

**FAC 7386      Ceremonial Hall**

RUC:            \$83.28 SF

Source:        Marshall and Swift  
Section 18, Page 23  
Inflated to current year and adjusted for pricing using SPBI  
Inflated to FY-09 using Green Book Table 5-6, MCON  
In V12, Tri-Service and USACE PAX Newsletter values were updated while  
all other values were inflated only.

SUC:            \$2.12 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 7386-Ceremonial Hall**  
**CostWorks 2008 Quarter 2**

Design Life= 50  
Average S.F= 15,326

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 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
Repair 8" concrete block wall - 1st floor	25	1 Bric	5,506.000	S.F.	110,450.36	134,346.40	2008 Qtr 2	2	1	\$ 134,346.40
Replace 8" concrete block wall - 1st floor	60	2 Bric	55.060	C.S.F.	54,777.54	65,938.20	2008 Qtr 2	0	0	\$ -
Replace 8" concrete block wall - 2nd floor	60	2 Bric	59.440	C.S.F.	63,075.94	75,994.04	2008 Qtr 2	0	0	\$ -
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	1	0	\$ -
Replace glass - 1st floor (1% of glass)	1	1 Carp	0.480	S.F.	4.34	5.10	2008 Qtr 2	50	50	\$ 254.88
Repair 12' x 12' steel roll-up door	10	1 Carp	2.000	Ea.	1,665.22	1,929.08	2008 Qtr 2	5	5	\$ 9,645.40
Refinish 12' x 12' steel roll-up door	5	1 Pord	2.000	Ea.	337.66	411.08	2008 Qtr 2	10	10	\$ 4,110.80
Replace 12' x 12' steel roll-up door	35	2 Carp	2.000	Ea.	6,650.54	7,699.10	2008 Qtr 2	1	1	\$ 7,699.10
Repair steel, painted, door	14	1 Carp	2.000	Ea.	1,164.88	1,372.72	2008 Qtr 2	3	3	\$ 4,118.16
Refinish 3'-0" x 7'-0" steel, painted, door	4	1 Pord	2.000	Ea.	65.82	80.62	2008 Qtr 2	12	12	\$ 967.44
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	1	\$ 1,240.08
Debris removal by hand & visual inspection,modified bitum/thermoplastc	1	2 Rofc	15.326	M.S.F.	449.66	541.77	2008 Qtr 2	50	50	\$ 27,088.71
Non-destructive moisture inspection,modified bitum/thermoplastic	5	2 Rofc	15.326	M.S.F.	1,391.29	1,682.79	2008 Qtr 2	10	10	\$ 16,827.95
Total roof replacement,modified bituminous / thermoplastic	25	G1	153.260	Sq.	74,613.10	88,202.66	2008 Qtr 2	2	1	\$ 88,202.66
Minor membrane repairs-(2% of roof area),modified bitum/thermoplastic	5	G5	3.065	Sq.	817.71	964.68	2008 Qtr 2	10	10	\$ 9,646.78
Flashing repairs-(2 S.F. per sq. repaired),modified bitum/thermoplastc	5	2 Rofc	6.130	S.F.	20.35	23.97	2008 Qtr 2	10	10	\$ 239.68
Membrane replacement-(25% of roof area),modified bitum/thermoplastic	20	G5	38.320	Sq.	24,400.26	28,927.77	2008 Qtr 2	2	2	\$ 57,855.54
Repair steel painted interior door	14	1 Carp	4.000	Ea.	671.00	792.56	2008 Qtr 2	3	3	\$ 2,377.68
Refinish 3'-0" x 7'-0" steel painted interior door	4	1 Pord	4.000	Ea.	197.60	243.28	2008 Qtr 2	12	12	\$ 2,919.36
Replace 3'-0" x 7'-0" steel painted interior door	60	1 Carp	4.000	Ea.	3,750.16	4,359.84	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	4	\$ 7,133.04
Refinish 3'-0" x 7'-0" solid core wood door interior	4	1 Pord	9.000	Ea.	379.98	467.82	2008 Qtr 2	12	12	\$ 5,613.84
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
Refinish drywall	8	1 Pord	2,801.000	S.F.	1,680.60	2,072.74	2008 Qtr 2	6	6	\$ 12,436.44
Replace 5/8" drywall	75	2 Carp	2,801.000	S.F.	6,246.23	7,534.69	2008 Qtr 2	0	0	\$ -
Repair 5/8" drywall - (2% of walls)	20	1 Carp	56.020	S.F.	89.07	107.00	2008 Qtr 2	2	2	\$ 214.00
Replace carpet	12	2 Tilf	136.200	S.Y.	6,146.71	7,101.47	2008 Qtr 2	4	3	\$ 21,304.40
Refinish concrete floor finished	25	2 Cefi	135.250	C.S.F.	47,261.76	56,898.32	2008 Qtr 2	2	1	\$ 56,898.32
Replace vinyl floor	18	1 Tilf	63.890	S.Y.	3,050.75	3,724.79	2008 Qtr 2	2	2	\$ 7,449.57
Replace acoustic tile ceiling, fire-rated	20	1 Carp	12.260	C.S.F.	4,942.62	5,872.54	2008 Qtr 2	2	2	\$ 11,745.08
Refinish sheetrock ceiling	20	1 Pord	5.750	C.S.F.	722.60	892.92	2008 Qtr 2	2	2	\$ 1,785.84
Replace sheetrock ceiling	40	2 Carp	5.750	C.S.F.	2,060.40	2,515.68	2008 Qtr 2	1	1	\$ 2,515.68
Repair sheetrock ceiling - (2% of ceilings)	20	1 Carp	0.115	C.S.F.	40.16	49.02	2008 Qtr 2	2	2	\$ 98.04
Check / minor repairs drinking fountain	1	1 Plum	2.000	Ea.	75.16	94.68	2008 Qtr 2	50	50	\$ 4,734.00
Repair internal leaks drinking fountain	4	1 Plum	2.000	Ea.	70.28	86.86	2008 Qtr 2	12	12	\$ 1,042.32

**FAC 7386-Ceremonial Hall**  
**CostWorks 2008 Quarter 2**

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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
Correct water pressure drinking fountain	2	1 Plum	2.000	Ea.	64.42	81.00	2008 Qtr 2	25	25	\$ 2,025.00
Replace refrigerant drinking fountain	2	1 Plum	2.000	Ea.	31.68	37.72	2008 Qtr 2	25	25	\$ 943.00
Repair drain leak drinking fountain	4	1 Plum	2.000	Ea.	45.26	54.06	2008 Qtr 2	12	12	\$ 648.72
Replace fountain drinking fountain	10	2 Plum	2.000	Ea.	2,011.68	2,387.14	2008 Qtr 2	5	5	\$ 11,935.70
Replace washer in spud connection lavatory, vitreous china	7	1 Plum	6.000	Ea.	144.06	169.98	2008 Qtr 2	7	7	\$ 1,189.86
Replace washer in faucet lavatory, vitreous china	2	1 Plum	6.000	Ea.	59.10	73.74	2008 Qtr 2	25	25	\$ 1,843.50
Replace faucets lavatory, vitreous china	10	1 Plum	6.000	Ea.	740.94	894.36	2008 Qtr 2	5	5	\$ 4,471.80
Clean out strainer and P trap lavatory, vitreous china	2	1 Plum	6.000	Ea.	162.24	201.42	2008 Qtr 2	25	25	\$ 5,035.50
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	25	25	\$ 304.75
Clean trap sink, iron enamel	3	1 Plum	1.000	Ea.	6.60	8.25	2008 Qtr 2	16	16	\$ 132.00
Replace faucets sink, iron enamel	10	1 Plum	1.000	Ea.	123.49	149.06	2008 Qtr 2	5	5	\$ 745.30
Unstop sink sink, iron enamel	2	1 Plum	1.000	Ea.	32.21	40.50	2008 Qtr 2	25	25	\$ 1,012.50
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	5	5	\$ 2,491.80
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	10	10	\$ 12,610.80
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	2	1	\$ 1,472.22
Replace wax ring gasket tankless water closet	5	1 Plum	6.000	Ea.	657.42	823.20	2008 Qtr 2	10	10	\$ 8,232.00
Replace flush valve diaphragm urinal	7	1 Plum	2.000	Ea.	141.48	166.12	2008 Qtr 2	7	7	\$ 1,162.84
Rebuild flush valve urinal	20	1 Plum	2.000	Ea.	263.96	320.02	2008 Qtr 2	2	2	\$ 640.04
Unplug line urinal	5	1 Plum	2.000	Ea.	224.28	279.82	2008 Qtr 2	10	10	\$ 2,798.20
Replace wall-hung urinal	35	2 Plum	2.000	Ea.	1,683.26	2,013.14	2008 Qtr 2	1	1	\$ 2,013.14
Inspect / check pump / motor operation, lub. circulation pump, 1/12 HP	0.5	1 Plum	1.000	Ea.	6.19	7.72	2008 Qtr 2	100	100	\$ 772.00
Replace pump / motor assembly circulation pump, 1/12 HP	10	2 Plum	1.000	Ea.	736.33	863.29	2008 Qtr 2	5	5	\$ 4,316.45
Resolder joint pipe & fittings, copper	10	1 Plum	2.000	Ea.	65.70	80.90	2008 Qtr 2	5	5	\$ 404.50
Replace pipe and fittings, copper 3/4"	20	2 Plum	16.000	L.F.	283.52	343.68	2008 Qtr 2	2	2	\$ 687.36
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	3	3	\$ 409.92
Drain and flush water heater, electric, 120 gallon	7	1 Plum	1.000	Ea.	226.43	283.04	2008 Qtr 2	7	7	\$ 1,981.28
Check operation water heater, electric, 120 gallon	3	1 Plum	1.000	Ea.	1.98	2.48	2008 Qtr 2	16	16	\$ 39.68
Replace water heater, electric, 120 gallon	15	2 Plum	1.000	Ea.	9,192.45	10,543.79	2008 Qtr 2	3	3	\$ 31,631.37
Unclog main drain pipe & fittings, cast iron	10	1 Plum	1.000	Ea.	35.62	44.41	2008 Qtr 2	5	5	\$ 222.05
Replace pipe & fittings, cast iron	40	2 Plum	8.000	L.F.	335.20	405.60	2008 Qtr 2	1	1	\$ 405.60
Replace pipe, 4" pipe and fittings, PVC	30	2 Plum	8.000	L.F.	473.60	585.52	2008 Qtr 2	1	1	\$ 585.52
Repair joint pipe and fittings, PVC	10	1 Plum	1.000	Ea.	115.94	144.14	2008 Qtr 2	5	5	\$ 720.70

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Unclog floor drain, PVC	20	1 Plum	1.000	Ea.	37.09	45.87	2008 Qtr 2	2	2	\$ 91.74
General maintenance & repair drain: roof, scupper, area	1	1 Plum	4.000	Ea.	113.40	142.68	2008 Qtr 2	50	50	\$ 7,134.00
Replace drain: roof, scupper, area	40	1 Plum	4.000	Ea.	1,593.36	1,872.56	2008 Qtr 2	1	1	\$ 1,872.56
Replace single zone rooftop unit, 25 ton	15	Q7	2.000	Ea.	68,196.80	79,355.20	2008 Qtr 2	3	3	\$ 238,065.60
Repair single zone rooftop unit, 25 ton	10	Q6	2.000	Ea.	51,642.18	59,845.78	2008 Qtr 2	5	5	\$ 299,228.90
Minor repairs to fire alarm control panel	5	1 Elec	1.000	Ea.	107.84	130.97	2008 Qtr 2	10	10	\$ 1,309.70
Maintenance and inspection fire alarm control panel	0.5	1 Elec	1.000	Ea.	30.54	38.17	2008 Qtr 2	100	100	\$ 3,817.00
Replace fire alarm control panel	15	1 Elec	1.000	Ea.	2,615.62	3,107.84	2008 Qtr 2	3	3	\$ 9,323.52
Replace sprinkler head	20	1 Plum	161.000	Ea.	10,252.48	12,632.06	2008 Qtr 2	2	2	\$ 25,264.12
Inspect sprinkler system	1	1 Plum	1.000	Ea.	26.55	32.89	2008 Qtr 2	50	50	\$ 1,644.50
Rebuild double check 3" backflow preventer sprinkler system	1	1 Plum	1.000	Ea.	598.06	715.83	2008 Qtr 2	50	50	\$ 35,791.50
Replace fire alarm bell, 6"	20	1 Elec	2.000	Ea.	284.56	343.02	2008 Qtr 2	2	2	\$ 686.04
Repair failed breaker, 3 pole circuit breaker	10	1 Elec	1.000	Ea.	342.23	400.69	2008 Qtr 2	5	5	\$ 2,003.45
Maintenance and inspection C.B., 3 pole circuit breaker	0.33	1 Elec	1.000	Ea.	22.91	28.50	2008 Qtr 2	151	151	\$ 4,303.50
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	1	0	\$ -
Maintenance and inspection lighting panel, indoor	3	1 Elec	1.000	Ea.	28.50	35.63	2008 Qtr 2	16	16	\$ 570.08
Maintenance and repair motor starter, up to 600 V	5	1 Elec	4.000	Ea.	683.00	830.00	2008 Qtr 2	10	10	\$ 8,300.00
Maintenance and inspection motor starter, up to 600 V	0.5	1 Elec	4.000	Ea.	152.68	191.40	2008 Qtr 2	100	100	\$ 19,140.00
Replace starter motor starter, up to 600 V	18	1 Elec	4.000	Ea.	2,112.72	2,521.64	2008 Qtr 2	2	2	\$ 5,043.28
Replace fluor. ballast for fluorescent lighting fixture, 80 W	10	1 Elec	68.000	Ea.	6,771.44	8,165.44	2008 Qtr 2	5	5	\$ 40,827.20
Replace lamps (2 lamps) fluorescent lighting fixture, 80 W	10	1 Elec	68.000	Ea.	1,729.92	2,120.24	2008 Qtr 2	5	5	\$ 10,601.20
Replace M.H. ballast mercury halide fixture, 175 W	10	1 Elec	40.000	Ea.	7,640.00	8,955.60	2008 Qtr 2	5	5	\$ 44,778.00
Replace lamp mercury halide fixture, 175 W	5	1 Elec	40.000	Ea.	2,959.60	3,498.80	2008 Qtr 2	10	10	\$ 34,988.00
Maintenance and repair receptacles and plugs	20	1 Elec	109.000	Ea.	3,388.81	4,221.57	2008 Qtr 2	2	2	\$ 8,443.14
Replace receptacle/plug receptacles and plugs	20	1 Elec	109.000	Ea.	5,750.84	7,021.78	2008 Qtr 2	2	2	\$ 14,043.56
Maintenance and repair wiring devices, switches	10	1 Elec	28.000	Ea.	870.52	1,084.44	2008 Qtr 2	5	5	\$ 5,422.20
Replace switch wiring devices, switches	15	1 Elec	28.000	Ea.	1,433.88	1,745.80	2008 Qtr 2	3	3	\$ 5,237.40
Check and repair manual pull station	10	1 Elec	3.000	Ea.	207.63	254.61	2008 Qtr 2	5	5	\$ 1,273.05
Replace manual pull station	15	1 Elec	3.000	Ea.	377.22	455.67	2008 Qtr 2	3	3	\$ 1,367.01
Repair smoke detector	10	1 Elec	18.000	Ea.	687.42	846.00	2008 Qtr 2	5	5	\$ 4,230.00
Check operation smoke detector	1	1 Elec	18.000	Ea.	205.20	257.40	2008 Qtr 2	50	50	\$ 12,870.00
Replace smoke detector	15	1 Elec	18.000	Ea.	3,411.90	4,085.82	2008 Qtr 2	3	3	\$ 12,257.46

**\$633,496.83**

**\$755,279.28**

MR Subtotal \$ 1,480,611.45

MR Per Year \$ 29,612.23

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**CostWorks 2008 Quarter 2**

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PM Per Year   \$   3,890.97

Subtotal       \$   33,503.20

Total Per Unit   \$       2.19

**CostWorks 2009 Quarter 1 - FAC 7386-Ceremonial Hall**

Qty	Assembly Number	Description	Total In-House	Total Incl. O&P	Zip Code Prefix	Type	Release
2.000	B2035 410 1950	Door, overhead, electric, roll up, to 24' high x 25' w	480.32	580.24	200	FMR	2008 Qtr 2
11.000	B2035 225 1950	Door, emergency egress, swinging, annualized	544.61	632.61	200	FMR	2008 Qtr 2
4.000	C1025 110 1950	Fire doors, swinging, annualized	99.56	119.44	200	FMR	2008 Qtr 2
2.000	D2015 100 1950	Urinals, annualized	25.86	32.30	200	FMR	2008 Qtr 2
6.000	D2015 100 2950	Toilet (vacuum breaker type), annualized	77.58	96.90	200	FMR	2008 Qtr 2
6.000	D2015 100 4950	Lavatories, annualized	148.08	180.48	200	FMR	2008 Qtr 2
2.000	D2015 800 1950	Drink fountain, annualized	99.00	118.72	200	FMR	2008 Qtr 2
6.000	D3045 160 1950	VAV Boxes, annualized	367.86	456.00	200	FMR	2008 Qtr 2
2.000	D3055 210 1950	Package unit, air cooled, 3 thru 24 ton, annualized	415.42	502.06	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 260 1950	Panelboard, 225 A and above, annualized	56.96	67.71	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
			<b>\$3,221.82</b>	<b>\$3,890.97</b>			

FAC 7386 Sustainment by Year - Terminal Cutoff Applied

