

**FAC 7388      Exchange Warehouse**

RUC:              \$129.46 SF

Source:          USACE PAX Newsletter 3.2.2 dated 20 Mar 09  
CatCode 44110  
Deflated to FY-09 using Appendix C  
In V12, Tri-Service and USACE PAX Newsletter values were updated while all  
other values were inflated only.

SUC:              \$1.52 SF

Source:          Cost Works model, 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 7388 Exchange Warehouse**  
**CostWorks 2008 Quarter 2**

Design Life = 45  
Average S.F. = 17,666.00

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

This spreadsheet was exported  
from R.S. Means CostWorks

Terminal Cutoff is the removal of a single task ocurrence 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	63.820	C.S.F.	23,708.49	29,108.30	2008 Qtr 2	1	1	\$ 29,108.30
Point & refinish block wall - 2nd floor	25	1 Bric	59.100	C.S.F.	25,872.80	31,738.47	2008 Qtr 2	1	1	\$ 31,738.47
Replace glass - 1st floor (1% of glass)	1	1 Carp	0.400	S.F.	3.62	4.25	2008 Qtr 2	45	45	\$ 191.16
Repair 2'-0" x 3'-0" aluminum window - 1st floor	20	1 Carp	8.000	Ea.	919.68	1,089.60	2008 Qtr 2	2	2	\$ 2,179.20
Replace 2'-0" x 3'-0" aluminum window - 1st floor	50	1 Carp	8.000	Ea.	3,508.80	4,103.92	2008 Qtr 2	0	0	\$ -
Repair 12' x 12' steel roll-up door	10	1 Carp	4.000	Ea.	3,330.44	3,858.16	2008 Qtr 2	4	4	\$ 15,432.64
Refinish 12' x 12' steel roll-up door	5	1 Pord	4.000	Ea.	675.32	822.16	2008 Qtr 2	9	9	\$ 7,399.44
Replace 12' x 12' steel roll-up door	35	2 Carp	4.000	Ea.	13,301.08	15,398.20	2008 Qtr 2	1	1	\$ 15,398.20
Repair steel, painted, door	14	1 Carp	2.000	Ea.	1,164.88	1,372.72	2008 Qtr 2	3	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	11	11	\$ 886.82
Replace 3'-0" x 7'-0" steel, painted, door	45	1 Carp	2.000	Ea.	1,064.16	1,240.08	2008 Qtr 2	1	0	\$ -
Debris removal and visual inspection built-up roofing	0.5	2 Rofc	17.600	M.S.F.	516.38	622.16	2008 Qtr 2	90	90	\$ 55,994.40
Non-destructive moisture inspection built-up roofing	5	2 Rofc	17.600	M.S.F.	1,597.73	1,932.48	2008 Qtr 2	9	9	\$ 17,392.32
Minor membrane repairs - (2% of roof area) built-up roofing	1	G5	3.500	Sq.	1,205.82	1,424.64	2008 Qtr 2	45	45	\$ 64,108.80
Flashing repairs - (2 S.F. per sq. repaired) built-up roofing	1	2 Rofc	7.000	S.F.	23.52	28.00	2008 Qtr 2	45	45	\$ 1,260.00
Minor membrane replacement - (25% of roof area) built-up roofing	15	G5	44.100	Sq.	26,214.36	31,270.43	2008 Qtr 2	3	2	\$ 62,540.86
Place new membrane over existing built-up roofing	20	G5	176.600	Sq.	60,815.74	71,883.26	2008 Qtr 2	2	2	\$ 143,766.53
Total roof replacement built-up roofing	28	G1	176.600	Sq.	100,799.75	119,372.77	2008 Qtr 2	1	1	\$ 119,372.77
Repair steel painted interior door	14	1 Carp	5.000	Ea.	838.75	990.70	2008 Qtr 2	3	2	\$ 1,981.40
Refinish 3'-0" x 7'-0" steel painted interior door	4	1 Pord	5.000	Ea.	247.00	304.10	2008 Qtr 2	11	11	\$ 3,345.10
Replace 3'-0" x 7'-0" steel painted interior door	60	1 Carp	5.000	Ea.	4,687.70	5,449.80	2008 Qtr 2	0	0	\$ -
Repair solid core wood door interior	11	1 Carp	9.000	Ea.	1,509.75	1,783.26	2008 Qtr 2	4	3	\$ 5,349.78
Refinish 3'-0" x 7'-0" solid core wood door interior	4	1 Pord	9.000	Ea.	379.98	467.82	2008 Qtr 2	11	11	\$ 5,146.02
Replace 3'-0" x 7'-0" solid core wood door interior	40	1 Carp	9.000	Ea.	3,300.30	3,826.08	2008 Qtr 2	1	1	\$ 3,826.08
Repair 8" concrete block wall - (2% of walls) painted	25	1 Bric	2.900	C.S.F.	2,932.51	3,520.66	2008 Qtr 2	1	1	\$ 3,520.66
Refinish concrete block wall painted	4	1 Pord	50.000	C.S.F.	4,858.50	5,906.50	2008 Qtr 2	11	11	\$ 64,971.50
Replace 8" concrete block wall painted	75	2 Bric	147.300	C.S.F.	158,761.41	190,928.79	2008 Qtr 2	0	0	\$ -
Repair 5/8" drywall - (2% of walls)	20	1 Carp	60.100	S.F.	95.56	114.79	2008 Qtr 2	2	2	\$ 229.58
Replace 5/8" drywall	75	2 Carp	3,007.000	S.F.	6,705.61	8,088.83	2008 Qtr 2	0	0	\$ -
Replace carpet	8	2 Tilf	25.000	S.Y.	1,128.25	1,303.50	2008 Qtr 2	5	5	\$ 6,517.50
Refinish concrete floor finished	25	2 Cefi	100.000	C.S.F.	34,944.00	42,069.00	2008 Qtr 2	1	1	\$ 42,069.00
Replace vinyl floor	18	1 Tilf	73.500	S.Y.	3,509.63	4,285.05	2008 Qtr 2	2	2	\$ 8,570.10
Acoustic tile repairs - (2% of ceilings)	9	1 Carp	0.200	C.S.F.	89.34	106.33	2008 Qtr 2	5	5	\$ 531.67
Replace acoustic tile ceiling, fire-rated	20	1 Carp	14.100	C.S.F.	5,684.42	6,753.90	2008 Qtr 2	2	2	\$ 13,507.80
Repair sheetrock ceiling - (2% of ceilings)	20	1 Carp	0.100	C.S.F.	34.93	42.63	2008 Qtr 2	2	2	\$ 85.25
Replace sheetrock ceiling	40	2 Carp	6.600	C.S.F.	2,364.98	2,887.57	2008 Qtr 2	1	1	\$ 2,887.57
Replace washer in spud connection lavatory, vitreous china	7	1 Plum	6.000	Ea.	144.06	169.98	2008 Qtr 2	6	6	\$ 1,019.88
Replace washer in faucet lavatory, vitreous china	2	1 Plum	6.000	Ea.	59.10	73.74	2008 Qtr 2	22	22	\$ 1,622.28
Replace faucets lavatory, vitreous china	10	1 Plum	6.000	Ea.	740.94	894.36	2008 Qtr 2	4	4	\$ 3,577.44

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Terminal Cutoff is the removal of a single task ocurence 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 Occurences	Terminal Cutoff
Clean out strainer and P trap lavatory, vitreous china	2	1 Plum	6.000	Ea.	162.24	201.42	2008 Qtr 2	22	22	\$ 4,431.24
Replace lavatory, vitreous china	35	2 Plum	6.000	Ea.	3,181.14	3,814.20	2008 Qtr 2	1	1	\$ 3,814.20
Replace faucet washer sink, iron enamel	2	1 Plum	1.000	Ea.	9.79	12.19	2008 Qtr 2	22	22	\$ 268.18
Clean trap sink, iron enamel	3	1 Plum	1.000	Ea.	6.60	8.25	2008 Qtr 2	15	15	\$ 123.75
Replace faucets sink, iron enamel	10	1 Plum	1.000	Ea.	123.49	149.06	2008 Qtr 2	4	4	\$ 596.24
Unstop sink sink, iron enamel	2	1 Plum	1.000	Ea.	32.21	40.50	2008 Qtr 2	22	22	\$ 891.00
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 flush valve diaphragm tankless water closet	10	1 Plum	6.000	Ea.	424.44	498.36	2008 Qtr 2	4	4	\$ 1,993.44
Rebuild flush valve tankless water closet	20	1 Plum	6.000	Ea.	791.88	960.06	2008 Qtr 2	2	2	\$ 1,920.12
Unplug clogged line tankless water closet	5	1 Plum	6.000	Ea.	1,009.56	1,261.08	2008 Qtr 2	9	9	\$ 11,349.72
Replace tankless water closet	35	2 Plum	6.000	Ea.	3,288.00	3,890.16	2008 Qtr 2	1	1	\$ 3,890.16
Replace tankless flush valve	25	1 Plum	6.000	Ea.	1,257.00	1,472.22	2008 Qtr 2	1	1	\$ 1,472.22
Replace wax ring gasket tankless water closet	5	1 Plum	6.000	Ea.	657.42	823.20	2008 Qtr 2	9	9	\$ 7,408.80
Replace flush valve diaphragm urinal	7	1 Plum	3.000	Ea.	212.22	249.18	2008 Qtr 2	6	6	\$ 1,495.08
Rebuild flush valve urinal	20	1 Plum	3.000	Ea.	395.94	480.03	2008 Qtr 2	2	2	\$ 960.06
Unplug line urinal	5	1 Plum	3.000	Ea.	336.42	419.73	2008 Qtr 2	9	9	\$ 3,777.57
Replace wall-hung urinal	35	2 Plum	3.000	Ea.	2,524.89	3,019.71	2008 Qtr 2	1	1	\$ 3,019.71
Repair circulator pump, 1/12 - 3/4 H.P.	5	1 Stpi	1.000	Ea.	70.99	84.25	2008 Qtr 2	9	9	\$ 758.25
Replace circulator pump, 1/12 - 3/4 H.P.	15	Q1	1.000	Ea.	2,484.44	2,870.47	2008 Qtr 2	3	2	\$ 5,740.94
Repair damaged pipe insulation, fiberglass 3/4"	5	Q14	4.000	Ea.	62.88	76.72	2008 Qtr 2	9	9	\$ 690.48
Repair damaged pipe insulation, fiberglass 2"	5	Q14	2.000	Ea.	36.92	45.06	2008 Qtr 2	9	9	\$ 405.54
Replace pipe insulation, fiberglass 3/4"	5	Q14	0.030	M.L.F.	188.67	229.84	2008 Qtr 2	9	9	\$ 2,068.55
Replace pipe insulation, fiberglass 2"	5	Q14	0.010	M.L.F.	74.26	90.69	2008 Qtr 2	9	9	\$ 816.22
Replace pipe and fittings, copper 3/4"	20	2 Plum	32.000	L.F.	567.04	687.36	2008 Qtr 2	2	2	\$ 1,374.72
Replace pipe and fittings, copper 2"	25	2 Plum	16.000	L.F.	652.96	785.76	2008 Qtr 2	1	1	\$ 785.76
Drain and flush water heater, electric, 120 gallon	7	1 Plum	1.000	Ea.	226.43	283.04	2008 Qtr 2	6	6	\$ 1,698.24
Check operation water heater, electric, 120 gallon	3	1 Plum	1.000	Ea.	1.98	2.48	2008 Qtr 2	15	15	\$ 37.20
Replace water heater, electric, 120 gallon	15	2 Plum	1.000	Ea.	9,192.45	10,543.79	2008 Qtr 2	3	2	\$ 21,087.58
Unclog floor drain, PVC	20	1 Plum	1.000	Ea.	37.09	45.87	2008 Qtr 2	2	2	\$ 91.74
Repair joint pipe and fittings, PVC	10	1 Plum	2.000	Ea.	231.88	288.28	2008 Qtr 2	4	4	\$ 1,153.12
Replace pipe, 4" pipe and fittings, PVC	30	2 Plum	600.000	L.F.	35,520.00	43,914.00	2008 Qtr 2	1	1	\$ 43,914.00
General maintenance & repair drain: roof, scupper, area	1	1 Plum	5.000	Ea.	141.75	178.35	2008 Qtr 2	45	45	\$ 8,025.75
Replace drain: roof, scupper, area	40	1 Plum	5.000	Ea.	1,991.70	2,340.70	2008 Qtr 2	1	1	\$ 2,340.70
Repair single zone rt. unit, 5 ton	10	2 Stpi	1.000	Ea.	1,929.71	2,314.56	2008 Qtr 2	4	4	\$ 9,258.24
Replace single zone rt. unit, 5 ton	15	Q5	1.000	Ea.	7,276.88	8,588.60	2008 Qtr 2	3	2	\$ 17,177.20
Maintenance and repair standard suspended heater	2	1 Elec	2.000	Ea.	185.18	217.34	2008 Qtr 2	22	22	\$ 4,781.48
Maintenance and inspection standard suspended heater	0.5	1 Elec	2.000	Ea.	124.92	156.16	2008 Qtr 2	90	90	\$ 14,054.40
Replace heater standard suspended heater	15	1 Elec	2.000	Ea.	1,450.80	1,699.34	2008 Qtr 2	3	2	\$ 3,398.68
Inspect sprinkler system	1	1 Plum	1.000	Ea.	26.55	32.89	2008 Qtr 2	45	45	\$ 1,480.05

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CostWorks 2008 Quarter 2

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Description	Frequency	Crew	Qty	Unit	Total In-House	Total Incl. O&P	Release	Occurrences In Design Life	Adjusted Occurences	Terminal Cutoff
Replace sprinkler head	20	1 Plum	185.000	Ea.	11,780.80	14,515.10	2008 Qtr 2	2	2	\$ 29,030.20
Replace fire alarm bell, 6"	20	1 Elec	4.000	Ea.	569.12	686.04	2008 Qtr 2	2	2	\$ 1,372.08
Repair failed breaker, 3 pole circuit breaker	4	1 Elec	1.000	Ea.	525.04	607.28	2008 Qtr 2	11	11	\$ 6,680.08
Maintenance and inspection C.B., 3 pole circuit breaker	0.33	1 Elec	1.000	Ea.	22.91	28.50	2008 Qtr 2	136	136	\$ 3,876.00
Replace C.B. enclosed, 600 V, 3 pole circuit breaker	12	1 Elec	1.000	Ea.	993.60	1,158.09	2008 Qtr 2	3	3	\$ 3,474.27
Maintenance and inspection lighting panel, indoor	3	1 Elec	2.000	Ea.	57.00	71.26	2008 Qtr 2	15	15	\$ 1,068.90
Maintenance and repair motor starter, up to 600 V	5	1 Elec	3.000	Ea.	512.25	622.50	2008 Qtr 2	9	9	\$ 5,602.50
Maintenance and inspection motor starter, up to 600 V	0.5	1 Elec	3.000	Ea.	114.51	143.55	2008 Qtr 2	90	90	\$ 12,919.50
Replace starter motor starter, up to 600 V	18	1 Elec	3.000	Ea.	1,584.54	1,891.23	2008 Qtr 2	2	2	\$ 3,782.46
Replace fluor. ballast for fluorescent lighting fixture, 80 W	10	1 Elec	132.000	Ea.	13,144.56	15,850.56	2008 Qtr 2	4	4	\$ 63,402.24
Replace lamps (2 lamps) fluorescent lighting fixture, 80 W	10	1 Elec	264.000	Ea.	6,716.16	8,231.52	2008 Qtr 2	4	4	\$ 32,926.08
Replace fixture fluorescent lighting fixture, 80 W	20	1 Elec	0.000	Ea.	0.00	0.00	2008 Qtr 2	2	2	\$ -
Maintenance and repair receptacles and plugs	20	1 Elec	117.000	Ea.	3,637.53	4,531.41	2008 Qtr 2	2	2	\$ 9,062.82
Replace receptacle/plug receptacles and plugs	20	1 Elec	117.000	Ea.	6,172.92	7,537.14	2008 Qtr 2	2	2	\$ 15,074.28
Maintenance and repair wiring devices, switches	10	1 Elec	30.000	Ea.	932.70	1,161.90	2008 Qtr 2	4	4	\$ 4,647.60
Replace switch wiring devices, switches	15	1 Elec	30.000	Ea.	1,536.30	1,870.50	2008 Qtr 2	3	2	\$ 3,741.00
Check and repair manual pull station	10	1 Elec	4.000	Ea.	276.84	339.48	2008 Qtr 2	4	4	\$ 1,357.92
Replace manual pull station	15	1 Elec	4.000	Ea.	502.96	607.56	2008 Qtr 2	3	2	\$ 1,215.12
Repair smoke detector	10	1 Elec	35.000	Ea.	1,336.65	1,645.00	2008 Qtr 2	4	4	\$ 6,580.00
Check operation smoke detector	1	1 Elec	35.000	Ea.	399.00	500.50	2008 Qtr 2	45	45	\$ 22,522.50
Replace smoke detector	15	1 Elec	35.000	Ea.	6,634.25	7,944.65	2008 Qtr 2	3	2	\$ 15,889.30

\$632,696.18

\$758,693.97

MR Subtotal

\$ 1,171,706.83

MR Per Year

\$ 26,037.93

PM Per Year

\$ 1,623.72

Subtotal

\$ 27,661.65

Total Per Unit

\$ 1.57

**CostWorks 2008 Quarter 2 - FAC 7388 Exchange Warehouse**

Qty	Description	Bare Total	Total In-House	Total Incl. O&P	Zip Code Prefix	Type	Release
2.000	VAV Boxes, annualized	100.30	122.62	152.00	200	FMR	2008 Qtr 2
2.000	Door, overhead, manual, up to 24' high x 25' wide,	212.90	269.48	325.10	200	FMR	2008 Qtr 2
2.000	Door, emergency egress, swinging, annualized	86.16	99.02	115.02	200	FMR	2008 Qtr 2
14.000	Fire doors, swinging, annualized	279.30	348.46	418.04	200	FMR	2008 Qtr 2
2.000	Drink fountain, annualized	80.24	99.00	118.72	200	FMR	2008 Qtr 2
6.000	Lavatories, annualized	118.32	148.08	180.48	200	FMR	2008 Qtr 2
6.000	Toilet (vacuum breaker type), annualized	62.34	77.58	96.90	200	FMR	2008 Qtr 2
3.000	Urinals, annualized	31.17	38.79	48.45	200	FMR	2008 Qtr 2
1.000	Circuit breaker, high voltage air, annualized	21.89	26.98	33.59	200	FMR	2008 Qtr 2
2.000	Panelboard, 225 A and above, annualized	98.56	113.92	135.42	200	FMR	2008 Qtr 2
		<b>\$1,091.18</b>	<b>\$1,343.93</b>	<b>\$1,623.72</b>			

# FAC 7388 Sustainment by Year - Terminal Cutoff Applied

