

FAC 7415 Bowling Center

RUC: \$237.51 SF

Source: Tri-Service FAC 7415 from *Tri-Service Facility Unit Costs for Military Construction* version prepared November 13, 2009

SUC: \$3.14 SF

Source: Cost Works model in \$FY-08, inflated to \$FY-09 using Green Book Table 5-6 (O&M less DHP)
In V12, values were inflated only.

Model follows:

Chart: A chart showing relative annual sustainment requirements follows:

FAC 7415-Bowling Center
CostWorks 2008 Quarter 2

Design Life= 40
Average S.F= 7,071

C.S.F=100 S.F; MSF=1000 S.F
Sq=100 S.F; M.L.F=1000 L.F

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Terminal Cutoff is the removal of a single task occurrence if that task occurs
within 10% of the end of the design life and if the frequency of the task exceeds
20% of the design life. This prevents scheduling major work near the end of the
design life

Description	Frequency	Crew	Qty	Unit	Total In-House	Total Incl. O&P	Release	Occurrences in Design Life	Adjusted Occurrences	Terminal Cutoff
Point & refinish block wall - 1st floor	25	1 Bric	50.900	C.S.F.	18,908.84	23,215.49	2008 Qtr 2	1	1	\$ 23,215.49
Repair 2'-0" x 3'-0" aluminum window - 1st floor	20	1 Carp	48.000	Ea.	5,518.08	6,537.60	2008 Qtr 2	2	1	\$ 6,537.60
Replace 2'-0" x 3'-0" aluminum window - 1st floor	50	1 Carp	48.000	Ea.	21,052.80	24,623.52	2008 Qtr 2	0	0	\$ -
Replace glass - 1st floor (1% of glass)	1	1 Carp	2.880	S.F.	26.06	30.59	2008 Qtr 2	40	40	\$ 1,223.42
Repair aluminum storefront door	12	1 Carp	3.000	Ea.	1,241.82	1,472.04	2008 Qtr 2	3	3	\$ 4,416.12
Replace 3'-0" x 7'-0" aluminum storefront doors	50	1 Carp	3.000	Ea.	5,043.78	5,922.24	2008 Qtr 2	0	0	\$ -
Replace insulating glass - (3% of glass)	1	1 Carp	1.890	S.F.	68.93	80.76	2008 Qtr 2	40	40	\$ 3,230.39
Repair 12' x 12' steel roll-up door	10	1 Carp	1.000	Ea.	832.61	964.54	2008 Qtr 2	4	3	\$ 2,893.62
Refinish 12' x 12' steel roll-up door	5	1 Pord	1.000	Ea.	168.83	205.54	2008 Qtr 2	8	8	\$ 1,644.32
Replace 12' x 12' steel roll-up door	35	2 Carp	1.000	Ea.	3,325.27	3,849.55	2008 Qtr 2	1	1	\$ 3,849.55
Repair steel, painted, door	14	1 Carp	2.000	Ea.	1,164.88	1,372.72	2008 Qtr 2	2	2	\$ 2,745.44
Refinish 3'-0" x 7'-0" steel, painted, door	4	1 Pord	2.000	Ea.	65.82	80.62	2008 Qtr 2	10	10	\$ 806.20
Replace 3'-0" x 7'-0" steel, painted, door	45	1 Carp	2.000	Ea.	1,064.16	1,240.08	2008 Qtr 2	0	0	\$ -
Replace tempered glass - (3% of glass)	1	1 Carp	1.260	S.F.	24.32	28.93	2008 Qtr 2	40	40	\$ 1,157.18
Debris removal and visual inspection built-up roofing	1	2 Rofc	7.071	M.S.F.	207.46	249.96	2008 Qtr 2	40	40	\$ 9,998.39
Non-destructive moisture inspection built-up roofing	5	2 Rofc	7.071	M.S.F.	641.91	776.40	2008 Qtr 2	8	8	\$ 6,211.17
Total roof replacement built-up roofing	28	G1	70.710	Sq.	40,359.85	47,796.42	2008 Qtr 2	1	1	\$ 47,796.42
Minor membrane repairs - (2% of roof area) built-up roofing	5	G5	1.410	Sq.	485.77	573.93	2008 Qtr 2	8	8	\$ 4,591.41
Flashing repairs - (2 S.F. per sq. repaired) built-up roofing	5	2 Rofc	2.830	S.F.	9.51	11.32	2008 Qtr 2	8	8	\$ 90.56
Minor membrane replacement - (25% of roof area) built-up roofing	20	G5	16.677	Sq.	9,913.31	11,825.33	2008 Qtr 2	2	1	\$ 11,825.33
Repair solid core wood door interior	11	1 Carp	7.000	Ea.	1,174.25	1,386.98	2008 Qtr 2	3	3	\$ 4,160.94
Refinish 3'-0" x 7'-0" solid core wood door interior	4	1 Pord	7.000	Ea.	295.54	363.86	2008 Qtr 2	10	10	\$ 3,638.60
Replace 3'-0" x 7'-0" solid core wood door interior	40	1 Carp	7.000	Ea.	2,566.90	2,975.84	2008 Qtr 2	1	0	\$ -
Refinish acoustical tile	10	1 Pord	11.890	C.S.F.	1,815.48	2,205.12	2008 Qtr 2	4	3	\$ 6,615.36
Replace acoustical tile	60	2 Carp	11.890	C.S.F.	5,418.99	6,455.20	2008 Qtr 2	0	0	\$ -
Repair acoustical tile - (2% of walls)	25	1 Carp	0.237	C.S.F.	92.23	109.20	2008 Qtr 2	1	1	\$ 109.20
Refinish drywall	8	1 Pord	6,660.000	S.F.	3,996.00	4,928.40	2008 Qtr 2	5	5	\$ 24,642.00
Replace 5/8" drywall	75	2 Carp	6,660.000	S.F.	14,851.80	17,915.40	2008 Qtr 2	0	0	\$ -
Repair 5/8" drywall - (2% of walls)	20	1 Carp	133.200	S.F.	211.79	254.41	2008 Qtr 2	2	1	\$ 254.41
Replace carpet	8	2 Tilf	98.220	S.Y.	4,432.67	5,121.19	2008 Qtr 2	5	5	\$ 25,605.95
Refinish concrete floor finished	25	2 Cefi	8.840	C.S.F.	3,089.05	3,718.90	2008 Qtr 2	1	1	\$ 3,718.90
Replace rubber tile floor	18	1 Tilf	196.400	S.Y.	34,806.01	40,941.54	2008 Qtr 2	2	2	\$ 81,883.09
Replace acoustic tile ceiling, fire-rated	20	1 Carp	61.870	C.S.F.	24,942.89	29,635.73	2008 Qtr 2	2	1	\$ 29,635.73
Check / minor repairs drinking fountain	1	1 Plum	1.000	Ea.	37.58	47.34	2008 Qtr 2	40	40	\$ 1,893.60
Repair internal leaks drinking fountain	4	1 Plum	1.000	Ea.	35.14	43.43	2008 Qtr 2	10	10	\$ 434.30
Correct water pressure drinking fountain	2	1 Plum	1.000	Ea.	32.21	40.50	2008 Qtr 2	20	20	\$ 810.00

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Description	Frequency	Crew	Qty	Unit	Total In-House	Total Incl. O&P	Release	Occurrences in Design Life	Adjusted Occurrences	Terminal Cutoff
Replace refrigerant drinking fountain	2	1 Plum	1.000	Ea.	15.84	18.86	2008 Qtr 2	20	20	\$ 377.20
Repair drain leak drinking fountain	4	1 Plum	1.000	Ea.	22.63	27.03	2008 Qtr 2	10	10	\$ 270.30
Replace fountain drinking fountain	10	2 Plum	1.000	Ea.	1,005.84	1,193.57	2008 Qtr 2	4	3	\$ 3,580.71
Replace washer in spud connection lavatory, vitreous china	7	1 Plum	2.000	Ea.	48.02	56.66	2008 Qtr 2	5	5	\$ 283.30
Replace washer in faucet lavatory, vitreous china	2	1 Plum	2.000	Ea.	19.70	24.58	2008 Qtr 2	20	20	\$ 491.60
Replace faucets lavatory, vitreous china	10	1 Plum	2.000	Ea.	246.98	298.12	2008 Qtr 2	4	3	\$ 894.36
Clean out strainer and P trap lavatory, vitreous china	2	1 Plum	2.000	Ea.	54.08	67.14	2008 Qtr 2	20	20	\$ 1,342.80
Replace lavatory, vitreous china	35	2 Plum	2.000	Ea.	1,060.38	1,271.40	2008 Qtr 2	1	1	\$ 1,271.40
Replace faucet washer sink, iron enamel	2	1 Plum	1.000	Ea.	9.79	12.19	2008 Qtr 2	20	20	\$ 243.80
Clean trap sink, iron enamel	3	1 Plum	1.000	Ea.	6.60	8.25	2008 Qtr 2	13	13	\$ 107.25
Replace faucets sink, iron enamel	10	1 Plum	1.000	Ea.	123.49	149.06	2008 Qtr 2	4	3	\$ 447.18
Unstop sink sink, iron enamel	2	1 Plum	1.000	Ea.	32.21	40.50	2008 Qtr 2	20	20	\$ 810.00
Replace sink, P.E.C.I. sink, iron enamel	35	2 Plum	1.000	Ea.	552.72	657.69	2008 Qtr 2	1	1	\$ 657.69
Replace faucet washer sink, stainless steel	2	1 Plum	1.000	Ea.	9.79	12.19	2008 Qtr 2	20	20	\$ 243.80
Clean trap sink, stainless steel	3	1 Plum	1.000	Ea.	6.60	8.25	2008 Qtr 2	13	13	\$ 107.25
Replace faucets sink, stainless steel	10	1 Plum	1.000	Ea.	123.49	149.06	2008 Qtr 2	4	3	\$ 447.18
Unstop sink, stainless steel	2	1 Plum	1.000	Ea.	32.21	40.50	2008 Qtr 2	20	20	\$ 810.00
Replace sink, stainless steel	40	2 Plum	1.000	Ea.	801.70	942.17	2008 Qtr 2	1	0	\$ -
Replace flush valve diaphragm tankless water closet	10	1 Plum	4.000	Ea.	282.96	332.24	2008 Qtr 2	4	3	\$ 996.72
Rebuild flush valve tankless water closet	20	1 Plum	4.000	Ea.	527.92	640.04	2008 Qtr 2	2	1	\$ 640.04
Unplug clogged line tankless water closet	5	1 Plum	4.000	Ea.	673.04	840.72	2008 Qtr 2	8	8	\$ 6,725.76
Replace tankless water closet	35	2 Plum	4.000	Ea.	2,192.00	2,593.44	2008 Qtr 2	1	1	\$ 2,593.44
Replace tankless flush valve	25	1 Plum	4.000	Ea.	838.00	981.48	2008 Qtr 2	1	1	\$ 981.48
Replace wax ring gasket tankless water closet	5	1 Plum	4.000	Ea.	438.28	548.80	2008 Qtr 2	8	8	\$ 4,390.40
Replace flush valve diaphragm urinal	7	1 Plum	2.000	Ea.	141.48	166.12	2008 Qtr 2	5	5	\$ 830.60
Rebuild flush valve urinal	20	1 Plum	2.000	Ea.	263.96	320.02	2008 Qtr 2	2	1	\$ 320.02
Unplug line urinal	5	1 Plum	2.000	Ea.	224.28	279.82	2008 Qtr 2	8	8	\$ 2,238.56
Replace wall-hung urinal	35	2 Plum	2.000	Ea.	1,683.26	2,013.14	2008 Qtr 2	1	1	\$ 2,013.14
Resolder joint pipe & fittings, copper	10	1 Plum	2.000	Ea.	65.70	80.90	2008 Qtr 2	4	3	\$ 242.70
Replace pipe and fittings, copper 3/4"	20	2 Plum	16.000	L.F.	283.52	343.68	2008 Qtr 2	2	1	\$ 343.68
Replace pipe and fittings, copper 2"	25	2 Plum	16.000	L.F.	652.96	785.76	2008 Qtr 2	1	1	\$ 785.76
Remove old insulation & replace with new, pipe 3/4", wall 1"	15	1 Plum	16.000	L.F.	112.16	136.64	2008 Qtr 2	2	2	\$ 273.28
Remove old insulation & replace with new, pipe 1-1/2", wall 1"	15	1 Plum	16.000	L.F.	123.36	150.08	2008 Qtr 2	2	2	\$ 300.16
Drain and flush water heater, electric, 120 gallon	7	1 Plum	1.000	Ea.	226.43	283.04	2008 Qtr 2	5	5	\$ 1,415.20
Check operation water heater, electric, 120 gallon	3	1 Plum	1.000	Ea.	1.98	2.48	2008 Qtr 2	13	13	\$ 32.24
Replace water heater, electric, 120 gallon	15	2 Plum	1.000	Ea.	9,192.45	10,543.79	2008 Qtr 2	2	2	\$ 21,087.58

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Unclog main drain pipe & fittings, cast iron	10	1 Plum	1.000	Ea.	35.62	44.41	2008 Qtr 2	4	3	\$ 133.23
Replace pipe & fittings, cast iron	40	2 Plum	16.000	L.F.	670.40	811.20	2008 Qtr 2	1	0	\$ -
Unclog floor drain, PVC	20	1 Plum	1.000	Ea.	37.09	45.87	2008 Qtr 2	2	1	\$ 45.87
Repair joint pipe and fittings, PVC	10	1 Plum	1.000	Ea.	115.94	144.14	2008 Qtr 2	4	3	\$ 432.42
Replace pipe, 4" pipe and fittings, PVC	30	2 Plum	16.000	L.F.	947.20	1,171.04	2008 Qtr 2	1	1	\$ 1,171.04
General maintenance & repair drain: roof, scupper, area	1	1 Plum	2.000	Ea.	56.70	71.34	2008 Qtr 2	40	40	\$ 2,853.60
Replace drain: roof, scupper, area	40	1 Plum	2.000	Ea.	796.68	936.28	2008 Qtr 2	1	0	\$ -
Replace fan & motor, propeller exh., 4700 CFM exhaust fan	15	Q20	1.000	Ea.	1,393.63	1,626.35	2008 Qtr 2	2	2	\$ 3,252.70
Repair single zone rooftop unit, 25 ton	10	Q6	0.500	Ea.	12,910.55	14,961.45	2008 Qtr 2	4	3	\$ 44,884.34
Replace single zone rooftop unit, 25 ton	15	Q7	1.000	Ea.	34,098.40	39,677.60	2008 Qtr 2	2	2	\$ 79,355.20
Repair fan coil unit, 1 ton	10	1 Stpi	1.000	Ea.	369.22	441.02	2008 Qtr 2	4	3	\$ 1,323.06
Replace fan coil unit, 1 ton	15	Q5	1.000	Ea.	1,098.30	1,295.56	2008 Qtr 2	2	2	\$ 2,591.12
Minor repairs to fire alarm control panel	5	1 Elec	1.000	Ea.	107.84	130.97	2008 Qtr 2	8	8	\$ 1,047.76
Maintenance and inspection fire alarm control panel	0.5	1 Elec	1.000	Ea.	30.54	38.17	2008 Qtr 2	80	80	\$ 3,053.60
Replace fire alarm control panel	15	1 Elec	1.000	Ea.	2,615.62	3,107.84	2008 Qtr 2	2	2	\$ 6,215.68
Replace sprinkler head	20	1 Plum	35.000	Ea.	2,228.80	2,746.10	2008 Qtr 2	2	1	\$ 2,746.10
Inspect sprinkler system	1	1 Plum	1.000	Ea.	26.55	32.89	2008 Qtr 2	40	40	\$ 1,315.60
Rebuild double check 3" backflow preventer sprinkler system	1	1 Plum	1.000	Ea.	598.06	715.83	2008 Qtr 2	40	40	\$ 28,633.20
Repair failed breaker, 3 pole circuit breaker	10	1 Elec	1.000	Ea.	342.23	400.69	2008 Qtr 2	4	3	\$ 1,202.07
Maintenance and inspection C.B., 3 pole circuit breaker	0.33	1 Elec	1.000	Ea.	22.91	28.50	2008 Qtr 2	121	121	\$ 3,448.50
Replace C.B. molded case, 600 V, 3 pole circuit breaker	50	1 Elec	1.000	Ea.	3,157.74	3,611.55	2008 Qtr 2	0	0	\$ -
Maintenance and inspection lighting panel, indoor	3	1 Elec	2.000	Ea.	57.00	71.26	2008 Qtr 2	13	13	\$ 926.38
Maintenance and repair motor starter, up to 600 V	5	1 Elec	24.000	Ea.	4,098.00	4,980.00	2008 Qtr 2	8	8	\$ 39,840.00
Maintenance and inspection motor starter, up to 600 V	0.5	1 Elec	24.000	Ea.	916.08	1,148.40	2008 Qtr 2	80	80	\$ 91,872.00
Replace starter motor starter, up to 600 V	18	1 Elec	24.000	Ea.	12,676.32	15,129.84	2008 Qtr 2	2	2	\$ 30,259.68
Replace fluor. ballast for fluorescent lighting fixture, 80 W	10	1 Elec	88.000	Ea.	8,763.04	10,567.04	2008 Qtr 2	4	3	\$ 31,701.12
Replace lamps (2 lamps) fluorescent lighting fixture, 80 W	10	1 Elec	88.000	Ea.	2,238.72	2,743.84	2008 Qtr 2	4	3	\$ 8,231.52
Maintenance and repair receptacles and plugs	20	1 Elec	48.000	Ea.	1,492.32	1,859.04	2008 Qtr 2	2	1	\$ 1,859.04
Replace receptacle/plug receptacles and plugs	20	1 Elec	48.000	Ea.	2,532.48	3,092.16	2008 Qtr 2	2	1	\$ 3,092.16
Maintenance and repair wiring devices, switches	10	1 Elec	12.000	Ea.	373.08	464.76	2008 Qtr 2	4	3	\$ 1,394.28
Replace switch wiring devices, switches	15	1 Elec	12.000	Ea.	614.52	748.20	2008 Qtr 2	2	2	\$ 1,496.40
Repair heat detector	10	1 Elec	4.000	Ea.	167.20	204.52	2008 Qtr 2	4	3	\$ 613.56
Check operation heat detector	1	1 Elec	4.000	Ea.	45.60	57.20	2008 Qtr 2	40	40	\$ 2,288.00
Replace heat detector	15	1 Elec	4.000	Ea.	467.88	570.36	2008 Qtr 2	2	2	\$ 1,140.72
Check and repair manual pull station	10	1 Elec	4.000	Ea.	276.84	339.48	2008 Qtr 2	4	3	\$ 1,018.44
Replace manual pull station	15	1 Elec	4.000	Ea.	502.96	607.56	2008 Qtr 2	2	2	\$ 1,215.12

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Repair smoke detector	10	1 Elec	11.000	Ea.	420.09	517.00	2008 Qtr 2	4	3	\$ 1,551.00
Check operation smoke detector	1	1 Elec	11.000	Ea.	125.40	157.30	2008 Qtr 2	40	40	\$ 6,292.00
Replace smoke detector	15	1 Elec	11.000	Ea.	2,085.05	2,496.89	2008 Qtr 2	2	2	\$ 4,993.78
					\$329,530.94	\$390,813.66				
									MR Subtotal	\$ 787,721.56
									MR Per Year	\$ 19,693.04
									PM Per Year	\$ 3,209.00
									Subtotal	\$ 22,902.04
									Total Per Unit	\$ 3.24

CostWorks 2009 Quarter 1 - FAC 7415-Bowling Center

Qty	Assembly Number	Description	Total In-House	Total Incl. O&P	Zip Code Prefix	Type	Release
1.000	B2035 410 1950	Door, overhead, electric, roll up, to 24' high x 25' w	240.16	290.12	200	FMR	2008 Qtr 2
12.000	B2035 225 1950	Door, emergency egress, swinging, annualized	594.12	690.12	200	FMR	2008 Qtr 2
2.000	D2015 100 1950	Urinals, annualized	25.86	32.30	200	FMR	2008 Qtr 2
4.000	D2015 100 2950	Toilet (vacuum breaker type), annualized	51.72	64.60	200	FMR	2008 Qtr 2
2.000	D2015 100 4950	Lavatories, annualized	49.36	60.16	200	FMR	2008 Qtr 2
1.000	D2015 800 1950	Drink fountain, annualized	49.50	59.36	200	FMR	2008 Qtr 2
1.000	D3045 120 1950	Fan coil unit, annualized	215.71	266.60	200	FMR	2008 Qtr 2
4.000	D3045 160 1950	VAV Boxes, annualized	245.24	304.00	200	FMR	2008 Qtr 2
1.000	D3045 210 1950	Fan, axial, up to 5,000 CFM, annualized	70.55	86.20	200	FMR	2008 Qtr 2
1.000	D3055 210 1950	Package unit, air cooled, 3 thru 24 ton, annualized	207.71	251.03	200	FMR	2008 Qtr 2
1.000	D4015 100 1950	Backflow prevention device, up to 4", annualized	18.89	23.42	200	FMR	2008 Qtr 2
1.000	D4015 150 1950	Extinguishing system, wet pipe, annualized	806.79	983.35	200	FMR	2008 Qtr 2
1.000	D5015 220 1950	Circuit breaker, high voltage air, annualized	26.98	33.59	200	FMR	2008 Qtr 2
1.000	D5015 280 1950	Motor control center, over 400 A, annualized	53.91	64.15	200	FMR	2008 Qtr 2
			\$2,656.50	\$3,209.00			

FAC 7415 Sustainment by Year - Terminal Cutoff Applied

