking 97- 97 \$ZVAR. ZFKCOOK8 Imputed district steam used for cooking 99- 99 \$ZVAR. ZFCOOK8 Imputed district steam used for cooking 101- 101 \$ZVAR. ZHWCOOK8 Imputed district HW used for cooking 103- 103 \$ZVAR. ZHCOOK8 Imputed district HW used for cooking 103- 103 \$ZVAR. ZHWCOOK8 Imputed district HW used for manufacturing 107- 107 \$ZVAR. ZELMANU8 Imputed propane used for manufacturing 107- 107 \$ZVAR. ZFKMANU8 Imputed fuel oil used for manufacturing 107- 107 \$ZVAR. ZFRMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 113- 115 \$ZVAR.	ZPRHT28	-	63-	63	\$ZVAR.
ZHWHT28 Imputed dist HW for 2nd space heating 67- 67 \$ZVAR. ZELCOOL8 Imputed electricity used for cooling 69- 69 \$ZVAR. ZNGCOOL8 Imputed natural gas used for cooling 71- 71 \$ZVAR. ZFKCOOL8 Imputed fuel oil used for cooling 73- 73 \$ZVAR. ZSTCOOL8 Imputed district steam used for cooling 75- 75 \$ZVAR. ZSTCOOL8 Imputed propane used for cooling 77- 77 \$ZVAR. ZPRCOOL8 Imputed propane used for cooling 79- 79 \$ZVAR. ZHWCOOL8 Imputed district HW used for cooling 79- 79 \$ZVAR. ZHWCOOL8 Imputed elect used for water heating 81- 81 \$ZVAR. ZHWATR8 Imputed nat gas used for water heating 83- 83 \$ZVAR. ZFKWATR8 Imputed fuel oil used for water heating 85- 85 \$ZVAR. ZFWATR8 Imputed propane used for water heating 87- 87 \$ZVAR. ZSTWATR8 Imputed dist steam for water heating 89- 89 \$ZVAR. ZSTWATR8 Imputed dist steam for water heating 91- 91 \$ZVAR. ZHWWATR8 Imputed dist HW used for cooking 93- 93 \$ZVAR. ZHWATR8 Imputed electricity used for cooking 93- 93 \$ZVAR. ZHKCOOK8 Imputed natural gas used for cooking 95- 95 \$ZVAR. ZFKCOOK8 Imputed fuel oil used for cooking 97- 97 \$ZVAR. ZFRCOOK8 Imputed fuel oil used for cooking 101- 101 \$ZVAR. ZHWCOOK8 Imputed district steam used for cooking 103- 103 \$ZVAR. ZHWCOOK8 Imputed district steam used for cooking 103- 103 \$ZVAR. ZHWCOOK8 Imputed district steam used for cooking 107- 107 \$ZVAR. ZHWCOOK8 Imputed district HW used for manufacturing 105- 105 \$ZVAR. ZHWCOOK8 Imputed nat gas used for manufacturing 107- 107 \$ZVAR. ZHWCOOK8 Imputed fuel oil used for manufacturing 109- 109 \$ZVAR. ZHWANU8 Imputed propane used for manufacturing 111- 111 \$ZVAR. ZHWANU8 Imputed dist steam for manufacturing 111- 111 \$ZVAR. ZHWANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZHWANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZHWANU8 Imputed dist HW used for manufacturing 115- 115 \$ZVAR.	ZSTHT28			65	\$ZVAR.
ZELCOOL8 Imputed electricity used for cooling 69- 69 \$ZVAR. ZNGCOOL8 Imputed natural gas used for cooling 71- 71 \$ZVAR. ZFKCOOL8 Imputed fuel oil used for cooling 73- 73 \$ZVAR. ZSTCOOL8 Imputed district steam used for cooling 75- 75 \$ZVAR. ZSTCOOL8 Imputed propane used for cooling 75- 75 \$ZVAR. ZPRCOOL8 Imputed propane used for cooling 77- 77 \$ZVAR. ZHWCOOL8 Imputed district HW used for cooling 79- 79 \$ZVAR. ZHWCOOL8 Imputed elect used for water heating 81- 81 \$ZVAR. ZELWATR8 Imputed nat gas used for water heating 83- 83 \$ZVAR. ZFKWATR8 Imputed fuel oil used for water heating 85- 85 \$ZVAR. ZFWATR8 Imputed propane used for water heating 87- 87 \$ZVAR. ZSTWATR8 Imputed dist steam for water heating 89- 89 \$ZVAR. ZSTWATR8 Imputed dist HW used for water heating 91- 91 \$ZVAR. ZHWWATR8 Imputed electricity used for cooking 93- 93 \$ZVAR. ZELCOOK8 Imputed electricity used for cooking 93- 93 \$ZVAR. ZFKCOOK8 Imputed fuel oil used for cooking 95- 95 \$ZVAR. ZFRCOOK8 Imputed propane used for cooking 97- 97 \$ZVAR. ZSTCOOK8 Imputed district steam used for cooking 101- 101 \$ZVAR. ZHWCOOK8 Imputed district steam used for cooking 103- 103 \$ZVAR. ZHWCOOK8 Imputed district steam used for cooking 103- 103 \$ZVAR. ZHWCOOK8 Imputed district HW used for manufacturing 107- 107 \$ZVAR. ZHWCOOK8 Imputed nat gas used for manufacturing 107- 107 \$ZVAR. ZHWCOOK8 Imputed fuel oil used for manufacturing 109- 109 \$ZVAR. ZHWANU8 Imputed propane used for manufacturing 109- 109 \$ZVAR. ZFKANU8 Imputed dist steam for manufacturing 111- 111 \$ZVAR. ZFYMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZHWANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR.	ZHWHT28		67-	67	\$ZVAR.
ZNGCOOL8 Imputed natural gas used for cooling 71- 71 \$ZVAR. ZFKCOOL8 Imputed fuel oil used for cooling 73- 73 \$ZVAR. ZSTCOOL8 Imputed district steam used for cooling 75- 75 \$ZVAR. ZPRCOOL8 Imputed propane used for cooling 77- 77 \$ZVAR. ZPRCOOL8 Imputed propane used for cooling 79- 79 \$ZVAR. ZHWCOOL8 Imputed elect used for water heating 81- 81 \$ZVAR. ZHWATR8 Imputed elect used for water heating 83- 83 \$ZVAR. ZNGWATR8 Imputed nat gas used for water heating 85- 85 \$ZVAR. ZFKWATR8 Imputed fuel oil used for water heating 87- 87 \$ZVAR. ZPRWATR8 Imputed propane used for water heating 87- 87 \$ZVAR. ZSTWATR8 Imputed dist steam for water heating 89- 89 \$ZVAR. ZHWWATR8 Imputed dist HW used for water heating 91- 91 \$ZVAR. ZELCOOK8 Imputed electricity used for cooking 93- 93 \$ZVAR. ZFKCOOK8 Imputed natural gas used for cooking 95- 95 \$ZVAR. ZFRCOOK8 Imputed fuel oil used for cooking 97- 97 \$ZVAR. ZPRCOOK8 Imputed for oil used for cooking 99- 99 \$ZVAR. ZPRCOOK8 Imputed district steam used for cooking 101- 101 \$ZVAR. ZHWCOOK8 Imputed district steam used for cooking 103- 103 \$ZVAR. ZHWCOOK8 Imputed district HW used for cooking 103- 103 \$ZVAR. ZHWCOOK8 Imputed elec used for manufacturing 105- 105 \$ZVAR. ZRGMANU8 Imputed int used for manufacturing 109- 109 \$ZVAR. ZPRMANU8 Imputed propane used for manufacturing 109- 109 \$ZVAR. ZFRMANU8 Imputed dist steam for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 115- 115 \$ZVAR.	ZELCOOL8		69-	69	\$ZVAR.
ZFKCOOL8 Imputed fuel oil used for cooling 73- 73 \$ZVAR. ZSTCOOL8 Imputed district steam used for cooling 75- 75 \$ZVAR. ZPRCOOL8 Imputed propane used for cooling 77- 77 \$ZVAR. ZHWCOOL8 Imputed district HW used for cooling 79- 79 \$ZVAR. ZHWCOOL8 Imputed elect used for water heating 81- 81 \$ZVAR. ZELWATR8 Imputed nat gas used for water heating 83- 83 \$ZVAR. ZFKWATR8 Imputed fuel oil used for water heating 85- 85 \$ZVAR. ZFKWATR8 Imputed propane used for water heating 87- 87 \$ZVAR. ZFRWATR8 Imputed dist steam for water heating 89- 89 \$ZVAR. ZSTWATR8 Imputed dist HW used for water heating 91- 91 \$ZVAR. ZHWWATR8 Imputed delectricity used for cooking 91- 91 \$ZVAR. ZELCOOK8 Imputed natural gas used for cooking 95- 95 \$ZVAR. ZFKCOOK8 Imputed fuel oil used for cooking 97- 97 \$ZVAR. ZFRCOOK8 Imputed fuel oil used for cooking 99- 99 \$ZVAR. ZSTCOOK8 Imputed district steam used for cooking 99- 99 \$ZVAR. ZSTCOOK8 Imputed district steam used for cooking 101- 101 \$ZVAR. ZSTCOOK8 Imputed district HW used for cooking 103- 103 \$ZVAR. ZHWCOOK8 Imputed elec used for manufacturing 105- 105 \$ZVAR. ZELMANU8 Imputed nat gas used for manufacturing 107- 107 \$ZVAR. ZFKMANU8 Imputed fuel oil used for manufacturing 107- 107 \$ZVAR. ZFRMANU8 Imputed fuel oil used for manufacturing 109- 109 \$ZVAR. ZFRMANU8 Imputed dist steam for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 113- 113 \$ZVAR.	ZNGCOOL8			71	\$ZVAR.
ZSTCOOL8 Imputed district steam used for cooling 75- 75 \$ZVAR. ZPRCOOL8 Imputed propane used for cooling 77- 77 \$ZVAR. ZHWCOOL8 Imputed district HW used for cooling 79- 79 \$ZVAR. ZELWATR8 Imputed elect used for water heating 81- 81 \$ZVAR. ZNGWATR8 Imputed nat gas used for water heating 83- 83 \$ZVAR. ZFKWATR8 Imputed fuel oil used for water heating 85- 85 \$ZVAR. ZPRWATR8 Imputed propane used for water heating 87- 87 \$ZVAR. ZSTWATR8 Imputed dist steam for water heating 89- 89 \$ZVAR. ZSTWATR8 Imputed dist HW used for water heating 89- 89 \$ZVAR. ZHWWATR8 Imputed dist HW used for cooking 91- 91 \$ZVAR. ZELCOOK8 Imputed electricity used for cooking 93- 93 \$ZVAR. ZFKCOOK8 Imputed natural gas used for cooking 95- 95 \$ZVAR. ZFRCOOK8 Imputed fuel oil used for cooking 97- 97 \$ZVAR. ZFRCOOK8 Imputed for cooking 99- 99 \$ZVAR. ZSTCOOK8 Imputed district steam used for cooking 101- 101 \$ZVAR. ZHWCOOK8 Imputed district HW used for cooking 103- 103 \$ZVAR. ZHWCOOK8 Imputed district HW used for cooking 103- 103 \$ZVAR. ZHWCOOK8 Imputed district HW used for cooking 105- 105 \$ZVAR. ZHMANU8 Imputed nat gas used for manufacturing 105- 105 \$ZVAR. ZFRMANU8 Imputed fuel oil used for manufacturing 109- 109 \$ZVAR. ZFRMANU8 Imputed dist steam for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR.	ZFKCOOL8		73-	73	\$ZVAR.
ZPRCOOL8 Imputed propane used for cooling 77- 77 \$ZVAR. ZHWCOOL8 Imputed district HW used for cooling 79- 79 \$ZVAR. ZELWATR8 Imputed elect used for water heating 81- 81 \$ZVAR. ZNGWATR8 Imputed nat gas used for water heating 83- 83 \$ZVAR. ZFKWATR8 Imputed fuel oil used for water heating 85- 85 \$ZVAR. ZPRWATR8 Imputed propane used for water heating 87- 87 \$ZVAR. ZSTWATR8 Imputed dist steam for water heating 89- 89 \$ZVAR. ZSTWATR8 Imputed dist HW used for water heating 91- 91 \$ZVAR. ZHWWATR8 Imputed electricity used for cooking 93- 93 \$ZVAR. ZELCOOK8 Imputed natural gas used for cooking 95- 95 \$ZVAR. ZFKCOOK8 Imputed fuel oil used for cooking 97- 97 \$ZVAR. ZPRCOOK8 Imputed propane used for cooking 99- 99 \$ZVAR. ZPRCOOK8 Imputed district steam used for cooking 101- 101 \$ZVAR. ZHWCOOK8 Imputed district HW used for cooking 103- 103 \$ZVAR. ZHWCOOK8 Imputed district HW used for cooking 103- 103 \$ZVAR. ZHWCOOK8 Imputed elec used for manufacturing 105- 105 \$ZVAR. ZHANU8 Imputed nat gas used for manufacturing 107- 107 \$ZVAR. ZFKMANU8 Imputed fuel oil used for manufacturing 109- 109 \$ZVAR. ZFKMANU8 Imputed dist steam for manufacturing 111- 111 \$ZVAR. ZHWMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 113- 113 \$ZVAR.	ZSTCOOL8		75-	75	\$ZVAR.
ZHWCOOL8 Imputed district HW used for cooling 79- 79 \$ZVAR. ZELWATR8 Imputed elect used for water heating 81- 81 \$ZVAR. ZNGWATR8 Imputed nat gas used for water heating 83- 83 \$ZVAR. ZFKWATR8 Imputed fuel oil used for water heating 85- 85 \$ZVAR. ZPRWATR8 Imputed propane used for water heating 87- 87 \$ZVAR. ZSTWATR8 Imputed dist steam for water heating 89- 89 \$ZVAR. ZSTWATR8 Imputed dist HW used for water heating 91- 91 \$ZVAR. ZHWWATR8 Imputed electricity used for cooking 93- 93 \$ZVAR. ZELCOOK8 Imputed natural gas used for cooking 95- 95 \$ZVAR. ZFKCOOK8 Imputed fuel oil used for cooking 97- 97 \$ZVAR. ZPRCOOK8 Imputed propane used for cooking 99- 99 \$ZVAR. ZSTCOOK8 Imputed district steam used for cooking 101- 101 \$ZVAR. ZSTCOOK8 Imputed district HW used for cooking 103- 103 \$ZVAR. ZHWCOOK8 Imputed district HW used for cooking 103- 103 \$ZVAR. ZHUCOOK8 Imputed elec used for manufacturing 105- 105 \$ZVAR. ZHANU8 Imputed nat gas used for manufacturing 107- 107 \$ZVAR. ZFKMANU8 Imputed fuel oil used for manufacturing 109- 109 \$ZVAR. ZFRMANU8 Imputed dist steam for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZHWMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR.	ZPRCOOL8		77-	77	\$ZVAR.
ZELWATR8 Imputed elect used for water heating 81- 81 \$ZVAR. ZNGWATR8 Imputed nat gas used for water heating 83- 83 \$ZVAR. ZFKWATR8 Imputed fuel oil used for water heating 85- 85 \$ZVAR. ZPRWATR8 Imputed propane used for water heating 87- 87 \$ZVAR. ZSTWATR8 Imputed dist steam for water heating 89- 89 \$ZVAR. ZSTWATR8 Imputed dist HW used for water heating 91- 91 \$ZVAR. ZELCOOK8 Imputed electricity used for cooking 93- 93 \$ZVAR. ZNGCOOK8 Imputed natural gas used for cooking 95- 95 \$ZVAR. ZFKCOOK8 Imputed fuel oil used for cooking 97- 97 \$ZVAR. ZPRCOOK8 Imputed propane used for cooking 99- 99 \$ZVAR. ZSTCOOK8 Imputed district steam used for cooking 101- 101 \$ZVAR. ZSTCOOK8 Imputed district HW used for cooking 103- 103 \$ZVAR. ZHWCOOK8 Imputed district HW used for cooking 103- 103 \$ZVAR. ZELMANU8 Imputed elec used for manufacturing 105- 105 \$ZVAR. ZNGMANU8 Imputed nat gas used for manufacturing 107- 107 \$ZVAR. ZFKMANU8 Imputed fuel oil used for manufacturing 109- 109 \$ZVAR. ZFRMANU8 Imputed dist steam for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZSTMANU8 Imputed dist HW used for manufacturing 113- 115 \$ZVAR.	ZHWCOOL8		79-	79	
ZFKWATR8 Imputed fuel oil used for water heating 85- 85 \$ZVAR. ZPRWATR8 Imputed propane used for water heating 87- 87 \$ZVAR. ZSTWATR8 Imputed dist steam for water heating 89- 89 \$ZVAR. ZHWWATR8 Imputed dist HW used for water heating 91- 91 \$ZVAR. ZELCOOK8 Imputed electricity used for cooking 93- 93 \$ZVAR. ZNGCOOK8 Imputed natural gas used for cooking 95- 95 \$ZVAR. ZFKCOOK8 Imputed fuel oil used for cooking 97- 97 \$ZVAR. ZPRCOOK8 Imputed propane used for cooking 99- 99 \$ZVAR. ZSTCOOK8 Imputed district steam used for cooking 101- 101 \$ZVAR. ZHWCOOK8 Imputed district HW used for cooking 103- 103 \$ZVAR. ZHWCOOK8 Imputed elec used for manufacturing 105- 105 \$ZVAR. ZELMANU8 Imputed nat gas used for manufacturing 107- 107 \$ZVAR. ZFKMANU8 Imputed fuel oil used for manufacturing 109- 109 \$ZVAR. ZFKMANU8 Imputed propane used for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 113- 113 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 115- 115 \$ZVAR.	ZELWATR8		81-	81	\$ZVAR.
ZFKWATR8 Imputed fuel oil used for water heating 85- 85 \$ZVAR. ZPRWATR8 Imputed propane used for water heating 87- 87 \$ZVAR. ZSTWATR8 Imputed dist steam for water heating 89- 89 \$ZVAR. ZHWWATR8 Imputed dist HW used for water heating 91- 91 \$ZVAR. ZELCOOK8 Imputed electricity used for cooking 93- 93 \$ZVAR. ZNGCOOK8 Imputed natural gas used for cooking 95- 95 \$ZVAR. ZFKCOOK8 Imputed fuel oil used for cooking 97- 97 \$ZVAR. ZPRCOOK8 Imputed propane used for cooking 99- 99 \$ZVAR. ZSTCOOK8 Imputed district steam used for cooking 101- 101 \$ZVAR. ZHWCOOK8 Imputed district HW used for cooking 103- 103 \$ZVAR. ZHWCOOK8 Imputed elec used for manufacturing 105- 105 \$ZVAR. ZELMANU8 Imputed nat gas used for manufacturing 107- 107 \$ZVAR. ZFKMANU8 Imputed fuel oil used for manufacturing 109- 109 \$ZVAR. ZFKMANU8 Imputed propane used for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 113- 113 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 115- 115 \$ZVAR.	ZNGWATR8	-	83-	83	\$ZVAR.
ZPRWATR8 Imputed propane used for water heating 87- 87 \$ZVAR. ZSTWATR8 Imputed dist steam for water heating 89- 89 \$ZVAR. ZHWWATR8 Imputed dist HW used for water heating 91- 91 \$ZVAR. ZELCOOK8 Imputed electricity used for cooking 93- 93 \$ZVAR. ZNGCOOK8 Imputed natural gas used for cooking 95- 95 \$ZVAR. ZFKCOOK8 Imputed fuel oil used for cooking 97- 97 \$ZVAR. ZPRCOOK8 Imputed propane used for cooking 99- 99 \$ZVAR. ZSTCOOK8 Imputed district steam used for cooking 101- 101 \$ZVAR. ZHWCOOK8 Imputed district HW used for cooking 103- 103 \$ZVAR. ZELMANU8 Imputed elec used for manufacturing 105- 105 \$ZVAR. ZNGMANU8 Imputed nat gas used for manufacturing 107- 107 \$ZVAR. ZFKMANU8 Imputed fuel oil used for manufacturing 109- 109 \$ZVAR. ZPRMANU8 Imputed dist steam for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 113- 113 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 115- 115 \$ZVAR.	ZFKWATR8		85-	85	\$ZVAR.
ZSTWATR8 Imputed dist steam for water heating 89-89 \$ZVAR. ZHWWATR8 Imputed dist HW used for water heating 91-91 \$ZVAR. ZELCOOK8 Imputed electricity used for cooking 93-93 \$ZVAR. ZNGCOOK8 Imputed natural gas used for cooking 95-95 \$ZVAR. ZFKCOOK8 Imputed fuel oil used for cooking 97-97 \$ZVAR. ZPRCOOK8 Imputed propane used for cooking 99-99 \$ZVAR. ZSTCOOK8 Imputed district steam used for cooking 101-101 \$ZVAR. ZHWCOOK8 Imputed district HW used for cooking 103-103 \$ZVAR. ZELMANU8 Imputed elec used for manufacturing 105-105 \$ZVAR. ZNGMANU8 Imputed nat gas used for manufacturing 107-107 \$ZVAR. ZFKMANU8 Imputed fuel oil used for manufacturing 109-109 \$ZVAR. ZPRMANU8 Imputed propane used for manufacturing 111-111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 113-113 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 113-113 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 115-115 \$ZVAR.	ZPRWATR8		87-	87	\$ZVAR.
ZHWWATR8 Imputed dist HW used for water heating 91- 91 \$ZVAR. ZELCOOK8 Imputed electricity used for cooking 93- 93 \$ZVAR. ZNGCOOK8 Imputed natural gas used for cooking 95- 95 \$ZVAR. ZFKCOOK8 Imputed fuel oil used for cooking 97- 97 \$ZVAR. ZPRCOOK8 Imputed propane used for cooking 99- 99 \$ZVAR. ZSTCOOK8 Imputed district steam used for cooking 101- 101 \$ZVAR. ZHWCOOK8 Imputed district HW used for cooking 103- 103 \$ZVAR. ZELMANU8 Imputed elec used for manufacturing 105- 105 \$ZVAR. ZNGMANU8 Imputed nat gas used for manufacturing 107- 107 \$ZVAR. ZFKMANU8 Imputed fuel oil used for manufacturing 109- 109 \$ZVAR. ZPRMANU8 Imputed propane used for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 115- 115 \$ZVAR.	ZSTWATR8		89-	89	\$ZVAR.
ZELCOOK8 Imputed electricity used for cooking 93- 93 \$ZVAR. ZNGCOOK8 Imputed natural gas used for cooking 95- 95 \$ZVAR. ZFKCOOK8 Imputed fuel oil used for cooking 97- 97 \$ZVAR. ZPRCOOK8 Imputed propane used for cooking 99- 99 \$ZVAR. ZSTCOOK8 Imputed district steam used for cooking 101- 101 \$ZVAR. ZHWCOOK8 Imputed district HW used for cooking 103- 103 \$ZVAR. ZELMANU8 Imputed elec used for manufacturing 105- 105 \$ZVAR. ZNGMANU8 Imputed nat gas used for manufacturing 107- 107 \$ZVAR. ZFKMANU8 Imputed fuel oil used for manufacturing 109- 109 \$ZVAR. ZPRMANU8 Imputed propane used for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 115- 115 \$ZVAR.	ZHWWATR8		91-	91	\$ZVAR.
ZNGCOOK8 Imputed natural gas used for cooking 95- 95 \$ZVAR. ZFKCOOK8 Imputed fuel oil used for cooking 97- 97 \$ZVAR. ZPRCOOK8 Imputed propane used for cooking 99- 99 \$ZVAR. ZSTCOOK8 Imputed district steam used for cooking 101- 101 \$ZVAR. ZHWCOOK8 Imputed district HW used for cooking 103- 103 \$ZVAR. ZELMANU8 Imputed elec used for manufacturing 105- 105 \$ZVAR. ZNGMANU8 Imputed nat gas used for manufacturing 107- 107 \$ZVAR. ZFKMANU8 Imputed fuel oil used for manufacturing 109- 109 \$ZVAR. ZPRMANU8 Imputed propane used for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 115- 115 \$ZVAR.	ZELCOOK8		93-	93	\$ZVAR.
ZFKCOOK8 Imputed fuel oil used for cooking 97- 97 \$ZVAR. ZPRCOOK8 Imputed propane used for cooking 99- 99 \$ZVAR. ZSTCOOK8 Imputed district steam used for cooking 101- 101 \$ZVAR. ZHWCOOK8 Imputed district HW used for cooking 103- 103 \$ZVAR. ZELMANU8 Imputed elec used for manufacturing 105- 105 \$ZVAR. ZNGMANU8 Imputed nat gas used for manufacturing 107- 107 \$ZVAR. ZFKMANU8 Imputed fuel oil used for manufacturing 109- 109 \$ZVAR. ZPRMANU8 Imputed propane used for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 115- 115 \$ZVAR.	ZNGCOOK8		95-	95	\$ZVAR.
ZPRCOOK8 Imputed propane used for cooking 99- 99 \$ZVAR. ZSTCOOK8 Imputed district steam used for cooking 101- 101 \$ZVAR. ZHWCOOK8 Imputed district HW used for cooking 103- 103 \$ZVAR. ZELMANU8 Imputed elec used for manufacturing 105- 105 \$ZVAR. ZNGMANU8 Imputed nat gas used for manufacturing 107- 107 \$ZVAR. ZFKMANU8 Imputed fuel oil used for manufacturing 109- 109 \$ZVAR. ZPRMANU8 Imputed propane used for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 115- 115 \$ZVAR.	ZFKCOOK8		97-	97	\$ZVAR.
ZHWCOOK8 Imputed district HW used for cooking 103- 103 \$ZVAR. ZELMANU8 Imputed elec used for manufacturing 105- 105 \$ZVAR. ZNGMANU8 Imputed nat gas used for manufacturing 107- 107 \$ZVAR. ZFKMANU8 Imputed fuel oil used for manufacturing 109- 109 \$ZVAR. ZPRMANU8 Imputed propane used for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 115- 115 \$ZVAR.	ZPRCOOK8		99-	99	\$ZVAR.
ZHWCOOK8 Imputed district HW used for cooking 103- 103 \$ZVAR. ZELMANU8 Imputed elec used for manufacturing 105- 105 \$ZVAR. ZNGMANU8 Imputed nat gas used for manufacturing 107- 107 \$ZVAR. ZFKMANU8 Imputed fuel oil used for manufacturing 109- 109 \$ZVAR. ZPRMANU8 Imputed propane used for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 115- 115 \$ZVAR.	ZSTCOOK8	Imputed district steam used for cooking	101-	101	\$ZVAR.
ZELMANU8 Imputed elec used for manufacturing 105- 105 \$ZVAR. ZNGMANU8 Imputed nat gas used for manufacturing 107- 107 \$ZVAR. ZFKMANU8 Imputed fuel oil used for manufacturing 109- 109 \$ZVAR. ZPRMANU8 Imputed propane used for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 115- 115 \$ZVAR.	ZHWCOOK8		103-	103	\$ZVAR.
ZFKMANU8 Imputed fuel oil used for manufacturing 109- 109 \$ZVAR. ZPRMANU8 Imputed propane used for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 115- 115 \$ZVAR.	ZELMANU8	Imputed elec used for manufacturing	105-	105	\$ZVAR.
ZPRMANU8 Imputed propane used for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 115- 115 \$ZVAR.	ZNGMANU8	-	107-	107	
ZPRMANU8 Imputed propane used for manufacturing 111- 111 \$ZVAR. ZSTMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 115- 115 \$ZVAR.		-			
ZSTMANU8 Imputed dist steam for manufacturing 113- 113 \$ZVAR. ZHWMANU8 Imputed dist HW used for manufacturing 115- 115 \$ZVAR.					
ZHWMANU8 Imputed dist HW used for manufacturing 115- 115 \$ZVAR.	ZSTMANU8				
	ZHWMANU8		115-	115	
ZNGGENR8 Imputed nat gas used for elec gener 117-117 \$ZVAR.	ZNGGENR8	Imputed nat gas used for elec gener			\$ZVAR.
ZFKGENR8 Imputed fuel oil used for elec gener 119- 119 \$ZVAR.	ZFKGENR8				\$ZVAR.

(File 12 continued)

ZPRGENR8	Imputed propane used for elec gener	121- 121	\$ZVAR.
ZGENUSE8	Imputed use of generated electricity	123- 123	\$ZVAR.
ZCOGEN8	Imputed cogeneration system	125- 125	\$ZVAR.
ZGRID8	Imputed deliver electricity to grid	127- 127	\$ZVAR.
ADJWT8	Final full sample building weight	129- 136	
STRATUM8	Variance stratum	138- 140	
PAIR8	Variance unit	142- 142	

Layout for File 13: Imputation Flags for File 6

Variable Name	Variable Description	Pos	<u>ition</u>	Format
PUBID8	Building identifier	1-	5	
REGION8	Census region	7 –	7	\$REGION.
CENDIV8	Census division	9-	9	\$CENDIV.
SQFT8	Square footage	11-	20	MISS10CH.
SQFTC8	Square footage category	22-	23	\$SQFTCX.
YRCONC8	Year of construction category	25-	26	\$YEARCAT.
PBA8	Principal building activity	28-	29	\$PBA.
ELUSED8	Electricity used	31-	31	\$YESNO.
NGUSED8	Natural gas used	33-	33	\$YESNO.
FKUSED8	Fuel oil/diesel/kerosene used	35-	35	\$YESNO.
PRUSED8	Bottled gas/LPG/propane used	37-	37	\$YESNO.
STUSED8	District steam used	39-	39	\$YESNO.
HWUSED8	District hot water used	41-	41	\$YESNO.
ZCWUSED8	Imputed district chilled water used	43-	43	\$ZVAR.
ZWOUSED8	Imputed wood used	45-	45	\$ZVAR.
ZCOUSED8	Imputed coal used	47-	47	\$ZVAR.
ZSOUSED8	Imputed solar used	49-	49	\$ZVAR.
ZOTUSED8	Imputed other energy source used	51-	51	\$ZVAR.
ZWOHT18	Imputed wood for main space heating	53-	53	\$ZVAR.
ZCOHT18	Imputed coal for main space heating	55-	55	\$ZVAR.
ZSOHT18	Imputed solar for main space heating	57-	57	\$ZVAR.
ZOTHT18	Imputed other source for main space ht	59-	59	\$ZVAR.
ZWOHT28	Imputed wood for 2nd space heating	61-	61	\$ZVAR.
ZCOHT28	Imputed coal for 2nd space heating	63-	63	\$ZVAR.
ZSOHT28	Imputed solar for 2nd space heating	65-	65	\$ZVAR.
ZOTHT28	Imputed other source for 2nd space ht	67-	67	\$ZVAR.
ZCWCOOL8	Imputed district CW used for cooling	69-	69	\$ZVAR.
ZOTCOOL8	Imputed other source used for cooling	71-	71	\$ZVAR.
ZWOWATR8	Imputed wood used for water heating	73-	73	\$ZVAR.
ZCOWATR8	Imputed coal used for water heating	75-	75	\$ZVAR.
ZSOWATR8	Imputed solar used for water heating	77-	77	\$ZVAR.
ZOTWATR8	Imputed other source for water heating	79-	79	\$ZVAR.
ZWOCOOK8	Imputed wood used for cooking	81-	81	\$ZVAR.
ZCOCOOK8	Imputed coal used for cooking	83-	83	\$ZVAR.
ZSOCOOK8	Imputed solar used for cooking	85-	85	\$ZVAR.
ZOTCOOK8	Imputed other source used for cooking	87-	87	\$ZVAR.
ZWOMANU8	Imputed wood used for manufacturing	89-	89	\$ZVAR.
ZCOMANU8	Imputed coal used for manufacturing	91-	91	\$ZVAR.
ZSOMANU8	Imputed solar used for manufacturing	93-	93	\$ZVAR.
ZOTMANU8	Imputed other source for manufacturing	95-	95	\$ZVAR.
ZWOGENR8	Imputed wood used for elec generation	97-	97	\$ZVAR.
ZCOGENR8	Imputed coal used for elec generation	99-	99	\$ZVAR.
ZSOGENR8	Imputed solar used for elec generation	101-		\$ZVAR.
ZOTGENR8	Imputed other source used for elec gener	103-		\$ZVAR.
ADJWT8	Final full sample building weight	105-		
STRATUM8	Variance stratum	114-		
PAIR8	Variance unit	118-	118	

Layout for File 14: Imputation Flags for File 7

<u>Variable Name</u>	Variable Description	Pos	ition	Format
PUBID8	Building identifier	1-	5	
REGION8	Census region	7-	7	\$REGION.
CENDIV8	Census division	9-	9	\$CENDIV.
SOFT8	Square footage	11-	20	MISS10CH.
SQFTC8	Square footage category	22-	23	\$SQFTCX.
YRCONC8	Year of construction category	25-	26	\$YEARCAT.
PBA8	Principal building activity	28-	29	\$PBA.
ELUSED8	Electricity used	31-	31	\$YESNO.
NGUSED8	Natural gas used	33-	33	\$YESNO.
FKUSED8	Fuel oil/diesel/kerosene used	35-	35	\$YESNO.
PRUSED8	Bottled gas/LPG/propane used	37-	37	\$YESNO.
STUSED8	District steam used	39-	39	\$YESNO.
HWUSED8	District hot water used	41-	41	\$YESNO.
ZLTOHRP8	Imputed percent lit when open	43-	43	\$ZVAR.
ZLOHRPC8	Imputed percent lit when open category	45-	45	\$ZVAR.
ZLTNHRP8	Imputed percent lit when closed	47-	47	\$ZVAR.
ZLNHRPC8	Imputed percent lit when closed category	49-	49	\$ZVAR.
ZRDLTNF8	Imputed reduce lighting during off hours	51-	51	\$ZVAR.
ZBULB8	Imputed incandescent bulbs	53-	53	\$ZVAR.
ZFLUOR8	Imputed fluorescent bulbs	55-	55	\$ZVAR.
ZCFLR8	Imputed compact fluorescent bulbs	57-	57	\$ZVAR.
ZHID8	Imputed HID bulbs	59-	59	\$ZVAR.
ZHALO8	Imputed halogen bulbs	61-	61	\$ZVAR.
ZOTLT8	Imputed other type of bulbs	63-	63	\$ZVAR.
ZFLUORP8	Imputed pct lit by fluorescent	65-	65	\$ZVAR.
ZCFLRP8	Imputed pct lit by compact fluorescent	67-	67	\$ZVAR.
ZBULBP8	Imputed pct lit by incandescent	69-	69	\$ZVAR.
ZHALOP8	Imputed pct lit by halogen	71-	71	\$ZVAR.
ZHIDP8	Imputed pct lit by HID	73-	73	\$ZVAR.
ZOTLTP8	Imputed pct lit by other lighting	75-	75	\$ZVAR.
ZSREF8	Imputed specular reflectors	77-	77	\$ZVAR.
ZHEB8	Imputed electronic ballasts	79-	79	\$ZVAR.
ZEMCSLT8	Imputed EMCS controls lighting	81-	81	\$ZVAR.
ZWINTYP8	Imputed window glass type	83-	83	\$ZVAR.
ZTINT8	Imputed tinted window glass	85-	85	\$ZVAR.
ZREFL8	Imputed reflective window glass	87-	87	\$ZVAR.
ZAWN8	Imputed external overhangs or awnings	89-	89	\$ZVAR.
ZSKYLT8	Imputed skylights or atriums	91-	91	\$ZVAR.
ZAUTOLT8	Imputed auto controls/sensors on lights	93-	93	\$ZVAR.
ZDAYLTP8	Imputed percent daylight	95-	95	\$ZVAR.
ADJWT8	Final full sample building weight		104	
STRATUM8	Variance stratum	106-		
PAIR8	Variance unit	110-	110	

Layout for File 15: Consumption and Expenditures for Sum of Major Fuels and Electricity (Includes Imputation Flags)

Variable Name	Variable Description	Pos	ition	Format
PUBID8	Building identifier	1-	5	
REGION8	Census region	7-	7	\$REGION.
CENDIV8	Census division	9 –	9	\$CENDIV.
SQFT8	Square footage	11-	20	MISS10CH.
SQFTC8	Square footage category	22-	23	\$SQFTCX.
YRCONC8	Year of construction category	25-	26	\$YEARCAT.
PBA8	Principal building activity	28-	29	\$PBA.
ELUSED8	Electricity used	31-	31	\$YESNO.
NGUSED8	Natural gas used	33-	33	\$YESNO.
FKUSED8	Fuel oil/diesel/kerosene used	35-	35	\$YESNO.
PRUSED8	Bottled gas/LPG/propane used	37-	37	\$YESNO.
STUSED8	District steam used	39-	39	\$YESNO.
HWUSED8	District hot water used	41-	41	\$YESNO.
ADJWT8	Final full sample building weight	43-	50	
STRATUM8	Variance stratum	52-	54	
PAIR8	Variance unit	56-	56	
HDD658	Heating degree days (base 65)	58-	63	COMMA6.
CDD658	Cooling degree days (base 65)	65-	70	COMMA6.
MFUSED8	Any major fuel used	72-	72	\$YESNO.
MFBTU8	Annual maj fuel consumption (thous Btu)	74-	91	COMMA18.
MFEXP8	Annual major fuel expenditures (\$)	93-	102	MISS10CH.
ELCNS8	Annual electricity consumption (kWh)	104-	118	MISS15CH.
ELBTU8	Annual elec consumption (thous Btu)	120-	137	COMMA18.
ELEXP8	Annual electricity expenditures (\$)	139-	148	MISS10CH.
ZELCNS8	Imputed electricity consumption	150-	150	\$ZVAR.
ZELEXP8	Imputed electricity expenditures	152-	152	\$ZVAR.

Layout for File 16: Consumption and Expenditures for Natural Gas, Fuel Oil, and District Heat (Includes Imputation Flags)

<u>Variable Name</u>	<u>Variable Description</u>	Positio	n <u>Format</u>
PUBID8	Building identifier	1- 5	
REGION8	Census region	7- 7	
CENDIV8	Census division	9- 9	
SQFT8	Square footage	11- 20	MISS10CH.
SQFTC8	Square footage category	22- 23	\$SQFTCX.
YRCONC8	Year of construction category	25- 26	\$YEARCAT.
PBA8	Principal building activity	28- 29	\$PBA.
ELUSED8	Electricity used	31- 31	\$YESNO.
NGUSED8	Natural gas used	33- 33	\$YESNO.
FKUSED8	Fuel oil/diesel/kerosene used	35- 35	\$YESNO.
PRUSED8	Bottled gas/LPG/propane used	37- 37	\$YESNO.
STUSED8	District steam used	39- 39	\$YESNO.
HWUSED8	District hot water used	41- 41	\$YESNO.
ADJWT8	Final full sample building weight	43- 50	
STRATUM8	Variance stratum	52- 54	
PAIR8	Variance unit	56- 56	
NGCNS8	Annual natural gas consumption (ccf)	58- 72	
NGBTU8	Annual nat gas consumption (thous Btu)	74- 91	COMMA18.
NGEXP8	Annual natural gas expenditures (\$)	93- 102	
ZNGCNS8	Imputed natural gas consumption	104- 104	\$ZVAR.
ZNGEXP8	Imputed natural gas expenditures	106- 106	\$ZVAR.
FKCNS8	Annual fuel oil consumption (gallons)	108- 122	MISS15CH.
FKBTU8	Annual fuel oil consumption (thous Btu)	124- 141	COMMA18.
FKEXP8	Annual fuel oil expenditures	143- 152	
ZFKCNS8	Imputed fuel oil consumption	154- 154	
ZFKEXP8	Imputed fuel oil expenditures	156- 156	•
DHUSED8	District heat (steam or hot water) used	158- 158	
DHHT18	District heat used for main heating	160- 160	·
DHHT28	District heat used for secondary heating	162- 162	
DHCOOL8	District heat used for cooling	164- 164	\$YESNO.
DHWATR8	District heat used for water heating	166- 166	\$YESNO.
DHCOOK8	District heat used for cooking	168- 168	\$YESNO.
DHMANU8	District heat used for manufacturing	170- 170	\$YESNO.
DHOTH8	District heat used for some other use	172- 172	\$YESNO.
DHCNS8	Annual dist heat consumption (thous lbs)	174- 188	MISS15CH.
DHBTU8	Annual dist heat consumption (thous Btu)	190- 207	
DHEXP8	Annual district heat expenditures (\$)	209- 218	
ZDHCNS8	Imputed district heat consumption	220- 220	·
ZDHEXP8	Imputed district heat expenditures	222- 222	\$ZVAR.

Layout for File 17: Consumption of Major Fuels by End Use

Variable Name	Variable Description	Pos	ition	Format
PUBID8	Building identifier	1-	5	
REGION8	Census region	7-	7	\$REGION.
CENDIV8	Census division	9-	9	\$CENDIV.
SOFT8	Square footage	11-	20	MISS10CH.
SQFTC8	Square footage category	22-	23	\$SQFTCX.
YRCONC8	Year of construction category	25-	26	\$YEARCAT.
PBA8	Principal building activity	28-	29	\$PBA.
ELUSED8	Electricity used	31-	31	\$YESNO.
NGUSED8	Natural gas used	33-	33	\$YESNO.
FKUSED8	Fuel oil/diesel/kerosene used	35-	35	\$YESNO.
PRUSED8	Bottled gas/LPG/propane used	37-	37	\$YESNO.
STUSED8	District steam used	39-	39	\$YESNO.
HWUSED8	District hot water used	41-	41	\$YESNO.
ADJWT8	Final full sample building weight	43-	50	
STRATUM8	Variance stratum	52-	54	
PAIR8	Variance unit	56-	56	
MFHTBTU8	Major Fuel heating use (mBtu)	58-	75	COMMA18.
MFCLBTU8	Major Fuel cooling use (mBtu)	77-	94	COMMA18.
MFVNBTU8	Major Fuel ventilation use (mBtu)	96-	113	COMMA18.
MFWTBTU8	Major Fuel water heating use (mBtu)	115-	132	COMMA18.
MFLTBTU8	Major Fuel lighting use (mBtu)	134-	151	COMMA18.
MFCKBTU8	Major Fuel cooking use (mBtu)	153-	170	COMMA18.
MFRFBTU8	Major Fuel refrigeration use (mBtu)	172-	189	COMMA18.
MFOFBTU8	Major Fuel office equipment use (mBtu)	191-	208	COMMA18.
MFPCBTU8	Major Fuel computer use (mBtu)	210-	227	COMMA18.
MFMSBTU8	Major Fuel miscellaneous use (mBtu)	229-	246	COMMA18.

Layout for File 18: Consumption of Electricity by End Use

Variable Name	Variable Description	Pos	<u>ition</u>	<u>Format</u>
PUBID8	Building identifier	1-	5	
REGION8	Census region	7 –	7	\$REGION.
CENDIV8	Census division	9-	9	\$CENDIV.
SQFT8	Square footage	11-	20	MISS10CH.
SQFTC8	Square footage category	22-	23	\$SQFTCX.
YRCONC8	Year of construction category	25-	26	\$YEARCAT.
PBA8	Principal building activity	28-	29	\$PBA.
ELUSED8	Electricity used	31-	31	\$YESNO.
NGUSED8	Natural gas used	33-	33	\$YESNO.
FKUSED8	Fuel oil/diesel/kerosene used	35-	35	\$YESNO.
PRUSED8	Bottled gas/LPG/propane used	37-	37	\$YESNO.
STUSED8	District steam used	39-	39	\$YESNO.
HWUSED8	District hot water used	41-	41	\$YESNO.
ADJWT8	Final full sample building weight	43-	50	
STRATUM8	Variance stratum	52-	54	
PAIR8	Variance unit	56-	56	
ELHTBTU8	Electric heating use (mBtu)	58-	75	COMMA18.
ELCLBTU8	Electric cooling use (mBtu)	77-	94	COMMA18.
ELVNBTU8	Electric ventilation use (mBtu)	96-	113	COMMA18.
ELWTBTU8	Electric water heating use (mBtu)	115-	132	COMMA18.
ELLTBTU8	Electricity lighting use (mBtu)	134-	151	COMMA18.
ELCKBTU8	Electric cooking use (mBtu)	153-	170	COMMA18.
ELRFBTU8	Electric refrigeration use (mBtu)	172-	189	COMMA18.
ELOFBTU8	Electric office equipment use (mBtu)	191-	208	COMMA18.
ELPCBTU8	Electric computer use (mBtu)	210-	227	COMMA18.
ELMSBTU8	Electric miscellaneous use (mBtu)	229-	246	COMMA18.

Layout for File 19: Consumption of Natural Gas by End Use

Variable Name	Variable Description	Pos	<u>ition</u>	Format
PUBID8	Building identifier	1-	5	
REGION8	Census region	7-		\$REGION.
CENDIV8	Census division	9-	9	\$CENDIV.
SQFT8	Square footage	11-	20	MISS10CH.
SQFTC8	Square footage category	22-	23	\$SQFTCX.
YRCONC8	Year of construction category	25-	26	\$YEARCAT.
PBA8	Principal building activity	28-	29	\$PBA.
ELUSED8	Electricity used	31-	31	\$YESNO.
NGUSED8	Natural gas used	33-	33	\$YESNO.
FKUSED8	Fuel oil/diesel/kerosene used	35-	35	\$YESNO.
PRUSED8	Bottled gas/LPG/propane used	37-	37	\$YESNO.
STUSED8	District steam used	39-	39	\$YESNO.
HWUSED8	District hot water used	41-	41	\$YESNO.
ADJWT8	Final full sample building weight	43-	50	
STRATUM8	Variance stratum	52-	54	
PAIR8	Variance unit	56-	56	
NGHTBTU8	Natural Gas heating use (mBtu)	58-	75	COMMA18.
NGCLBTU8	Natural Gas cooling use (mBtu)	77-	94	COMMA18.
NGWTBTU8	Natural Gas water heating use (mBtu)	96-	113	COMMA18.
NGCKBTU8	Natural Gas cooking use (mBtu)	115-	132	COMMA18.
NGMSBTU8	Natural Gas miscellaneous use (mBtu)	134-	151	COMMA18.

Layout for File 20: Consumption of Fuel Oil and District Heat by End Use

Variable Name	Variable Description	Posi	ition	<u>Format</u>
DUDIDO	Duilding ideatifica	1-	_	
PUBID8	Building identifier	7-	5 7	dDDGT ON
REGION8	Census region Census division	7- 9-	9	\$REGION.
CENDIV8		11-	20	\$CENDIV. MISS10CH.
SQFT8	Square footage	22-	23	
SQFTC8	Square footage category			\$SQFTCX.
YRCONC8	Year of construction category	25-	26	\$YEARCAT.
PBA8	Principal building activity	28-	29	\$PBA.
ELUSED8	Electricity used	31-	31	\$YESNO.
NGUSED8	Natural gas used	33-	33	\$YESNO.
FKUSED8	Fuel oil/diesel/kerosene used	35-	35	\$YESNO.
PRUSED8	Bottled gas/LPG/propane used	37-	37	\$YESNO.
STUSED8	District steam used	39-	39	\$YESNO.
HWUSED8	District hot water used	41-	41	\$YESNO.
ADJWT8	Final full sample building weight	43-	50	
STRATUM8	Variance stratum	52-	54	
PAIR8	Variance unit	56-	56	
FKHTBTU8	Fuel Oil heating use (mBtu)	58-	75	COMMA18.
FKCLBTU8	Fuel Oil cooling use (mBtu)	77-	94	COMMA18.
FKWTBTU8	Fuel Oil water heating use (mBtu)	96-	113	COMMA18.
FKCKBTU8	Fuel Oil cooking use (mBtu)	115-	132	COMMA18.
FKMSBTU8	Fuel Oil miscellaneous use (mBtu)	134-	151	COMMA18.
DHHTBTU8	District Heat heating use (mBtu)	153-	170	COMMA18.
DHCLBTU8	District Heat cooling use (mBtu)	172-	189	COMMA18.
DHWTBTU8	District Heat water heating use (mBtu)	191-	208	COMMA18.
DHCKBTU8	District Heat cooking use (mBtu)	210-	227	COMMA18.
DHMSBTU8	District Heat miscellaneous use (mBtu)	229-	246	COMMA18.

Format Codes for All Variables

```
VALUE $CENDIV
  '1'='New England'
  '2'='Middle Atlantic'
  '3'='East North Central'
  '4'='West North Central'
  '5'='South Atlantic'
  '6'='East South Central'
  '7'='West South Central'
  '8'='Mountain'
  '9'='Pacific'
VALUE $CLEQP
  '1'='Packaged A/C units'
  '2'='Residential-type central A/C'
  '3'='Individual room A/C'
  '4'='Heat pumps for cooling'
  '5'='District chilled water piped in'
  '6'='Central chillers inside the building'
  '7'='"Swamp" coolers or evaporative coolers'
  '8'='Other cooling equipment'
VALUE $CLIMAT
  '1'='<2000 CDD,>7000 HDD'
  '2'='<2000 CDD,5500-7000 HDD'
  '3'='<2000 CDD,4000-5499 HDD'
  '4'='<2000 CDD,<4000 HDD'
  '5'='>=2000 CDD,<4000 HDD'
  '7'='Withheld to protect confidentiality'
VALUE $DAYSOPN
  '1'='Open all five days (Mon-Fri)'
  '2'='Open some of these days (Mon-Fri)'
  '3'='Not open at all (Mon-Fri)'
VALUE $EQPOFF
  '1'='Always turned off'
  '2'='Sometimes turned off'
  '3'='Never turned off'
  '4'='Computers are "powered down"'
```

```
VALUE $FACACT
  '01'='College/university/junior college'
  '02'='Primary or secondary school (K-12)'
  '03'='Other type of school'
  '04'='Office complex'
  '05'='Retail complex'
  '06'='Religious campus or complex'
  '07'='Hospital or other health care complex'
  '08'='Lodging or resort complex'
  '09'='Post office complex'
  '10'='Other type of government complex'
  '11'='Industrial complex'
  '12'='Transportation complex'
  '13'='Other type of campus or complex'
VALUE $FKTYP
  '1'='Fuel oil'
  '2'='Diesel'
  '3'='Kerosene'
  '4'='Fuel oil and diesel'
  '5'='Fuel oil and kerosene'
  '6'='Diesel and kerosene'
  '7'='Fuel oil, diesel, and kerosene'
VALUE $FLAT
  '1'='All flat screen'
  '2'='Most flat screen'
  '3'='Some flat screen'
  '4'='A few flat screen'
VALUE $GENUSE
  '1'='Primarily for emergency back-up'
  '2'='During periods of high demand'
  '3'='Whenever electricity was used'
VALUE $GLSAREA
  '1'='More glass area'
  '2'='Less glass area'
  '3'='About the same amount'
VALUE $GLSPCT
  '1'='10 percent or less'
  '2'='11 to 25 percent'
  '3'='26 to 50 percent'
  '4'='51 to 75 percent'
  '5'='76 to 100 percent'
VALUE $GOVTYP
  '1'='Federal'
  '2'='State'
  '3'='Local'
  '7'='Withheld to protect confidentiality'
PICTURE HCBED
  0-150 = '009'
  9991 = 'Over 150' (noedit)
```

```
VALUE $HOWRDC
  '1'='Time-clock thermostat'
  '2'='Thermostat is manually reset'
  '3'='Part of EMCS'
VALUE $HRSCAT
  '1'='Zero'
  '2'='1 to 39'
  '3'='40 to 48'
  '4' = '49 to 60'
  '5'='61 to 84'
  '6'='85 to 167'
  '7'='Always open'
VALUE $HTEQP
  '1'='Furnaces that heat air directly'
  '2'='Boilers inside the building'
  '3'='Packaged heating units'
  '4'='Individual space heaters'
  '5'='Heat pumps for heating'
  '6'='District steam or hot water'
  '7'='Other heating equipment'
VALUE $LAUND
  '1'='In this building'
  '2'='In another building on-site'
  '3'='By an offsite laundry service'
VALUE $LIT1CAT
  '1'='1 to 25 percent'
  '2'='26 to 50 percent'
  '3'='51 to 75 percent'
  '4'='76 to 100 percent'
  '5'='Not lit at all when open'
VALUE $LIT2CAT
  '1'='1 to 25 percent'
  '2'='26 to 50 percent'
  '3'='51 to 75 percent'
  '4'='76 to 100 percent'
  '5'='Not lit at all during off hours'
PICTURE MISS2CH
   0-96 = '09'
   97 = 'Not ascertained'
   98 = 'Refused'
   99 = 'Don''t know'
PICTURE MISS3CH
   0-996 = '009'
   997 = 'Not ascertained'
   998 = 'Refused'
   999 = 'Don''t know'
```

```
PICTURE MISS4CH
   0-9996 = '0,009'
   9997 = 'Not ascertained'
   9998 = 'Refused'
   9999 = 'Don''t know'
PICTURE YEAR4CH
  0-9996 = '0009'
   9997 = 'Not ascertained'
   9998 = 'Refused'
   9999 = 'Don''t know'
PICTURE MISS5CH
   0-99996 = '00,009'
   99997 = 'Not ascertained'
   99998 = 'Refused'
   99999 = 'Don''t know'
PICTURE MISS6CH
   0-999996 = '000,009'
   999997 = 'Not ascertained'
   999998 = 'Refused'
   999999 = 'Don''t know'
PICTURE MISS8CH
   0-99999996 = '00,000,009'
   99999997 = 'Not ascertained'
   99999998 = 'Refused'
   99999999 = 'Don''t know'
PICTURE MISS10CH
   0-9999999996 = '0,000,000,009'
   999999997 = 'Not ascertained'
   9999999998 = 'Refused'
   9999999999 = 'Don''t know'
PICTURE MISS15CH
  999999999999997 = 'Not Ascertained'
  999999999999999 = 'Don''t Know'
VALUE $MONTH
  '1'='January'
  '2'='February'
  '3'='March'
  '4'='April'
  '5'='May'
  '6'='June'
  '7'='July'
  '8'='August'
  '9'='September'
  '10'='October'
  '11'='November'
  '12'='December'
;
```

```
PICTURE NFLOOR
  0-14 = '009'
  991 = '15 \text{ to } 25' \text{ (noedit)}
  992 = 'Over 25' (noedit)
VALUE $NGSRC
  '1'='Local utility'
  '2'='Someone else (eg non-utility, broker)'
  '3'='Bought both ways'
  '9'='Don''t Know'
VALUE $NOCCAT
  '01'='Zero'
  '02'='One'
  '03'='2 to 5'
  '04' = '6 to 10'
  '05'='11 to 20'
  '06'='21 to 50'
  '07'='51 to 100'
  '08'='More than 100'
VALUE $OWNER
  '01'='Property management company'
  '02'='Other corporation/partnership/LLC'
  '03'='Religious organization'
  '04'='Other non-profit organization'
  '05'='Privately-owned school'
  '06'='Individual owner'
  '07'='Other nongovernment owner'
  '08'='Federal government'
  '09'='State government'
  '10'='Local government'
VALUE $PBA
  '01'='Vacant'
  '02'='Office'
  '04'='Laboratory'
  '05'='Nonrefrigerated warehouse'
  '06'='Food sales'
  '07'='Public order and safety'
  '08'='Outpatient health care'
  '11'='Refrigerated warehouse'
  '12'='Religious worship'
  '13'='Public assembly'
  '14'='Education'
  '15'='Food service'
  '16'='Inpatient health care'
  '17'='Nursing'
  '18'='Lodging'
  '23'='Strip shopping mall'
  '24'='Enclosed mall'
  '25'='Retail other than mall'
  '26'='Service'
  '91'='Other'
```

```
VALUE $PBAPLUS
'01'='Vacant'
'02'='Administrative/professional office'
'03'='Bank/other financial'
'04'='Government office'
'05'='Medical office (non-diagnostic)'
'06'='Mixed-use office'
'07'='Other office'
'08'='Laboratory'
'09'='Distribution/shipping center'
'10'='Non-refrigerated warehouse'
'11'='Self-storage'
'12'='Convenience store'
'13'='Convenience store with gas station'
'14'='Grocery store/food market'
'15'='Other food sales'
'16'='Fire station/police station'
'17'='Other public order and safety'
'18'='Medical office (diagnostic)'
'19'='Clinic/other outpatient health'
'20'='Refrigerated warehouse'
'21'='Religious worship'
'22'='Entertainment/culture'
'23'='Library'
'24'='Recreation'
'25'='Social/meeting'
'26'='Other public assembly'
'27'='College/university'
'28'='Elementary/middle school'
'29'='High school'
'30'='Preschool/daycare'
'31'='Other classroom education'
'32'='Fast food'
'33'='Restaurant/cafeteria'
'34'='Other food service'
'35'='Hospital/inpatient health'
'36'='Nursing home/assisted living'
'37'='Dormitory/fraternity/sorority'
'38'='Hotel'
'39'='Motel or inn'
'40'='Other lodging'
'41'='Vehicle dealership/showroom'
'42'='Retail store'
'43'='Other retail'
'44'='Post office/postal center'
'45'='Repair shop'
'46'='Vehicle service/repair shop'
'47'='Vehicle storage/maintenance'
'48'='Other service'
'49'='Other'
'50'='Strip shopping mall'
'51'='Enclosed mall'
```

```
VALUE $PBAX
  '11'='Office/Professional'
  '12'='Data center/Computer "server farm"'
  '13'='Warehouse/Storage'
  '14'='Food sales or service'
  '15'='Retail'
  '16'='Education'
  '17'='Religious worship'
  '18'='Public assembly'
  '19'='Health care'
  '20'='Service'
  '21'='Lodging'
  '22'='Public order and safety'
  '23'='Residential'
  '24'='Industrial'
  '25'='Agricultural'
  '26'='Vacant'
  '27'='Other'
VALUE $PCCAT
  '01'='1 to 4'
  '02'='5 to 9'
  '03'='10 to 19'
  '04' = '20 to 49'
  '05'='50 to 99'
  '06'='100 to 249'
  '07'='250 to 499'
  '08'='500 to 999'
  '09' = '1,000 \text{ to } 2,499'
  '10'='2,500 to 4,999'
  '11'='5,000 or more'
VALUE $POOLSRC
  '1'='Electricity'
  '2'='Natural gas'
  '3'='Fuel oil/diesel/kerosene'
  '4'='Bottled gas/LPG/Propane'
  '5'='Solar'
  '6'='Some other energy source'
VALUE $PRAMT
  '1'='Less than 100'
  '2'='100 to 499'
  '3'='500 to 999'
  '4' = '1,000 or more'
  '7'='Not Ascertained'
  '8'='Refused'
  '9'='Don''t Know'
VALUE $PRNTR
  '1'='Inkjet'
  '2'='Laser'
  '3'='Some other type'
  '4'='Half inkjet, half laser'
```

```
VALUE $PRUNIT
  '1'='Gallons'
  '2'='Pounds'
  '7'='Not Ascertained'
  '8'='Refused'
  '9'='Don''t Know'
VALUE $REGION
  '1'='Northeast'
  '2'='Midwest'
  '3'='South'
  '4'='West'
VALUE $RFCNS
  '1'='Built-up'
  '2'='Slate or tile shingles'
  '3'='Wood shingles/shakes/other wood'
  '4'='Asphalt/fiberglass/other shingles'
  '5'='Metal surfacing'
  '6'='Plastic/rubber/synthetic sheeting'
  '7'='Concrete'
  '8'='No one major type'
  '9'='Other'
VALUE $SHAPE
  '1'='Square'
  '2'='Wide rectangle'
  '3'='Narrow rectangle'
  '4'='Rectangle/square with courtyard'
  '5'='"H" shaped'
  '6'='"U" shaped'
  '7'='"E" shaped'
  '8'='"T" shaped'
  '9'='"L" shaped'
  '10'='"+" or cross shaped'
  '11'='Other shape'
VALUE $SQFTCX
  '01'='1,000 sq ft or less'
  '02'='1,001 to 5,000 sq ft'
  '03'='5,001 to 10,000 sq ft'
  '04'='10,001 to 25,000 sq ft'
  '05' = '25,001 to 50,000 sq ft'
  '06'='50,001 to 100,000 sq ft'
  '07' = '100,001 to 200,000 sq ft'
  '08'='200,001 to 500,000 sq ft'
  '09'='500,001 to 1 million sq ft'
  '10'='Over 1 million sq ft'
VALUE $WATREQP
  '1'='One or more centralized'
  '2'='One or more "point-of-use"'
  '3'='Both types of water heaters'
```

```
VALUE $WINDTYP
  '1'='Single layer glass'
  '2'='Multi-layer glass'
  '3'='Combination of both'
  '4'='No windows'
VALUE SWLCNS
  '1'='Brick, stone, or stucco'
  '2'='Pre-cast concrete panels'
  '3'='Concrete block or poured concrete '
  '4'='Siding, shingles, tiles, or shakes'
  '5'='Sheet metal panels'
  '6'='Window or vision glass'
  '7'='Decorative or construction glass'
  '8'='No one major type'
  '9'='Other'
VALUE $WOAMT
  '1'='Less than 1 cord'
  '2'='1 to 9 cords'
  '3'='10 to 20 cords'
  '4'='More than 20 cords'
  '7'='Not Ascertained'
  '9'='Don''t Know'
VALUE $WODOLS
  '1'='$1 to $100'
  '2'='$101 to $500'
  '3'='$501 to $1,000'
  '4' = '\$1,001 to \$2,000'
  '5'='Over $2,000'
  '7'='Not Ascertained'
  '9'='Don''t Know'
VALUE $WORKCAT
  '01'='None'
  '02'='1 to 4'
  '03'='5 to 9'
  '04' = '10 to 19'
  '05'='20 to 49'
  '06'='50 to 99'
  '07'='100 to 249'
  '08'='250 to 499'
  '09'='500 to 999'
  '10' = '1,000 \text{ to } 2,499'
  '11'='2,500 to 4,999'
  '12'='5,000 or More'
VALUE $WOSRC
  '1'='Purchased all the wood'
  '2'='Obtained all wood free of charge'
  '3'='Some wood purchased and some free'
  '7'='Not Ascertained'
  '9'='Don''t Know'
```

```
PICTURE YEAR4CH
   0-9996 = '0009'
   9997 = 'Not ascertained'
   9998 = 'Refused'
  9999 = 'Don''t know'
VALUE $YEARCAT
 '1'='Before 1920'
  '2'='1920 to 1945'
  '3'='1946 to 1959'
  '4'='1960 to 1969'
  '5'='1970 to 1979'
  '6'='1980 to 1989'
  '7'='1990 to 1999'
  '8'='2000 to 2003'
  '9'='2004'
VALUE $YES
 '1'='Yes'
 '9'='Don''t Know'
VALUE $YESNO
 '1'='Yes'
  '2'='No'
  '7'='Not Ascertained'
 '8'='Refused'
 '9'='Don''t Know'
VALUE $ZVAR
 '0' = 'Reported'
  '1' = 'Imputed'
 '8' = 'Missing'
 '9' = 'Inapplicable'
```