

**APPENDIX - A, PART - I & II ( Buildings and Support Facilities)**

This newsletter supersedes the Draft PAX Newsletter No. 3.2.2, **dated 20 Mar 09**, and updates the Appendix A, Facility Unit Cost Table, Appendix C, Tri-Service Military Construction Program (MCP) Index, and Table-1, Size Adjustment Factors, contained in TM 5-800-4, Programming Cost Estimates for Military Construction, dated May 1994. It may be used as a guide for preparation and/or review and budget submission of the FY 12 Army MILCON projects' parametric cost estimates, ENG Form 3086, unless otherwise noted. This is published and maintained on the web page at <http://www.usace.army.mil/CaEI/Pages/PAX.aspx>

**1. APPENDIX A - FACILITY UNIT COST TABLE (FOR FY12 and later MILCON Projects)**

a. Most unit costs are based on historic construction award data from FY2007 to 2009 projects, with a few exceptions. In rare cases, where we did not have at least three recently (FY 2007-09) entered projects for a facility-type in HAG (Historic Analysis Generator) database, we used FY 2006 awards. All bid data was normalized for 3 bidders, incorporated actual construction inflation rate thru 30 Sep 2009, and escalated from 1 Oct 2009 to the assumed mid-point of construction of October 2012 using the inflation rate published in the OSD memo, dated 11 Dec 09, Subject: Inflation Guidance - Fiscal Year FY2011 President's Budget. The unit cost database include only new construction projects, and does not include data from renovation or addition/alteration projects.

b. The tabulation is arranged numerically by category codes. Category code series descriptions are taken from the DA Pamphlet 415-28, Guide to Army Real Property Category Codes. The five (5) digit category code is designated by adding XX behind the three (3) digit main category code for this group where unit costs span a group of subcategories or cat code is still not officially established. For example, 851XX and 852XX are designated for roads, streets, parking, apron and sidewalks pavements.

c. Escalation - Unit costs are escalated to 1 October **2012**, the assumed midpoint of construction for **FY12** projects, with an area cost factor (ACF) of 1.00. The MCP inflation indices shown in **Appendix C** & should be used to escalate the **FY12** unit costs beyond **1 Oct 12**. These unit costs include normal **AT/FP costs** for upto 2-storied facilities where adequate stand-off distace is acheived, and the installed (built-in) building equipment and furnishings normally funded by the MILCON funds as described in AR 420-1, contractor's markup cost for overhead & profit, but do not include allowances for construction contingencies and supervision, inspection, and overhead (SIOH), or construction cost growth resulting from user changes, unforeseen site conditions, or contract document errors and omissions. Unit costs for DoD medical facilities include category A and B equipment, but do not include category E and F equipment costs.

d. The unit costs for Primary Facilities (buildings) in Appendix A, Part I, are for the primary facilities gross areas only, and do not include costs for support facilities, equipment acquired with other fund (non-MILCON) sources, sustainable construction features, or construction cost growth resulting from unforeseen site conditions or user requested change orders. For medical facilities, the building costs include Categories A and B equipment, but exclude Categories E and F equipment.

d. Unit costs should be adjusted by the appropriate area cost factor, cost escalation factor as shown in Appendix C, size adjustment factor in Table I, and other adjustment factors as described in the TM 5-800-4, when applicable. The ACF list is contained in Appendix B, Location Adjustment Factors in the TM 5-800-4, and updated by the latest PAX Newsletter No. 3.2.1, Area Cost Factors Indexes, dated 2 Mar 10, which is also available on the web page as addressed above.

e. Size Adjustment Tables, Table -1: Building size identified in Part I of Appendix A is a reference size, and may not represent the standard size shown in the Army Standard Facilities design criteria. Table I, Size Adjustment Factors, shows a correlation between project size and construction cost, and is used to determine an appropriate size adjustment factor for the proposed facility.

**UNIT COSTS for The ARMY FACILITIES - MILITARY CONSTRUCTION PROGRAM  
PAX NEWSLETTER 3.2.2, dated 15 SEP 2010**

g. Chart A in Appendix A contains unit costs for Sitework Utility Piping. Chart C in Appendix A contains information for unit of measurement conversion factors between Metric and English Systems.

**2. APPENDIX C - TRI-SERVICE MILITARY CONSTRUCTION PROGRAM (MCP) INDEX**

Unit costs are escalated to 1 Oct 2012, the assumed midpoint of construction for a typical FY12 MCA project at a location with an Area Cost Factor of 1. The Military Construction Program (MCP) cost index for 1 October 2012 is 2607. For a project with an anticipated midpoint of construction date other than 1 October 2012 a cost escalation factor can be determined from this appendix as follows:

Project Anticipated Midpoint Date - **1 Apr 2013 (MCP Index = 2629)**

Cost Escalation Factor = MCP Index **1 Apr 2013 / MCP Index 1 Oct 2012 = 2629/2607 = 1.0084**

3. The Point of Contacts for this Newsletter letter at HQUSACE can be reached at (202) 761-7503, DSN-763-7503, or (202) 761-5887, DSN 763-5887.

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Facility Unit Costs (UC) Are Based on the Most Recent 3-Year (2007-09) Bid Results, Where At Least 3 MCA/BRAC Projects' Bid Data Were Entered Into The HAG II Database By 15 NOV 09. The UC Below Represents the Average of Bid Price Escalated to 1 OCT 2012, the Assumed Mid Point of Construction for a Typical FY12 MILCON Project, Using the Inflation Factor Provided In the OSD Inflation Guidance Memo, Dated 11 Dec 2009, and Normalized to an Area Cost Factor (ACF) of 1

<u>CAT CODE</u>		<u>Reference/ Standard Size</u>	<u>Unit Of Measure (UOM)</u>	<u>Unit Cost \$/UOM (Final UC)</u>	<u>Remarks</u> <b>Note-1:</b> No recent Bid Data since 2005 to Forecast UC
124XX	Fuel Storage Tank (Underground)	1,000	GA	5.37	Includes excavation, backfill & manhole, excludes exterior piping & pumping
		5,000	GA	5.18	
		10,000	GA	4.88	
		20,000	GA	4.78	
		30,000	GA	4.60	
13115	Information Systems Facility	40,000	SF	250.00	Also See Catcode 13131, Info Processing Ctr
	Houses majority of Garrison level Info Management & Info Tech services plus associated admin Support & shop spaces				
13120	Communications Center	21,000	SF	298.00	
	Hub facility for Internal and External Communications, commercial telephone feeds, and environmental control requirements; DSN, DDN switching equipment. No shielding included				
13131	Information Processing Center	21,000	SF	311.00	Also called Data Processing Ctr
	Houses personnel and equipment for data-processing; special temperature, humidity, environmental control requirements; raised and security measures				
13181	Satellite Communications Center	6,000	SF	527.00	
13310	Flight Control Tower				See Note-1 above
14110	Airfield Operations Building	36,000	SF	285.00	Also see Catcode 14132, Ready Building
	Houses flight operations and Airfield HQ functions with or w/o Flight Control Tower. May include passenger support facilities similar to a civilian air terminal. See catcode 13310 above for Flight Control Tower				
14112	Aviation Unit Operations Bldg	36,000	SF	240.00	
		At an airfield, houses Aviation Unit HQ admin and training functions and space for supplies.			
Various	Access Control Facility, ACP - Buildings				
14113	Gatehouse -	840	SF	442.00	
14113	Guard booth - Prefab, 50 SF each	2	EA	51,000.00	
14113	Guard booth - Pedestrian	1	EA	71,400.00	
14113	Overwatch Position	1	EA	51,000.00	
14113	Visitor Control Ctr, 6 processor	2,960	SF	274.00	Use Size Adj Table for other sizes, 2480 & 3440 SF
14113	Search Bldg w/ Pkg Scanner, Detector	1,200	SF	302.00	Use Size Adj Table for other size, 650 SF

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	Access Control Facility (contd. From previous page)				
14179	I.D. Check Area Canopy, 64' x 69'	4,416	SF	100.00	UCs for Canopies include costs for high intensity lighting, redundant visual security capability, oversized foundations and solid wall panel privacy.
14179	Search Area Canopy-Cars, 24'x60'	1,440	SF	88.00	
14179	Search Area Canopy-Trucks, 26'x80'	2,080	SF	80.00	
	In addition, ACP complex includes Active Vehicle Barriers (AVB), & equipment, such as, AVB Control System (equipment), Traffic Signals, Electronic Security System Control Panels, and various types of fences. Diesel Generator with Switch required.				
14114	CIDC Field Operations Bldg	9,854	SF	187.00	Use Size Adj Table for other sizes, 7674 & 14634 SF
14129	Training Aid Spt Ctr, Range Complex	varies	SF		See Unit Cost under Range Complex, catcode 14129
14132	Ready Building	20,000	SF	215.00	Also called Arrival-Departure Airfield Control Group
14161	Emergency Operations Ctr (EOC)		SF		
14162	SCIF Facility	3,000	SF	254.00	Sensitive Compartmented Information Facility
14165	Fuel/POL/Wash Support Bldg	195	SF	324.00	
14179	Overhead Protection/Canopy - General	10,600	SF	55.00	Pavement cost Not included
14182	Brigade (BDE) Headquarters Bldg	40,100	SF	206.00	Ref Size based on Large BDE HQ w/SCIF, 125-156 staff
	Use Size Adj Table-1, Part-1 for unit cost for Small (31,200 SF), Medium (34,500 SF), and X-Large (55,300 SF) BDE HQs				
14183	Battalion (BN) HQ Bldg w/Classrms	18,100		209.00	Ref Size based on Large BN, 51-71 staff
	Use Size Adj Table-1, Part-1 for unit cost for Small (14,000 SF), Medium (16,400 SF), and X-Large (20,100 SF) BN HQs				
14185	Company Operations Fac (COF)	52,840			Ref size is based on a std 3-CO COF w/detached Admin
14185	Administrative Module	16,120	SF	189.00	3-Readiness Modules @12,240 ea
	Readiness/Storage Module (RM)	36,720	SF	167.00	
	RM contains fully conditioned and sprinkled Storage space for TA-50 Lockers and Arms Vault. The cost of contractor furnished and installed TA-50 Lockers are included in the UC. Admin & Readiness Modules will be programmed seperately in DD1391/ENG3086				
14179	Overhead Protection/Canopy for COF	8,955	SF	55.00	Min Canopy Ht 14', Conc. Hardstand cost separate item
85210	Concrete Hardstand for COF	varies	SY	Varies	Should be programmed under the Support Facility item
	COF Hardstand Cover is a Pre-engineered Canopy w/lighting, power, and lightning protection over the equipment layout area.				
	Standard Reference size, 8955 SF is based on 3 Overhead Protection @2985 SF each for a typical 3-Company COF.				

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<b>14190</b>	Command & Control Fac (C2F)	143,090		<b>249.00</b>	This is Division/Corps level Command Facility only
	C2F Bldg contains 3 distinct functional elements, e.g. Admin spaces (110,110 SF), Emergency (Network) Operations Ctr (17,160 SF) and SCIF spaces (15,730 SF). The cost of raised flooring, redundant electrical/mechanical systems, and secured access system is included in the UC. C2F Bldg above Corps level is a non-standard facility.				
<b>14955</b>	Wash Platform	1	EA	<b>80,345.00</b>	2 Vehicles - Low pressure w/Wash Water treatment
<b>14960</b>	Grease Rack	1	EA	<b>62,680.00</b>	
<b>14962</b>	Central Wash Facility, 16 Stations	1	EA	<b>8,129,529.00</b>	CC-83180, Oil & Grease Separator is collocated w/ this
<b>17120</b>	General Instruction Bldg (GIB)	50,000		<b>235.00</b>	This UC is NOT for the Range GIB or Range Classroom
	General Instruction Bldg for Range				
<b>17121</b>	Indoor Firing Range	23,000		<b>205.00</b>	bldg. See Range Classroom Bld, catcode 17123, below
<b>Various</b>	RANGE FACILITIES COMPLEX				
	Range Operation & Control Facilities (ROC)				
<b>17122</b>	Ammunition Breakdown Bldg	185	SF	<b>704.00</b>	
<b>17122</b>	Operations/Storage Bld - Small	800	SF	<b>220.00</b>	
"	Operations/Storage Bld - Large	2000	SF	<b>265.00</b>	
"	Ops/Storage Bld for Service Schools	1600	SF	<b>239.00</b>	
<b>17123</b>	Range Classroom Building	800	SF	<b>285.00</b>	This is the same Bldg as the Gen Instruction Bldg- Range
<b>17123</b>	After Action Review Bld - Small	1,064	SF	<b>222.00</b>	
"	After Action Review Bld - Large	2,866	SF	<b>214.00</b>	
"	Combined ROC/AAR-Digital Range	4,176	SF	<b>207.00</b>	
<b>14129</b>	Training Support Center (TSC)	84,500	SF	<b>156.00</b>	Use Size Adj. Table for other Sizes: 27,820 & 124,630 SF
<b>14970</b>	Loading Dock/Instrumentation Dock	900	SF	<b>120.00</b>	
<b>17139</b>	Covered Mess -	800	SF	<b>138.00</b>	Includes hardstand cost below canopy
"	Covered Mess - Service Schools	1413	SF	<b>131.00</b>	

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	Range Control Towers (RCT)				Open Decks, stairs, & walkways are considered half areas
17971	Tower with Open Observation deck	657	SF	413.00	Total tower cost \$269,370 Each
"	Tower with Enclosed Observation	802	SF	584.00	For Non-Instrumented Range, Tower cost \$465,160 Each
"	Tower w/Enclosed Observation -	1544	SF	534.00	For Instrumented Range, Tower cost \$818,320 Each
	RANGE FACILITIES COMPLEX - contd. From previous page				
73075	Field Latrine-Aerated Vault Type	330	SF	599.00	
"	Field Latrine-Water Closet	550	SF	579.00	
75061	Covered Bleacher	726	SF	163.00	
"	Covered Bleacher for Svc Schools	1,078	SF	157.00	
17133	Vehicle Maint. Instructional Bldg	30,000	SF	199.00	
17134	Aircraft Maint Instructional Bldg	35,000	SF	251.00	Hi-Bay Bldg
17135	Laboratory Instructions Bldg	9,000	SF		See Note-1 above
17136	Automation Aided Instruction Bldg	25,000	SF	277.00	
17137	Material Handling Instructional Bldg	40,000	SF	XXX	See Note-1 above
17139	Covered Mess	800	SF	XXX	See Range Complex
17140	Army Reserve Center Bldg	48,000	SF	180.00	
	For other Reserve Fac, use Unit Cost from the appropriate Facility Type catcodes				
17141	Armed Forces Reserve Center Bldg	48,000	SF	180.00	New Catcode for Reserve Ctr
17142	National Guard/Reserve Ctr Bldg	XXX	XX	XXXX	This Catcode is No longer Used by the Army
17180	Army National Guard Readiness Ctr	48,000	SF	180.00	New Catcode for ARNG Readiness Ctr
17210	Simulator Building- Motion Based	32,000	SF		See Note-1 above
17971	Control/Observation Tower	XXX	XX	XXXX	See Range Complex
	<b>AIRCRAFT (AC) MAINT HANGARS</b>				
21110	Hangar - General Purpose	80,000	SF	236.00	
	Hangar - High Bay	60,000	SF	251.00	

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21110	Aircraft (AC) Maint Hangars (Contd. From the previous page)				
	Corrosion Control Hangar	35,000	SF	306.00	
	Rotary Wing AC Maint Hangars - ARMY STANDARDS				
	Attack-Assault-Cavalry (AAC) BN	147,470	SF	244.00	
	Aviation Support Battalion (ASB)	157,500	SF	253.00	
	Ground Spt Aviation Battalion (GSAB)	157,500	SF	231.00	
21115	Unmanned Aerial Veh Maint Hangar	134,400	SF	226.00	
	Unmanned Aerial Vehicle Storage Bld	1,800	SF	130.00	
21117	Avionics Maint Shop	23,000	SF	217.00	
21120	Aircraft Component Repair Shop	20,000	SF	232.00	
21130	Aircraft Paint/Corrosion Control Shop	70,000		297.00	
21140	Aircraft Engine Test facility	13,000	SF	231.00	3 Records
21210	Guided Missile Maint Facility	10,300	SF		See Note-1 above
<b>Varies</b>	<b>TACTICAL EQUIPMENT MAINT FACILITY (TEMF) COMPLEX</b>				For Track and Wheeled vehicles
	TEMF Complex includes Admin space, Repair & Maintenance shops and work-bays w/ overhead crane, arms/COMSEC vault, Storage areas, Deployment Storage bldg, POL Storage bldg, Tactical Vehicle Parking Apron, Hazard Waste Storage area, Use Size Adj Table-1, Part-1 for unit cost for Small (18,000 SF), Large (57,031 SF), and X-Large (74,688 SF) TEMFs.				
21409	Vehicle Maint Shop, Army Reserve				Use UC for Catcode 21410 below
21410	Tactical Equipment Maint Facility	35,290	SF	204.00	Use Size Adj Table for other sizes
85210	Organizational (tactical) Veh Parking	32,000	SY		9" Conc. w/ 8" base; varies w/ project locations
44224	Org. Storage Bldg, Veh Maint Shop	6,000	SF		Use UC for CC44224, Organizational Equip Storage Bldg
21470	POL Storage Bldg, Veh Maint Shop	600	SF	103.00	
21470	Hazardous Waste Storage Bldg	600	SF	83.00	
21115	Unmanned Aerial Vehicle Storage Bld	1,800	SF	130.00	
44220	Distribution CO Storage Bldg w/Loading	8,000	SF	108.00	Use UC for CC44110, Gen Purpose Warehouse, Lo-Bay

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21470	Oil Storage Bldg	600	SF		See Vehicles Maint Facility above
21610	Ammunition Renovation Shop	6,500	SF	XXX	See Note-1 above
21612	Ammunition Surveillance Shop	13,000	SF	XXX	See Note-1 above
21630	Ammunition Demilitarization Fac	82,500	SF	XXX	See Note-1 above
21710	Electronics Maint Shop	5,500	SF	164.00	
21740	Aircraft Avionics Maint Shop	23,000	SF		See Catcode 21117 UC above
21850	Battery Shop	5,000	SF		See Note-1 above
21881	Parachute Repair Shop	8,000	SF	216.00	
21885	General Purpose Maint Shop	31,000	SF	163.00	
21910	Engineering/Housing Maint Shop	31,000	SF	163.00	
31010	Chemistry Lab	9,000	SF		See Note-1 above
31410	Ground Transportation Equip Bldg	31,000	SF		See Note-1 above
41150	Liquid Fuel Storage Tank - Bulk	2,500	BL	91.00	Above Ground Steel Tank including Foundation Dyke and Exterior Coating (BL = Barrel ; 42 US Gallon = 1 BL)
		5,000	BL	60.00	
		10,000	BL	44.00	
		25,000	BL	33.00	
		50,000	BL	23.45	
		100,000	BL	16.60	
		250000	BL	14.65	
41150	Liquid Fuel Storage Tank - Bulk	2,500	BL	90.86	Above Ground Steel Tank w/ Float Pans, including Foundation Dyke & Exterior Coating (BL = Barrel ; 42 US Gallon = 1 BL)
		5,000	BL	60.00	
		10,000	BL	48.85	
		25,000	BL	38.10	
		50,000	BL	30.30	
		100,000	BL	22.50	
		250,000	BL	18.55	
42120	Hi Explosive Magazine w/Crane	4,000	SF	261.00	Use same UC for CC42180, Igloo Storage & CC42280
42183	General Purpose Magazine w/o Crane	5,000	SF	250.00	Use same UC for CC42283, Igloo Storage w/o Crane



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<b>43211</b>	Cold Storage Building/Warehouse				
	Cold Storage w/Processing	11,000	SF	<b>XXX</b>	See Note-1 above
	Cold Storage w/o Processing	6,000	SF	<b>XXX</b>	See Note-1 above
<b>44110</b>	General Purpose (GP) Warehouse				
	Lo-Bay, upto 16' Clear Stack height	40,000	SF	<b>108.00</b>	Use same UC for CC44220, GP Warehouse, Installation
	Hi-Bay, upto 26' Clear Stack height	100,000	SF	<b>134.00</b>	Use same UC for CC44220, GP Warehouse, Installation
<b>44130</b>	Controlled Humidity Warehouse	40,000	SF	<b>120.00</b>	Use same UC for CC44230, Inst'l Controlled Humidity W'hse
<b>44135</b>	Hazardous Material Storage Bldg	21,000	SF	<b>153.00</b>	
	HAZMAT Storage- Army Reserve Ctr	500	SF	<b>153.00</b>	Use Catcode 44228 and the same UC as CC44135
<b>44150</b>	Flammable Material Storage	8,200	SF	<b>XXX</b>	See Note-1 above
<b>44181</b>	Covered Vehicle Storage Facility	16,000	SF	<b>XXX</b>	See Note-1 above
<b>44182</b>	Vehicle Storage Facility	16,000	SF	<b>XXX</b>	See Note-1 above
<b>44210</b>	Aircraft Parts Storage Fac, Installation	16,000	SF	<b>XXX</b>	See Note-1 above
<b>44222</b>	Storage Shed	2,500	SF	<b>46.00</b>	Covered Storage, not enclosed
<b>44224</b>	Organizational Equipment Storage Bldg	3,400	SF	<b>93.00</b>	For COF Equip Storage, see Readiness Module, CC14185
<b>45110</b>	Open Storage Area, Depot	XXX	SY		Use Catcode 851XX, Pavements, from Part-II, PAX
<b>45210</b>	Open Storage Area, Installation	XXX	SY		Use Catcode 851XX, Pavements, from Part-II, PAX
<b>51010</b>	Inpatient Hospital/Medical Center	Varies	SF	<b>460.00</b>	
<b>53060</b>	Medical Warehouse	44,000	SF		See Note-1 above
<b>53071</b>	Ambulance Garage	480	SF		See Note-1 above
<b>54010</b>	Dental Clinic	18,000	SF	<b>420.00</b>	
<b>55010</b>	Medical Clinic attached to Hospital	150,000	SF	<b>363.00</b>	
	Medical Clinic, Free Standing	70,000	SF	<b>315.00</b>	
	Ambulatory Clinic	100,000	SF		See Note-1 above
<b>61001</b>	Military Entrance Processing Stn	26,810	SF	<b>232.00</b>	Use Size Adj. Table for other Sizes: 21,205 & 32,717 SF

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<u>CAT CODE</u>		<u>Reference/ Standard Size</u>	<u>Unit Of Measure (UOM)</u>	<u>Unit Cost \$/UOM (Final UC)</u>	<u>Remarks</u> <b>Note-1:</b> No recent Bid Data since 2005 to Forecast UC
<b>61050</b>	Administrative Fac, General Purpose	65,000	SF	<b>224.00</b>	Prewired work station @ \$4500/Stn - installed, NOT incl.
	This multipurpose building provided office space, visitors area, auditorium, cafeteria, storage space, etc for administrative personnel				
	Command Headquarters Bldg	Varies	SF	<b>290.00</b>	Use this UC for HQS Bld above Corps, ARCOM HQS only
<b>62010</b>	Underground Administrative Facility	6,000	SF		See Note-1 above
<b>Varies</b>	FAMILY HOUSING DWELLINGS - CONUS & OCONUS	No. of Bedroom	<b>Family Unit &amp; SF</b>	<b>CONUS/ OCONUS</b>	
	Show "Families (FA)" as the UOM in the in the Primary Line item by category code. Use SF per Family as the UOM in Subline item.				
	Don't need to size adjust the UC per SF (using the Size Adj Table-1, Part -I) as the adjusted unit cost per FA by cacode, grade, and number of bedroom/per dwelling is already provided in the UC column below. Use Size Adj Table-1, Part - II only for project size adj.				
	Normally 2-car garage (400 SF) are provided with each dwelling. GSF of garage is not included in the dwelling GSF, but cost of garage is considered included in the AFH unit cost as a norm. (i) Add up to 300 SF/FA for harsh climates, defined as having more than 7,500 Heating Degree Days (HDD) annually, or 5,500 Cooling Degree Days (CHD), annually. (ii) Gross SF may be increased by 10%/FA for housing units for an officer holding a special command position, for the commanding officer of a military installation, and for the senior non-commissioned officer of a military installation				
<b>71111</b>	General Officer, Grade O10	4 Bedrooms	4,060 SF/FA	<b>132.57/ 152.21</b>	
"	General Officer, Grade O9	4 Bedrooms	4,060 SF/FA	<b>132.57/ 152.21</b>	
"	General Officer, Grade O8	4 Bedrooms	3,330 SF/FA	<b>135/ 155</b>	
"	General Officer, Grade O7	4 Bedrooms	3,330 SF/FA	<b>135/ 155</b>	
<b>71112</b>	Cononel, Grade O6	4 Bedrooms	2,520 SF/FA	<b>130/ 150</b>	
<b>71113</b>	LT. Cononel & Major, Grade O4&5	4 Bedrooms	2,310 SF/FA	<b>125/ 145</b>	
"	LT. Cononel & Major, Grade O4&5	3 Bedrooms	2,020 SF/FA	<b>127.25/ 147.61</b>	
<b>71113</b>	Warrant Officer, Grade W4&5	4 Bedrooms	2,310 SF/FA	<b>125/ 145</b>	
"	Warrant Officer, Grade W4&5	3 Bedrooms	2,020 SF/FA	<b>127.25/ 147.61</b>	

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<b><u>CAT CODE</u></b>		<b><u>Reference/ Standard Size</u></b>	<b><u>Unit Of Measure (UOM)</u></b>	<b><u>Unit Cost \$/UOM (Final UC)</u></b>	<b><u>Remarks</u></b> <b>Note-1: No recent Bid Data since 2005 to Forecast UC</b>
<b>Varies</b>	FAMILY HOUSING DWELLINGS - Continued from the Previous page	No. of Bedroom	<b>Family Unit &amp; SF</b>	<b>CONUS/ OCONUS</b>	
<b>71114</b>	CO Grade Officer, O1-3	5 Bedrooms	2,510 SF/FA	<b>121.28/ 141.00</b>	Use this for Warrant Officer, W1-3, too
"	CO Grade Officer, O1-3	4 Bedrooms	2,150 SF/FA	<b>123/ 143</b>	Use this for Warrant Officer, W1-3, too
<b>71114</b>	CO Grade Officer, O1-3	3 Bedrooms	1,860 SF/FA	<b>125.21/ 145.57</b>	Use this for Warrant Officer, W1-3, too
<b>71115</b>	Senior NCO, E-9	4 Bedrooms	2,310 SF/FA	<b>122.39/ 142.29</b>	
<b>71115</b>	Senior NCO, E-9	3 Bedrooms	2,020 SF/FA	<b>123.62/ 143.72</b>	
"	Senior NCO, E-7&8	5 Bedrooms	2,510 SF/FA	<b>121.28/ 141.00</b>	
"	Senior NCO, E-7&8	4 Bedrooms	2,150 SF/FA	<b>123/ 143</b>	
"	Senior NCO, E-7&8	3 Bedrooms	1,860 SF/FA	<b>125.21/ 145.57</b>	
<b>71116</b>	Junior NCO/Enlisted, E-1 thru 6	5 Bedrooms	2,300 SF/FA	<b>117.84/ 137.48</b>	
	Junior NCO/Enlisted, E-1 thru 6	4 Bedrooms	1,950 SF/FA	<b>120/ 140</b>	
	Junior NCO/Enlisted, E-1 thru 6	3 Bedrooms	1,630 SF/FA	<b>122.16/ 142.52</b>	
	<b>GARAGE &amp; CARPORTS</b>				
<b>71410</b>	Detached Garage	500	SF	<b>64.00</b>	Masonry, 2 Cars
"	Detached Garage	500	SF	<b>54.00</b>	Wood, 2 Cars
<b>85218</b>	Parking Garage, Multistoried	175,000	SF	<b>55.00</b>	Assumes 425-450 SF/Vehicle to include turning radii & ramps
<b>71411</b>	Carport - 2 Cars	500	SF	<b>44.65</b>	
<b>72010</b>	Temporary Lodging	30,000	SF		See Catcode 72412; also called Transient Housing
<b>72111</b>	Barracks - Permanent Party (UEPH)	150-199	Person	<b>189.00</b>	Use Table-1, Part-II, Project Size Adj. Table for CC-72111
	Unit cost does not include the cost for free standing equipment. All finished of unfinished areas with an average height of 6'-11" (2100 MM), measured from the underside of the structural system, and areas with perimeter walls measuring 4'-11" (155 MM) or more, shall be counted as full scope.				

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<u>CAT CODE</u>		<u>Reference/ Standard Size</u>	<u>Unit Of Measure (UOM)</u>	<u>Unit Cost \$/UOM (Final UC)</u>	<u>Remarks</u> <b>Note-1:</b> No recent Bid Data since 2005 to Forecast UC
<b>Various</b>	WARRIORS IN TRANSITION (WT) COMPLEX				
72112	WT Barracks, 56 Person Module	37,800	SF	228.00	Use Table-1, Part-I, Size Adj. Factor Table for CC7212
14188	WT Battalion HQS w/o Classrm	8,100	SF	234.00	For Stand Alone Battalion (BN) HQS Bldg
14188	WT Company (CO) HQ Bldg	10,300	SF	230.00	For Stand Alone CO HQS Bldg
14188	Joint BN-CO Admin/Ops Fac	18,400	SF		Not Sufficient Data
74033	Soldiers Family Assistance Ctr	15,000	SF	297.00	
72210	Dining Fac-Seating 251-500 Pers	18,000	SF		Use Size Adj. Factor Table-1, Part-I, for this item
<b>Various</b>	OPERATIONAL READINESS TRAINING COMPLEX (ORTC)/ TRANSIENT TRAINING COMPLEX				
72114	Enlisted Barracks, Transient Trng	30,560	SF	157.00	
72412	Transient Sn. Enlisted Officers Qtrs	22,560	SF	182.00	
14184	Battalion HQ Bldg, Transient Trng	11,235	SF	156.00	
14186	COF/HQ, 6 COFs/BN, Transient Trng	19,580	SF	154.00	
14179	Hardstand Cover - Transient Trng	12,853	SF	54.00	Canopy Cost only, Conc. Hardstand cost separate item
85210	Hardstand W/COF, 4" concrete	varies	SY	36.00	Guidance only. Program this item under Supporting Fac
14187	Brigade HQ Bldg, Transient Trng	10,240	SF	167.00	
21406	Vehicle Maint Shop, Transient Trng	11,855	SF	171.00	
44222	6 COF Storage Sheds @ 800 SF/COF	4,800	SF	53.00	Cover/Shed cost only, cost of flooring underneath extra
72212	Dining Fac, 720 PN-Transient Trng	16,980	SF	321.00	Std REF Size for ORTC-Dining Fac is 16,960 SF; Use Size Adj Table-1, Part-1 for the 20,990 SF Dining Fac
	Dining Fac, 1428 PN-Transient Trng	20,990	SF		
<b>Varies</b>	ADVANCE INDIVIDUAL TRAINING (AIT) COMPLEX				
72121	AIT Barracks w/CO Ops Space	93,000	SF/Barracks	191.00	Each Barracks/CO Ops 93,000 SF individually
	Calculate average individual Barrack/CO Ops Bldg size, then apply Size Adj. Factor Table-1, Part-I for Barracks/CO Ops				
	Bldg size adjustment. AIT Complex may contain 1,2,3, or 4 Brks/CO Ops Bldgs.				
14182	AIT Brigade HQS, if needed	9,100	SF	206.00	
14183	AIT Battalion HQS w/ Classrms	12,300	SF	209.00	

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<u>CAT CODE</u>		<u>Reference/ Standard Size</u>	<u>Unit Of Measure (UOM)</u>	<u>Unit Cost \$/UOM (Final UC)</u>	<u>Remarks</u> <b>Note-1:</b> No recent Bid Data since 2005 to Forecast UC
<b>Varies</b>	ADVANCE INDIVIDUAL TRAINING (AIT) COMPLEX Contd. From the previous page				
<b>72110</b>	Dining Fac for 1 BN, 544 seats	30,500	SF	<b>318.00</b>	Std REF Size for AIT-Dining Fac is 30,500 SF; Use Size Adj Table-1, Part-1 for the 62,390 SF Dining Fac
	Dining Fac for 2 BN, 1088 seats	62,390	SF		
	BASIC TRAINING (BT) and ONE STATION UNIT TRAINING (OUST) BARRACKS COMPLEX				
<b>72181</b>	BT/OUST Brks w/ CO Ops Space	64,700	SF/Barracks	<b>182.00</b>	Each Barracks/CO Ops Bldg 64,700 SF individually
	Calculate average individual Barrack/CO Ops Bldg size, then apply Size Adj. Factor Table-1, Part-I for Barracks/CO Ops Bldg size adjustment. BT/OUST Barracks Complex may contain 1,2,3, 4 or 5 Brks/CO Ops Bldgs. Full scoped Covered Training Area under Barracks w/CO Ops Space is included in the each individual Barracks Bldg gross area.				
	Battalion (BN) HQS W/ Classrms	23,500	SF	<b>182.00</b>	
	Dining Fac for 1 BN, 544 seats	30,500	SF	<b>318.00</b>	Covered Queuing area is included in the Dining Fac SF area. Use Size Adj Table-1, Part-1 for 56,000 SF Fac
	Dining Fac for 2 BN, 1088 seats	56,000	SF		
	Lawn Equipment Storage (2000 SF), 1/4 mile 8-lane Athletic Track should be programmed for the BT/OUST Complex.				
	Entire BT/OUST complex is programmed under a single catcode 72181. Central Energy Plant may be programmed, if needed.				
	<b>Varies</b>	DINING FACILITIES (DFAC)	Varies	SF	
	Cost includes MCA funded Kitchen equipment and installation. 26,500 SF is the Reference Size to calculate UC for other DFAC sizes when UC is not indicated				
<b>72210</b>	Dining Facility for 801 to 1300 PN	26,500	SF	<b>344.00</b>	
	Dining Facility for AIT, 1300 PN	30,500	SF	<b>318.00</b>	Use this Size as Ref Size for 62,390 SF AIT DFAC
	Dining Facility for AIT, 2600 PN	62,390	SF		Use Size Adj Factor Table for UC calculation
<b>72181</b>	Dining Facility- Basic/OUST Training	30,500	SF	<b>318.00</b>	Use this Size as Ref Size for 56,900 SF Basic Trng DFAC
	Dining Facility - Basic/OUST Trng	56,900	SF		Use Size Adj Factor Table for UC calculation
<b>72212</b>	Dining Facility - ORTC, 720 PN	16,960	SF	<b>321.00</b>	Use this Size as Ref Size for 20,990 SF ORTC DFAC
	Dining Facility - ORTC 1248 PN	20,990	SF		Use Size Adj Factor Table for UC calculation
<b>72410</b>	Unaccompanied Officers Quarters	44,000	SF	<b>208.00</b>	
<b>72412</b>	Unaccomp. Officers Qtrs- Transient	44,000	SF	<b>180.00</b>	

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<b>73010</b>	Fire Station, 2-CO HQs, 3 Aparatus	20,200	SF	<b>240.00</b>	Use Size Adj Table-1, Part-1 for UCs of other sizes
	These are stand alone Fire Stations. Their sizes are determined by the authorized number of Aparatus Bays which house Emergency Vehicles, number of Dorm rooms, and whether they are HQs or Statelite Stations. A standard Aparatus Bay shall be 62' x 91' for a 2- or 3-CO Station; for a Air Rescue Fire Fighting (ARFF) Aparatus Bay is 70' x 91'				
<b>73010</b>	Consol. Fire, Safety & Security (FSS)	Varies	SF		Combined Military Police, Safety, Fire & Emergency Svc
"	Consolidated FSS Fac - Medium	15,000	SF	<b>244.00</b>	Also called Directorate of Emergency Services (DES) Fac
"	Consolidated FSS Fac - HQ	47,700	SF	<b>227.00</b>	
<b>73016</b>	Police/Law Enforcement (MP) Station	4,200	SF	<b>257.00</b>	
<b>73017</b>	Chapel - seating capacity 200 person	17,900	SF	<b>304.00</b>	
	Use Size Adj. Table-1, Part-1 for other standard Chapel sizes: 22,600 SF (400 PN seating), 32,900 SF (600 PN seating)				
"	Chapel for Initial Entry Trainees (IET)	35,000	SF	<b>287.00</b>	New Std. Worship Center for IETs, 1428 PN seating
<b>73018</b>	Religious Education Facility	5,320	SF	<b>279.00</b>	For upto 10 small groups of 55-70 persons
	A dedicated space for Religious Education and Religious Activities. Should be reported separately from the worship space if collocated in a Chapel, catcode 73017. Use Size Adjustment Factor Table-1, for other UC of other sizes.				
<b>73019</b>	Chapel Family Life Center	16,970	SF	<b>269.00</b>	This facility is designed for 300-450 persons
<b>73046</b>	DEPENDENT SCHOOLS	Varies			
	Elementary		SF	<b>215.00</b>	
	Junior High		SF	<b>216.00</b>	
	High		SF	<b>227.00</b>	
<b>74010</b>	Auditorium, General Purpose	4,000	SF	<b>168.00</b>	
<b>74011</b>	Bowling Center	7,800	SF	<b>XXX</b>	See Note-1 above
<b>74012</b>	Cafeteria	5,000	SF	<b>XXX</b>	See Note-1 above
<b>74014</b>	Child Development Center (CDC)	25,000	SF	<b>xxx</b>	CDC CC74014 is replaced by 2 new catcodes below
<b>74016</b>	Child Development Ctr for School Age	20,500	SF	<b>237.00</b>	Program CDC Playground, CC75018, separately
	Use Size Adjust. Factor Table-1 and 20,500 SF (Medium sized School Age Children CDC) as the Reference size for other CDC sizes				

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74017	Child Development Ctr for Under 6 yrs	26,450	SF	256.00	Program Outdoor Play Area, CC75018, separately
	Use Size Adjust. Factor Table-1 and 26,450 SF (Medium Under 6 yrs of Age Children CDC) as the Reference size for other CDC sizes				
74021	Commissary	85,000	SF	221.00	UC Based on less than 3 bid results.
74022	Skill Development Center	22,000	SF	XXX	See Note-1 above
74023	Credit Union	3,000	SF	XXX	See Note-1 above
74024	Skill Development Ctr - automotive	15,000	SF	XXX	See Note-1 above
74025	Education Center for 10,000-15,000 PN	23,300	SF	219.00	Also called Army Continuing Education System Fac
	Use Size Adjust. Factor Table-1 and 23,300 SF as the Reference size for other Education Center sizes				
74028	Physical Fitness Center/Facility	65,000	SF	207.00	Program Indoor Swimming Pool, CC74042 separately
	Use Size Adjust. Factor Table-1 and 65,000 SF as the Reference size for other Fitness Center sizes				
74030	Sports Pro Shop	28,000	SF		See Note-1 above
74033	Army Community Service Ctr	17,215	SF	297.00	Also called Army Family Service Center
74041	Main Library	12,000	SF	241.00	
74047	Service Club	22,500	SF	XXX	See Note-1 above
74048	Officer Open Dining Facility	22,500	SF	XXX	See Note-1 above
74053	Main Exchange	80,000	SF	XXX	See Note-1 above
74056	Exchange Service Outlet			XXX	See Note-1 above
74066	Youth Center	19,650	SF	237.00	
74068	Recreation Center	20,000	SF	XXX	See Note-1 above
74070	Indoor Roller Skating Rink	20,000	SF	XXX	See Note-1 above
74072	Natatorium (Indoor Swimming Pool)	20,000	SF	208.00	25 meter pool (6200 SF water area) w/ancillary areas
74075	Recreational Support Building	5,000	SF		See Note-1 above

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	<b>PLAYGROUND CHILD DEVELOPMENT CENTER</b>				
	For Under 6 Years of Age, Pre-School				
<b>75018</b>	Small	16,667	SF	<b>29.00</b>	
	Medium	23,870	SF	<b>25.00</b>	
	Large (338 Children)	38,310	SF	<b>20.00</b>	
	For School Age, 6 to 10 years, Children				
	Small (105-135 children)	47,605	SF		
	Medium/Large (150-225 Children)	52,105	SF		
<b>75022</b>	Multipurpose Athletics Field	1	EACH		See Note-1 above
<b>75030</b>	Outdoor Swimming Pool	13000	SF		See Note-1 above
<b>89120</b>	Plant /Utilities Building	varies	SF	<b>167.00</b>	Plant Equipment Cost not included
	<b>SPECIAL FOUNDATIONS</b>				
	Piling, Treated Wood, 50' long, 12" butt		LF	<b>33.00</b>	
	Piling, Concrete, 14" square		LF	<b>50.00</b>	
	Piling, Concrete, 16" square		LF	<b>53.00</b>	
	Piling, Concrete, 18" diameter			<b>60.00</b>	
	Piling, Steel H, 50' Long, HP 12x53		LF	<b>41.00</b>	
	Piling, Steel Pipe, 12" D, Conc Filled		LF	<b>50.00</b>	



**APPENDIX A - FACILITY UNIT COST TABLE ( Part - II, Support Facilities)**

**NOTE: The SUPPORT FACILITIES UNIT COSTS ARE for GUIDANCE only. ADJUSTMENTS to THESE UNIT COSTS are ALLOWED WHEN LOCAL COST DATA ARE AVAILABLE and PROVIDED, with BACK-UP**

CATEGORY CODE	ITEM	QUANTITY	UNIT of MEASURE	UNIT COST	REMARK
				\$/UNIT	
111XX	AIRFIELD RUNWAYS				SEE CATCODE 851XX
112XX	AIRFIELD TAXIWAYS				SEE CATCODE 851XX
113XX	AIRFIELD APRONS				SEE CATCODE 851XX
116XX	AIRFIELD PAVING, MISC				SEE CATCODE 851XX
81150	UNINTERRUPTIBLE POWER SUPPLY (UPS)		KW	\$4,898.00	UTILITY SYSTEM TO ENSURE CONTINUOUS ELECTRIC PWR SUPPLY DURING OUTAGES AND INCLUDES ELECTRIC SYSTEM COMPONENTS (RECTIFIER, CHARGER, BATTERY, INVERTER, ETC)
81160	STANDBY GENERATOR	75	KW	\$534.00	UTILITY SYSTEM TO ENSURE CONTINUOUS ELECTRIC PWR SUPPLY DURING OUTAGES. COST INCLUDES ELECTRIC SYSTEM COMPONENTS SUCH AS RECTIFIER, CHARGER, BATTERY, INVERTER, TRANSFER SWITCH ETC)
		125	KW	\$383.00	
		200	KW	\$305.00	
		300	KW	\$260.00	
89111	POWER PLANT BUILDING		SF	\$170.00	STAND ALONE BUILDING TO HOUSE EQUIPMENT AND STATIC SWITCHGEAR NECESSARY TO GENERATE ELECTRIC POWER
81230	EXTERIOR LIGHTING w/ UNDER GROUND DISTRIBUTION		LF	\$33.00	BASED ON WOOD POLE, 1" PVC DIRECT BURIAL CONDUIT, WITH 3' DEEP EXCAVATION, #10 WIRE AND 500 WATT MV LAMINAR FIXTURE
81241	OVERHEAD ELECTRIC LINES				
	MEDIUM TO HEAVY DISTRIBUTION LINES		MI	\$112,120.00	BASED ON WOOD POLES 15 KV TO 69 KV SHORT LINES, WOOD POLE, 3 PH, 4 WIRE
	OVERHEAD W/ WOOD POLES		LF	\$27 - 32.00	BASED ON POLE SPACING 250', WITH 15 KV MAX, 3 PHASE, 4 WIRE
81242	UNDERGRD ELECTRIC LINES				
	DIRECT BURIAL:				COSTS INCL TRENCH, SAND BASE, BACKFILL AND MARKER
	# 1/0		LF	\$18.00	3/C - 600V DB
	# 4/0		LF	\$30.00	3/C - 600V DB
	UG DUCTS:				
	1-WAY-4"		LF	\$23.00	TYPE EB, PVC, CONCRETE ENCASED 3" EACH WAY, INCLUDES EXCAVATION AND BACKFILL TO 3 FEET DEEP
	2-WAY-4"		LF	\$28.00	
	4-WAY-4"		LF	\$35.00	
6-WAY-6"		LF	\$52.00		
81320	SUBSTATION, LOAD UNINTER. SWITCH 600 AMP		KVA	\$75.00	300 KVA & BELOW W/CLF FUSES. DOES NOT INCL BUILDING (89113)
81360	TRANSFORMERS				PRIMARY DELTA OR Y,277/480 V SECONDARY
	150 KVA		EA	\$12,620.00	OIL-FILLED, PAD MOUNTED, 3-PHASE
	500 KVA		EA	\$18,880.00	
	1,000 KVA		EA	\$34,100.00	
	2,000 KVA		EA	\$50,170.00	
82110	HEAT PLANT COAL-FIRED				
	STEAM:				
	50 MBTU/H (MILLION BTU/H)		EA	\$4,123,190.00	UTILITY SYSTEM THAT GENERATE HEAT FROM COAL AND INCLUDES FURNACE, BOILERS, WATER SUPPLY, PUMPS, PIPELINES, & FUEL & ASH HANDLING FACILITIES.
	100 MBTU/H		EA	\$7,561,020.00	
	150 MBTU/H		EA	\$10,774,790.00	
	200 MBTU/H		EA	\$13,804,120.00	

**APPENDIX A - FACILITY UNIT COST TABLE ( Part - II, Support Facilities)**

**NOTE: The SUPPORT FACILITIES UNIT COSTS ARE for GUIDANCE only. ADJUSTMENTS to THESE UNIT COSTS are ALLOWED WHEN LOCAL COST DATA ARE AVAILABLE and PROVIDED, with BACK-UP**

CATEGORY CODE	ITEM	QUANTITY	UNIT of MEASURE	UNIT COST	REMARK
				\$/UNIT	
82110	HEAT PUMP COAL FIRED (CONT'D)				
	HITEMP WATER:				
	50 MBTU/H		EA	\$3,931,420.00	INCLUDES FURNACE, BOILERS, WATER SUPPLY, PUMPS, PIPELINES, & FUEL & ASH HANDLING FACILITIES
	100 MBTU/H		EA	\$6,312,400.00	
	150 MBTU/H		EA	\$8,417,270.00	
	200 MBTU/H		EA	\$10,774,790.00	
82120	HEAT PLANT OIL-FIRED				
	STEAM:				
	10 MBTU/H		EA	\$744,480.00	INCLUDES PLANT EQUIP & OIL HANDLING FACILITY
	50 MBTU/H		EA	\$2,557,600.00	
	100 MBTU/H		EA	\$4,898,340.00	
	150 MBTU/H		EA	\$7,106,070.00	
	200 MBTU/H		EA	\$8,607,320.00	
	HITEMP WATER:				
	10 MBTU/H		EA	\$672,930.00	
	50 MBTU/H		EA	\$2,375,410.00	
	100 MBTU/H		EA	\$4,432,220.00	
	150 MBTU/H		EA	\$6,312,400.00	
82210	STEAM CONDENSATE LINES - UNDERGROUND				STEAM SUPPLY & RETURN LINES, COST INCLUDES INSULATION, FITTINGS, ACCESSORIES, 3 FEET EXCAVATION, BACKFILL AND TESTING
	COMMON CONDUIT:				
	11-1/4"		LF	\$218.00	STM: 2", RET: 1-1/2"
	10"		LF	\$199.00	STM: 1-1/2", RET: 1-1/2"
	10"		LF	\$189.00	STM: 1-1/4", RET: 1"
	10"		LF	\$187.00	STM: 1", RET: 1"
	STEAM CONDENSATE LINES - UNDERGROUND (contd. From the previous page)				
	SINGLE CONDUIT:				STEAM OR HITEMP WATER, COST INCLUDES FITTINGS, ACCESSORIES, 3 FT EXCAVATION, BACKFILL AND TESTING
	6"		LF	\$119.00	1-1/4" PIPE
	8"		LF	\$129.00	1-1/2" PIPE
	8"		LF	\$131.00	2" PIPE
	10"		LF	\$157.00	2-1/2" PIPE
	10"		LF	\$168.00	3" PIPE
	11-1/8"		LF	\$203.00	4" PIPE
	15"		LF	\$233.00	6" PIPE
82220	HOT WATER LINES - HIGH TEMPERATURE				HOT WATER SUPPLY & RETURN LINES
	COMMON CONDUIT - UNDERGROUND				INCLUDES FITTINGS, ACCESSORIES, 3 FT EXCAVATION, BACKFILL & TESTING
	12"		LF	\$170.00	HW: 1", RET: 1"
	12-7/8"		LF	\$208.00	HW: 1-1/2", RET: 1-1/2"
	15"		LF	\$256.00	HW: 2", RET: 2"
	18"		LF	\$281.00	HW: 3", RET: 3"
	21"		LF	\$326.00	HW 4., RET: 4"

**APPENDIX A - FACILITY UNIT COST TABLE ( Part - II, Support Facilities)**

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CATEGORY CODE	ITEM	QUANTITY	UNIT of MEASURE	UNIT COST	REMARK
				\$/UNIT	
82220	STEAM DISTRIBUTION MANHOLE, PREFAB STEEL, 8' X 6' HT		EA	\$17,220.00	VENT, MH VENT, NORMAL PIPING & INSTALLATION, CONDUIT, INCL LADDER
82410	GAS PIPE LINES - HEATING GAS TRANSMISSION				SEE CHART A
82610	AIR CONDITIONING/REFRIG PLANT				DOES NOT INCLUDE AIR-CONDITIONING/ REFRIGERATION PLANT, COST INCLUDES EQUIPMENT, SUCH AS COMPRESSOR, CONDENSER, PUMPS, VALVES, ONLY
	NEW BLDG		TON	\$3,388.00	
	EXISTING BLDG		TON	\$4,739.00	
83140	INDUSTRIAL WASTE TREATMENT PLANT		EA	\$1,826,550.00	500,000 GPD , TREATMENT EQUIPMENT ONLY, DOES NOT INCLUDE A BUILDING TO HOUSE THE EQUIPMENT
83150	SEWAGE LIFT STATION		EA	\$210,400.00	1,000 GPM; EQUIPMENT ONLY, DOES NOT INCLUDE A BUILDING TO HOUSE THE EQUIPMENT
83210	SANITARY SEWER				SEE CHART A
83210	SANITARY SEWER MANHOLES: CONCRETE, CAST-IN-PLACE				MANHOLE, 4 FT ID, INCLUDES FOOTING, EXCAVATION & BACKFILL, 24" DIA COVER & FRAME
	UP TO 8' DEEP		VLF	\$570.00	
	OVER 8' DEEP		VLF	\$610.00	
	CONCRETE, PRECAST: UP TO 8' DEEP		VLF	\$393.00	
	OVER 8' DEEP		VLF	\$431.00	
832XX	MISC:				
	CATCH BASINS		EA	\$2,619.00	4 FT DEEP
	CATCH BASINS		EA	\$3,039.00	6 FT DEEP
	CURB INLETS		EA	\$618.00	GUTTERMOUTH
83310	INCINERATOR		EA	\$49,940.00	200 LB PER HR PER UNIT (EQUIPMENT ONLY, BUILDING NOT INCLUDED)
84210	WATER DISTRIBUTION LINES				SEE CHART A
84472	WATER PUMP STATION, NONPOTABLE				EQUIPMENT ONLY, INCLUDES PUMPS, VALVES, AUTO CONTROLS, FILLINGS & ACCESSORIES, COMPLETE W/ INSTALLATION COSTS, DOES NOT INCLUDE A BUILDING TO HOUSE THE EQUIPMENT
	500 GPM		EA	\$76,560.00	
	1,000 GPM		EA	\$101,630.00	
	2,000 GPM		EA	\$114,290.00	
	2,500 GPM		EA	\$117,660.00	
84610	WATER STORAGE TANK				INCLUDES STEEL STORAGE TANK STANDPIPE, 125 FEET HIGH TOWER, VALVES AND STD FOUNDATIONS, BUT DOES NOT INCLUDE PUMPHOUSE BUILDING
	ELEVATED WATER STG TANK				
	50,000 GA		EA	\$381,690.00	
	100,000 GA		EA	\$478,810.00	
	150,000 GA		EA	\$573,670.00	
	250,000 GA		EA	\$660,620.00	
	500,000 GA		EA	\$1,062,630.00	
	750,000 GA		EA	\$1,467,920.00	
	1,000,000 GA		EA	\$1,865,630.00	

**APPENDIX A - FACILITY UNIT COST TABLE ( Part - II, Support Facilities)**

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CATEGORY CODE	ITEM	QUANTITY	UNIT of MEASURE	UNIT COST	REMARK
				\$/UNIT	
84610	WATER STORAGE TANK (Contd. From the previous page)				
	GROUND STG TANK (WATER)				
	100,000 GA		EA	\$264,280.00	INCLUDES CONCRETE TANK AND STD FOUNDATIONS, BUT DOES NOT INCLUDE EXTERNAL PIPING AND PUMPING
	250,000 GA		EA	\$438,150.00	
	500,000 GA		EA	\$539,750.00	
	1,000,000 GA		EA	\$724,970.00	
	2,000,000 GA		EA	\$1,044,540.00	
	4,000,000 GA		EA	\$1,652,250.00	
84620	RESERVOIR, POTABLE				
	250,000 GA		EA	\$426,830.00	INCLUDES 6" CONCRETE FLOOR SLAB, ORDINARY EXCAVATION AND PUMPING WITHIN
	500,000 GA		EA	\$569,190.00	
	1,000,000 GA		EA	\$785,920.00	
	2,000,000 GA		EA	\$1,208,090.00	
	4,000,000 GA		EA	\$1,985,360.00	
851XX	ROADS/ PAVEMENTS				INCLUDE DRIVEWAYS, EXCLUDES VEHICLE PARKING, EARTHWORK (CUT & FILL, CATCODE 93410, COST NOT INCLUDED)
	ASPHALT CONCRETE SURFACE				
	1-1/2"		SY	\$5.20	FOR PAVEMENT ONLY, A/C SURFACE, URBAN AREA
	2"		SY	\$6.80	
	3"		SY	\$9.90	
	CONCRETE SURFACE - NON REINFORCED				
	6"		SY	\$32.00	12 FEET PASS FIXED FORM, JOINTS, FINISHING, CURING, URBAN AREA
	8"		SY	\$44.00	
	10"		SY	\$51.00	
	12"		SY	\$59.00	
	BASE COURSE (CRUSHED STONES), THICKNESS:				
	4"		SY	\$7.10	INCLUDES MATERIAL, EQUIPMENT & COMPACTION
	6"		SY	\$10.00	
	8"		SY	\$13.00	
	12"		SY	\$20.00	
	BASE COURSE (BANK RUN GRAVEL), THICKNESS:				INCLUDES MATERIAL, TRANSPORT & PLACEMENT
	6"		SY	\$5.50	
	9"		SY	\$8.20	
	12"		SY	\$11.00	
	BASE COURSE (BITUM. CONCRETE) THICKNESS:				
	4"		SY	\$12.00	
	6"		SY	\$18.00	
	8"		SY	\$23.00	
	10"		SY	\$30.00	
	6" x 8" CURB/GUTTER (CONCRETE)		LF	\$17.00	INCLUDES CURB & GUTTER AND STEEL FORMS

**APPENDIX A - FACILITY UNIT COST TABLE ( Part - II, Support Facilities)**

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CATEGORY CODE	ITEM	QUANTITY	UNIT of MEASURE	UNIT COST	REMARK
				\$/UNIT	
852XX	SIDEWALK & OTHER PAVEMENTS				INCLUDES VEHICLE PARKING AREAS, PEDESTRIAN WALKWAYS, ETC. SEE CATCODE 851XX FOR DRIVEWAYS & ROADS
85220	SIDEWALKS & WALKWAYS				
	4" CONCRETE CAST IN PLACE, NO BASE		SF	\$4.50	INCLUDES GRADING & FORMING
	2-1/2" ASPHALT CONCRETE		SF	\$2.10	
86010	RAILROAD TRACKS W/TIES AND BALLAST		LF	\$322.40	STANDARD GAUGE RAILROAD, STEEL TIES IN CONC W/ 100# RAIL, FASTNERS & PLATES COMPLETE. PARALLEL TRACKS COUNTED SEPARATELY
87110	STORM SEWER		LF		SEE CHART A
87210	FENCING & WALLS				
	CHAIN LINK:				9 GAUGE GALVANIZED STEEL
	6 FT HIGH		LF	\$20.00	TYPE A (9 GA) INCLUDES 3 STRAND BARBED WIRE
	8 FT HIGH		LF	\$24.00	
	10 FT HIGH		LF	\$29.00	
87250	ENTRANCE GATES				
	4' WIDE, SINGLE SWING, 6' HIGH W/ GATE POSTS		EA	\$327.00	
	12' WIDE, SINGLE SWING, 6' HIGH W/ GATE POSTS		EA	\$902.00	FOR MOTOR OPERATED (SWING) ADD \$2,000
	24' WIDE, SWING GATE - DOUBLE, 6' HIGH		EA	\$1,576.00	FOR MOTOR OPERATED (SWING) ADD \$3,150
	36' WIDE, SLIDING GATE - DOUBLE, 8' HIGH		EA	\$2,168.00	FOR MOTOR OPERATED (SLIDE) ADD \$4,410
88110	AUTOMATIC WATER SPRINKLER SYSTEMS (2,000 SF, PROTECTED AREA ONLY, INCL GATE VALVE)				
	WET PIPE		SF	\$4.30	PROTECTED AREA ONLY
	DRY PIPE		SF	\$4.80	PROTECTED AREA ONLY
	DELUGE		SF	\$6.40	PROTECTED AREA ONLY, EXCLUDES DELUGE VALVE, PUMPING ELEVATED WATER STG, & EXTERIOR PIPING
89240	FIRE HYDRANTS, STANDARD 6' DEPTH		EA	\$3,231.00	INCL EXCAVATION & BACKFILL, 4-1/2" CUTOFF VALVE, PIPING & CONNECTION TO MAIN LINE
93210	SITE CLEARING & GRADING				
	SITE CLEARING & GRUBBING		AC	\$4,198.00	CLEAR & GRUB MEDIUM WOODED AREA, GRUB & REMOVE STUMPS & HAUL
	SITE CLEARING, MEDIUM		SY	\$0.60	SUNDRY SURFACE ITEM CLEARING EXCL. WOODS & PAVING
	GRADING:				
	ROUGH - LARGE OPEN AREA		SY	\$2.70	AVG 2' C/F, SPREAD DUMP FILL, NO COMPACTION
	FINE		SY	\$1.40	3 PASSES WITH DOZER, COMPACTION
	BORROW, UNCLASSIFIED MATERIAL		CY	\$18.00	BUY, LOAD AT PIT, UPTO 5-MILE RT HAUL, & SPREAD W/ DOZER
93220	LANDSCAPE AND PLANTING				
	TOPSOIL:				
	HAUL & SPREAD		CY	\$21.00	INCLUDES MATERIAL, TRANSPORT & PLACEMENT
	STRIP/STOCKPILE		SY	\$1.60	6" DEEP

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CATEGORY CODE	ITEM	QUANTITY	UNIT of MEASURE	UNIT COST	REMARK
				\$/UNIT	
93220	LANDSCAPE AND PLANTING				
	MULCHING:				
	WOOD CHIPS		SY	\$2.70	2" DEEP
	GRASS:				
	SEEDING		SY	\$0.80	HYD W/FERTILIZER
	SODDING		SY	\$6.90	1" DEEP BLUE GRASS
93310	DEMOLITION W/ DISPOSAL				
	BUILDING: 10,000 SF, 10' EAVE HEIGHT, 25 MILES HAUL, NO DISPOSAL (DUMP) FEE INCLUDED. RECYCLE WILL REDUCE DISPOSAL COST:	<b>NOTE:</b> ASBESTOS REMOVAL/DISPOSAL NOT INCLUDED. COST ESTIMATE FOR THIS WORK ITEM SHOULD BE BASED ON SITE SURVEY/EVALUATION AND LOCAL EXPERIENCE, AND SEPARATELY IDENTIFIED.			
	CONCRETE STRUCTURE		PER BLDG SF	\$5.60	FOUNDATION REMOVAL OR VALUE OF RECOVERED CONCRETE AGGREGATE FOR USE AS ENGINEERED BACKFILL NOT INCLUDED
	STEEL FRAME BUILDING		PER BLDG SF	\$4.30	FOUNDATION REMOVAL OR SALVAGE VALUE CREDIT FOR STEEL MEMBERS AND STEEL SCRAP NOT INCLUDED
	MASONRY BLDG		PER BLDG SF	\$4.80	FOR SIMPLE CONCRETE BLOCK CONSTRUCTION, NO FOUNDATION
	WOOD FRAME		PER BLDG SF	\$3.60	FOR POST AND BEAM OR STUD WALL
	CONCRETE SLAB 6" THICK (IF SEPARATE FROM BLDG)		SF	\$2.30	6 INCH THICK WITH TURNED DOWN FOOTING
	BUILDING INTERIOR		SF		NOT REQUIRED FOR CONVENTIONAL DEMOLITION
	LEAD BASED PAINT (LPB) REMOVAL/DISPOSAL		N/A	\$0.00	
	<b>NOTE:</b> LPB IS NOT REQUIRED TO BE ABATED PRIOR TO OR AS A PART OF THE BLDG DEMOLITION, UNLESS SPECIFICALLY REQUIRED IN COMPLIANCE WITH EM 385-1-1. UNLESS OTHERWISE RESTRICTED, MATERIALS COATED W/ LBP MAY BE PLACES IN THE INSTALLATION LANDFILL.				
	CONCRETE PAVEMENT, UPTO 4" THICK		SY	\$16.00	1.32/SF, INCLUDES 2" GRAVEL
	BITUMINOUS PAVEMENT, 2" THICK		SY	15.00	\$1.25/SF, INCLUDES 2" GRAVEL
93410	CUT AND FILL				
	EARTH:				
	CUT & FILL, 200 HP DOZER, 300 FT HAUL		CY	\$8.20	COMMON EARTH FILL & SPREAD
	EXCAVATION, BULK DOZER		CY	\$8.80	COMMON EARTH, HAULING 2 MILE ROUND TRIP
	EXCAVATION, TRENCH-MACHINE		CY	\$6.00	4 FT DEEP, 2 FT WIDE, MEDIUM SOIL
	EXCAVATION TRENCH-HAND		CY	\$46.00	2 TO 6 FT DEEP, MEDIUM SOIL
	BACKFILL-MACHINE		CY	\$7.00	INCLUDES COMPACTION
	BACKFILL-HAND		CY	\$34.00	INCLUDES COMPACTION
	ROCK:				
	EXCAVATION ROCK, HARD		CY	\$89.00	DRILL BLAST BY MACHINE
	EXCAVATION SHALE, MEDIUM		CY	\$48.00	RIPPER DOZER AND LOAD
	EXCAVATION ROCK TRENCH-HAND		CY	\$149.00	BY HAND /AIR TOOL

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CATEGORY	ITEM	QUANTITY	UNIT of MEASURE	UNIT COST	REMARK
CODE				\$/UNIT	
88040	AT/FP VEHICULAR BARRICADES				
	<b>Barrier Standards</b>				
	SD-STD-02.01 specifies perpendicular barrier impact by a <b>15,000 lb. (6810 kg)</b> vehicle "K" indicates the Dept of State certified barrier's maximum vehicle impact speed rating "L" indicates the test vehicle's distance of penetration upon impact with barrier				
	<b>K12</b> = 50 mph (880 kph) <b>K8</b> = 40 mph (65 kph) <b>K4</b> = 30 mph (48 kph)				<b>L3</b> = 3 ft. (915 mm) <b>L2</b> = 3 ft. to 20 ft. (915 mm to 6.1 m) <b>L1</b> = 20 ft. to 50 ft. (6.1 m to 15.3 m)
	<b>Note: Electrical connection costs are only included up to five feet from the unit. Additional electrical power requirements to be added separately. All active fixed barriers with a remote control panel include costs for barrier installation, safety loop</b>				
	PORTABLE BEAM BARRICADE		EA	\$25,540.00	RATED K4/L2, NO FDN REQUIRED, MOVE WITH FORKLIFT, STOPS 15,000 LB VEHICLE AT 30 MPH
	PORTABLE HYDRAULIC BARRICADE		EA	\$35,750.00	TRANSPORTABLE RISING ROAD PLATE BARRICADE, SET UP WITH FORKLIFT, STOPS 15,000 LB VEHICLE AT 30 MPH
	PORTABLE HEDGEHOG BARRICADE		EA	\$3,064.00	BARRICADE MADE OF PAINTED STRUCTURAL STEEL, REMOVABLE PNEUMATIC TIRES AND TOW BAR, 12' LONG
	WEDGE BARRICADE		EA	\$55,740.00	24" HIGH, 9' LONG, REMOTE CONTROL PANEL
	WEDGE BARRICADE		EA	\$61,290.00	K4/L2 RATED, 30" HIGH, 9' LONG, REMOTE CONTROL PANEL, STOPS 15,000 LB VEHICLE AT 30 MPH
	HYDRAULIC RISING ROAD PLATE		EA	\$56,170.00	PLATE RISES TO 18" HIGH, SURFACE MOUNTED, 12' LENGTH, REMOTE CONTROL PANEL, STOPS 15,000 LB VEHICLE AT 63 MPH
	HYDRAULIC WEDGE		EA	\$71,500.00	K12/L2 RATED, 9' WIDE X 3'-2" HIGH, STOPS VEHICLE AT 50 MPH, ZERO PENETRATION
	HYDRAULIC RISING ROAD PLATE		EA	\$40,850.00	PLATE RISES TO 18" HIGH, SURFACE MOUNTED, 10' LENGTH, 1" THICK STEEL PLATE, STOPS 6,000 LB VEHICLE AT 40 MPH
	HYDRAULIC RISING ROAD PLATE		EA	\$61,290.00	K12/L2 RATED, PLATE RISES TO 39" HIGH, SURFACE MOUNTED, REMOTE CONTROL PANEL, STOPS 15,000 LB VEHICLE AT 70 MPH
	RISING ROAD PLATE		EA	\$56,170.00	K12/L2 RATED, PLATE RISES TO 18" HIGH, SURFACE MOUNTED, REMOTE CONTROL PANEL, STOPS 15,000 LB VEHICLE AT 63 MPH
	RISING ROAD PLATE		EA	\$58,220.00	K12/L2 RATED, PLATE RISES TO 39" HIGH, SHALLOW FOUNDATION TO 18" DEPTH, 9' LENGTH, STOPS 15,000 LB VEHICLE AT 50 MPH
	POP-UP BOLLARD SYSTEM		EA	\$51,210.00	K4/L2 RATED, HYDRAULIC OR PNEUMATIC, SET OF THREE BOLLARDS, 13.25" DIA, 35" HIGH
	POP-UP BOLLARD SYSTEM		EA	\$53,250.00	K12/L2 RATED, HYDRAULIC, REMOTE CONTROL PANEL, 35" HIGH, 15.25" DIA, STOP-GO SIGNAL ARMS AND LIGHTS, SUMP PUMPS, STOPS 15,000 LB VEHICLE AT 50 MPH, ADD \$10,000 FOR EACH ADDL BOLLARD UP TO FIVE ADDL
	POP-UP BOLLARD SYSTEM		EA	\$51,210.00	HYDRAULIC, SET OF THREE BOLLARDS, 8.63" DIA, 24" HIGH, REMOTE CONTROL PANEL, ADD \$5,000 FOR EACH ADDL BOLLARD UP TO SEVEN ADDL
	POP-UP BOLLARD SYSTEM		EA	\$66,550.00	K4/L2 RATED, HYDRAULIC, SET OF THREE BOLLARDS, 13.25" DIA, 35" HIGH, REMOTE CONTROL PANEL, STOP-GO SIGNAL ARMS AND LIGHTS, SUMP PUMPS, STOPS 15,000 LB VEHICLE AT 30 MPH
	POP-UP BOLLARD SYSTEM		EA	\$61,450.00	K8/L2 RATED, HYDRAULIC, SET OF THREE BOLLARDS, 12.25" DIA, 35" HIGH, REMOTE CONTROL PANEL, STOP-GO SIGNAL ARMS AND LIGHTS, SUMP PUMPS, STOPS 15,000 LB VEHICLE AT 40 MPH

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CATEGORY CODE	ITEM	QUANTITY	UNIT of MEASURE	UNIT COST	REMARK
				\$/UNIT	
88040	AT/FP VEHICULAR BARRICADES (Contd. From the previous page)				
	MANUAL POP-UP BOLLARD SYSTEM		EA	\$5,121.00	K4/L2 RATED, COUNTER BALANCED MANUAL LIFT, 10.75" DIA, 30" HIGH
	MANUAL POP-UP BOLLARD SYSTEM		EA	\$4,096.00	24" HIGH, STOPS 10,000 LB VEHICLE AT 48 MPH AND STOPS 13,200 LB VEHICLE AT 38 MPH
	CRASH BEAM BARRICADE		EA	\$46,080.00	K4/L2 RATED, HYDRAULIC, CONCRETE BOLLARD MOUNTED, REMOTE CONTROL PANEL, STOPS 15,000 LB VEHICLE AT 30 MPH
	CRASH CABLE BEAM BARRICADE SWING GATE, MANUALLY OPERATED		EA	\$12,280.00	K4/L2 RATED, MANUAL HORIZONTAL SWING CRASH BEAM BARRIER, CONCRETE BOLLARD MOUNTED, STOPS 10,000 LB VEHICLE AT 15 MPH
	CABLE BEAM BARRICADE, HYDRAULIC		EA	\$40,960.00	K4/L2 RATED, HYDRAULIC, CONCRETE BOLLARD MOUNTED, STOPS 10,000 LB VEHICLE AT 15 MPH
	CRASH BEAM BARRICADE, HYDRAULIC		EA	\$51,210.00	K4/L2 RATED, HYDRAULIC, CONCRETE BOLLARD MOUNTED, STOPS 15,000 LB VEHICLE AT 30 MPH
	SLIDING LINEAR CRASH GATE		EA	\$63,490.00	K4/L2 RATED, 9' HIGH x 12' WIDE CLEAR OPENING GATE WITH GROUND TRACK, LINEAR GATE OPERATOR, REMOTE CONTROL PANEL, STOP-GO SIGNAL LIGHTS, STOPS 15,000 LB VEHICLE AT 50 MPH
	MANUAL CRASH SWING GATE		EA	\$15,360.00	9' HIGH x 12' WIDE CLEAR OPENING GATE
	HYDRAULIC ROLLING CRASH GATE		EA	\$49,150.00	9' HIGH x 12' WIDE CLEAR OPENING GATE, GATE LEAF LINEAR SLIDE ASSEMBLY, DRIVE SIDE GATE LEAF SUPPORTS AND GUIDES, LINEAR GATE OPERATOR, HYDRUALIC PUMP DRIVEN RACK AND PINION OPERATOR, REMOTE CONTROL PANEL, STOP-GO SIGNAL LIGHTS
	SLIDING CANTILEVER CRASH GATE		EA	\$54,270.00	9' HIGH x 12' WIDE CLEAR OPENING GATE, GATE LEAF LINEAR SLIDE ASSEMBLY, DRIVE SIDE GATE LEAF SUPPORTS AND GUIDES, LINEAR GATE OPERATOR, HYDRUALIC PUMP DRIVEN RACK AND PINION OPERATOR, REMOTE CONTROL PANEL, STOP-GO SIGNAL LIGHTS. THIS GATE DOES NOT NEED T
	PASSIVE VEHICLE BARRIER, SURFACE MOUNTED SABRE TOOTH CONTROLLER		EA	\$615.00	SURFACE MOUNTED TIRE SPIKES, 3' WIDE, MANUALLY OPERATED



CHART A To Appendix A, Part II PIPING - SITEWORK UTILITIES (Catcodes 82410, 83210, 84210 87110)								
SIZE in INCHES	UNIT	BLACK STEEL U/C 2010	Notes	SIZE in INCHES	UNIT	PVC U/C 2010		
1	LF	\$12.70	BLACK STEEL, SCHEDULE 40, WELDED	1	LF	\$6.70		
2	LF	\$18.40		2	LF	\$10.20		
3	LF	\$22.80		3	LF	\$13.40		
4	LF	\$28.00		4	LF	\$20.30		
6	LF	\$34.50		6	LF	\$26.40		
10	LF	\$75.30		10	LF	\$33.20		
12	LF	\$107.60						
18	LF	\$141.90						
24	LF	\$240.80						
SIZE in INCHES	UNIT	CORRUGATED METAL U/C 2010		SIZE in INCHES	UNIT	HDPE U/C 2010		
				4	LF	\$8.50		
6	LF	\$11.60	CORRUGATED METAL PIPING	6	LF	\$14.30		
10	LF	\$18.00		10	LF	\$20.70		
12	LF	\$21.40		12	LF	\$30.90		
18	LF	\$30.20		18	LF	\$52.20		
24	LF	\$50.30		24	LF	\$85.20		
36	LF	\$83.10						
60	LF	\$210.40						
SIZE in INCHES	UNIT	DUCTILE IRON U/C 2010		SIZE in INCHES	UNIT	CONCRETE 2010		
						PLAIN	REINF	
4	LF	\$21.30	DUCTILE IRON PIPING					
6	LF	\$24.30						
10	LF	\$42.70						
12	LF	\$54.40		6	LF	\$16.20		
18	LF	\$95.40		10	LF	\$18.90		
24	LF	\$128.40		12	LF	\$21.00	\$27.20	
				18	LF	\$33.30	\$38.50	
				24	LF	\$38.50	\$49.80	
				36	LF		\$126.80	
				60	LF		\$197.70	
SIZE in INCHES	UNIT	REINFORCED PLASTIC U/C		SIZE in INCHES	UNIT	VITRIFIED CLAY		
						STANDARD STRENGTH	STD STRENGTH	
3	LF	\$11.00	REINFORCED PLASTIC PIPING					
4	LF	\$19.80						
6	LF	\$24.20		4	LF	\$8.10	\$9.30	
10	LF	\$55.00		6	LF	\$11.30	\$12.40	
12	LF	\$67.40		10	LF	\$19.90	\$23.10	
				12	LF	\$23.70	\$26.20	
				18	LF	\$51.60	\$62.90	
				24	LF	\$105.20	\$125.30	
				36	LF	\$214.50	\$238.90	

NOTES:

1. Corrugated metal piping, galvanized 16 gage upto 18", 14 gage for 24", and 12 gage upto 60"
2. Ductile iron, cement lined, class 50 water pipe, 18" in length, and mechanical joint
3. Reinforced plastic, fiberglass reinforced, plain end pipe
4. PVC, schedule 40, class 150 pipe
5. Cost includes furnishing and installing pipes only; trenching, bedding, backfilling & compaction must be added
6. For cathodic protection, if required, add 14% of total piping cost

**UNIT COSTS for ARMY FACILITIES**  
**PAX Newsletter 3.2.2, Dated 15 Sep 2010**

**CHART C. METRIC/ENGLISH SYSTEMS**

<b>QUANTITY</b>	<b>FROM</b>	<b>MULTIPLY BY</b>	<b>TO OBTAIN</b>	
LENGTH	inch	25.400000	millimeter	
	foot	0.304800	meter	
	yard	0.914400	meter	
	mile (U.S. Status)	1.609344	kilometer	
	millimeter	0.039370	inch	
	meter	3.280840	foot	
	meter	1.093613	yard	
	kilometer	0.621370	mile	
AREA	square inch	645.160300	square millimeter	
	square foot	0.092903	square meter	
	square yard	0.836127	square meter	
	square mile	2.589998	square kilometer	
	acre	4046.873000	square meter	
	acre	0.404687	hectare	
	square millimeter	0.001550	square inch	
	square meter	10.763910	square foot	
	square meter	1.195990	square yard	
	square kilometer	0.386101	square mile	
	square meter	0.000247	acre	
	hectare	2.471044	acre	
VOLUME	cubic inch	16387.060000	cubic millimeter	
	cubic foot	0.028316	cubic meter	
	cubic yard	0.764555	cubic meter	
	gallon (U.S. liquid)	3.785412	liter	
	quart (U.S. liquid)	0.946353	liter	
	cubic millimeter	0.000061	cubic inch	
	cubic meter	35.314662	cubic foot	
	cubic meter	1.307951	cubic yard	
	liter	0.264172	gallon	
	liter	1.056688	quart	
	MASS	ounce (avoirdupois)	28.349520	gram
		pound (avoirdupois)	0.453592	kilogram
		short ton	907.185000	kilogram
		gram	0.035273	ounce
kilogram		2.204622	pound	
kilogram		0.001102	short ton	
<b>ENERGY, HEAT AND WORK</b>				
POWER	kilowatthour	3.600000	megajoule	
	btu	1.055056	kilojoule	
	horsepower hour	2.684520	megajoule	
	megajoule	0.277780	kilowatthour	
	kilojoule	0.947817	btu	
	megajoule	0.372506	horsepower hour	
	ton (refrigeration)	3.517000	kw	
	btu/s	1.055056	kw	
POWER	hp (electric)	745.700000	w	
	btu/h	0.293071	w	
	kw	0.284333	ton (refrigeration)	
	kw	0.947817	btu/s	
	w	0.001341	hp (electric)	
	w	3.412141	btu/h	

**APPENDIX C To TM 5-800-4 (UFC 3-701- 01A) , PAX Newsletter 3.2.2, Dated 15 Sep 2010**  
**TRI-SERVICE MILITARY CONSTRUCTION PROGRAM (MCP) INDEX Based on OSD Escalation Rate, Dated 11 Dec 09**  
**FOR FY 2010 THRU FY 2016 PROGRAMS**

<u>FISCAL YEAR (FY)</u>	<u>DATES</u>	<u>INDEX</u>	<u>ESCALATION PERCENTAGE FOR FISCAL YEAR</u>
<b>FY 2009</b>	<b>1-Oct- 2008</b> -----	<b>2454</b>	----- <b>FY09</b>
	1-Jan- 2009 -----	2462	
	1-Apr- 2009 -----	2469	
	1-Jul- 2009 -----	2476	
<b>FY 2010</b>	<b>1-Oct- 2009</b> -----	<b>2483</b>	----- <b>FY10 (1.2%)</b>
	1-Jan- 2010 -----	2493	
	1-Apr- 2010 -----	2502	
	1-Jul- 2010 -----	2511	
<b>FY 2011</b>	<b>1-Oct- 2010</b> -----	<b>2520</b>	----- <b>FY11 (1.5%)</b>
	1-Jan- 2011 -----	2531	
	1-Apr- 2011 -----	2542	
	1-Jul- 2011 -----	2553	
<b>FY 2012</b>	<b>1-Oct- 2011</b> -----	<b>2563</b>	----- <b>FY12 (1.7%)</b>
	1-Jan- 2012 -----	2574	
	1-Apr- 2012 -----	2585	
	1-Jul- 2012 -----	2596	
<b>FY 2013</b>	<b>1-Oct- 2012</b> -----	<b>2607</b>	----- <b>FY13 (1.7%)</b>
	1-Jan- 2013 -----	2618	
	1-Apr- 2013 -----	2629	
	1-Jul- 2013 -----	2640	
<b>FY 2014</b>	<b>1-Oct- 2013</b> -----	<b>2651</b>	----- <b>FY14 (1.7%)</b>
	1-Jan- 2014 -----	2663	
	1-Apr- 2014 -----	2674	
	1-Jul- 2014 -----	2685	
<b>FY 2015</b>	<b>1-Oct- 2014</b> -----	<b>2696</b>	----- <b>FY15 (1.7%)</b>
	1-Jan- 2015 -----	2708	
	1-Apr- 2015 -----	2719	
	1-Jul- 2015 -----	2731	
<b>FY 2016</b>	<b>1-Oct- 2015</b> -----	<b>2742</b>	----- <b>FY16 (1.7%)</b>
	1-Jan- 2016 -----	2754	
	1-Apr- 2016 -----	2766	
	1-Jul- 2016 -----	2778	
<b>FY 2017</b>	<b>1-Oct- 2016</b> -----	<b>2789</b>	----- <b>FY17 (1.7%)</b>

**Notes**

1. Use **1.7%** per fiscal year for projection beyond FY **2016**
2. Tri - Service MCP Index (1,000) = 1 October 1979 ENR Historical Building Cost Index (1,900)
3. The MCP indexes after 1 Oct 2009 were derived using Price Escalation Indices (Annual Rates in Percentages) for Budget Authority published in the Under Secretary of Defense (Comptroller) Memorandum, dated 11 Dec 2009, Subject: Revised Inflation Guidance - Fiscal Year (FY) 2011 President's Budget.
4. This revised index table supersedes the MCP index table published as Appendix-C to PAX Newsletter 3.2.2, dated **20 Mar 2009**

**UNIT COSTS for ARMY FACILITIES**  
**PAX Newsletter 3.2.2, dated 15 Sep 10**

**TABLE I - SIZE ADJUSTMENT FACTORS**

**PART I - BUILDING (OTHER THAN BARRACKS & FAMILY HOUSING)**

<u>SIZE RATIO</u>	<u>ADJUST FACTOR</u>	<u>SIZE RATIO</u>	<u>ADJUST FACTOR</u>	<u>SIZE RATIO</u>	<u>ADJUST FACTOR</u>	<u>SIZE RATIO</u>	<u>ADJUST FACTOR</u>
< 0.05	1.2750	0.9000	1.0110	1.8000	0.9490	2.7000	0.9250
0.0500	1.2750	0.9500	1.0050	1.8500	0.9470	2.7500	0.9240
0.1000	1.2690	1.0000	1.0000	1.9000	0.9450	2.8000	0.9240
0.1500	1.2320	1.0500	0.9950	1.9500	0.9430	2.8500	0.9230
0.2000	1.2020	1.1000	0.9900	2.0000	0.9420	2.9000	0.9220
0.2500	1.1750	1.1500	0.9860	2.0500	0.9400	2.9500	0.9210
0.3000	1.1520	1.2000	0.9820	2.1000	0.9390	3.0000	0.9210
0.3500	1.1320	1.2500	0.9780	2.1500	0.9370	3.0500	0.9200
0.4000	1.1140	1.3000	0.9740	2.2000	0.9360	>3.05	0.9200
0.4500	1.0980	1.3500	0.9710	2.2500	0.9350		
0.5000	1.0840	1.4000	0.9680	2.3000	0.9330		
0.5500	1.0720	1.4500	0.9650	2.3500	0.9320		
0.6000	1.0600	1.5000	0.9620	2.4000	0.9310		
0.6500	1.0500	1.5500	0.9600	2.4500	0.9300		
0.7000	1.0410	1.6000	0.9570	2.5000	0.9290		
0.7500	1.0330	1.6500	0.9550	2.5500	0.9280		
0.8000	1.0250	1.7000	0.9530	2.6000	0.9270		
0.8500	1.0180	1.7500	0.9510	2.6500	0.9260		

NOTE: Size ratio is determined by dividing the proposed building size by the average size shown in Part I of Appendix A. To determine the size adjustment factor, use the closest size ratio from above table.

**PART II - PROJECT SIZE ADJUSTMENTS FOR BARRACKS/FAMILY HOUSING**

<b>MILITARY FAMILY HOUSING PROJECT SIZE ADJUSTMENT FACTORS</b>		<b>BARRACKS/ DORMITORIES PROJECT SIZE ADJUSTMENT FACTORS</b>	
<b>NUMBER OF UNITS in the project</b>	<b>PROJECT SIZE FACTOR</b>	<b>NUMBER OF ROOMS in the project</b>	<b>PROJECT SIZE FACTOR</b>
1-9	1.25	1-99	1.07
10-19	1.15	100-149	1.03
20-49	1.10	150-199	1.00
50-99	1.04	200-299	0.97
100-199	1.00	300+	0.95
200-299	0.93		
300+	0.90		