

Department of Technology, Management and Budget  
Facilities & Business Services Administration  
Design and Construction Division  
For  
Michigan Department of Corrections  
**Ionia Correctional Facility (ICF)**  
Technical Energy Assessment Audit  
File No. 472/12168.DCS, Index No. 02550

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## SECTION 1 – State / Agency Contacts

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State Contact for Energy Systems Group:

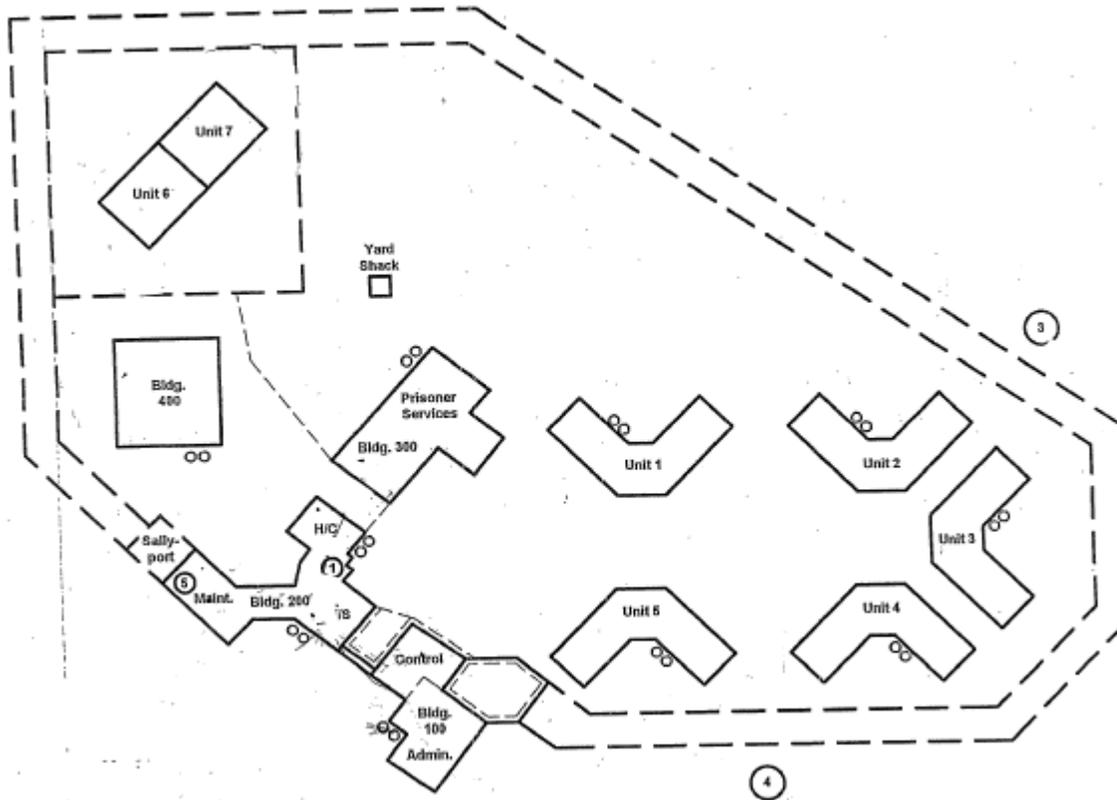
- The Department of Technology, Management and Budget, Facilities & Business Services Administration, Design and Construction Division

Agency Contact for Energy Systems Group:

- Michigan Department of Corrections

## Section 2: Existing Conditions

### SUMMARY TABLE OF RECOMMENDED ENERGY AND WATER SAVINGS MEASURES



### Ionia Correctional Facility (ICF)

The following description applies to all of the buildings with the exception of units 6 and 7 – the Dormitories.

1. The Facility was constructed in 1985 and was originally designated the Ionia Maximum Security Prison.
2. The buildings are basic brick and block construction with double pane insulated windows.
3. Many of the doors and frames are rusted and in poor condition.
4. All of the buildings are provided with steam from the central plant for heating and domestic hot water in addition to dishwasher, steam kettles, and the clothes dryers.
5. All of the mechanical heating equipment is hot water. The equipment is all original (installed in 1985) and overall in fair condition, the expected life for the equipment is 20 to 25 years.

6. The domestic water heaters for inmate housing (unit 1 to 5) is from a steam to hot water heat exchanger that are original and over 25 years. The life expectancy for any domestic water heater in a prison is 10 to 15 years due to heavy use. Several have been replaced.
7. The Administration air handler is VAV System with reheats on exterior zones only. The system was converted from inlet vanes to a VFD but the existing VFD is not working. The heating coil in the air handler does not work which leads to heating problems in some areas.
8. As in the other correctional facilities in Ionia; the city water is very poor and destroys boilers and piping.
9. The use of the rooms in the school building (Building 300) has changed. The shop area has been converted to a law office. The air handler that served the original shop is not operated. The original law office on the second floor is now a chapel and is air conditioned, even though it is not occupied every day. Several of the rooms on the second floor have stand-alone air conditioners that exhaust the condenser air above the ceiling.
10. The kitchen in Unit 200 is occupied almost continuously. The gas fired heating section of the main make up air handler used to provide air to the kitchen exhaust does not work and the unit is shut down in the winter.
11. MSI (Building 400) has a steam to hot water heat exchanger that provides hot water to several ceiling hung unit heaters. Two gas fired unit heaters that provided make up air to the building but have not been used since the building was converted to a sewing/fabric shop.

#### **Units 6 and 7 - Dormitories**

1. The Dormitory was built in 1988, and has a separate boiler and domestic hot water heaters. The domestic hot water heater coils have been replaced. The boiler was replaced in 2006. The tempering valve for the hot water has been removed and the water heater temperature is controlled from the water heaters.



The VFD's on the air handlers for the inmate cells is not operating. As part of this ECM; the VFD's will be replaced and controls reprogrammed for energy conservation.  
 See **ECM #5: Energy Management System Upgrade/Expansion and Variable Speed Drives**



The VFD for the administration VAV system is not working. As part of this ECM; this VFD will be replaced and controls reprogrammed for energy conservation.  
 See **ECM #5: Energy Management System Upgrade/Expansion and Variable Speed Drives**



Pneumatic thermostat in the school building is replaced in the summer and winter with a different thermostat to switch the air handler from heating to cooling. As part of this ECM; all of the controls will be converted to digital controls and the pneumatics will be removed.  
 See **ECM #5: Energy Management System Upgrade/Expansion and Variable Speed Drives**



The auditorium air handler is operated continuously (heating and air conditioning) to provide cooling for the video room to the left of the stage. As part of this ECM; separate htg/clg unit will be installed for this area and the air handler will be shut off.  
 See **ECM #5: Energy Management System Upgrade/Expansion and Variable Speed Drives**



The heating coil for the administration is not working and causes uncomfortable conditions in the administration building at times. As part of this ECM; the heating coil will be replaced.

In addition, all air handlers will be recommissioned including new motor, bearings, sheaves, belts, heating coils, pump, and general cleaning.

See **ECM #1: Heating System Upgrade and Mechanical Re-commissioning**



Pneumatic thermostat shows signs of leakage (white and green on valve body) and is in need of repair. As part of this ECM; all heating valves will be replaced and the entire control system will be converted to digital controls eliminating the pneumatics.

See **ECM #5: Energy Management System Upgrade/Expansion and Variable Speed Drives**



Make up for the kitchen hoods. The heating is not working in this unit and is only operated from spring to fall. As part of this ECM; this unit will be replaced.

See **ECM #1: Heating System Upgrade and Mechanical Re-commissioning**

Other items investigated but not included in ECM is due to long payback, no payback or in some cases, an increase in utility usage.



Very rusted door frames and air gaps. Weather stripping doors to prevent infiltration, dirt and bugs from entering will be difficult, if not impossible, the doors and frames should be replaced. The cost to implement this ECM will exceed 15 years.

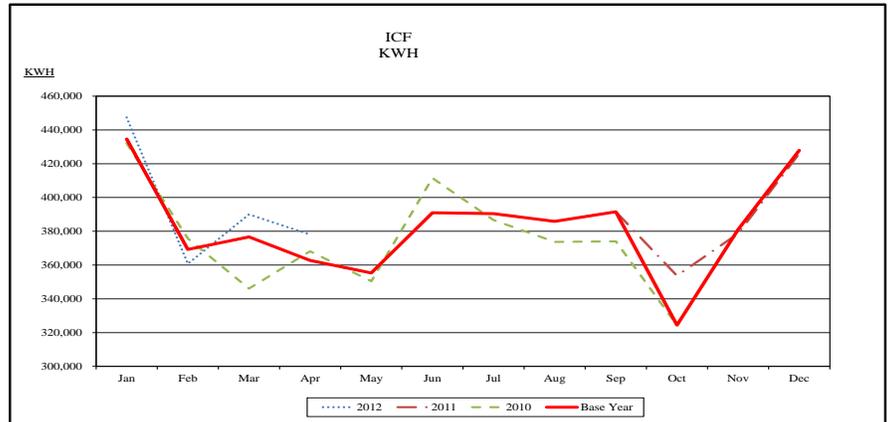
## Section 3: Base Year Energy Usage

### ELECTRICAL ENERGY CONSUMPTION

Power is provided by Consumers Energy with an average blended rate of \$.0901/KWH.

The electric meter at ICF only serves the ICF buildings and the following table is the actual base year electrical usage.

ICF Base Year Electric Summary	
Usage Date	Total Elec Usage (Kwh)
Base Year	
Oct-10	324,419
Nov-10	381,031
Dec-10	427,897
Jan-11	434,607
Feb-11	369,234
Mar-11	376,669
Apr-11	362,743
May-11	355,333
Jun-11	390,994
Jul-11	390,450
Aug-11	385,842
Sep-11	391,568
<b>Annual Totals =</b>	<b>4,590,787</b>



The above graph compares the base year the actual usage for 2010, 2011 and part of 2012.

### NATURAL GAS UTILITY SUMMARY

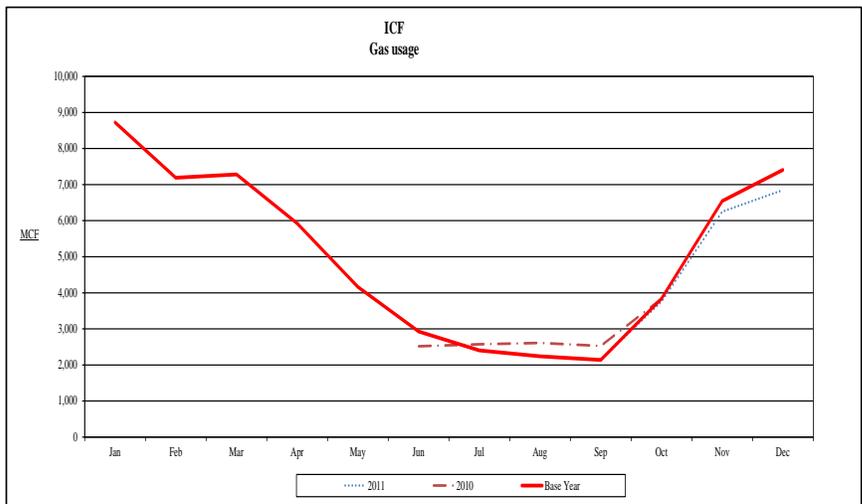
The DOC through the State of Michigan purchases gas through a broker or marketer and gas is delivered to the facility by Consumers Energy. The price of natural gas due to recent drilling methods, a mild winter and economic recession is at an all-time low. We feel this will not continue, and the cost of gas over the lifetime of the equipment will eventually rise. A report from BP(British Petroleum) projects the gas costs to rise to by 61% over the next 5 years

The estimated usage is based on inmate population and square feet. The following chart compares the estimated usage at ICF to the other facilities IBC is shown for reference only.

Facility	Square Feet	Estimated MCF	inmates	Usage/ inmate	MCF/sq.ft.	% of Total Usage	Comments
ICF	295,000	53,251	706	75.43	0.181	21.40%	
MTU	318,861	89,582	1,295	69.17	0.281	36.00%	
Dormitory	62,652	15,428	240	64.28	0.246	6.20%	
RMI	449,141	90,577	1,316	68.83	0.202	36.40%	Based on DOE-2 Energy Program
<b>Total</b>	<b>1,125,654</b>	<b>248,838</b>	<b>3,557</b>	<b>69.96</b>	<b>0.221</b>		
IBC	400,807	56,376	1,648	34.21	0.141		Shown for reference only

The following table is a combination of metered gas usage at ICF and the estimated usage of steam provided from the Central Boiler Plant shown in the above chart.

ICF Total Base Year Gas Usage Summary	
Usage Date	Total Estimated Gas Usage (MCF)
<b>Base Year</b>	
Oct-10	3,836
Nov-10	6,546
Dec-10	7,410
Jan-11	8,725
Feb-11	7,191
Mar-11	7,281
Apr-11	5,926
May-11	4,163
Jun-11	2,926
Jul-11	2,405
Aug-11	2,240
Sep-11	2,142
<b>Annual Totals =</b>	<b>60,790</b>



Note: Steam is provided from the central plant for heating, domestic hot water, kitchen steam kettles and clothes dryers. Steam is provided from the same central boiler plant to (3) other facilities.

#### WATER & SEWER UTILITY SUMMARY

ICF is provided water from the city of Ionia. Sewer is treated by the city of Ionia and is collected and metered at a single location for the (5) facilities (IBC, ICF, RMI, MTU, Dorm). Water and sewer costs have increased in the past (2) years from \$5.72/KGAL to \$8.06/KGAL.

The following is the actual metered usage for all water meters associated with ICF. We have assumed the sewer usage is the same as the water.

ICF Water and Sewer Summary	
Usage Date	Total Usage (Kgal)
<b>Base Year</b>	
Dec-10	20,481
Mar-11	22,800
Jun-11	19,658
Sep-11	21,834
<b>Annual Totals =</b>	<b>84,773</b>

## UTILITY COST BASELINE & SUMMARY

The following table summarizes the base line usage and cost that will be used for the analysis energy savings.

A base year of October 2010 to September 2011 was selected.

ICF Utility Base line Summary						
Base Year Utility	Base Year Utility Usage		Base Year Utility Cost (\$/yr)	Base Year Unit Cost		Unit Cost Basis
Electricity	4,590,787	KWH	\$ 413,404	\$0.0901	\$/KWH	Actual blended \$/KWH based on base year costs
Natural Gas	60,790	MCF	\$ 371,424	\$ 6.11	\$/Mcf	Estimated average natural gas cost over the term of the contract
Water and Sewer	84,773	KGAL	\$ 683,270	\$ 8.06	\$/KGAL	Actual cost of water and sewer that took effect in June 2012
Total			\$1,551,791			

Electric base year electric usage is the actual electric usage of ICF based on electric bills.

Natural gas base year usage actual natural gas bill and estimated usage based on inmate occupancy and square feet

Water base year usage is the actual usage of ICF based on water bills.

Sewer base year usage is based on the water usage. All correctional facilities in Ionia are metered from a single location.

Utility Rate	Regulatory Asset Recovery Surcharge	Surcharges (per month per meter)			Power Supply Cost Recovery (PSCR)		Securitization	Securitization Tax	Stranded Costs	Electric Restructuring Implementation Program (ERIP)	DOE SNF Proceeds Surcharge
		Renewable Energy Plan Surcharge	Energy Efficiency Electric Program Surcharge	Energy Efficiency Self-Directed Customer Surcharge	Maximum Allowable Factor	Actual Factor Billed					
GS Com		\$ 14.40	\$ 44.29	\$ 1.17	\$ (0.001940)	\$ (0.001940)	\$ 0.001387	\$ 0.000682	\$ 0.0009	\$ 0.001134	\$ (0.001376)
GS Ind	\$ 0.002916	\$ 14.40	\$ 44.29	\$ 1.17	\$ (0.001940)	\$ (0.001940)	\$ 0.001387	\$ 0.000682	\$ 0.0009	\$ 0.001134	\$ (0.001376)
GSD Com		\$ 14.40	\$ 44.29	\$ 1.17	\$ (0.001940)	\$ (0.001940)	\$ 0.001387	\$ 0.000682	\$ 0.0009	\$ 0.001134	\$ (0.001376)
GP Com		\$ 90.00	\$ 743.82	\$ 17.49	\$ (0.001940)	\$ (0.001940)	\$ 0.001387	\$ 0.000682	\$ 0.0009	\$ 0.001134	\$ (0.001376)
GPD Com		\$ 90.00	\$ 743.82	\$ 17.49	\$ (0.001940)	\$ (0.001940)	\$ 0.001387	\$ 0.000682	\$ 0.0009	\$ 0.001134	\$ (0.001376)
GML Com		\$ 2.70			\$ (0.001940)	\$ (0.001940)	\$ 0.001387	\$ 0.000682		\$ 0.001134	\$ (0.001376)
GUL Com	*Per light fixture	25/luminaire								\$ 0.001134	\$ (0.001376)
GU Com		\$ 1.40			\$ (0.001940)	\$ (0.001940)	\$ 0.001387	\$ 0.000682		\$ 0.001134	\$ (0.001376)
											*For Customers <15kW
Voltage Level	Capacity Charge (per kW)		Energy Charge (per kWh)				Delivery Charge			Municipal Pumping Service Provision	
	On-Peak Summer	On-Peak Winter	On Peak Summer	On-Peak Winter	Off-Peak Summer	Off-Peak Winter	System Access	Capacity Charge (per kW)	Distribution Charge (per kWh)	On-Peak Summer (per kW)	On-Peak Winter (per kW)
GPD CVL 3	\$ 13.00	\$ 11.00	\$ 0.089475	\$ 0.059475	\$ 0.059475	\$ 0.049475	\$100/month	\$ 1.000000	\$ 0.010443	\$ (1.480000)	\$ (1.170000)

\*System Access charges are applicable to Full Service and Retail Open Access (ROA) Custo



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Electric Base Year									
Facility Name	Address	Account No.	Meter No.(s)	Billing Period	On Peak Bill Demand Cap	On Peak kWh	Off Peak kWh	Max Demand	Total \$ Due
ICF	1700 W Bluewater Hwy	10000351286	83183182	10/19/10	645	81,880	242,539	833	\$ 29,376
				11/19/10	626	95,740	285,291	833	\$ 32,256
				12/22/10	657	97,870	330,027	816	\$ 34,402
				01/24/11	660	100,924	333,683	797	\$ 35,578
				02/21/11	678	90,380	278,854	780	\$ 31,665
				03/22/11	672	92,358	284,311	780	\$ 32,232
				04/20/11	653	90,042	272,701	780	\$ 31,181
				05/20/11	634	90,477	264,856	770	\$ 30,677
				06/21/11	718	94,523	296,471	747	\$ 38,834
				07/21/11	751	101,340	289,110	751	\$ 39,522
				08/19/11	733	102,777	283,065	751	\$ 38,929
				09/20/11	718	94,286	297,282	751	\$ 38,752

Water Base Line Year												
Facility	Address	Account No.	Dec-10	Actual cost	Mar-11	Actual cost	Jun-11	Actual cost	Sep-11	Actual cost	Total	Total
ICF	1576 Bluewater Hwy	3642000000	16,678	\$ 39,193.30	18,161	\$ 42,678.35	15,643	\$ 36,761.05	17,270	\$ 40,584.50	67,752	\$ 159,217.20
ICF	Bluewater Hwy	3640000000	3,803	\$ 8,937.05	4,639	\$ 10,901.65	4,015	\$ 9,435.25	4,564	\$ 10,725.40	17,021	\$ 39,999.35
ICF	Bluewater Hwy	3642000000		\$ -		\$ -		\$ -		\$ -	-	\$ -

Utility Rate	Energy Efficiency	Transportation	Gas Charges					
			Customer Charge	Gas Distribution	Energy Optimization	Interim Increase	Gas Cost Recovery	Total per unit
LT-1	0.1601	0.6276				\$0.021800		\$0.809500
GS-2 Com			\$18.20/month	\$1.939739	\$0.159935	\$0.063192	\$5.450163	\$7.613029
GS-3 Com			\$180.33/month	\$1.004302	\$0.111997264		\$6.3474008	\$7.463700

Gas Base Year							
Facility Name	Address	Utility Rate	Meter No.(s)	Billing Month 2011	Unit	Total \$ Due	\$/Unit
ICF	1700 W. Bluewater Hwy	LT-1	56035230	Jan-11	1,064.7	\$5,734.88	\$5.386381
				Feb-11	958.4	\$5,183.85	\$5.408859
				Mar-11	827.1	\$4,282.41	\$5.177621
				Apr-11	615.8	\$3,254.09	\$5.284329
				May-11	478.8	\$2,593.44	\$5.416541
				Jun-11	414.6	\$2,282.34	\$5.504920
				Jul-11	359.2	\$1,990.82	\$5.542372
				Aug-11	365.2	\$1,950.47	\$5.340827
				Sep-11	414.1	\$2,172.07	\$5.245279
				Oct-11	489.1	\$2,560.34	\$5.234799
				Nov-11	654.1	\$3,276.44	\$5.009081
				Dec-11	760.7	\$3,670.67	\$4.825385



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\*Estimated energy and cost savings are for year one only. All cost and savings are +/- 10%.

## Section 4: Energy Conservation Measures

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Based on conversations with DTMB and MDOC; the following are the recommended ECM's for the ICF Complex. ECM#1 is based on the 15 year option. ECM #2 through 5 can be part of the 12 or 15 year package.

**ECM #1: Heating System Upgrade and Mechanical Re-commissioning**

**ECM #2: Lighting Upgrade**

**ECM #3: Building Envelope**

**ECM #4: Water and Sewer Conservation**

**ECM #5: Energy Management System Upgrade/Expansion and Variable Speed Drives**

**Construction Cost Estimate**

**Client** MDOC and DTMB  
**Project** ICF  
**Location** Ionia, MI

**Estimate/Rev. Date:** 2-13-13  
**Contract #:** Y12299

		Qty.	Unit	Unit Cost	Total
<b>LIGHTING UPGRADE</b>					
(1)	Relamps	1	LS	\$23,553	\$23,553
(2)	Relamp/Reballast	1	LS	\$153,092	\$153,092
(3)	Reflector Retrofits	1	LS	\$105,987	\$105,987
(4)	New fixtures	1	LS	\$58,881	\$58,881
(5)	LED	1	LS	\$241,414	\$241,414
(6)	Occupancy sensors	1	LS	\$5,888	\$5,888
<b>TOTAL LIGHTING UPGRADE</b>				<b>\$588,814</b>	
<b>BUILDING ENVELOPE</b>					
(1)	Weatherstripping, roof/wall sealing	1	LS	\$21,625	\$21,625
(2)		1	LS		\$0
<b>TOTAL BUILDING ENVELOPE</b>				<b>\$21,625</b>	
<b>WATER/SEWER CONSERVATION</b>					
(1)	Inmate Flush Valves	1	LS	\$522,542	\$522,542
(2)	Inmate Lavatory Valves	1	LS	\$190,769	\$190,769
(3)	Inmate Shower Valves	1	LS	\$74,649	\$74,649
(4)	Staff Valves	1	LS	\$41,472	\$41,472
<b>TOTAL WATER/SEWER CONSERVATION</b>				<b>\$829,432</b>	
<b>ENERGY MANAGEMENT SYS. UPGRADE/EXPANSION/VARIABLE SPEED DRIVES</b>					
(1)	Control points	1	LS	\$724,993	\$724,993
(2)	Program., eng., software, computer, graphics, training (% of control points cost)	1	12.5%	\$90,624	\$90,624
(3)	VSD	17	LS	\$5,000	\$85,000
(4)	2 ton split system video room	1	LS	\$13,000	\$13,000
<b>TOTAL ENERGY MANAGEMENT SYS. UPGRADE/EXPANSION/VARIABLE SPEED DRIVES</b>				<b>\$913,617</b>	

*Estimates +/- 10% and are based on Means, past experience, vendor pricing and contractor review.*

The above is a summary of the estimated costs for the proposed ECM's. Further information can be found in the write up and description for each section. The above are for budgetary purposes only.

## ECM #1: Heating System Upgrade and Mechanical Re-commissioning

(ECM#1 is optional and based on 15 year financing)

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### RECOMMENDED ACTION

Replace existing steam heating with hi efficiency hot water boilers and domestic water heaters. This eliminates the need for the underground steam piping from the existing central plant eliminates condensate pumps, and steam traps. All of the existing steam coils and equipment will be replaced with a new hot water heating system including heating coils. Existing steam clothes dryers and steam kitchen equipment will be replaced.

Re-commission air handlers including: new heating coils, bearing, motors, clean unit, new outside air dampers, new return air dampers, new multizone dampers, and new heating valves.

Replace exhaust fans, heating pumps, kitchen make up air unit.

See **Central Boiler Plant ECM #1- Boiler Decentralization** for cost and savings.

### EXISTING CONDITIONS

See **Central Boiler Plant ECM #1- Boiler Decentralization**.

See **ICF Correctional Facility Mechanical Equipment Matrix** following.

### PROPOSED SYSTEMS

See **Central Boiler Plant ECM #1- Boiler Decentralization**

Summary: remove existing condensate tanks, steam traps, steam coils, steam heat exchangers, steam valves; provide new hi efficiency hot water boilers with piping, pumps, hot water coils; replace steam to hot water heat exchanger for domestic hot water with hi efficiency domestic water heaters

**Mechanical Re-commissioning** (See **Central Boiler Plant ECM #1- Boiler Decentralization** for further information) :

- Replace supply fan bearings
- Clean supply fan blower wheels
- Replace supply fan motors with new energy efficient
- Replace supply fan sheaves, flywheels, and belts. Replace shafts where required. Rebalance central air handler.
- Replace return air fan bearings
- Clean return air fan blower wheel
- Replace return air fan motors with new energy efficient
- Replace return air fan sheaves, flywheels, and belts. Replace shafts where required.
- Replace outside air, return air, exhaust air and relief dampers.
- Replace general exhaust fans (excluding kitchen, welding, wood, shop or other specialty exhaust fans)
- Replace multizone dampers
- Replace hot water coils
- Replace hot water control valves

- Replace face and bypass dampers
- Replace pipe mounted (including domestic hot water) and base mounted pumps. Rebalance at pump.
- Thorough cleaning of entire air handling unit (excluding ductwork)
- Clean fresh air intakes.
- Replace kitchen MUAU
- Replace water softener.
- Labeling of all equipment
- Existing hot water finned tube radiation, unit heaters, and cabinet unit heaters to be reused.
- Existing cabinet unit heaters and hot water unit heaters to be cleaned, coils and motors replaced, as required.
- Existing shut off valves, balancing valves, dampers to be reused where possible. Allocation for new shut off, balancing valves, thermometers, pressure reducing valves, strainers, triple duty valves, etc., as required.
- (1) Year parts and labor warranty for all new and existing equipment that will be reused.

## ICF Mechanical Equipment Matrix

### Key

AHU	Air Handling Unit
DDC	Direct Digital Controls (computer control)
DWH	Domestic Water Heater
EMS	Energy Management System
FTR	Finned Tube Radiation
HP	Horsepower of Motor(s)
HVAC	Heat, Ventilating, Air Conditioning Equipment (AHU, pumps, air conditioning, etc.)
HW	Hot Water Heating
HX	Heat Exchanger
MUAU	Make Up Air Unit (used to provide 100% outside air for ventilation or exhaust)
MZ	Multizone Air Handler (outdated type of heating and cooling system)
PNEU	Pneumatic control
VAV	Variable Air Volume Air Handler (type of heating and cooling system)
VFD	Variable Frequency Drive (controls speed of motor)

Facility	Equip.	Serves	Install Date	HP (Qty.) /Hp ea.	Design Airflow (CFM)/ % OA	Heating (HW - hot water S - steam)	Cooling (Tons)	Equipment Service Life*1 (years)	Comments	ECM included in scope of work
Admin.	VAV	Admin. offices	1986	40/10	30,000/10%	HW	60	Existing age 26 Expected Life 20 Remaining 0	- Heating coil does not work - VFD does not work.	Install VFD Mechanical Re-commissioning <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b> <b>ECM #5: Energy Management System Upgrade/Expansion and Variable Speed Drives</b>
Admin.	Base moutned Pumps	FTR and AHU	1986	(2)/ 2 (1)/ 1				Existing age 26 Expected Life 20 Remaining 0		Replace pumps <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
Admin.	Domestic Water Heater	Admin.	1986					Existing age 26 Expected Life 15 Remaining 0	Steam to hot water HX	Replace water heater <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
Admin.	Steam to HW HX	Admin. building heating	1986					Existing age 26 Expected Life 24 Remaining 0		To be removed <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
Health/Kitch./Dining (bldg. 200)	(8) zone MZ	Health	1986	(1)/7.5	8,500/20%	HW	40	Existing age 26 Expected Life 20 Remaining 0		Mechanical Re-commissioning <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>

Facility	Equip.	Serves	Install Date	HP (Qty.) /Hp ea.	Design Airflow (CFM)/ % OA	Heating (HW - hot water S - steam)	Cooling (Tons)	Equipment Service Life*1 (years)	Comments	ECM included in scope of work
Health/Kitch./Dining (bldg. 200)	AHU	Dining hall	1986	(1)/15	20,500/25%	HW		Existing age 26 Expected Life 20 Remaining 0		<b>Mechanical Re-commissioning</b>  <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
Health/Kitch./Dining (bldg. 200)	MUAU-1	Kitchen hood	1986	(1)/5	7,684/100%	gas		Existing age 26 Expected Life 15 Remaining 0	Gas heating does not work – unit shut off in winter months.	Replace MUAU  <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
Health/Kitch./Dining (bldg. 200)	(3) MUAU	Kitchen Hoods	1986	(1) ¾ (1) 2 (1) 5	13,648	No htg		Existing age 26 Expected Life 20 Remaining 0	Operation based on associated kitchen exhaust hood	Existing Kitchen exhaust fans to be reused
Health/Kitch./Dining (bldg. 200)	Base Moutned Pumps	AHU's, West zone FTR, east zone FTR	1986	(2) /7.5 (3)/ 2 (1) /3				Existing age 26 Expected Life 20 Remaining 0		<b>Mechanical Re-commissioning</b>  <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
Health/Kitch./Dining (bldg. 200)	Domestic Water Heater	Kitchen	2010					Existing age 26 Expected Life 15 Remaining 0	Gas DWH	Existing DWH to be reused
Health/Kitch./Dining (bldg. 200)	Water Softener	All buildings	1986					Existing age 26 Expected Life 20 Remaining 0	Some components have been replaced.	To be replaced  <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
Health/Kitch./Dining (bldg. 200)	Steam to HW HX	Heating for bldg. 200	1986					Existing age 26 Expected Life 24 Remaining 0		To be removed  <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
Health/Kitch./Dining (bldg. 200)	(4) Steam Kettles	Food Service	1986					Existing age 26 Expected Life Remaining 0	Steam used to heat kettle	Replace with gas fired steam kettles  <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
Health/Kitch./Dining (bldg. 200)	(1) steamer	Food Service	1986					Existing age 26 Expected Life Remaining 0	Steam used for steamer	Replace with gas fired steamer  <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>

Facility	Equip.	Serves	Install Date	HP (Qty.) /Hp ea.	Design Airflow (CFM)/ % OA	Heating (HW - hot water S - steam)	Cooling (Tons)	Equipment Service Life*1 (years)	Comments	ECM included in scope of work
Health/Kitch./Dining (bldg. 200)	(1) dishwash booster heater	Food Service	1986					Existing age 26 Expected Life 15 Remaining 0	Steam to hot water booster heat exchanger	Install new gas booster heater <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
School/Aud. (bldg. 300)	(2)AHU	Multi-purpose room	1985	(2)/.75	2,000	HW	--	Existing age 26 Expected Life 20 Remaining 0		Mechanical Re-commissioning <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
School/Aud. (bldg. 300)	VAV	Offices/chapel	1985	(1) /7.5 supply (1)/3 return	6000/10%	HW	18	Existing age 26 Expected Life 20 Remaining 0	- VAV boxes without reheats - Inlet vanes do not work and ductwork is over pressurized	Existing VAV boxes and reheats to be reused <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b> <b>ECM #5: Energy Management System Upgrade/Expansion and Variable Speed Drives</b>
School/Aud. (bldg. 300)	AHU	Aud.	1985	7.5/5	7500/10%	HW	20	Existing age 27 Expected Life 20 Remaining 0	AHU runs continuously for one room (video) adjacent to stage.	Addition of small AHU for video room <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
School/Aud. (bldg. 300)	AHU	Art room, class	1985	5	5400/40%	HW	--	Existing age 27 Expected Life 20 Remaining 0		Mechanical Re-commissioning <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
School/Aud. (bldg. 300)	AHU	Old shop	1985	--	100%	HW		Existing age 27 Expected Life 20 Remaining 0	AHU not operated (area converted to law office)	No work on unit
School/Aud. (bldg. 300)	(2) Pumps	AHU/FTR	1985	Base: (1)/7.5 Inline: (1)/3/4				Existing age 27 Base Expected Life 20 Inline Expected Life 10 Remaining 0		<b>Mechanical Re-commissioning</b> <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
School/Aud. (bldg. 300)	Domestic Water Heater	Bldg. 300	Late 1990's (est.)					Existing age 15 Expected Life 15 Remaining 0	Gas water heater	<b>Replace gas water heater</b> <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>

Facility	Equip.	Serves	Install Date	HP (Qty.) /Hp ea.	Design Airflow (CFM)/ % OA	Heating (HW - hot water S - steam)	Cooling (Tons)	Equipment Service Life*1 (years)	Comments	ECM included in scope of work
School/Aud. (bldg. 300)	Steam to HW HX	Heating for School/AHU (bldg. 300)	1985					Existing age 26 Expected Life Remaining 0		Replace with hi efficiency boiler  <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
Housing Units 1to 5	AHU w/reheat	Inmate Cells	1985	(1)/25 (1)/10	13,600/ 100%	Steam preheat HW reheat Glycol heat recovery coil	--	Existing age 27 Expected Life 20 Remaining 0	- Associated exhaust fan in penthouse with heat recovery coil - Before heat recovery connected numerous coils freeze and breaks. - VFD's do not work.	Install VFD Mechanical Re-commissioning Existing heat recovery coils to be reused  <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>  <b>ECM #5: Energy Management System Upgrade/Expansion and Variable Speed Drives</b>
Housing Units 1to 5	(7) zone Multi-zone	Offices, common spaces	1985	(5)/.75	3350/ 20%	HW	--	Existing age 27 Expected Life 20 Remaining 0		Mechanical Re-commissioning  <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
Housing Units 1to 5	Pumps		1985	Base: (2) 5 (1) 1 Inline: (4) ¾				Existing age 27 Base Expected Life 20 Inline Expected Life 10 Remaining 0		Mechanical Re-commissioning  <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
Housing Units 1to 5	Air Cond.	Control Room					Less than 1 ton	Existing age 15 Expected Life 20 Remaining 0	The existing heat pumps have been failing and are replaced with air conditioning with condensing units in penthouse.	No work. Air conditioning to be reused
Housing Units 1to 5	Domestic Water Heater	Unit	1985					Existing age 26 Expected Life 15 Remaining 0	Steam to hot water HX: Several heat exchangers have been replaced	To be replaced with gas fired hi efficiency domestic water heater  <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
Housing Units 1to 5	Clothes Dryer		1985					Existing age 26 Expected Life 20 Remaining 0	Steam used to dry clothes. Some coils have been replaced.	Replace steam dryer with gas fired dryer  <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>

Facility	Equip.	Serves	Install Date	HP (Qty.) /Hp ea.	Design Airflow (CFM)/ % OA	Heating (HW - hot water S - steam)	Cooling (Tons)	Equipment Service Life*1 (years)	Comments	ECM included in scope of work
Housing Units 1to 5	Steam to HW HX	Heating for Housing units	1985					Existing age 27 Expected Life 24 Remaining 0		To be removed. <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
Dorm 6 & 7	Boilers	Dorms	2006					Existing age 6 Expected Life 25 Remaining 19	Original boiler replaced in 2006.	Boiler to be reused
Dorm 6 & 7	Inline Pumps	Dorms	1988	(4)/ ¾		HW		Existing age 24 Expected Life 10 Remaining 0	Some pumps have been replaced but piping is in poor condition.	Mechanical Re-commissioning <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
Dorm 6 & 7	Water Softener	Dorms	1988					Existing age 24 Expected Life 15 Remaining 0		Existing to Remain
Dorm 6 & 7	Unit Vents	Dorms common areas	2010 (est.)	(2)/ ¼	1200/33 %	HW		Existing age 2 Expected Life 20 Remaining 18	Newer but outside air dampers covered	Unit vents to be reused Uncover dampers under <b>ECM #5: Energy Management System Upgrade/Expansion and Variable Speed Drives</b>
Dorm 6 & 7	Domestic water heater	Dorms	1988			Gas		Existing age 24 Expected Life 15 Remaining 0	DWH in poor condition with new heat exchanger. Tempering valve removed	Mechanical Re-commissioning <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
MSI	Base Pumps	Unit htrs.	1986	--				Existing age 26 Expected Life 20 Remaining 0	(1) pump for hot water unit heaters	To be removed. Building converted to natural gas heating <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
MSI	(2)Make up AHU	Plant	1986		100%	Gas		Existing age 26 Expected Life 15 Remaining 0	100% outside air units provided make up - no longer needed. Used for ventilation.	No work. <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
MSI	Unit Heaters	Plant	1986			HW		Existing age 26 Expected Life 15 Remaining 0		Replace steam HW unit heaters with gas fired UH <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>
MSI	Domestic Water Heater	Plant	1986			Electric		Existing age 26 Expected Life 20 Remaining 0		No work. To be reused.

Facility	Equip.	Serves	Install Date	HP (Qty.) /Hp ea.	Design Airflow (CFM)/ % OA	Heating (HW - hot water S - steam)	Cooling (Tons)	Equipment Service Life*1 (years)	Comments	ECM included in scope of work
MSI	Steam to HW HX	Plant	1986					Existing age 26 Expected Life 24 Remaining 0		To be removed. Building converted to all gas heating  <b>ECM #1: Heating System Upgrade and Mechanical Re-commissioning</b>

Note: \*1 Service life taken from ASHRAE where listed. Expected life has been adjusted for some equipment (ex: domestic water heaters) based on correctional usage. Where equipment is not listed expected life is based on similar equipment or experience.

Table 4 Comparison of Service Life Estimates

Equipment Item	Median Service Life, Years		Equipment Item	Median Service Life, Years		Equipment Item	Median Service Life, Years	
	Abramson et al. (2005)	Akalin (1978)		Abramson et al. (2005)	Akalin (1978)		Abramson et al. (2005)	Akalin (1978)
<b>Air Conditioners</b>			<b>Air Terminals</b>			<b>Condensers</b>		
Window unit	N/A*	10	Diffusers, grilles, and registers	N/A*	27	Air-cooled	N/A	20
Residential single or split package	N/A*	15	Induction and fan-coil units	N/A*	20	Evaporative	N/A*	20
Commercial through-the-wall	N/A*	15	VAV and double-duct boxes	N/A*	20	<b>Insulation</b>		
Water-cooled package	>24	15	<b>Air washers</b>	N/A*	17	Molded	N/A*	20
<b>Heat pumps</b>			<b>Ductwork</b>			Blanket		
Residential air-to-air	N/A*	15 <sup>b</sup>	<b>Dampers</b>	N/A*	20	<b>Pumps</b>		
Commercial air-to-air	N/A*	15	<b>Fans</b>	N/A*	20	Base-mounted	N/A*	20
Commercial water-to-air	>24	19	Centrifugal	N/A*	25	Pipe-mounted	N/A*	10
<b>Roof-top air conditioners</b>			Axial	N/A*	20	Sump and well	N/A*	10
Single-zone	N/A*	15	Propeller	N/A*	15	Condensate	N/A*	15
Multizone	N/A*	15	Ventilating roof-mounted	N/A*	20	<b>Reciprocating engines</b>		
<b>Boilers, Hot-Water (Steam)</b>			<b>Coils</b>			<b>Steam turbines</b>		
Steel water-tube	>22	24 (30)	DX, water, or steam	N/A*	20	<b>Electric motors</b>		
Steel fire-tube		25 (25)	Electric	N/A*	15	<b>Motor starters</b>		
Cast iron	N/A*	35 (30)	<b>Heat Exchangers</b>			<b>Electric transformers</b>		
Electric	N/A*	15	Shell-and-tube	N/A*	24	<b>Controls</b>		
<b>Burners</b>	N/A*	21	<b>Reciprocating compressors</b>			Pneumatic	N/A*	20
<b>Furnaces</b>			<b>Packaged Chillers</b>			Electric	N/A*	16
Gas- or oil-fired	N/A*	18	Reciprocating	N/A*	20	Electronic	N/A*	15
<b>Unit heaters</b>			Centrifugal	>25	23	<b>Valve actuators</b>		
Gas or electric	N/A*	13	Absorption	N/A*	23	Hydraulic	N/A*	15
Hot-water or steam	N/A*	20	<b>Cooling Towers</b>			Pneumatic	N/A*	20
<b>Radiant heaters</b>			Galvanized metal	>22	20	Self-contained		
Electric	N/A*	10	Wood	N/A*	20			
Hot-water or steam	N/A*	25	Ceramic	N/A*	34			

\*N/A: Not enough data yet in Abramson et al. (2005). Note that data from Akalin (1978) for these categories may be outdated and not statistically relevant. Use these data with caution until enough updated data are accumulated in Abramson et al.

The service life of mechanical equipment where referenced to is taken from the above chart from ASHRAE (American Society of Heating, Refrigeration, and Air-conditioning Engineers). Our analysis includes no operational savings but this chart is useful to help in identifying potential energy conservation measures with operational or capital improvements. This chart is a general guide and many factors from original manufacturer to installation quality and maintenance must be considered.

## ECM #2: Lighting Upgrade

### RECOMMENDED ACTION

We recommend retrofitting the existing interior lighting with new, higher efficient lighting systems.

Estimated Energy Savings	=693,537 KWH/yr.
Estimated Cost savings	=\$62,488/yr.
Implementation Cost	= \$852,004

Implementation costs includes design and engineering, project management, contingency, performance, overhead and profit.

Estimated energy and cost savings are for year one only. All cost and savings are +/- 10%.

### EXISTING CONDITIONS

The Ionia Correctional Facility existing lighting system consists of a blend of multiple generations of technology. Both 4 foot and 8 foot T12 and T8 lamps exist throughout the facility. T12 ballasts are a mixture of PCB containing standard magnetic, and non-PCB containing energy saving magnetic, while T8 ballasts are first generation electronic. There are also a number of high pressure sodium and metal halide high intensity discharge fixtures with magnetic ballasts throughout the buildings.

### PROPOSED SYSTEMS

Proposed lighting energy conservation measures will address 4,133 fixtures and create an upgraded the fixture count of 3,832, detailed in the room by room section. A combination of replacing, relamping, reballasting, and retrofitting existing fixtures with 28 watt T8 lamps and the latest generation of high efficiency electronic ballasts. Specular reflectors will be used to retrofit and delamp wherever possible to reduce the overall quantity of lamps and ballasts throughout the facilities. Existing HID fixtures will be replaced with high bay fluorescent fixtures with high output T5 lamps and electronic ballasts. The combination of more efficient technology, standardized lamps and ballasts, and a new lighting system that will not need to be maintained for several years will result not only in significant energy savings, but reduced operational and maintenance costs as well.

### SAVINGS CALCULATIONS

#### Lighting

Refer to room by room chart for values

$$\text{KWH savings} = (\text{Existing Watts/fixture} \times \text{Existing quantity of fixtures} - \text{Proposed Watts/Fixture} \times \text{Proposed quantity of fixtures}) / 1000 \text{ KWH/Watt} \times \text{Hours}$$

$$\text{\$ Savings} = \text{KWH savings} \times \text{\$/KWH}$$

#### Occupancy Sensors

$$\text{KWH savings Occupancy Sensor} = \text{Proposed Watts/fixture} \times \text{Proposed quantity of fixtures} \times (\text{non occupancy sensor operating hours} - \text{occupancy sensor operating hours})$$

$$\text{\$ Savings} = \text{KWH savings Occupancy sensor} \times \text{\$/KWH}$$

## SCOPES

### Complex Wide

Existing 2x4 (3) and (4) T8 and T12 lamp troffers will be retrofitted with specular reflectors, F28T8 lamps and high efficiency electronic ballasts.

Certain existing 2x4 (3) and (4) T8 lamp troffers with low annual hours of operation, and will be relamped and reballasted with F8T8 lamps and high efficiency electronic ballasts.

Existing 2x4 (3) and (4) T8 lamp troffers with annual hours of operation at or below 1999, and will be relamped with F028 T8 lamps.

Existing 2x4 (2) T8 and T12 lamp troffers will be relamped and reballasted with F028 T8 lamps and high efficiency electronic ballasts.

Existing 2x4 (2) T8 lamp troffers with specular reflectors will be relamped with F28T8 lamps.

Existing 2x2 (2) T8 and T12 u-bend lamp troffers will be retrofitted with specular reflectors, F17T8 lamps and high efficiency electronic ballasts.

Existing 1x4 (2) T8 and T12 lamp troffers will be retrofitted with specular reflectors, F28T8 lamps and high efficiency electronic ballasts.

Certain existing 1x4 (2) T8 lamp troffers with low annual hours of operation, and will be relamped and reballasted with F28T8 lamps and high efficiency electronic ballasts.

Existing 4' (1), (2) and (4) T8 and T12 lamp fixtures will be relamped and reballasted with F28T8 lamps and high efficiency electronic ballasts.

Existing 4' (2), (3) and (4) T8 lamp fixtures with annual hours of operation at or below 2999, and will be relamped with F028 T8 lamps.

Existing 8' (2) T8 and T12 lamp industrial fixtures will be retrofitted with specular reflectors, F028 T8 lamps and high efficiency electronic ballasts.

Existing 8' (2) T8 and T12 lamp strip fixtures will be retrofitted with specular reflectors, F028 T8 lamps and high efficiency electronic ballasts.

Existing 8' (2) T8HO lamp fixtures will be retrofitted with specular reflectors, F28T8 lamps and high efficiency electronic ballasts.

Existing 2' (2) T8 lamp strip fixtures are energy efficient, nothing will be done.

Existing metal halide high bay and low bay fixtures will be replaced with new high bay fixtures with specular reflectors, T8 lamps and high efficiency electronic ballasts.

Certain existing metal halide high bay fixtures will be replaced with new (2) T8 lamp industrial fixtures with high efficiency electronic ballasts.

Certain existing metal halide high bay fixtures will be removed.

Existing 2x4 (4) T8 lamp high bay fixtures are energy efficient, nothing will be done.

Existing incandescent flood lamps will be relamped with new LED flood lamps.

Existing incandescent lamp fixtures will be relamped with compact fluorescent lamps.

Existing magnetic CFL lamps will be replaced with new LED flood lamps.

Existing 150 watt CFL lamps will be relamped with 70 watt induction lamps.

Existing electronic CFL fixtures are energy efficient, nothing will be done.

Existing incandescent and compact fluorescent exit signs will be replaced with new LED exit signs.

Exterior (Attached to Building) – Existing high pressure sodium wallpack fixtures will be replaced with new LED wallpack fixtures with high efficiency electronic drivers and integral photocells.

Exterior (Attached to Building) – Existing high pressure sodium lamp recessed can fixtures will be retrofitted with specular reflectors, CFL lamps and high efficiency electronic ballasts.

### **SITE LIGHTING OPTION**

Existing 150 and 400 watt high pressure sodium shoebox fixtures will be replaced with new LED fixtures with high efficiency drivers.

Existing 250 watt high pressure sodium flood fixtures will be replaced with new LED flood fixtures with high efficiency electronic drivers and integral photocells.

Existing 175 watt mercury vapor barn light fixtures will be replaced with new LED wall pack fixtures with high efficiency electronic drivers.

Existing 1000 watt high pressure sodium high mast fixtures will be left alone.

Existing 150 watt high pressure sodium post top fixtures are not used and will be left alone.

### **OCCUPANCY SENSOR OPTION**

There is good opportunity to install occupancy sensors (in non-inmate areas) throughout the prison complex's buildings. Many areas have long hours of operation and the use of occupancy sensors will allow these areas with lower occupancy to reduce lighting energy consumption.

Types of occupancy sensors to be installed: wall mounted, ceiling mounted low voltage, ceiling mounted line voltage and ceiling mounted dual technology.

Typical areas to have occupancy sensors installed:

Offices	Restrooms	Gyms
Break Rooms	Training Rooms	Conferences
Copy Rooms	Cold Vending Machines	

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF01	GROOMING CELLS	6,500	8	72	8	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	CELLS	2,000	12	59	12	50	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF01	CELLS	2,000	12	31	12	28	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (1) LINEAR 4' 32 WATT T8 LAMP, AND (1) ELECTRONIC BALLAST	RELAMP WITH (1) LINEAR 4' 28 WATT T8 LAMP
ICF01	CELLS	2,000	42	72	42	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	CELLS	2,000	30	59	30	50	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF01	DAY ROOM OFFICE	6,500	6	72	2	72	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X12' RETROFIT KIT WITH SPECULAR REFLECTOR, (3) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	SUPPLY	500	2	72	2	42	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	DAY ROOM	6,500	6	72	3	48	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X8' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	DAY ROOM	6,500	4	72	4	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF01	DAY ROOM SUPPLY	2,000	6	72	3	48	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X8' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	DAY ROOM SUPPLY	2,000	1	72	1	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	EXTERIOR	4,380	1	188	1	70	150 WATT HIGH PRESSURE SODIUM FIXTURE.	WALLPACK: NEW REPLACEMENT FIXTURE WITH (1) 70 WATT LED LIGHT ENGINE AND (1) ELECTRONIC DRIVER
ICF01	EXTERIOR	4,380	1	188	1	18	CANOPY: WITH (1) 150 WATT HIGH PRESSURE SODIUM LAMP AND (1) MAGNETIC BALLAST	CANOPY: NEW REPLACEMENT FIXTURE WITH (1) 18 WATT LED LIGHT ENGINE, (1) ELECTRONIC DRIVER AND (1) PHOTOCELL
ICF01	GUARD SHACK	4,380	1	75	1	18	75 WATT INCANDESCENT LAMP	RELAMP WITH (1) SPIRAL 18 WATT COMPACT FLUORESCENT LAMP
ICF01	ENTRY	6,500	1	59	1	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	ENTRY	6,500	1	72	1	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	COMMON HALL	6,500	6	72	2	72	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X12' RETROFIT KIT WITH SPECULAR REFLECTOR, (3) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	BLOCK HALL	6,500	28	72	28	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	BLOCK HALL	6,500	16	59	16	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
							T8 LAMPS, AND (1) ELECTRONIC BALLAST	HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	STORAGE LIBRARY	1,000	2	72	2	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	STAIRWELL	8,760	6	72	6	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	OFFICE	2,200	1	144	1	48	VAPOR TIGHT: SURFACE MOUNTED WITH NARROW 8' BODY, ACRYLIC LENS, WHITE METAL BELLY PAN, (4) LINEAR 4' 34 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	INDUSTRIAL: UNIVERSAL NARROW 8' BODY RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	OFFICE	2,200	2	144	2	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 34 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	SHOWER	8,760	3	72	3	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	SUPPLY	500	2	72	2	42	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	COMMON HALL	6,500	2	72	1	48	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X8' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	DAY ROOM	6,500	20	72	5	95	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X16' RETROFIT KIT WITH SPECULAR REFLECTOR, (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST



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Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF01	DAY ROOM	6,500	2	72	1	48	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X8' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	CAGES	1,000	3	43	3	15	TROFFER: SURFACE MOUNTED WITH 1'X2' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (1) LINEAR 4' 34 WATT T12 U-BEND LAMP, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: CUSTOM 1'X2' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 2' 17 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	STAFF REST	1,000	1	72	1	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	CONROL ROOM	500	1	72	1	42	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	LAUNDRY	6,500	1	144	1	48	VAPOR TIGHT: SURFACE MOUNTED WITH NARROW 8' BODY, ACRYLIC LENS, WHITE METAL BELLY PAN, (4) LINEAR 4' 34 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	INDUSTRIAL: UNIVERSAL NARROW 8' BODY RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	LAUNDRY	6,500	1	72	1	42	VAPOR TIGHT: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	SHOWER	8,760	3	72	3	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	STORAGE	500	2	72	2	42	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	COMMON HALL	6,500	6	72	2	72	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT	TROFFER: UNIVERSAL 1'X12' RETROFIT KIT WITH SPECULAR REFLECTOR, (3) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
							T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	COMMON HALL	6,500	2	72	1	48	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X8' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	UPPER MECH	500	3	144	3	84	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 8' BODY, NO LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 40 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	UPPER MECH	500	1	72	1	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	BASEMENT MECH	500	8	144	8	84	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 8' BODY, NO LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 40 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF01	BASEMENT MECH	500	1	72	1	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	ENTRY	6,500	4	59	4	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	ENTRY	6,500	4	72	4	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	COMMON HALL	6,500	24	72	8	72	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X12' RETROFIT KIT WITH SPECULAR REFLECTOR, (3) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF02-05	BLOCK HALL	6,500	112	72	112	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	BLOCK HALL	6,500	64	59	64	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	STORAGE LIBRARY	1,000	8	72	8	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	CELLS	2,000	344	50	344	22	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (1) LINEAR 4' 34 WATT T12 LAMP, AND (1) STANDARD MAGNETIC BALLAST	RELAMP REBALLAST WITH (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	CELLS	2,000	344	31	344	28	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (1) LINEAR 4' 32 WATT T8 LAMP, AND (1) ELECTRONIC BALLAST	RELAMP WITH (1) LINEAR 4' 28 WATT T8 LAMP
ICF02-05	STAIRWELL	8,760	12	72	12	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	OFFICE	2,200	4	144	4	48	VAPOR TIGHT: SURFACE MOUNTED WITH NARROW 8' BODY, ACRYLIC LENS, WHITE METAL BELLY PAN, (4) LINEAR 4' 34 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	INDUSTRIAL: UNIVERSAL NARROW 8' BODY RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	OFFICE	2,200	8	144	8	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 34 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	SHOWER	8,760	12	59	12	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF02-05	SUPPLY	500	8	72	8	42	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	COMMON HALL	6,500	8	72	4	48	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X8' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	DAY ROOM	6,500	80	59	20	95	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 1'X16' RETROFIT KIT WITH SPECULAR REFLECTOR, (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	DAY ROOM	6,500	8	59	5	48	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 1'X8' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	ENTRY	6,500	8	72	8	42	VAPOR TIGHT: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	DAY ROOM	6,500	80	72	20	95	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X16' RETROFIT KIT WITH SPECULAR REFLECTOR, (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	DAY ROOM	6,500	8	72	4	48	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X8' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	CAGES	1,000	16	43	16	15	TROFFER: SURFACE MOUNTED WITH 1'X2' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (1) LINEAR 4' 34 WATT T12 U-BEND LAMP, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: CUSTOM 1'X2' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 2' 17 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF02-05	STAFF REST	1,000	4	59	4	50	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF02-05	CONTROL ROOM	500	4	72	4	50	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF02-05	LAUNDRY	6,500	4	144	4	48	VAPOR TIGHT: SURFACE MOUNTED WITH NARROW 8' BODY, ACRYLIC LENS, WHITE METAL BELLY PAN, (4) LINEAR 4' 34 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	INDUSTRIAL: UNIVERSAL NARROW 8' BODY RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	LAUNDRY	6,500	4	59	4	50	VAPOR TIGHT: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF02-05	SHOWER	8,760	12	72	12	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	STORAGE	500	8	72	8	42	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	COMMON HALL	6,500	24	59	8	72	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 1'X12' RETROFIT KIT WITH SPECULAR REFLECTOR, (3) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	COMMON HALL	6,500	8	59	4	48	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 1'X8' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	UPPER MECH	500	12	144	12	48	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 8' BODY, NO LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 40 WATT T12 LAMPS, AND (2) ENERGY SAVING	INDUSTRIAL: UNIVERSAL NARROW 8' BODY RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
							MAGNETIC BALLASTS	START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	UPPER MECH	500	4	72	4	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	BASEMENT MECH	500	32	144	32	48	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 8' BODY, NO LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 40 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	INDUSTRIAL: UNIVERSAL NARROW 8' BODY RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF02-05	BASEMENT MECH	500	4	59	4	50	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF02-05	EXTERIOR	4,380	4	188	4	70	150 WATT HIGH PRESSURE SODIUM FIXTURE.	WALLPACK: NEW REPLACEMENT FIXTURE WITH (1) 70 WATT LED LIGHT ENGINE AND (1) ELECTRONIC DRIVER
ICF02-05	EXTERIOR	4,380	4	188	4	73	150 WATT HIGH PRESSURE SODIUM FIXTURE.	FLOOD: NEW REPLACEMENT FIXTURE WITH (1) 73 WATT LED LIGHT ENGINE, (1) UNIVERSAL VOLTAGE ELECTRONIC DRIVER, AND (1) PHOTOCCELL
ICF06	COMMON AREA	4,380	16	112	16	84	WRAP: SURFACE MOUNTED WITH WIDE 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF06	HALL	4,380	2	59	2	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF06	KITCHENETTE	6,200	4	112	4	84	WRAP: SURFACE MOUNTED WITH WIDE 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF06	OFFICE	8,760	2	112	2	84	WRAP: SURFACE MOUNTED WITH WIDE 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF06	ELECTRICAL	500	2	72	2	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF06	CUSTODIAL	500	2	72	2	42	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF06	DAY ROOM	6,200	24	72	12	84	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TANDEM RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF06	DAY ROOM	8,760	4	72	4	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF06	DAY ROOM	6,200	4	72	4	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF06	REST 1	6,200	12	72	6	84	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TANDEM RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF06	REST 2	6,200	12	72	6	84	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TANDEM RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF06	STAFF REST	3,000	2	72	2	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF06	OFFICE	6,200	12	144	12	84	WRAP: SURFACE MOUNTED WITH WIDE 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 34 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF06	PLUMBING	500	6	100	6	27	100 WATT INCANDESCENT LAMP	RELAMP WITH (1) SPIRAL 27 WATT COMPACT FLUORESCENT LAMP
ICF06	ENTRY	6,200	2	72	2	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF06	DAY ROOM	6,200	12	72	6	84	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TANDEM RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF06	BUNK HALL	8,760	20	30	20	30	CAN: RECESSED WITH (2) 13 WATT COMPACT FLUORESCENT LAMPS AND (1) ELECTRONIC BALLAST	LEAVE ALONE
ICF06	BUNK WALL	6,200	40	26	40	26	STRIP: SURFACE MOUNTED WITH NARROW 3' BODY, NO LENS, WHITE METAL BELLY PAN, (1) LINEAR 3' 25 WATT T8 LAMP, AND (1) ELECTRONIC BALLAST	LEAVE ALONE
ICF06	BUNK DESK	6,200	20	51	20	29	STRIP: SURFACE MOUNTED WITH NARROW 2' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 2' 20 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 2' 17 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF06	HIGH BUNK WALL	6,200	40	26	40	26	STRIP: SURFACE MOUNTED WITH NARROW 3' BODY, NO LENS, WHITE METAL BELLY PAN, (1) LINEAR 3' 25 WATT T8 LAMP, AND (1) ELECTRONIC BALLAST	LEAVE ALONE
ICF06	STORAGES	500	4	72	4	42	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF06	EXTERIOR STORAGE	500	2	109	2	48	STRIP: SURFACE MOUNTED WITH NARROW 8' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 8' 59 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	INDUSTRIAL: UNIVERSAL NARROW 8' BODY RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF06	EXTERIOR	4,380	8	188	8	35	WALLPACK: WITH (1) 150 WATT HIGH PRESSURE SODIUM LAMP AND (1) MAGNETIC BALLAST	WALLPACK: NEW REPLACEMENT FIXTURE WITH (1) 35 WATT LED LIGHT ENGINE AND (1) ELECTRONIC DRIVER

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF06	MECHANICAL	500	4	109	4	48	STRIP: SURFACE MOUNTED WITH NARROW 8' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 8' 59 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	INDUSTRIAL: UNIVERSAL NARROW 8' BODY RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF06	EXTERIOR	4,380	5	295	5	115	FLOOD: WITH (1) 250 WATT HIGH PRESSURE SODIUM LAMP AND (1) MAGNETIC BALLAST	FLOOD: NEW REPLACEMENT FIXTURE WITH (1) 115 WATT LED LIGHT ENGINE, (1) UNIVERSAL VOLTAGE ELECTRONIC DRIVER, AND (1) PHOTOCCELL
ICF07	COMMON AREA	4,380	16	112	16	84	WRAP: SURFACE MOUNTED WITH WIDE 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF07	HALL	4,380	2	59	2	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF07	KITCHENETTE	6,200	4	112	4	84	WRAP: SURFACE MOUNTED WITH WIDE 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF07	OFFICE	8,760	2	112	2	84	WRAP: SURFACE MOUNTED WITH WIDE 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF07	ELECTRICAL	500	2	72	2	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF07	CUSTODIAL	500	2	72	2	42	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF07	DAY ROOM	6,200	24	72	12	84	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TANDEM RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF07	DAY ROOM	8,760	4	72	4	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1)	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
							ENERGY SAVING MAGNETIC BALLAST	ELECTRONIC BALLAST
ICF07	DAY ROOM	6,200	4	72	4	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF07	REST 1	6,200	12	72	6	84	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TANDEM RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF07	REST 2	6,200	12	72	6	84	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TANDEM RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF07	STAFF REST	3,000	2	72	2	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF07	OFFICE	6,200	12	144	12	84	WRAP: SURFACE MOUNTED WITH WIDE 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 34 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF07	PLUMBING	500	6	100	6	27	100 WATT INCANDESCENT LAMP	RELAMP WITH (1) SPIRAL 27 WATT COMPACT FLUORESCENT LAMP
ICF07	ENTRY	6,200	2	72	2	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF07	DAY ROOM	6,200	12	72	6	84	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TANDEM RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF07	BUNK HALL	8,760	20	30	20	30	CAN: RECESSED WITH (2) 13 WATT COMPACT FLUORESCENT LAMPS AND (1) ELECTRONIC BALLAST	LEAVE ALONE

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF07	BUNK WALL	6,200	40	46	40	20	STRIP: SURFACE MOUNTED WITH NARROW 3' BODY, NO LENS, WHITE METAL BELLY PAN, (1) LINEAR 3' 30 WATT T12 LAMP, AND (1) STANDARD MAGNETIC BALLAST	RELAMP REBALLAST WITH (1) LINEAR 3' 25 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF07	BUNK DESK	6,200	20	33	20	33	STRIP: SURFACE MOUNTED WITH NARROW 2' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 2' 17 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	LEAVE ALONE
ICF07	HIGH BUNK WALL	6,200	40	46	40	20	STRIP: SURFACE MOUNTED WITH NARROW 3' BODY, NO LENS, WHITE METAL BELLY PAN, (1) LINEAR 3' 30 WATT T12 LAMP, AND (1) STANDARD MAGNETIC BALLAST	RELAMP REBALLAST WITH (1) LINEAR 3' 25 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF07	STORAGES	500	4	72	4	42	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF07	EXTERIOR STORAGE	500	2	109	2	48	STRIP: SURFACE MOUNTED WITH NARROW 8' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 8' 59 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	INDUSTRIAL: UNIVERSAL NARROW 8' BODY RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF07	EXTERIOR	4,380	8	188	8	35	WALLPACK: WITH (1) 150 WATT HIGH PRESSURE SODIUM LAMP AND (1) MAGNETIC BALLAST	WALLPACK: NEW REPLACEMENT FIXTURE WITH (1) 35 WATT LED LIGHT ENGINE AND (1) ELECTRONIC DRIVER
ICF07	MECHANICAL	500	4	109	4	48	STRIP: SURFACE MOUNTED WITH NARROW 8' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 8' 59 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	INDUSTRIAL: UNIVERSAL NARROW 8' BODY RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF07	EXTERIOR	4,380	5	295	5	115	FLOOD: WITH (1) 250 WATT HIGH PRESSURE SODIUM LAMP AND (1) MAGNETIC BALLAST	FLOOD: NEW REPLACEMENT FIXTURE WITH (1) 115 WATT LED LIGHT ENGINE, (1) UNIVERSAL VOLTAGE ELECTRONIC DRIVER, AND (1) PHOTOCCELL
ICF100	LOBBY	5,825	37	54	37	54	CAN: RECESSED WITH (2) 26 WATT COMPACT FLUORESCENT LAMPS, AND (1) ELECTRONIC BALLAST	LEAVE ALONE
ICF100	LOBBY	5,825	12	72	3	95	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, PARABOLIC LOUVER, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1)	TROFFER: UNIVERSAL 1'X16' RETROFIT KIT WITH SPECULAR REFLECTOR, (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
							ENERGY SAVING MAGNETIC BALLAST	START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	LOBBY	5,825	4	72	4	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, PARABOLIC LOUVER, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	LOBBY	5,825	3	72	1	72	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, PARABOLIC LOUVER, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X12' RETROFIT KIT WITH SPECULAR REFLECTOR, (3) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	LOCKER	5,825	6	54	6	54	CAN: RECESSED WITH (2) 26 WATT COMPACT FLUORESCENT LAMPS, AND (1) ELECTRONIC BALLAST	LEAVE ALONE
ICF100	LOCKER	5,825	2	100	2	14	100 WATT INCANDESCENT LAMP	RELAMP WITH (1) PAR30 14 WATT LED LAMP
ICF100	VENDING	5,825	2	54	2	54	CAN: RECESSED WITH (2) 26 WATT COMPACT FLUORESCENT LAMPS, AND (1) ELECTRONIC BALLAST	LEAVE ALONE
ICF100	CUSTODIAL	500	1	72	1	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	ELEVATOR MECH	500	1	72	1	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	SOFFIT CANS	8,760	18	26	18	14	26 WATT COMPACT FLUORESCENT LAMP	RELAMP WITH (1) PAR30 14 WATT LED LAMP
ICF100	SOFFIT CANS	8,760	3	26	3	14	26 WATT COMPACT FLUORESCENT LAMP	RELAMP WITH (1) PAR30 14 WATT LED LAMP
ICF100	MENS	5,825	4	72	1	95	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X16' RETROFIT KIT WITH SPECULAR REFLECTOR, (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
								ELECTRONIC BALLAST
ICF100	MENS	5,825	2	72	1	48	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X8' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	MENS	5,825	2	72	2	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	WOMENS	5,825	4	72	1	95	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X16' RETROFIT KIT WITH SPECULAR REFLECTOR, (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	WOMENS	5,825	2	72	1	48	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X8' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	WOMENS	5,825	2	72	2	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	EQUIPMENT ROOM	500	1	72	1	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	LITIGATION COORDINATOR	2,200	5	54	5	54	CAN: RECESSED WITH (2) 26 WATT COMPACT FLUORESCENT LAMPS, AND (1) ELECTRONIC BALLAST	LEAVE ALONE
ICF100	WARDEN	2,200	4	72	2	48	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, PARABOLIC LOUVER, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X8' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF100	WARDEN	2,200	3	72	1	72	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, PARABOLIC LOUVER, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X12' RETROFIT KIT WITH SPECULAR REFLECTOR, (3) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	WARDEN	2,200	1	150	1	14	150 WATT INCANDESCENT LAMP	RELAMP WITH (1) PAR30 14 WATT LED LAMP
ICF100	WARDEN REST	500	1	72	1	42	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	WARDEN	8,760	2	72	2	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, PARABOLIC LOUVER, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	WARDEN	2,200	1	72	1	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, PARABOLIC LOUVER, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	CONFERENCE	1,500	14	80	14	42	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) STANDARD MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	CONFERENCE	8,760	1	72	1	42	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, PARABOLIC LOUVER, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	CONFERENCE	1,500	2	72	2	42	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, PARABOLIC LOUVER, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	CONFERENCE	1,500	1	72	1	42	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, PARABOLIC LOUVER, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF100	CONFERENCE	1,500	3	60	3	9	60 WATT INCANDESCENT LAMP	RELAMP WITH (1) PAR20 9 WATT LED LAMP
ICF100	WARDEN RECEPTION	8,760	1	72	1	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, PARABOLIC LOUVER, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	WARDEN RECEPTION	2,500	1	72	1	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, PARABOLIC LOUVER, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	WARDEN RECEPTION	2,500	2	72	1	48	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, PARABOLIC LOUVER, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X8' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	HALL	8,760	1	54	1	54	CAN: RECESSED WITH (2) 26 WATT COMPACT FLUORESCENT LAMPS, AND (1) ELECTRONIC BALLAST	LEAVE ALONE
ICF100	HALL	2,500	7	54	7	54	CAN: RECESSED WITH (2) 26 WATT COMPACT FLUORESCENT LAMPS, AND (1) ELECTRONIC BALLAST	LEAVE ALONE
ICF100	HALL	8,760	2	72	2	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, PARABOLIC LOUVER, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	STAIR	8,760	2	125	2	27	100 WATT MERCURY VAPOR FIXTURE	RELAMP WITH (1) SPIRAL 27 WATT COMPACT FLUORESCENT LAMP
ICF100	STAIR	8,760	5	72	5	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	EYEWASH	500	1	59	1	50	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF100	RESTS	500	2	72	2	42	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	RESTS	500	2	74	2	40	STRIP: SURFACE MOUNTED WITH NARROW 3' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 3' 30 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 3' 25 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	SHOWER	500	1	72	1	42	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	SHOWER	500	1	75	1	18	75 WATT INCANDESCENT LAMP	RELAMP WITH (1) SPIRAL 18 WATT COMPACT FLUORESCENT LAMP
ICF100	SUPPLY	500	1	72	1	42	VAPOR TIGHT: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	ADMIN ASSISTANT	2,500	1	72	1	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, PARABOLIC LOUVER, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	RECORDS	2,500	6	59	6	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF100	ADMIN ASSISTANT	2,500	2	72	1	48	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, PARABOLIC LOUVER, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X8' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	FILES	1,000	2	72	2	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, PARABOLIC LOUVER, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF100	STAIR	8,760	2	125	2	27	100 WATT MERCURY VAPOR FIXTURE	RELAMP WITH (1) SPIRAL 27 WATT COMPACT FLUORESCENT LAMP
ICF100	STAIR	8,760	1	54	1	54	CAN: RECESSED WITH (2) 26 WATT COMPACT FLUORESCENT LAMPS, AND (1) ELECTRONIC BALLAST	LEAVE ALONE
ICF100	OPEN OFFICE	8,760	3	59	3	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF100	OPEN OFFICE	1,000	25	59	25	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF100	OFFICE	2,500	4	59	4	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF100	OFFICE	2,500	4	59	4	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF100	KITCHENETTE	1,000	8	59	8	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF100	CUSTODIAL	500	1	72	1	42	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	RESTS	8,760	4	72	4	42	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	RESTS	500	2	72	2	42	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF100	STORAGE (LOCKED)	500	3	72	3	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	OPEN OFFICE	2,500	10	59	10	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF100	OPEN OFFICE	8,760	2	59	2	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF100	MECH	8,760	1	72	1	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	MECH	500	1	72	1	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	SERVER HALL	8,760	2	72	2	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	SERVER HALL	500	2	72	2	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	SERVER ROOM	8,760	1	72	1	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	SERVER ROOM	500	1	72	1	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF100	MECH	8,760	1	72	1	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	MECH	500	10	72	10	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	OFFICE	2,500	8	144	8	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 34 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	EMPLOYEE RECORDS	1,500	16	144	16	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 34 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	OFFICE	2,500	2	59	2	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF100	METAL DETECTOR	8,760	3	59	3	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF100	BREAK ROOM	8,760	6	59	6	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF100	CONTROL ROOM	8,760	1	144	1	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, PARABOLIC LOUVER, WHITE METAL REFLECTOR, (4) LINEAR 4' 34 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	CONTROL ROOM	8,760	5	100	5	12	100 WATT INCANDESCENT LAMP	RELAMP WITH (1) PAR30 12 WATT DIMMING LED LAMP

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF100	ARSENAL ROOM	1,000	2	59	2	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF100	VISITATION ROOMS	500	6	74	6	40	STRIP: SURFACE MOUNTED WITH NARROW 3' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 3' 30 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 3' 25 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	LARGE STORAGE	500	9	59	9	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF100	LOBBY/HALL	8,760	18	15	18	12	15 WATT COMPACT FLUORESCENT LAMP	RELAMP WITH (1) PAR30 12 WATT LED LAMP
ICF100	LOBBY/HALL	0	22	72	22	72	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	LEAVE ALONE
ICF100	LOBBY/HALL	0	3	74	3	74	STRIP: SURFACE MOUNTED WITH NARROW 3' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 3' 30 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	LEAVE ALONE
ICF100	MEDIUM VISITING	8,760	12	54	12	54	CAN: RECESSED WITH (2) 26 WATT COMPACT FLUORESCENT LAMPS, AND (1) ELECTRONIC BALLAST	LEAVE ALONE
ICF100	MEDIUM VISITING	8,760	17	72	17	42	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	MEDIUM VISITING	8,760	5	74	5	40	STRIP: SURFACE MOUNTED WITH NARROW 3' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 3' 30 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 3' 25 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	REST	500	1	74	1	40	STRIP: SURFACE MOUNTED WITH NARROW 3' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 3' 30 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 3' 25 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF100	MAXIMUM VISITING	8,760	11	54	11	54	CAN: RECESSED WITH (2) 26 WATT COMPACT FLUORESCENT LAMPS, AND (1) ELECTRONIC BALLAST	LEAVE ALONE
ICF100	MAXIMUM VISITING	8,760	14	72	14	42	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	MAXIMUM VISITING	8,760	1	74	1	40	STRIP: SURFACE MOUNTED WITH NARROW 3' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 3' 30 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 3' 25 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	OFFICE	2,200	1	72	1	42	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	RESTS & FILE RM	8,760	4	72	4	42	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	RESTS & FILE RM	8,760	4	74	4	40	STRIP: SURFACE MOUNTED WITH NARROW 3' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 3' 30 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 3' 25 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	VISITATION WAITING	8,760	12	54	12	54	CAN: RECESSED WITH (2) 26 WATT COMPACT FLUORESCENT LAMPS, AND (1) ELECTRONIC BALLAST	LEAVE ALONE
ICF100	VISITATION WAITING	8,760	8	72	8	42	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	HALL	8,760	6	15	6	12	15 WATT COMPACT FLUORESCENT LAMP	RELAMP WITH (1) PAR30 12 WATT LED LAMP
ICF100	OPEN OFFICE	3,000	6	125	6	27	100 WATT MERCURY VAPOR FIXTURE	RELAMP WITH (1) SPIRAL 27 WATT COMPACT FLUORESCENT LAMP

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF100	OPEN OFFICE	3,000	2	72	2	42	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	OPEN OFFICE	3,000	1	74	1	40	STRIP: SURFACE MOUNTED WITH NARROW 3' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 3' 30 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 3' 25 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	OFFICE	3,000	4	144	4	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 34 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	OFFICE	3,000	4	144	4	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 34 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	OFFICE/STORAGE	500	2	144	2	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 34 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	OFFICE	2,200	2	144	2	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 34 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	REST	500	1	72	1	42	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	REST	500	1	74	1	40	STRIP: SURFACE MOUNTED WITH NARROW 3' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 3' 30 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 3' 25 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	OFFICE	2,200	2	144	2	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 34 WATT T12 LAMPS, AND (2) ENERGY SAVING	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER



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Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
							MAGNETIC BALLASTS	HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	CUSTODIAL	8,760	1	72	1	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	OFFICE	2,200	2	144	2	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 34 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	CONFERENCE	3,000	12	59	12	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF100	HALL	0	10	72	10	72	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	LEAVE ALONE
ICF100	HALL	0	2	74	2	74	STRIP: SURFACE MOUNTED WITH NARROW 3' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 3' 30 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	LEAVE ALONE
ICF100	OFFICE	8,760	2	144	2	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 34 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	OFFICE	2,200	2	144	2	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 34 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	CONTROL ROOM	500	2	115	2	63	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, PARABOLIC LOUVER, WHITE METAL REFLECTOR, (3) LINEAR 4' 34 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	RELAMP REBALLAST WITH (3) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF100	CONTROL ROOM	8,760	5	43	5	22	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (1) LINEAR 4' 34 WATT T12 LAMP, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	CONTROL ROOM	8,760	1	72	1	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, PARABOLIC LOUVER, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	CONTROL ROOM	500	3	40	3	13	40 WATT INCANDESCENT LAMP	RELAMP WITH (1) SPIRAL 13 WATT COMPACT FLUORESCENT LAMP
ICF100	CONTROL REST	750	1	72	1	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	CONTROL ROOM	500	5	43	5	22	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (1) LINEAR 4' 34 WATT T12 LAMP, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	LOBBY	8,760	2	59	2	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF100	REST	8,760	1	72	1	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF100	VESTIBULE	8,760	1	54	1	54	CAN: RECESSED WITH (2) 26 WATT COMPACT FLUORESCENT LAMPS, AND (1) ELECTRONIC BALLAST	LEAVE ALONE
ICF100	SOFFIT CANS	4,380	2	26	2	14	26 WATT COMPACT FLUORESCENT LAMP	RELAMP WITH (1) PAR30 14 WATT LED LAMP
ICF100	VISITOR YARD	4,380	3	138	3	35	100 WATT HIGH PRESSURE SODIUM FIXTURE	WALLPACK: NEW REPLACEMENT FIXTURE WITH (1) 35 WATT LED LIGHT ENGINE AND (1) ELECTRONIC DRIVER

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF100	BUILDING MOUNTED	4,380	2	295	2	115	FLOOD: WITH (1) 250 WATT HIGH PRESSURE SODIUM LAMP AND (1) MAGNETIC BALLAST	FLOOD: NEW REPLACEMENT FIXTURE WITH (1) 115 WATT LED LIGHT ENGINE, (1) UNIVERSAL VOLTAGE ELECTRONIC DRIVER, AND (1) PHOTOCCELL
ICF100VEND	VENDING MACHINES	8,760	5	427	5	427	COLD VENDING MACHINE	LEAVE ALONE
ICF200	ENTRY	8,760	7	32	7	17	32 WATT COMPACT FLUORESCENT LAMP	RELAMP WITH (1) PAR38 17 WATT LED LAMP
ICF200	WAITING	1,500	4	59	4	42	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	WAITING	8,760	1	59	1	42	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	HALL	8,760	3	59	3	42	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	HALL	3,000	12	59	12	42	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	MEDICATION	3,000	6	59	6	42	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	MEDICATION	3,000	5	38	5	20	WRAP: SURFACE MOUNTED WITH NARROW 3' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (1) LINEAR 3' 30 WATT T12 LAMP, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (1) LINEAR 3' 25 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	SUPERVISOR OFFICE	3,000	2	112	2	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF200	OFFICE	3,000	2	112	2	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	OFFICE	3,000	2	112	2	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	OFFICE	3,000	2	112	2	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	OFFICE	3,000	3	59	3	42	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	COPY	3,000	2	112	2	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	OFFICE	3,000	1	112	1	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	OFFICE	3,000	1	59	1	42	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	OPTOMETRY	1,000	2	59	2	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF200	RESTS	1,000	2	72	2	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF200	XRAY	1,000	2	59	2	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF200	STORAGE	500	1	72	1	42	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	PORTER	500	1	72	1	42	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	PSYCHOLOGIS T	1,000	1	59	1	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF200	PSYCHOLOGIS T	1,000	1	59	1	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF200	PSYCHOLOGIS T	1,000	1	59	1	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF200	PSYCHOLOGIS T	1,000	1	59	1	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF200	TESTING	2,200	1	144	1	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 34 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	TESTING	1,000	4	38	4	20	WRAP: SURFACE MOUNTED WITH NARROW 3' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (1) LINEAR 3' 30 WATT T12 LAMP, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (1) LINEAR 3' 25 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	UTILITY	1,000	2	38	2	20	WRAP: SURFACE MOUNTED WITH NARROW 3' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (1) LINEAR 3' 30 WATT T12 LAMP, AND (1)	RELAMP REBALLAST WITH (1) LINEAR 3' 25 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY



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Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
							ENERGY SAVING MAGNETIC BALLAST	ELECTRONIC BALLAST
ICF200	UTILITY	1,500	1	144	1	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 34 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	STATIONARY	500	1	59	1	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF200	STATIONARY	500	3	38	3	20	WRAP: SURFACE MOUNTED WITH NARROW 3' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (1) LINEAR 3' 30 WATT T12 LAMP, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (1) LINEAR 3' 25 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	BREAK ROOM	3,000	4	38	4	20	WRAP: SURFACE MOUNTED WITH NARROW 3' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (1) LINEAR 3' 30 WATT T12 LAMP, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (1) LINEAR 3' 25 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	BREAK ROOM	3,000	3	59	3	42	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	TELEMEDICINE	2,000	2	112	2	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	HALL	1,000	1	59	1	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	PROPERTY ROOM	4,160	22	72	22	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF200	RESTROOM	3,000	2	59	1	48	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 1'X8' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	SHOWER	500	1	60	1	18	60 WATT INCANDESCENT LAMP	RELAMP WITH (1) SPIRAL 18 WATT COMPACT FLUORESCENT LAMP
ICF200	RESTROOM	3,000	1	59	1	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	EXAM ROOM	3,000	4	59	4	42	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	HALL	3,000	5	59	5	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	EXAM ROOM	3,000	2	112	2	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	EXAM ROOM	3,000	3	59	1	72	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 1'X12' RETROFIT KIT WITH SPECULAR REFLECTOR, (3) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	ENTRY	3,000	2	59	2	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	RESTROOM	1,350	1	59	1	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF200	OFFICE	3,000	4	59	4	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	DENTAL	8,760	1	112	1	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	DENTAL	3,000	5	112	5	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	REST	3,000	1	51	1	29	STRIP: SURFACE MOUNTED WITH NARROW 2' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 2' 20 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 2' 17 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	COUNTER	3,000	3	38	3	20	WRAP: SURFACE MOUNTED WITH NARROW 3' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (1) LINEAR 3' 30 WATT T12 LAMP, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (1) LINEAR 3' 25 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	COUNTER	1,500	1	112	1	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	OFFICE	3,000	2	112	2	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	STAIR	8,760	4	59	4	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	HALL	8,760	1	72	1	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER



Proprietary and Confidential

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
							T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	HALL	500	1	72	1	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	STORAGE	500	3	72	3	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	TELECOM	8,760	1	72	1	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	TELECOM	500	3	72	3	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	MECH	8,760	1	72	1	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	MECH	500	7	72	7	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	CUSTODIAL	500	1	59	1	50	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF200	REST	500	1	59	1	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	BALCONY	500	16	59	16	50	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF200	BALCONY	500	2	59	2	50	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF200	BALCONY	8,760	4	59	4	50	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF200	BOILER	500	11	72	11	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	BOILER	500	6	72	6	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	BOILER	8,760	3	72	3	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	OPEN CAFETERIA	6,000	11	150	11	78	150 WATT COMPACT FLUORESCENT LAMP	UNIVERSAL RETROFIT KIT WITH (1) 70 INDUCTION LAMP, AND (1) UNIVERSAL VOLTAGE ELECTRONIC BALLAST
ICF200	CAFETERIA LINE	6,000	4	59	2	48	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 1'X8' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	CAFETERIA LINE	6,000	10	59	10	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	CAFETERIA CANS	6,000	14	18	14	9	18 WATT COMPACT FLUORESCENT LAMP	RELAMP WITH (1) PAR20 9 WATT LED LAMP
ICF200	KITCHEN	6,000	7	72	7	29	TROFFER: RECESS MOUNTED WITH 2'X2' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 U-BEND LAMPS, AND (1) ENERGY	TROFFER: UNIVERSAL 2'X2' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 2' 17 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
							SAVING MAGNETIC BALLAST	HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	KITCHEN	6,000	35	59	35	42	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	KITCHEN	6,000	3	59	3	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	KITCHEN HOODS	6,000	10	59	10	42	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	SPICE ROOM	6,000	2	59	1	48	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 1'X8' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	SPICE ROOM	6,000	2	59	2	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	TOOL ROOM ENTRY	6,000	1	59	1	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	TOOL ROOM	6,000	1	59	1	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	CAUSTIC	500	1	59	1	50	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF200	OFFICE	3,000	1	59	1	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	REST	3,000	2	59	2	25	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 1'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	HALL	6,000	2	59	2	42	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	KITCHEN MGR	6,000	2	59	2	42	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	STORAGE	3,000	2	59	2	42	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	BATH	2,500	1	59	1	42	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	UTILITY	2,000	1	59	1	42	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	RECEIVING	6,000	2	59	2	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	RECEIVING	3,000	4	59	4	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF200	PLUMBING	500	1	72	1	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
							MAGNETIC BALLAST	
ICF200	CUSTODIAL	500	1	59	1	50	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF200	EXTERIOR SECURITY WALPACKS	1,000	2	188	2	35	WALLPACK: WITH (1) 150 WATT HIGH PRESSURE SODIUM LAMP AND (1) MAGNETIC BALLAST	WALLPACK: NEW REPLACEMENT FIXTURE WITH (1) 35 WATT LED LIGHT ENGINE AND (1) ELECTRONIC DRIVER
ICF200	EXTERIOR	4,380	1	188	1	35	WALLPACK: WITH (1) 150 WATT HIGH PRESSURE SODIUM LAMP AND (1) MAGNETIC BALLAST	WALLPACK: NEW REPLACEMENT FIXTURE WITH (1) 35 WATT LED LIGHT ENGINE AND (1) ELECTRONIC DRIVER
ICF200	EXTERIOR	4,380	3	95	3	12	WALLPACK: WITH (1) 70 WATT HIGH PRESSURE SODIUM LAMP AND (1) MAGNETIC BALLAST	WALLPACK: NEW REPLACEMENT FIXTURE WITH (1) 12 WATT LED LIGHT ENGINE AND (1) ELECTRONIC DRIVER
ICF200	EXTERIOR ROOF	4,380	2	295	2	115	FLOOD: WITH (1) 250 WATT HIGH PRESSURE SODIUM LAMP AND (1) MAGNETIC BALLAST	FLOOD: NEW REPLACEMENT FIXTURE WITH (1) 115 WATT LED LIGHT ENGINE, (1) UNIVERSAL VOLTAGE ELECTRONIC DRIVER, AND (1) PHOTOCCELL
ICF200	EXTERIOR ROOF	4,380	1	188	1	188	POST TOP: POLE MOUNTED WITH (1) 150 WATT HIGH PRESSURE SODIUM LAMP AND (1) MAGNETIC BALLAST	LEAVE ALONE
ICF300	LOBBY/ENTRANCE	8,760	9	125	9	27	100 WATT MERCURY VAPOR FIXTURE	RELAMP WITH (1) SPIRAL 27 WATT COMPACT FLUORESCENT LAMP
ICF300	LOBBY/ENTRANCE	8,760	2	205	2	27	175 WATT MERCURY VAPOR FIXTURE	RELAMP WITH (1) SPIRAL 27 WATT COMPACT FLUORESCENT LAMP
ICF300	MENS	500	1	112	1	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	MENS	500	1	81	1	40	WRAP: SURFACE MOUNTED WITH NARROW 3' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 3' 30 WATT T12 LAMPS, AND (1) STANDARD MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 3' 25 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	WOMENS	500	1	112	1	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
								ELECTRONIC BALLAST
ICF300	WOMENS	500	1	59	1	50	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	AUDITORIUM	300	18	74	18	40	STRIP: SURFACE MOUNTED WITH NARROW 3' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 3' 30 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 3' 25 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	AUDITORIUM	300	2	51	2	29	STRIP: SURFACE MOUNTED WITH NARROW 2' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 2' 20 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 2' 17 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	AUDITORIUM	300	4	80	4	42	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) STANDARD MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	AUDITORIUM	300	14	250	14	250	PAR 38 250 WATT INCANDESCENT LAMP	LEAVE ALONE
ICF300	STAGE	300	3	250	3	250	PAR 38 250 WATT INCANDESCENT LAMP	LEAVE ALONE
ICF300	STAGE REAR	300	6	250	6	250	PAR 38 250 WATT INCANDESCENT LAMP	LEAVE ALONE
ICF300	STAIR/HALL	8,760	2	125	2	27	100 WATT MERCURY VAPOR FIXTURE	RELAMP WITH (1) SPIRAL 27 WATT COMPACT FLUORESCENT LAMP
ICF300	STAGE HALL	300	1	112	1	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	STAGE REST	100	1	46	1	46	WRAP: SURFACE MOUNTED WITH NARROW 3' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 3' 25 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	LEAVE ALONE

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF300	STAGE OFFICE	1,000	2	112	2	42	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	ELEVATOR MECH	500	1	59	1	50	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	GYM ENTRANCE	3,000	1	59	1	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	GYM ENTRANCE	8,760	1	59	1	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	CUSTODIAL	500	1	59	1	50	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	FIRE PUMP	500	1	100	1	27	100 WATT INCANDESCENT LAMP	RELAMP WITH (1) SPIRAL 27 WATT COMPACT FLUORESCENT LAMP
ICF300	GYM	3,000	24	458	24	215	HIGHBAY: WITH (1) 400 WATT METAL HALIDE LAMP AND (1) MAGNETIC BALLAST	HIGH BAY: NEW REPLACEMENT FIXTURE WITH SPECULAR REFLECTOR, (6) LINEAR 4' 32 WATT T8 LAMPS, (2) UNIVERSAL VOLTAGE PROGRAM START HIGH POWER HIGH EFFICIENCY ELECTRONIC BALLASTS, AND (1) INTEGRAL OCCUPANCY SENSOR
ICF300	GYM	5,000	8	59	8	42	VAPOR TIGHT: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	LOCKER	8,760	1	59	1	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	LOCKER	3,000	6	59	3	84	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TANDEM RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF300	LOCKER	3,000	2	59	2	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	SHOWER	8,760	1	31	1	22	VAPOR TIGHT: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL BELLY PAN, (1) LINEAR 4' 32 WATT T8 LAMP, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	SHOWER	3,000	1	31	1	22	VAPOR TIGHT: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL BELLY PAN, (1) LINEAR 4' 32 WATT T8 LAMP, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (1) LINEAR 4' 28 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	REST	3,000	4	59	4	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	CUSTODIAL	500	1	59	1	50	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	OFFICE	3,000	3	59	3	42	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	REST	3,000	1	59	1	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	WEIGHT ROOM	2,000	6	112	6	84	WRAP: SURFACE MOUNTED WITH NARROW 8' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	EQUIPMENT ROOM	2,000	6	59	6	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	ENTRANCE	1,000	4	125	4	27	100 WATT MERCURY VAPOR FIXTURE	RELAMP WITH (1) SPIRAL 27 WATT COMPACT FLUORESCENT LAMP

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF300	STAIR	8,760	1	59	1	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	STAIR	500	1	59	1	50	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	EXTERIOR MECHANICAL	500	2	59	2	50	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	EXTERIOR MECHANICAL	8,760	1	59	1	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	HALL	8,760	4	112	4	84	WRAP: SURFACE MOUNTED WITH WIDE 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	HALL	3,000	6	112	6	84	WRAP: SURFACE MOUNTED WITH WIDE 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	HALL	8,760	3	59	3	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	HALL	3,000	7	59	7	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	ENTRANCE	3,000	3	125	3	27	100 WATT MERCURY VAPOR FIXTURE	RELAMP WITH (1) SPIRAL 27 WATT COMPACT FLUORESCENT LAMP
ICF300	GARAGE	750	28	72	28	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF300	CUSTODIAL	500	1	31	1	28	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (1) LINEAR 4' 32 WATT T8 LAMP, AND (1) ELECTRONIC BALLAST	RELAMP WITH (1) LINEAR 4' 28 WATT T8 LAMP
ICF300	REST	500	1	59	1	50	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	ELECTRICAL	500	1	31	1	28	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (1) LINEAR 4' 32 WATT T8 LAMP, AND (1) ELECTRONIC BALLAST	RELAMP WITH (1) LINEAR 4' 28 WATT T8 LAMP
ICF300	CLOSET	500	1	31	1	28	STRIP: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL BELLY PAN, (1) LINEAR 4' 32 WATT T8 LAMP, AND (1) ELECTRONIC BALLAST	RELAMP WITH (1) LINEAR 4' 28 WATT T8 LAMP
ICF300	QUARTERMASTER	3,000	48	59	48	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	QUARTERMASTER	8,760	2	59	2	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	LIBRARY	3,000	22	59	22	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	LIBRARY	8,760	2	59	2	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	LIBRARY	2,000	11	112	11	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	REST	2,000	5	59	5	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF300	REST	8,760	1	59	1	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	EXTERIOR AIR HANDLER	500	7	59	7	50	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	EXTERIOR AIR HANDLER	8,760	1	59	1	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	BARBER SHOP	1,000	2	59	2	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	STAIR	8,760	1	59	1	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	STAIR	2,000	1	59	1	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	HALL	500	1	59	1	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	STORAGE	500	2	112	2	98	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (4) LINEAR 4' 28 WATT T8 LAMPS
ICF300	STORAGE	250	3	112	3	98	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (4) LINEAR 4' 28 WATT T8 LAMPS
ICF300	STORAGE	50	3	250	3	250	PAR 38 250 WATT INCANDESCENT LAMP	LEAVE ALONE

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF300	AIR HANDLER	500	7	59	7	50	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	MENS	200	1	59	1	50	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	WOMENS	200	1	59	1	50	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	CUSTODIAL	500	1	59	1	50	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	REST	1,000	5	59	5	50	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	ART ROOM	3,000	23	59	23	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	ELECTRICAL	500	2	59	2	50	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	UPPER HALL	8,760	2	59	2	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	UPPER HALL	8,760	3	112	3	84	WRAP: SURFACE MOUNTED WITH WIDE 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	UPPER HALL	3,000	6	112	6	84	WRAP: SURFACE MOUNTED WITH WIDE 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF300	OFFICE	3,000	2	112	2	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	OFFICE	3,000	4	59	4	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	STORAGE	500	1	59	1	50	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	DATA	500	1	59	1	50	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	OPT	3,000	12	59	12	42	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	COMPUTER LAB	750	12	112	12	98	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (4) LINEAR 4' 28 WATT T8 LAMPS
ICF300	CLERK/TUTOR	3,000	12	112	12	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	HALL	3,000	14	59	14	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	HALL	8,760	3	59	3	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	CLASS	750	6	112	6	98	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (4) LINEAR 4' 28 WATT T8 LAMPS



Proprietary and Confidential

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF300	CLASS	750	6	112	6	98	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (4) LINEAR 4' 28 WATT T8 LAMPS
ICF300	CLASS	750	12	112	12	98	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (4) LINEAR 4' 28 WATT T8 LAMPS
ICF300	CLASS	750	6	112	6	98	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (4) LINEAR 4' 28 WATT T8 LAMPS
ICF300	OPT	3,000	6	59	6	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	OFFICE	3,000	6	112	6	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	HALL	8,760	1	59	1	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	OFFICE	3,000	2	59	2	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	KITCHENETTE	3,000	2	112	2	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	OFFICE	3,000	2	59	2	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	OFFICE	3,000	2	59	2	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICF300	OFFICE	3,000	4	59	4	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	CLASS/CHAPEL	8,760	1	112	1	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	CLASS/CHAPEL	3,000	19	112	19	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	OFFICE	3,000	3	59	3	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	OFFICE	3,000	2	59	2	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICF300	STORAGE	3,000	4	112	4	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	OFFICE	3,000	2	112	2	48	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 2'X4' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300	BARBER VANITY	1,000	2	81	2	40	WRAP: SURFACE MOUNTED WITH NARROW 3' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 3' 30 WATT T12 LAMPS, AND (1) STANDARD MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 3' 25 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICF300VEND	VENDING MACHINE	8,760	1	427	1	427	COLD VENDING MACHINE	LEAVE ALONE

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICFMAINT/W AREHOUSE	LOCKSMITH	2,500	1	46	1	20	STRIP: SURFACE MOUNTED WITH NARROW 3' BODY, NO LENS, WHITE METAL BELLY PAN, (1) LINEAR 3' 30 WATT T12 LAMP, AND (1) STANDARD MAGNETIC BALLAST	RELAMP REBALLAST WITH (1) LINEAR 3' 25 WATT T8 LAMP AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMAINT/W AREHOUSE	LICKSMITH	2,500	2	59	2	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICFMAINT/W AREHOUSE	DOCK & ENTRY	500	5	72	5	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMAINT/W AREHOUSE	WAREHOUSE	1,000	30	72	30	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMAINT/W AREHOUSE	WAREHOUSE	8,760	8	72	8	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMAINT/W AREHOUSE	REST	500	1	72	1	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMAINT/W AREHOUSE	CUSTODIAL	500	1	100	1	18	100 WATT INCANDESCENT LAMP	RELAMP WITH (1) SPIRAL 18 WATT COMPACT FLUORESCENT LAMP
ICFMAINT/W AREHOUSE	ELECTRICAL	500	5	72	5	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMAINT/W AREHOUSE	ELECTRICAL	8,760	1	72	1	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMAINT/W AREHOUSE	GENERATOR	8,760	1	72	1	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1)	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
							ENERGY SAVING MAGNETIC BALLAST	ELECTRONIC BALLAST
ICFMAINT/W AREHOUSE	GENERATOR	500	2	72	2	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMAINT/W AREHOUSE	EXTERIOR	4,380	4	95	4	12	WALLPACK: WITH (1) 70 WATT HIGH PRESSURE SODIUM LAMP AND (1) MAGNETIC BALLAST	WALLPACK: NEW REPLACEMENT FIXTURE WITH (1) 12 WATT LED LIGHT ENGINE AND (1) ELECTRONIC DRIVER
ICFMAINT/W AREHOUSE	STAIR	8,760	2	72	2	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMAINT/W AREHOUSE	STAIR	500	2	72	2	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMAINT/W AREHOUSE	MAINTENENCE HALL	8,760	1	59	1	50	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICFMAINT/W AREHOUSE	MAINTENENCE HALL	500	2	59	2	50	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICFMAINT/W AREHOUSE	OFFICES	1,000	4	59	4	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICFMAINT/W AREHOUSE	LOCKER	3,000	4	59	2	48	TROFFER: RECESS MOUNTED WITH 1'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	TROFFER: UNIVERSAL 1'X8' RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMAINT/W AREHOUSE	SHOP	8,760	2	59	2	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICFMAINT/W AREHOUSE	SHOP	3,000	33	59	33	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMAINT/W AREHOUSE	WEAPONS CHECK	500	2	72	2	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMAINT/W AREHOUSE	BREAK ROOM	3,000	4	72	4	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMAINT/W AREHOUSE	BREAK ROOM	500	2	72	2	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMAINT/W AREHOUSE	CRIBS	1,000	4	59	4	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICFMAINT/W AREHOUSE	OFFICE CAGE	1,000	1	72	1	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMAINT/W AREHOUSE	GARAGE	1,000	11	59	11	50	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICFMAINT/W AREHOUSE	GARAGE	8,760	1	59	1	50	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICFMAINT/W AREHOUSE	EXTERIOR GATE 1	4,380	2	188	2	70	150 WATT HIGH PRESSURE SODIUM FIXTURE.	WALLPACK: NEW REPLACEMENT FIXTURE WITH (1) 70 WATT LED LIGHT ENGINE AND (1) ELECTRONIC DRIVER
ICFMAINT/W AREHOUSE	EXIT	8,760	3	15	3	2	EXIT SIGN WITH (2) TWIN TUBE 7 WATT COMPACT FLUORESCENT LAMPS, (1) MAGNETIC BALLAST	EXIT SIGN: NEW REPLACEMENT FIXTURE WITH (1) 2 WATT LED LIGHT ENGINE, AND EMERGENCY BATTERY BACKUP

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICFMSI	DRESSOUT ROOM	2,250	5	178	5	95	STRIP: SURFACE MOUNTED WITH NARROW 8' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 8' 86 WATT T8HO LAMPS, AND (1) ELECTRONIC BALLAST	INDUSTRIAL: UNIVERSAL NARROW 8' BODY RETROFIT KIT WITH SPECULAR REFLECTOR, (4) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	DRESSOUT ROOM	8,760	1	59	1	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	DRESSOUT ROOM	2,250	4	178	4	95	STRIP: SURFACE MOUNTED WITH NARROW 8' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 8' 86 WATT T8HO LAMPS, AND (1) ELECTRONIC BALLAST	INDUSTRIAL: UNIVERSAL NARROW 8' BODY RETROFIT KIT WITH SPECULAR REFLECTOR, (4) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	DRESSOUT ROOM	8,760	1	59	1	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	BELOW MEZZ 1	2,250	12	178	12	95	STRIP: SURFACE MOUNTED WITH NARROW 8' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 8' 86 WATT T8HO LAMPS, AND (1) ELECTRONIC BALLAST	INDUSTRIAL: UNIVERSAL NARROW 8' BODY RETROFIT KIT WITH SPECULAR REFLECTOR, (4) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	CRIB 1	2,250	2	112	2	48	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 8' BODY, NO LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	INDUSTRIAL: UNIVERSAL NARROW 8' BODY RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	CRIB 2	2,250	1	112	1	48	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 8' BODY, NO LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	INDUSTRIAL: UNIVERSAL NARROW 8' BODY RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	CRIB 3	2,250	1	112	1	48	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 8' BODY, NO LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	INDUSTRIAL: UNIVERSAL NARROW 8' BODY RETROFIT KIT WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICFMSI	SEWING ROOM	2,250	6	178	6	125	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 8' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 8' 86 WATT T8HO LAMPS, AND (1) ELECTRONIC BALLAST	INDUSTRIAL: UNIVERSAL NARROW 8' BODY RETROFIT KIT WITH SPECULAR REFLECTOR, (4) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START HIGH POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	SEWING ROOM	2,250	5	178	5	95	STRIP: SURFACE MOUNTED WITH NARROW 8' BODY, NO LENS, WHITE METAL BELLY PAN, (2) LINEAR 8' 86 WATT T8HO LAMPS, AND (1) ELECTRONIC BALLAST	INDUSTRIAL: UNIVERSAL NARROW 8' BODY RETROFIT KIT WITH SPECULAR REFLECTOR, (4) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	SEWING ROOM	2,250	2	458	2	0	HIGHBAY: WITH (1) 400 WATT METAL HALIDE LAMP AND (1) MAGNETIC BALLAST	REMOVE EXISTING FIXTURE
ICFMSI	SEWING OPEN	2,250	9	178	9	125	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 8' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 8' 86 WATT T8HO LAMPS, AND (1) ELECTRONIC BALLAST	INDUSTRIAL: UNIVERSAL NARROW 8' BODY RETROFIT KIT WITH SPECULAR REFLECTOR, (4) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START HIGH POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	SEWING OPEN	2,250	2	458	2	215	HIGHBAY: WITH (1) 400 WATT METAL HALIDE LAMP AND (1) MAGNETIC BALLAST	HIGH BAY: NEW REPLACEMENT FIXTURE WITH SPECULAR REFLECTOR, (6) LINEAR 4' 32 WATT T8 LAMPS, (2) UNIVERSAL VOLTAGE PROGRAM START HIGH POWER HIGH EFFICIENCY ELECTRONIC BALLASTS, AND (1) INTEGRAL OCCUPANCY SENSOR
ICFMSI	STORAGE	2,250	21	178	21	125	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 8' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 8' 86 WATT T8HO LAMPS, AND (1) ELECTRONIC BALLAST	INDUSTRIAL: UNIVERSAL NARROW 8' BODY RETROFIT KIT WITH SPECULAR REFLECTOR, (4) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START HIGH POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	STORAGE	2,250	3	458	3	0	HIGHBAY: WITH (1) 400 WATT METAL HALIDE LAMP AND (1) MAGNETIC BALLAST	REMOVE EXISTING FIXTURE
ICFMSI	STORAGE	2,250	4	145	4	48	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 60 WATT T12HO LAMPS, AND (1) STANDARD MAGNETIC BALLAST	INDUSTRIAL: NEW NARROW 8' BODY REPLACEMENT FIXTURE WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICFMSI	STORAGE	2,250	6	72	6	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	STORAGE	2,250	2	72	2	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	BLAST ROOM (LOCKED)	2,250	6	59	6	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	CRIB 5	8,760	1	59	1	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	STORAGE	2,250	7	72	7	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	STORAGE	2,250	1	59	1	42	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	MEZZ 2	2,250	5	178	5	95	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 8' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 8' 86 WATT T8HO LAMPS, AND (1) ELECTRONIC BALLAST	INDUSTRIAL: UNIVERSAL NARROW 8' BODY RETROFIT KIT WITH SPECULAR REFLECTOR, (4) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	MEZZ 2	2,250	1	458	1	0	HIGHBAY: WITH (1) 400 WATT METAL HALIDE LAMP AND (1) MAGNETIC BALLAST	REMOVE EXISTING FIXTURE
ICFMSI	LAUNDRY	500	2	100	2	18	100 WATT INCANDESCENT LAMP	RELAMP WITH (1) SPIRAL 18 WATT COMPACT FLUORESCENT LAMP
ICFMSI	MECHANICAL	500	4	59	4	50	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICFMSI	RECEIVING	2,250	3	458	3	215	HIGHBAY: WITH (1) 400 WATT METAL HALIDE LAMP AND (1) MAGNETIC BALLAST	HIGH BAY: NEW REPLACEMENT FIXTURE WITH SPECULAR REFLECTOR, (6) LINEAR 4' 32 WATT T8 LAMPS, (2) UNIVERSAL VOLTAGE PROGRAM START HIGH POWER HIGH EFFICIENCY ELECTRONIC BALLASTS, AND (1) INTEGRAL OCCUPANCY SENSOR
ICFMSI	OFFICE	2,250	2	72	2	42	VAPOR TIGHT: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL BELLY PAN, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	SHIPPING OFFICES	2,250	13	59	13	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICFMSI	STAFF REST	500	1	72	1	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	MEZZ 3	2,250	4	72	2	84	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	TANDEM RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	MEZZ 4	2,250	4	59	4	50	TROFFER: RECESS MOUNTED WITH 2'X4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 32 WATT T8 LAMPS, AND (1) ELECTRONIC BALLAST	RELAMP WITH (2) LINEAR 4' 28 WATT T8 LAMPS
ICFMSI	MEZZ 1	2,250	8	458	8	48	HIGHBAY: WITH (1) 400 WATT METAL HALIDE LAMP AND (1) MAGNETIC BALLAST	INDUSTRIAL: NEW NARROW 8' BODY REPLACEMENT FIXTURE WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	PRODUCTION TASK	2,250	102	178	102	125	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 8' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 8' 86 WATT T8HO LAMPS, AND (1) ELECTRONIC BALLAST	INDUSTRIAL: UNIVERSAL NARROW 8' BODY RETROFIT KIT WITH SPECULAR REFLECTOR, (4) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START HIGH POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	HIGH CEILING PRODUCTION	2,250	55	458	55	215	HIGHBAY: WITH (1) 400 WATT METAL HALIDE LAMP AND (1) MAGNETIC BALLAST	HIGH BAY: NEW REPLACEMENT FIXTURE WITH SPECULAR REFLECTOR, (6) LINEAR 4' 32 WATT T8 LAMPS, (2) UNIVERSAL

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
								VOLTAGE PROGRAM START HIGH POWER HIGH EFFICIENCY ELECTRONIC BALLASTS, AND (1) INTEGRAL OCCUPANCY SENSOR
ICFMSI	UNDER MEZZ 4	2,250	5	72	5	42	WRAP: SURFACE MOUNTED WITH NARROW 4' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 34 WATT T12 LAMPS, AND (1) ENERGY SAVING MAGNETIC BALLAST	RELAMP REBALLAST WITH (2) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFMSI	EXTERIOR	4,380	8	188	8	35	WALLPACK: WITH (1) 150 WATT HIGH PRESSURE SODIUM LAMP AND (1) MAGNETIC BALLAST	WALLPACK: NEW REPLACEMENT FIXTURE WITH (1) 35 WATT LED LIGHT ENGINE AND (1) ELECTRONIC DRIVER
ICFMSI	EXIT	8,760	1	15	1	2	EXIT SIGN WITH (2) TWIN TUBE 7 WATT COMPACT FLUORESCENT LAMPS, (1) MAGNETIC BALLAST	EXIT SIGN: NEW REPLACEMENT FIXTURE WITH (1) 2 WATT LED LIGHT ENGINE, AND EMERGENCY BATTERY BACKUP
ICFPOLEBAR N	GATOR STORAGE	1,000	4	145	4	48	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 60 WATT T12HO LAMPS, AND (1) STANDARD MAGNETIC BALLAST	INDUSTRIAL: NEW NARROW 8' BODY REPLACEMENT FIXTURE WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFPOLEBAR N	GARAGE	1,000	3	145	3	48	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 60 WATT T12HO LAMPS, AND (1) STANDARD MAGNETIC BALLAST	INDUSTRIAL: NEW NARROW 8' BODY REPLACEMENT FIXTURE WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFPOLEBAR N	TOOL SHOP	3,000	23	145	23	48	INDUSTRIAL: SURFACE MOUNTED WITH NARROW 4' BODY, NO LENS, WHITE METAL REFLECTOR, (2) LINEAR 4' 60 WATT T12HO LAMPS, AND (1) STANDARD MAGNETIC BALLAST	INDUSTRIAL: NEW NARROW 8' BODY REPLACEMENT FIXTURE WITH SPECULAR REFLECTOR, (2) LINEAR 4' 28 WATT T8 LAMPS, AND (1) UNIVERSAL VOLTAGE INSTANT START NORMAL POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFPOLEBAR N	TOOL SHOP	3,000	1	144	1	84	WRAP: SURFACE MOUNTED WITH NARROW 8' BODY, ACRYLIC LENS, WHITE METAL REFLECTOR, (4) LINEAR 4' 34 WATT T12 LAMPS, AND (2) ENERGY SAVING MAGNETIC BALLASTS	TANDEM RELAMP REBALLAST WITH (4) LINEAR 4' 28 WATT T8 LAMPS AND (1) UNIVERSAL VOLTAGE INSTANT START LOW POWER HIGH EFFICIENCY ELECTRONIC BALLAST
ICFPOLEBAR N	TOOL SHOP	3,000	2	144	2	144	HIGHBAY: 2'X4' WITH (4) LINEAR 4' 32 WATT T8 LAMPS, AND (1) HIGH POWER ELECTRONIC BALLAST	LEAVE ALONE
ICFPOLEBAR N	TOOL SHOP	3,000	1	150	1	0	150 WATT COMPACT FLUORESCENT LAMP	REMOVE EXISTING FIXTURE

Area Information			Existing		Proposed		Description	
Bldg.	Description	Hours of Operation	Qty. Fixt.	Watts per Fixture	Qty Fixt	Watts per Fixture	Existing Fixture	Proposed Fixture
ICFSITE/LOT	1000W HPS HIGH MAST	4,380	18	1,100	18	1,100	FLOOD: WITH (1) 1000 WATT HIGH PRESSURE SODIUM LAMP AND (1) MAGNETIC BALLAST	LEAVE ALONE
ICFSITE/LOT	400W HPS POLES	4,380	100	458	100	143	FLOOD: WITH (1) 400 WATT HIGH PRESSURE SODIUM LAMP AND (1) MAGNETIC BALLAST	FLOOD: NEW REPLACEMENT FIXTURE WITH (1) 143 WATT LED LIGHT ENGINE AND (1) ELECTRONIC DRIVER
ICFSITE/LOT	150W HPS POLES	4,380	35	188	35	70	150 WATT HIGH PRESSURE SODIUM FIXTURE.	WALLPACK: NEW REPLACEMENT FIXTURE WITH (1) 70 WATT LED LIGHT ENGINE AND (1) ELECTRONIC DRIVER
ICFSITE/LOT	150W HPS POLES	0	6	188	6	188	POST TOP: POLE MOUNTED WITH (1) 150 WATT HIGH PRESSURE SODIUM LAMP AND (1) MAGNETIC BALLAST	LEAVE ALONE
ICFSITE/LOT	250W HPS POLES	4,380	2	295	2	73	SHOEBOX: WITH (1) 250 WATT HIGH PRESSURE SODIUM LAMP AND (1) MAGNETIC BALLAST	FLOOD: NEW REPLACEMENT FIXTURE WITH (1) 73 WATT LED LIGHT ENGINE, (1) UNIVERSAL VOLTAGE ELECTRONIC DRIVER, AND (1) PHOTOCELL
ICFSITE/LOT	175W BARN LIGHT	4,380	1	205	1	48	175 WATT MERCURY VAPOR FIXTURE	FLOOD: NEW REPLACEMENT FIXTURE WITH (1) 48 WATT LED LIGHT ENGINE, (1) UNIVERSAL VOLTAGE ELECTRONIC DRIVER, AND (1) PHOTOCELL

4,133

3,832

## ECM #3: Building Envelope

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### RECOMMENDED ACTION

We recommend sealing all gaps, cracks, and holes using appropriate materials such as Fire Retardant, Poly Urethane Foam, caulks, and appropriate weather stripping.

Estimated Energy Savings = 405 MCF/yr.

Estimated Cost Savings = \$2,472/yr.

Implementation Cost = \$31,291

Implementation costs includes design and engineering, project management, contingency, performance, overhead and profit.

\*Estimated energy and cost savings are for year one only. All cost and savings are +/- 10%.

### EXISTING CONDITIONS

Air leakage is define as; “the uncontrolled migration of conditioned air through the building envelope”. Caused by pressure differences due to wind, chimney effect and mechanical systems, it has been shown to represent the single largest source of heat loss or gain through the building envelopes of nearly all types of buildings. Along with these effects on a building envelope, the following can enlarge the heat loss issues:

- a) Deteriorating door weather stripping can lead to a larger air transfer, creating heat loss that will cause increases in heating loads and heating costs.
- b) Seals around windows will corrode over time. This also leads to a larger transfer of conditioned air, causing increases in heating costs.
- c) Incorrect sealing at the roof/wall connection point on a building structure can also create heat loss and depressurize a building from the outside environment.

Many of these issues can be solved by creating better seals around doors, windows, roof/wall connections, etc.

Many of the doors and frames are in poor condition with rust holes making it impossible to adequately seal the door with weather stripping. Door and frame replacement are not included in this scope or work.

Some studies have shown that upwards of 20% to 40% of heat loss could be attributed to air leakage. Typical savings, however, tend to be in the 10% to 25% range. Beyond the realized utility savings costs; air leakage can also affect thermal comfort of occupant’s air quality from exterior contaminants, moisture migration, and imbalance of mechanical systems.

### PROPOSED SYSTEM

There are two aspects of the proposed retrofit; first, sealing all doors and windows to create an air tight environment in both inmate and public occupied areas. Second, to seal all roof/wall connection points in the public occupied buildings.

## SAVINGS CALCULATIONS

### Building Envelope

The intention of this energy conservation measure is to seal the windows and doors that have a small gap which allows infiltration of air into the building. In addition there is a small gap between the roof and wall intersection which allows infiltration into the building. This calculation is fairly complicated and converts the size of the opening to a correlating amount of air flow (cfm) that can infiltrate through it then assumes this air is a heat loss to the building. No savings has been taken for cooling.

Facility	Natural Gas Heating Savings (MCF)	Natural gas \$/MCF	Total Savings
ICF	405	\$ 6.11	\$ 2,472

### Building Envelope/Air Leakage - Savings Calculations

Balance Point Temp (°F)	Temperature below which heating is required
Heating Season (Hours)	Hours below the Balance Point Temp based on average monthly bin data
Average OA Air Temp at Balance Point (°F)	Average outside air temperature at the balance point temp
Space Temp (°F)	Space temperature when occupied
Boiler Efficiency	Estimated boiler efficiency at average OA temp
Weather Location	MI-Detroit
Airflow Coefficient	21.66 cfm/ft <sup>2</sup> /(PA). Calculated value based on scientific test and flow dynamics.
Wind in MPH	10.00 Average wind speed based on weather data
Pressure Differential (ΔP)	12.93 PA. Pressure difference at the average wind speed.
Pressure Factor	0.65
Constant	1.08 Btuh/CFM/°F
Conversion factor	1,000,000 BTU/MCF

$$\text{Airflow (CFM)} = \text{Opening Area (sq.ft.)} \times \text{Airflow Coefficient} \times (\text{Pressure Differential})^{\text{Pressure Factor}}$$

The airflow is based on empirical formulas based on building pressurization techniques:

$$\text{Savings (MCF)} = \text{Airflow} \times 1.08 \text{ Btuh/CFM/}^\circ\text{F} \times \text{Heating Season Hours} \times \text{Temp Differential} / 1,000,000 \text{ BTU/MCF} / \text{Boiler Efficiency}$$

Facility	Balance Point Temp (°F)	Heating Season (Hours)	Average OA Air Temp at Balance Point (°F)	Space Temp (°F)	Boiler Efficiency
ICF	55	5188	35.5	72	87%

Facility	Description	Length (ft.)	Gap (in.)	Opening Area (ft <sup>2</sup> )	Airflow (CFM)	Savings (MCF)
ICF	admin roof/wall	380	3/32	2.97	340	79.9
ICF	Doors	100	1/16	0.52	60	14.0
ICF	MSI - doors	80	1/16	0.42	48	11.2
ICF	MSI - OH doors	80	1/8	0.83	95	22.4
ICF	MSI - Roof/wall	750	3/32	5.86	670	157.6
ICF	Inmate housing doors	600	1/16	3.13	357	84.1
ICF	Maint doors	96	1/8	1.00	114	26.9
ICF	Maint - OH doors	60	1/16	0.31	36	8.4

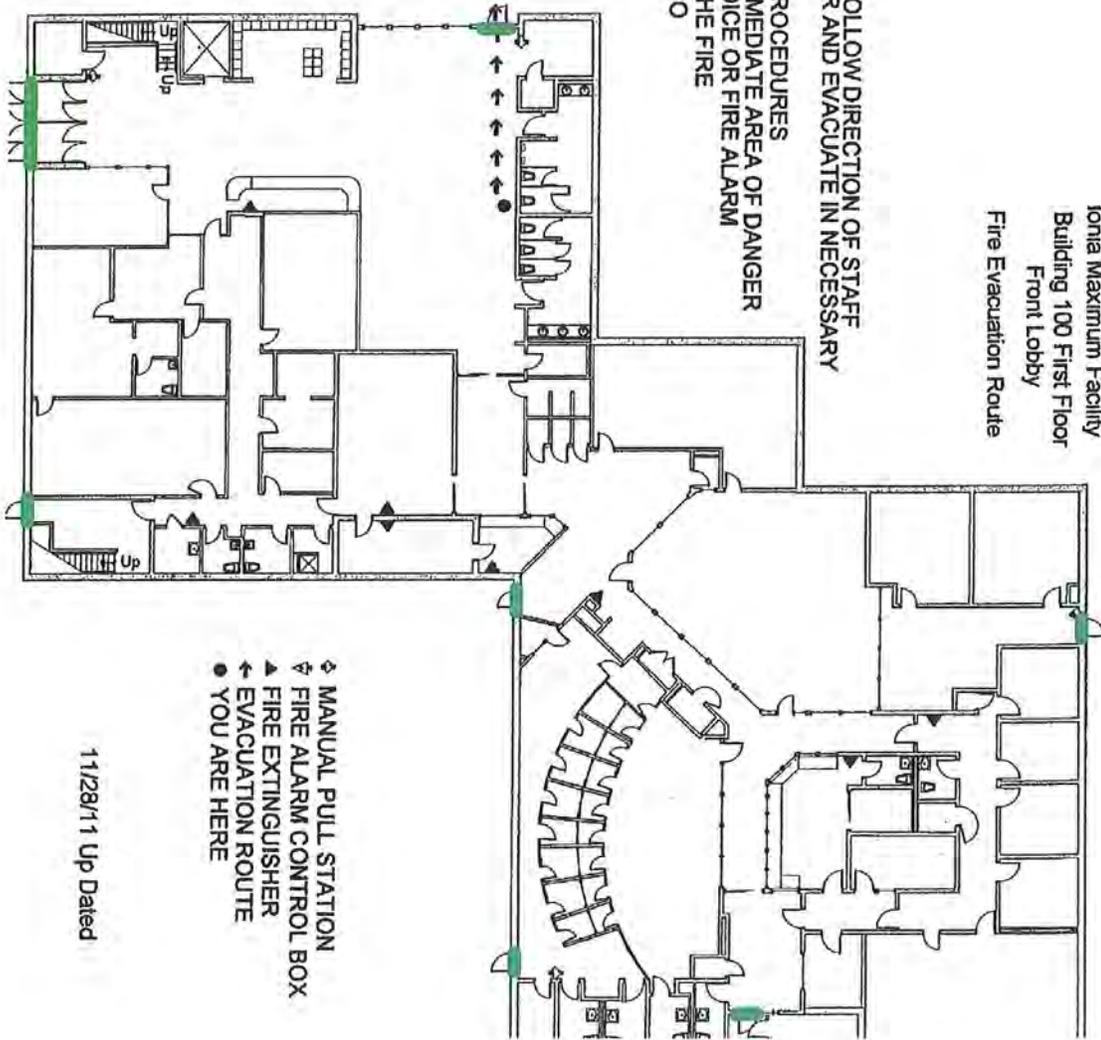
- Pipe Penetrations and Shafts
- Roof/ Level Change
- Roof/ Wall Connection
- Windows
- Door Sweeps Only
- Door to be fully weather stripped inc. sweeps
- Overhead door to be fully weather stripped

Ionia Correctional  
Pre Install  
9/28/12 ML

**FIRE AND EMERGENCY PROCEDURES**  
 R-REMOVE PERSONS IN THE IMMEDIATE AREA OF DANGER  
 A-ALARM, SOUND BY RADIO, VOICE OR FIRE ALARM  
 C-CLOSE DOORS TO ISOLATE THE FIRE  
 E-EXTINGUISH IF SAFE TO DO SO

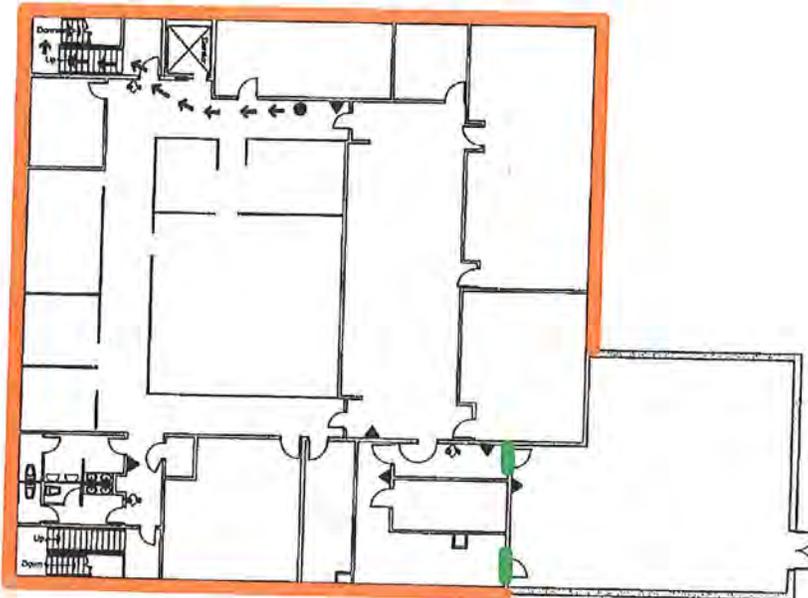
**PRISONERS AND VISITORS-FOLLOW DIRECTION OF STAFF  
 NOTIFY THE CONTROL CENTER AND EVACUATE IN NECESSARY**

Ionia Maximum Facility  
Building 100 First Floor  
Front Lobby  
Fire Evacuation Route



11/28/11 Up Dated

**Ionla Maximum Facility  
Building 100 Second Floor  
Fire Evacuation Route**



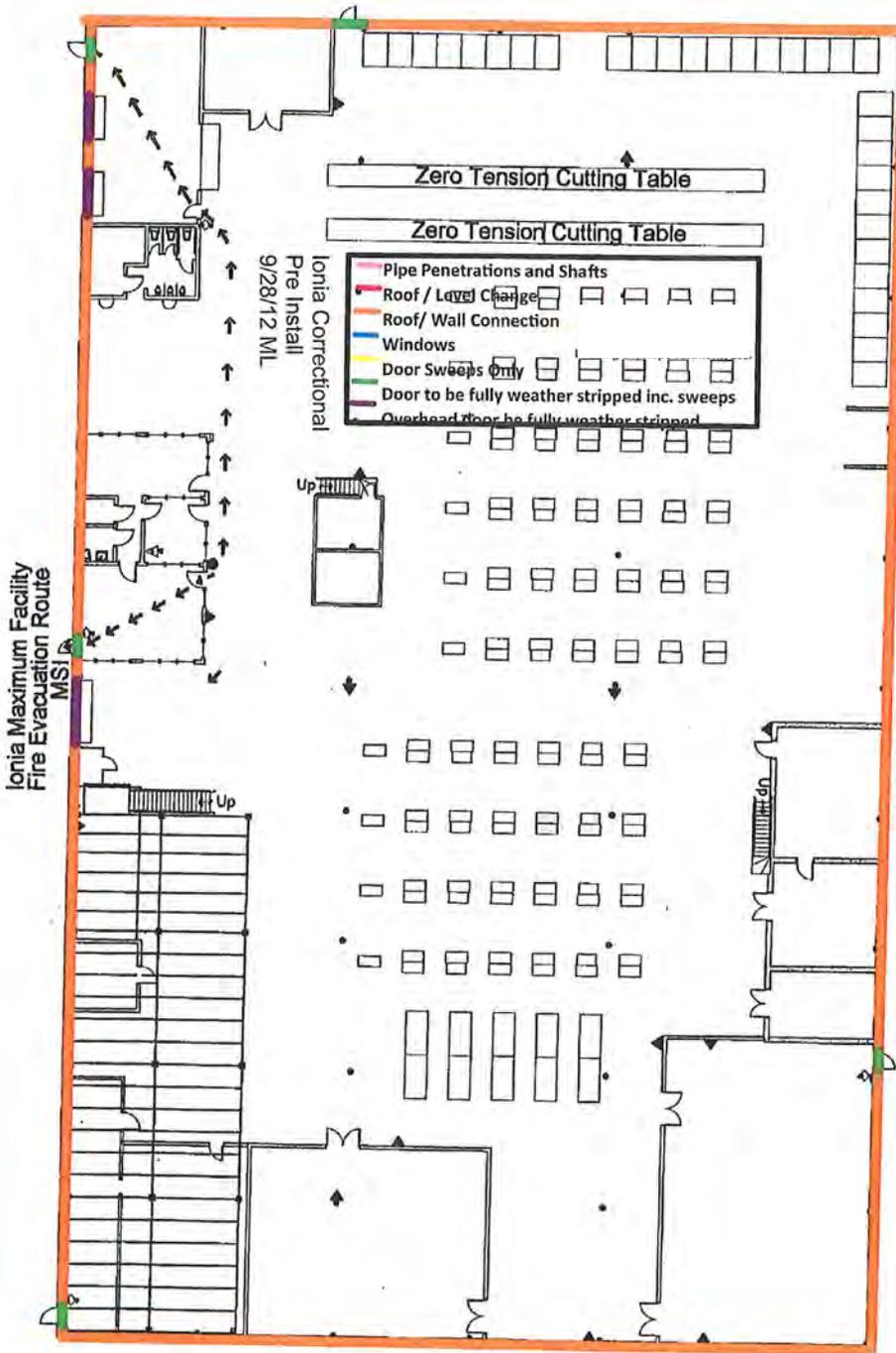
Ionla Correctional  
Pre Install  
9/28/12 ML

	Pipe Penetrations and Shafts
	Roof / Level Change
	Roof / Wall Connection
	Windows
	Door Sweeps Only
	Door to be fully weather stripped inc. sweeps
	Overhead door to be fully weather stripped

- ◆ MANUAL PULL STATION
- ▽ FIRE ALARM CONTROL BOX
- ▲ FIRE EXTINGUISHER
- ← EVACUATION ROUTE
- YOU ARE HERE

11/28/11 Up Dated

**FIRE AND EMERGENCY PROCEDURES**  
**R--REMOVE PERSONS IN THE IMMEDIATE AREA OF DANGER**  
**A--ALARM, SOUND BY RADIO, VOICE OR FIRE ALARM**  
**C--CLOSE DOORS TO ISOLATE THE FIRE**  
**E--EXTINGUISH IF SAFE TO DO SO**  
**PRISONERS AND VISITORS-FOLLOW DIRECTION OF STAFF**  
**NOTIFY THE CONTROL CENTER AND EVACUATE IN NECESSARY**



**FIRE AND EMERGENCY PROCEDURES**

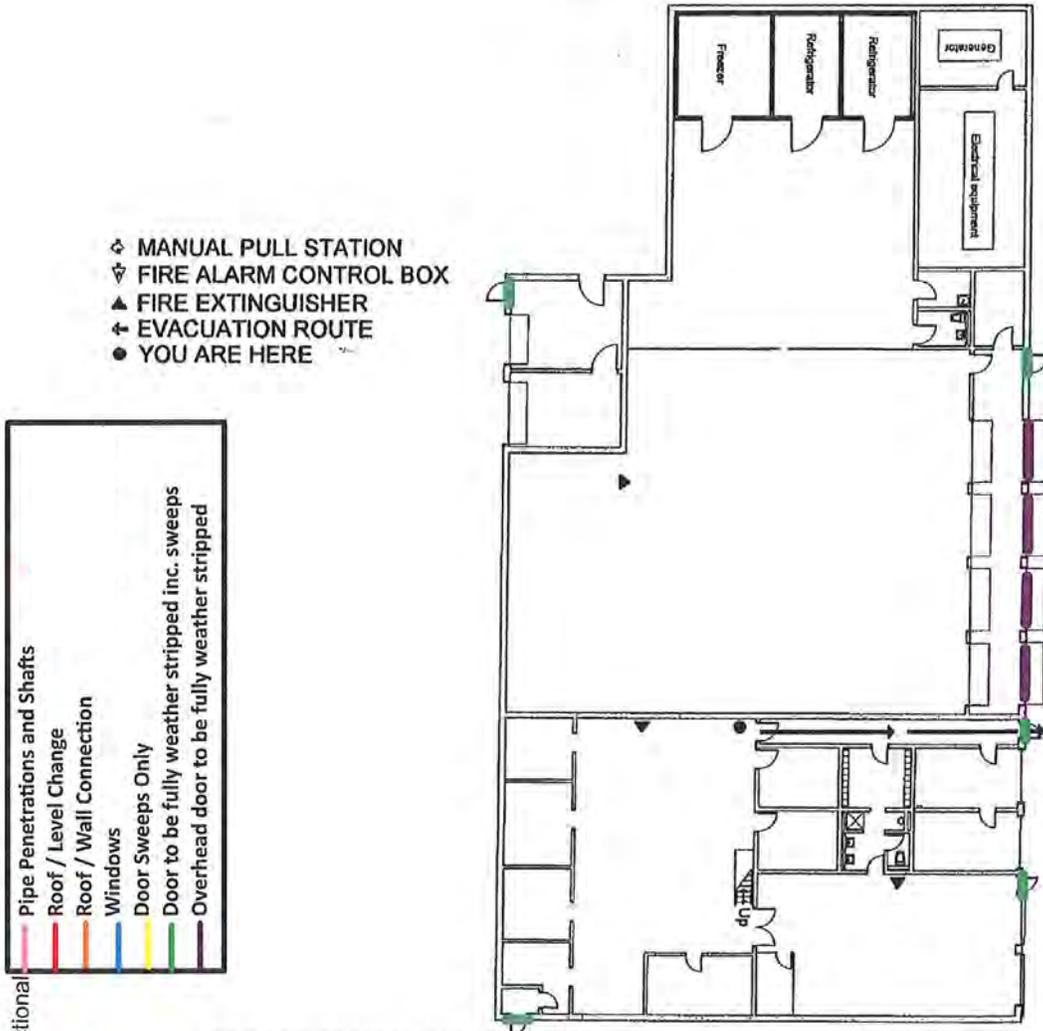
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PRISONERS AND VISITORS--FOLLOW DIRECTION OF STAFF  
 NOTIFY THE CONTROL CENTER AND EVACUATE IN NECESSARY

◆ FIRE ALARM CONTROL BOX  
 ▼ MANUAL PULL STATION  
 ▲ FIRE EXTINGUISHER  
 ← EVACUATION ROUTE  
 ● YOU ARE HERE

12/02/11 Up Dated

**IONIA MAXIMUM CORRECTIONAL FACILITY  
FIRE EVACUATION ROUTE  
Maintenance**



Ionina Correctional  
Pre Install  
9/28/12 ML

- ◇ MANUAL PULL STATION
- ▽ FIRE ALARM CONTROL BOX
- ▲ FIRE EXTINGUISHER
- EVACUATION ROUTE
- YOU ARE HERE

- Pipe Penetrations and Shafts
- Roof / Level Change
- Roof / Wall Connection
- Windows
- Door Sweeps Only
- Door to be fully weather stripped inc. sweeps
- Overhead door to be fully weather stripped

**FIRE AND EMERGENCY PROCEDURES**  
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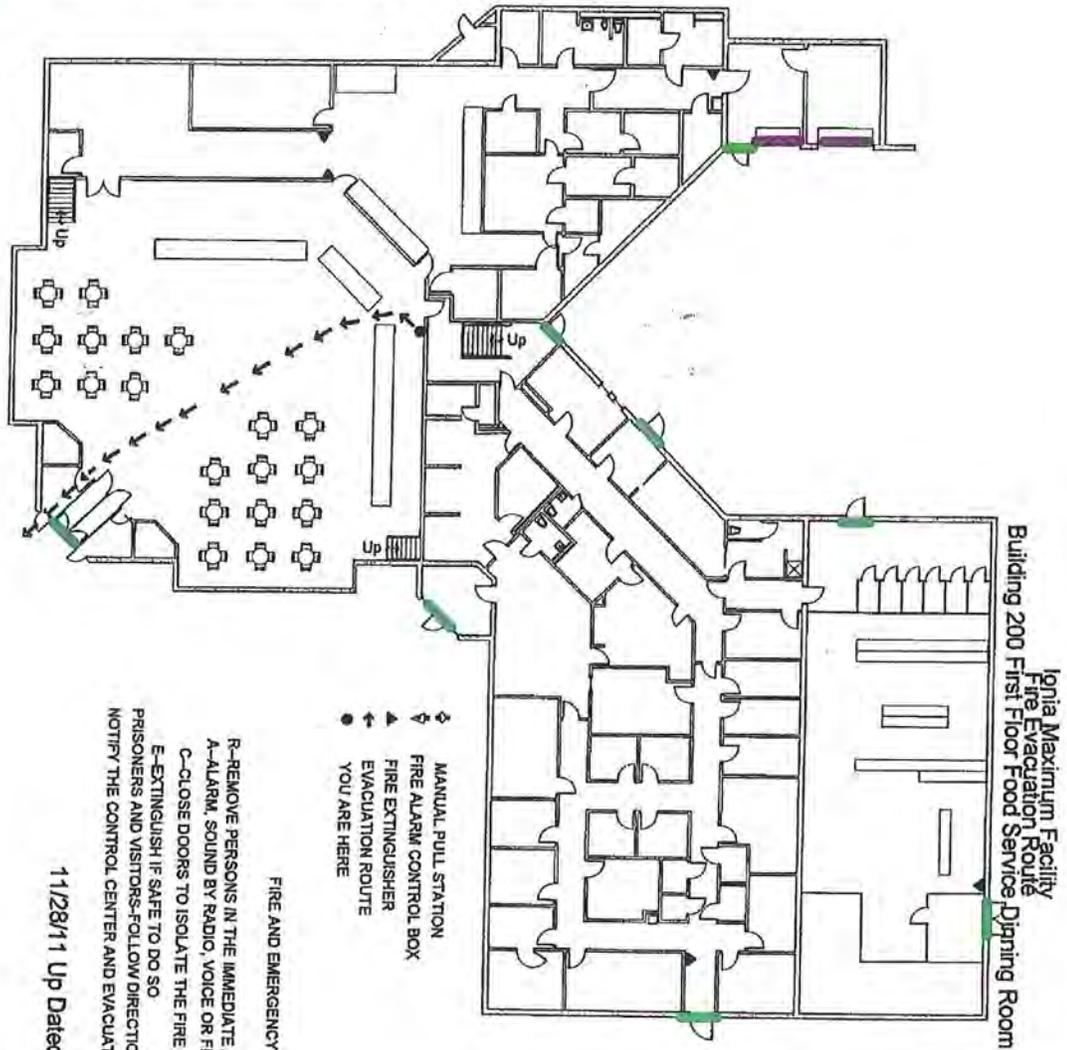
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**PRISONERS AND VISITORS-FOLLOW DIRECTIONS OF STAFF**

11/28/11 up dated

\*Estimated energy and cost savings are for year one only. All cost and savings are +/- 10%.

- Pipe Penetrations and Shafts
- Roof / Level Change
- Roof/ Wall Connection
- Windows
- Door Sweeps Only
- Door to be fully weather stripped inc. sweeps
- Overhead door be fully weather stripped

Ionia Correctional  
Pre Install  
9/28/12 ML



- ◇ MANUAL PULL STATION
- FIRE ALARM CONTROL BOX
- ▲ FIRE EXTINGUISHER
- - - EVACUATION ROUTE
- YOU ARE HERE

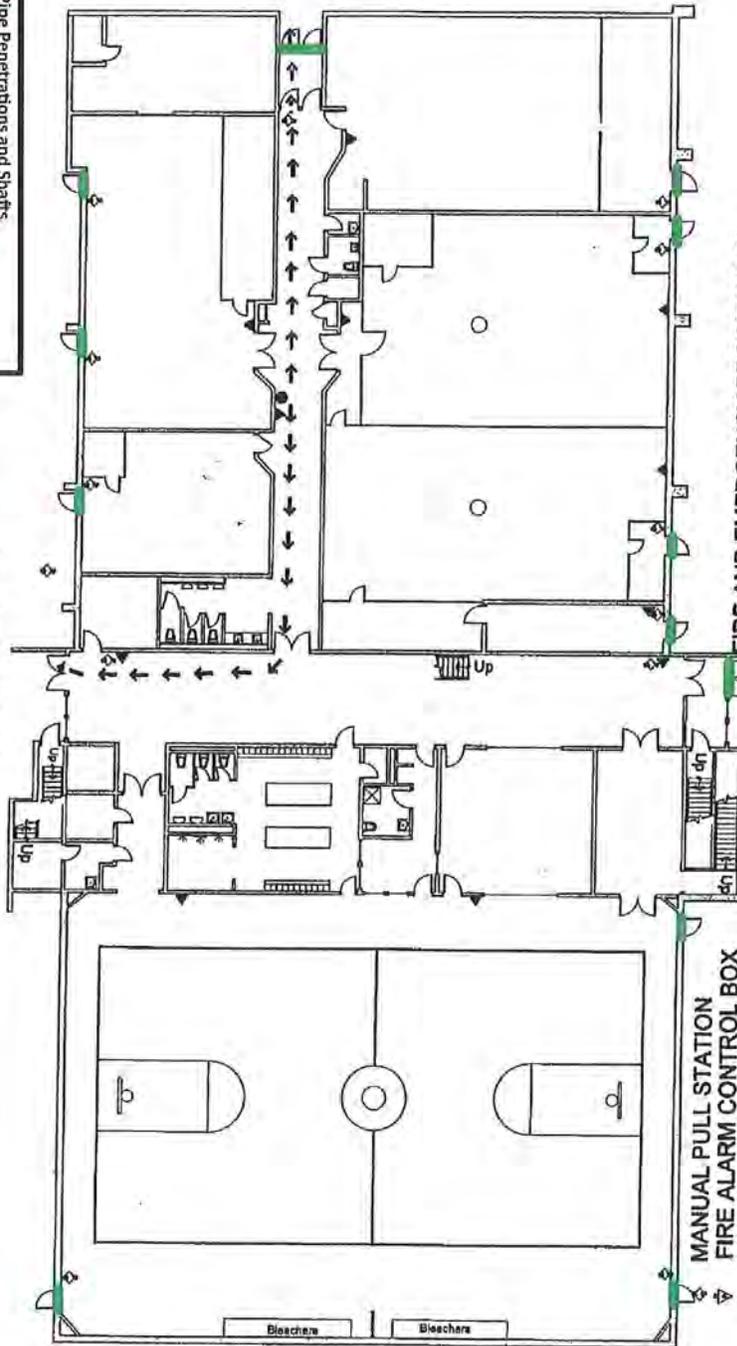
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11/28/11 Up Dated

- Pipe Penetrations and Shafts
- Roof / Level Change
- Roof/ Wall Connection
- Windows
- Door Sweeps Only
- Door to be fully weather striped inc. sweeps
- Overhead door to be fully weather striped

Ionía Correctional  
 Building 300 First Floor Library Hallway  
 Fire Evacuation Route  
 Pre Install  
 9/28/12 ML



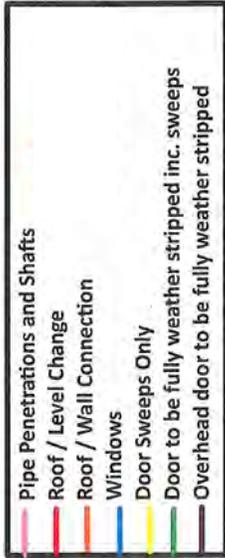
MANUAL PULL STATION  
 FIRE ALARM CONTROL BOX  
 FIRE EXTINGUISHER  
 EVACUATION ROUTE  
 YOU ARE HERE

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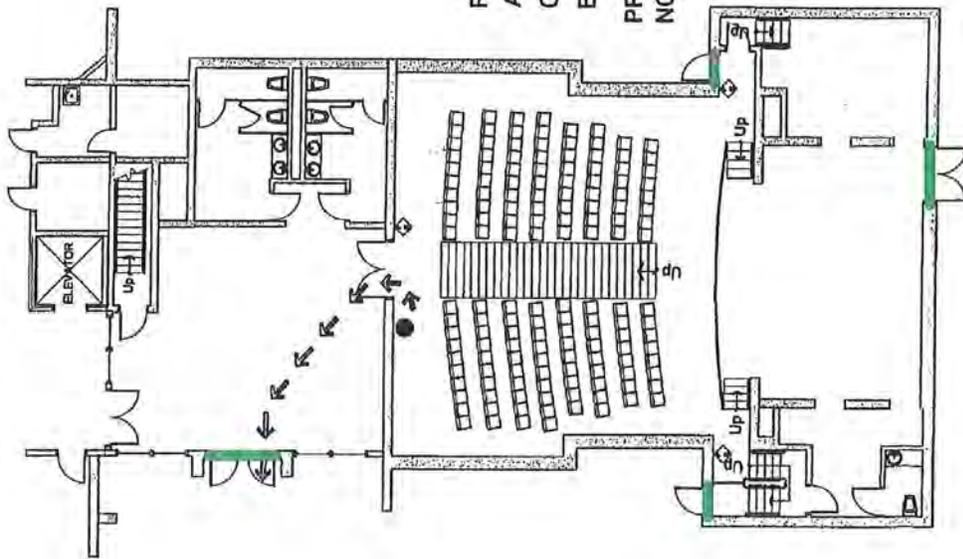
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11/28/11 Up Dated

Ionia Maximum Facility  
 Building 300 Auditorium 1<sup>st</sup> Floor  
 Fire Evacuation Route



Ionia Correctional  
 Pre Install  
 9/28/12 ML



FIRE AND EMERGENCY PROCEDURES

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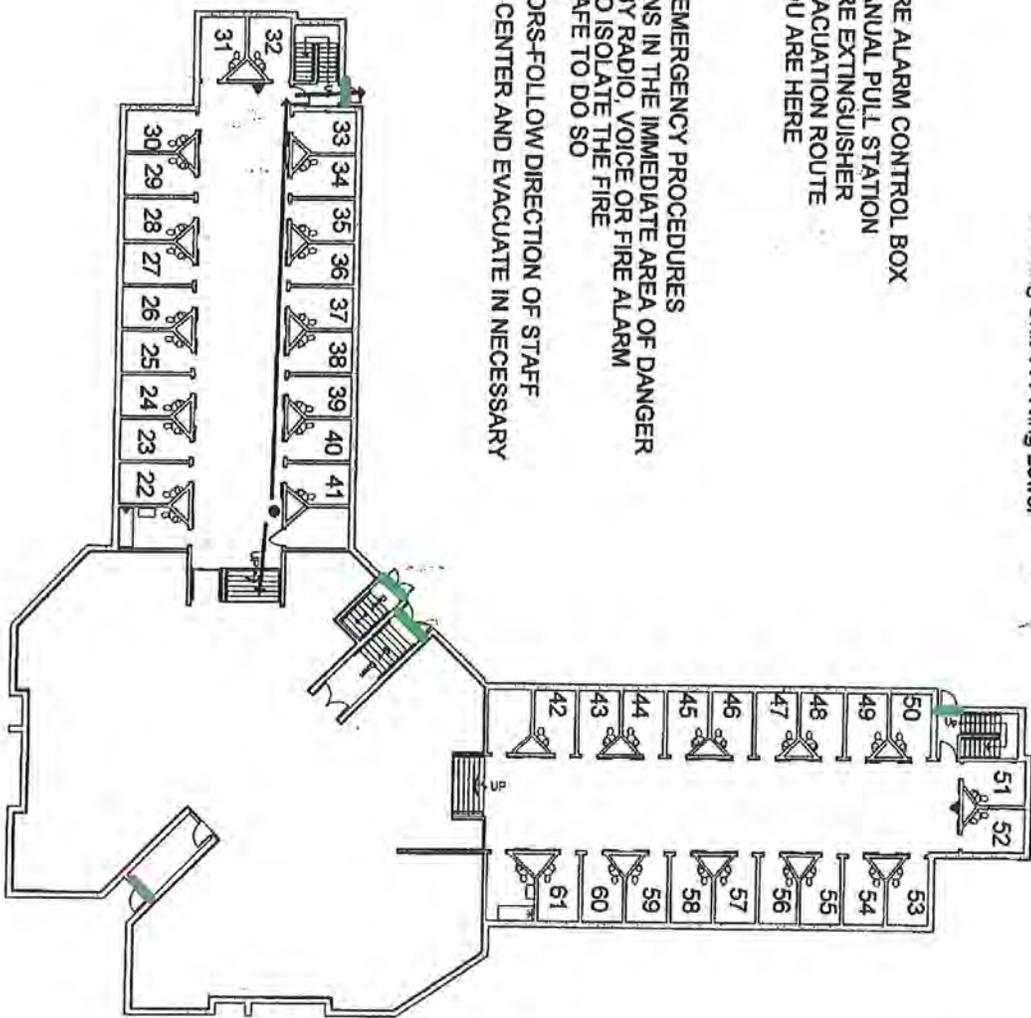
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- ▽ FIRE ALARM CONTROL BOX
- ▲ FIRE EXTINGUISHER
- ← EVACUATION ROUTE
- YOU ARE HERE

11/28/11 Up Dated

- Pipe Penetrations and Shafts
- Roof / Level Change
- Roof/ Wall Connection
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- Door Sweeps Only
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Ionia Correctional  
 Pre Install  
 9/28/12 ML



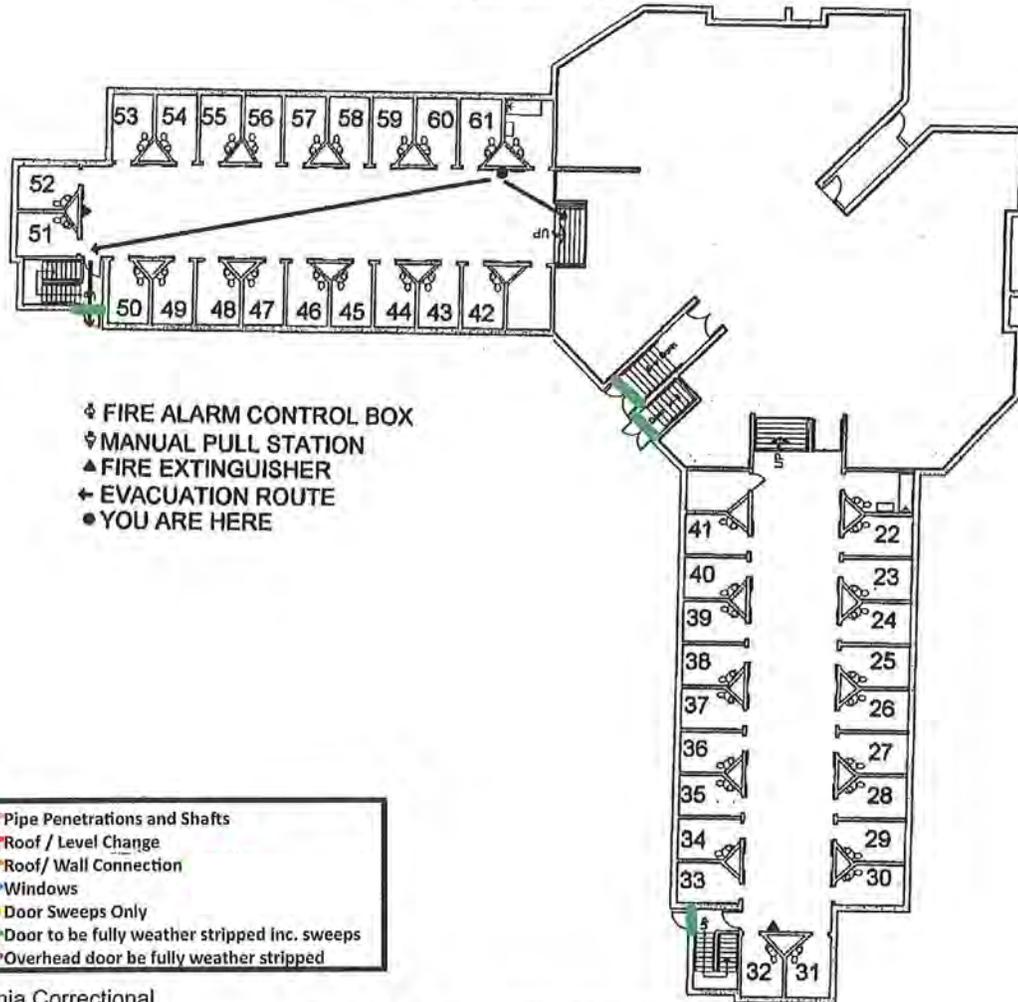
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- ◻ MANUAL PULL STATION
- ▲ FIRE EXTINGUISHER
- ⊕ EVACUATION ROUTE
- YOU ARE HERE

Ionia Maximum Facility  
 Fire Evacuation Route  
 Housing Unit 1 A-Wing Lower

\*Estimated energy and cost savings are for year one only. All cost and savings are +/- 10%.

Ionia Maximum Facility  
Housing Unit 1 B-Wing Lower  
Fire Evacuation Route



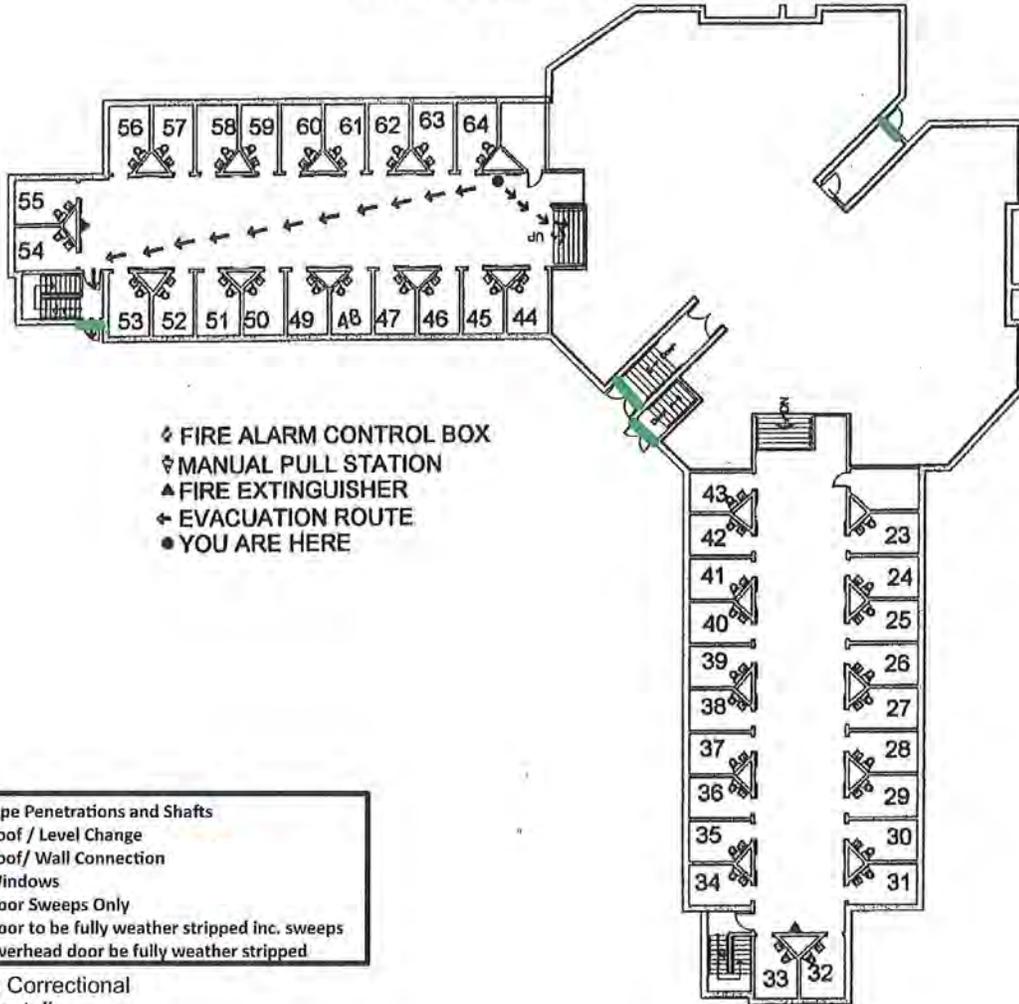
Ionia Correctional  
Pre Install  
9/28/12 ML

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**PRISONERS AND VISITORS-FOLLOW DIRECTION OF STAFF  
 NOTIFY THE CONTROL CENTER AND EVACUATE IN NECESSARY**

Up Dated 11/28/11

Ionia Maximum Facility  
Fire Evacuation Route  
Housing Unit 2 B-Wing Lower



Ionia Correctional  
Pre Install  
9/28/12 ML

**FIRE AND EMERGENCY PROCEDURES**

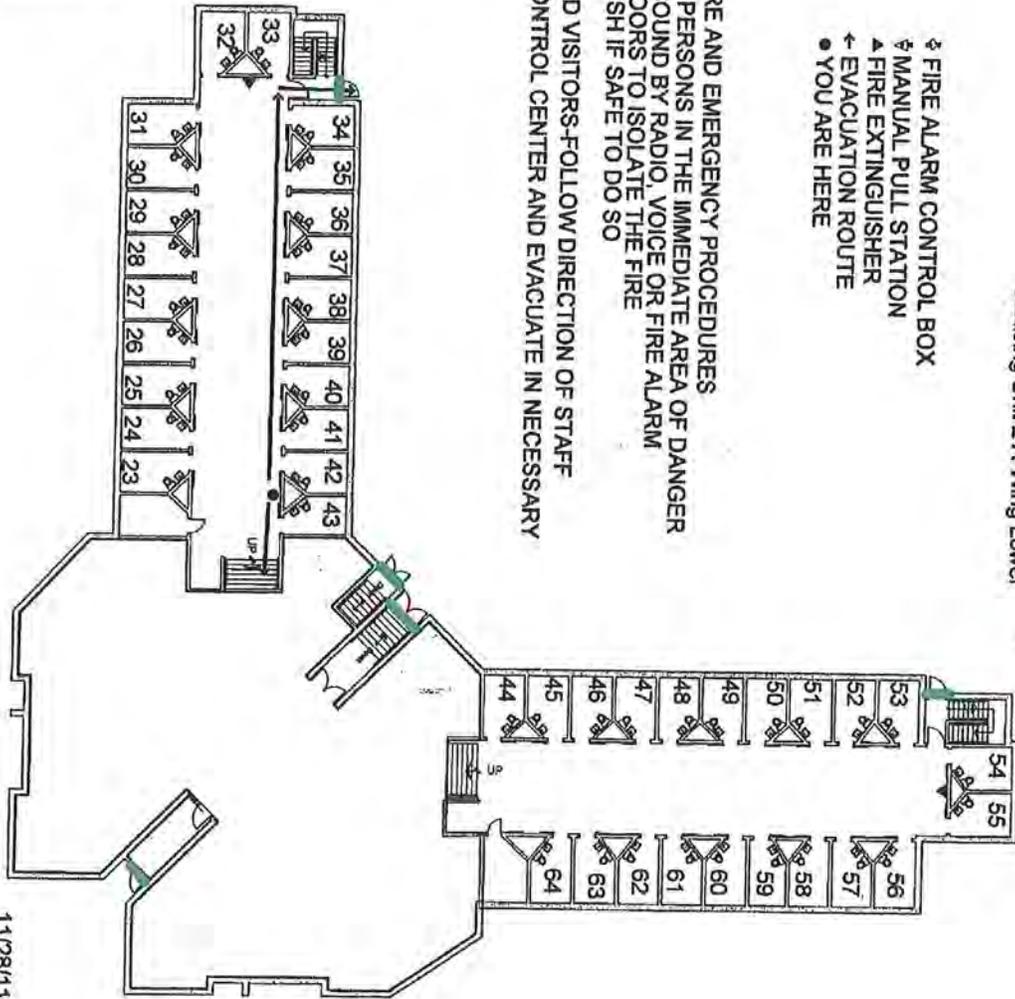
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11/28/11 Up dated

**PRISONERS AND VISITORS-FOLLOW DIRECTION OF STAFF  
 NOTIFY THE CONTROL CENTER AND EVACUATE IN NECESSARY**

- Pipe Penetrations and Shafts
- Roof / Level Change
- Roof/ Wall Connection
- Windows
- Door Sweeps Only
- Door to be fully weather stripped inc, sweeps
- Overhead door be fully weather stripped

Ionia Correctional  
Pre Install  
9/28/12 ML



11/28/11 Up dated

- ⌘ FIRE ALARM CONTROL BOX
- ⌘ MANUAL PULL STATION
- ▲ FIRE EXTINGUISHER
- ← EVACUATION ROUTE
- YOU ARE HERE

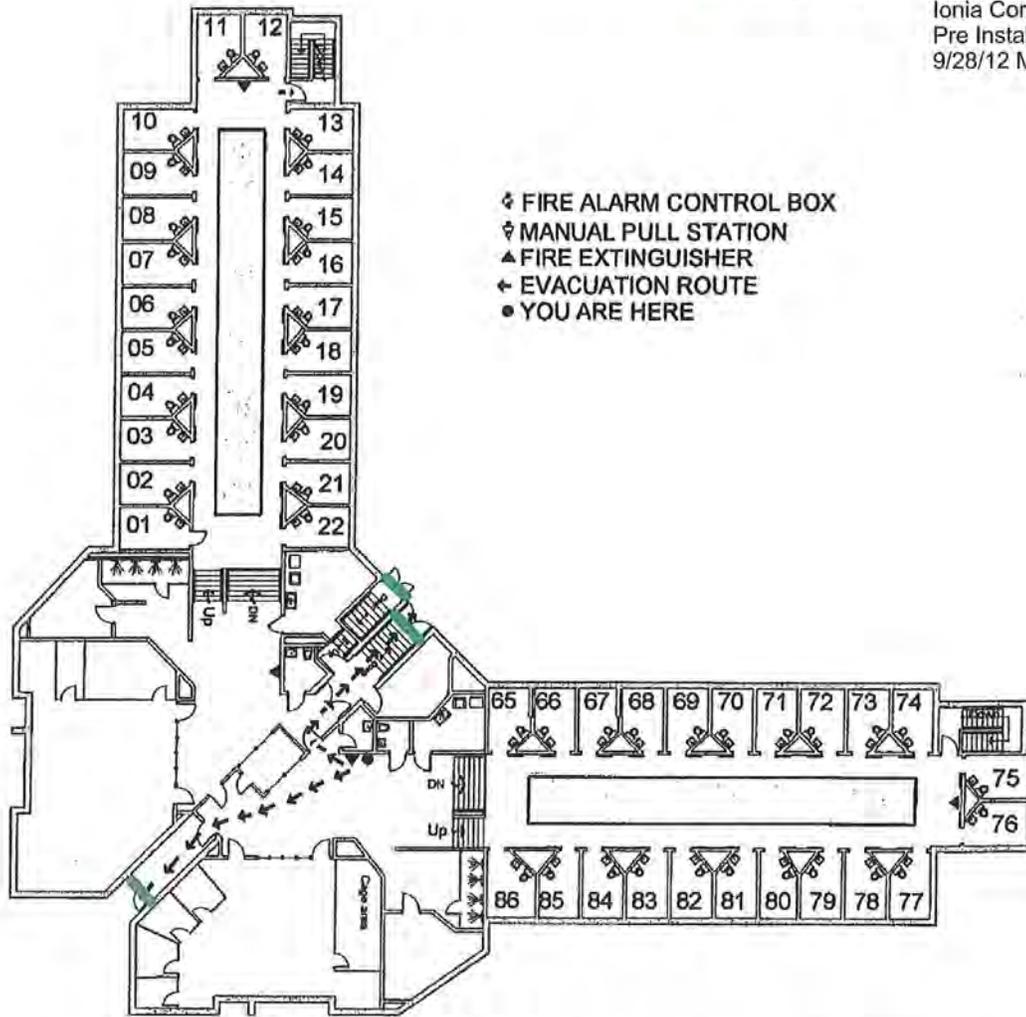
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 NOTIFY THE CONTROL CENTER AND EVACUATE IN NECESSARY

Ionia Maximum Facility  
Fire Evacuation Route  
Housing Unit 2 A-Wing Lower

**Ionía Maximum Facility  
Fire Evacuation Route  
Housing Unit 2 B Wing Base**

- Pipe Penetrations and Shafts
- Roof / Level Change
- Roof/ Wall Connection
- Windows
- Door Sweeps Only
- Door to be fully weather stripped inc. sweeps
- Overhead door to be fully weather stripped

Ionía Correctional  
Pre Install  
9/28/12 ML



- ⚡ FIRE ALARM CONTROL BOX
- ⚡ MANUAL PULL STATION
- ▲ FIRE EXTINGUISHER
- ← EVACUATION ROUTE
- YOU ARE HERE

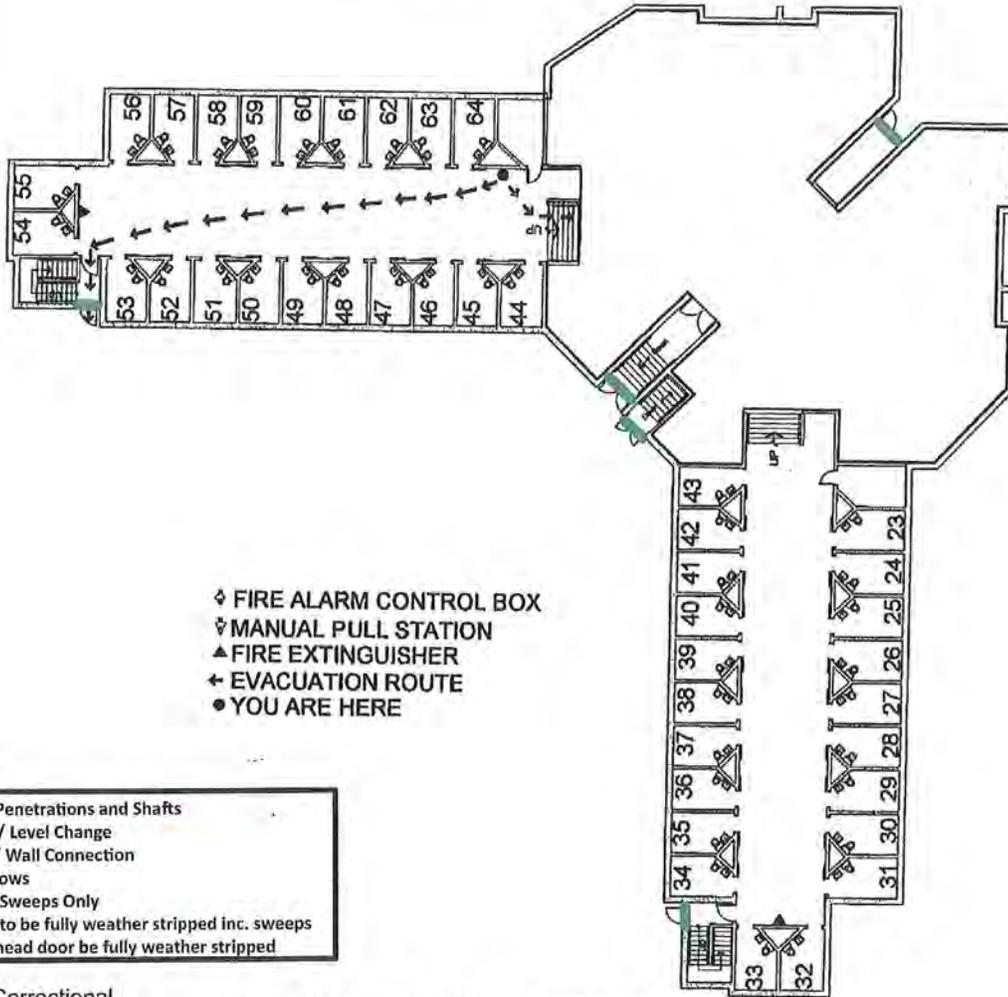
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11/28/11 Up Dated

**PRISONERS AND VISITORS-FOLLOW DIRECTION OF STAFF  
NOTIFY THE CONTROL CENTER AND EVACUATE IN NECESSARY**

Ionia Maximum Facility  
Fire Evacuation Route  
Housing Unit 3 B-Wing Lower



- ◇ FIRE ALARM CONTROL BOX
- ▽ MANUAL PULL STATION
- ▲ FIRE EXTINGUISHER
- ← EVACUATION ROUTE
- YOU ARE HERE

- Pipe Penetrations and Shafts
- Roof / Level Change
- Roof/ Wall Connection
- Windows
- Door Sweeps Only
- Door to be fully weather stripped inc. sweeps
- Overhead door to be fully weather stripped

Ionia Correctional  
Pre Install  
9/28/12 ML

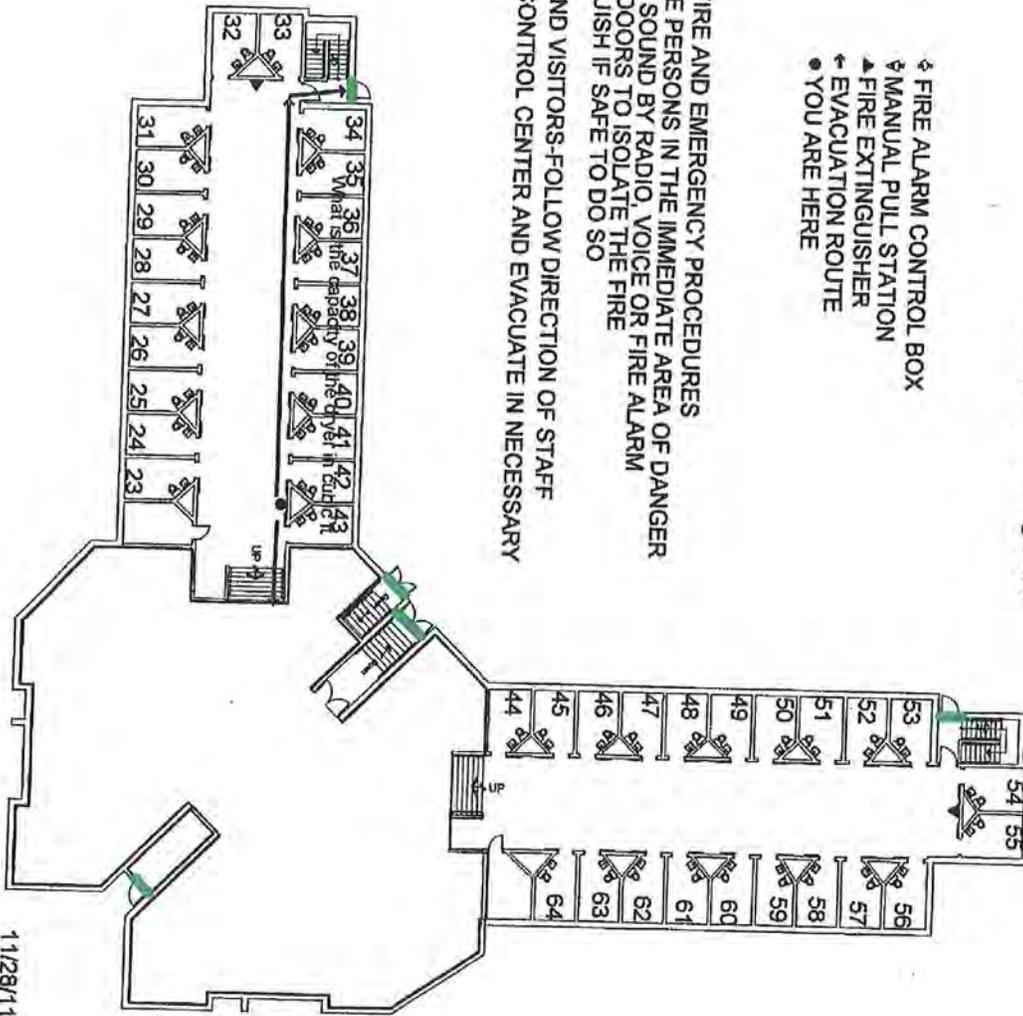
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11/28/11 Up Dated

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**NOTIFY THE CONTROL CENTER AND EVACUATE IN NECESSARY**

- █ Pipe Penetrations and Shafts
- █ Roof / Level Change
- █ Roof/ Wall Connection
- █ Windows
- █ Door Sweeps Only
- █ Door to be fully weather stripped inc. sweeps
- █ Overhead door to be fully weather stripped

Ionia Correctional  
Pre Install  
9/28/12 ML



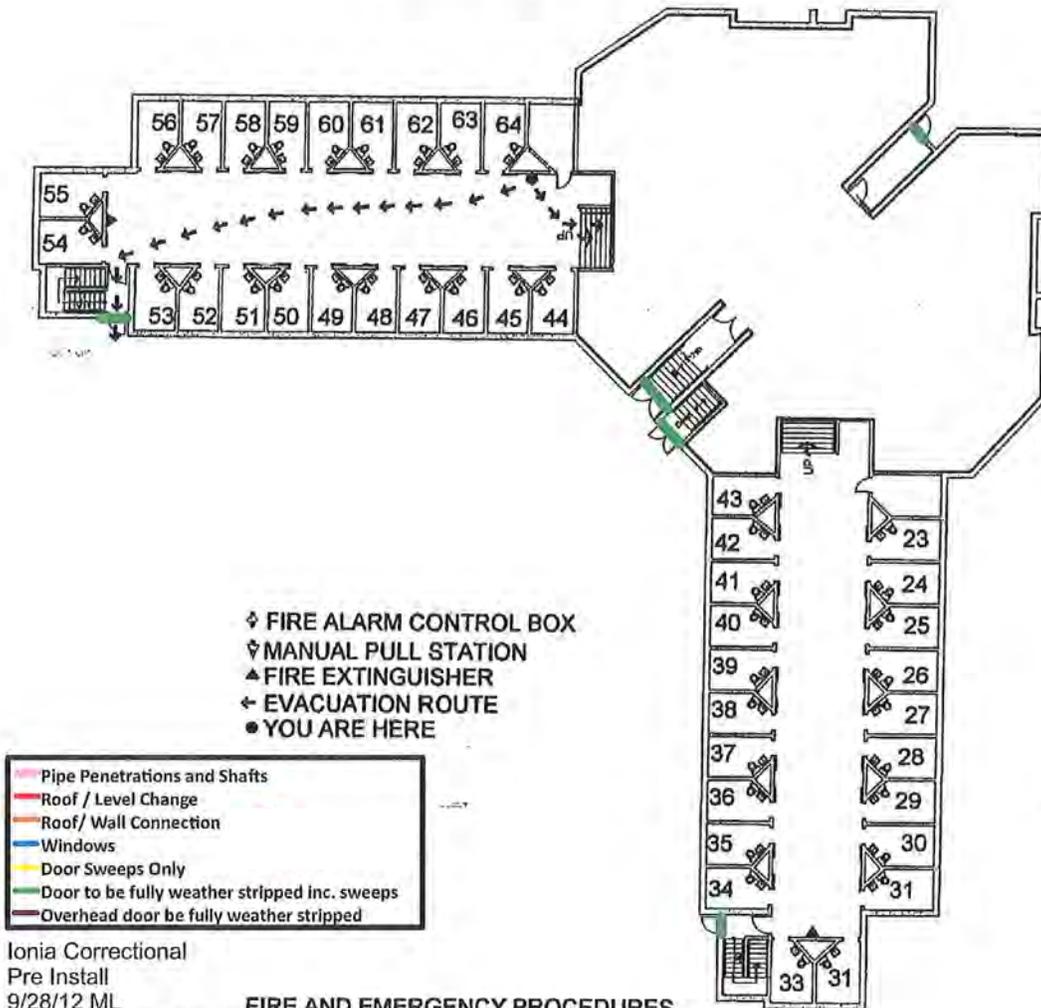
Ionia Maximum Facility  
Fire Evacuation Route  
Housing Unit 3 A-Wing Lower

- ⚡ FIRE ALARM CONTROL BOX
- ⚡ MANUAL PULL STATION
- ▲ FIRE EXTINGUISHER
- ← EVACUATION ROUTE
- YOU ARE HERE

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 PRISONERS AND VISITORS-FOLLOW DIRECTION OF STAFF  
 NOTIFY THE CONTROL CENTER AND EVACUATE IN NECESSARY

11/28/11 Up Dated

Ionia Maximum Facility  
Fire Evacuation Route  
Housing Unit 4 B-Wing Lower



Ionia Correctional  
Pre Install  
9/28/12 ML

**FIRE AND EMERGENCY PROCEDURES**

- R--REMOVE PERSONS IN THE IMMEDIATE AREA OF DANGER
- A--ALARM, SOUND BY RADIO, VOICE OR FIRE ALARM
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**PRISONERS AND VISITORS-FOLLOW DIRECTION OF STAFF  
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11/28/11 Up Dated

Ionia Maximum Facility  
Fire Evacuation Route  
Housing Unit 4 A-Wing Lower

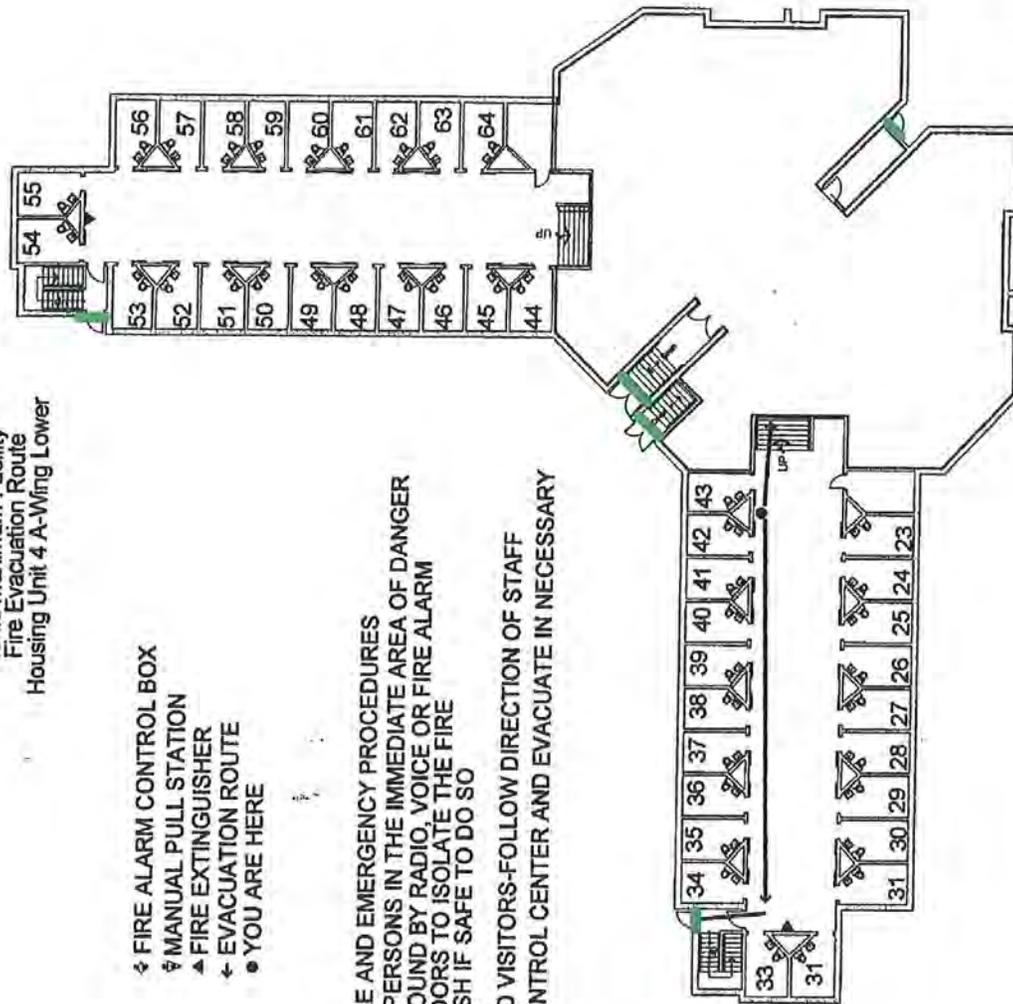
- ◆ FIRE ALARM CONTROL BOX
- ♣ MANUAL PULL STATION
- ▲ FIRE EXTINGUISHER
- ← EVACUATION ROUTE
- YOU ARE HERE

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Ionia Correctional  
 Pre Install  
 9/28/12 ML

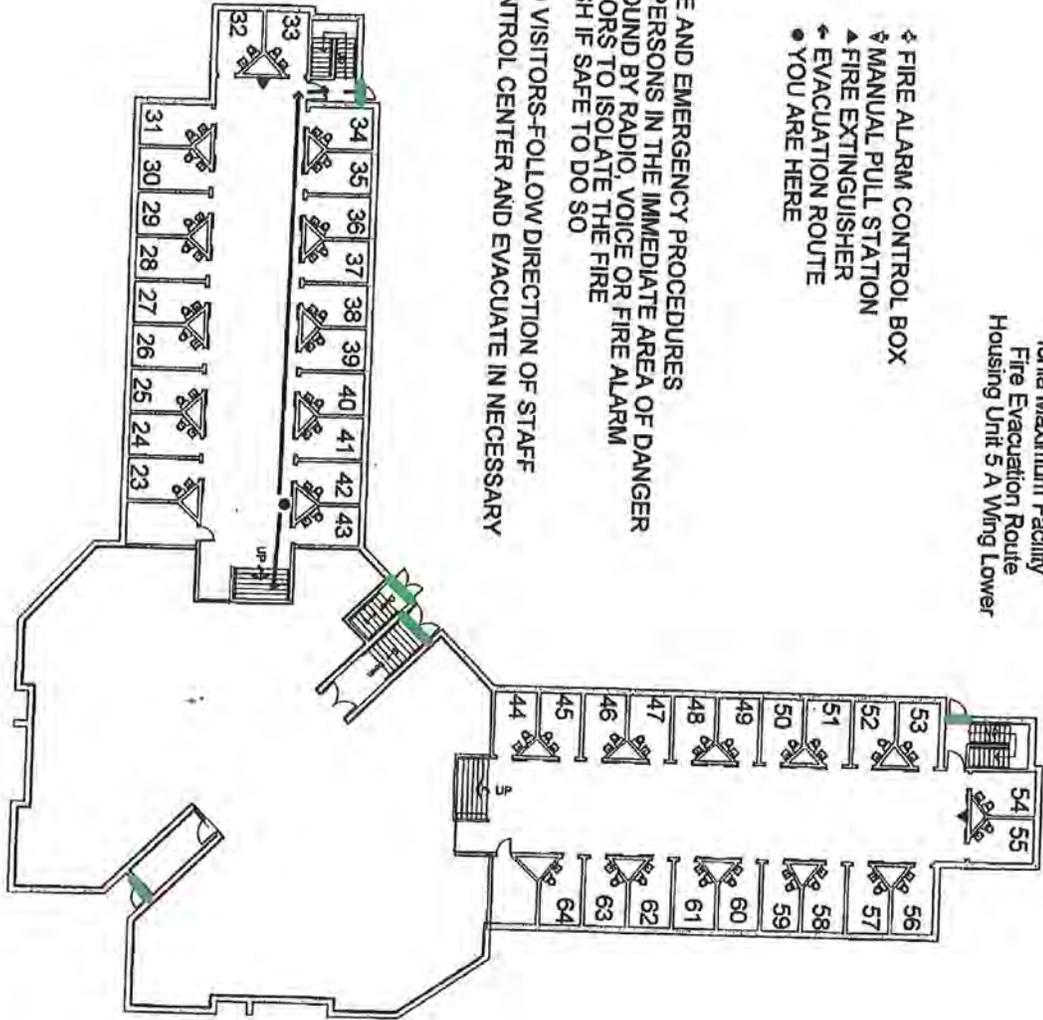
	Pipe Penetrations and Shafts
	Roof / Level Change
	Roof/ Wall Connection
	Windows
	Door Sweeps Only
	Door to be fully weather stripped inc. sweeps
	Overhead door be fully weather stripped



11/28/11 Up Dated

- Pipe Penetrations and Shafts
- Roof / Level Change
- Roof/ Wall Connection
- Windows
- Door Sweeps Only
- Door to be fully weather stripped inc. sweeps
- Overhead door be fully weather stripped

Ionia Correctional  
Pre Install  
9/28/12 ML



Ionia Maximum Facility  
Fire Evacuation Route  
Housing Unit 5 A Wing Lower

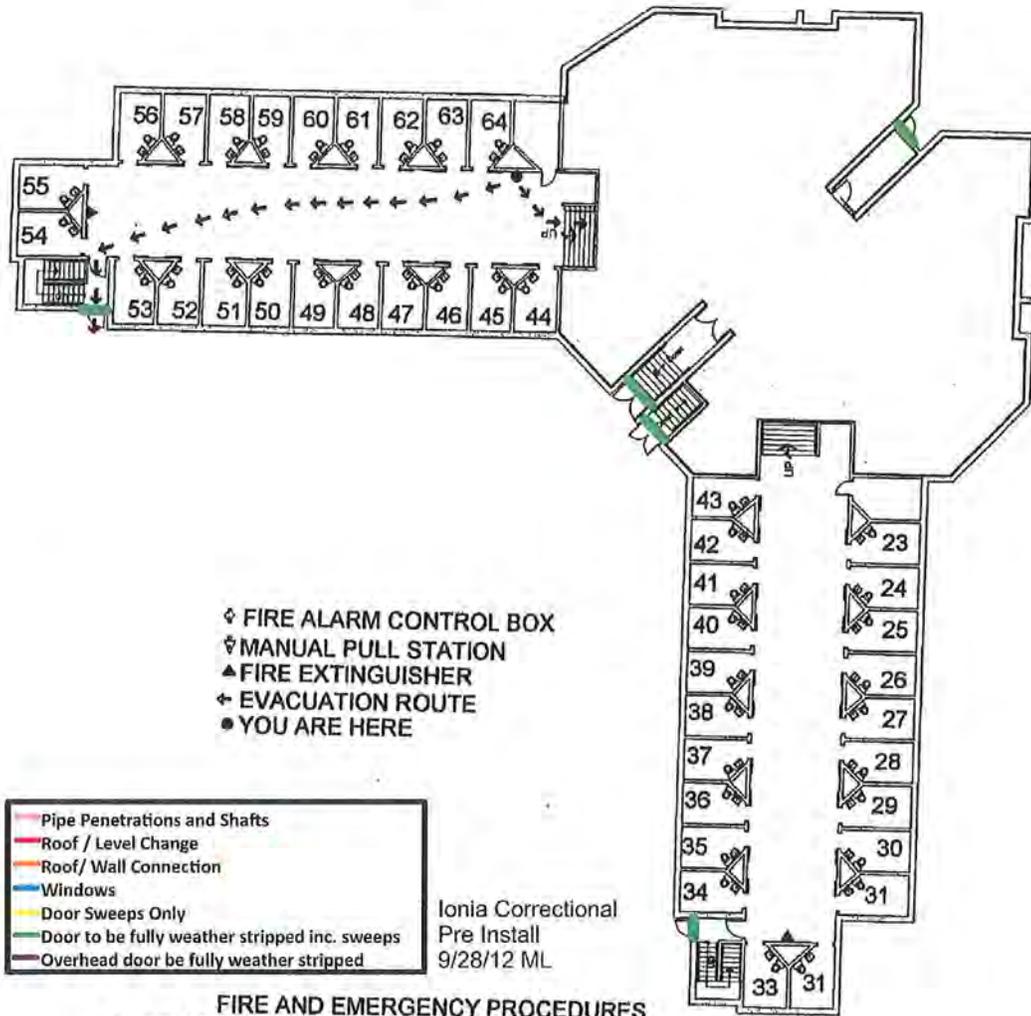
- ⚡ FIRE ALARM CONTROL BOX
- ⚡ MANUAL PULL STATION
- ▲ FIRE EXTINGUISHER
- ↔ EVACUATION ROUTE
- YOU ARE HERE

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**PRISONERS AND VISITORS- FOLLOW DIRECTION OF STAFF  
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Ionia Maximum Facility  
Fire Evacuation Route  
Housing Unit 5 B-Wing Lower

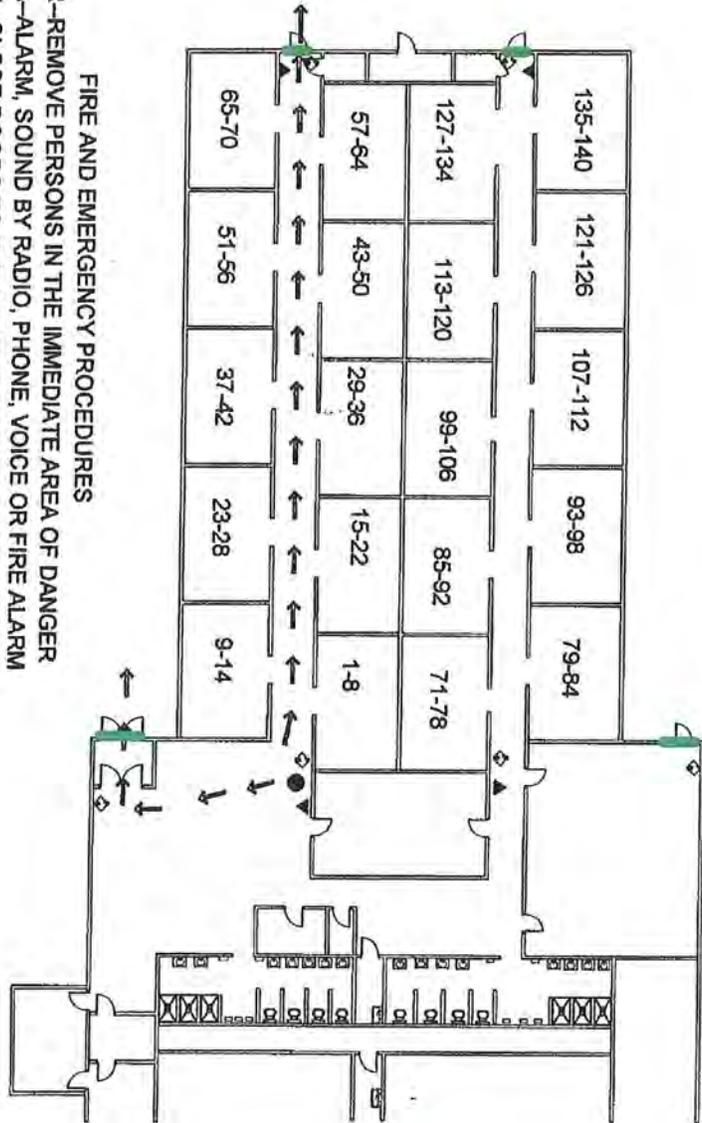


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 NOTIFY THE CONTROL CENTER AND EVACUATE IN NECESSARY**

11/28/11 Up Dated

**IONIA MAXIMUM CORRECTIONAL FACILITY  
FIRE EVACUATION ROUTE  
HOUSING UNIT 6 A-Wing**



- Pipe Penetrations and Shafts
- Roof / Level Change
- Roof/ Wall Connection
- Windows
- Door Sweeps Only
- Door to be fully weather stripped inc. sweeps
- Overhead door be fully weather stripped

Ionía Correctional  
Pre Install  
9/28/12 ML

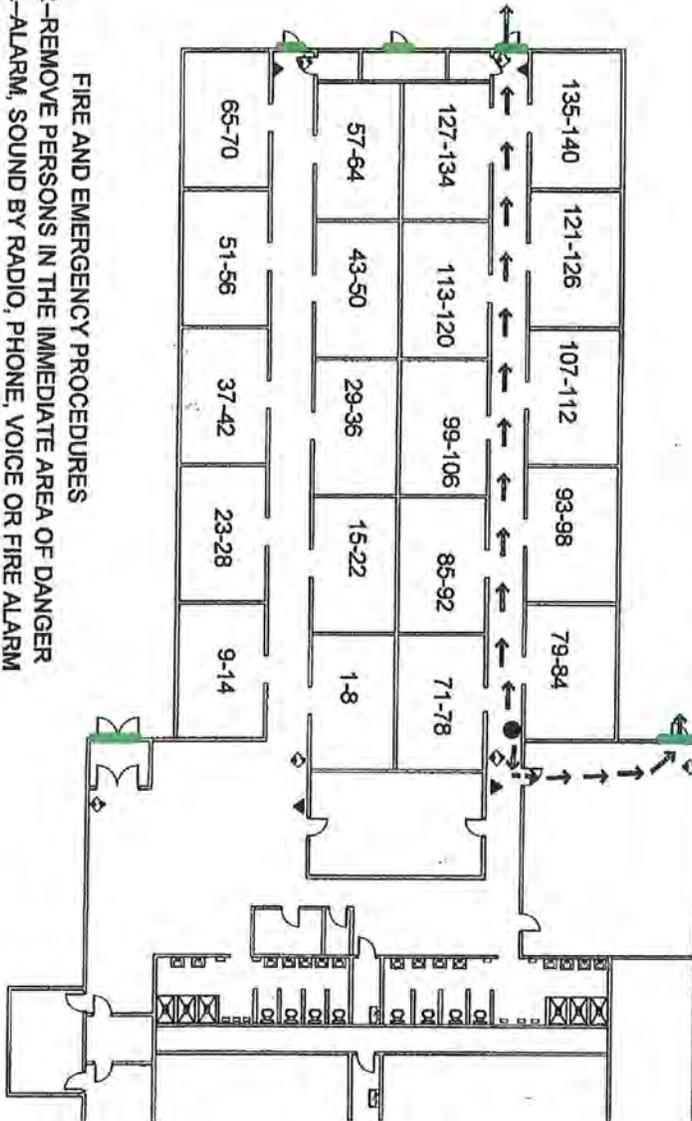
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- ◊ MANUAL PULL STATION
- ▽ FIRE ALARM CONTROL BOX
- ▲ FIRE EXTINGUISHER
- ← EVACUATION ROUTE
- YOU ARE HERE

11/28/11 Up dated

\*Estimated energy and cost savings are for year one only. All cost and savings are +/- 10%.

**IONIA MAXIMUM CORRECTIONAL FACILITY  
FIRE EVACUATION ROUTE  
HOUSING UNIT 6 B-Wing**



- Pipe Penetrations and Shafts
- Roof / Level Change
- Roof / Wall Connection
- Windows
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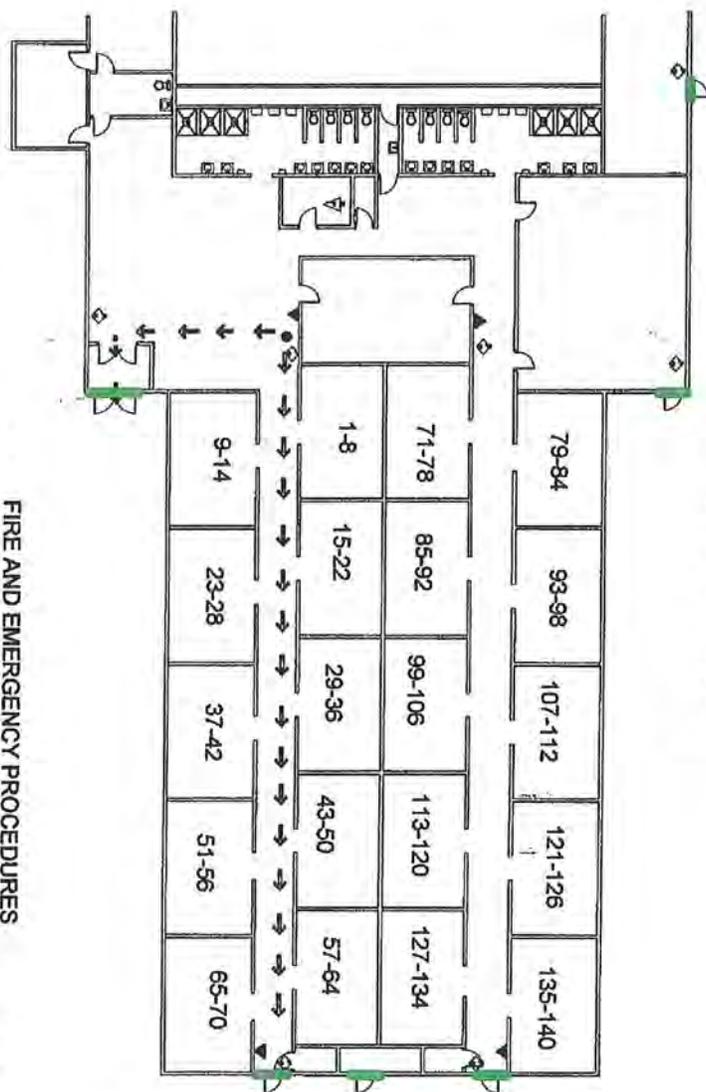
IONIA Correctional  
Pre Install  
9/28/12 ML

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- ▲ FIRE EXTINGUISHER
- ← EVACUATION ROUTE
- YOU ARE HERE

11/28/11 Up dated

**IONIA MAXIMUM CORRECTIONAL FACILITY  
FIRE EVACUATION ROUTE  
HOUSING UNIT 7 A-Wing**



- ◊ MANUAL PULL STATION
- ▽ FIRE ALARM CONTROL BOX
- ▲ FIRE EXTINGUISHER
- ← EVACUATION ROUTE
- YOU ARE HERE

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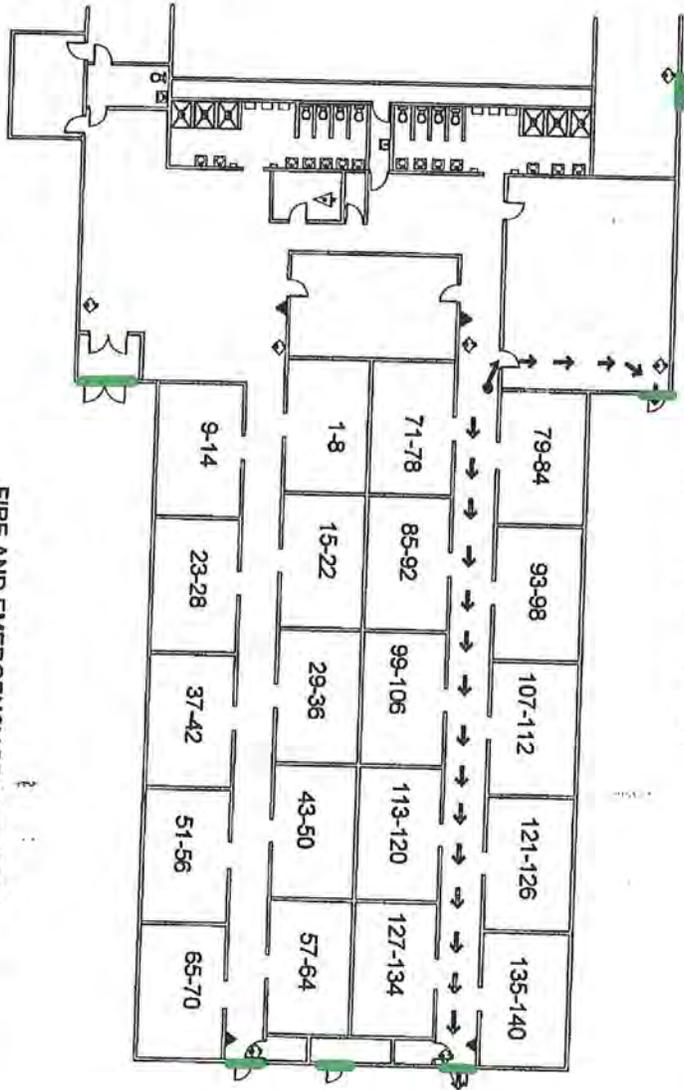
11-28-11 up dated

	Pipe Penetrations and Shafts
	Roof / Level Change
	Roof / Wall Connection
	Windows
	Door Sweeps Only
	Door to be fully weather stripped inc. sweeps
	Overhead door be fully weather stripped

Ionía Correctional  
 Pre Install  
 9/28/12 ML

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**IONIA MAXIMUM CORRECTIONAL FACILITY  
FIRE EVACUATION ROUTE  
HOUSING UNIT 7 B-Wing**



- ◆ MANUAL PULL STATION
- ▽ FIRE ALARM CONTROL BOX
- ▲ FIRE EXTINGUISHER
- EVACUATION ROUTE
- YOU ARE HERE

**FIRE AND EMERGENCY PROCEDURES**  
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11-28-11 up dated

	Pipe Penetrations and Shafts
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	Windows
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Ionía Correctional  
Pre Install  
9/28/12 ML

## ECM #4: Water and Sewer Conservation

### RECOMMENDED ACTION

We recommend retrofitting the existing domestic plumbing fixtures with new low-flow, higher efficient plumbing savings. Due to a shared water pipe with a directional valve MTU and ICF share combined water feed. So these numbers are identical to each but the savings are used only once.

Estimated Water Savings	=15,593 KGAL/yr.
Estimated Gas Savings	=778 MCF/yr.
Estimated Water Cost Savings	=\$125,681/yr.
Estimated Gas Cost Savings	=\$4,754/yr.
Implementation Cost	= \$1,200,175

Implementation costs includes design and engineering, project management, contingency, performance, overhead and profit.

\* Estimated energy and cost savings are for year one only. All cost and savings are +/- 10%

### EXISTING CONDITIONS

ICF has approximately 711 inmates housed within the seven (7) units of the facility. The inmate areas contain 431 cells configured with either stainless steel combination fixtures or separate china lavatory and toilet fixtures. Additionally, there are 60 showers located throughout the inmate areas.

The existing stainless steel lavatory/toilet combination fixtures and china lavatory & toilet fixtures have been measured to average 3.5 gallons per flush. The industry average use per fixture approaches 40 flushes per day, therefore the volume of water used, and associated water and sewer costs, is substantial. Additionally, the shower usage has been measured to average 3.0 gallons per minute which is much higher than the proposed retrofit units.

### PROPOSED SYSTEMS

We recommend utilizing I-CON systems based on our experience with the equipment and MDOC's recommendation of I-CON. The proposed retrofit measure was designed to address all of the issues and expenses identified. There are two aspects of the proposed retrofit, first, retrofitting the inmate cell areas and stainless steel fixture equipped restrooms with I-CON electronic plumbing control systems and, second, retrofitting the existing china fixtures with new more efficient systems in dorm and administration areas.

The I-CON electronic plumbing control system is being proposed for the cell areas and stainless steel fixture equipped restrooms in the facilities because the I-CON products are the only sources that can offer retrofit systems adapting to all existing plumbing fixtures at the sites. The I-CON system is the one source that can reduce gallons per flush from 3.5 gallons per flush to 1.6 gallons per flush, without the need to replace the plumbing fixture at a significant added cost. Each time the toilet is flushed, it will provide a prescribed reduction in water, and the corresponding reduction in water and sewer expense will occur.

## SCOPES

### Unit 1-5 Retrofits

Unit 1 through 5 consists of two wings (A and B). Each pod has a main floor and mezzanine with 43 cells in each wing. Each set of two cells has a V-shape plumbing chase located between them that contain the flush valves and lavatory valves for the cells. The existing plumbing controls are Sloan 3.5 gpf flush valves and Metcraft Tempest II lavatory valves or 4" center set faucets. The existing fixtures are a combination of stainless steel combination units and stainless steel toilets and sinks.

The existing fixtures are stainless steel combination units. This ECM would replace the following:

A-wing and B-wing: Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm with Icon I-CON 1.6 gpf Flush Valve Toilet Retrofit and I-CON Lavatory Retrofit Cartridge.

B-Wing: American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf would be replaced with I-CON 1.6 gpf Flush Valve.

Each inmate's flush valve, Four Hundred Thirty Two (432); will be retrofitted with an I-CON flush valve. The existing flush valve stop will remain. All existing fixtures will remain. Each inmate's lavatory valve, Three Hundred Three (303), will be retrofitted with an I-CON lavatory retrofit cartridges. Each inmate's existing flush valve and lavatory valve buttons will be replaced with an I-CON sensor button. In locations where a block wall exists, an I-CON core drill assembly will be utilized.

#### Electrical Requirements:

In each plumbing chase, we will be pulling low-voltage from the emergency circuit or back up power circuit to power the I-CON controllers. We will be installing a Buck Boost transformer to step power down to 24 volts. We will be installing I-CON combination lavatory/toilet controllers.

### Shower Valve Retrofits

Each Thirty Nine (39) inmate shower valve mechanical cartridge, or shower valve will be retrofitted with an I-CON VLV-SHW-5775 shower valve in Units 1 through 5. Each inmate's existing push button (or buttons/depending on the existing conditions) will be replaced with an I-CON SEN-1489 sensor button. In locations where a block wall exists, an I-CON CDA-1489 core drill assembly will be utilized.

Units 1-5 consists of two wings, A and B each pod has main floor and mezzanine with showers on each floor. Each floor has a chase for each bank of showers. The existing shower plumbing controls are a mechanical single temperature metering valve. Existing Single Temperature Symmons Metering Valve, Symmons 2.5 gpm shower head will be replaced with I-CON Shower Valve, I-CON 2.0 gpm Anti-Suicide Shower Head with Shower Covers.

Each inmate shower valve Thirty Nine (39) will be retrofitted with an I-CON VLV-SHW-5775 Shower Manifold. Each inmate's existing shower valve lever will be replaced with an I-CON SEN-1489 sensor button. In locations where a block wall exists, an I-CON CDA-1489 core drill assembly will be utilized.

#### Electrical Requirements:

Each shower plumbing chase in the POD will utilize the same 1 KVA Buck Boost transformer installed for the flush valves. In each plumbing chase an I-CON CTR-X12-AC-04-4S-001 I/O controller will be installed.



## Low Flow Retrofits

ICF Low Flow Project Totals

Low Flow Plumbing Controls

<u>Description</u>	<u>Quantity</u>
Toilet	73
Faucets	109
Urinals	14
Showerheads	22

## Water Closet Retrofit

Each, Seventy Three (73), existing 3.5 water closets will be replaced with Zurn Floor Mount, Floor Mount ADA, Wall Mount, Tank Type or Tank Type ADA water closets where applicable. The existing Floor Mount Wall Outlet water closets will be replaced with a Zurn 1.28 fixture. Locations are shown on the attached application schedule. Regarding existing floor mounted toilets; all broken floor flanges will be repaired. In the event a floor flange is beyond repair, a "repair flange" will be installed prior to the new retrofit. Wall toilets will receive a new neoprene gasket prior to installation. Flush Valve type water closets will receive a new Zurn Z-6200 piston flush valve. The existing Water Closet flush valve will be removed from the angle stop to the closet spud connection, and the new valve installed. Locations and operation of the isolation valves will be shown to the subcontractor by the facility staff. The subcontractor is not responsible for the existing conditions of said isolation valves and may require the assistance of the facility to locate additional "secondary" valves in an effort to shut down the flow of water to perform the retrofit. Tank Type toilets will also receive a new stainless steel braided supply hose. Each toilet (not including I-CON retrofit) will receive a new Bemis 1055 Toilet Seat.

## Staff & Inmate Lavatory Aerator

Each, Fifty Nine (59), staff and, Fifty (50), inmate lavatory faucets will be replaced with either a Symmons S-20, or S-244 faucet and a .5 GPM aerator for the staff or a Symmons S-60 or S-244 for the inmates. The aerators in the inmate areas will be replaced with an I-CON .5 GPM tamper proof model made for institutional use that will insure the aerator stays in place and the savings will continue on a long term basis.

## Urinal Flush Valves

Each Fourteen (14), staff Urinal flush valves will be replaced with a Zurn Z-6201 or Z-6203 piston flush valve. The existing Urinal flush valve will be removed from the angle stop to the urinal fixture spud connection, and the new valve and spud installed. Locations, and operation, of the isolation valves will be shown to the subcontractor by the facility staff. The subcontractor is not responsible for the existing conditions of said isolation valves and may require the assistance of the facility to locate additional "secondary" valves in an effort to shut down the flow of water to perform the retrofit.

## Showerheads

Each, One (1), staff showerheads will be replaced with an I-CON FXW-SHW-2226 / 2gpm pressure compensating showerhead and each, Twenty One (21), inmate showerhead will be replaced with an I-CON FXW-SHW-2229 / 2gpm pressure compensating showerhead.



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\*Estimated energy and cost savings are for year one only. All cost and savings are +/- 10%.

## ICF Project Totals

The total numbers of I-CON Plumbing Controls for the entire facility are as follows:

### I-CON STANDALONE PLUMBING CONTROLS

<u>Description</u>	<u>Quantity</u>
I-CON Combination Fixture Retrofits	88
I-CON Separate Flush Valve Retrofits	344
I-CON Separate Lavatory Retrofits	215
I-CON Shower Retrofits	39

## SAVINGS CALCULATIONS

### Water and Sewer Conservation Retrofit

#### Savings Summary

	Kgal	Water \$/Kgal	Sewer \$/Kgal	Total Savings	MCF	\$/MCF	Total Savings
<b>ICF</b>	15,593	\$2.45	\$5.61	\$125,681	778	\$6.110	\$4,754

	<u>Inmates</u>	706
ICF		
Incoming Water Ten		60
Mixed water temper:		105

#### Water and Sewer Savings Calculations

Plumbing Fixture Savings = (Use per day before x gpm before x Number of units x 365) - (Uses per day After x gpm after x number of units x 365)

Shower Savings = (Minutes per usage before x gpm before x inmates x 365) - (Minutes per usage After x gpm after x units x 365)

Facility	Fixture Type	Inmates	GPM Before	GPM After	Gallon Savings	Plumbing Fixtures			Showers		Total KGAL (per 1000 gallons) Savings Per Year
						Fixture Quantity	Uses Per Day Before	Uses Per Day After	Minutes Per Usage Before	Minutes Per Usage After	
ICF	I-Con Flush Valves	706	3.5	1.6	1.9	432	20	12			8,010
	Toilet	706	3.5	1.28	2.22	72	20	20			1,167
	Urinal	706	1.5	1	0.5	14	10	10			26
	Lavatory	706	2.2	0.5	1.7	412			4	4	1,752
	I-Con Showers	706	3	2	1	60			10	6	4,638
	Shower	706	3	2	1	1			0	0	0
<b>Total</b>											15,593

#### Gas Savings from Water Usage Reduction

Total MCF Before = (Mixed Water Temp - Incoming Temp) x 1 Btu/lb/F x (GPM before/2) x Usage Before x inmates x 8.34 pounds per gallon x (365 days/year) / (1,000,000 btu/MCF) \* 86% efficiency)

Total MCF After = (Mixed Water Temp - Incoming Temp) x 1 Btu/lb/F x (GPM after/2) x Usage after x inmates x 8.34 pounds per gallon x 365 days/yr. / (1,000,000 btu/MCF x 86% efficiency)

Facility	Fixture Type	Inmates/ Staff	GPM Before	GPM After	Mixed Water Temp	Incoming Water Temp	Usage Before	Usage After	Total MCF Usage Per Year Before	Total MCF Usage Per Year After	MCF Yearly Savings
ICF	Dorm Showers	175	3	2	105	60	8	6	334	167	167
	Dorm Lavatories	175	2.2	0.5	105	60	4	4	123	28	95
	Common Showers	360	3	2	105	60	8	6	688	344	344
	Common Lavatories	360	2	0.5	105	60	4	4	229	57	172
<b>Total</b>											778



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\*Estimated energy and cost savings are for year one only. All cost and savings are +/- 10%.

## SYSTEMS RETROFIT – FLUSH VALVE & LAVATORY

### Unit 1-5 Retrofits

Bldg	Area	Flr	Room	Qty	Existing Description	Toilet Retrofit	Lavatory Retrofit
Unit 1	A Wing	1	Cell 41	1	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	A Wing	1	Showers Room	1	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	A Wing	MZ	Cell 21	1	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	A Wing	MZ	Showers Room	1	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	B Wing	1	Showers Room	1	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	B Wing	MZ	Cell 82	1	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	B Wing	MZ	Showers Room	1	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	A Wing	1	Cell 22-23	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	A Wing	1	Cell 23-24	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	A Wing	1	Cells 25-26	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	A Wing	1	Cells 27-28	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	A Wing	1	Cells 29-30	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge

Bldg	Area	Flr	Room	Qty	Existing Description	Toilet Retrofit	Lavatory Retrofit
Unit 1	A Wing	1	Cells 31-32	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	A Wing	1	Cells 33-34	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	A Wing	1	Cells 35-36	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	A Wing	1	Cells 37-38	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	A Wing	1	Cells 39-40	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	A Wing	MZ	Cell 1-2	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	A Wing	MZ	Cell 3-4	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	A Wing	MZ	Cells 11-12	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	A Wing	MZ	Cells 13-14	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	A Wing	MZ	Cells 15-16	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	A Wing	MZ	Cells 17-18	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	A Wing	MZ	Cells 19-20	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	A Wing	MZ	Cells 5-6	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge

Bldg	Area	Flr	Room	Qty	Existing Description	Toilet Retrofit	Lavatory Retrofit
					lavatory valve .5 gpm		
Unit 1	A Wing	MZ	Cells 7-8	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	A Wing	MZ	Cells 9-10	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	B Wing	1	Cells 42-43	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	B Wing	1	Cells 44-45	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	B Wing	1	Cells 46-47	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	B Wing	1	Cells 48-49	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	B Wing	1	Cells 50-51	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	B Wing	1	Cells 52-53	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	B Wing	1	Cells 54-55	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	B Wing	1	Cells 56-57	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	B Wing	1	Cells 58-59	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	B Wing	1	Cells 60-61	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	B Wing	MZ	Cells 62-63	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge

Bldg	Area	Flr	Room	Qty	Existing Description	Toilet Retrofit	Lavatory Retrofit
					gpf, Metcraft Tempest II lavatory valve .5 gpm		
Unit 1	B Wing	MZ	Cells 64-65	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	B Wing	MZ	Cells 66-67	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	B Wing	MZ	Cells 68-69	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	B Wing	MZ	Cells 70-71	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	B Wing	MZ	Cells 72-73	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	B Wing	MZ	Cells 74-75	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	B Wing	MZ	Cells 76-77	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	B Wing	MZ	Cells 78-79	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 1	B Wing	MZ	Cells 80-81	2	Metcraft Stainless Steel Combination Unit 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf, Metcraft Tempest II lavatory valve .5 gpm	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	A Wing	1	Cell 1-2	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	A Wing	1	Cell 3-4	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	A Wing	1	Cells 5-6	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	A Wing	1	Cells 7-8	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	A Wing	1	Cells 9-10	2	Metcraft Stainless Steel Floor Mount Wall Discharge	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit



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Bldg	Area	Flr	Room	Qty	Existing Description	Toilet Retrofit	Lavatory Retrofit
					3.5 gpf, Sloan Royal Flush Valve 3.5 gpf		Cartridge
Unit 2	A Wing	1	Cells 11-12	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	A Wing	1	Cells 13-14	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	A Wing	1	Cells 15-16	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	A Wing	1	Cells 17-18	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	A Wing	1	Cells 19-20	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	A Wing	1	Cell 21-22	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	A Wing	MZ	Cell 23-24	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	A Wing	MZ	Cells 25-26	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	A Wing	MZ	Cells 27-28	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	A Wing	MZ	Cells 29-30	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	A Wing	MZ	Cells 31-32	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	A Wing	MZ	Cells 33-34	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	A Wing	MZ	Cells 35-36	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	A Wing	MZ	Cells 37-38	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	A Wing	MZ	Cells 39-40	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	A Wing	MZ	Cells 41-42	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge



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Bldg	Area	Flr	Room	Qty	Existing Description	Toilet Retrofit	Lavatory Retrofit
					Valve 3.5 gpf		
Unit 2	A Wing	MZ	Cell 43	1	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	B Wing	MZ	Cells 65-66	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	B Wing	MZ	Cells 67-68	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	B Wing	MZ	Cells 69-70	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	B Wing	MZ	Cells 71-72	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	B Wing	MZ	Cells 73-74	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	B Wing	MZ	Cells 75-76	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	B Wing	MZ	Cells 77-78	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	B Wing	MZ	Cells 79-80	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	B Wing	MZ	Cells 81-82	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	B Wing	MZ	Cells 83-84	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	B Wing	MZ	Cells 85-86	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	B Wing	1	Cells 44-45	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	B Wing	1	Cells 46-47	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	B Wing	1	Cells 48-49	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	B Wing	1	Cells 50-51	2	Metcraft Stainless Steel Floor Mount Wall Discharge	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit

Bldg	Area	Flr	Room	Qty	Existing Description	Toilet Retrofit	Lavatory Retrofit
					3.5 gpf, Sloan Royal Flush Valve 3.5 gpf		Cartridge
Unit 2	B Wing	1	Cells 52-53	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	B Wing	1	Cells 54-55	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	B Wing	1	Cells 56-57	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	B Wing	1	Cells 58-59	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	B Wing	1	Cells 60-61	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	B Wing	1	Cells 62-63	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 2	B Wing	1	Cell 64	1	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	A Wing	1	Cell 1-2	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	A Wing	1	Cell 3-4	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	A Wing	1	Cells 5-6	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	A Wing	1	Cells 7-8	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	A Wing	1	Cells 9-10	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	A Wing	1	Cells 11-12	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	A Wing	1	Cells 13-14	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	A Wing	1	Cells 15-16	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	A Wing	1	Cells 17-18	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge



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Bldg	Area	Flr	Room	Qty	Existing Description	Toilet Retrofit	Lavatory Retrofit
					Valve 3.5 gpf		
Unit 3	A Wing	1	Cells 19-20	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	A Wing	1	Cell 21-22	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	A Wing	MZ	Cell 23-24	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	A Wing	MZ	Cells 25-26	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	A Wing	MZ	Cells 27-28	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	A Wing	MZ	Cells 29-30	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	A Wing	MZ	Cells 31-32	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	A Wing	MZ	Cells 33-34	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	A Wing	MZ	Cells 35-36	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	A Wing	MZ	Cells 37-38	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	A Wing	MZ	Cells 39-40	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	A Wing	MZ	Cells 41-42	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	A Wing	MZ	Cell 43	1	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	B Wing	MZ	Cells 65-66	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	B Wing	MZ	Cells 67-68	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	B Wing	MZ	Cells 69-70	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge

Bldg	Area	Flr	Room	Qty	Existing Description	Toilet Retrofit	Lavatory Retrofit
					Valve 3.5 gpf		
Unit 3	B Wing	MZ	Cells 71-72	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	B Wing	MZ	Cells 73-74	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	B Wing	MZ	Cells 75-76	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	B Wing	MZ	Cells 77-78	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	B Wing	MZ	Cells 79-80	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	B Wing	MZ	Cells 81-82	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	B Wing	MZ	Cells 83-84	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	B Wing	MZ	Cells 85-86	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	B Wing	1	Cells 44-45	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	B Wing	1	Cells 46-47	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	B Wing	1	Cells 48-49	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	B Wing	1	Cells 50-51	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	B Wing	1	Cells 52-53	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	B Wing	1	Cells 54-55	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	B Wing	1	Cells 56-57	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	B Wing	1	Cells 58-59	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge

Bldg	Area	Flr	Room	Qty	Existing Description	Toilet Retrofit	Lavatory Retrofit
					Valve 3.5 gpf		
Unit 3	B Wing	1	Cells 60-61	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	B Wing	1	Cells 62-63	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 3	B Wing	1	Cell 64	1	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 4	A Wing	1	Cell 1-2	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 4	A Wing	1	Cell 3-4	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 4	A Wing	1	Cells 5-6	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 4	A Wing	1	Cells 7-8	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 4	A Wing	1	Cells 9-10	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 4	A Wing	1	Cells 11-12	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 4	A Wing	1	Cells 13-14	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 4	A Wing	1	Cells 15-16	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 4	A Wing	1	Cells 17-18	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 4	A Wing	1	Cells 19-20	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 4	A Wing	1	Cell 21-22	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 4	A Wing	MZ	Cell 23-24	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 4	A Wing	MZ	Cells 25-26	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge



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Bldg	Area	Flr	Room	Qty	Existing Description	Toilet Retrofit	Lavatory Retrofit
					Valve 3.5 gpf		
Unit 4	A Wing	MZ	Cells 27-28	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 4	A Wing	MZ	Cells 29-30	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 4	A Wing	MZ	Cells 31-32	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 4	A Wing	MZ	Cells 33-34	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 4	A Wing	MZ	Cells 35-36	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 4	A Wing	MZ	Cells 37-38	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 4	A Wing	MZ	Cells 39-40	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 4	A Wing	MZ	Cells 41-42	2	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 4	A Wing	MZ	Cell 43	1	Metcraft Stainless Steel Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	I-CON Lavatory Retrofit Cartridge
Unit 4	B Wing	MZ	Cells 65-66	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 4	B Wing	MZ	Cells 67-68	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 4	B Wing	MZ	Cells 69-70	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 4	B Wing	MZ	Cells 71-72	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 4	B Wing	MZ	Cells 73-74	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 4	B Wing	MZ	Cells 75-76	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 4	B Wing	MZ	Cells 77-78	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan	I-CON 1.6 gpf Flush Valve	No Retrofit

Bldg	Area	Flr	Room	Qty	Existing Description	Toilet Retrofit	Lavatory Retrofit
					Royal Flush Valve 3.5 gpf		
Unit 4	B Wing	MZ	Cells 79-80	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 4	B Wing	MZ	Cells 81-82	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 4	B Wing	MZ	Cells 83-84	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 4	B Wing	MZ	Cells 85-86	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 4	B Wing	1	Cells 44-45	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 4	B Wing	1	Cells 46-47	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 4	B Wing	1	Cells 48-49	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 4	B Wing	1	Cells 50-51	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 4	B Wing	1	Cells 52-53	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 4	B Wing	1	Cells 54-55	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 4	B Wing	1	Cells 56-57	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 4	B Wing	1	Cells 58-59	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 4	B Wing	1	Cells 60-61	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 4	B Wing	1	Cells 62-63	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 4	B Wing	1	Cell 64	1	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	A Wing	MZ	Cell 1-2	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan	I-CON 1.6 gpf Flush Valve	No Retrofit

Bldg	Area	Flr	Room	Qty	Existing Description	Toilet Retrofit	Lavatory Retrofit
					Royal Flush Valve 3.5 gpf		
Unit 5	A Wing	MZ	Cell 3-4	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	A Wing	MZ	Cells 5-6	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	A Wing	MZ	Cells 7-8	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	A Wing	MZ	Cells 9-10	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	A Wing	MZ	Cells 11-12	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	A Wing	MZ	Cells 13-14	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	A Wing	MZ	Cells 15-16	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	A Wing	MZ	Cells 17-18	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	A Wing	MZ	Cells 19-20	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	A Wing	MZ	Cell 21-22	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	A Wing	1	Cell 23-24	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	A Wing	1	Cells 25-26	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	A Wing	1	Cells 27-28	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	A Wing	1	Cells 29-30	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	A Wing	1	Cells 31-32	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit

Bldg	Area	Flr	Room	Qty	Existing Description	Toilet Retrofit	Lavatory Retrofit
Unit 5	A Wing	1	Cells 33-34	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	A Wing	1	Cells 35-36	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	A Wing	1	Cells 37-38	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	A Wing	1	Cells 39-40	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	A Wing	1	Cells 41-42	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	A Wing	1	Cell 43	1	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	B Wing	MZ	Cells 65-66	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	B Wing	MZ	Cells 67-68	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	B Wing	MZ	Cells 69-70	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	B Wing	MZ	Cells 71-72	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	B Wing	MZ	Cells 73-74	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	B Wing	MZ	Cells 75-76	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	B Wing	MZ	Cells 77-78	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	B Wing	MZ	Cells 79-80	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	B Wing	MZ	Cells 81-82	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	B Wing	MZ	Cells 83-84	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit

Bldg	Area	Flr	Room	Qty	Existing Description	Toilet Retrofit	Lavatory Retrofit
Unit 5	B Wing	MZ	Cells 85-86	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	B Wing	1	Cells 44-45	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	B Wing	1	Cells 46-47	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	B Wing	1	Cells 48-49	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	B Wing	1	Cells 50-51	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	B Wing	1	Cells 52-53	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	B Wing	1	Cells 54-55	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	B Wing	1	Cells 56-57	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	B Wing	1	Cells 58-59	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	B Wing	1	Cells 60-61	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit
Unit 5	B Wing	1	Cells 62-63	2	American Standard Porcelain Floor Mount Wall Discharge 3.5 gpf, Sloan Royal Flush Valve 3.5 gpf	I-CON 1.6 gpf Flush Valve	No Retrofit

## SYSTEMS RETROFIT – SHOWER VALVE

### Units 1-5 Retrofits

Bldg	Area	Flr	Room	Qty	Existing Description	Shower Retrofit
Unit 1	A Wing	1	Showers Room	1	Single Temperature Symmons Metering Valve, Symmons 2.5 gpm shower head	I-CON Shower Valve, I-CON 2.0 gpm Anti-Suicide Shower Head with Shower Covers
Unit 1	B Wing	1	Showers Room	1	Single Temperature Symmons Metering Valve, Symmons 2.5 gpm shower head	I-CON Shower Valve, I-CON 2.0 gpm Anti-Suicide Shower Head with Shower Covers
Unit 1	A Wing	MZ	Showers Room	1	Single Temperature Symmons Metering Valve, Symmons 2.5 gpm shower head	I-CON Shower Valve, I-CON 2.0 gpm Anti-Suicide Shower Head with Shower Covers
Unit 1	B Wing	MZ	Showers Room	1	Single Temperature Symmons Metering Valve, Symmons 2.5 gpm shower head	I-CON Shower Valve, I-CON 2.0 gpm Anti-Suicide Shower Head with Shower Covers
Unit 1	A Wing	1	Day Showers Room	3	Single Temperature Symmons Metering Valve, Symmons 2.5 gpm shower head	I-CON Shower Valve, I-CON 2.0 gpm Anti-Suicide Shower Head with Shower Covers
Unit 1	B Wing	1	Day Showers Room	3	Single Temperature Symmons Metering Valve, Symmons 2.5 gpm shower head	I-CON Shower Valve, I-CON 2.0 gpm Anti-Suicide Shower Head with Shower Covers
Unit 2	A Wing	1	Day Showers Room	3	Single Temperature Symmons Metering Valve, Symmons 2.5 gpm shower head	I-CON Shower Valve, I-CON 2.0 gpm Anti-Suicide Shower Head with Shower Covers
Unit 2	B Wing	1	Day Showers Room	3	Single Temperature Symmons Metering Valve, Symmons 2.5 gpm shower head	I-CON Shower Valve, I-CON 2.0 gpm Anti-Suicide Shower Head with Shower Covers
Unit 3	A Wing	1	Day Showers Room	3	Single Temperature Symmons Metering Valve, Symmons 2.5 gpm shower head	I-CON Shower Valve, I-CON 2.0 gpm Anti-Suicide Shower Head with Shower Covers
Unit 3	B Wing	1	Day Showers Room	3	Single Temperature Symmons Metering Valve, Symmons 2.5 gpm shower head	I-CON Shower Valve, I-CON 2.0 gpm Anti-Suicide Shower Head with Shower Covers
Unit 4	A Wing	1	Day Showers Room	4	Single Temperature Symmons Metering Valve, Symmons 2.5 gpm shower head	I-CON Shower Valve, I-CON 2.0 gpm Anti-Suicide Shower Head with Shower Covers
Unit 4	B Wing	1	Day Showers Room	4	Single Temperature Symmons Metering Valve, Symmons 2.5 gpm shower head	I-CON Shower Valve, I-CON 2.0 gpm Anti-Suicide Shower Head with Shower Covers
Unit 5	A Wing	1	Day Showers Room	4	Single Temperature Symmons Metering Valve, Symmons 2.5 gpm shower head	I-CON Shower Valve, I-CON 2.0 gpm Anti-Suicide Shower Head with Shower Covers
Unit 5	B Wing	1	Day Showers Room	4	Single Temperature Symmons Metering Valve, Symmons 2.5 gpm shower head	I-CON Shower Valve, I-CON 2.0 gpm Anti-Suicide Shower Head with Shower Covers

## ECM #5: Energy Management System Upgrade/Expansion and Variable Speed Drives

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### RECOMMENDED ACTION

Convert the existing pneumatic temperature controls to digital controls eliminating the pneumatics.

Provide new head end with updated graphics, software (2 year updates), sequences of operation and hands on training.

Install Variable Frequency Drives (VFD) on the air handlers in the inmate housing, administration building and school office/chapel air handlers including revised sequences of operation.

Estimated Electric Savings	= 577,484 KWH/YR
Estimated Electric Cost Savings	= \$52,031/yr
Estimated Gas Savings	= 1,123 MCF/yr
Estimated Gas Cost Savings	= \$6,860/yr
Implementation Cost	= \$1,321,989

Implementation costs includes design and engineering, project management, contingency, performance, overhead and profit.

\*Estimated energy and cost savings are for year one only. All cost and savings are +/- 10%.

### EXISTING CONDITIONS

The existing temperature controls are original and pneumatic with a Novar DDC system installed in the 1990's to control some basic Energy Management Functions. The Novar system is functional but outdated, and should be replaced or updated with a Web base open protocol system. Pneumatics are no longer installed and the existing controls are beyond their expected life of 20 years.

Most of the controls are the original pneumatic and in fair/poor condition with reported leaks and oil/water in the pneumatic piping which will eventually ruin the remaining pneumatics. Portions of the pneumatic tubing have been replaced. Two compressors provide temperature control air to all of the buildings.

At the Administration building, the maintenance staff has converted some of the original pneumatic controllers to the Novar system while using the existing damper and valve actuators.

The controller at the school is a mix of digital and pneumatics with digital control on dampers but pneumatic control on heating valves.

Dorms 6 and 7 do not have an EMS system, the controls have been disconnected.

MSI has electric thermostats on unit heaters and packaged controls on the air handlers with a Novar system controlling basic energy management functions.

The administration air handler has an existing VFD that is not operating and currently there is no modulation of the fan based on occupancy. The return fan has the existing inlet vanes.

The school air handler serving the offices has inlet vanes but they are not operating properly with excessive air being discharged from the ductwork.

The energy management system is manufactured by Novar digital and was installed in the 1990's. Most of the major equipment is on the system but most are simple on/off energy management functions. The Novar system is proprietary and only Novar can maintain and make changes or additions. Digital controls have replaced the pneumatic controls on several of the air handlers.

VFD's were added to the inmate housing air handlers in the late 1990's or early 2000's. Modern VFD's are much improved regarding stray voltages, size and control compared to the existing VFD's.

The chapel air handler is a VAV system but the speed control does not work over pressurizing the ductwork

The auditorium air handler is operated continuously to provide air to the video room adjacent to the stage.

The dining unit air handler and the health multizone air handlers are operated continuously even though the area has minimum or no occupancy in the evening and at night.

## **PROPOSED SYSTEM**

ESG recommends all of the controls at the facility be converted to DDC. The new DDC system will be LAN/BacNet compatible, open protocol, Tridium compatible and non-proprietary allowing multiple qualified contractors or applied partners in the local geographic area to install, program, repair or maintain the system.

The new control system will provide much greater control of the HVAC equipment and can be monitored from the central computer or a workstation/portable computer in another building. In addition, DDC provides greater flexibility in scheduling equipment, troubleshooting and optimizing energy saving strategies (start/stop, economizer, occupancy, etc.). Monitoring also optimizes the maintenance staff's utilization by allowing diagnostics and correction of many HVAC problems without going to the equipment.

Converting from pneumatic to digital control will eliminate the pneumatic control system, reduce costly maintenance of the system, and significantly reduce the comfort problems commonly associated with pneumatic controls.

This upgrade will provide a new front-end graphical user interface that will set point changes and time scheduling. The new system will provide the connectivity to the stand-alone controllers located at the individual pieces of equipment (air handling units, VAV boxes, hood system controls, etc.).

The existing LAN system in the building will be used to communicate between buildings and the central computer located in the maintenance shop. Off-site access via a VPN or any other means will not be permitted.

Provide variable frequency drives for the air handlers in housing units, administration AHU, dining AHU and school AHU.

Install separate (2) ton air conditioning unit for video room adjacent to the stage.

ESG believes this system will provide the proper space temperatures to meet comfort and safety needs and schedules to reduce energy consumption. Not only will the complex experience reduced electric, heating and cooling energy, this system will allow maintenance personnel to diagnose problems sooner and make corrections faster, which will result in saved maintenance time and

satisfied inmates, correctional officers and staff.

The control strategies for the buildings will include the air-handling units. The heating valve, cooling and outside air dampers will be direct digital control with monitoring and adjustment from the central computer. This will help to ensure that proper amount of air is being supplied to the areas and that greatest potential for savings is achieved.

Other control strategies that will be implemented on fan systems that are suited for these applications are:

- *Optimized Start/Stop* – the air-handling units will be individually controlled to startup for the optimum morning warm-up or cool-down start-time to reach the proper space temperature determined by the outside air temperature.
- *Variable Air Volume and Variable Pump Control Optimization* – fan speeds will be varied based on static pressure readings to control the quantity of air being delivered and minimize outside air. Additional information is discussed under the New Condensing Boiler for Reheat ECM.
- *Space Setback Temperatures* – where applicable, space temperatures will be set-up or down to maintain the predetermined space temperature to conserve energy during unoccupied periods.
- *Discharge Air Temperature Reset* – discharge air temperature set points are usually a fixed temperature for the entire year. There is a better method of supplying air in a variable volume system with reheat. The new controls will measure the position of the VAV boxes and reset the discharge air set point temperature to best optimize the correct amount of air to be supplied to the spaces.
- *Economizer Mode* – the repair or replacement of the outside air dampers is covered under the AHU Upgrades and once completed, the controls will operate to take advantage of outside air temperatures to provide free cooling. These dampers will go to their minimum position when outdoor temperatures are outside the economizer temperature range and go to the closed position when the units are able to be shutdown.

### **Benefits of New DDC Controls**

- A. *Energy Efficiency* – The new control system will allow the buildings to take advantage of energy savings strategies.
- B. *Reduced Maintenance Cost* – The maintenance staff will be able to address maintenance issues from a single point. The staff can access trending data, and monitor equipment run times, alarms and schedules. In addition, all maintenance associated with the pneumatic system will be reduced or eliminated.
- C. *Reliability* – The pneumatic system is old and antiquated due to equipment obsolescence, moisture in air lines and not operating or incorrect readings of the older controls. Installing a new DDC system would assure reliable operation for the next generation of students and staff.
- D. *Temperature Control and Comfort* – DDC provides superior temperature control and occupant comfort.
- E. *Operating Costs* – A properly operating system will save energy.

General Scope:

- Remove existing energy management system. remove sensors, controllers. Cover sensor openings with stainless steel plate. Remove exposed wiring to above ceiling or joists. Remove all controls attached to air handlers and plug openings.
- Provide new computer, monitor, keyboard, mouse, printer and other accessories as required in area as directed by ICF.
- Provide all programming including graphics.
- Furnish and install all required network drops from control panels to LON access as directed by DOC personnel. Final connection by DOC.
- All LAN jacks to be maintained by the Michigan DOC.
- Submittal data & as-built O&M manuals shall be provided.
- Verify and record proper operation of controls to insure that all setback/up, sequences of operation and time schedules are operating properly. Provide trending of major equipment.
- Room sensors in officer or staff only areas to have temperature adjustment knob (+/- or red/blue dial- no temperature settings) with cover (no thermometer or display.) Room temperature adjustment to be limited by central computer system.
- All set points to be adjustable
- Provide sequences of operation and graphics as approved by ICF and Michigan DOC
- Remove pneumatics controls, panels, compressors, air dryers, and filters. Remove all pneumatic controls attached to air handlers (sensor, controllers, actuators, etc.) Remove pneumatic piping in exposed area (excluding mechanical rooms). Remove tubing to above joist or above ceiling. Cover opening from thermostats with stainless steel plate securely attached to the wall. seal opening left from removal of pneumatic controlles or sensors with plug.
- Thermostats required in inmate areas to be sensor with steel plate cover securely attached to the wall. All wiring in inmate areas to be in conduit securely attached to the wall with tamper proof screws.
- 32 hours on site training during and after installation. 16 hours on site training 6 monthes after completion. Owner
- 2 year software upgrade after acceptance of installation
- Exiting finned tube, convectors with pneumatic controls to be converted to self contained valve(total 10)
- Existing cabinet unit heaters with pneumatic controls to be converted to return air thermostat and aquastat (total 10)
- Not included: factory controls on gas fired heating equipment, equipment that is disconnected, self contained control valves, pipe or duct mounted gauges or thermometers, package/factory mounted domestic hot water controls.
- Provide and install variable frequency drives as listed below as manufactured by Danfoss, Toshiba, Square D or other approved equal. VFD on AHU's to have bypass. Sequences of operation to to include override of VAV boxes for full speed operation. Rewire safeties to new VFD. Provide factory programming, set up and hands on training. VFD to include filters and impedance devices to prevent interference with ICF security and electrical system.

- Provide portable computer with software for access from other building within ICF. VPN or off site access not allowed.
- Provide all power as required for all devices.
- Provide and install a (2) ton split system as manufactured by Mitubishi, Freidrich, Carrier or Trane in the video room adjacent to the stage. Install condensing unit on roof. All roof penetrations to be done by roofing contractor as recommended by ICF and DOC. Unit to be controlled from LON thermostat and connected to the new energy management system. Provide power wiring, control wiring. Install all tubing and insulation as required.

## Variable Speed Drives

Facility	KWH Savings	KWH \$	kWh Savings
ICF	314,146	\$ 0.0901	\$ 28,305

Existing Variable speed drives installed in the 1990's no longer work on the air handling equipment.  
 This ECM proposes to replace the existing non operable variable frequency drives and in install new VFD's.  
 All sequences and the installation of the VFD's are based on the installation of an energy management system.

### Savings Calculations

Conversion Constant = 0.746  
 Affinity factor = 2.1 the actual calculations the number is cubed but in reality this should be less than 3 and preferably between 2 and 2.5  
 VSD efficiency = 96% VSD efficiencies can range from 95% to 99% per manufacturers data.

Annual KWH with VSD = HP x Motor Loading x VSD% speed<sup>Affinity Factor</sup> x Conversion constant x occupied bin hours / (Motor Efficiency x VSD efficiency)  
 Annual KWH without VSD = HP x Motor Loading x Conversion Constant x occupied bin hours / (Motor Efficiency)  
 KWH savings = KWH no VSD - KWH with VSD

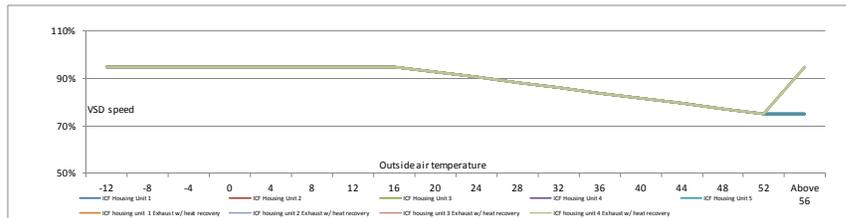
### Electric Savings (Heating/Make up air units)

General Sequence: Supply and associated exhaust fan speed will be operated at minimum 75% speed. As the space temperature decreases the fan speed will increase. When outside air temperature is above 75 F the supply fan will be at minimum speed and the exhaust fan speed will increase.

Equipment	Building	Area Served	Horsepower (HP)	Motor Energy Efficiency	Max design cfm (derated by 33% to account for losses)	Motor loading	Max rpm	Max in. WC	Min %	Min cfm	Min RPM or speed	Pressure at Min. speed	HZ at min speed
ICF Housing Unit 1	ICF	Cells	25	90%	5,924	73%	1,800	3	75%	4,443	1350	1.7	45
ICF Housing Unit 2	ICF	Cells	25	90%	5,924	73%	1,800	3	75%	4,443	1350	1.7	45
ICF Housing Unit 3	ICF	Cells	25	90%	5,924	73%	1,800	3	75%	4,443	1350	1.7	45
ICF Housing Unit 4	ICF	Cells	25	90%	5,924	73%	1,800	3	75%	4,443	1350	1.7	45
ICF Housing Unit 5	ICF	Cells	25	90%	5,924	73%	1,800	3	75%	4,443	1350	1.7	45
ICF housing unit 1 Exh	ICF	cells	10	90%	5,924	73%	1,800	2	75%	4,443	1350	1.1	45
ICF housing unit 2 Exh	ICF	cells	10	90%	5,924	73%	1,800	2	75%	4,443	1350	1.1	45
ICF housing unit 3 Exh	ICF	cells	10	90%	5,924	73%	1,800	2	75%	4,443	1350	1.1	45
ICF housing unit 4 Exh	ICF	cells	10	90%	5,924	73%	1,800	2	75%	4,443	1350	1.1	45
ICF housing unit 5 Exh	ICF	cells	10	90%	5,924	73%	1,800	2	75%	4,443	1350	1.1	45

Temperature Range		-12	-8	-4	0	4	8	12	16	20	24	28	32	36	40	44	48	52	Above 56	
Equipment	Facility	Annual occupied bin hours within range																		
ICF Housing Unit 1	ICF	4	31	48	52	49	97	180	226	302	301	456	811	612	418	472	625	504	3,563	
ICF Housing Unit 2	ICF	95%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	92.8%	90.6%	88.3%	86.1%	83.9%	81.7%	79.4%	77.2%	75.0%	75%	
ICF Housing Unit 3	ICF	95%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	92.8%	90.6%	88.3%	86.1%	83.9%	81.7%	79.4%	77.2%	75.0%	75%	
ICF Housing Unit 4	ICF	95%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	92.8%	90.6%	88.3%	86.1%	83.9%	81.7%	79.4%	77.2%	75.0%	75%	
ICF Housing Unit 5	ICF	95%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	92.8%	90.6%	88.3%	86.1%	83.9%	81.7%	79.4%	77.2%	75.0%	75%	
g unit 1 Exhaust w/ heat recovery	ICF	95%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	92.8%	90.6%	88.3%	86.1%	83.9%	81.7%	79.4%	77.2%	75.0%	95%	
g unit 2 Exhaust w/ heat recovery	ICF	95%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	92.8%	90.6%	88.3%	86.1%	83.9%	81.7%	79.4%	77.2%	75.0%	95%	
g unit 3 Exhaust w/ heat recovery	ICF	95%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	92.8%	90.6%	88.3%	86.1%	83.9%	81.7%	79.4%	77.2%	75.0%	95%	
g unit 4 Exhaust w/ heat recovery	ICF	95%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	92.8%	90.6%	88.3%	86.1%	83.9%	81.7%	79.4%	77.2%	75.0%	95%	
g unit 5 Exhaust w/ heat recovery	ICF	95%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	92.8%	90.6%	88.3%	86.1%	83.9%	81.7%	79.4%	77.2%	75.0%	95%	

Equipment	Facility	Annual KWH with VSD	Annual KWH without VSD	Savings (Kwh)
ICF Housing Unit 1	ICF	88,819	132,378	43,559
ICF Housing Unit 2	ICF	88,819	132,378	43,559
ICF Housing Unit 3	ICF	88,819	132,378	43,559
ICF Housing Unit 4	ICF	88,819	132,378	43,559
ICF Housing Unit 5	ICF	88,819	132,378	43,559
ICF housing unit 1 Exh	ICF	43,418	52,951	9,534
ICF housing unit 2 Exh	ICF	43,418	52,951	9,534
ICF housing unit 3 Exh	ICF	43,418	52,951	9,534
ICF housing unit 4 Exh	ICF	43,418	52,951	9,534



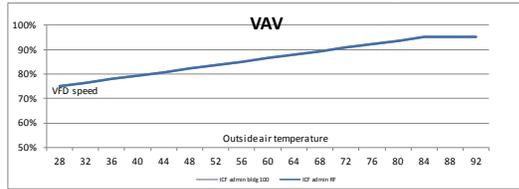
VAV AHU

General Sequence: Fan speed will be controlled by the static pressure in the duct from a minimum of 75% to 95% speed.

Equipment	Building	Area Served	Horsepower (HP)	Motor Energy Efficiency	Max design cfm (derated by 33% to account for losses)	Motor loading	Max rpm	Max in. WC	Min %	Min cfm	Min RPM or speed	Pressure at Min. speed	HZ at min speed
ICF admin bldg 100	ICF	administration	40	90%	19,800	73%	1800	4	75%	14850	1350	2.3	45
ICF admin RF	ICF	administration	10	90%	19,800	73%	1800	4	75%	14850	1350	2.3	45
ICF building 300 AHU-11	ICF	Chapel, offices	7.5	90%	3,960	73%	1800	4	75%	2970	1350	2	45
ICF building 300 AHU-11 RAF	ICF	Chapel, offices	3	90%	3,960	73%	1800	4	75%	2970	1350	2	45

Temperature Range	28	32	36	40	44	48	52	56	60	64	68	72	76	80	84	88	92	96	
Annual Occupied bin hours within range	624	290	219	149	169	223	180	183	169	211	226	152	103	118	67	25	16	2	
Equipment	Building	Annual KWH with VSD	Annual KWH without VSD	Savings (Kwh)	79.3%	80.7%	82.1%	83.6%	85.0%	86.4%	87.9%	89.3%	90.7%	92.1%	93.6%	95.0%	95.0%	95.0%	
ICF admin bldg 100	ICF	75%	76.4%	77.9%	79.3%	80.7%	82.1%	83.6%	85.0%	86.4%	87.9%	89.3%	90.7%	92.1%	93.6%	95.0%	95.0%	95.0%	95%
ICF admin RF	ICF	75%	76.4%	77.9%	79.3%	80.7%	82.1%	83.6%	85.0%	86.4%	87.9%	89.3%	90.7%	92.1%	93.6%	95.0%	95.0%	95.0%	95%
ICF building 300 AHU-11	ICF	75%	76.4%	77.9%	79.3%	80.7%	82.1%	83.6%	85.0%	86.4%	87.9%	89.3%	90.7%	92.1%	93.6%	95.0%	95.0%	95.0%	95%
ICF building 300 AHU-11 RAF	ICF	75%	76.4%	77.9%	79.3%	80.7%	82.1%	83.6%	85.0%	86.4%	87.9%	89.3%	90.7%	92.1%	93.6%	95.0%	95.0%	95.0%	95%

Equipment	Building	Annual KWH with VSD	Annual KWH without VSD	Savings (Kwh)
ICF admin bldg 100	ICF	53,225	75,645	22,420
ICF admin RF	ICF	13,306	18,911	5,605
ICF building 300 AHU-11	ICF	9,980	14,183	4,204
ICF building 300 AHU-11 RAF	ICF	3,992	5,673	1,681



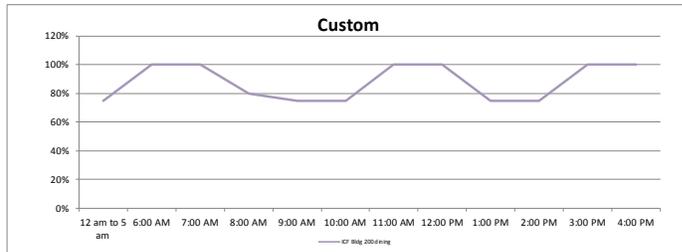
Custom (Time based)

General Sequence: fan speed will be based on time schedule as shown.

Equipment	Building	Area Served	Horsepower (HP)	Motor Energy Efficiency	Max design cfm (derated by 33% to account for losses)	Motor loading	Max rpm	Max in. WC	Min %	Min cfm	Min RPM or speed	Pressure at Min. speed	HZ at min speed
ICF Bldg 200 dining	ICF	Dining	15	90%	5,610	73%	1800	3	75%	4207.5	1350	1.69	45

Time	12 am to 5 am	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM to Mid.
ICF Bldg 200 dining annual hours	1,825	365	365	365	365	365	365	365	365	365	365	365	365	2,555
% speed	75%	100%	100%	80%	75%	75%	100%	100%	75%	75%	100%	100%	80%	75%

Equipment	Building	Annual KWH with VSD	Annual KWH without VSD	Savings (Kwh)
ICF Bldg 200 dining	ICF	55,202	79,509	24,306



## Unoccupied Setback

This ECM calculates the energy savings from changing the space temperature (up in summer and down in the winter) when the space is unoccupied. An energy management system will act as a time clock to start, stop and cycle the equipment during the unoccupied period.

Facility	kWh Savings	KWH \$	kWh Savings	natural gas Savings	Natural Gas	Cost Savings
ICF	263,338	\$ 0.0901	\$ 23,727	409	\$ 6.11	\$ 2,500

U = U values for wall, roof, windows, doors (See below)  
A = Area of walls, roof, windows, doors (See below)

### Buildings or areas that will be set back

Equipment	Building	Area	Sq Ft	Wall Area	Wall U	stories	Roof Area	Roof U	Window Area	U	overall U value
ICF housing ahu lobby	ICF	Lobby	5,700	2,562	0.125	2	2,850	0.05	256	0.7	642
ICF bldg 200 health AHU-6	ICF	Health services	6,089	3,746	0.125	1	6,089	0.05	375	0.7	1,035
ICF bldg 300 AHU-9,10 gym	ICF	Gym	8,160	4,336	0.125	1	8,160	0.05	434	0.7	1,254
ICF building 300 AHU-11	ICF	Chapel, offices	3,189	2,711	0.125	1	3,189	0.05	271	0.7	688
ICF building 300 AHU-12	ICF	ART	1,900	2,092	0.125	1	1,900	0.05	209	0.7	503
MSI	ICF	Building	36,000	9,107	0.125	1	36,000	0.05	911	0.7	3,576
ICF bldg 200 Health services	ICF	Health services	6,089	3,746	0.125	1	6,089	0.05	375	0.7	1,035
Building 300	ICF	Prisoner services	42,344	6,984	0.125	2	21,172	0.05	698	0.7	2,421
ICF Bldg 200 dining	ICF	Dining	4,692	3,288	0.125	1	4,692	0.05	329	0.7	876
ICF admin bldg 100	ICF	administration	26,027	5,476	0.125	2	13,014	0.05	548	0.7	1,718
ICF building 300 AHU-13	ICF	Auditorium	2,950	2,607	0.125	1	2,950	0.05	261	0.7	656

### HEATING -

Calculates the savings from setting back a building or area when unoccupied. Temp below which building will require some heating

Existing occupied hours/week  
Proposed occupied hours/week  
Warm up hours  
Heating season hours  
% of area that will set back  
Existing setback temperature  
Proposed setback temperature  
% heating eff  
Savings (MCF)

Below this temperature the building or area will require some heating. No unoccupied heating will take place above this temperature  
Existing time the building or area is occupied  
Future weekly occupied time  
Amount of time that system will require to warm up from setback. Generally about 25% of the setback time  
Number of hours in the heating season based on the temperature below which heating will be required.  
Estimated percent of the square feet that can be set back.  
Existing setback temperature  
Proposed setback temperature. Generally about 60 F to enable the building to be at temperature when occupied.  
% heating efficiency of the heating system  
= overall U value x (existing setback - proposed setback) x (existing weekly hours - future weekly hours - warm up) x (heating season hours/168 hours/week) x % of area that will be setback /(% heating efficiency x 1,000,000 btu/mcf)

Building	Equipment	Temp below which building will require some heating	Existing occupied hours/week	Proposed occupied hours/week	Warm up hours	Heating season hours	% of area that will set back	Existing setback temperature	Proposed setback temperature	% heating eff	Savings (MCF)	
ICF	Lobby	ICF housing ahu lobby	41	168	84	21	3,587	90%	72	60	86%	10.8
ICF	Health services	ICF bldg 200 Health services	41	168	72	18	3,587	75%	72	60	86%	18.0
ICF	Building	MSI	41	168	60	15	3,587	90%	72	60	86%	89.2
ICF	Prisoner services	Building 300	41	168	84	21	3,587	90%	72	60	86%	40.9
ICF	Dining	ICF Bldg 200 dining	41	168	84	21	3,587	90%	72	65	86%	8.6
ICF	administration	ICF admin bldg 100	41	168	72	18	3,587	75%	72	60	86%	29.9

### Cooling

Calculates the savings from raising the temperature in a building or area when it is unoccupied. This ECM only applies to areas with air conditioning.

Temp above which building will require some air conditioning

Existing occupied hours/week  
Proposed occupied hours/week  
Cool Down hours  
Cooling season hours  
% of area that will set up  
Existing set up temperature  
Proposed set up temperature  
KW/Ton  
Savings (KWH)

Above this temperature the building or area will require some air conditioning. No unoccupied air conditioning will take place below this temperature  
Existing time the building or area is occupied  
Future weekly occupied time  
Amount of time that system will require to cool down. Generally about 25% of the setback time  
Number of hours in the cooling season based on the temperature above which cooling will be required.  
Estimated percent of the square feet that can be set back.  
Existing temperature for set up now.  
Proposed setup temperature. Generally about 80 F to enable the building to be at temperature when occupied.  
Air conditioning efficiency. Generally about 1 to 1.2 for RTU and unitary type air conditioning.  
= overall U value x (existing set up - proposed set up) x (existing weekly hours - future weekly hours - cool down hours) x (cooling season hours/168 hours/week) x % of area that will be setback x KW/Ton / 12,000 btu/ton

Building	Equipment	Temp above which building will require some air conditioning	Existing occupied hours/week	Proposed occupied hours/week	Cool Down hours	Cooling season hours	% of area that will set up	Existing set up temperature	Proposed set up temperature	KW/Ton	Savings (KWH)	
ICF	Chapel, offices	ICF building 300 AHU-11	71	168	66	16.5	1170	100%	72	80	1.1	300
ICF	Auditorium	ICF building 300 AHU-13	71	168	30	7.5	1170	100%	72	80	1.1	437
ICF	Health services	ICF bldg 200 Health services	71	168	72	18	1170	75%	72	80	1.1	309
ICF	administration	ICF admin bldg 100	71	168	72	18	1170	75%	72	80	1.1	513



Proprietary and Confidential

## Fan motor savings

Calculates the savings from shutting off the supply, return or exhaust fan during unoccupied periods

qty	Number of fans
HP	Nameplate horsepower of each fan.
motor efficiency	Efficiency of the motor.
Motor Loading	Estimated load on the motor.
Existing occupied hours/week	Existing hours that the building or area is unoccupied
Proposed occupied hours/week	Future hours the building or area is unoccupied
Unoccupied operation	Amount of time that motor will need to run for night time cycling or warm up/cool down.
KWH savings	= Qty x Hp x motor loading x (Existing unoccupied hours - Proposed occupied hours - unoccupied operation) x 52 weeks/yr / motor efficiency

Building		AHU	qty	HP	motor efficiency	Motor Loading	Existing occupied hours/week	Proposed occupied hours/week	Unoccupied operation	KWH savings
ICF	Gym	ICF bldg 300 AHU-9,10 gym	2	0.75	90%	73%	168	84	21	2,973
ICF	ART	ICF building 300 AHU-12	1	5	90%	73%	168	72	18	12,271
ICF	Auditorium	ICF building 300 AHU-13	1	7.5	90%	73%	168	30	7.5	30,796
ICF	administration	ICF admin bldg 100	1	40	90%	73%	168	72	18	98,170
ICF	Chapel, offices	ICF building 300 AHU-11 RAF	1	3	90%	73%	168	84	21	5,947
ICF	Health services	ICF bldg 200 health AHU-6 RAF	1	3	90%	73%	168	66	16.5	8,071
ICF	Chapel, offices	ICF building 300 AHU-11	1	7.5	90%	73%	168	66	16.5	20,177
ICF	Auditorium	ICF building 300 AHU-13 RAF	1	3	90%	73%	168	30	7.5	12,318
ICF	administration	ICF admin bldg 100 RAF	1	10	90%	73%	168	72	18	24,542
ICF	Health services	ICF bldg 200 health AHU-6 RAF	1	3	90%	73%	168	66	16.5	8,071
ICF	Chapel, offices	ICF building 300 AHU-11 RAF	1	3	90%	73%	168	84	21	5,947
ICF	Auditorium	ICF building 300 AHU-13 RAF	1	3	90%	73%	168	30	7.5	12,318
ICF	Health services	ICF bldg 200 health AHU-6	1	7.5	90%	73%	168	66	16.5	20,177

## Ventilation Savings

Ventilation Savings from the fan not operating during unoccupied periods. Many of the dampers are original and do not fit well. Factors have been included account for CFM degradation. Savings taken for heating only.

Unit Airflow CFM	Air handler design air flow x 66% to account for losses, age an inefficiencies.
% OA	Percent outside air based on design x 30% to account for little to no damper control and operation
OA cfm	Estimated outside air
Heating Delivered air temp.	Estimated or design discharge air temperature
Average OA temperature	Average outside air temperature
Existing occupied hours/week	Current hours that the area is occupied
Proposed occupied hours/week	Future hours that the area is occupied
Warm up hours/week	Hours that the unit needs to run to warm up the space
Heating season hours	Number of hours in the heating season at the average OA temp
MCF	= 1.1 x (heating delivered air temp - Averege OA temp) x OA cfm x (Existing weekly hours of operation - Future weekly hours of operation - warm up hours) x heating season hours/168 hours/wk /(86% heating efficiency x 1,000,000 btu/MCF)

Building		AHU	Heating		Unit Airflow CFM	% OA	OA cfm	Heating Delivered air temp.	Average OA temperature	Existing occupied hours/week	Proposed occupied hours/week	Warm up hours/week	Heating season hours	MCF
			CFM Factor	OA factor										
			66%	30%										
ICF	Lobby	ICF housing ahu lobby	2,211	6%	133	100	35	168	84	21	4,095	17		
ICF	Gym	ICF bldg 300 AHU-9,10 gym	1,320	9%	119	100	35	168	84	21	4,095	15		
ICF	ART	ICF building 300 AHU-12	3,564	13%	475	85	35	168	72	18	4,095	58		
ICF	Auditorium	ICF building 300 AHU-13	4,950	3%	149	105	35	168	30	8	4,095	42		
ICF	administration	ICF admin bldg 100	19,800	3%	594	90	35	168	72	18	4,095	79		