1994 DEMAND SIDE MANAGEMENT BASE PLANNING STUDY

**** DRAFT ****

VOLUME IV. ENERGY CONSERVATION MEASURES

GAINESVILLE REGIONAL UTILITIES
DECEMBER 12, 1994

TABLE OF CONTENTS

PURPOSE AND SCOPE

Energy conservation measures ("ECMS") are specific materials and devices applied to improve the efficiency by which a specific objective or end use is attained. For example, one conservation measure would be the replacement of an electric water heater with a gas water heater. As part of the 1994 Demand Side Management Base Planning Study, Gainesville Regional Utilities ("GRU") assembled information to evaluate 66 residential and 88 commercial energy conservation measures.

This report is the forth volume of the five volumes comprising GRU's 1994 Demand Side Management Base Planning Study. The five volumes include:

I. The Value of Conservation for Gainesville Regional Utilities
II. Patterns of Energy Use in Gainesville
III. Technical and Achievable Potential
IV. Energy Conservation Measures
V. Market Segment Characterizations

The purpose of this volume is to present the identifying codes, descriptions, and parameters used to evaluate each of the ECMS. The data presented here are current as of December 1, 1994. The energy conservation potential for each ECM varies depending upon the market segment and appliance for which the evaluation is to be made. The data files presented here have been structured in such a manner as to allow each ECM to be matched to the appropriate end use model components through a hierarchy of codes (the end use models employed for the study are listed in Volume 5). The match of an ECM to an appliance and market segment is reflected by a unique line in the ECM data base.

Also included in the database are parameters used to compute the energy and savings from the ECM when applied against a specific appliance in a specific market segment, as well as to estimate the installation, operation, and maintenance costs. There are also codes intended to flag the instances which require computations of alternative fuel switching and load shifting.

ECM FILE PARAMETER DEFINITIONS

PARAMETER NAME	PARAMETER DEFINITION
ECM_#	ECM NUMBER
DESCRIPTION	ECM DESCRIPTION
ENERGY AP-ID	ENERGY APPLIANCE ID NUMBER
SUPP AP-ID	SUPPLEMENTAL APPLIANCE ID NUMBER
INDEP ADJ FAC	INDEPENDENT ADJUSTMENT FACTOR
MAR SEG	MARKET SEGMENT NAME
TECH FEAS	TECHNICAL FEASIBILITY PERCENTAGE
CO MP	COMPLEMENT
ENERGY SAVINGS SUM	SUMMER ENERGY SAVINGS PERCENTAGE
ENERGY SAVINGS WINT	WINTER ENERGY SAVINGS PERCENTAGE
ENERGY SAVINGS VENT	VENTILATION ENERGY SAVINGS PERCENTAGE
POWER SAVINGS SUM	SUMMER POWER SAVINGS PERCENTAGE
POWER SAVINGS WINT	WINTER POWER SAVINGS PERCENTAGE
POWER SAVINGS VENT	VENTILATION POWER SAVINGS PERCENTAGE
% SHIFT ON-OFF	PERCENTAGE SHIFT IS ON OR OFF
INST._COSTS -- EQUIP	EQUIPMENT COST
INST._COSTS -- LABOR	LABOR INSTALLATION COST
ANNUAL O & M	ANNUAL O & M COSTS
COST UNITS	COST PER UNIT
GAS FLAG	GAS FLAG

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RESIDENTIAL TECHNOLOGIES

This discussion identifies the measures and briefly addresses the development of the data necessary to perform the analyses for residential DSM technologies.

DSM Measures and DSM Codes

The DSM measures analyzed, identified by their codes, are briefly described below:

1010. HIGH EFFICIENCY AIR SOURCE HEAT PUMP - A high efficiency air source heat pump with an SEER of 13.0 and an HSPF of 8.1 replaces a standard efficiency heat pump with an SEER of 10 a 0 and an HSPF of 6.8 in new and existing construction. The standard unit has a cooling COP of 2.570 and a heating COP of 2.978. The high efficiency unit has a cooling COP of 3.437 and a heating COP of 3.540.

1020. GROUND SOURCE HEAT PUMP - A ground source heat pump extracts heat from, and rejects heat to, water in thermal contact with the ground. Ground source heat pumps can be closed-loop, where water is continuously circulated between the heat pump and pipes buried in the ground or can be open-loop where water is extracted from a well or lake and dumped after use. A ground source heat pump replaces a standard efficiency heat pump. For this analysis, only closed loop systems were considered. In the future, it is expected that open loop systems will be prohibited due to environmental considerations.

1030. TWO SPEED HEAT PUMP - A heat pump with a two-speed compressor, an SEER of 14.8 and an HSPF of 8.45 replaces a standard heat pump. The heat pump has a cooling COP of 3.074 and a heating COP of 3.430. The primary advantage of the two speed heat pump is better performance at part load. At design conditions, this heat pump is somewhat less efficient than a high efficiency- unit.

1040. DUCTS IN CONDITIONED SPACES - Based on the 1990 Florida state-wide residential survey, most single family detached dwellings have space conditioning ductwork located in unconditioned spaces (primarily the attic). For this measure, the ductwork in new single family detached dwellings will be located in the conditioned space to eliminate losses associated with duct leakage and duct heat gain/loss.

1050. REDUCED DUCT LEAKAGE - This measure involves the sealing of space conditioning ducts to eliminate the loss of conditioned air and/or the introduction of attic air into the duct system.

1060. REDUCED DUCT HEAT TRANSFER - This measure involves the addition of insulation to ducting in new single family detached dwellings. The Florida energy code requires ducts to have an insulation value of R-6. For this measure, it is assumed that additional insulation would be added to increase the duct total insulation level to R-12.

1070. SETBACK/PROGRAMMABLE THERMOSTAT - The programmable thermostat sets the thermostat up 5 degrees F from 9 am to 5 pm during weekdays in the cooling season and sets the thermostat back 5 degrees F from 11 pm to 6 am for all days during the heating season. The thermostat is assumed to have energy management recovery that allows for early recovery from a setback or setup and involves the automatic calculation of when to begin raising (or lowering) the space temperature to reach the programmed temperature at a preset time.

1080. LOAD CONTROL FOR RESIDENTIAL ELECTRIC HEAT - This measure involves the use of remote transmitters to control residential space heating systems to reduce peak load by load shedding (turning units off at the time of the utility peak) or cycling (periodically turning units off). This measure was only considered for utilities which already have load control programs.

1090. GAS FURNACE - Conventional gas combustion technology. Installation requires fresh and exhaust air venting.

2010. CEILING INSULATION (R-0 TO R-19) - This measure only applies to existing dwellings with no ceiling insulation as identified from the 1990 Florida Residential survey and involves the addition of insulation with an R-value of R-19.

2012. CEILING INSULATION (R-11 TO R-30) - This measure only applies to existing dwellings with R-11 ceiling insulation as identified from the 1990 Florida Residential survey and involves the addition of insulation with an R-value of R-19 to achieve a total R-value of R-30.

2014. CEILING INSULATION (R-19 TO R-30) - This measure only applies to existing dwellings with R-19 ceiling insulation as identified from the 1990 Florida Residential survey and involves the addition of insulation with an R-value of **R- 11**.

2016. CEILING INSULATION (R-30 TO R-38) - This measure only applies to existing dwellings with R-30 ceiling insulation as identified from the 1990 Florida Residential survey and involves the addition of insulation with an R-value of R-8.

2020. WALL INSULATION - For this measure, wall insulation in existing frame dwellings is increased from R-0 to R-11. This measure only applies to dwellings with no wall insulation as identified from the 1990 Florida Residential Survey.

2030. WEATHERSTRIP/CAULK WITH BLOWER DOOR - Caulking and weatherstripping of existing dwellings reduces air infiltration by 10% on average. This measure only applies to existing dwellings as it is assumed that new construction is adequately sealed per the Florida Building Code.

2040. WINDOW FILM OR REFLECTIVE GLASS - In existing dwellings, a reflective window film is applied to the interior surface of single pane windows. In the northern climate region, double pane reflective glass is substituted for clear double pane glass in new construction. In the central and southern climate regions, single pane reflective glass is substituted for single pane clear glass in new construction. This measure is applied to windows facing east and west because the solar gain is highest from these directions.

2050. LOW EMISSIVITY GLASS - For this measure, double pane glass with an argon gas fill and a low emissivity coating on the inner surface of the outer pane replaces single and double pane clear glass windows. This measure reduces heat transmission through the windows.

2060. SHADE SCREENS - For this measure shade screens which block solar gain are installed on single and double pane clear windows in existing and new construction. This measure is applied to windows facing east and west because solar gain is highest from these directions.

2070. REFLECTIVE ROOF COATINGS - This measure will involve the application of a reflective coating with an absorptivity of 0.30 to a standard roof with an absorptivity of 0.80 to reduce the cooling loads associated with roof solar gain.

2080. ATTIC RADIANT BARRIERS - This measure involves the installation of a reflective surface on the bottom of roof joists in new single family detached construction to reduce solar gain through the roof. The reflective surface will have an emissivity of 0.08 on each side and result in an effective increase in the roof insulation level of approximately R-7.

3010. HIGH EFFICIENCY CENTRAL AIR CONDITIONER - A high efficiency unit with an SEER of 13.0 and a COP of 3.437 replaces a standard unit with an SEER of 10.0 and a COP of 2.570.

3020. TWO SPEED CENTRAL AIR CONDITIONER - A two speed unit with an SEER of 14.8 and a COP of 3.074 replaces a standard unit with an SEER of 10.0 and a COP of 2.570. The two speed unit has better performance than the high efficiency unit at part load, but has a lower performance at design conditions.

3030. WHOLE HOUSE FAN - A whole house fan is installed in new and existing single family dwellings to reduce cooling energy use. The fan will be sized to provide 20 air changes per hour and will operate when the outdoor air temperature was above 72 degrees F and below 83 degrees F and the relative humidity is 60% or less. When the fan is running, the air conditioning system is turned off.

3040. HIGH EFFICIENCY ROOM AIR CONDITIONER - A high efficiency unit with an EER of I 1.0 replaces a standard unit with an EER of 8.8.

3050. AIR CONDITIONER/HEAT PUMP MAINTENANCE - Annual air conditioner/ heat pump maintenance reduces cooling energy use by 10% and heating energy use by 9.2%.

3060. DIRECT LOAD CONTROL OF CENTRAL AIR CONDITIONER - This measure involves the use of remote transmitters to control residential space cooling systems to reduce peak load by load shedding (turning units off at the time of the utility peak) or cycling (periodically turning units off). This measure is only considered for utilities which already have load control programs.

3070. LANDSCAPE SHADING - This measure involves the planting of six trees, three each, on the east and west sides of new and existing single family dwellings to provide external shading during the cooling season.

3080. CEILING FANS - Ceiling fans will allow cooling thermostat settings to be increased by 2 degrees F in single family and multifamily dwellings. A ceiling fan will be installed for each 250 square feet of floor area.

3090. GAS AIR CONDITIONING - This technology uses internal combustion engines to provide rotary power to conventional compression cycle air conditioners.

4010. HIGH EFFICIENCY ELECTRIC RESISTANCE WATER HEATER - This DSM option involves the promotion of high efficiency electric resistance water heaters to replace standard models which meet federal appliance standards.

4020. INTEGRAL HEAT PUMP WATER HEATER - Heat pump water heaters would be installed to replace electric resistance water heaters, reducing electricity use for water heating by approximately half, as well as, in some cases, providing reduced cooling loads. A heat pump water heater utilizes a vapor compressor refrigerator cycle similar to that of an air conditioner to -draw heat from the surrounding air to heat water. The heat pump water heater condenser rejects heat to the domestic water supply. An integral unit includes both the water tank and the heat pump water heater located on top of the tank.

4040. SOLAR WATER HEATER - A solar water heater system would be installed to replace electric water heaters. This option converts energy from solar radiation absorbed by collector panels to usable heat, and then transfers this heat to the domestic hot water supply. Some systems heat water directly by circulating the potable water through the solar loop (open-loop systems); others (closed-loop systems) continually recirculate the same absorption fluid, which transfers its heat via a heat exchanger to the potable water supply.

4050. HEAT RECOVERY WATER HEATER (DESUPERHEATER) - Heat recovery water heaters would be installed to replace electric resistance water heaters. These units recover superheat from the compressor discharge gas of a central air conditioner or heat pump for the purpose of heating or preheating water. The majority of the savings occurs during the summer months.

4030. ADD-ON HEAT PUMP WATER HEATER - This DSM measure promotes the addition of heat pump water heaters (add-on or remote units) to supplement the existing electric resistance hot water system.

4060. DHW HEATER TANK INSULATION - This option includes the installation of R-11 external insulation blanket onto electric water heater tanks.

4070. DHW PIPE INSULATION - This option includes the installation of pipe insulation to all accessible domestic hot water piping (assumed to be 70 ft. of pipe in new homes, but only 20 ft. in existing homes).

4080. HEAT TRAP - This measure includes the installation of external heat traps on both the inlets and outlets of electric water heaters.

4090. LOW FLOW SHOWERHEAD - This technology replaces existing showerheads (3-5 gpm) with high quality low flow showerheads (2-2.5 gpm). It is based on reducing the flow of water while providing a comfortable shower, thereby reducing water heating requirements.

4100. DLC OF ELECTRIC WATER HEATER - Utility-controlled radio switches would be installed on residential electric water heaters, which would be controlled by the utility during times of system peak demand. 100% of participating water heaters would be entirely shut off during system peak periods.

4110. GAS WATER HEATER - This is a conventional appliance that burns gas to heat water. Conversion to this unit requires adequate fresh and exhaust air ducting. The site efficiency of these devices is about 57%-60%.

6080. HIGH EFFICIENCY CLOTHES WASHER - Horizontal-axis clothes washers would be promoted over the more common vertical-axis clothes washers. Horizon-axis washers use less water, energy, and detergent per cycle.

5010. COMPACT FLUORESCENT - Compact fluorescent lamp/ballast units would be promoted for use in the most heavily used rooms or fixtures in the house. This option involves replacing high use (1000 hrs/yr) incandescent lamps with compact fluorescent lamp/ballast units. It is assumed that on average, three lamps per household can accommodate the weight and size of a compact fluorescent.

5020. EFFICIENT INCANDESCENT - Efficient incandescent light bulbs would be encouraged over standard incandescent bulbs. The DSM measure is able to provide relatively equal lighting with reduced wattage due to more efficient filament design and phosphorescent coating. It includes replacements for 4OW, 6OW, 75W, and IOOW lamps. It is assumed that 80% of all standard incandescent lamps can be replaced with more efficient lamps.

5030. HIGH PRESSURE SODIUM (Outdoor) - High pressure sodium fixtures would be promoted as a replacement for outdoor floodlight fixtures. Savings estimates are based on 1,500 hrs/yr operating time, which assumes that the lights are turned off at bedtime.

5040. MOTION DETECTORS -FOR OUTDOOR LIGHTING - Add-on controls which exclude the combination of both a motion detector and a photocell would be installed on existing outdoor lighting fixtures. Savings estimates assume that the motion detector would be activated only 5% of the time.

5050. LOW PRESSURE SODIUM FLOODLIGHT - A very efficient form of sodium lighting with the disadvantage of being extremely monochromatic.

6010. BEST CURRENT REFRIGERATOR - FROST-FREE - Frost-free refrigerators with anticipated higher efficiencies than those required by federal appliance efficiency standards would be promoted.

6020. BEST CURRENT REFRIGERATOR - MANUAL - Manual defrost refrigerators with anticipated higher efficiencies than those required by federal appliance efficiency standards would be promoted.

6030. REMOVE SECOND REFRIGERATOR - Customers with second, older and less efficient, yet still operating refrigerators will be encouraged to remove them from the system. The utility would be responsible for picking up and disposing of the refrigerator.

6050. BEST CURRENT FREEZER - FROST-FREE - Frost-free freezers with anticipated higher efficiencies than those required by federal appliance efficiency standards would be promoted.

6060. BEST CURRENT FREEZER - MANUAL - Manual defrost freezers with anticipated higher efficiencies than those required by federal appliance efficiency standards would be promoted.

6070. REMOVE SECOND FREEZER - Customers with second, older and less efficient, yet still operating freezers will be encouraged to remove them from the system. The utility would be responsible for picking up and disposing of the freezers.

6100. HIGH EFFICIENCY POOL PUMPS - Standard efficiency pool pump motors are replaced with more efficient motors.

6110. DOWN-SIZED POOL PUMPS WITH OVERSIZED PIPING - This measure encourages the combination of 1) properly sizing pool pump motors (which are often oversized) and 2) modifying the piping to minimize losses (which includes installing larger diameter piping, eliminating sharp 90-degree elbows, and possibly installing a larger filter).

6120. DIRECT LOAD CONTROL (DLC) OF POOL PUMPS - Utility-controlled radio switches would be installed on residential pool pumps, which would be controlled by the utility during times of system peak demand. 100% of participating pool pumps would be shut off during system peak periods.

RESIDENTIAL ECM

W:\U1500\DSM94\MODEL.DSM\ECM\RECMOLD.WQ <==SOURCE SPREADSHEET

DATE: 11/03/94

To print, print to file, or look, type: Alt-D <== IMPORTANT

This ECM file applies to market segment types: OLD

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1 7 <== COLUMN WIDTH 35 ==>   10  6  8  4  8.00  3  8  8  8  8  8  8  8  8  8  8  5  4
Column numbers                 1  1  1  1  1  1  1  1
  1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7
3456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234
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SAS variable names							SVFAM											C_UNITS	
ECMID	ECMLAB	APID	SAPID	IADJF	MS	TFEAS	X	ESSUM	ESWIN	ESVNT	PSSUM	PSWIN	PSVNT	ONOFSF	CUEQP	CULAB	CUOAM	X	GASFLG
1010	LabelLabelLabelLabelLabelLabelLabeL	10012001	1010	0.12345	OF	0.12	1	0.12345	0.12345	0.12345	0.12345	0.12345	0.12345	0.12345	123.456	123.456	123.456	XX/YY	0

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B  B                  B  B  B  B  B  B  B  B  B  B  B  B  B  B  B  B  B  B  B
   E                E  E  E  E  E  E  E  E  E  E  E  E  E  E  E  E  E  E  E  E
```

GASFLG=NAT GAS FLAG:
- 0=NA
- 1=CONVERT KWH SAVINGS TO THERMS
- 2=CONVERT KWH SAVINGS FROM BLOWERS TO REDUCED THERMS

ECMID	ECMLAB	APID	SAPID	IADJF	MS·	TFEAS	SVFAM X	ESSUM	ESWIN	ESVNT	PSSUM	PSWIN	PSVNT	ONOFSF	CUEQP	CULAB	CUOAM	C_UNITS X	GASFLG
ECM_#	DESCRIPTION	ENERGY AP-ID	SUPP AP-ID	INDEP ADJ FAC	MAR SEG	TECH FEAS	CO MP	-ENERGY_SAVINGS- SUM	WINT	VENT	-POWER_SAVINGS- SUM	WINT	VENT	% SHIFT ON-OFF	– INST._COSTS – EQUIP.	LABOR	ANNUAL O&M	COST UNITS	GAS FLAG
SPACE HEATING																			
1010	HIGH EFF. AIR SOURCE HEAT PUMP	1540	0	1	SF	1.00	1	0.2521	0.1587	0	0.2519	0.1587	0	0	925	0	0	$/UNIT	0
1010	HIGH EFF. AIR SOURCE HEAT PUMP	1540	0	1	MF	1.00	1	0.2524	0.1578	0	0.2525	0.1582	0	0	925	0	0	$/UNIT	0
1010	HIGH EFF. AIR SOURCE HEAT PUMP	1540	0	1	MH	1.00	1	0.2522	0.158	0	0.2525	0.1582	0	0	925	0	0	$/UNIT	0
1020	GROUND SOURCE HEAT PUMP	1540	0	1	SF	0.60	1	0.4717	0.5539	0	0.2352	0.4335	0	0	2253	0	0	$/UNIT	0
1030	TWO SPEED HEAT PUMP	1540	0	1	SF	1.00	1	0.3244	0.1955	0	0.1636	0.1308	0	0	1057	0	0	$/UNIT	0
1030	TWO SPEED HEAT PUMP	1540	0	1	MF	1.00	1	0.3241	0.195	0	0.164	0.1316	0	0	991	0	0	$/UNIT	0
1030	TWO SPEED HEAT PUMP	1540	0	1	MH	1.00	1	0.3241	0.1952	0	0.1643	0.1312	0	0	991	0	0	$/UNIT	0
1040	DUCTS IN CONDITIONED SPACES ELEC.HEAT	1510	0	1	SF	0.00	1	0	0	0	0	0	0	0	0	0	0	$/UNIT	0
1045	DUCTS IN CONDITIONED SPACES HEAT PUMP	1540	0	1	SF	0.00	1	0	0	0	0	0	0	0	0	0	0	$/UNIT	0
1050	REDUCED DUCT LEAKAGE ELEC.HEAT	1510	0	1	SF	0.80	1	0.2549	0.1331	0	0.2549	0.1331	0	0	275	0	0	$/UNIT	0
1055	REDUCED DUCT LEAKAGE HEAT PUMP	1540	0	1	SF	0.80	1	0.2549	0.1327	0	0.2549	0.1325	0	0	275	0	0	$/UNIT	0
1060	REDUCED DUCT HEAT TRANSFER ELEC. HEAT	1510	0	1	SF	0.00	0	0	0	0	0	0	0	0	0	0	0	$/UNIT	0
1065	REDUCED DUCT HEAT TRANSFER HEAT PUMP	1540	0	1	SF	0.00	0	0	0	0	0	0	0	0	0	0	0	$/UNIT	0
1070	SETBACK/PROGRAM. THERMOSTAT ELEC. HEAT	1510	0	1	SF	1.00	0	0.1552	0.2551	0	-0.0671	0.0356	0	0	87	0	0	$/UNIT	0
1070	SETBACK/PROGRAM. THERMOSTAT ELEC. HEAT	1510	0	1	AT	1.00	0	0.1191	0.2097	0	-0.0387	0.078	0	0	87	0	0	$/UNIT	0
1070	SETBACK/PROGRAM. THERMOSTAT ELEC. HEAT	1510	0	1	MH	1.00	0	0.1041	0.1447	0	-0.043	0.011	0	0	87	0	0	$/UNIT	0

RESIDENTIAL ECM

1075	SETBACK/PROGRAM. THERMOSTAT HEAT PUMP	1540	0	1	SF	1.00	0	0.1527	0.1785	0	-0.0661	0.013	0	0	103	0	0	$/UNIT	0
1075	SETBACK/PROGRAM. THERMOSTAT HEAT PUMP	1540	0	1	AT	1.00	0	0.1191	0.1483	0	-0.0387	0.0524	0	0	103	0	0	$/UNIT	0
1075	SETBACK/PROGRAM. THERMOSTAT HEAT PUMP	1540	0	1	MH	1.00	0	0.1041	0.1225	0	-0.043	-0.0061	0	0	103	0	0	$/UNIT	0
1080	LOAD CONTROL FOR ELECTRIC HEAT ELEC. HEAT	1510	0	1	SF	0.90	0	0	0.05	0	0	0.43	0	0	80	55	2.92	$/UNIT	0
1080	LOAD CONTROL FOR ELECTRIC HEAT ELEC. HEAT	1510	0	1	AT	0.90	0	0	0.05	0	0	0.43	0	0	80	55	2.92	$/UNIT	0
1080	LOAD CONTROL FOR ELECTRIC HEAT ELEC. HEAT	1510	0	1	MH	0.90	0	0	0.05	0	0	0.43	0	0	80	55	2.92	$/UNIT	0
1085	LOAD CONTROL FOR ELECTRIC HEAT HEAT PUMP	1540	0	1	SF	0.90	0	0	0.05	0	0	0.43	0	0	80	55	2.92	$/UNIT	0
1085	LOAD CONTROL FOR ELECTRIC HEAT HEAT PUMP	1540	0	1	AT	0.90	0	0	0.05	0	0	0.43	0	0	80	55	2.92	$/UNIT	0
1085	LOAD CONTROL FOR ELECTRIC HEAT HEAT PUMP	1540	0	1	MH	0.90	0	0	0.05	0	0	0.43	0	0	80	55	2.92	$/UNIT	0
1090	GAS FURNACE	1510	0	1	SF	0.60	0	0.039	0	0	0.011	0	0	0	0.0423	0.017	0	$/UNIT	0
1090	GAS FURNACE	1510	0	1	AT	0.60	0	0.031	0	0	0	0	0	0	0.0946	0.0379	0	$/UNIT	0
1090	GAS FURNACE	1510	0	1	MH	0.60	0	0.033	0	0	0	0	0	0	0.0461	0.0185	0	$/UNIT	0
*																			
* BUILDING ENVELOPE																			
*																			
2010	CEILING INSULATION (R-0 TO R-19)	-1	2010	1	SF	0.80	0	0.2187	0.3772	0	0.2276	0.2327	0	0	621	340	0	$/UNIT	0
2010	CEILING INSULATION (R-0 TO R-19)	-1	2010	1	AT	0.80	0	0.0946	0.3427	0	0.1338	0.1808	0	0	530	197	0	$/UNIT	0
2010	CEILING INSULATION (R-0 TO R-19)	-1	2010	1	MH	0.80	0	0.131	0.3301	0	0.1314	0.2049	0	0	375	205	0	$/UNIT	0
2012	CEILING INSULATION (R-11 TO R-30)	-1	2020	1	SF	0.80	0	0.0837	0.1762	0	0.1301	0.0896	0	0	621	340	0	$/UNIT	0
2012	CEILING INSULATION (R-11 TO R-30)	-1	2020	1	AT	0.80	0	0.0308	0.1447	0	0.0633	0.0651	0	0	530	197	0	$/UNIT	0
2012	CEILING INSULATION (R-11 TO R-30)	-1	2020	1	MH	0.80	0	0.0308	0.1447	0	0.0633	0.0651	0	0	375	205	0	$/UNIT	0
2014	CEILING INSULATION (R-19 TO R-30)	-1	2030	1	SF	0.80	0	0.0373	0.0864	0	0.0688	0.0417	0	0	443	281	0	$/UNIT	0
2014	CEILING INSULATION (R-19 TO R-30)	-1	2030	1	AT	0.80	0	0.0111	0.0691	0	0.0307	0.0301	0	0	257	162	0	$/UNIT	0
2014	CEILING INSULATION (R-19 TO R-30)	-1	2030	1	MH	0.00	0	0.025	0.0719	0	0.0358	0.0349	0	0	268	170	0	$/UNIT	0
2016	CEILING INSULATION (R-30 TO R-38)	-1	2040	1	SF	0.80	0	0.0128	0.0343	0	0.0158	0.0343	0	0	384	281	0	$/UNIT	0
2016	CEILING INSULATION (R-30 TO R-38)	-1	2040	1	AT	0.80	0	0.0054	0.0273	0	0.0097	0.0273	0	0	222	162	0	$/UNIT	0
2016	CEILING INSULATION (R-30 TO R-38)	-1	2040	1	MH	0.00	0	0.0168	0.0325	0	0.0173	0.0325	0	0	232	170	0	$/UNIT	0

*WALL INSULATION ECM DOES NOT APPLY TO EXISTING CONSTRUCTION

2020	WALL INSULATION (R-0 TO R-11)	-1	2060	1	SF	0.70	0	0.0362	0.3034	0	0.0531	0.1818	0	0	55	1301	0	$/UNIT	0
2020	WALL INSULATION (R-0 TO R-11)	-1	2060	0	AT	0.00	0	0.0362	0.3034	0	0.0531	0.1818	0	0	55	1301	0	$/UNIT	0
2030	WEATHERSTRIP/CAULKw/BLOW DOOR	-1	2080	1	SF	0.80	0	0.0126	0.0246	0	0.0198	0.0308	0	0	230	0	0	$/UNIT	0
2030	WEATHERSTRIP/CAULKw/BLOW DOOR	-1	2080	1	AT	0.80	0	0.0096	0.0456	0	0.0217	0.0431	0	0	230	0	0	$/UNIT	0
2030	WEATHERSTRIP/CAULKw/BLOW DOOR	-1	2080	1	MH	0.80	0	0.0064	0.0192	0	0.0097	0.0253	0	0	230	0	0	$/UNIT	0

*SPEC SELECTIVE GLASS ECM DOES NOT APPLY TO EXISTING CONSTRUCTION

2040	WINDOW FILM/REFLECTIVE GLASS	-1	2100	1	SF	0.80	0	0.1438	-0.0497	0	0.0801	0	0	0	305	0	0	$/UNIT	0
2040	WINDOW FILM/REFLECTIVE GLASS	-1	2100	1	AT	0.80	0	0.0837	-0.0466	0	0.0518	-0.0005	0	0	106	0	0	$/UNIT	0
2040	WINDOW FILM/REFLECTIVE GLASS	-1	2100	1	MH	0.80	0	0.123	-0.0418	0	0.0765	-0.0005	0	0	184	0	0	$/UNIT	0
2050	LOW EMISSIVITY GLASS	-1	2120	1	SF	0.80	0	0.052	0.3285	0	0.0627	0.2325	0	0	555	0	0	$/UNIT	0
2050	LOW EMISSIVITY GLASS	-1	2120	1	AT	0.00	0	0	0	0	0	0	0	0	0	0	0	$/UNIT	0
2050	LOW EMISSIVITY GLASS	-1	2120	1	MH	0.00	0	0	0	0	0	0	0	0	0	0	0	$/UNIT	0
2060	SHADE SCREENS	-1	2140	1	SF	0.80	0	0.1549	-0.0547	0	0.0855	-0.0002	0	0	155	0	0	$/UNIT	0

RESIDENTIAL ECM

2060	SHADE SCREENS	-1	2140	1	AT	0.80	0	0.0909	-0.0515	0	0.0558	-0.0005	0	0	54	0	0	$/UNIT	0
2060	SHADE SCREENS	-1	2140	1	MH	0.80	0	0.1321	-0.0454	0	0.0825	-0.0005	0	0	94	0	0	$/UNIT	0
2070	REFLECTIVE ROOF COATINGS	-1	2160	1	SF	0.80	0	0.1638	-0.0392	0	0.1622	-0.0002	0	0	1127	0	0	$/UNIT	0
2070	REFLECTIVE ROOF COATINGS	-1	2160	1	MH	0.80	0	0.1638	-0.0392	0	0.1622	-0.0002	0	0	1127	0	0	$/UNIT	0
2080	ATTIC RADIANT BARRIERS	-1	2180	1	SF	0.00	0	0	0	0	0	0	0	0	0	0	0	$/UNIT	0

*
* AIR CONDITIONING
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3010	HIGH EFFICIENCY CENTRAL AC	1010	0	1	SF	1.00	0	0.2521	0	0	0.2519	0	0	0	625	0	0	$/UNIT	0
3010	HIGH EFFICIENCY CENTRAL AC	1010	0	1	AT	1.00	0	0.2524	0	0	0.2906	0	0	0	625	0	0	$/UNIT	0
3010	HIGH EFFICIENCY CENTRAL AC	1010	0	1	MH	1.00	0	0.2522	0	0	0.2525	0	0	0	625	0	0	$/UNIT	0
3020	TWO SPEED CENTRAL AC	1010	0	1	SF	1.00	2	0.3244	0	0	0.1636	0	0	0	700	0	0	$/UNIT	0
3020	TWO SPEED CENTRAL AC	1010	0	1	AT	1.00	2	0.3241	0	0	0.164	0	0	0	700	0	0	$/UNIT	0
3020	TWO SPEED CENTRAL AC	1010	0	1	MH	1.00	2	0.3241	0	0	0.1643	0	0	0	700	0	0	$/UNIT	0
3030	WHOLE HOUSE FANS ELEC. HEAT	1010	0	1	SF	0.70	3	0.1462	0	0	0	0	0	0	345	121	0	$/UNIT	0
3035	WHOLE HOUSE FANS HEAT PUMP	1050	0	1	SF	0.70	3	0.1462	0	0	0	0	0	0	345	121	0	$/UNIT	0
3040	HIGH EFFICIENCY ROOM AC	1040	0	1	SF	1.00	2	0.25	0	0	0.25	0	0	0	142	0	0	$/UNIT	0
3040	HIGH EFFICIENCY ROOM AC	1040	0	1	AT	1.00	2	0.25	0	0	0.25	0	0	0	142	0	0	$/UNIT	0
3040	HIGH EFFICIENCY ROOM AC	1040	0	1	MH	1.00	2	0.25	0	0	0.25	0	0	0	142	0	0	$/UNIT	0
3050	AC/HEAT PUMP MAINTENANCE ELEC. HEAT	1010	0	1	SF	1.00	3	0.1	0.092	0	0.1	0.092	0	0	100	50	0	$/UNIT	0
3050	AC/HEAT PUMP MAINTENANCE ELEC. HEAT	1010	0	1	AT	1.00	3	0.1	0.092	0	0.1	0.092	0	0	100	50	0	$/UNIT	0
3050	AC/HEAT PUMP MAINTENANCE ELEC. HEAT	1010	0	1	MH	1.00	3	0.1	0.092	0	0.1	0.092	0	0	100	50	0	$/UNIT	0
3055	AC/HEAT PUMP MAINTENANCE HEAT PUMP	1050	0	1	SF	1.00	3	0.1	0.092	0	0.1	0.092	0	0	100	50	0	$/UNIT	0
3055	AC/HEAT PUMP MAINTENANCE HEAT PUMP	1050	0	1	AT	1.00	3	0.1	0.092	0	0.1	0.092	0	0	100	50	0	$/UNIT	0
3055	AC/HEAT PUMP MAINTENANCE HEAT PUMP	1050	0	1	MH	1.00	3	0.1	0.092	0	0.1	0.092	0	0	100	50	0	$/UNIT	0
3060	DLC of CENTRAL AC ELEC. HEAT	1010	0	1	SF	0.90	0	0.05	0	0	0.43	0	0	0	80	55	2.92	$/UNIT	0
3060	DLC of CENTRAL AC ELEC. HEAT	1010	0	1	AT	0.90	0	0.05	0	0	0.43	0	0	0	80	55	2.92	$/UNIT	0
3060	DLC of CENTRAL AC ELEC. HEAT	1010	0	1	MH	0.90	0	0.05	0	0	0.43	0	0	0	80	55	2.92	$/UNIT	0
3065	DLC of CENTRAL AC HEAT PUMP	1050	0	1	SF	0.90	0	0.05	0	0	0.43	0	0	0	80	55	2.92	$/UNIT	0
3065	DLC of CENTRAL AC HEAT PUMP	1050	0	1	AT	0.90	0	0.05	0	0	0.43	0	0	0	80	55	2.92	$/UNIT	0
3065	DLC of CENTRAL AC HEAT PUMP	1050	0	1	MH	0.90	0	0.05	0	0	0.43	0	0	0	80	55	2.92	$/UNIT	0
3070	LANDSCAPE SHADING ELEC. HEAT	1010	0	1	SF	0.80	0	0.113	-0.0176	0	0.0624	0.0057	0	0	558	0	0	$/UNIT	0
3075	LANDSCAPE SHADING HEAT PUMP	1050	0	1	SF	0.80	0	0.113	-0.0302	0	0.0624	0.0046	0	0	558	0	0	$/UNIT	0
3080	CEILING FANS ELEC. HEAT	1010	0	1	SF	0.80	0	0.4363	0	0	0.1503	0	0	0	72	125	0	$/UNIT	0
3080	CEILING FANS ELEC. HEAT	1010	0	1	AT	0.80	0	0.3745	0	0	0.1076	0	0	0	72	125	0	$/UNIT	0
3085	CEILING FANS HEAT PUMP	1050	0	1	SF	0.80	0	0.4363	0	0	0.1503	0	0	0	72	125	0	$/UNIT	0
3085	CEILING FANS HEAT PUMP	1050	0	1	AT	0.80	0	0.3745	0	0	0.1076	0	0	0	72	125	0	$/UNIT	0
3090	GAS AIR CONDITIONING	1010	0	1	SF	0.80	0	0	0	0.059	0	0	0.059	0	0.041	0	0	$/UNIT	0
3090	GAS AIR CONDITIONING	1010	0	1	AT	0.80	0	0	0	0.059	0	0	0.059	0	0.066	0	0	$/UNIT	0
3090	GAS AIR CONDITIONING	1010	0	1	MH	0.80	0	0	0	0.059	0	0	0.059	0	0.047	0	0	$/UNIT	0

RESIDENTIAL ECM

•
• WATER HEATING
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4010 HIGH EFF. ELECTRIC WATER HEATER	3010	0	1	SF	1.00	0	0.06	0.06	0	0.06	0.06	0	0	320	100	0	$/UNIT	0
4010 HIGH EFF. ELECTRIC WATER HEATER	3010	0	1	AT	1.00	0	0.06	0.06	0	0.06	0.06	0	0	295	100	0	$/UNIT	0
4010 HIGH EFF. ELECTRIC WATER HEATER	3010	0	1	MH	1.00	0	0.06	0.06	0	0.06	0.06	0	0	295	100	0	$/UNIT	0
4020 INTEGRAL HEAT PUMP WATER HEATER	3010	0	1	SF	0.75	0	0.46	0.46	0	0	0.5	0	0	1375	150	50	$/UNIT	0
4020 INTEGRAL HEAT PUMP WATER HEATER	3010	0	1	AT	0.75	0	0.46	0.46	0	0	0.5	0	0	1350	150	50	$/UNIT	0
4020 INTEGRAL HEAT PUMP WATER HEATER	3010	0	1	MH	0.75	0	0.46	0.46	0	0	0.5	0	0	1350	150	50	$/UNIT	0
4030 ADD-ON HEAT PUMP WATER HEATER	3010	0	1	SF	0.75	4	0.46	0.46	0	0	0.5	0	0	650	350	50	$/UNIT	0
4030 ADD-ON HEAT PUMP WATER HEATER	3010	0	1	AT	0.75	4	0.46	0.46	0	0	0.5	0	0	650	350	50	$/UNIT	0
4030 ADD-ON HEAT PUMP WATER HEATER	3010	0	1	MH	0.75	4	0.46	0.46	0	0	0.5	0	0	650	350	50	$/UNIT	0
4040 SOLAR WATER HEATER	3010	0	1	SF	0.75	4	0.65	0.65	0	1	0.64	0	0	2000	1000	50	$/UNIT	0
4040 SOLAR WATER HEATER	3010	0	1	AT	0.75	4	0.65	0.65	0	1	0.64	0	0	2000	1000	50	$/UNIT	0
4040 SOLAR WATER HEATER	3010	0	1	MH	0.75	4	0.65	0.65	0	1	0.64	0	0	2000	1000	50	$/UNIT	0
4050 HEAT RECOVERY WATER HEATER	3010	0	1	SF	0.50	4	0.25	0	0	1	0	0	0	700	200	15	$/UNIT	0
4050 HEAT RECOVERY WATER HEATER	3010	0	1	AT	0.30	4	0.25	0	0	1	0	0	0	675	200	15	$/UNIT	0
4050 HEAT RECOVERY WATER HEATER	3010	0	1	MH	0.43	4	0.25	0	0	1	0	0	0	675	200	15	$/UNIT	0
4060 WATER HEATER TANK WRAP	3010	0	1	SF	0.89	4	0.07	0.07	0	0.07	0.07	0	0	15	20	0	$/UNIT	0
4060 WATER HEATER TANK WRAP	3010	0	1	AT	0.89	4	0.07	0.07	0	0.07	0.07	0	0	15	20	0	$/UNIT	0
4060 WATER HEATER TANK WRAP	3010	0	1	MH	0.71	4	0.07	0.07	0	0.07	0.07	0	0	15	20	0	$/UNIT	0
4070 WATER HEATER PIPE INSULATION	3010	0	1	SF	0.89	5	0.02	0.02	0	0.02	0.02	0	0	20	0	0	$/UNIT	0
4070 WATER HEATER PIPE INSULATION	3010	0	1	AT	0.89	5	0.02	0.02	0	0.02	0.02	0	0	20	0	0	$/UNIT	0
4070 WATER HEATER PIPE INSULATION	3010	0	1	MH	0.71	5	0.02	0.02	0	0.02	0.02	0	0	20	0	0	$/UNIT	0
4080 HEAT TRAP	3010	0	1	SF	1.00	5	0.05	0.05	0	0.05	0.05	0	0	8	20	0	$/UNIT	0
4080 HEAT TRAP	3010	0	1	AT	1.00	5	0.05	0.05	0	0.05	0.05	0	0	8	20	0	$/UNIT	0
4080 HEAT TRAP	3010	0	1	MH	1.00	5	0.05	0.05	0	0.05	0.05	0	0	8	20	0	$/UNIT	0
4090 LOW FLOW SHOWERHEAD	3010	0	1	SF	1.00	4	0.07	0.07	0	0.07	0.07	0	0	20	0	0	$/UNIT	0
4090 LOW FLOW SHOWERHEAD	3010	0	1	AT	1.00	4	0.07	0.07	0	0.07	0.07	0	0	20	0	0	$/UNIT	0
4090 LOW FLOW SHOWERHEAD	3010	0	1	MH	1.00	4	0.07	0.07	0	0.07	0.07	0	0	20	0	0	$/UNIT	0
4100 DLC of ELECTRIC WATER HEATER	3010	0	1	SF	0.90	4	0.005	0.005	0	1	1	0	0	80	55	2.92	$/UNIT	0
4100 DLC of ELECTRIC WATER HEATER	3010	0	1	AT	0.90	4	0.005	0.005	0	1	1	0	0	80	55	2.92	$/UNIT	0
4100 DLC of ELECTRIC WATER HEATER	3010	0	1	MH	0.90	4	0.005	0.005	0	1	1	0	0	80	55	2.92	$/UNIT	0
4110 GAS WATER HEATER	3010	0	1	SF	0.67	4	0.5	0.5	0	0.5	0.5	0	0	0.50049	0.0594	0.00404	$/UNIT	0
4110 GAS WATER HEATER	3010	0	1	AT	0.67	4	0.5	0.5	0	0.5	0.5	0	0	0.36467	0.04328	0.00395	$/UNIT	0
4110 GAS WATER HEATER	3010	0	1	MH	0.67	4	0.5	0.5	0	0.5	0.5	0	0	0.43159	0.05122	0.00381	$/UNIT	0

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• LIGHTING
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5010 COMPACT FLOURESCENT	4010	0	1	SF	1.00	4	0.17	0.17	0	0.17	0.17	0	0	45	0	0	$/UNIT	0
5010 COMPACT FLOURESCENT	4010	0	1	AT	1.00	4	0.3	0.3	0	0.3	0.3	0	0	45	0	0	$/UNIT	0

RESIDENTIAL ECM

5010	COMPACT FLOURESCENT	4010	0	1	MH	1.00	4	0.32	0.32	0	0.32	0.32	0	0	45	0	0	$/UNIT	0
5020	EFFICIENT INCANDESCENT	4010	0	1	SF	0.80	5	0.1	0.1	0	0.1	0.1	0	0	0	0	7.15	$/UNIT	0
5020	EFFICIENT INCANDESCENT	4010	0	1	AT	0.80	5	0.1	0.1	0	0.1	0.1	0	0	0	0	4.4	$/UNIT	0
5020	EFFICIENT INCANDESCENT	4010	0	1	MH	0.80	5	0.1	0.1	0	0.1	0.1	0	0	0	0	3.85	$/UNIT	0
5030	HIGH PRESSURE SODIUM (OUTDOOR)	4050	0	1	SF	1.00	5	0.75	0.75	0	0	0	0	0	67	0	0	$/UNIT	0
5030	HIGH PRESSURE SODIUM (OUTDOOR)	4050	0	1	AT	1.00	5	0.75	0.75	0	0	0	0	0	67	0	0	$/UNIT	0
5030	HIGH PRESSURE SODIUM (OUTDOOR)	4050	0	1	MH	1.00	5	0.75	0.75	0	0	0	0	0	67	0	0	$/UNIT	0
5040	MOTION DETECTORS	4050	0	1	SF	0.75	4	0.95	0.95	0	0	0	0	0	20	15	0	$/UNIT	0
5040	MOTION DETECTORS	4050	0	1	AT	0.75	4	0.95	0.95	0	0	0	0	0	20	15	0	$/UNIT	0
5040	MOTION DETECTORS	4050	0	1	MH	0.75	4	0.95	0.95	0	0	0	0	0	20	15	0	$/UNIT	0
5050	LOW PRESSURE SODIUM FLOODLIGHT	4050	0	1	SF	0.67	4	0.637	0.637	0	0.637	0.637	0	0	0.56414	0.0594	0.00482	$/UNIT	0
5050	LOW PRESSURE SODIUM FLOODLIGHT	4050	0	1	AT	0.67	4	0.554	0.554	0	0.554	0.554	0	0	0.41105	0.04328	0.00471	$/UNIT	0
5050	LOW PRESSURE SODIUM FLOODLIGHT	4050	0	1	MH	0.67	4	0.554	0.554	0	0.554	0.554	0	0	0.48648	0.05122	0.00454	$/UNIT	0

*
* APPLIANCES
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6010	BEST CURRENT REFRIG. FROST FREE	5010	0	1	SF	1.00	4	0.16	0.16	0	0.16	0.16	0	0	677	0	0	$/UNIT	0
6010	BEST CURRENT REFRIG. FROST FREE	5010	0	1	AT	1.00	4	0.16	0.16	0	0.16	0.16	0	0	677	0	0	$/UNIT	0
6010	BEST CURRENT REFRIG. FROST FREE	5010	0	1	MH	1.00	4	0.16	0.16	0	0.16	0.16	0	0	677	0	0	$/UNIT	0
6020	BEST CURRENT REFRIG. MANUAL	5030	0	1	SF	1.00	4	0.25	0.25	0	0.25	0.25	0	0	522	0	0	$/UNIT	0
6020	BEST CURRENT REFRIG. MANUAL	5030	0	1	AT	1.00	4	0.25	0.25	0	0.25	0.25	0	0	522	0	0	$/UNIT	0
6020	BEST CURRENT REFRIG. MANUAL	5030	0	1	MH	1.00	4	0.25	0.25	0	0.25	0.25	0	0	522	0	0	$/UNIT	0
6030	REMOVE SECOND REFRIGERATOR	5010	0	1	SF	0.50	5	1	1	0	1	1	0	0	35	0	0	$/UNIT	0
6030	REMOVE SECOND REFRIGERATOR	5010	0	1	AT	0.50	5	1	1	0	1	1	0	0	35	0	0	$/UNIT	0
6030	REMOVE SECOND REFRIGERATOR	5010	0	1	MH	0.50	5	1	1	0	1	1	0	0	35	0	0	$/UNIT	0
6050	BEST CURRENT FREEZER FROST FREE	5070	0	1	SF	1.00	5	0.22	0.22	0	0.22	0.22	0	0	542	0	0	$/UNIT	0
6050	BEST CURRENT FREEZER FROST FREE	5070	0	1	AT	1.00	5	0.22	0.22	0	0.22	0.22	0	0	542	0	0	$/UNIT	0
6050	BEST CURRENT FREEZER FROST FREE	5070	0	1	MH	1.00	5	0.22	0.22	0	0.22	0.22	0	0	542	0	0	$/UNIT	0
6060	BEST CURRENT FREEZER MANUAL	5090	0	1	SF	1.00	4	0.21	0.21	0	0.21	0.21	0	0	390	0	0	$/UNIT	0
6060	BEST CURRENT FREEZER MANUAL	5090	0	1	AT	1.00	4	0.21	0.21	0	0.21	0.21	0	0	390	0	0	$/UNIT	0
6060	BEST CURRENT FREEZER MANUAL	5090	0	1	MH	1.00	4	0.21	0.21	0	0.21	0.21	0	0	390	0	0	$/UNIT	0
6070	REMOVE SECOND FREEZER	5070	0	1	SF	0.50	4	1	1	0	1	1	0	0	35	0	0	$/UNIT	0
6070	REMOVE SECOND FREEZER	5070	0	1	AT	0.50	4	1	1	0	1	1	0	0	35	0	0	$/UNIT	0
6070	REMOVE SECOND FREEZER	5070	0	1	MH	0.50	4	1	1	0	1	1	0	0	35	0	0	$/UNIT	0
6080	HIGH EFFICIENCY CLOTHES DRYER	5140	0	1	SF	1.00	4	0.26	0.26	0	0.26	0.26	0	0	470	0	0	$/UNIT	0
6080	HIGH EFFICIENCY CLOTHES DRYER	5140	0	1	AT	1.00	4	0.26	0.26	0	0.26	0.26	0	0	470	0	0	$/UNIT	0
6080	HIGH EFFICIENCY CLOTHES DRYER	5140	0	1	MH	1.00	4	0.26	0.26	0	0.26	0.26	0	0	470	0	0	$/UNIT	0
6090	HIGH EFFICIENCY CLOTHES WASHER	5160	0	1	SF	1.00	4	0.33	0.33	0	0.33	0.33	0	0	650	0	0	$/UNIT	0
6090	HIGH EFFICIENCY CLOTHES WASHER	5160	0	1	AT	1.00	4	0.33	0.33	0	0.33	0.33	0	0	650	0	0	$/UNIT	0
6090	HIGH EFFICIENCY CLOTHES WASHER	5160	0	1	MH	1.00	4	0.33	0.33	0	0.33	0.33	0	0	650	0	0	$/UNIT	0
6100	HIGH EFFICIENCY POOL PUMPS	5180	0	1	SF	1.00	6	0.09	0.09	0	0.09	0.09	0	0	37	0	0	$/UNIT	0
6100	HIGH EFFICIENCY POOL PUMPS	5180	0	1	AT	1.00	6	0.09	0.09	0	0.09	0.09	0	0	37	0	0	$/UNIT	0

RESIDENTIAL ECM

6100	HIGH EFFICIENCY POOL PUMPS	5180	0	1	MH	1.00	6	0.09	0.09	0	0.09	0.09	0	0	37	0	0	$/UNIT	0
6110	DOWN-SIZED POOL PUMPS W/OVERSIZED PIPING	5180	0	1	SF	0.50	6	0.42	0.42	0	0.42	0.42	0	0	50	0	0	$/UNIT	0
6110	DOWN-SIZED POOL PUMPS W/OVERSIZED PIPING	5180	0	1	AT	0.50	6	0.42	0.42	0	0.42	0.42	0	0	50	0	0	$/UNIT	0
6110	DOWN-SIZED POOL PUMPS W/OVERSIZED PIPING	5180	0	1	MH	0.50	6	0.42	0.42	0	0.42	0.42	0	0	50	0	0	$/UNIT	0
6120	DIRECT LOAD CONTROL of POOL PUMPS	5180	0	1	SF	0.90	7	0.005	0.005	0	1	1	0	0	80.01	55	2.92	$/UNIT	0
6120	DIRECT LOAD CONTROL of POOL PUMPS	5180	0	1	AT	0.90	7	0.005	0.005	0	1	1	0	0	80.01	55	2.92	$/UNIT	0
6120	DIRECT LOAD CONTROL of POOL PUMPS	5180	0	1	MH	0.90	7	0.005	0.005	0	1	1	0	0	80.01	55	2.92	$/UNIT	0

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COMMERCIAL ENERGY CONSERVATION MEASURES

END USE CATEGORY	ECM_#	NAME
SPACE CONDITIONING		
	1010	INSTALL HE CHILLER
	1020	INSTALL HE CHILLER
	1030	INSTALL HE CHILLER & ASD
	1040	RPL LE DX W/ HE DX
	1050	RPL LE RM AC W/ HE RM AC
	1060	INSTALL COOL STORAGE
	1070	HEAT PIPE ENHANCED DX
	1080	HOTEL OCCUPANCY SENSORS
	1090	2-SPEED MOTOR - COOLING TOWER
	1100	SPEED CONTROL - COOLING TOWER
	1110	AC MAINTENANCE - CHILLER
	1120	AC MAINTENANCE - DX
	1130	AIR DUCT/WATER PIPE INSUL - CHILLER
	1140	AIR DUCT/WATER PIPE INSUL - DX
	1150	ENRG MGT SYSTEM - CHILLER
	1160	ENRG MGT SYSTEM - DX
	1170	TEMP SETUP/SETBACK - CHILLER
	1180	TEMP SETUP/SETBACK - DX
	1190	REP ER HEAT W/ GAS HEAT
	1200	GAS-FIRED COOLING
BUILDING ENVELOPE		
	2010	INC ROOF INSUL -
	2070	INC WALL INSUL-
	2150	ADD WIND FILM-
	2220	SPEC SEC GL-
	2280	LIGHT ROOF-
*		
* VENTILATION		
*		
	3020	NO DUCT LEAKS - DX AC
	3080	VAV W/INLET V - CHILLER
	3090	VAV W/INLET V - DX AC
	3140	ASD CON W/VAV - CHILLER
	3150	ASD CON W/VAV - DX AC
	3200	TIME/PROG CON - CHILLER
	3210	TIME/PROG CON - DX AC
	3260	HE VN MOTORS - CHILLER
	3270	HE VN MOTORS - DX AC
	3320	MAKEUP AIR/EX - CHILLER
	3330	MAKEUP AIR/EX - DX AC

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COMMERCIAL ENERGY CONSERVATION MEASURES

END USE CATEGORY	ECM_#	NAME
* LIGHTING		
*		
	4010	4'-34W FL W/ HYBRID BAL #1
	4020	4'-34W FL W/ HYBRID BAL #2
	4030	4'-34W FL W/ ELECTRONIC BAL #1
	4040	4'-34W FL W/ ELECTRONIC BAL #2
	4050	8'-60W FL W/ELEC BALLAST #1
	4060	8'-60W FL W/ELEC BALLAST #2
	4070	T8 LAMPS/ELEC BALLAST #1
	4080	T8 LAMPS/ELEC BALLAST #2
	4090	REF/DE-L FL: 4'-40W, ELEC B
	4100	REF/DE-L FL: 4'-34&40W, ELEC B
	4110	REF/DE-L FL: 8'-75W, ELEC B
	4120	REF/DE-L FL: 8'-60W, ELEC B
	4130	REF/DE-L FL: 4'-34&40W, HYBRID B #1
	4140	REF/DE-L FL: 4'-34&40W, HYBRID B #2
	4150	REF/DE-L FL: 4'-34&40W, ELEC B #1
	4160	REF/DE-L FL: 4'-34&40W, ELEC B #2
	4170	REF/DE-L FL: 8'-60W, ELEC BAL #1
	4180	REF/DE-L FL: 8'-60W, ELEC BAL #2
	4190	4'-34W FL/DIMMING BALLASTS #1
	4200	4'-34W FL/DIMMING BALLASTS #2
	4210	HPS (70/100/150/250W)
	4220	HPS (70/100/150/250W), ELEC BAL
	4230	HPS (35W)
	4240	METAL HALIDE (32W)
	4250	COMPACT FL (15/18/27W)
	4260	TWO COMPACT FL LAMPS (18W)
	4270	ENERGY MANAGEMENT SYSTEM
	4280	OCCUPANCY SENSORS
	4290	DAYLIGHTING DESIGN
	4300	PHOTOELECTRIC CONTROL
	4310	LPS SECURITY LIGHTS
*		
* REFRIGERATION		
*		
	5010	MULTIPLEX: AIR COOL
	5020	MULTIPLEX: AIR COOL/ AMB SUBC
	5030	MULTIPLEX: AIR COOL/ MECH SUBC
	5040	MULTIPLEX: AIR COOL/ AMB&MECH SUB
	5050	MULTIPLEX: AIR COOL/EXT LIQ SUCT H
	5060	OPEN-DRIVE REFRIG (ASD)
	5070	ANTI-CONDENS HEAT CONTROL

COMMERCIAL ENERGY CONSERVATION MEASURES

END USE CATEGORY	ECM_#	NAME
	5080	HI R-VALUE GLASS DOORS
	5090	ENERGY MANAGEMENT SYSTEM
	5100	DUAL PATH SUPERMARKET AC
*		
* WATER HEATING		
*		
	6010	HEAT PUMP WATER HEATER
	6020	SOLAR WATER HEATER
	6030	HEAT RECOVERY WATER HEATER
	6040	DHW HEATER INSULATION
	6050	DHW HEAT TRAP
	6060	LO FLO/VARI FLO SHOWERHEAD
	6070	DHW CIRCULATION PUMP
	6080	GAS WATER HEATER
*		
* COOKING		
*		
	7010	CONVECTION OVENS
	7020	ENERGY EFFICIENT ELEC FRYERS
	7030	GAS COOKING
*		
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COMMERCIAL TECHNOLOGIES

This discussion identifies the measures and briefly addresses the development of data necessary to perform the analysis for commercial DSM technologies. In developing the analysis design, a series of steps was performed to create a data base that includes characteristics of the base technologies and the DSM measures.

DSM Measures and DSM Codes

The DSM measures analyzed, identified by their codes, are briefly described below.

1010. HIGH EFFICIENCY CHILLER - This measure consists of comparing standard efficiency[COMPRESSOR COP=4.0] reciprocating chillers to high efficiency [COMPRESSOR COP=4.75] screw chillers for all buildings but hospitals and warehouses. For hospitals, standard efficiency [COMPRESSOR COP=5.0] centrifugal chillers is replaced with high efficiency [COMPRESSOR COP=5.76] centrifugal chillers. This option does not apply to warehouses. The incremental capital cost of the option is estimated to be $26/ton (Bosek, Gibson & Associates, and SRC). There is no incremental labor cost for installation and maintenance. This measure was modeled using Micro-AXCESS.

1030. HIGH EFFICIENCY CHILLER W/ASD - This option consists of retrofitting an adjustable speed drive (ASD) controller onto high efficiency centrifugal chillers. The same assumptions apply here as in the high efficiency chiller option. The full equipment and installation cost for the ASD system is $200/ton (an assumed cost based on Bosek, Gibson and Assoc., various LBL reports, as well as other sources). The incremental cost of $26/ton for the high efficiency chiller is also added in. Technical feasibility is assumed to be 0% for restaurant and warehouse, 80% for hospitals, and 10% for the remaining buildings. This measure was modeled for hospitals using Micro-AXCESS; based on those results, load impacts were estimated for the remaining building types.

1040. HIGH EFFICIENCY DIRECT EXPANSION (DX) AC - The Florida Energy Efficiency Code shows the following standards for 1992:

Cooling- Capacity (kBtu/h)	EER
> 65 < 135	8.9
> 135 < 760	8.5

An average baseline EER = 8.7 (1.38 kW/ton) is assumed. The DSM EER is 9.8 (1.23 kW/ton) based on data provided by Bosek, Gibson & Assoc. This measure applies to all building types. Incremental equipment cost is $200/ton - based on base case cost of $400/ton and DSM case cost of $600/ton @ 20 tons [Bosek, Gibson & Assoc., and SRC]. There is no incremental labor cost. This measure was modeled using Micro-AXCESS.

1050. HIGH EFFICIENCY ROOM AC UNITS - The Florida Energy Efficiency Code shows the following standards for 1992:

Cooling Capacity (Btu/h)	EER
< 8,000	8.9
> 8,000 < 13,000	8.3
> 13,000	7.9

An average baseline EER = 8.3 (1.45 kW/ton) is assumed. The DSM EER is 10.9 based on data provided by Bosek, Gibson & Assoc. This measure applies to all building types. Incremental equipment cost is estimated to be $122/ton. There is no incremental labor cost.

1060. COOL STORAGE - This load shifting measure is assumed to be specifically partial ice storage or load leveling and is only applied to buildings with chillers. This option was modeled using DSMSIM.[1] The DSMSIM model uses basic algorithms to estimate the ice storage chiller and storage tank capacities based on the day with the highest accumulated cooling load (determined from base case load shapes developed from Micro-AXCESS). Maximum cooling energy is shifted from on-peak to off-peak periods based on the partial ice storage capacity, using a chiller priority strategy. Ice making capacity and efficiency derating factors are also taken into account. The capacities vary by building type and weather zone. The characteristics of the base and cool storage chillers were assumed to be the same (e.g., chiller type, COP). The incremental cost of the system was based on a chiller cost of $384/ton, cooling tower cost of $60/ton, storage tank of $60/ton-hr, and controls of $6/ton-hr (Bosek, Gibson & Assoc. , and SRC). This resulted in a range of incremental capital costs by building type and by region which are presented in Appendix J.

1070. HEAT PIPE ENHANCED AIR CONDITIONING - Heat pipes installed upstream of the evaporator can substantially reduce the moisture content from incoming outside air, resulting in significant cooling savings. The performance of this technology was estimated using Micro-AXCESS by setting up the baseline cooling setpoint by 4 degrees; this technique was suggested by experienced Micro-AXCESS users. This applied only to DX AC systems. Cooling savings ranged from 0.8 to 30%, and increased heating and ventilation energy use.

1080. HOTEL OCCUPANCY SENSORS - This option is similar to a lighting occupancy sensor. The sensor turns off the air conditioning shortly after it detects the room is unoccupied. The option was estimated using Micro-AXCESS by setting up the baseline cooling setpoint by 2 degrees during the on-peak period. The incremental cost of the technology was assumed to be $150 per sensor, installed.

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[1] DSMSIM is an /src Systems Software Model.

1090. 2-SPEED MOTOR FOR COOLING TOWER - This option consists of replacing the single speed motors in the cooling tower with a 2-speed motor. This applied only to chiller systems. The energy savings is estimated to be 80 percent of the *speed control for cooling tower* option 1100. The incremental cost is estimated to be $60/HP (assumed cost based on ACEEE, Energy Efficient Motor Systems, 1991).

1100. SPEED CONTROL FOR COOLING TOWER - This includes retrofitting an ASD (or VFD) to an existing cooling tower fan. This applied only to chiller systems. Load impacts from this measure were estimated from the Micro-AXCESS model. The installed cost of $350/HP was assumed (based on ACEEE, Energy Efficient Motor Systems, 1991).

1110. AIR CONDITIONING MAINTENANCE - This option consists of annual cleaning and tuning up of DX AC and chiller systems. The impacts of this measure was estimated using Mirro-AXCESS by increasing both the baseline compressor efficiency and capacity by 2% - suggested by experienced Micro-;AXCESS users. The start up equipment cost is estimated to be $19.35/ton, labor is estimated to be $36.00/ton, and annual maintenance cost is estimated to be $1.50/ton (Bosek, Gibson & Assoc.).

1130. HVAC AIR DUCT/WATER PIPE INSULATION FOR CHILLER AND DX - AC -This measure consists of installing additional insulation on air ducts and additional insulation on chilled water pipes. The savings and cost estimates based on ASHRAE methodology are shown in Appendix J. The installed costs estimated by Bosek, Gibson & Assoc.

1150. HVAC ENERGY MANAGEMENT SYSTEM (EMS) - The impacts of this measure was estimated using Micro-AXCESS by combining the inputs of two other simulated measures:
-Temperature Setup/Setback (1170)
-Timer/Programmable Ventilation Control (3200)

Chiller coil reset was eliminated from this combination, since independent DOE 2.1 simulations of this particular measure in Florida yielded negative savings. The option was modeled in Micro-AXCESS. The cost for the option is estimated to be $450/ton. Annual O&M is estimated to be $18/ton (Bosek, Gibson & Assoc.).

1170. TEMPERATURE SETUP/SETBACK - This measure was modeled using Micro-SC-D-17 AXCESS. Based on the baseline prototype building characteristics, cooling is shut off at night, while for temperature setback, the heating setpoint was lowered to 55 degrees F during off peak hours. The measure is not applicable to grocery, hospital, and lodging. The cost of the option is estimated to be $11/ton. The estimated capital, installation and maintenance costs for this measure is $11/ton, $14/ton, and $1.50/ton, respectively (Bosek, Gibson & Assoc.).

2010. ROOF INSULATION - Additional insulation is installed raising the R-value from 2.53 to 10.53 in existing buildings and from 10 to 20 in new buildings. The measure was simulated in Micro-AXCESS to determine the energy impacts. The cost of material is estimated to $0.75/sf of roof for existing and $0.80/sf for new construction. Additional labor cost for existing construction is $0.14/sf of roof (all costs based on MEANS Cost Data, 1992).

2070. WALL INSULATION - This option was applied only to new buildings. The R-value of the wall was increased from 5.26 to 11.76 and the buildings simulated. The incremental capital cost was estimated to be $0.85/sf of wall (based on MEANS Cost Data, 1992). No incremental labor cost is assumed.

2150. WINDOW FILM - This option consists of installing window film on existing and new construction. The option was modeled using Micro-A@CESS by decreasing the window shading coefficient and glass U-value. For existing buildings the shading coefficient was reduced from 0.85 to 0.23 and the U-value from 1.06 to 0.69. For new buildings the shading coefficient was not changed but the U-value is reduced from 1.06 to 0.69. The installed cost of the measure is $2.75/sf of glass (based on contractor's costs).

2220. SPECTRALLY SELECTIVE GLASS - This option, applied only to new buildings, was modeled using Micro-AXCESS by reducing the U-value from 1.06 to 0.22 and reducing the shading coefficient to 0.20. (ACEEE 1992 Proceedings). The incremental cost of the measure is estimated to be $7/sf of glass (based on E-Source).

2280. LIGHT COLORED ROOFS - This option consists of installing lighter colored roofs or the application of a reflective coating at time of roof replacement. The savings of 7 percent is a conservative assumption based on a report by FSEC. The incremental cost of the option is estimated to be $0.40/sf of roof (assumption based on FSEC's results), and a maintenance cost of $0.03/sf of roof (SRC).

3020. LEAK FREE DUCTS - This measure primarily consists of sealing all exterior ductwork for rooftop DX AC equipment. Cooling and ventilation demand and energy savings of 7 % for existing buildings and 3 % for new buildings was estimated. These savings are based on a combination of estimates developed by Bosek, Gibson & Assoc. and Micro-AXCESS simulation (by varying outside air percentage). Installed capital costs are $40/ton for existing buildings (including rebalancing of air handling units) and $15/ton for new buildings. Costs of $/ton of cooling capacity are based on estimates provided by Bosek, Gibson & Assoc.

3080. VAV SYSTEMS WITH INLET VANES - Micro-AXCESS was used to model ventilation fan, cooling, and heating energy and demand impacts between a constant volume system and a variable air volume system with inlet vanes. This was modeled for both DX AC and chiller systems for all buildings in the three climate regions. The installed cost of variable air volume systems is $518/ton of cooling capacity based on estimates provided by Bosek, Gibson & Assoc. Capital costs include those for VAV boxes, DDC controls, ductwork, and electrical supplies.

3140. ASD VENTILATION CONTROLS W/VAV - This measure includes an adjustable speed drive control for the ventilation fan in addition to the VAV system described in measure V-D-2/3. Energy and demand impacts of this combined measure were computed using Micro-AXCESS. This. was simulated for buildings with DX AC,and chiller systems. In addition to the cost of a VAV system (shown in measure V-D2/3), the installed capital cost for ASDs is $300/HP of ventilation fan capacity (ACEEE, Energy Efficient Motor Systems, 1991).

3200. TIMER/PROGRAMMABLE VENTILATION CONTROL - This measure was modeled using Micro-AXCESS by simply shutting down the ventilation fan system one to three hours earlier (depending on the building type); consequently, the cooling and heating systems shut down (or shifted into night cycling mode) as well. Costs are based on $1 10 per timeclock and $990 per unit for electrical and testing (Bosek, Gibson & Assoc.). This measure was not applied to the grocery, hospital, and lodging market segments.

3260. HIGH EFFICIENCY VENTILATION MOTORS - This measure assumes high efficiency motors in place of standard efficiency motors, resulting in an average demand and energy savings of 5.9% and an incremental cost of $25/hp (ACEEE, Energy Efficiency Motor Systems, 199 1). Technical feasibility is assumed to be 85 % (SRC).

3320. SEPARATE MAKEUP AIR/EXHAUST HOODS - This technology is typically installed in commercial kitchen areas to reduce the energy wasted in pre-conditioned supply air via exhaust hoods. Cooling energy and demand savings of 80% is estimated within the kitchen areas. This measure is applied to the restaurant, school, college, hospital, and lodging market segments. It was assumed the kitchen areas with hoods are approximately 3% of school, college, and hospital, 10% of restaurant, and 2% of lodging total floorspace. It is assumed the current penetration is 30% for each of these market segments. Costs are estimated at about $3,700/ksf. Bosek, Gibson & Assoc. provided the energy impact, cost, and applicability estimates.

4010. 4'- 34W FLUORESCENT LAMPS/HYBRID BALLASTS (#1) - This measure compares four 4'- 34W fluorescent lamps and two hybrid ballasts with four 4' -40W lamps and two EE ballasts in existing buildings only. The estimated lighting energy and demand savings is 30.2%. Base and DSM fixture costs are $28.20 and $37.80, respectively. Technical feasibility is assumed to be (SRC).

4020. 4' - 34W FLUORESCENT LAMPS/HYBRID BALLASTS (#2) - This measure compares four 4' - 34W fluorescent lamps and two hybrid ballasts with four 4' - 34W lamps and two EE ballasts in existing buildings only. The estimated lighting energy and demand savings is 14.3%. Base and DSM fixture costs are $29.40 and $37.80, respectively. Technical feasibility is assumed to be 90% (SRC).

4030. 4' - 34W FLUORESCENT LAMPS/ELECTRONIC BALLASTS (#I) - This measure considers the following:

1) Compares four 4' - 34W fluorescent lamps and two electronic ballasts with four 4' - 4OW fluorescent lamps and two EE ballasts in existing buildings only. Estimated lighting energy and demand savings is 30.2%. Base and DSM fixture costs are $28.20 and $52.20, respectively. Assumed technical feasibility is assumed to be 90% (SRC).

2) Compares three 4' - 34W fluorescent lamps and one electronic ballast with three 4'- 4OW fluorescent lamps and one EE ballast in new buildings, only. Estimated lighting energy and demand savings is 31.6%. Base and DSM fixture costs are $15.35 and $27.65, respectively, Assumed technical feasibility is assumed to be 90 % (SRC).

4040. 4' - 34W FLUORESCENT LAMPS/ELECTRONIC BALLASTS (#2) - This measure compares four 4' - 34W fluorescent lamps and two electronic ballasts with four 4' - 34W fluorescent lamps and two EE ballasts in existing buildings only. Estimated lighting energy and demand savings is 14.3%. Base and DSM fixture costs are $29.40 and $52.00, respectively. Technical feasibility is assumed to be 90% (SRC).

4050. 8' - 6OW FLUORESCENT LAMPS/ELECTRONIC BALLASTS (#L) - This measure compares two 8' -6OW fluorescent lamps and one electronic ballast with two 8' - 75W lamps and one EE ballast in both new and existing buildings. The estimated lighting energy and demand savings is 31.0%. Base and DSM fixture costs are $25.25 and $36.70, respectively. Technical feasibility is assumed to be 90% (SRC).

4060. 8' - 6OW FLUORESCENT LAMPS/ELECTRONIC BALLASTS (#2) - This measure compares two 8' - 6OW fluorescent lamps and one electronic ballast with two 8' - 6OW fluorescent lamps and one EE ballast in both new and existing buildings. The estimated lighting energy and demand savings is 11.4%. Base and DSM fixture costs are $26.40 and $36.70, respectively. Technical feasibility is assumed to be 90% (SRC).

4070. T8 LAMPS/ELECTRONIC BALLASTS (#L) - This measure considers the following:

1) Compares four 4' - T8 lamps and two electronic ballasts with four 4' - 4OW lamps and two EE ballasts in existing buildings only. Estimated lighting energy and demand savings is 27.9%. Base and DSM fixture costs are $28.20 and $57.60, respectively. Technical feasibility is assumed to be 90% (SRC).

2) Compares three 4' - T8 lamps and one electronic ballast with three 4' - 4OW lamps and one EE ballast in new buildings only. Estimated lighting energy and demand savings is 34.6%. Base and DSM fixture costs are $15.35 and $31.70, respectively. Technical feasibility is assumed to be 90% (SRC).

4080. T8 LAMPS/ELECTRONIC BALLASTS (#2) - This measure compares four 4-' - T8 lamps and two electronic ballasts with four 4' - 34W lamps and two EE ballasts in existing buildings only. The estimated energy savings is 11.4%, while fixture lumen output is significantly increased. The base and DSM fixture costs are $29.40 and $57.60, respectively. Technical feasibility is assumed to be 90% (SRC).

4090. REFLECTOR/DELAMPED #1: INSTALL 4' - 4OW FLUORESCENT LAMPS/EE BALLAST - This measure consists of the installation of an efficient reflector along with a two 4' - 4OW lamp/one EE ballast fixture in existing buildings only. This is compared to a four 4' 4OW lamp/two EE ballast base case fixture. Estimated lighting energy and demand savings is 50%. Base and DSM fixture costs are $28.20 and $54. 10, respectively. Technical feasibility is assumed to be 67% (SRC).

4100. REFLECTOR/DELAMPED #2: INSTALL 4' - 34W & 40W FLUORESCENT LAMPS/EE BALLAST -This measure consists of the installation of an efficient reflector, and a 20%/80% mix of two 4' - 4OW lamps/one EE ballast fixtures and two 4' - 34W lamps/one EE ballast fixtures in existing buildings only. This is compared to a four 4' - 34W lamp/two EE ballast base case fixture. The estimated combined lighting energy and

4150. REFLECTOR/DELAMPING #8: INSTALL 4' - 34W & 40W FLUORESCENT LAMPS/ELECTRONIC BALLASTS - This measure is identical to measure 4100 with the exception that this measure consists of electronic ballasts instead of EE ballasts, and that its compared to 34W fluorescent lamps instead of 4OW lamps. Estimated lighting energy and demand savings is 55.4%. The base and DSM fixture costs are $29.40 and $65.98, respectively. Technical feasibility is assumed to be 67% (SRC).

4120. REFLECTOR/DELAMPING #9: INSTALL 8' - 6OW FLUORESCENT LAMPS/ELECTRONIC BALLAST -This measure consists of the installation of an efficient reflector along with a one 8' - 60W fluorescent lamp/one EE ballast fixture for both new and existing buildings (it is assumed one ballast serves two single lamp fixture). This is compared to a two 8' -60W flourescent lamp/one EE ballast base case fixture with the exception that this measure consists of electronic ballasts instead of EE ballasts, and that its compared to 75W fluorescent lamps instead of 6OW lamps. Estimated lighting energy and demand savings is 65.5%. The base and DSM fixture costs are $25.25 and $62.85, respectively.

4170. REFLECTOR/DELAMPING #10: INSTALL 8' - 6OW FLUORESCENT

LAMPS/ELECTRONIC BALLAST - This measure consists of the installation of an efficient reflector along with a one 8' - 60W fluorescent lamp/one EE ballast fixture for both new and existing buildings (it is assumed one ballast serves two single lamp fixture). This is compared to a two 8' -60W flourescent lamp/one EE ballast base case fixture with the exception that this measure consists of electronic ballasts instead of EE ballasts. Estimated lighting energy and demand savings is 55.7%. The base and DSM fixture cost are $26.45 and $62.85, respectively.

4190. 4' - 34W FLUORESCENT LAMPS/DIMMING BALLASTS (#1) - This measure considers the following:

1) Compares four 4' - 34W fluorescent lamps and two electronic dimming ballasts (including daylighting controls) with 4' - 4OW lamps and two EE ballasts for existing buildings only. Estimated lighting energy and demand savings is 56.1% and 65. 0 %. The base and DSM fixture costs are $28.20 and $132.00, respectively.
2) Compares three 4' - 34W fluorescent lamps and one electronic dimming ballast (including daylighting controls) with three 4' - 4OW fluorescent lamps and one EE ballast for new buildings only. Estimated lighting energy and demand savings is 56.1% and 65.0%. The base and DSM fixture cost are $15.35 and $67.25, respectively.

The lighting energy and demand savings is based on benchmark results from DOE 2.1 simulations. The technical feasibility ranges from 21% to 81% depending on the building type - this was based on the ratio of perimeter floorspace (15 feet deep) to the total building floorspace, by building type.

4240. METAL HALIDE (32W) - This measure considers replacing one 15OW incandescent lamp with one 32W metal halide fixture in both new and existing buildings. Estimated lighting energy and demand savings is 73.3%. Base and DSM costs are $4.23 and $88.56 per fixture, respectively. Incremental installation cost is included for existing buildings. Annualized maintenance cost of replacing both incandescent and metal halide lamps during the lifetime of the metal halide ballast is considered. The technical feasibility is assumed to be 90% (SRC).

4250. COMPACT FLUORESCENT LAMPS (15/18/27W) - This measure considers replacing a weighted mix of 6OW, 75W and 10OW incandescent lamps with the same mix of 15W, 18W and 27W compact fluorescent lamps in.both new and existing buildings. The percentage breakdown of the mix varies by building type and is provided in Appendix L. These were estimated based on FP&L's commercial survey results. Weighted average lighting energy and demand savings is 70.7%, while maintaining the original lumen output. Average base and DSM costs are $3.25 and $20.00 per fixture, respectively. Incremental installation cost is included for existing buildings. Annualized maintenance cost of replacing both incandescent and compact fluorescent lamps during the lifetime of the compact fluorescent ballast is considered. Technical feasibility is assumed to be 85 % and 90 % for new and existing buildings, respectively (SRC).

4260. TWO LAMP COMPACT FLUORESCENT (18W) - This measure consists of two 18W compact fluorescent tubes within a single fixture which replaces one 15OW incandescent lamp in both new and existing buildings. Estimated lighting energy and demand savings is 76.0%. Base and DSM costs are $4.32 and $60.00 per fixture, respectively. Incremental installation cost is included for existing buildings. Annualized maintenance cost of replacing both incandescent and compact fluorescent lamps during the lifetime of the compact fluorescent ballast is considered. Technical feasibility is assumed to be 85% and 90% for new and existing buildings, respectively.

4270. ENERGY MANAGEMENT SYSTEM FOR LIGHTING - This measure consists of retrofitting an energy management system (EMS) to automatically control the lighting operation. It was assumed that the-EMS would save an average of 2 full load hours of lighting a day. This equates to lighting energy savings ranging from 6.9% to 15.7% relative to the operating hours for each building type. It is also assumed the lighting demand savings is 20 % of the energy savings, thus ranging from 1. 4 % to 3. 1 %. The capital and installation cost is assumed to be $900/ksf and $180/ksf, respectively (based on several studies reviewed). Technical feasibility is assumed to be 60% (SRC).

4280. OCCUPANCY SENSORS - This measure consists of retrofitting occupancy sensors to shut off lights in unoccupied portions of a building. It is assumed this measure saves 25 % lighting energy and 5% lighting demand in both new and existing buildings. The assumed capital and installation costs are $57.50/sensor and $10/sensor, respectively. Energy savings and costs based on EPRI's Retrofit Lighting Technologies brochure. Technical feasibility is assumed to be 30% (SRC).

4290. DAYLIGHTING DESIGN - This measure consists of a combination of dimming ballasts (L-D-19/20), doubling the window area and installing spectrally selective glass (see measure SC-D-24/25), and finally downsizing the cooling capacity by 10%. This measure applies to new building only, and excludes warehouse and lodging. Micro-AXCESS was used to model the change in HVAC end use consumption- due to the revised building characteristics and reduced cooling capacity; these results were then combined with the dimming ballast measure (see measure L-D-19/20). Estimated lighting energy and demand savings is 56.1% and 65%, while cooling energy and - demand savings range from 13.7% to 28.7% and 14.7% to 32.4%, respectively depending on the building type and region. The cooling and heating impacts are shown in a table following the lighting tables for this measure in Appendix L. The DSM costs include the incremental costs of the enlarged spectrally selective glazing area and the reduced cooling capacity, as well as the full cost -of the 34W fluorescent lamp/dimming fixture; while the base case cost includes the full cost of the 4OW fluorescent lamp/EE ballast fixture. Technical feasibility ranges from 21 % to 81 % depending on the building type - this was based on the ratio of perimeter floorspace (15 feet deep) to the total building floorspace, by building type.

4300. PHOTOELECTRIC CONTROL - This measure consists of retrofitting photoelectric controls onto exterior lighting. Using Micro-AXCESS, the base case exterior lighting schedule of 4 p.m. to 7 a.m. (set for most building types) was changed to automatically turn on and off relative to daylighting hours. Estimated exterior lighting energy savings ranged from 14.7% to 25.4%, depending on the base case schedule of each building type. As expected, there are no demand savings. The capital cost of each photoelectric sensor is $10 (Grainger's '91) which is converted + $/ksf based on the size and function of each building type; this ranged from $1/ksf to $12/ksf. It was assumed that the installation cost is 75 % of the capital cost. Technical feasibility and current penetration are assumed to be 80% and 35%, respectively (SRC).

5060. MULTIPLEX AND OPEN DRIVE REFRIGERATION SYSTEMS - These measures consist of various air-cooled refrigeration systems which are compared to a stand-alone compressor system. Measures R-D-1 through R-D-6 include a multiplex system with or without ambient or mechanical subcooling, external liquid suction heat exchanger, in addition to an open-drive (ASD) refrigeration system. The energy and demand impacts, as well as cost and applicability of these measures were primarily based on two EPRI reports - details of these measures are shown in Appendix M. Although the EPRI studies includes analysis of multiplex evaporative condensing systems in addition to the air-cooled condensing systems, the evaporative condensing systems were not included in this study. It was assumed these measures are applicable to the restaurant, grocery, warehouse and hospital market segments.

5070. ANTI-CONDENSATE HEATER CONTROLS - It is assumed this measure saves 5% energy and demand and is applied to all market segments, except office, warehouse, and miscellaneous. The capital and installation costs are $150 and $40 per control (one control per refrigerator case, 8 cases per 25.6 ksf). Cost and impact estimates based on an assessment study done for Bonneville, 1988. Current penetration is assumed to be 30% (SRC).

5080. HIGH R-VALUE GLASS DOORS - This measure consists of replacing single glass doors or retrofitting refrigeration cases with high R-value glass doors. An average of 30% energy and demand savings is assumed. The installed cost of the measure is $1,000 per display case.' This technology is applied to all.market segments, except office, warehouse, and miscellaneous with various levels of technical feasibility and a current penetration of 70% (SRC).

5090. REFRIGERATION ENERGY MANAGEMENT SYSTEM - This technology consists of strategically controlling many or all refrigeration systems in a given facility. From the EPRI Commercial TAG Volume, an energy and demand savings of 10 % and 5 % is assumed, at an installed cost of $20,000 per multifunctional EMS. It is assumed this technology is only applicable to the grocery market segment, which has an assumed current penetration of 50% (SRC).

5100. DUAL-PATH AIR CONDITIONING - Similar to Heat Pipe Enhanced Air Conditioning, this technology removes a significant amount of moisture from incoming air before passing over the evaporator, Its best, if not only application is where there is high humidity levels; therefore, the dual-path air conditioner is only analyzed for the grocery market segment. Energy and demand impacts, and costs have been estimated based on a case study in Miami, Florida, presented in an EPRI brochure, Dual-Path Supermarket HVAC Systems, 1991 [CU.2053.10.911. These estimates are as follows:

	Energy Demand Savings (%)	Savings (%)
Cooling	18	3.4
Vent. Fan	18	0
Refrig.	19.5	0

The incremental cost is $276/ksf, based on the same study. Although this is an air conditioning technology, it is placed with this end use category, because its applicability is focused on high refrigeration loads. It is assumed this technology has no current penetration.

6010. HEAT PUMP WATER HEATER - This measure consists of replacing conventional electric hot water heaters with heat pump hot water heaters. Estimated energy and demand savings is 50% (assuming an average seasonal COP of 2.0). The cost of this measure is $5,831 per heat pump water heater.[2] while the conventional electric water heater costs $1,312 per tank.[3] This measure was applied to all market segments with an assumed technical feasibility of 80%, with a negligible current penetration (O%) (SRC).

6020. SOLAR WATER HEATER - Solar water heaters were analyzed for all building types. The technology data was developed based on the following information provided by FSEC: 700 Btu per sf of collector is recoverable; 0.5 sf of collector per gallon DHW per day; and, installed capital cost of $50 per sf of collector. The hot water energy savings was estimated to be 64.6% using the above parameters; while, summer and winter demand savings are assumed to be 85% and 10%, respectively. The area of collector varies by building type. The final cost of the collector also includes the water tank cost. The solar heater -water tank is estimated to be 3 times the size of the standard DHW tank.

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[2] Commercial Heat Pump Water Heaters Application Handbook, 1990

[3] A.O.Smith, 1992

6030. HEAT RECOVERY WATER HEATER - This measure consists of an electric water heater which utilizes a supplemental heat source from the cooling system waste heat from a double bundle chiller or condenser heat exchanger. There is an assumed 25 % energy savings based on WAPA Guidebook of Commercial DSM Technologies, while assuming a summer and winter demand savings of 35 % and 15 %, respectively. The cost is $2,400 per water heater, also based on WAPA. The current penetration is assumed to be zero.

6040. DHW HEATING INSULATION - This is a retrofit measure consisting of wrapping an existing water tank with additional insulation. Energy and demand savings of 5 % is assumed. The installed cost is $55 per hot water tank. The technical feasibility and current penetration are assumed to be 50% and 20%, respectively (SRC).

6050. DHW HEAT TRAP - This retrofit measure reduces hot water energy due to backflow through the pipes from natural convection. It is analyzed for all existing market segments; it is not analyzed in the new market since the technology is a Florida Energy Efficiency Code for Building Construction - 1991 requirement. Energy savings is 10% based on the WAPA Guidebook of commercial DSM technologies, while demand savings is assumed to be 2% (SRC). An assumed installed cost is $25 per water heater (SRC). The technical feasibility and current penetration is assumed to be 80% and 15%, respectively (SRC).

6060. LOW FLOW/VARIABLE FLOW SHOWERHEAD - This retrofit measure can easily be installed in place of existing showers and faucets to reduce the flow of hot water. It is assumed there are approximately two showerheads and four faucets per water heater (SRC). Estimated energy and demand energy savings is 15 %. An installed capital cost equivalent to $40 per water heater was assumed (SRC). This measure was only analyzed in all existing market segments, and excluded in new buildings, since the Florida Energy Efficiency Code for Building Construction - 1991 already includes this measure. Technical feasibility varies by building type based on an assumed (SRC) percentage of hot water dedicated to showers and faucets:

80% - office, retail, school, college and lodging
50% - grocery, hospital, and miscellaneous
20% - restaurant

Current penetration of this measure is assumed to be 10% (SRC).

6070. DWH RECIRCULATION PUMPS - This option consists of installing timers to prevent the operation of recirculation pumps on the hot water system typically integrated with a boiler during periods of no hot water use. The energy saving due to this option was estimated to be 60 percent (based on case studies provided by OUC). There are no demand -savings due to this option. The cost of the option is estimated to be $200 per system which includes the cost of the timer control and accessories. The option is most applicable to schools, colleges and hospitals and not very applicable to the other building types.

6080. GAS WATER HEATER - This is a conventional appliance that burns gas to heat water. Conversion to this unit requires adequate fresh and exhaust air ducting. The site efficiency of these devices is about 57%-60%.

Cooking Technologies

7010. CONVECTION OVENS - This technology was modeled as a replacement option. The convection ovens have an efficiency of 65 % as compared to the 55 % efficiency of standard ovens. Therefore, energy and demand savings were estimated to be 15.4%. The option was applied to restaurants, grocery, school, hospitals, and lodging. The cost estimates are based on $1,000 per convection oven and 2 ovens per 5,000 square foot restaurant. The costs for other-building types were prorated based on energy use.

7020. ENERGY EFFICIENT ELECTRIC FRYERS -.This technology was modeled as a replacement technology applicable to the same building types as the previous option. Energy and demand savings were estimated to be 10%. The cost estimates are based on $300 per efficient fryer, 2 fryers per 5,000 square feet of restaurant, and prorated to other building types based on energy use.

The approach for developing the load impacts for most of these measures was based on other studies, engineering estimates (mostly by SRC), and input from the technical subcommittee members.

7030. GAS COOKING - Replacement of electric forms of cooking with conventional gas burners and convection ovens. The advantage of this form of appliance is the savings from not having to convert fuel to electricity prior to its use.

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•           W:\U1500\DSM94\SAS\CECMOLD.WQ1  <==SOURCE SPREADSHEET
•  DATE:    11/29/94
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•   To print, print to file, or look, type:    Alt-D       <== IMPORTANT
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•    This ECM file applies to market segment types:         OLD
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•  1   7    <== COLUMN WIDTH  35   ==>      10    6    8   4   8.00   3    8    8    8    8    8    8    8    8    8    8   5   4
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•    1    2    3    4    5    6    7    8    9    0    1    2    3    4    5    6    7
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•  SAS variable names                                          SVFAM                                                                               C_UNITS
•    ECMID ECMLAB                          APID      SAPID  IADJF    MS    TFEAS X   ESSUM    ESWIN    ESVNT    PSSUM    PSWIN    PSVNT    ONOFSF CUEQP   CULAB   CUOAM  X      GASFLG
•     1010 LabelLabelLabelLabelLabelLabelLabel  10012001  1010  0.12345  OF     0.12   1  0.12345  0.12345  0.12345  0.12345  0.12345  0.12345  0.12345  123.456  123.456  123.456 XX/YY  0
•  B        B                              B         B      B        B     B       B  B        B        B        B        B        B        B        B        B        B      B     B
•       E                                 E         E      E        E     E       E  E        E        E        E        E        E        E        E        E        E      E     E
•
•  GASFLG=NAT GAS FLAG:
•         0=NA
•         1=CONVERT KWH SAVINGS TO THERMS
•         2=CONVERT KWH SAVINGS FROM BLOWERS TO REDUCED THERMS
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ECMID	ECMLAB	APID	SAPID	IADJF	MS	TFEAS	SVFAM X	ESSUM	ESWIN	ESVNT	PSSUM	PSWIN	PSVNT	ONOFSF	CUEQP	CULAB	CUOAM	C_UNITS X	GASFLG
ECM_#	DESCRIPTION	ENERGY AP-ID	SUPP AP-ID	INDEP ADJ FAC	MAR SEG	TECH FEAS	CO MP	-ENERGY_SAVINGS- SUM	WINT	VENT	-POWER_SAVINGS- SUM	WINT	VENT	% SHIFT ON-OFF	-- INST_COSTS -- EQUIP.	LABOR	ANNUAL O&M	COST UNITS	GAS FLAG
SPACE CONDITIONING																			
1010	INSTALL HE CHILLER	1010	0	1	OF	0.95	1	0.415	0.415	0	0.219	0.219	0	0	0.08648	0	0	$/SF	0
1010	INSTALL HE CHILLER	1010	0	1	RB	0.95	1	0.383	0.383	0	0.2	0.2	0	0	0.14857	0	0	$/SF	0
1010	INSTALL HE CHILLER	1010	0	1	RO	0.95	1	0.412	0.412	0	0.239	0.239	0	0	0.07243	0	0	$/SF	0
1010	INSTALL HE CHILLER	1010	0	1	SG	0.95	1	0.371	0.371	0	0.143	0.143	0	0	0.07676	0	0	$/SF	0
1010	INSTALL HE CHILLER	1010	0	1	SC	0.95	1	0.435	0.435	0	0.208	0.208	0	0	0.05383	0	0	$/SF	0
1010	INSTALL HE CHILLER	1010	0	1	CO	0.95	1	0.4	0.4	0	0.168	0.168	0	0	0.05348	0	0	$/SF	0
1010	INSTALL HE CHILLER	1010	0	1	HM	0.95	1	0.443	0.443	0	0.286	0.286	0	0	0.05275	0	0	$/SF	0
1010	INSTALL HE CHILLER	1010	0	1	MS	0.95	1	0.443	0.443	0	0.294	0.294	0	0	0.6492	0	0	$/SF	0
1020	INSTALL HE CHILLER	1015	0	1	HS	0.95	1	0.087	0.087	0	0.105	0.105	0	0	0.08231	0	0	$/SF	0
1030	INSTALL HE CHILLER & ASD	1015	0	1	HS	0.70	1	0.32	0.32	0	0.184	0.184	0	0	0.79144	0.1298	0.0095	$/SF	0
1040	RPL LE DX W/ HE DX	1050	0	1	OF	0.95	1	0.123	0.123	0	0.122	0.122	0	0	0.51135	0	0	$/SF	0
1040	RPL LE DX W/ HE DX	1050	0	1	RB	0.95	1	0.123	0.123	0	0.111	0.111	0	0	1.14286	0	0	$/SF	0
1040	RPL LE DX W/ HE DX	1050	0	1	RO	0.95	1	0.123	0.123	0	0.13	0.13	0	0	0.55712	0	0	$/SF	0
1040	RPL LE DX W/ HE DX	1050	0	1	SG	0.95	1	0.123	0.123	0	0.118	0.118	0	0	0.59042	0	0	$/SF	0
1040	RPL LE DX W/ HE DX	1050	0	1	WH	0.95	1	0.123	0.123	0	0.2	0.2	0	0	0.16216	0	0	$/SF	0
1040	RPL LE DX W/ HE DX	1050	0	1	SC	0.95	1	0.123	0.123	0	0.121	0.121	0	0	0.41407	0	0	$/SF	0
1040	RPL LE DX W/ HE DX	1050	0	1	CO	0.95	1	0.123	0.123	0	0.125	0.125	0	0	0.41138	0	0	$/SF	0
1040	RPL LE DX W/ HE DX	1050	0	1	HS	0.95	1	0.123	0.123	0	0.123	0.123	0	0	0.63315	0	0	$/SF	0
1040	RPL LE DX W/ HE DX	1050	0	1	HM	0.95	1	0.123	0.123	0	0.127	0.127	0	0	0.40575	0	0	$/SF	0
1040	RPL LE DX W/ HE DX	1050	0	1	MS	0.95	1	0.121	0.121	0	0.15	0.15	0	0	0.40575	0	0	$/SF	0
1050	RPL LE RM AC W/ HE RM AC	1070	0	1	OF	0.95	1	0.24	0.24	0	0.24	0.24	0	0	0.31192	0	0	$/SF	0

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1050	RPL LE RM AC W/ HE RM AC	1070	0	1	RB	0.95	1	0.24	0.24	0	0.24	0.24	0	0	0.69714	0	0	$/SF	0
1050	RPL LE RM AC W/ HE RM AC	1070	0	1	RO	0.95	1	0.24	0.24	0	0.24	0.24	0	0	0.33984	0	0	$/SF	0
1050	RPL LE RM AC W/ HE RM AC	1070	0	1	SG	0.95	1	0.24	0.24	0	0.24	0.24	0	0	0.36016	0	0	$/SF	0
1050	RPL LE RM AC W/ HE RM AC	1070	0	1	WH	0.95	1	0.24	0.24	0	0.24	0.24	0	0	0.09892	0	0	$/SF	0
1050	RPL LE RM AC W/ HE RM AC	1070	0	1	SC	0.95	1	0.24	0.24	0	0.24	0.24	0	0	0.25258	0	0	$/SF	0
1050	RPL LE RM AC W/ HE RM AC	1070	0	1	CO	0.95	1	0.24	0.24	0	0.24	0.24	0	0	0.25094	0	0	$/SF	0
1050	RPL LE RM AC W/ HE RM AC	1070	0	1	HS	0.95	1	0.24	0.24	0	0.24	0.24	0	0	0.38622	0	0	$/SF	0
1050	RPL LE RM AC W/ HE RM AC	1070	0	1	HM	0.95	1	0.24	0.24	0	0.24	0.24	0	0	0.24751	0	0	$/SF	0
1050	RPL LE RM AC W/ HE RM AC	1070	0	1	MS	0.95	1	0.24	0.24	0	0.24	0.24	0	0	0.30463	0	0	$/SF	0
1060	INSTALL COOL STORAGE	1010	0	1	OF	0.60	0	-0.129	-0.129	0	0.451	0.451	0	0.451	0.276	0.414	0	$/SF	0
1060	INSTALL COOL STORAGE	1010	0	1	RB	0.60	0	-0.12	-0.12	0	0.44	0.44	0	0.44	0.789	1.1835	0	$/SF	0
1060	INSTALL COOL STORAGE	1010	0	1	RO	0.60	0	-0.1	-0.1	0	0.455	0.455	0	0.455	0.148	0.222	0	$/SF	0
1060	INSTALL COOL STORAGE	1010	0	1	SG	0.60	0	-0.091	-0.091	0	0.355	0.355	0	0.355	0.453	0.6795	0	$/SF	0
1060	INSTALL COOL STORAGE	1010	0	1	SC	0.60	0	-0.123	-0.123	0	0.471	0.471	0	0.471	0.162	0.243	0	$/SF	0
1060	INSTALL COOL STORAGE	1010	0	1	CO	0.60	0	-0.135	-0.135	0	0.594	0.594	0	0.594	0.444	0.666	0	$/SF	0
1060	INSTALL COOL STORAGE	1015	0	1	HS	0.60	0	-0.042	-0.042	0	0.241	0.241	0	0.241	0.29	0.435	0	$/SF	0
1060	INSTALL COOL STORAGE	1010	0	1	HM	0.60	0	-0.083	-0.083	0	0.269	0.269	0	0.269	0.232	0.348	0	$/SF	0
1060	INSTALL COOL STORAGE	1010	0	1	MS	0.60	0	-0.118	-0.118	0	0.465	0.465	0	0.465	0.232	0.348	0	$/SF	0
1070	HEAT PIPE ENHANCED DX	1050	3020	1	OF	0.50	0	0.17	-0.046	-0.083	0.111	-0.023	0	0	0.69033	0.46022	0.00384	$/SF	0
1070	HEAT PIPE ENHANCED DX	1050	3020	1	RB	0.50	0	0.159	-0.039	-0.13	0.111	0	0	0	1.54286	1.02857	0.00857	$/SF	0
1070	HEAT PIPE ENHANCED DX	1050	3020	1	RO	0.50	0	0.175	-0.052	-0.273	0.111	0	0	0	0.75211	0.50141	0.00418	$/SF	0
1070	HEAT PIPE ENHANCED DX	1050	3020	1	SG	0.50	0	0.002	-0.096	-0.047	0.059	-0.042	0	0	0.79707	0.53138	0.00443	$/SF	0
1070	HEAT PIPE ENHANCED DX	1050	3020	1	WH	0.50	0	0.265	-0.008	-0.053	0.2	0	0	0	0.21892	0.14595	0.00122	$/SF	0
1070	HEAT PIPE ENHANCED DX	1050	3020	1	SC	0.50	0	0.183	-0.021	-0.013	0.069	-0.003	0	0	0.55899	0.37266	0.00311	$/SF	0
1070	HEAT PIPE ENHANCED DX	1050	3020	1	CO	0.50	0	0.216	-0.0043	-0.207	0.12	-0.0012	0	0	0.55536	0.37024	0.00309	$/SF	0
1070	HEAT PIPE ENHANCED DX	1050	3020	1	HS	0.50	0	0.309	-0.006	0	0.226	0	0	0	0.85475	0.56984	0.00475	$/SF	0
1070	HEAT PIPE ENHANCED DX	1050	3020	1	HM	0.50	0	0.11	-0.0034	-0.207	0.114	-0.0023	0	0	0.54777	0.36518	0.00304	$/SF	0
1070	HEAT PIPE ENHANCED DX	1050	3020	1	MS	0.50	0	0.215	-0.0054	-0.079	0.15	-0.0014	0	0	0.54777	0.36518	0.00304	$/SF	0
1080	HOTEL OCCUPANCY SENSORS	1070	0	1	HM	0.70	0	0.117	-0.0018	0	0.089	-0.0016	0	0	0.375	0.05	0	$/SF	0
1090	2-SPEED MOTOR - COOLING TOWER	1010	0	1	OF	0.60	0	0.039	0.039	0	0.011	0.011	0	0	0.0423	0.017	0	$/SF	0
1090	2-SPEED MOTOR - COOLING TOWER	1010	0	1	RB	0.60	0	0.031	0.031	0	0	0	0	0	0.0946	0.0379	0	$/SF	0
1090	2-SPEED MOTOR - COOLING TOWER	1010	0	1	RO	0.60	0	0.033	0.033	0	0	0	0	0	0.0461	0.0185	0	$/SF	0
1090	2-SPEED MOTOR - COOLING TOWER	1010	0	1	SG	0.60	0	0.029	0.029	0	0	0	0	0	0.0489	0.0196	0	$/SF	0
1090	2-SPEED MOTOR - COOLING TOWER	1010	0	1	SC	0.60	0	0.045	0.045	0	0.008	0.008	0	0	0.0343	0.0137	0	$/SF	0
1090	2-SPEED MOTOR - COOLING TOWER	1010	0	1	CO	0.60	0	0.015	0.015	0	-0.005	-0.005	0	0	0.0341	0.0136	0	$/SF	0
1090	2-SPEED MOTOR - COOLING TOWER	1015	0	1	HS	0.60	0	0.072	0.072	0	0.012	0.012	0	0	0.0524	0.021	0	$/SF	0
1090	2-SPEED MOTOR - COOLING TOWER	1010	0	1	HM	0.60	0	0.047	0.047	0	0.011	0.011	0	0	0.0336	0.0135	0	$/SF	0
1090	2-SPEED MOTOR - COOLING TOWER	1010	0	1	MS	0.60	0	0.048	0.048	0	0	0	0	0	0.414	0.0166	0	$/SF	0
1100	SPEED CONTROL - COOLING TOWER	1010	0	1	OF	0.60	0	0.048	0.048	0	0.014	0.014	0	0	0.079	0.017	0	$/SF	0
1100	SPEED CONTROL - COOLING TOWER	1010	0	1	RB	0.60	0	0.039	0.039	0	0	0	0	0	0.1766	0.0379	0	$/SF	0
1100	SPEED CONTROL - COOLING TOWER	1010	0	1	RO	0.60	0	0.042	0.042	0	0	0	0	0	0.0861	0.0185	0	$/SF	0
1100	SPEED CONTROL - COOLING TOWER	1010	0	1	SG	0.60	0	0.036	0.036	0	0	0	0	0	0.0913	0.0196	0	$/SF	0
1100	SPEED CONTROL - COOLING TOWER	1010	0	1	SC	0.60	0	0.056	0.056	0	0.01	0.01	0	0	0.064	0.0137	0	$/SF	0
1100	SPEED CONTROL - COOLING TOWER	1010	0	1	CO	0.60	0	0.019	0.019	0	-0.007	-0.007	0	0	0.0636	0.0136	0	$/SF	0
1100	SPEED CONTROL - COOLING TOWER	1015	0	1	HS	0.60	0	0.09	0.09	0	0.015	0.015	0	0	0.0979	0.021	0	$/SF	0
1100	SPEED CONTROL - COOLING TOWER	1010	0	1	HM	0.60	0	0.058	0.058	0	0.014	0.014	0	0	0.0627	0.0135	0	$/SF	0
1100	SPEED CONTROL - COOLING TOWER	1010	0	1	MS	0.60	0	0.058	0.058	0	0	0	0	0	0.0772	0.0166	0	$/SF	0
1110	AC MAINTENANCE - CHILLER	1010	0	1	OF	0.90	0	0.04	0.04	0	0.04	0.04	0	0	0.04947	0.09204	0.00384	$/SF	0
1110	AC MAINTENANCE - CHILLER	1010	0	1	RB	0.90	0	0.04	0.04	0	0.04	0.04	0	0	0.11057	0.20571	0.00857	$/SF	0
1110	AC MAINTENANCE - CHILLER	1010	0	1	RO	0.90	0	0.04	0.04	0	0.04	0.04	0	0	0.0539	0.10028	0.00413	$/SF	0

COMMERCIAL ECM

1110	AC MAINTENANCE - CHILLER	1010	0	1	SG	0.90	0	0.04	0.04	0	0.04	0.04	0	0	0.05712	0.10628	0.00443	$/SF	0
1110	AC MAINTENANCE - CHILLER	1010	0	1	SC	0.90	0	0.04	0.04	0	0.04	0.04	0	0	0.04006	0.07453	0.00311	$/SF	0
1110	AC MAINTENANCE - CHILLER	1010	0	1	CO	0.90	0	0.04	0.04	0	0.04	0.04	0	0	0.0398	0.07405	0.00309	$/SF	0
1110	AC MAINTENANCE - CHILLER	1015	0	1	HS	0.90	0	0.04	0.04	0	0.04	0.04	0	0	0.06126	0.11397	0.00475	$/SF	0
1110	AC MAINTENANCE - CHILLER	1010	0	1	HM	0.90	0	0.04	0.04	0	0.04	0.04	0	0	0.03926	0.07304	0.00304	$/SF	0
1110	AC MAINTENANCE - CHILLER	1010	0	1	MS	0.90	0	0.04	0.04	0	0.04	0.04	0	0	0.04832	0.08989	0.00375	$/SF	0
1120	AC MAINTENANCE - DX	1010	0	1	OF	0.80	0	0.04	0.04	0	0.04	0.04	0	0	0.04947	0.09204	0.00384	$/SF	0
1120	AC MAINTENANCE - DX	1010	0	1	RB	0.80	0	0.04	0.04	0	0.04	0.04	0	0	0.11057	0.20571	0.00857	$/SF	0
1120	AC MAINTENANCE - DX	1010	0	1	RO	0.80	0	0.04	0.04	0	0.04	0.04	0	0	0.0539	0.10028	0.00413	$/SF	0
1120	AC MAINTENANCE - DX	1010	0	1	SG	0.80	0	0.04	0.04	0	0.04	0.04	0	0	0.05712	0.10628	0.00443	$/SF	0
1120	AC MAINTENANCE - DX	1010	0	1	WH	0.80	0	0.04	0.04	0	0.04	0.04	0	0	0.01569	0.02919	0.0012	$/SF	0
1120	AC MAINTENANCE - DX	1010	0	1	SC	0.80	0	0.04	0.04	0	0.04	0.04	0	0	0.04006	0.07453	0.00311	$/SF	0
1120	AC MAINTENANCE - DX	1010	0	1	CO	0.80	0	0.04	0.04	0	0.04	0.04	0	0	0.0398	0.07405	0.00309	$/SF	0
1120	AC MAINTENANCE - DX	1010	0	1	HS	0.80	0	0.04	0.04	0	0.04	0.04	0	0	0.06126	0.11397	0.00475	$/SF	0
1120	AC MAINTENANCE - DX	1010	0	1	HM	0.80	0	0.04	0.04	0	0.04	0.04	0	0	0.03926	0.07304	0.00304	$/SF	0
1120	AC MAINTENANCE - DX	1010	0	1	MS	0.80	0	0.04	0.04	0	0.04	0.04	0	0	0.04832	0.08989	0.00375	$/SF	0
1130	AIR DUCT/WATER PIPE INSUL - CHILLE	1010	3010	1	OF	0.10	0	0.001	0.001	0.001	0.001	0.001	0.001	0	0.11784	0	0	$/SF	0
1130	AIR DUCT/WATER PIPE INSUL - CHILLE	1010	3010	1	RB	0.10	0	0.003	0.003	0.003	0.003	0.003	0.003	0	0.47909	0	0	$/SF	0
1130	AIR DUCT/WATER PIPE INSUL - CHILLE	1010	3010	1	RO	0.10	0	0.001	0.001	0.001	0.001	0.001	0.001	0	0.13596	0	0	$/SF	0
1130	AIR DUCT/WATER PIPE INSUL - CHILLE	1010	3010	1	SG	0.10	0	0.001	0.001	0.001	0.001	0.001	0.001	0	0.14991	0	0	$/SF	0
1130	AIR DUCT/WATER PIPE INSUL - CHILLE	1010	3010	1	SC	0.10	0	0.001	0.001	0.001	0.001	0.001	0.001	0	0.08335	0	0	$/SF	0
1130	AIR DUCT/WATER PIPE INSUL - CHILLE	1010	3010	1	CO	0.10	0	0.001	0.001	0.002	0.001	0.001	0.002	0	0.0825	0	0	$/SF	0
1130	AIR DUCT/WATER PIPE INSUL - CHILLE	1015	3010	1	HS	0.10	0	0.001	0.001	0.001	0.001	0.001	0.001	0	0.16889	0	0	$/SF	0
1130	AIR DUCT/WATER PIPE INSUL - CHILLE	1010	3010	1	HM	0.10	0	0.001	0.001	0.001	0.001	0.001	0.001	0	0.08066	0	0	$/SF	0
1130	AIR DUCT/WATER PIPE INSUL - CHILLE	1010	3010	1	MS	0.10	0	0.001	0.001	0.001	0.001	0.001	0.001	0	0.11336	0	0	$/SF	0
1140	AIR DUCT/WATER PIPE INSUL - DX	1050	3020	1	OF	0.60	0	0.001	0.001	0.001	0.001	0.001	0.001	0	0.07821	0	0	$/SF	0
1140	AIR DUCT/WATER PIPE INSUL - DX	1050	3020	1	RB	0.60	0	0.003	0.003	0.003	0.003	0.003	0.003	0	0.39051	0	0	$/SF	0
1140	AIR DUCT/WATER PIPE INSUL - DX	1050	3020	1	RO	0.60	0	0.001	0.001	0.001	0.001	0.001	0.001	0	0.9279	0	0	$/SF	0
1140	AIR DUCT/WATER PIPE INSUL - DX	1050	3020	1	SG	0.60	0	0.001	0.001	0.001	0.001	0.001	0.001	0	0.10415	0	0	$/SF	0
1140	AIR DUCT/WATER PIPE INSUL - DX	1050	3020	1	SC	0.60	0	0.001	0.001	0.001	0.001	0.001	0.001	0	0.05126	0	0	$/SF	0
1140	AIR DUCT/WATER PIPE INSUL - DX	1050	3020	1	CO	0.60	0	0.001	0.001	0.002	0.001	0.001	0.002	0	0.05062	0	0	$/SF	0
1140	AIR DUCT/WATER PIPE INSUL - DX	1050	3020	1	HS	0.60	0	0.001	0.001	0.001	0.001	0.001	0.001	0	0.11982	0	0	$/SF	0
1140	AIR DUCT/WATER PIPE INSUL - DX	1050	3020	1	HM	0.60	0	0.001	0.001	0.001	0.001	0.001	0.001	0	0.04922	0	0	$/SF	0
1140	AIR DUCT/WATER PIPE INSUL - DX	1050	3020	1	MS	0.60	0	0.001	0.001	0.001	0.001	0.001	0.001	0	0.07466	0	0	$/SF	0
1150	ENRG MGT SYSTEM - CHILLER	1010	3010	1	OF	0.80	0	0.098	0.503	0.07	0.014	0.178	0	0.15	1.15054	0	0.04602	$/SF	0
1150	ENRG MGT SYSTEM - CHILLER	1010	3010	1	RB	0.80	0	0.069	0.381	0.024	0	-0.571	0	0.15	2.57143	0	0.10286	$/SF	0
1150	ENRG MGT SYSTEM - CHILLER	1010	3010	1	RO	0.80	0	0.097	0.408	-0.051	0.022	0	0	0.15	1.25352	0	0.05014	$/SF	0
1150	ENRG MGT SYSTEM - CHILLER	1010	3010	1	SC	0.80	0	0.076	0.38	0.097	0	-0.406	0	0.15	0.93166	0	0.03727	$/SF	0
1150	ENRG MGT SYSTEM - CHILLER	1010	3010	1	CO	0.80	0	0.127	0.294	-0.01	0.02	-0.308	0	0.15	0.9256	0	0.03702	$/SF	0
1150	ENRG MGT SYSTEM - CHILLER	1010	3010	1	MS	0.80	0	0.076	0.346	-0.007	0.059	0.142	0	0.15	1.12362	0	0.04494	$/SF	0
1160	ENRG MGT SYSTEM - DX	1050	3020	1	OF	0.80	0	0.105	0.503	0.07	0.022	0.178	0	0.15	1.15054	0	0.04602	$/SF	0
1160	ENRG MGT SYSTEM - DX	1050	3020	1	RB	0.80	0	0.082	0.381	0.024	0.056	-0.571	0	0.15	2.57143	0	0.10286	$/SF	0
1160	ENRG MGT SYSTEM - DX	1050	3020	1	RO	0.80	0	0.11	0.408	-0.051	0.056	0	0	0.15	1.25352	0	0.05014	$/SF	0
1160	ENRG MGT SYSTEM - DX	1050	3020	1	WH	0.80	0	0.037	0.388	0.054	0	-0.675	0	0.15	0.36487	0	0.01459	$/SF	0
1160	ENRG MGT SYSTEM - DX	1050	3020	1	SC	0.80	0	0.073	0.38	0.097	0	-0.406	0	0.15	0.93166	0	0.03727	$/SF	0
1160	ENRG MGT SYSTEM - DX	1050	3020	1	CO	0.80	0	0.114	0.294	-0.01	0.027	-0.308	0	0.15	0.9256	0	0.03702	$/SF	0
1160	ENRG MGT SYSTEM - DX	1050	3020	1	MS	0.80	0	0.101	0.346	-0.007	0.05	0.142	0	0.15	0.9256	0	0.03702	$/SF	0
1170	TEMP SETUP/SETBACK - CHILLER	1010	3010	1	OF	0.80	0	0.014	0.505	-0.097	0.014	0.214	0	0	0.02812	0.03579	0.00384	$/SF	0
1170	TEMP SETUP/SETBACK - CHILLER	1010	3010	1	RB	0.80	0	0.018	0.385	-0.038	0	-0.571	0	0	0.06286	0.08	0.00857	$/SF	0
1170	TEMP SETUP/SETBACK - CHILLER	1010	3010	1	RO	0.80	0	0.009	0.428	-0.083	0.022	0	0	0	0.03064	0.039	0.00418	$/SF	0

COMMERCIAL ECM

1170	TEMP SETUP/SETBACK - CHILLER	1010	3010	1	SC	0.80	0	-0.003	0.372	0.005	0	-0.401	0	0	0.02277	0.02898	0.00311	$/SF	0
1170	TEMP SETUP/SETBACK - CHILLER	1010	3010	1	CO	0.80	0	0.017	0.321	-0.062	0.02	-0.306	0	0	0.02263	0.0288	0.00309	$/SF	0
1170	TEMP SETUP/SETBACK - CHILLER	1010	3010	1	MS	0.80	0	0.02	0.358	-0.067	0.059	0.163	0	0	0.02747	0.03496	0.00375	$/SF	0
1180	TEMP SETUP/SETBACK - DX	1050	3020	1	OF	0.80	0	0.027	0.505	-0.097	0.022	0.214	0	0	0.02812	0.03579	0.00384	$/SF	0
1180	TEMP SETUP/SETBACK - DX	1050	3020	1	RB	0.80	0	0.031	0.385	-0.038	0.056	-0.0571	0	0	0.06286	0.08	0.00857	$/SF	0
1180	TEMP SETUP/SETBACK - DX	1050	3020	1	RO	0.80	0	0.019	0.428	-0.083	0.037	0	0	0	0.03064	0.039	0.00418	$/SF	0
1180	TEMP SETUP/SETBACK - DX	1050	3020	1	WH	0.80	0	0.009	0.364	-0.008	0	-0.675	0	0	0.00892	0.01135	0.00122	$/SF	0
1180	TEMP SETUP/SETBACK - DX	1050	3020	1	SC	0.80	0	-0.002	0.372	0.005	0	-0.401	0	0	0.02277	0.02898	0.00311	$/SF	0
1180	TEMP SETUP/SETBACK - DX	1050	3020	1	CO	0.80	0	0.031	0.321	-0.062	0.033	-0.306	0	0	0.02263	0.0288	0.00309	$/SF	0
1180	TEMP SETUP/SETBACK - DX	1050	3020	1	MS	0.80	0	0.039	0.358	-0.067	0.05	0.163	0	0	0.02747	0.03496	0.00375	$/SF	0
1190	REP ER HEAT W/ GAS HEAT	1510	3020	1	OF	0.35	0	0	0.85	0.25	0	0.85	0.25	0	0.639188	0.159797	0	$/SF	1
1190	REP ER HEAT W/ GAS HEAT	1510	3020	1	RB	0.50	0	0	0.85	0.25	0	0.85	0.25	0	1.428575	0.357144	0	$/SF	1
1190	REP ER HEAT W/ GAS HEAT	1510	3020	1	RO	0.50	0	0	0.85	0.25	0	0.85	0.25	0	0.6964	0.1741	0	$/SF	1
1190	REP ER HEAT W/ GAS HEAT	1510	3020	1	SG	0.50	0	0	0.85	0.25	0	0.85	0.25	0	0.738025	0.184506	0	$/SF	1
1190	REP ER HEAT W/ GAS HEAT	1510	3020	1	WH	0.50	0	0	0.85	0.25	0	0.85	0.25	0	0.2027	0.050675	0	$/SF	1
1190	REP ER HEAT W/ GAS HEAT	1510	3020	1	SC	0.50	0	0	0.85	0.25	0	0.85	0.25	0	0.517588	0.129397	0	$/SF	1
1190	REP ER HEAT W/ GAS HEAT	1510	3020	1	CO	0.50	0	0	0.85	0.25	0	0.85	0.25	0	0.514225	0.128556	0	$/SF	1
1190	REP ER HEAT W/ GAS HEAT	1510	3020	1	HS	0.50	0	0	0.85	0.25	0	0.85	0.25	0	0.791438	0.197859	0	$/SF	1
1190	REP ER HEAT W/ GAS HEAT	1510	3020	1	HM	0.50	0	0	0.85	0.25	0	0.85	0.25	0	0.507188	0.126797	0	$/SF	1
1190	REP ER HEAT W/ GAS HEAT	1510	3020	1	MS	0.50	0	0	0.85	0.25	0	0.85	0.25	0	0.507188	0.126797	0	$/SF	1
1200	GAS-FIRED COOLING	1010	3010	1	OF	0.25	1	0.749	0.749	0	0.749	0.749	0	0	1.0227	0.255675	0.051135	$/SF	4
1200	GAS-FIRED COOLING	1010	3010	1	RB	0.25	1	0.692	0.692	0	0.692	0.692	0	0	2.28572	0.57143	0.114286	$/SF	4
1200	GAS-FIRED COOLING	1010	3010	1	RO	0.25	1	0.744	0.744	0	0.744	0.744	0	0	1.11424	0.27856	0.055712	$/SF	4
1200	GAS-FIRED COOLING	1010	3010	1	SG	0.25	1	0.67	0.67	0	0.67	0.67	0	0	1.18084	0.29521	0.059042	$/SF	4
1200	GAS-FIRED COOLING	1010	3010	1	SC	0.25	1	0.786	0.786	0	0.786	0.786	0	0	0.82814	0.207035	0.041407	$/SF	4
1200	GAS-FIRED COOLING	1010	3010	1	CO	0.25	1	0.722	0.722	0	0.722	0.722	0	0	0.82276	0.20569	0.041138	$/SF	4
1200	GAS-FIRED COOLING	1015	3010	1	HS	0.25	1	0.157	0.157	0	0.157	0.157	0	0	1.2663	0.316575	0.063315	$/SF	4
1200	GAS-FIRED COOLING	1010	3010	1	HM	0.25	1	0.8	0.8	0	0.8	0.8	0	0	0.8115	0.202875	0.040575	$/SF	4
1200	GAS-FIRED COOLING	1010	3010	1	MS	0.25	1	0.8	0.8	0	0.8	0.8	0	0	0.8115	0.202875	0.040575	$/SF	4

* BUILDING ENVELOPE

2010	INC ROOF INSUL -	-1	2010	1	OF	0.80	0	-0.033	0.592	0	0.123	0.482	0	0	0.75	0.14	0	$/SF	0
2010	INC ROOF INSUL -	-1	2010	1	RB	0.80	0	0.027	0.329	0	0.1	0.756	0	0	0.75	0.14	0	$/SF	0
2010	INC ROOF INSUL -	-1	2010	1	RO	0.80	0	0.137	0.518	0	0.257	0	0	0	0.75	0.14	0	$/SF	0
2010	INC ROOF INSUL -	-1	2010	1	SG	0.80	0	-0.007	0.637	0	0.071	0.839	0	0	0.75	0.14	0	$/SF	0
2010	INC ROOF INSUL -	-1	2010	1	SC	0.80	0	0.042	0.67	0	0.211	0.512	0	0	0.75	0.14	0	$/SF	0
2010	INC ROOF INSUL -	-1	2010	1	CO	0.80	0	-0.009	0.749	0	0.084	0.795	0	0	0.75	0.14	0	$/SF	0
2010	INC ROOF INSUL -	-1	2010	1	HS	0.80	0	0.011	0.14	0	0.056	0.76	0	0	0.75	0.14	0	$/SF	0
2010	INC ROOF INSUL -	-1	2010	1	HM	0.80	0	0.05	0.462	0	0.283	0.375	0	0	0.75	0.14	0	$/SF	0
2010	INC ROOF INSUL -	-1	2010	1	MS	0.80	0	0.14	0.493	0	0.269	0.409	0	0	0.75	0.14	0	$/SF	0

*WALL INSULATION ECM DOES NOT APPLY TO EXISTING CONSTRUCTION

2070	INC WALL INSUL-	-1	2030	1	OF	0.00	0	0	0	0	0	0	0	0	0	0	0	$/SF	0
2070	INC WALL INSUL-	-1	2030	1	RB	0.00	0	0	0	0	0	0	0	0	0	0	0	$/SF	0
2070	INC WALL INSUL-	-1	2030	1	RO	0.00	0	0	0	0	0	0	0	0	0	0	0	$/SF	0
2070	INC WALL INSUL-	-1	2030	1	SG	0.00	0	0	0	0	0	0	0	0	0	0	0	$/SF	0
2070	INC WALL INSUL-	-1	2030	1	SC	0.00	0	0	0	0	0	0	0	0	0	0	0	$/SF	0
2070	INC WALL INSUL-	-1	2030	1	CO	0.00	0	0	0	0	0	0	0	0	0	0	0	$/SF	0
2070	INC WALL INSUL-	-1	2030	1	HS	0.00	0	0	0	0	0	0	0	0	0	0	0	$/SF	0
2070	INC WALL INSUL-	-1	2030	1	HM	0.00	0	0	0	0	0	0	0	0	0	0	0	$/SF	0
2070	INC WALL INSUL-	-1	2030	1	MS	0.00	0	0	0	0	0	0	0	0	0	0	0	$/SF	0

COMMERCIAL ECM

2150	ADD WIND FILM-	-1	2050	1	OF	0.90	0	0.124	0.072	0	0.173	0.095	0	0	0.23928	0	0	$/SF	0
2150	ADD WIND FILM-	-1	2050	1	RB	0.90	0	0.27	0.067	0	0.316	0.095	0	0	0.80143	0	0	$/SF	0
2150	ADD WIND FILM-	-1	2050	1	RO	0.90	0	0.125	-0.137	0	0.123	0	0	0	0.20582	0	0	$/SF	0
2150	ADD WIND FILM-	-1	2050	1	SG	0.90	0	0.079	-0.038	0	0.071	0.042	0	0	0.26447	0	0	$/SF	0
2150	ADD WIND FILM-	-1	2050	1	SC	0.90	0	0.135	-0.018	0	0.125	0.033	0	0	0.15619	0	0	$/SF	0
2150	ADD WIND FILM-	-1	2050	1	CO	0.90	0	0.038	0.028	0	0.034	0.014	0	0	0.05351	0	0	$/SF	0
2150	ADD WIND FILM-	-1	2050	1	HS	0.90	0	0.038	0.001	0	0.116	0.021	0	0	0.0935	0	0	$/SF	0
2150	ADD WIND FILM-	-1	2050	1	HM	0.90	0	0.256	0.042	0	0.313	0.119	0	0	0.25189	0	0	$/SF	0
2150	ADD WIND FILM-	-1	2050	1	MS	0.90	0	0.222	-0.149	0	0.227	0.051	0	0	0.32061	0	0	$/SF	0

*SPEC SELECTIVE GLASS ECM DOES NOT APPLY TO EXISTING CONSTRUCTION

2220	SPEC SEC GL-	-1	2070	1	OF	0.00	0	0	0	0	0	0	0	0	0	0	0	$/SF	0
2220	SPEC SEC GL-	-1	2070	1	RB	0.00	0	0	0	0	0	0	0	0	0	0	0	$/SF	0
2220	SPEC SEC GL-	-1	2070	1	RO	0.00	0	0	0	0	0	0	0	0	0	0	0	$/SF	0
2220	SPEC SEC GL-	-1	2070	1	SG	0.00	0	0	0	0	0	0	0	0	0	0	0	$/SF	0
2220	SPEC SEC GL-	-1	2070	1	WH	0.00	0	0	0	0	0	0	0	0	0	0	0	$/SF	0
2220	SPEC SEC GL-	-1	2070	1	SC	0.00	0	0	0	0	0	0	0	0	0	0	0	$/SF	0
2220	SPEC SEC GL-	-1	2070	1	CO	0.00	0	0	0	0	0	0	0	0	0	0	0	$/SF	0
2220	SPEC SEC GL-	-1	2070	1	HS	0.00	0	0	0	0	0	0	0	0	0	0	0	$/SF	0
2220	SPEC SEC GL-	-1	2070	1	HM	0.00	0	0	0	0	0	0	0	0	0	0	0	$/SF	0
2220	SPEC SEC GL-	-1	2070	1	MS	0.00	0	0	0	0	0	0	0	0	0	0	0	$/SF	0
2280	LIGHT ROOF-	-1	2090	1	OF	0.60	0	0.07	0	0	0.07	0	0	0	0.4	0	0	$/SF	0
2280	LIGHT ROOF-	-1	2090	1	RB	0.60	0	0.07	0	0	0.07	0	0	0	0.4	0	0	$/SF	0
2280	LIGHT ROOF-	-1	2090	1	RO	0.60	0	0.07	0	0	0.07	0	0	0	0.4	0	0	$/SF	0
2280	LIGHT ROOF-	-1	2090	1	SG	0.60	0	0.07	0	0	0.07	0	0	0	0.4	0	0	$/SF	0
2280	LIGHT ROOF-	-1	2090	1	SC	0.60	0	0.07	0	0	0.07	0	0	0	0.4	0	0	$/SF	0
2280	LIGHT ROOF-	-1	2090	1	CO	0.60	0	0.07	0	0	0.07	0	0	0	0.4	0	0	$/SF	0
2280	LIGHT ROOF-	-1	2090	1	HS	0.60	0	0.07	0	0	0.07	0	0	0	0.1	0	0	$/SF	0
2280	LIGHT ROOF-	-1	2090	1	HM	0.60	0	0.07	0	0	0.07	0	0	0	0.2	0	0	$/SF	0
2280	LIGHT ROOF-	-1	2090	1	MS	0.60	0	0.07	0	0	0.07	0	0	0	0.4	0	0	$/SF	0

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* VENTILATION

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3020	NO DUCT LEAKS - DX AC	1050	3020	1	OF	0.80	0	0.07	0.07	0.07	0.07	0.07	0.07	0	0.10227	0	0	$/SF	0
3020	NO DUCT LEAKS - DX AC	1050	3020	1	RB	0.80	0	0.07	0.07	0.07	0.07	0.07	0.07	0	0.22857	0	0	$/SF	0
3020	NO DUCT LEAKS - DX AC	1050	3020	1	RO	0.80	0	0.07	0.07	0.07	0.07	0.07	0.07	0	0.11142	0	0	$/SF	0
3020	NO DUCT LEAKS - DX AC	1050	3020	1	SG	0.80	0	0.07	0.07	0.07	0.07	0.07	0.07	0	0.11808	0	0	$/SF	0
3020	NO DUCT LEAKS - DX AC	1050	3020	1	WH	0.80	0	0.07	0.07	0.07	0.07	0.07	0.07	0	0.03243	0	0	$/SF	0
3020	NO DUCT LEAKS - DX AC	1050	3020	1	SC	0.80	0	0.07	0.07	0.07	0.07	0.07	0.07	0	0.08281	0	0	$/SF	0
3020	NO DUCT LEAKS - DX AC	1050	3020	1	CO	0.80	0	0.07	0.07	0.07	0.07	0.07	0.07	0	0.08228	0	0	$/SF	0
3020	NO DUCT LEAKS - DX AC	1050	3020	1	HS	0.80	0	0.07	0.07	0.07	0.07	0.07	0.07	0	0.12663	0	0	$/SF	0
3020	NO DUCT LEAKS - DX AC	1050	3020	1	HM	0.80	0	0.07	0.07	0.07	0.07	0.07	0.07	0	0.08115	0	0	$/SF	0
3020	NO DUCT LEAKS - DX AC	1050	3020	1	MS	0.80	0	0.07	0.07	0.07	0.07	0.07	0.07	0	0.09988	0	0	$/SF	0
3080	VAV W/INLET V - CHILLER	1010	3010	1	OF	0.90	2	-0.143	1	0.439	0.068	1	0.5	0	1.09941	0.19431	0.03068	$/SF	0
3080	VAV W/INLET V - CHILLER	1010	3010	1	RB	0.90	2	0.008	1	0.392	0.067	1	0.333	0	2.45714	0.43429	0.06857	$/SF	0
3080	VAV W/INLET V - CHILLER	1010	3010	1	RO	0.90	2	0.017	1	0.415	0.087	1	0.5	0	1.1978	0.21171	0.03343	$/SF	0
3080	VAV W/INLET V - CHILLER	1010	3010	1	SG	0.90	2	0.006	1	0.498	0.143	1	0.5	0	1.26941	0.22436	0.03543	$/SF	0
3080	VAV W/INLET V - CHILLER	1010	3010	1	SC	0.90	2	-0.492	1	0.346	0.042	1	0.529	0	0.89025	0.15735	0.02484	$/SF	0
3080	VAV W/INLET V - CHILLER	1010	3010	1	CO	0.90	2	-0.078	1	0.478	0.128	1	0.424	0	0.88446	0.15632	0.02468	$/SF	0
3080	VAV W/INLET V - CHILLER	1010	3010	1	HS	0.90	2	-0.389	0.301	0.518	0.12	0.569	0.495	0	1.36128	0.2406	0.03799	$/SF	0
3080	VAV W/INLET V - CHILLER	1010	3010	1	HM	0.90	2	-0.269	1	0.551	0.043	1	0.5	0	0.87237	0.15419	0.02435	$/SF	0
3080	VAV W/INLET V - CHILLER	1010	3010	1	MS	0.90	2	-0.244	1	0.432	0.059	1	0.6	0	1.07368	0.18977	0.02996	$/SF	0

3090 VAV W/INLET V - DX AC	1050	3020	1	OF	0.60	3	-0.176	1	0.439	0.089	1	0.5	0	1.09941	0.19431	0.03068	$/SF	0
3090 VAV W/INLET V - DX AC	1050	3020	1	RB	0.60	3	0.032	1	0.392	0.056	1	0.333	0	2.45714	0.43429	0.06857	$/SF	0
3090 VAV W/INLET V - DX AC	1050	3020	1	RO	0.60	3	0.056	1	0.415	0.111	1	0.5	0	1.1978	0.21171	0.03343	$/SF	0
3090 VAV W/INLET V - DX AC	1050	3020	1	SG	0.60	3	0.053	1	0.498	0.118	1	0.5	0	1.26941	0.22436	0.03543	$/SF	0
3090 VAV W/INLET V - DX AC	1050	3020	1	WH	0.60	3	-0.36	1	0.437	0	1	0	0	0.34865	0.06162	0.00973	$/SF	0
3090 VAV W/INLET V - DX AC	1050	3020	1	SC	0.60	3	-0.678	1	0.346	0.06	1	0.529	0	0.89025	0.15735	0.02484	$/SF	0
3090 VAV W/INLET V - DX AC	1050	3020	1	CO	0.60	3	-0.024	1	0.478	0.158	1	0.424	0	0.88446	0.15632	0.02468	$/SF	0
3090 VAV W/INLET V - DX AC	1050	3020	1	HS	0.60	3	-0.653	1	0.518	0.099	1	0.495	0	1.36128	0.2406	0.03799	$/SF	0
3090 VAV W/INLET V - DX AC	1050	3020	1	HM	0.60	3	-0.385	1	0.551	0.063	1	0.5	0	0.87237	0.15419	0.02435	$/SF	0
3090 VAV W/INLET V - DX AC	1050	3020	1	MS	0.60	3	-0.339	1	0.432	0.05	1	0.6	0	1.07368	0.18977	0.02996	$/SF	0
3140 ASD CON W/VAV - CHILLER	1010	3010	1	OF	0.60	2	-0.096	1	0.933	0.096	1	0.85	0	0.7389	0.12784	0	$/SF	0
3140 ASD CON W/VAV - CHILLER	1010	3010	1	RB	0.60	2	0.036	1	0.829	0.067	1	0.333	0	1.65143	0.28571	0	$/SF	0
3140 ASD CON W/VAV - CHILLER	1010	3010	1	RO	0.60	2	0.052	1	0.918	0.109	1	0.917	0	0.80504	0.13928	0	$/SF	0
3140 ASD CON W/VAV - CHILLER	1010	3010	1	SG	0.60	2	0.046	1	0.922	0.143	1	0.75	0	0.85316	0.14761	0	$/SF	0
3140 ASD CON W/VAV - CHILLER	1010	3010	1	SC	0.60	2	-0.419	1	0.936	0.073	1	0.912	0	0.59833	0.10352	0	$/SF	0
3140 ASD CON W/VAV - CHILLER	1010	3010	1	CO	0.60	2	-0.036	1	0.93	0.141	1	0.788	0	0.59444	0.10284	0	$/SF	0
3140 ASD CON W/VAV - CHILLER	1010	3010	1	HS	0.60	2	-0.347	0.274	0.92	0.134	0.537	0.871	0	1.05736	0.15829	0	$/SF	0
3140 ASD CON W/VAV - CHILLER	1010	3010	1	HM	0.60	2	-0.218	1	0.945	0.057	1	0.864	0	0.58631	0.10144	0	$/SF	0
3140 ASD CON W/VAV - CHILLER	1010	3010	1	MS	0.60	2	-0.188	1	0.947	0.059	1	1	0	0.72162	0.12485	0	$/SF	0
3150 ASD CON W/VAV - DX AC	1050	3020	1	OF	0.60	3	-0.095	1	0.933	0.122	1	0.85	0	0.7389	0.12784	0	$/SF	0
3150 ASD CON W/VAV - DX AC	1050	3020	1	RB	0.60	3	0.079	1	0.829	0.056	1	0.333	0	1.65143	0.28571	0	$/SF	0
3150 ASD CON W/VAV - DX AC	1050	3020	1	RO	0.60	3	0.115	1	0.918	0.148	1	0.917	0	0.80504	0.13928	0	$/SF	0
3150 ASD CON W/VAV - DX AC	1050	3020	1	SG	0.60	3	0.118	1	0.922	0.176	1	0.75	0	0.85316	0.14761	0	$/SF	0
3150 ASD CON W/VAV - DX AC	1050	3020	1	WH	0.60	3	-0.248	1	0.939	0	1	1	0	0.23432	0.04054	0	$/SF	0
3150 ASD CON W/VAV - DX AC	1050	3020	1	SC	0.60	3	-0.545	1	0.936	0.103	1	0.912	0	0.59833	0.10352	0	$/SF	0
3150 ASD CON W/VAV - DX AC	1050	3020	1	CO	0.60	3	0.043	1	0.93	0.179	1	0.788	0	0.59444	0.10284	0	$/SF	0
3150 ASD CON W/VAV - DX AC	1050	3020	1	HS	0.60	3	-0.564	1	0.92	0.119	1	0.871	0	1.05736	0.15829	0	$/SF	0
3150 ASD CON W/VAV - DX AC	1050	3020	1	HM	0.60	3	-0.287	1	0.945	0.101	1	0.864	0	0.58631	0.10144	0	$/SF	0
3150 ASD CON W/VAV - DX AC	1050	3020	1	MS	0.60	3	-0.239	1	0.947	0.1	1	1	0	0.72162	0.12485	0	$/SF	0

• NOTE: TIMER/PROGRAMMABLE VENTILATION CONTROL DOES NOT APPLY TO HOSPITALS, GROCERY, OR LODGING

3200 TIME/PROG CON - CHILLER	1010	3010	1	OF	0.80	0	0.16	0	0.193	0	-0.025	0	0	0.055	0.117	0.05	$/SF	0
3200 TIME/PROG CON - CHILLER	1010	3010	1	RB	0.80	0	0.064	-0.006	0.076	0	0	0	0	0.088	0.187	0.08	$/SF	0
3200 TIME/PROG CON - CHILLER	1010	3010	1	RO	0.80	0	0.078	-0.015	0.071	0	0	0	0	0.062	0.134	0.05	$/SF	0
3200 TIME/PROG CON - CHILLER	1010	3010	1	SC	0.80	0	0.079	0.016	0.091	0	0.063	0	0	0.053	0.114	0.05	$/SF	0
3200 TIME/PROG CON - CHILLER	1010	3010	1	CO	0.80	0	0.103	-0.015	0.088	0	-0.001	0	0	0.062	0.134	0.05	$/SF	0
3200 TIME/PROG CON - CHILLER	1010	3010	1	MS	0.80	0	0.08	-0.014	0.077	0	-0.014	0	0	0.058	0.125	0.05	$/SF	0
3210 TIME/PROG CON - DX AC	1050	3020	1	OF	0.80	0	0.131	0	0.193	0.011	-0.025	0	0	0.055	0.117	0.05	$/SF	0
3210 TIME/PROG CON - DX AC	1050	3020	1	RB	0.80	0	0.052	-0.006	0.076	0	0	0	0	0.088	0.187	0.08	$/SF	0
3210 TIME/PROG CON - DX AC	1050	3020	1	RO	0.80	0	0.074	-0.015	0.071	0	0	0	0	0.062	0.134	0.05	$/SF	0
3210 TIME/PROG CON - DX AC	1050	3020	1	WH	0.80	0	0.031	-0.005	0.06	0	0	0	0	0.055	0.117	0.05	$/SF	0
3210 TIME/PROG CON - DX AC	1050	3020	1	SC	0.80	0	0.075	0.016	0.091	0	0.063	0	0	0.053	0.114	0.05	$/SF	0
3210 TIME/PROG CON - DX AC	1050	3020	1	CO	0.80	0	0.103	-0.015	0.088	0	-0.001	0	0	0.062	0.134	0.05	$/SF	0
3210 TIME/PROG CON - DX AC	1050	3020	1	MS	0.80	0	0.074	-0.014	0.077	0	-0.014	0	0	0.058	0.125	0.05	$/SF	0
3260 HE VN MOTORS - CHILLER	1010	3010	1	OF	0.80	0	0	0	0.059	0	0	0.059	0	0.041	0	0	$/SF	0
3260 HE VN MOTORS - CHILLER	1010	3010	1	RB	0.80	0	0	0	0.059	0	0	0.059	0	0.066	0	0	$/SF	0
3260 HE VN MOTORS - CHILLER	1010	3010	1	RO	0.80	0	0	0	0.059	0	0	0.059	0	0.047	0	0	$/SF	0
3260 HE VN MOTORS - CHILLER	1010	3010	1	SG	0.80	0	0	0	0.059	0	0	0.059	0	0.026	0	0	$/SF	0
3260 HE VN MOTORS - CHILLER	1010	3010	1	SC	0.80	0	0	0	0.059	0	0	0.059	0	0.04	0	0	$/SF	0
3260 HE VN MOTORS - CHILLER	1010	3010	1	CO	0.80	0	0	0	0.059	0	0	0.059	0	0.047	0	0	$/SF	0

COMMERCIAL ECM

3260	HE VN MOTORS - CHILLER	1010	3010	1	HS	0.80	0	0	0	0.059	0	0	0.059	0	0.09	0	0	$/SF	0
3260	HE VN MOTORS - CHILLER	1010	3010	1	HM	0.80	0	0	0	0.059	0	0	0.059	0	0.044	0	0	$/SF	0
3260	HE VN MOTORS - CHILLER	1010	3010	1	MS	0.80	0	0	0	0.059	0	0	0.059	0	0.044	0	0	$/SF	0
3270	HE VN MOTORS - DX AC	1050	3020	1	OF	0.80	0	0	0	0.059	0	0	0.059	0	0.041	0	0	$/SF	0
3270	HE VN MOTORS - DX AC	1050	3020	1	RB	0.80	0	0	0	0.059	0	0	0.059	0	0.066	0	0	$/SF	0
3270	HE VN MOTORS - DX AC	1050	3020	1	RO	0.80	0	0	0	0.059	0	0	0.059	0	0.047	0	0	$/SF	0
3270	HE VN MOTORS - DX AC	1050	3020	1	SG	0.80	0	0	0	0.059	0	0	0.059	0	0.026	0	0	$/SF	0
3270	HE VN MOTORS - DX AC	1050	3020	1	WH	0.80	0	0	0	0.059	0	0	0.059	0	0.041	0	0	$/SF	0
3270	HE VN MOTORS - DX AC	1050	3020	1	SC	0.80	0	0	0	0.059	0	0	0.059	0	0.04	0	0	$/SF	0
3270	HE VN MOTORS - DX AC	1050	3020	1	CO	0.80	0	0	0	0.059	0	0	0.059	0	0.047	0	0	$/SF	0
3270	HE VN MOTORS - DX AC	1050	3020	1	HS	0.80	0	0	0	0.059	0	0	0.059	0	0.09	0	0	$/SF	0
3270	HE VN MOTORS - DX AC	1050	3020	1	HM	0.80	0	0	0	0.059	0	0	0.059	0	0.044	0	0	$/SF	0
3270	HE VN MOTORS - DX AC	1050	3020	1	MS	0.80	0	0	0	0.059	0	0	0.059	0	0.044	0	0	$/SF	0
3320	MAKEUP AIR/EX - CHILLER	1010	3010	1	RB	0.10	0	0.8	0	0.02	0.8	0	0.02	0	3.6	0	0	$/SF	0
3320	MAKEUP AIR/EX - CHILLER	1010	3010	1	SC	0.03	0	0.8	0	0.02	0.8	0	0.02	0	3.733	0	0	$/SF	0
3320	MAKEUP AIR/EX - CHILLER	1010	3010	1	CO	0.03	0	0.8	0	0.02	0.8	0	0.02	0	3.733	0	0	$/SF	0
3320	MAKEUP AIR/EX - CHILLER	1010	3010	1	HS	0.03	0	0.8	0	0.02	0.8	0	0.02	0	3.5	0	0	$/SF	0
3330	MAKEUP AIR/EX - DX AC	1050	3020	1	RB	0.10	0	0.8	0	0.02	0.8	0	0.02	0	3.6	0	0	$/SF	0
3330	MAKEUP AIR/EX - DX AC	1050	3020	1	SC	0.03	0	0.8	0	0.02	0.8	0	0.02	0	3.733	0	0	$/SF	0
3330	MAKEUP AIR/EX - DX AC	1050	3020	1	CO	0.03	0	0.8	0	0.02	0.8	0	0.02	0	3.733	0	0	$/SF	0
3330	MAKEUP AIR/EX - DX AC	1050	3020	1	HS	0.03	0	0.8	0	0.02	0.8	0	0.02	0	3.5	0	0	$/SF	0

* LIGHTING

4010	4'-34W FL W/ HYBRID BAL #1	4090	0	1	OF	0.90	4	0.302	0.302	0	0.302	0.302	0	0	0.3904	0	0.01002	$/SF	0
4010	4'-34W FL W/ HYBRID BAL #1	4090	0	1	RB	0.90	4	0.302	0.302	0	0.302	0.302	0	0	0.28446	0	0.00979	$/SF	0
4010	4'-34W FL W/ HYBRID BAL #1	4090	0	1	RO	0.90	4	0.302	0.302	0	0.302	0.302	0	0	0.33666	0	0.00944	$/SF	0
4010	4'-34W FL W/ HYBRID BAL #1	4090	0	1	SG	0.90	4	0.302	0.302	0	0.302	0.302	0	0	0.4567	0	0.02541	$/SF	0
4010	4'-34W FL W/ HYBRID BAL #1	4090	0	1	WH	0.90	4	0.302	0.302	0	0.302	0.302	0	0	0.16881	0	0.00555	$/SF	0
4010	4'-34W FL W/ HYBRID BAL #1	4090	0	1	SC	0.90	4	0.302	0.302	0	0.302	0.302	0	0	0.33038	0	0.00802	$/SF	0
4010	4'-34W FL W/ HYBRID BAL #1	4090	0	1	CO	0.90	4	0.302	0.302	0	0.302	0.302	0	0	0.40952	0	0.01257	$/SF	0
4010	4'-34W FL W/ HYBRID BAL #1	4090	0	1	HS	0.90	4	0.302	0.302	0	0.302	0.302	0	0	0.34931	0	0.01609	$/SF	0
4010	4'-34W FL W/ HYBRID BAL #1	4090	0	1	HM	0.90	4	0.302	0.302	0	0.302	0.302	0	0	0.12388	0	0.00309	$/SF	0
4010	4'-34W FL W/ HYBRID BAL #1	4090	0	1	MS	0.90	4	0.302	0.302	0	0.302	0.302	0	0	0.24878	0	0.00719	$/SF	0
4020	4'-34W FL W/ HYBRID BAL #2	4100	0	1	OF	0.90	4	0.143	0.143	0	0.143	0.143	0	0	0.3904	0	0.01002	$/SF	0
4020	4'-34W FL W/ HYBRID BAL #2	4100	0	1	RB	0.90	4	0.143	0.143	0	0.143	0.143	0	0	0.28446	0	0.0073	$/SF	0
4020	4'-34W FL W/ HYBRID BAL #2	4100	0	1	RO	0.90	4	0.143	0.143	0	0.143	0.143	0	0	0.33666	0	0.00864	$/SF	0
4020	4'-34W FL W/ HYBRID BAL #2	4100	0	1	SG	0.90	4	0.143	0.143	0	0.143	0.143	0	0	0.4567	0	0.01173	$/SF	0
4020	4'-34W FL W/ HYBRID BAL #2	4100	0	1	WH	0.90	4	0.143	0.143	0	0.143	0.143	0	0	0.16881	0	0.00433	$/SF	0
4020	4'-34W FL W/ HYBRID BAL #2	4100	0	1	SC	0.90	4	0.143	0.143	0	0.143	0.143	0	0	0.33038	0	0.00848	$/SF	0
4020	4'-34W FL W/ HYBRID BAL #2	4100	0	1	CO	0.90	4	0.143	0.143	0	0.143	0.143	0	0	0.40952	0	0.01051	$/SF	0
4020	4'-34W FL W/ HYBRID BAL #2	4100	0	1	HS	0.90	4	0.143	0.143	0	0.143	0.143	0	0	0.34931	0	0.00897	$/SF	0
4020	4'-34W FL W/ HYBRID BAL #2	4100	0	1	HM	0.90	4	0.143	0.143	0	0.143	0.143	0	0	0.12388	0	0.00318	$/SF	0
4020	4'-34W FL W/ HYBRID BAL #2	4100	0	1	MS	0.90	4	0.143	0.143	0	0.143	0.143	0	0	0.24878	0	0.00639	$/SF	0
4030	4'-34W FL W/ ELECTRONIC BAL #1	4090	0	1	OF	0.90	4	0.302	0.302	0	0.302	0.302	0	0	0.59393	0	0.01002	$/SF	0
4030	4'-34W FL W/ ELECTRONIC BAL #1	4090	0	1	RB	0.90	4	0.302	0.302	0	0.302	0.302	0	0	0.43275	0	0.00979	$/SF	0
4030	4'-34W FL W/ ELECTRONIC BAL #1	4090	0	1	RO	0.90	4	0.302	0.302	0	0.302	0.302	0	0	0.51216	0	0.00944	$/SF	0
4030	4'-34W FL W/ ELECTRONIC BAL #1	4090	0	1	SG	0.90	4	0.302	0.302	0	0.302	0.302	0	0	0.69479	0	0.02541	$/SF	0
4030	4'-34W FL W/ ELECTRONIC BAL #1	4090	0	1	WH	0.90	4	0.302	0.302	0	0.302	0.302	0	0	0.25681	0	0.00555	$/SF	0
4030	4'-34W FL W/ ELECTRONIC BAL #1	4090	0	1	SC	0.90	4	0.302	0.302	0	0.302	0.302	0	0	0.50262	0	0.00802	$/SF	0
4030	4'-34W FL W/ ELECTRONIC BAL #1	4090	0	1	CO	0.90	4	0.302	0.302	0	0.302	0.302	0	0	0.62302	0	0.01257	$/SF	0

COMMERCIAL ECM

4030	4'-34W FL W/ ELECTRONIC BAL #1	4090	0	1	HS	0.90	4	0.302	0.302	0	0.302	0.302	0	0	0.53141	0	0.01609	$/SF	0
4030	4'-34W FL W/ ELECTRONIC BAL #1	4090	0	1	HM	0.90	4	0.302	0.302	0	0.302	0.302	0	0	0.18846	0	0.00309	$/SF	0
4030	4'-34W FL W/ ELECTRONIC BAL #1	4090	0	1	MS	0.90	4	0.302	0.302	0	0.302	0.302	0	0	0.37848	0	0.00719	$/SF	0
4040	4'-34W FL W/ ELECTRONIC BAL #2	4100	0	1	OF	0.90	4	0.143	0.143	0	0.143	0.143	0	0	0.59393	0	0.01002	$/SF	0
4040	4'-34W FL W/ ELECTRONIC BAL #2	4100	0	1	RB	0.90	4	0.143	0.143	0	0.143	0.143	0	0	0.43275	0	0.00979	$/SF	0
4040	4'-34W FL W/ ELECTRONIC BAL #2	4100	0	1	RO	0.90	4	0.143	0.143	0	0.143	0.143	0	0	0.51216	0	0.00944	$/SF	0
4040	4'-34W FL W/ ELECTRONIC BAL #2	4100	0	1	SG	0.90	4	0.143	0.143	0	0.143	0.143	0	0	0.69479	0	0.02541	$/SF	0
4040	4'-34W FL W/ ELECTRONIC BAL #2	4100	0	1	WH	0.90	4	0.143	0.143	0	0.143	0.143	0	0	0.25681	0	0.00555	$/SF	0
4040	4'-34W FL W/ ELECTRONIC BAL #2	4100	0	1	SC	0.90	4	0.143	0.143	0	0.143	0.143	0	0	0.50262	0	0.00802	$/SF	0
4040	4'-34W FL W/ ELECTRONIC BAL #2	4100	0	1	CO	0.90	4	0.143	0.143	0	0.143	0.143	0	0	0.62302	0	0.01257	$/SF	0
4040	4'-34W FL W/ ELECTRONIC BAL #2	4100	0	1	HS	0.90	4	0.143	0.143	0	0.143	0.143	0	0	0.53141	0	0.01609	$/SF	0
4040	4'-34W FL W/ ELECTRONIC BAL #2	4100	0	1	HM	0.90	4	0.143	0.143	0	0.143	0.143	0	0	0.18846	0	0.00309	$/SF	0
4040	4'-34W FL W/ ELECTRONIC BAL #2	4100	0	1	MS	0.90	4	0.143	0.143	0	0.143	0.143	0	0	0.37848	0	0.00719	$/SF	0
4050	8'-60W FL W/ELEC BALLAST #1	4130	0	1	OF	0.90	5	0.31	0.31	0	0.31	0.31	0	0	0.59988	0	0.01783	$/SF	0
4050	8'-60W FL W/ELEC BALLAST #1	4130	0	1	RB	0.90	5	0.31	0.31	0	0.31	0.31	0	0	0.43709	0	0.01742	$/SF	0
4050	8'-60W FL W/ELEC BALLAST #1	4130	0	1	RO	0.90	5	0.31	0.31	0	0.31	0.31	0	0	0.5173	0	0.01679	$/SF	0
4050	8'-60W FL W/ELEC BALLAST #1	4130	0	1	SG	0.90	5	0.31	0.31	0	0.31	0.31	0	0	0.70176	0	0.0452	$/SF	0
4050	8'-60W FL W/ELEC BALLAST #1	4130	0	1	WH	0.90	5	0.31	0.31	0	0.31	0.31	0	0	0.25939	0	0.00988	$/SF	0
4050	8'-60W FL W/ELEC BALLAST #1	4130	0	1	SC	0.90	5	0.31	0.31	0	0.31	0.31	0	0	0.50766	0	0.01427	$/SF	0
4050	8'-60W FL W/ELEC BALLAST #1	4130	0	1	CO	0.90	5	0.31	0.31	0	0.31	0.31	0	0	0.62927	0	0.02236	$/SF	0
4050	8'-60W FL W/ELEC BALLAST #1	4130	0	1	HS	0.90	5	0.31	0.31	0	0.31	0.31	0	0	0.53674	0	0.02863	$/SF	0
4050	8'-60W FL W/ELEC BALLAST #1	4130	0	1	HM	0.90	5	0.31	0.31	0	0.31	0.31	0	0	0.19035	0	0.00551	$/SF	0
4050	8'-60W FL W/ELEC BALLAST #1	4130	0	1	MS	0.90	5	0.31	0.31	0	0.31	0.31	0	0	0.38227	0	0.01279	$/SF	0
4060	8'-60W FL W/ELEC BALLAST #2	4140	0	1	OF	0.90	5	0.114	0.114	0	0.114	0.114	0	0	0.59988	0	0.01783	$/SF	0
4060	8'-60W FL W/ELEC BALLAST #2	4140	0	1	RB	0.90	5	0.114	0.114	0	0.114	0.114	0	0	0.43709	0	0.01742	$/SF	0
4060	8'-60W FL W/ELEC BALLAST #2	4140	0	1	RO	0.90	5	0.114	0.114	0	0.114	0.114	0	0	0.5173	0	0.01679	$/SF	0
4060	8'-60W FL W/ELEC BALLAST #2	4140	0	1	SG	0.90	5	0.114	0.114	0	0.114	0.114	0	0	0.70176	0	0.0452	$/SF	0
4060	8'-60W FL W/ELEC BALLAST #2	4140	0	1	WH	0.90	5	0.114	0.114	0	0.114	0.114	0	0	0.25939	0	0.00988	$/SF	0
4060	8'-60W FL W/ELEC BALLAST #2	4140	0	1	SC	0.90	5	0.114	0.114	0	0.114	0.114	0	0	0.50766	0	0.01427	$/SF	0
4060	8'-60W FL W/ELEC BALLAST #2	4140	0	1	CO	0.90	5	0.114	0.114	0	0.114	0.114	0	0	0.62927	0	0.02236	$/SF	0
4060	8'-60W FL W/ELEC BALLAST #2	4140	0	1	HS	0.90	5	0.114	0.114	0	0.114	0.114	0	0	0.53674	0	0.02863	$/SF	0
4060	8'-60W FL W/ELEC BALLAST #2	4140	0	1	HM	0.90	5	0.114	0.114	0	0.114	0.114	0	0	0.19035	0	0.00551	$/SF	0
4060	8'-60W FL W/ELEC BALLAST #2	4140	0	1	MS	0.90	5	0.114	0.114	0	0.114	0.114	0	0	0.38227	0	0.01279	$/SF	0
4070	T8 LAMPS/ELEC BALLAST #1	4090	0	1	OF	0.90	4	0.279	0.279	0	0.279	0.279	0	0	0.64388	0	0.01875	$/SF	0
4070	T8 LAMPS/ELEC BALLAST #1	4090	0	1	RB	0.90	4	0.279	0.279	0	0.279	0.279	0	0	0.46915	0	0.01832	$/SF	0
4070	T8 LAMPS/ELEC BALLAST #1	4090	0	1	RO	0.90	4	0.279	0.279	0	0.279	0.279	0	0	0.55524	0	0.01766	$/SF	0
4070	T8 LAMPS/ELEC BALLAST #1	4090	0	1	SG	0.90	4	0.279	0.279	0	0.279	0.279	0	0	0.75323	0	0.04754	$/SF	0
4070	T8 LAMPS/ELEC BALLAST #1	4090	0	1	WH	0.90	4	0.279	0.279	0	0.279	0.279	0	0	0.27841	0	0.01039	$/SF	0
4070	T8 LAMPS/ELEC BALLAST #1	4090	0	1	SC	0.90	4	0.279	0.279	0	0.279	0.279	0	0	0.54489	0	0.01501	$/SF	0
4070	T8 LAMPS/ELEC BALLAST #1	4090	0	1	CO	0.90	4	0.279	0.279	0	0.279	0.279	0	0	0.67542	0	0.02352	$/SF	0
4070	T8 LAMPS/ELEC BALLAST #1	4090	0	1	HS	0.90	4	0.279	0.279	0	0.279	0.279	0	0	0.57611	0	0.03011	$/SF	0
4070	T8 LAMPS/ELEC BALLAST #1	4090	0	1	HM	0.90	4	0.279	0.279	0	0.279	0.279	0	0	0.20432	0	0.00579	$/SF	0
4070	T8 LAMPS/ELEC BALLAST #1	4090	0	1	MS	0.90	4	0.279	0.279	0	0.279	0.279	0	0	0.41031	0	0.01345	$/SF	0
4080	T8 LAMPS/ELEC BALLAST #2	4100	0	1	OF	0.90	4	0.114	0.114	0	0.114	0.114	0	0	0.64388	0	0.01875	$/SF	0
4080	T8 LAMPS/ELEC BALLAST #2	4100	0	1	RB	0.90	4	0.114	0.114	0	0.114	0.114	0	0	0.46915	0	0.01832	$/SF	0
4080	T8 LAMPS/ELEC BALLAST #2	4100	0	1	RO	0.90	4	0.114	0.114	0	0.114	0.114	0	0	0.55524	0	0.01766	$/SF	0
4080	T8 LAMPS/ELEC BALLAST #2	4100	0	1	SG	0.90	4	0.114	0.114	0	0.114	0.114	0	0	0.75323	0	0.04754	$/SF	0
4080	T8 LAMPS/ELEC BALLAST #2	4100	0	1	WH	0.90	4	0.114	0.114	0	0.114	0.114	0	0	0.27841	0	0.01039	$/SF	0
4080	T8 LAMPS/ELEC BALLAST #2	4100	0	1	SC	0.90	4	0.114	0.114	0	0.114	0.114	0	0	0.54489	0	0.01501	$/SF	0
4080	T8 LAMPS/ELEC BALLAST #2	4100	0	1	CO	0.90	4	0.114	0.114	0	0.114	0.114	0	0	0.67542	0	0.02352	$/SF	0
4080	T8 LAMPS/ELEC BALLAST #2	4100	0	1	HS	0.90	4	0.114	0.114	0	0.114	0.114	0	0	0.57611	0	0.03011	$/SF	0

COMMERCIAL ECM

4080 T8 LAMPS/ELEC BALLAST #2	4100	0	1	HM	0.90	4	0.114	0.114	0	0.114	0.114	0	0	0.20432	0	0.00579	$/SF	0
4080 T8 LAMPS/ELEC BALLAST #2	4100	0	1	MS	0.90	4	0.114	0.114	0	0.114	0.114	0	0	0.41031	0	0.01345	$/SF	0
4090 REF/DE-L FL: 4'-40W, ELEC B	4090	0	1	OF	0.67	4	0.5	0.5	0	0.5	0.5	0	0	0.50049	0.0594	0.00404	$/SF	0
4090 REF/DE-L FL: 4'-40W, ELEC B	4090	0	1	RB	0.67	4	0.5	0.5	0	0.5	0.5	0	0	0.36467	0.04328	0.00395	$/SF	0
4090 REF/DE-L FL: 4'-40W, ELEC B	4090	0	1	RO	0.67	4	0.5	0.5	0	0.5	0.5	0	0	0.43159	0.05122	0.00381	$/SF	0
4090 REF/DE-L FL: 4'-40W, ELEC B	4090	0	1	SG	0.67	4	0.5	0.5	0	0.5	0.5	0	0	0.58549	0.06948	0.01024	$/SF	0
4090 REF/DE-L FL: 4'-40W, ELEC B	4090	0	1	WH	0.67	4	0.5	0.5	0	0.5	0.5	0	0	0.21641	0.02568	0.00224	$/SF	0
4090 REF/DE-L FL: 4'-40W, ELEC B	4090	0	1	SC	0.67	4	0.5	0.5	0	0.5	0.5	0	0	0.42354	0.05026	0.0324	$/SF	0
4090 REF/DE-L FL: 4'-40W, ELEC B	4090	0	1	CO	0.67	4	0.5	0.5	0	0.5	0.5	0	0	0.52501	0.0623	0.00507	$/SF	0
4090 REF/DE-L FL: 4'-40W, ELEC B	4090	0	1	HS	0.67	4	0.5	0.5	0	0.5	0.5	0	0	0.44781	0.05314	0.00649	$/SF	0
4090 REF/DE-L FL: 4'-40W, ELEC B	4090	0	1	HM	0.67	4	0.5	0.5	0	0.5	0.5	0	0	0.15881	0.01885	0.00125	$/SF	0
4090 REF/DE-L FL: 4'-40W, ELEC B	4090	0	1	MS	0.67	4	0.5	0.5	0	0.5	0.5	0	0	0.31893	0.03785	0.0029	$/SF	0
4100 REF/DE-L FL: 4'-34&40W, ELEC B	4100	0	1	OF	0.67	4	0.477	0.477	0	0.477	0.477	0	0	0.50493	0.0594	0.00482	$/SF	0
4100 REF/DE-L FL: 4'-34&40W, ELEC B	4100	0	1	RB	0.67	4	0.477	0.477	0	0.477	0.477	0	0	0.36791	0.04328	0.00471	$/SF	0
4100 REF/DE-L FL: 4'-34&40W, ELEC B	4100	0	1	RO	0.67	4	0.477	0.477	0	0.477	0.477	0	0	0.43542	0.05122	0.00454	$/SF	0
4100 REF/DE-L FL: 4'-34&40W, ELEC B	4100	0	1	SG	0.67	4	0.477	0.477	0	0.477	0.477	0	0	0.59068	0.06948	0.01221	$/SF	0
4100 REF/DE-L FL: 4'-34&40W, ELEC B	4100	0	1	WH	0.67	4	0.477	0.477	0	0.477	0.477	0	0	0.21833	0.02568	0.00267	$/SF	0
4100 REF/DE-L FL: 4'-34&40W, ELEC B	4100	0	1	SC	0.67	4	0.477	0.477	0	0.477	0.477	0	0	0.4273	0.05026	0.00386	$/SF	0
4100 REF/DE-L FL: 4'-34&40W, ELEC B	4100	0	1	CO	0.67	4	0.477	0.477	0	0.477	0.477	0	0	0.52966	0.0623	0.00604	$/SF	0
4100 REF/DE-L FL: 4'-34&40W, ELEC B	4100	0	1	HS	0.67	4	0.477	0.477	0	0.477	0.477	0	0	0.45178	0.05314	0.00773	$/SF	0
4100 REF/DE-L FL: 4'-34&40W, ELEC B	4100	0	1	HM	0.67	4	0.477	0.477	0	0.477	0.477	0	0	0.16022	0.01885	0.00149	$/SF	0
4100 REF/DE-L FL: 4'-34&40W, ELEC B	4100	0	1	MS	0.67	4	0.477	0.477	0	0.477	0.477	0	0	0.32176	0.03785	0.00346	$/SF	0
4110 REF/DE-L FL: 8'-75W, ELEC B	4130	0	1	OF	0.40	5	0.5	0.5	0	0.5	0.5	0	0	0.50835	0.07657	0.00753	$/SF	0
4110 REF/DE-L FL: 8'-75W, ELEC B	4130	0	1	RB	0.40	5	0.5	0.5	0	0.5	0.5	0	0	0.3704	0.05579	0.00735	$/SF	0
4110 REF/DE-L FL: 8'-75W, ELEC B	4130	0	1	RO	0.40	5	0.5	0.5	0	0.5	0.5	0	0	0.43837	0.06603	0.00709	$/SF	0
4110 REF/DE-L FL: 8'-75W, ELEC B	4130	0	1	SG	0.40	5	0.5	0.5	0	0.5	0.5	0	0	0.59468	0.08957	0.01908	$/SF	0
4110 REF/DE-L FL: 8'-75W, ELEC B	4130	0	1	WH	0.40	5	0.5	0.5	0	0.5	0.5	0	0	0.21981	0.03311	0.00417	$/SF	0
4110 REF/DE-L FL: 8'-75W, ELEC B	4130	0	1	SC	0.40	5	0.5	0.5	0	0.5	0.5	0	0	0.4302	0.0648	0.00602	$/SF	0
4110 REF/DE-L FL: 8'-75W, ELEC B	4130	0	1	CO	0.40	5	0.5	0.5	0	0.5	0.5	0	0	0.53325	0.08032	0.00944	$/SF	0
4110 REF/DE-L FL: 8'-75W, ELEC B	4130	0	1	HS	0.40	5	0.5	0.5	0	0.5	0.5	0	0	0.45484	0.06851	0.01208	$/SF	0
4110 REF/DE-L FL: 8'-75W, ELEC B	4130	0	1	HM	0.40	5	0.5	0.5	0	0.5	0.5	0	0	0.16131	0.0243	0.00232	$/SF	0
4110 REF/DE-L FL: 8'-75W, ELEC B	4130	0	1	MS	0.40	5	0.5	0.5	0	0.5	0.5	0	0	0.32394	0.04879	0.0054	$/SF	0
4120 REF/DE-L FL: 8'-60W, ELEC B	4140	0	1	OF	0.40	5	0.5	0.5	0	0.5	0.5	0	0	0.51551	0.07657	0.00892	$/SF	0
4120 REF/DE-L FL: 8'-60W, ELEC B	4140	0	1	RB	0.40	5	0.5	0.5	0	0.5	0.5	0	0	0.37561	0.05579	0.00871	$/SF	0
4120 REF/DE-L FL: 8'-60W, ELEC B	4140	0	1	RO	0.40	5	0.5	0.5	0	0.5	0.5	0	0	0.44454	0.06603	0.0084	$/SF	0
4120 REF/DE-L FL: 8'-60W, ELEC B	4140	0	1	SG	0.40	5	0.5	0.5	0	0.5	0.5	0	0	0.60305	0.08957	0.0226	$/SF	0
4120 REF/DE-L FL: 8'-60W, ELEC B	4140	0	1	WH	0.40	5	0.5	0.5	0	0.5	0.5	0	0	0.2229	0.03311	0.00494	$/SF	0
4120 REF/DE-L FL: 8'-60W, ELEC B	4140	0	1	SC	0.40	5	0.5	0.5	0	0.5	0.5	0	0	0.43625	0.0648	0.00714	$/SF	0
4120 REF/DE-L FL: 8'-60W, ELEC B	4140	0	1	CO	0.40	5	0.5	0.5	0	0.5	0.5	0	0	0.54076	0.08032	0.01118	$/SF	0
4120 REF/DE-L FL: 8'-60W, ELEC B	4140	0	1	HS	0.40	5	0.5	0.5	0	0.5	0.5	0	0	0.46124	0.06851	0.01431	$/SF	0
4120 REF/DE-L FL: 8'-60W, ELEC B	4140	0	1	HM	0.40	5	0.5	0.5	0	0.5	0.5	0	0	0.16358	0.0243	0.00275	$/SF	0
4120 REF/DE-L FL: 8'-60W, ELEC B	4140	0	1	MS	0.40	5	0.5	0.5	0	0.5	0.5	0	0	0.3285	0.04879	0.00639	$/SF	0
4130 REF/DE-L FL: 4'-34&40W, HYBRID B #1	4090	0	1	OF	0.67	4	0.637	0.637	0	0.637	0.637	0	0	0.56414	0.0594	0.00482	$/SF	0
4130 REF/DE-L FL: 4'-34&40W, HYBRID B #1	4090	0	1	RB	0.67	4	0.637	0.637	0	0.637	0.637	0	0	0.41105	0.04328	0.00471	$/SF	0
4130 REF/DE-L FL: 4'-34&40W, HYBRID B #1	4090	0	1	RO	0.67	4	0.637	0.637	0	0.637	0.637	0	0	0.48648	0.05122	0.00454	$/SF	0
4130 REF/DE-L FL: 4'-34&40W, HYBRID B #1	4090	0	1	SG	0.67	4	0.637	0.637	0	0.637	0.637	0	0	0.65994	0.06948	0.01221	$/SF	0
4130 REF/DE-L FL: 4'-34&40W, HYBRID B #1	4090	0	1	WH	0.67	4	0.637	0.637	0	0.637	0.637	0	0	0.24393	0.02568	0.00267	$/SF	0
4130 REF/DE-L FL: 4'-34&40W, HYBRID B #1	4090	0	1	SC	0.67	4	0.637	0.637	0	0.637	0.637	0	0	0.47741	0.05026	0.00386	$/SF	0
4130 REF/DE-L FL: 4'-34&40W, HYBRID B #1	4090	0	1	CO	0.67	4	0.637	0.637	0	0.637	0.637	0	0	0.59177	0.0623	0.00604	$/SF	0
4130 REF/DE-L FL: 4'-34&40W, HYBRID B #1	4090	0	1	HS	0.67	4	0.637	0.637	0	0.637	0.637	0	0	0.50475	0.05314	0.00773	$/SF	0
4130 REF/DE-L FL: 4'-34&40W, HYBRID B #1	4090	0	1	HM	0.67	4	0.637	0.637	0	0.637	0.637	0	0	0.17901	0.01885	0.00149	$/SF	0

COMMERCIAL ECM

4130	REF/DE-L FL: 4'-34&40W, HYBRID B #1	4090	0	1	MS	0.67	4	0.637	0.637	0	0.637	0.637	0	0	0.35949	0.03785	0.00346	$/SF	0
4140	REF/DE-L FL: 4'-34&40W, HYBRID B #2	4100	0	1	OF	0.67	4	0.637	0.637	0	0.637	0.637	0	0	0.56414	0.0594	0.00482	$/SF	0
4140	REF/DE-L FL: 4'-34&40W, HYBRID B #2	4100	0	1	RB	0.67	4	0.554	0.554	0	0.554	0.554	0	0	0.41105	0.04328	0.00471	$/SF	0
4140	REF/DE-L FL: 4'-34&40W, HYBRID B #2	4100	0	1	RO	0.67	4	0.554	0.554	0	0.554	0.554	0	0	0.48648	0.05122	0.00454	$/SF	0
4140	REF/DE-L FL: 4'-34&40W, HYBRID B #2	4100	0	1	SG	0.67	4	0.554	0.554	0	0.554	0.554	0	0	0.65994	0.06948	0.01221	$/SF	0
4140	REF/DE-L FL: 4'-34&40W, HYBRID B #2	4100	0	1	WH	0.67	4	0.554	0.554	0	0.554	0.554	0	0	0.24393	0.02568	0.00267	$/SF	0
4140	REF/DE-L FL: 4'-34&40W, HYBRID B #2	4100	0	1	SC	0.67	4	0.554	0.554	0	0.554	0.554	0	0	0.47741	0.05026	0.00386	$/SF	0
4140	REF/DE-L FL: 4'-34&40W, HYBRID B #2	4100	0	1	CO	0.67	4	0.554	0.554	0	0.554	0.554	0	0	0.59177	0.0623	0.00604	$/SF	0
4140	REF/DE-L FL: 4'-34&40W, HYBRID B #2	4100	0	1	HS	0.67	4	0.554	0.554	0	0.554	0.554	0	0	0.50475	0.05314	0.00773	$/SF	0
4140	REF/DE-L FL: 4'-34&40W, HYBRID B #2	4100	0	1	HM	0.67	4	0.554	0.554	0	0.554	0.554	0	0	0.17901	0.01885	0.00149	$/SF	0
4140	REF/DE-L FL: 4'-34&40W, HYBRID B #2	4100	0	1	MS	0.67	4	0.554	0.554	0	0.554	0.554	0	0	0.35949	0.03785	0.00346	$/SF	0
4150	REF/DE-L FL: 4'-34&40W, ELEC B #1	4090	0	1	OF	0.67	4	0.637	0.637	0	0.637	0.637	0	0	0.6659	0.0594	0.00482	$/SF	0
4150	REF/DE-L FL: 4'-34&40W, ELEC B #1	4090	0	1	RB	0.67	4	0.637	0.637	0	0.637	0.637	0	0	0.48519	0.04328	0.00471	$/SF	0
4150	REF/DE-L FL: 4'-34&40W, ELEC B #1	4090	0	1	RO	0.67	4	0.637	0.637	0	0.637	0.637	0	0	0.57423	0.05122	0.00454	$/SF	0
4150	REF/DE-L FL: 4'-34&40W, ELEC B #1	4090	0	1	SG	0.67	4	0.637	0.637	0	0.637	0.637	0	0	0.77899	0.06948	0.01221	$/SF	0
4150	REF/DE-L FL: 4'-34&40W, ELEC B #1	4090	0	1	WH	0.67	4	0.637	0.637	0	0.637	0.637	0	0	0.28793	0.02568	0.00267	$/SF	0
4150	REF/DE-L FL: 4'-34&40W, ELEC B #1	4090	0	1	SC	0.67	4	0.637	0.637	0	0.637	0.637	0	0	0.56352	0.05026	0.00386	$/SF	0
4150	REF/DE-L FL: 4'-34&40W, ELEC B #1	4090	0	1	CO	0.67	4	0.637	0.637	0	0.637	0.637	0	0	0.69852	0.0623	0.00604	$/SF	0
4150	REF/DE-L FL: 4'-34&40W, ELEC B #1	4090	0	1	HS	0.67	4	0.637	0.637	0	0.637	0.637	0	0	0.59581	0.05314	0.00773	$/SF	0
4150	REF/DE-L FL: 4'-34&40W, ELEC B #1	4090	0	1	HM	0.67	4	0.637	0.637	0	0.637	0.637	0	0	0.2113	0.01885	0.00149	$/SF	0
4150	REF/DE-L FL: 4'-34&40W, ELEC B #1	4090	0	1	MS	0.67	4	0.637	0.637	0	0.637	0.637	0	0	0.42434	0.03785	0.00346	$/SF	0
4160	REF/DE-L FL: 4'-34&40W, ELEC B #2	4100	0	1	OF	0.67	4	0.554	0.554	0	0.554	0.554	0	0	0.6659	0.0594	0.00482	$/SF	0
4160	REF/DE-L FL: 4'-34&40W, ELEC B #2	4100	0	1	RB	0.67	4	0.554	0.554	0	0.554	0.554	0	0	0.48519	0.04328	0.00471	$/SF	0
4160	REF/DE-L FL: 4'-34&40W, ELEC B #2	4100	0	1	RO	0.67	4	0.554	0.554	0	0.554	0.554	0	0	0.57423	0.05122	0.00454	$/SF	0
4160	REF/DE-L FL: 4'-34&40W, ELEC B #2	4100	0	1	SG	0.67	4	0.554	0.554	0	0.554	0.554	0	0	0.77899	0.06948	0.01221	$/SF	0
4160	REF/DE-L FL: 4'-34&40W, ELEC B #2	4100	0	1	WH	0.67	4	0.554	0.554	0	0.554	0.554	0	0	0.28793	0.02568	0.00267	$/SF	0
4160	REF/DE-L FL: 4'-34&40W, ELEC B #2	4100	0	1	SC	0.67	4	0.554	0.554	0	0.554	0.554	0	0	0.56352	0.05026	0.00386	$/SF	0
4160	REF/DE-L FL: 4'-34&40W, ELEC B #2	4100	0	1	CO	0.67	4	0.554	0.554	0	0.554	0.554	0	0	0.69852	0.0623	0.00604	$/SF	0
4160	REF/DE-L FL: 4'-34&40W, ELEC B #2	4100	0	1	HS	0.67	4	0.554	0.554	0	0.554	0.554	0	0	0.59581	0.05314	0.00773	$/SF	0
4160	REF/DE-L FL: 4'-34&40W, ELEC B #2	4100	0	1	HM	0.67	4	0.554	0.554	0	0.554	0.554	0	0	0.2113	0.01885	0.00149	$/SF	0
4160	REF/DE-L FL: 4'-34&40W, ELEC B #2	4100	0	1	MS	0.67	4	0.554	0.554	0	0.554	0.554	0	0	0.42434	0.03785	0.00346	$/SF	0
4170	REF/DE-L FL: 8'-60W, ELEC BAL #1	4130	0	1	OF	0.40	5	0.655	0.655	0	0.655	0.655	0	0	0.65772	0.07657	0.00892	$/SF	0
4170	REF/DE-L FL: 8'-60W, ELEC BAL #1	4130	0	1	RB	0.40	5	0.655	0.655	0	0.655	0.655	0	0	0.47924	0.05579	0.00871	$/SF	0
4170	REF/DE-L FL: 8'-60W, ELEC BAL #1	4130	0	1	RO	0.40	5	0.655	0.655	0	0.655	0.655	0	0	0.56718	0.06603	0.0084	$/SF	0
4170	REF/DE-L FL: 8'-60W, ELEC BAL #1	4130	0	1	SG	0.40	5	0.655	0.655	0	0.655	0.655	0	0	0.76942	0.08957	0.0226	$/SF	0
4170	REF/DE-L FL: 8'-60W, ELEC BAL #1	4130	0	1	WH	0.40	5	0.655	0.655	0	0.655	0.655	0	0	0.2844	0.03311	0.00494	$/SF	0
4170	REF/DE-L FL: 8'-60W, ELEC BAL #1	4130	0	1	SC	0.40	5	0.655	0.655	0	0.655	0.655	0	0	0.55661	0.0648	0.00714	$/SF	0
4170	REF/DE-L FL: 8'-60W, ELEC BAL #1	4130	0	1	CO	0.40	5	0.655	0.655	0	0.655	0.655	0	0	0.68994	0.08032	0.01118	$/SF	0
4170	REF/DE-L FL: 8'-60W, ELEC BAL #1	4130	0	1	HS	0.40	5	0.655	0.655	0	0.655	0.655	0	0	0.58849	0.06851	0.01431	$/SF	0
4170	REF/DE-L FL: 8'-60W, ELEC BAL #1	4130	0	1	HM	0.40	5	0.655	0.655	0	0.655	0.655	0	0	0.20871	0.0243	0.00275	$/SF	0
4170	REF/DE-L FL: 8'-60W, ELEC BAL #1	4130	0	1	MS	0.40	5	0.655	0.655	0	0.655	0.655	0	0	0.41913	0.04879	0.00639	$/SF	0
4180	REF/DE-L FL: 8'-60W, ELEC BAL #2	4140	0	1	OF	0.40	5	0.557	0.557	0	0.557	0.557	0	0	0.65772	0.07657	0.00892	$/SF	0
4180	REF/DE-L FL: 8'-60W, ELEC BAL #2	4140	0	1	RB	0.40	5	0.557	0.557	0	0.557	0.557	0	0	0.47924	0.05579	0.00871	$/SF	0
4180	REF/DE-L FL: 8'-60W, ELEC BAL #2	4140	0	1	RO	0.40	5	0.557	0.557	0	0.557	0.557	0	0	0.56718	0.06603	0.0084	$/SF	0
4180	REF/DE-L FL: 8'-60W, ELEC BAL #2	4140	0	1	SG	0.40	5	0.557	0.557	0	0.557	0.557	0	0	0.76942	0.08957	0.0226	$/SF	0
4180	REF/DE-L FL: 8'-60W, ELEC BAL #2	4140	0	1	WH	0.40	5	0.557	0.557	0	0.557	0.557	0	0	0.2844	0.03311	0.00494	$/SF	0
4180	REF/DE-L FL: 8'-60W, ELEC BAL #2	4140	0	1	SC	0.40	5	0.557	0.557	0	0.557	0.557	0	0	0.55661	0.0648	0.00714	$/SF	0
4180	REF/DE-L FL: 8'-60W, ELEC BAL #2	4140	0	1	CO	0.40	5	0.557	0.557	0	0.557	0.557	0	0	0.68994	0.08032	0.01118	$/SF	0
4180	REF/DE-L FL: 8'-60W, ELEC BAL #2	4140	0	1	HS	0.40	5	0.557	0.557	0	0.557	0.557	0	0	0.58849	0.06851	0.01431	$/SF	0
4180	REF/DE-L FL: 8'-60W, ELEC BAL #2	4140	0	1	HM	0.40	5	0.557	0.557	0	0.557	0.557	0	0	0.20871	0.0243	0.00275	$/SF	0
4180	REF/DE-L FL: 8'-60W, ELEC BAL #2	4140	0	1	MS	0.40	5	0.557	0.557	0	0.557	0.557	0	0	0.41913	0.04879	0.00639	$/SF	0

4190	4'-34W FL/DIMMING BALLASTS #1	4090	0	1	OF	0.31	4	0.561	0.561	0	0.65	0.65	0	0	1.23226	0	0.01002	$/SF	0
4190	4'-34W FL/DIMMING BALLASTS #1	4090	0	1	RB	0.81	4	0.512	0.512	0	0.65	0.65	0	0	0.89786	0	0.00979	$/SF	0
4190	4'-34W FL/DIMMING BALLASTS #1	4090	0	1	RO	0.38	4	0.525	0.525	0	0.65	0.65	0	0	1.06262	0	0.00944	$/SF	0
4190	4'-34W FL/DIMMING BALLASTS #1	4090	0	1	SG	0.68	4	0.469	0.469	0	0.65	0.65	0	0	1.44153	0	0.02541	$/SF	0
4190	4'-34W FL/DIMMING BALLASTS #1	4090	0	1	WH	0.00	4	0.529	0.529	0	0.65	0.65	0	0	0.53282	0	0.00555	$/SF	0
4190	4'-34W FL/DIMMING BALLASTS #1	4090	0	1	SC	0.65	4	0.557	0.557	0	0.65	0.65	0	0	1.04281	0	0.00802	$/SF	0
4190	4'-34W FL/DIMMING BALLASTS #1	4090	0	1	CO	0.21	4	0.561	0.561	0	0.65	0.65	0	0	1.29262	0	0.01257	$/SF	0
4190	4'-34W FL/DIMMING BALLASTS #1	4090	0	1	HS	0.23	4	0.498	0.498	0	0.65	0.65	0	0	1.10255	0	0.01609	$/SF	0
4190	4'-34W FL/DIMMING BALLASTS #1	4090	0	1	HM	0.00	4	0.43	0.43	0	0.65	0.65	0	0	0.39102	0	0.00309	$/SF	0
4190	4'-34W FL/DIMMING BALLASTS #1	4090	0	1	MS	0.55	4	0.54	0.54	0	0.65	0.65	0	0	0.78525	0	0.00719	$/SF	0
4200	4'-34W FL/DIMMING BALLASTS #2	4100	0	1	OF	0.31	4	0.561	0.561	0	0.65	0.65	0	0	1.23226	0	0.01002	$/SF	0
4200	4'-34W FL/DIMMING BALLASTS #2	4100	0	1	RB	0.81	4	0.512	0.512	0	0.65	0.65	0	0	0.89786	0	0.00979	$/SF	0
4200	4'-34W FL/DIMMING BALLASTS #2	4100	0	1	RO	0.38	4	0.525	0.525	0	0.65	0.65	0	0	1.06262	0	0.00944	$/SF	0
4200	4'-34W FL/DIMMING BALLASTS #2	4100	0	1	SG	0.68	4	0.469	0.469	0	0.65	0.65	0	0	1.44153	0	0.02541	$/SF	0
4200	4'-34W FL/DIMMING BALLASTS #2	4100	0	1	WH	0.00	4	0.529	0.529	0	0.65	0.65	0	0	0.53282	0	0.00555	$/SF	0
4200	4'-34W FL/DIMMING BALLASTS #2	4100	0	1	SC	0.65	4	0.557	0.557	0	0.65	0.65	0	0	1.04281	0	0.00802	$/SF	0
4200	4'-34W FL/DIMMING BALLASTS #2	4100	0	1	CO	0.21	4	0.561	0.561	0	0.65	0.65	0	0	1.29262	0	0.01257	$/SF	0
4200	4'-34W FL/DIMMING BALLASTS #2	4100	0	1	HS	0.23	4	0.498	0.498	0	0.65	0.65	0	0	1.10255	0	0.01609	$/SF	0
4200	4'-34W FL/DIMMING BALLASTS #2	4100	0	1	HM	0.00	4	0.43	0.43	0	0.65	0.65	0	0	0.39102	0	0.00309	$/SF	0
4200	4'-34W FL/DIMMING BALLASTS #2	4100	0	1	MS	0.55	4	0.54	0.54	0	0.65	0.65	0	0	0.78525	0	0.00719	$/SF	0
4210	HPS (70/100/150/250W)	4310	0	1	OF	0.90	6	0.333	0.333	0	0.333	0.333	0	0	0.96804	0	0.04661	$/SF	0
4210	HPS (70/100/150/250W)	4310	0	1	RB	0.90	6	0.286	0.286	0	0.286	0.286	0	0	1.4977	0	0.09145	$/SF	0
4210	HPS (70/100/150/250W)	4310	0	1	RO	0.90	6	0.311	0.311	0	0.311	0.311	0	0	1.02676	0	0.05331	$/SF	0
4210	HPS (70/100/150/250W)	4310	0	1	SG	0.90	6	0.328	0.328	0	0.328	0.328	0	0	1.0287	0	0.10952	$/SF	0
4210	HPS (70/100/150/250W)	4310	0	1	WH	0.90	6	0.336	0.336	0	0.336	0.336	0	0	0.30756	0	0.01912	$/SF	0
4210	HPS (70/100/150/250W)	4310	0	1	SC	0.90	6	0.345	0.345	0	0.345	0.345	0	0	0.63414	0	0.02893	$/SF	0
4210	HPS (70/100/150/250W)	4310	0	1	CO	0.90	6	0.297	0.297	0	0.297	0.297	0	0	0.75369	0	0.04213	$/SF	0
4210	HPS (70/100/150/250W)	4310	0	1	HS	0.90	6	0.358	0.358	0	0.358	0.358	0	0	0.97168	0	0.08217	$/SF	0
4210	HPS (70/100/150/250W)	4310	0	1	HM	0.90	6	0.316	0.316	0	0.316	0.316	0	0	0.51245	0	0.02307	$/SF	0
4210	HPS (70/100/150/250W)	4310	0	1	MS	0.90	6	0.337	0.337	0	0.337	0.337	0	0	0.44581	0	0.02424	$/SF	0
4220	HPS (70/100/150/250W), ELEC BAL	4310	0	1	OF	0.90	6	0.354	0.354	0	0.354	0.354	0	0	0.99187	0	0.04661	$/SF	0
4220	HPS (70/100/150/250W), ELEC BAL	4310	0	1	RB	0.90	6	0.286	0.286	0	0.286	0.286	0	0	1.53458	0	0.09145	$/SF	0
4220	HPS (70/100/150/250W), ELEC BAL	4310	0	1	RO	0.90	6	0.332	0.332	0	0.332	0.332	0	0	1.05204	0	0.05331	$/SF	0
4220	HPS (70/100/150/250W), ELEC BAL	4310	0	1	SG	0.90	6	0.351	0.351	0	0.351	0.351	0	0	1.05403	0	0.10952	$/SF	0
4220	HPS (70/100/150/250W), ELEC BAL	4310	0	1	WH	0.90	6	0.35	0.35	0	0.35	0.35	0	0	0.31514	0	0.01912	$/SF	0
4220	HPS (70/100/150/250W), ELEC BAL	4310	0	1	SC	0.90	6	0.351	0.351	0	0.351	0.351	0	0	0.64976	0	0.02893	$/SF	0
4220	HPS (70/100/150/250W), ELEC BAL	4310	0	1	CO	0.90	6	0.314	0.314	0	0.314	0.314	0	0	0.77224	0	0.04213	$/SF	0
4220	HPS (70/100/150/250W), ELEC BAL	4310	0	1	HS	0.90	6	0.358	0.358	0	0.358	0.358	0	0	0.99561	0	0.08217	$/SF	0
4220	HPS (70/100/150/250W), ELEC BAL	4310	0	1	HM	0.90	6	0.318	0.318	0	0.318	0.318	0	0	0.52506	0	0.02307	$/SF	0
4220	HPS (70/100/150/250W), ELEC BAL	4310	0	1	MS	0.90	6	0.352	0.352	0	0.352	0.352	0	0	0.45679	0	0.02424	$/SF	0
4230	HPS (35W)	4340	0	1	OF	0.90	7	0.72	0.72	0	0.72	0.72	0	0	5.33517	0.19863	0.30441	$/SF	0
4230	HPS (35W)	4340	0	1	RB	0.90	7	0.72	0.72	0	0.72	0.72	0	0	5.02647	0.18713	0.38461	$/SF	0
4230	HPS (35W)	4340	0	1	RO	0.90	7	0.72	0.72	0	0.72	0.72	0	0	4.90467	0.1826	0.30563	$/SF	0
4230	HPS (35W)	4340	0	1	SG	0.90	7	0.72	0.72	0	0.72	0.72	0	0	6.79474	0.25297	0.84005	$/SF	0
4230	HPS (35W)	4340	0	1	WH	0.90	7	0.72	0.72	0	0.72	0.72	0	0	2.23439	0.08319	0.16338	$/SF	0
4230	HPS (35W)	4340	0	1	SC	0.90	7	0.72	0.72	0	0.72	0.72	0	0	4.68444	0.1744	0.25283	$/SF	0
4230	HPS (35W)	4340	0	1	CO	0.90	7	0.72	0.72	0	0.72	0.72	0	0	3.50931	0.13065	0.23942	$/SF	0
4230	HPS (35W)	4340	0	1	HS	0.90	7	0.72	0.72	0	0.72	0.72	0	0	5.77659	0.21506	0.59139	$/SF	0
4230	HPS (35W)	4340	0	1	HM	0.90	7	0.72	0.72	0	0.72	0.72	0	0	1.99223	0.07417	0.11061	$/SF	0
4230	HPS (35W)	4340	0	1	MS	0.90	7	0.72	0.72	0	0.72	0.72	0	0	2.57678	0.09593	0.16549	$/SF	0

4240	METAL HALIDE (32W)	4340	0	1	OF	0.90	7	0.733	0.733	0	0.733	0.733	0	0	5.86322	0.19863	0.74724	$/SF	0
4240	METAL HALIDE (32W)	4340	0	1	RB	0.90	7	0.733	0.733	0	0.733	0.733	0	0	5.52396	0.18713	0.94411	$/SF	0
4240	METAL HALIDE (32W)	4340	0	1	RO	0.90	7	0.733	0.733	0	0.733	0.733	0	0	5.39011	0.1826	0.75023	$/SF	0
4240	METAL HALIDE (32W)	4340	0	1	SG	0.90	7	0.733	0.733	0	0.733	0.733	0	0	7.46725	0.25297	2.06208	$/SF	0
4240	METAL HALIDE (32W)	4340	0	1	WH	0.90	7	0.733	0.733	0	0.733	0.733	0	0	2.45554	0.08319	0.40106	$/SF	0
4240	METAL HALIDE (32W)	4340	0	1	SC	0.90	7	0.733	0.733	0	0.733	0.733	0	0	5.14808	0.1744	0.62062	$/SF	0
4240	METAL HALIDE (32W)	4340	0	1	CO	0.90	7	0.733	0.733	0	0.733	0.733	0	0	3.85664	0.13065	0.5877	$/SF	0
4240	METAL HALIDE (32W)	4340	0	1	HS	0.90	7	0.733	0.733	0	0.733	0.733	0	0	6.34834	0.21506	1.45169	$/SF	0
4240	METAL HALIDE (32W)	4340	0	1	HM	0.90	7	0.733	0.733	0	0.733	0.733	0	0	2.18942	0.07417	0.27153	$/SF	0
4240	METAL HALIDE (32W)	4340	0	1	MS	0.90	7	0.733	0.733	0	0.733	0.733	0	0	2.83182	0.09593	0.40623	$/SF	0
4250	COMPACT FL (15/18/27W)	4370	0	1	OF	0.90	7	0.707	0.707	0	0.707	0.707	0	0	1.32418	0.19863	0.34282	$/SF	0
4250	COMPACT FL (15/18/27W)	4370	0	1	RB	0.90	7	0.707	0.707	0	0.707	0.707	0	0	1.24756	0.18713	0.43314	$/SF	0
4250	COMPACT FL (15/18/27W)	4370	0	1	RO	0.90	7	0.707	0.707	0	0.707	0.707	0	0	1.21733	0.1826	0.34419	$/SF	0
4250	COMPACT FL (15/18/27W)	4370	0	1	SG	0.90	7	0.707	0.707	0	0.707	0.707	0	0	1.68645	0.25297	0.94603	$/SF	0
4250	COMPACT FL (15/18/27W)	4370	0	1	WH	0.90	7	0.707	0.707	0	0.707	0.707	0	0	0.55457	0.08319	0.184	$/SF	0
4250	COMPACT FL (15/18/27W)	4370	0	1	SC	0.90	7	0.707	0.707	0	0.707	0.707	0	0	1.16267	0.1744	0.28473	$/SF	0
4250	COMPACT FL (15/18/27W)	4370	0	1	CO	0.90	7	0.707	0.707	0	0.707	0.707	0	0	0.87101	0.13065	0.26963	$/SF	0
4250	COMPACT FL (15/18/27W)	4370	0	1	HS	0.90	7	0.707	0.707	0	0.707	0.707	0	0	1.43375	0.21506	0.666	$/SF	0
4250	COMPACT FL (15/18/27W)	4370	0	1	HM	0.90	7	0.707	0.707	0	0.707	0.707	0	0	0.49447	0.07417	0.12457	$/SF	0
4250	COMPACT FL (15/18/27W)	4370	0	1	MS	0.90	7	0.707	0.707	0	0.707	0.707	0	0	0.63955	0.09593	0.18637	$/SF	0
4260	TWO COMPACT FL LAMPS (18W)	4390	0	1	OF	0.90	7	0.76	0.76	0	0.76	0.76	0	0	3.97255	0.66209	0.68563	$/SF	0
4260	TWO COMPACT FL LAMPS (18W)	4390	0	1	RB	0.90	7	0.76	0.76	0	0.76	0.76	0	0	3.74269	0.62378	0.86627	$/SF	0
4260	TWO COMPACT FL LAMPS (18W)	4390	0	1	RO	0.90	7	0.76	0.76	0	0.76	0.76	0	0	3.652	0.60867	0.68838	$/SF	0
4260	TWO COMPACT FL LAMPS (18W)	4390	0	1	SG	0.90	7	0.76	0.76	0	0.76	0.76	0	0	5.05934	0.84322	1.89207	$/SF	0
4260	TWO COMPACT FL LAMPS (18W)	4390	0	1	WH	0.90	7	0.76	0.76	0	0.76	0.76	0	0	1.66372	0.27729	0.36799	$/SF	0
4260	TWO COMPACT FL LAMPS (18W)	4390	0	1	SC	0.90	7	0.76	0.76	0	0.76	0.76	0	0	3.48802	0.58134	0.56945	$/SF	0
4260	TWO COMPACT FL LAMPS (18W)	4390	0	1	CO	0.90	7	0.76	0.76	0	0.76	0.76	0	0	2.61302	0.4355	0.53925	$/SF	0
4260	TWO COMPACT FL LAMPS (18W)	4390	0	1	HS	0.90	7	0.76	0.76	0	0.76	0.76	0	0	4.30124	0.71687	1.332	$/SF	0
4260	TWO COMPACT FL LAMPS (18W)	4390	0	1	HM	0.90	7	0.76	0.76	0	0.76	0.76	0	0	1.48341	0.24724	0.24914	$/SF	0
4260	TWO COMPACT FL LAMPS (18W)	4390	0	1	MS	0.90	7	0.76	0.76	0	0.76	0.76	0	0	1.91866	0.31978	0.37274	$/SF	0
4270	ENERGY MANAGEMENT SYSTEM	4030	0	1	OF	0.60	0	0.149	0.149	0	0.03	0.03	0	0.05	0.9	0.18	0	$/SF	0
4270	ENERGY MANAGEMENT SYSTEM	4030	0	1	RB	0.60	0	0.111	0.111	0	0.022	0.022	0	0.05	0.9	0.18	0	$/SF	0
4270	ENERGY MANAGEMENT SYSTEM	4030	0	1	RO	0.60	0	0.136	0.136	0	0.027	0.027	0	0.05	0.9	0.18	0	$/SF	0
4270	ENERGY MANAGEMENT SYSTEM	4030	0	1	SG	0.60	0	0.069	0.069	0	0.014	0.014	0	0.05	0.9	0.18	0	$/SF	0
4270	ENERGY MANAGEMENT SYSTEM	4030	0	1	WH	0.60	0	0.116	0.116	0	0.023	0.023	0	0.05	0.9	0.18	0	$/SF	0
4270	ENERGY MANAGEMENT SYSTEM	4030	0	1	SC	0.60	0	0.157	0.157	0	0.031	0.031	0	0.05	0.9	0.18	0	$/SF	0
4270	ENERGY MANAGEMENT SYSTEM	4030	0	1	CO	0.60	0	0.124	0.124	0	0.025	0.025	0	0.05	0.9	0.18	0	$/SF	0
4270	ENERGY MANAGEMENT SYSTEM	4030	0	1	HS	0.60	0	0.083	0.083	0	0.017	0.017	0	0.05	0.9	0.18	0	$/SF	0
4270	ENERGY MANAGEMENT SYSTEM	4030	0	1	HM	0.60	0	0.153	0.153	0	0.031	0.031	0	0.05	0.9	0.18	0	$/SF	0
4270	ENERGY MANAGEMENT SYSTEM	4030	0	1	MS	0.60	0	0.132	0.132	0	0.026	0.026	0	0.05	0.9	0.18	0	$/SF	0
4280	OCCUPANCY SENSORS	4030	0	1	OF	0.30	0	0.25	0.25	0	0.05	0.05	0	0	0.115	0.02	0	$/SF	0
4280	OCCUPANCY SENSORS	4030	0	1	RB	0.30	0	0.25	0.25	0	0.05	0.05	0	0	0.115	0.02	0	$/SF	0
4280	OCCUPANCY SENSORS	4030	0	1	RO	0.30	0	0.25	0.25	0	0.05	0.05	0	0	0.115	0.02	0	$/SF	0
4280	OCCUPANCY SENSORS	4030	0	1	SG	0.30	0	0.25	0.25	0	0.05	0.05	0	0	0.115	0.02	0	$/SF	0
4280	OCCUPANCY SENSORS	4030	0	1	WH	0.30	0	0.25	0.25	0	0.05	0.05	0	0	0.115	0.02	0	$/SF	0
4280	OCCUPANCY SENSORS	4030	0	1	SC	0.30	0	0.25	0.25	0	0.05	0.05	0	0	0.115	0.02	0	$/SF	0
4280	OCCUPANCY SENSORS	4030	0	1	CO	0.30	0	0.25	0.25	0	0.05	0.05	0	0	0.115	0.02	0	$/SF	0
4280	OCCUPANCY SENSORS	4030	0	1	HS	0.30	0	0.25	0.25	0	0.05	0.05	0	0	0.115	0.02	0	$/SF	0
4280	OCCUPANCY SENSORS	4030	0	1	HM	0.30	0	0.25	0.25	0	0.05	0.05	0	0	0.115	0.02	0	$/SF	0
4280	OCCUPANCY SENSORS	4030	0	1	MS	0.30	0	0.25	0.25	0	0.05	0.05	0	0	0.115	0.02	0	$/SF	0

*DAYLIGHTING DESIGN FOR NEW CONSTRUCTION ONLY

4290	DAYLIGHTING DESIGN	4090	0	1	OF	0.00	8	0	0	0	0	0	0	0	0	0	0	$/SF	0
4290	DAYLIGHTING DESIGN	4090	0	1	RB	0.00	8	0	0	0	0	0	0	0	0	0	0	$/SF	0
4290	DAYLIGHTING DESIGN	4090	0	1	RO	0.00	8	0	0	0	0	0	0	0	0	0	0	$/SF	0
4290	DAYLIGHTING DESIGN	4090	0	1	SG	0.00	8	0	0	0	0	0	0	0	0	0	0	$/SF	0
4290	DAYLIGHTING DESIGN	4090	0	1	WH	0.00	8	0	0	0	0	0	0	0	0	0	0	$/SF	0
4290	DAYLIGHTING DESIGN	4090	0	1	SC	0.00	8	0	0	0	0	0	0	0	0	0	0	$/SF	0
4290	DAYLIGHTING DESIGN	4090	0	1	CO	0.00	8	0	0	0	0	0	0	0	0	0	0	$/SF	0
4290	DAYLIGHTING DESIGN	4090	0	1	HS	0.00	8	0	0	0	0	0	0	0	0	0	0	$/SF	0
4290	DAYLIGHTING DESIGN	4090	0	1	HM	0.00	8	0	0	0	0	0	0	0	0	0	0	$/SF	0
4290	DAYLIGHTING DESIGN	4090	0	1	MS	0.00	8	0	0	0	0	0	0	0	0	0	0	$/SF	0
4300	PHOTOELECTRIC CONTROL	4085	0	1	OF	0.80	8	0.253	0.253	0	0	0	0	0.05	0.001	0.00075	0	$/SF	0
4300	PHOTOELECTRIC CONTROL	4085	0	1	RB	0.80	8	0.147	0.147	0	0	0	0	0.05	0.012	0.00563	0	$/SF	0
4300	PHOTOELECTRIC CONTROL	4085	0	1	RO	0.80	8	0.254	0.254	0	0	0	0	0.05	0.0075	0.00563	0	$/SF	0
4300	PHOTOELECTRIC CONTROL	4085	0	1	SG	0.80	8	0.253	0.253	0	0	0	0	0.05	0.0075	0.00563	0	$/SF	0
4300	PHOTOELECTRIC CONTROL	4085	0	1	WH	0.80	8	0.253	0.253	0	0	0	0	0.05	0.0075	0.00075	0	$/SF	0
4300	PHOTOELECTRIC CONTROL	4085	0	1	SC	0.80	8	0.252	0.252	0	0	0	0	0.05	0.001	0.00075	0	$/SF	0
4300	PHOTOELECTRIC CONTROL	4085	0	1	CO	0.80	8	0.253	0.253	0	0	0	0	0.05	0.001	0.00075	0	$/SF	0
4300	PHOTOELECTRIC CONTROL	4085	0	1	HS	0.80	8	0.253	0.253	0	0	0	0	0.05	0.001	0.00075	0	$/SF	0
4300	PHOTOELECTRIC CONTROL	4085	0	1	HM	0.80	8	0.254	0.254	0	0	0	0	0.05	0.001	0.00075	0	$/SF	0
4300	PHOTOELECTRIC CONTROL	4085	0	1	MS	0.80	8	0.253	0.253	0	0	0	0	0.05	0.001	0.00075	0	$/SF	0
4310	LPS SECURITY LIGHTS	4040	0	1	OF	0.75	6	0.5	0.5	0	0.5	0.5	0	0	0.99187	0	0.04661	$/SF	0
4310	LPS SECURITY LIGHTS	4040	0	1	RB	0.75	6	0.5	0.5	0	0.5	0.5	0	0	0.99187	0	0.04661	$/SF	0
4310	LPS SECURITY LIGHTS	4040	0	1	RO	0.75	6	0.5	0.5	0	0.5	0.5	0	0	0.99187	0	0.04661	$/SF	0
4310	LPS SECURITY LIGHTS	4040	0	1	SG	0.75	6	0.5	0.5	0	0.5	0.5	0	0	0.99187	0	0.04661	$/SF	0
4310	LPS SECURITY LIGHTS	4040	0	1	WH	0.75	6	0.5	0.5	0	0.5	0.5	0	0	0.99187	0	0.04661	$/SF	0
4310	LPS SECURITY LIGHTS	4040	0	1	SC	0.75	6	0.5	0.5	0	0.5	0.5	0	0	0.99187	0	0.04661	$/SF	0
4310	LPS SECURITY LIGHTS	4040	0	1	CO	0.75	6	0.5	0.5	0	0.5	0.5	0	0	0.99187	0	0.04661	$/SF	0
4310	LPS SECURITY LIGHTS	4040	0	1	HS	0.75	6	0.5	0.5	0	0.5	0.5	0	0	0.99187	0	0.04661	$/SF	0
4310	LPS SECURITY LIGHTS	4040	0	1	HM	0.75	6	0.5	0.5	0	0.5	0.5	0	0	0.99187	0	0.04661	$/SF	0
4310	LPS SECURITY LIGHTS	4040	0	1	MS	0.75	6	0.5	0.5	0	0.5	0.5	0	0	0.99187	0	0.04661	$/SF	0

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* REFRIGERATION
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5010	MULTIPLEX: AIR COOL	5010	0	1	RB	0.10	9	0.221	0.221	0	0.172	0.172	0	0	0.40008	0	0.08175	$/SF	0
5010	MULTIPLEX: AIR COOL	5010	0	1	SG	0.85	9	0.221	0.221	0	0.172	0.172	0	0	0.6423	0	0.13125	$/SF	0
5010	MULTIPLEX: AIR COOL	5010	0	1	WH	0.75	9	0.221	0.221	0	0.172	0.172	0	0	0.07238	0	0.01479	$/SF	0
5010	MULTIPLEX: AIR COOL	5010	0	1	HS	0.10	9	0.221	0.221	0	0.172	0.172	0	0	0.03215	0	0.00657	$/SF	0
5020	MULTIPLEX: AIR COOL/ AMB SUBC	5010	0	1	RB	0.10	9	0.234	0.234	0	0.171	0.171	0	0	0.48906	0	0.08175	$/SF	0
5020	MULTIPLEX: AIR COOL/ AMB SUBC	5010	0	1	SG	0.85	9	0.234	0.234	0	0.171	0.171	0	0	0.78516	0	0.13125	$/SF	0
5020	MULTIPLEX: AIR COOL/ AMB SUBC	5010	0	1	WH	0.75	9	0.234	0.234	0	0.171	0.171	0	0	0.08848	0	0.01479	$/SF	0
5020	MULTIPLEX: AIR COOL/ AMB SUBC	5010	0	1	HS	0.10	9	0.234	0.234	0	0.171	0.171	0	0	0.0393	0	0.00657	$/SF	0
5030	MULTIPLEX: AIR COOL/ MECH SUBC	5010	0	1	RB	0.10	9	0.239	0.239	0	0.168	0.168	0	0	0.51809	0	0.08175	$/SF	0
5030	MULTIPLEX: AIR COOL/ MECH SUBC	5010	0	1	SG	0.85	9	0.239	0.239	0	0.168	0.168	0	0	0.83176	0	0.13125	$/SF	0
5030	MULTIPLEX: AIR COOL/ MECH SUBC	5010	0	1	WH	0.75	9	0.239	0.239	0	0.168	0.168	0	0	0.09373	0	0.01479	$/SF	0
5030	MULTIPLEX: AIR COOL/ MECH SUBC	5010	0	1	HS	0.10	9	0.239	0.239	0	0.168	0.168	0	0	0.04164	0	0.00657	$/SF	0
5040	MULTIPLEX AIR COOL/ AMB&MECH SU	5010	0	1	RB	0.10	9	0.252	0.252	0	0.167	0.167	0	0	0.51809	0	0.08175	$/SF	0
5040	MULTIPLEX AIR COOL/ AMB&MECH SU	5010	0	1	SG	0.85	9	0.252	0.252	0	0.167	0.167	0	0	0.83176	0	0.13125	$/SF	0
5040	MULTIPLEX AIR COOL/ AMB&MECH SU	5010	0	1	WH	0.75	9	0.252	0.252	0	0.167	0.167	0	0	0.09373	0	0.01479	$/SF	0
5040	MULTIPLEX AIR COOL/ AMB&MECH SU	5010	0	1	HS	0.10	9	0.252	0.252	0	0.167	0.167	0	0	0.04164	0	0.00657	$/SF	0

COMMERCIAL ECM

5050	MULTIPLEX: AIR COOL/EXT LIQ SUCT H	5010	0	1	RB	0.10	9	0.318	0.318	0	0.779	0.334	0	0	0.69575	0	0.08175	$/SF	0
5050	MULTIPLEX: AIR COOL/EXT LIQ SUCT H	5010	0	1	SG	0.85	9	0.318	0.318	0	0.779	0.334	0	0	1.11699	0	0.13125	$/SF	0
5050	MULTIPLEX: AIR COOL/EXT LIQ SUCT H	5010	0	1	WH	0.75	9	0.318	0.318	0	0.779	0.334	0	0	0.12587	0	0.01479	$/SF	0
5050	MULTIPLEX: AIR COOL/EXT LIQ SUCT H	5010	0	1	HS	0.10	9	0.318	0.318	0	0.779	0.334	0	0	0.05591	0	0.00657	$/SF	0
5060	OPEN-DRIVE REFRIG (ASD)	5010	0	1	RB	0.10	9	0.202	0.202	0	0.792	0.792	0	0	0.97082	0	0.08175	$/SF	0
5060	OPEN-DRIVE REFRIG (ASD)	5010	0	1	SG	0.85	9	0.202	0.202	0	0.792	0.792	0	0	1.55859	0	0.13125	$/SF	0
5060	OPEN-DRIVE REFRIG (ASD)	5010	0	1	WH	0.75	9	0.202	0.202	0	0.792	0.792	0	0	0.17563	0	0.01479	$/SF	0
5060	OPEN-DRIVE REFRIG (ASD)	5010	0	1	HS	0.10	9	0.202	0.202	0	0.792	0.792	0	0	0.07802	0	0.00657	$/SF	0
5070	ANTI-CONDENS HEAT CONTROL	5010	0	1	RB	0.50	0	0.05	0.05	0	0.05	0.05	0	0	0.0292	0.00779	0	$/SF	0
5070	ANTI-CONDENS HEAT CONTROL	5010	0	1	RO	0.10	0	0.05	0.05	0	0.05	0.05	0	0	0.00407	0.00109	0	$/SF	0
5070	ANTI-CONDENS HEAT CONTROL	5010	0	1	SG	0.85	0	0.05	0.05	0	0.05	0.05	0	0	0.04688	0.0125	0	$/SF	0
5070	ANTI-CONDENS HEAT CONTROL	5010	0	1	SC	0.10	0	0.05	0.05	0	0.05	0.05	0	0	0.00214	0.00057	0	$/SF	0
5070	ANTI-CONDENS HEAT CONTROL	5010	0	1	CO	0.10	0	0.05	0.05	0	0.05	0.05	0	0	0.00194	0.00052	0	$/SF	0
5070	ANTI-CONDENS HEAT CONTROL	5010	0	1	HS	0.10	0	0.05	0.05	0	0.05	0.05	0	0	0.00235	0.00063	0	$/SF	0
5070	ANTI-CONDENS HEAT CONTROL	5010	0	1	HM	0.10	0	0.05	0.05	0	0.05	0.05	0	0	0.00352	0.00094	0	$/SF	0
5080	HI R-VALUE GLASS DOORS	5010	0	1	RB	0.60	0	0.3	0.3	0	0.3	0.3	0	0	0.19465	0	0	$/SF	0
5080	HI R-VALUE GLASS DOORS	5010	0	1	RO	0.10	0	0.3	0.3	0	0.3	0.3	0	0	0.02714	0	0	$/SF	0
5080	HI R-VALUE GLASS DOORS	5010	0	1	SG	0.90	0	0.3	0.3	0	0.3	0.3	0	0	0.3125	0	0	$/SF	0
5080	HI R-VALUE GLASS DOORS	5010	0	1	SC	0.10	0	0.3	0.3	0	0.3	0.3	0	0	0.01425	0	0	$/SF	0
5080	HI R-VALUE GLASS DOORS	5010	0	1	CO	0.10	0	0.3	0.3	0	0.3	0.3	0	0	0.01296	0	0	$/SF	0
5080	HI R-VALUE GLASS DOORS	5010	0	1	HS	0.10	0	0.3	0.3	0	0.3	0.3	0	0	0.01564	0	0	$/SF	0
5080	HI R-VALUE GLASS DOORS	5010	0	1	HM	0.10	0	0.3	0.3	0	0.3	0.3	0	0	0.02347	0	0	$/SF	0
5090	ENERGY MANAGEMENT SYSTEM	5010	0	1	SG	0.90	0	0.1	0.1	0	0.05	0.05	0	0.05	0.78125	0	0	$/SF	0
5100	DUAL PATH SUPERMARKET AC	5010	0	1	SG	0.85	0	0.195	0.195	0	0	0	0	0	0.276	0	0	$/SF	0

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• WATER HEATING
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6010	HEAT PUMP WATER HEATER	6010	0	1	OF	0.80	10	0.5	0.5	0	0.5	0.5	0	0	0.05831	0	0	$/SF	0
6010	HEAT PUMP WATER HEATER	6010	0	1	RB	0.80	10	0.5	0.5	0	0.5	0.5	0	0	0.77747	0	0	$/SF	0
6010	HEAT PUMP WATER HEATER	6010	0	1	RO	0.80	10	0.5	0.5	0	0.5	0.5	0	0	0.05831	0	0	$/SF	0
6010	HEAT PUMP WATER HEATER	6010	0	1	SG	0.80	10	0.5	0.5	0	0.5	0.5	0	0	0.29155	0	0	$/SF	0
6010	HEAT PUMP WATER HEATER	6010	0	1	SC	0.80	10	0.5	0.5	0	0.5	0.5	0	0	0.09718	0	0	$/SF	0
6010	HEAT PUMP WATER HEATER	6010	0	1	CO	0.80	10	0.5	0.5	0	0.5	0.5	0	0	0.09718	0	0	$/SF	0
6010	HEAT PUMP WATER HEATER	6010	0	1	HS	0.80	10	0.5	0.5	0	0.5	0.5	0	0	0.29155	0	0	$/SF	0
6010	HEAT PUMP WATER HEATER	6010	0	1	HM	0.80	10	0.5	0.5	0	0.5	0.5	0	0	0.29155	0	0	$/SF	0
6010	HEAT PUMP WATER HEATER	6010	0	1	MS	0.80	10	0.5	0.5	0	0.5	0.5	0	0	0.05831	0	0	$/SF	0
6020	SOLAR WATER HEATER	6010	0	1	OF	0.40	10	0.646	0.646	0	0.646	0.646	0	0	0.14363	0	0	$/SF	0
6020	SOLAR WATER HEATER	6010	0	1	RB	0.40	10	0.646	0.646	0	0.646	0.646	0	0	1.97732	0	0	$/SF	0
6020	SOLAR WATER HEATER	6010	0	1	RO	0.40	10	0.646	0.646	0	0.646	0.646	0	0	0.13389	0	0	$/SF	0
6020	SOLAR WATER HEATER	6010	0	1	SG	0.40	10	0.646	0.646	0	0.646	0.646	0	0	0.51927	0	0	$/SF	0
6020	SOLAR WATER HEATER	6010	0	1	SC	0.40	10	0.646	0.646	0	0.646	0.646	0	0	0.32583	0	0	$/SF	0
6020	SOLAR WATER HEATER	6010	0	1	CO	0.40	10	0.646	0.646	0	0.646	0.646	0	0	0.47803	0	0	$/SF	0
6020	SOLAR WATER HEATER	6010	0	1	HS	0.40	10	0.646	0.646	0	0.646	0.646	0	0	0.72765	0	0	$/SF	0
6020	SOLAR WATER HEATER	6010	0	1	HM	0.40	10	0.646	0.646	0	0.646	0.646	0	0	1.3801	0	0	$/SF	0
6020	SOLAR WATER HEATER	6010	0	1	MS	0.40	10	0.646	0.646	0	0.646	0.646	0	0	0.12253	0	0	$/SF	0
6030	HEAT RECOVERY WATER HEATER	6010	0	1	OF	0.20	0	0.25	0.25	0	0.25	0.25	0	0	0.024	0	0	$/SF	0
6030	HEAT RECOVERY WATER HEATER	6010	0	1	RB	0.20	0	0.25	0.25	0	0.25	0.25	0	0	0.32	0	0	$/SF	0
6030	HEAT RECOVERY WATER HEATER	6010	0	1	RO	0.20	0	0.25	0.25	0	0.25	0.25	0	0	0.024	0	0	$/SF	0
6030	HEAT RECOVERY WATER HEATER	6010	0	1	SG	0.20	0	0.25	0.25	0	0.25	0.25	0	0	0.12	0	0	$/SF	0

6030	HEAT RECOVERY WATER HEATER	6010	0	1	SC	0.20	0	0.25	0.25	0	0.25	0.25	0	0	0.04	0	0	$/SF	0
6030	HEAT RECOVERY WATER HEATER	6010	0	1	CO	0.20	0	0.25	0.25	0	0.25	0.25	0	0	0.04	0	0	$/SF	0
6030	HEAT RECOVERY WATER HEATER	6010	0	1	HS	0.20	0	0.25	0.25	0	0.25	0.25	0	0	0.12	0	0	$/SF	0
6030	HEAT RECOVERY WATER HEATER	6010	0	1	HM	0.20	0	0.25	0.25	0	0.25	0.25	0	0	0.12	0	0	$/SF	0
6030	HEAT RECOVERY WATER HEATER	6010	0	1	MS	0.20	0	0.25	0.25	0	0.25	0.25	0	0	0.024	0	0	$/SF	0
6040	DHW HEATER INSULATION	6010	0	1	OF	0.50	0	0.05	0.05	0	0.05	0.05	0	0	0.00055	0	0	$/SF	0
6040	DHW HEATER INSULATION	6010	0	1	RB	0.50	0	0.05	0.05	0	0.05	0.05	0	0	0.00733	0	0	$/SF	0
6040	DHW HEATER INSULATION	6010	0	1	RO	0.50	0	0.05	0.05	0	0.05	0.05	0	0	0.00055	0	0	$/SF	0
6040	DHW HEATER INSULATION	6010	0	1	SG	0.50	0	0.05	0.05	0	0.05	0.05	0	0	0.00275	0	0	$/SF	0
6040	DHW HEATER INSULATION	6010	0	1	SC	0.50	0	0.05	0.05	0	0.05	0.05	0	0	0.00092	0	0	$/SF	0
6040	DHW HEATER INSULATION	6010	0	1	CO	0.50	0	0.05	0.05	0	0.05	0.05	0	0	0.00092	0	0	$/SF	0
6040	DHW HEATER INSULATION	6010	0	1	HS	0.50	0	0.05	0.05	0	0.05	0.05	0	0	0.00275	0	0	$/SF	0
6040	DHW HEATER INSULATION	6010	0	1	HM	0.50	0	0.05	0.05	0	0.05	0.05	0	0	0.00275	0	0	$/SF	0
6040	DHW HEATER INSULATION	6010	0	1	MS	0.50	0	0.05	0.05	0	0.05	0.05	0	0	0.00055	0	0	$/SF	0
6050	DHW HEAT TRAP	6010	0	1	OF	0.80	0	0.1	0.1	0	0.1	0.1	0	0	0.00015	0	0	$/SF	0
6050	DHW HEAT TRAP	6010	0	1	RB	0.80	0	0.1	0.1	0	0.1	0.1	0	0	0.002	0	0	$/SF	0
6050	DHW HEAT TRAP	6010	0	1	RO	0.80	0	0.1	0.1	0	0.1	0.1	0	0	0.00015	0	0	$/SF	0
6050	DHW HEAT TRAP	6010	0	1	SG	0.80	0	0.1	0.1	0	0.1	0.1	0	0	0.00075	0	0	$/SF	0
6050	DHW HEAT TRAP	6010	0	1	SC	0.80	0	0.1	0.1	0	0.1	0.1	0	0	0.00025	0	0	$/SF	0
6050	DHW HEAT TRAP	6010	0	1	CO	0.80	0	0.1	0.1	0	0.1	0.1	0	0	0.00025	0	0	$/SF	0
6050	DHW HEAT TRAP	6010	0	1	HS	0.80	0	0.1	0.1	0	0.1	0.1	0	0	0.00075	0	0	$/SF	0
6050	DHW HEAT TRAP	6010	0	1	HM	0.80	0	0.1	0.1	0	0.1	0.1	0	0	0.00075	0	0	$/SF	0
6050	DHW HEAT TRAP	6010	0	1	MS	0.80	0	0.1	0.1	0	0.1	0.1	0	0	0.00015	0	0	$/SF	0
6060	LO FLO/VARI FLO SHOWERHEAD	6010	0	1	OF	0.80	0	0.15	0.15	0	0.15	0.15	0	0	0.0002	0	0	$/SF	0
6060	LO FLO/VARI FLO SHOWERHEAD	6010	0	1	RB	0.20	0	0.15	0.15	0	0.15	0.15	0	0	0.00267	0	0	$/SF	0
6060	LO FLO/VARI FLO SHOWERHEAD	6010	0	1	RO	0.80	0	0.15	0.15	0	0.15	0.15	0	0	0.0002	0	0	$/SF	0
6060	LO FLO/VARI FLO SHOWERHEAD	6010	0	1	SG	0.50	0	0.15	0.15	0	0.15	0.15	0	0	0.001	0	0	$/SF	0
6060	LO FLO/VARI FLO SHOWERHEAD	6010	0	1	SC	0.80	0	0.15	0.15	0	0.15	0.15	0	0	0.00033	0	0	$/SF	0
6060	LO FLO/VARI FLO SHOWERHEAD	6010	0	1	CO	0.80	0	0.15	0.15	0	0.15	0.15	0	0	0.00033	0	0	$/SF	0
6060	LO FLO/VARI FLO SHOWERHEAD	6010	0	1	HS	0.50	0	0.15	0.15	0	0.15	0.15	0	0	0.001	0	0	$/SF	0
6060	LO FLO/VARI FLO SHOWERHEAD	6010	0	1	HM	0.80	0	0.15	0.15	0	0.15	0.15	0	0	0.001	0	0	$/SF	0
6060	LO FLO/VARI FLO SHOWERHEAD	6010	0	1	MS	0.50	0	0.15	0.15	0	0.15	0.15	0	0	0.0002	0	0	$/SF	0
6070	DHW CIRCULATION PUMP	6010	0	1	OF	0.10	0	0.6	0.6	0	0	0	0	0	0.002	0	0	$/SF	0
6070	DHW CIRCULATION PUMP	6010	0	1	RB	0.10	0	0.6	0.6	0	0	0	0	0	0.02667	0	0	$/SF	0
6070	DHW CIRCULATION PUMP	6010	0	1	RO	0.10	0	0.6	0.6	0	0	0	0	0	0.002	0	0	$/SF	0
6070	DHW CIRCULATION PUMP	6010	0	1	SG	0.10	0	0.6	0.6	0	0	0	0	0	0.01	0	0	$/SF	0
6070	DHW CIRCULATION PUMP	6010	0	1	SC	0.30	0	0.6	0.6	0	0	0	0	0	0.00333	0	0	$/SF	0
6070	DHW CIRCULATION PUMP	6010	0	1	CO	0.30	0	0.6	0.6	0	0	0	0	0	0.00333	0	0	$/SF	0
6070	DHW CIRCULATION PUMP	6010	0	1	HS	0.40	0	0.6	0.6	0	0	0	0	0	0.01	0	0	$/SF	0
6070	DHW CIRCULATION PUMP	6010	0	1	HM	0.10	0	0.6	0.6	0	0	0	0	0	0.01	0	0	$/SF	0
6070	DHW CIRCULATION PUMP	6010	0	1	MS	0.10	0	0.6	0.6	0	0	0	0	0	0.002	0	0	$/SF	0
6080	GAS WATER HEATER	6010	0	1	OF	0.50	10	0.99	0.99	0	0.99	0.99	0	0	0.035	0.0125	0	$/SF	3
6080	GAS WATER HEATER	6010	0	1	RB	0.50	10	0.99	0.99	0	0.99	0.99	0	0	0.035	0.0125	0	$/SF	3
6080	GAS WATER HEATER	6010	0	1	RO	0.50	10	0.99	0.99	0	0.99	0.99	0	0	0.035	0.0125	0	$/SF	3
6080	GAS WATER HEATER	6010	0	1	SG	0.50	10	0.99	0.99	0	0.99	0.99	0	0	0.035	0.0125	0	$/SF	3
6080	GAS WATER HEATER	6010	0	1	SC	0.50	10	0.99	0.99	0	0.99	0.99	0	0	0.035	0.0125	0	$/SF	3
6080	GAS WATER HEATER	6010	0	1	CO	0.50	10	0.99	0.99	0	0.99	0.99	0	0	0.035	0.0125	0	$/SF	3
6080	GAS WATER HEATER	6010	0	1	HS	0.50	10	0.99	0.99	0	0.99	0.99	0	0	0.035	0.0125	0	$/SF	3
6080	GAS WATER HEATER	6010	0	1	HM	0.50	10	0.99	0.99	0	0.99	0.99	0	0	0.035	0.0125	0	$/SF	3
6080	GAS WATER HEATER	6010	0	1	MS	0.50	10	0.99	0.99	0	0.99	0.99	0	0	0.035	0.0125	0	$/SF	3

COMMERCIAL ECM

* COOKING
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7010	CONVECTION OVENS	7010	0	1	RB	0.40	11	0.154	0.154	0	0.154	0.154	0	0	0.4	0	0 $/SF	0
7010	CONVECTION OVENS	7010	0	1	SG	0.60	11	0.154	0.154	0	0.154	0.154	0	0	0.07136	0	0 $/SF	0
7010	CONVECTION OVENS	7010	0	1	SC	0.60	11	0.154	0.154	0	0.154	0.154	0	0	0.0259	0	0 $/SF	0
7010	CONVECTION OVENS	7010	0	1	HS	0.60	11	0.154	0.154	0	0.154	0.154	0	0	0.0144	0	0 $/SF	0
7010	CONVECTION OVENS	7010	0	1	HM	0.60	11	0.154	0.154	0	0.154	0.154	0	0	0.02656	0	0 $/SF	0
7020	ENERGY EFFICIENT ELEC FRYERS	7050	0	1	RB	0.40	11	0.1	0.1	0	0.1	0.1	0	0	0.12	0	0 $/SF	0
7020	ENERGY EFFICIENT ELEC FRYERS	7050	0	1	SG	0.15	11	0.1	0.1	0	0.1	0.1	0	0	0.02141	0	0 $/SF	0
7020	ENERGY EFFICIENT ELEC FRYERS	7050	0	1	SC	0.15	11	0.1	0.1	0	0.1	0.1	0	0	0.00777	0	0 $/SF	0
7020	ENERGY EFFICIENT ELEC FRYERS	7050	0	1	HS	0.10	11	0.1	0.1	0	0.1	0.1	0	0	0.00432	0	0 $/SF	0
7020	ENERGY EFFICIENT ELEC FRYERS	7050	0	1	HM	0.10	11	0.1	0.1	0	0.1	0.1	0	0	0.00797	0	0 $/SF	0
7030	GAS COOKING	7010	0	1	RB	0.50	11	0.98	0.98	0	0.98	0.98	0	0	0.25	0	0 $/SF	1
7030	GAS COOKING	7010	0	1	SG	0.50	11	0.98	0.98	0	0.98	0.98	0	0	0.0446	0	0 $/SF	1
7030	GAS COOKING	7010	0	1	SC	0.50	11	0.98	0.98	0	0.98	0.98	0	0	0.01619	0	0 $/SF	1
7030	GAS COOKING	7010	0	1	HS	0.50	11	0.98	0.98	0	0.98	0.98	0	0	0.009	0	0 $/SF	1
7030	GAS COOKING	7010	0	1	HM	0.50	11	0.98	0.98	0	0.98	0.98	0	0	0.0166	0	0 $/SF	1

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