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ATTACHMENT J-0200000-01
DEFINITIONS AND ACRONYMS

Definition	Description
Assessment	A general term referring to either a survey or inspection of a facility to determine condition.
Asset	A general term used to refer to an item, such as a component, system, building or facility, which is managed by an automated data management program.
Business Management System (BMS)	A web-based tool that provides a systematic method for the management of business processes, common practices, and process quality improvements that produce and support the most efficient and effective delivery of NAVFAC's products and services.
Competent Person	A person who has the professional experience and training necessary to identify existing and predictable hazards at a work or service environment, and who has the authority to take prompt and corrective action to eliminate or remove dangers from the environment. One who can identify existing and predictable hazards in the working environment or working conditions that are dangerous to personnel and who has authorization to take prompt corrective measures to eliminate them.
Component Inventory Management Unit (CIMU)	An organization of like-kind real property into manageable maintenance units. CIMU is a building component, group of components or component assemblies, serving a specific purpose in a facility that can be expected to follow a common and predictable lifecycle behavior. This class of non-equipment will include items such as exterior walls, exterior windows, interior finish, and roofs. This class of equipment will include items such as fan coil units, air handling units, lighting, and water closets. CIMUs can include one or more items of installed equipment typically subject to routine scheduled maintenance.
Confined Work Space	A space that is large enough and so configured that a person may bodily enter a space (such as in tanks, vessels, silos, storage bins, hoppers, vaults, pits, and like spaces where there is limited means of entry) and is hindered or restricted from escaping during an emergency.
Contracting Officer (KO)	That individual with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer.
Contracting Officer's Representative (COR)	The individual appointed by the KO responsible for monitoring the Contractor's technical compliance and progress, relative to assigned contract(s)/orders(s), based on the contract requirements specified in the PWS and in accordance with the PAP. The COR performs a variety of contract administration duties that includes oversight of PA, documenting and rating Contractor performance, reviewing invoices, and acceptance of work. Assignment as a COR is a collateral duty typically performed by the FSCM or SPAR.
Contractor	That entity or its representative responsible for the delivery of the services or materials specified in this contract, as designated by contract award. The term Contractor as used herein refers to both the prime Contractor and any subcontractors. The prime Contractor shall insure that subcontractors comply with the provision of this contract.
Contractor Representative	That individual appointed by the Contractor, either orally or in writing, who has been assigned responsibility for executing the requirements of this contract.
Direct Material Costs	The actual vendor invoice charges for materials used for performance of work under this contract. Direct material costs shall include transportation charges when such charges are included on the invoice by the vendor, as well as any discounts allowed for prompt payment and discounts or rebates for core value or salvage value that accrue to the Contractor. When questions arise concerning the cost of materials, material costs will be based on the lowest of quotes provided by the Contractor from at least three different commercial vendors for the direct material cost. The Government retains the right to obtain additional quotes in questionable situations. The lowest price will be used.

ATTACHMENT J-0200000-01
DEFINITIONS AND ACRONYMS

Definition	Description
Electronic Operation And Maintenance And Support Information (eOMSI)	A set of consultant-prepared data and document files that contain detailed, as-built technical information that describes the efficient, economical and safe operation, maintenance and repair of a facility, plant, equipment or system throughout its life cycle. Generally it is prepared during construction and submitted upon completion of a new facility or major facility upgrade. eOMSI's typically include asset information, staffing and budgeting information, supply support including critical spare parts, operating procedures, troubleshooting and diagnostic guides, extended warranty data, maintenance task frequencies and documentation, technical data, repair procedures and manufacturer's product data. eOMSI data and document files are provided in electronic formats.
Equipment	Tangible asset that is functionally complete for its intended purpose, durable, and non-expendable.
Facility	A building or structure designed and created to serve a particular function.
Fixed Burden Rate (FBR)	<p>The additional costs (expressed in percent of direct material cost) for ordering, handling, and stockpiling materials and repair parts. For example, if the offeror's Fixed Burden Rate for materials in the Base Period is 10% then:</p> $\$100,000.00 + (\$100,000.00 \times 10\%) = \$110,000.00$ <p>The Government will compensate the Contractor for the required parts and materials and not the total amount shown in Schedule of Indefinite Delivery Indefinite Quantity Work.</p>
Frequency Of Service	<p>Annual (A). Services performed once during each 12-month period of the contract at intervals of 335 to 395 days.</p> <p>Biennial (B). Services performed once during each 24-month period of the contract at intervals of 670 to 790 days.</p> <p>Daily (D5). Services performed once each calendar day, Monday through Friday, including holidays unless otherwise noted.</p> <p>Daily (D7). Services performed once each calendar day, seven days per week, including weekends and holidays.</p> <p>Monthly (M). Services performed 12 times during each 12-month period of the contract at intervals of 28 to 31 calendar days.</p> <p>Quarterly (Q). Services performed four times during each 12-month period of the contract at intervals of 80 to 100 calendar days.</p> <p>Semiannual (SA). Services performed twice during each 12-month period of the contract at intervals of 160 to 200 calendar days.</p> <p>Semimonthly (SM). Services performed 24 times during each 12-month period of the contract at intervals of 14 to 16 calendar days.</p> <p>Three times weekly (3W). Services performed three times a week, such as Monday, Wednesday, and Friday.</p> <p>Twice weekly (2W). Services performed twice a week, such as Monday and Thursday or Tuesday and Friday.</p> <p>Weekly (W). Services performed 52 times during each 12-month period of the contract at intervals of six to eight calendar days.</p>
Government Furnished Property (GFP)	Property in the possession of, or directly acquired by, the Government and subsequently furnished to the contractor for performance of a contract. Government furnished property includes, but is not limited to, spares and property furnished for repairs, maintenance, overhaul, or modification. Government furnished property also includes contractor acquired property if the contractor acquired property is a deliverable under a cost contract when accepted by the Government for continued use under the contract.
Infrastructure Condition Assessment Program (ICAP)	A Navy automated data management program that utilizes historical asset lifecycle data and a structured assessment process to evaluate the condition facilities and their components.

ATTACHMENT J-0200000-01
DEFINITIONS AND ACRONYMS

Definition	Description
Inspection	A rigorous, detailed assessment of the condition of a facility performed to generate a fundable scope and cost estimate for prioritization and funding of maintenance and repair.
Job or Work Order	An authorization for work that requires planning and estimating and has an individual line of accounting for financial and performance evaluation.
Load Handling Equipment	A term used to describe cranes, hoists and all other hoisting equipment (hoisting equipment means equipment, including crane, derricks, hoists and power operated equipment used WITH RIGGING to raise, lower and/or horizontally move a load.
Maintenance And Repair	The preservation or restoration of a piece of equipment, system, or facility to such condition that it may be effectively used for its designated purposes. Maintenance/repair may be adjustment, overhaul, reprocessing, or replacement of constituent parts or materials that are missing or have deteriorated by action of the elements or usage, or replacement of the entire unit or system if beyond economical repair.
NAVFAC MAXIMO	A specially configured software version of MAXIMO®, a commercially available computerized maintenance management system (CMMS), adopted by NAVFAC for enterprise facility asset data management. The terms "MAXIMO", "NAVFAC MAXIMO" or "Government's MAXIMO" shall be used interchangeably in the document.
Performance Assessment	A method used by the Government to provide some measure of control over the quality of purchased goods and services received.
Performance Assessment Representative (PAR)	The individual(s) assigned as a Technical Point of Contact (TPOC) / Subject Matter Expert (SME) to the COR to perform duties as the on-site representative who assesses Contractor performance. The PAR periodically observes Contractor performance, reviews delivered services, reviews quality management corrective actions, periodically assesses and documents Contractor performance on PAWs and the MPAS, and communicates findings as necessary with the Contractor, SPAR, and COR.
Pre-Expended Bin Materials And Supplies	The minor materials and supplies that are incidental to the job, for which the total direct cost of any one material line item shown on the material estimate is \$10.00 or less. Examples of pre-expended bin materials and supplies include, but are not limited to, solder, lead, flux, electrical connectors, electrical tape, fuses, nails, screws, bolts, nuts, washers, spacers, masking tape, sand paper, solvent, cleaners, lubricants, grease, oil, rags, mops, glue, epoxy, spackling compound, joint tape, plumbers tape and compound, clips, welding rods, and touch up paint.
Property Administrator	An authorized representative of the Contracting Officer who is responsible for administering contract property requirements, terms and conditions of the contract
Property Management Program	A Government program established for the purpose of reviewing and approving the Contractor's Property Management Plan and System through performance of a system analysis whenever government property is in the possession of the Contractor.
Quality Assurance (QA)	The planned and systematic activities implemented in a quality system so that quality requirements for a product or service will be fulfilled.
Quality Control (QC)	The observation techniques and activities used to fulfill requirements for quality.
R. S. Means	A data collection and organization system developed by R. S. Means Company which can be used to prepare accurate, dependable construction estimates and budgets in a variety of ways. The Contractor shall use the latest edition. Material prices are based on a national average and computed labor costs are based on a 30-city national average. An estimate prepared using this data is called a "Means estimate"; data may simply be referred to as "Means".
Real Property Inventory Equipment (RPIE)	A Government owned or leased individual pieces of equipment, apparatus, or fixture that are essential to the function of the real property (i.e. plumbing, electrical, heating, cooling and elevators). It is physically attached to, integrated into, and built in or on the property. Individual RPIE's can be combined to make a CIMU to facilitate facilities management. An individual RPIE can also be a CIMU if the equipment is complex enough to require its own management planning.

ATTACHMENT J-0200000-01
DEFINITIONS AND ACRONYMS

Definition	Description
Response Time	The time allowed the Contractor after initial notification of a work requirement to be physically on the premises at the work site with appropriate personnel, tools, equipment, and materials, ready to perform the work required.
Unit Priced Labor (UPL) Hour	The unit price bid by the Contractor to perform one hour of work-in-place. With the exception of direct material and construction equipment costs, the unit price includes all indirect and direct costs associated with performing work. The price includes the Contractor's hourly composite trade wage, adjusted to allow for workforce productivity; costs for pre-expended bin materials, union agreements, crew sizes, hand tools, payroll burdens and fringes, overtime, job (field) overhead (including clerical support, supervision, inspection, fees, taxes, licenses, permits, and insurance), general and administrative (home office) overhead, and profit. Additionally, time for job preparation, safety standby personnel, and similar indirect labor elements are included.

ATTACHMENT J-0200000-01
DEFINITIONS AND ACRONYMS

Acronym	Title
ACO	Administrative Contracting Officer
BW	Biweekly
CDR	Contract Discrepancy Report
CIA	Controlled Industrial Area
CIMU	Component Inventory Management Unit
CMMS	Computerized Maintenance Management System
COR	Contracting Officer Representative
COR	Condition of Readiness
DBH	Diameter at Breast Height
DCR	Direct Condition Rating
DoD	Department of Defense
DoN	Department of Navy
DRMO	Defense Reutilization Management Office
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
FAR	Federal Acquisition Regulation
FFP	Firm Fixed Price
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FSC	Facility Support Contract
FSCM	Facility Support Contract Manager
GIS	Geospatial Information System
GFE	Government-furnished Equipment
GFF	Government-furnished Facilities
GFM	Government-furnished Materials
HCA	Head Contracting Agency
ICAP	Infrastructure Condition Assessment Program
ICP	Integrated Contingency Plan
IDIQ	Indefinite Delivery Indefinite Quantity
iNFADS	Internet Navy Facilities Asst Data Store
IPM	Integrated Pest Management
IPMIS	Integrated Pest Management Information System
IPMP	Integrated Pest Management Plan
KO	Contracting Officer
LAN	Local Area Network
M	Monthly
MAP	Maintenance Action Plan
MDI	Mission Dependency Index
MEP	Mechanical, Electrical and Plumbing
MPAS	Monthly Performance Assessment Summary
MRI	Mission Readiness Index
MSDS	Material Safety Data Sheets
NAVFAC	Naval Facilities Engineering Command
NMCI	Navy Marine Corps Intranet
NOSC	Navy-On-Scene Coordinator
PAP	Performance Assessment Plan
PAR	Performance Assessment Representative
PAW	Performance Assessment Worksheet
PEO	Program Executive Officer
PM	Project Manager
PM	Planned Maintenance or Preventative Maintenance

ATTACHMENT J-0200000-01
DEFINITIONS AND ACRONYMS

Acronym	Title
PRCSP	Permit Required Confined Space Program
PWS	Performance Work Statement
PWO	Public Works Officer
Q	Quarterly
QC	Quality Control
RPIE	Real Property Inventory Equipment
RSL	Remaining Service Life
SC	Security Clearances
SM	Semimonthly
SPAR	Senior Performance Assessment Representative
TE	Technical Exhibit
VIQ	Variation in Quantity
WBS	Work Breakdown Structure

**ATTACHMENT J-0200000-02
WAGE DETERMINATIONS (SCA)**

WD 05-2393 (Rev.-17) was first posted on www.wdol.gov on 07/14/2015

REGISTER OF WAGE DETERMINATIONS UNDER
THE SERVICE CONTRACT ACT
By direction of the Secretary of Labor

U.S. DEPARTMENT OF LABOR
EMPLOYMENT STANDARDS ADMINISTRATION
WAGE AND HOUR DIVISION
WASHINGTON D.C. 20210

Daniel W. Simms Division of
Director Wage Determinations

Wage Determination No.: 2005-2393
Revision No.: 17
Date Of Revision: 07/08/2015

Note: Executive Order (EO) 13658 establishes an hourly minimum wage of \$10.10 for 2015 that applies to all contracts subject to the Service Contract Act for which the solicitation is issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.10 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

States: North Carolina, South Carolina

Area: North Carolina Counties of Beaufort, Bladen, Brunswick, Carteret, Columbus, Craven, Cumberland, Dare, Duplin, Greene, Harnett, Hoke, Hyde, Johnston, Jones, Lee, Lenoir, Martin, Moore, New Hanover, Onslow, Pamlico, Pender, Pitt, Richmond, Robeson, Sampson, Scotland, Tyrrell, Washington, Wayne, Wilson
South Carolina Counties of Dillon, Horry, Marion, Marlboro

Fringe Benefits Required Follow the Occupational Listing

OCCUPATION CODE - TITLE	FOOTNOTE	RATE
01000 - Administrative Support And Clerical Occupations		
01011 - Accounting Clerk I		12.40
01012 - Accounting Clerk II		14.00
01013 - Accounting Clerk III		15.65
01020 - Administrative Assistant		19.33
01040 - Court Reporter		14.47
01051 - Data Entry Operator I		11.58
01052 - Data Entry Operator II		12.64
01060 - Dispatcher, Motor Vehicle		16.32
01070 - Document Preparation Clerk		11.40
01090 - Duplicating Machine Operator		11.40
01111 - General Clerk I		11.48
01112 - General Clerk II		12.53
01113 - General Clerk III		14.06
01120 - Housing Referral Assistant		17.94
01141 - Messenger Courier		10.81
01191 - Order Clerk I		11.60
01192 - Order Clerk II		12.66
01261 - Personnel Assistant (Employment) I		13.15
01262 - Personnel Assistant (Employment) II		14.71
01263 - Personnel Assistant (Employment) III		18.35
01270 - Production Control Clerk		17.84
01280 - Receptionist		10.77
01290 - Rental Clerk		11.75
01300 - Scheduler, Maintenance		12.79
01311 - Secretary I		12.79
01312 - Secretary II		14.47
01313 - Secretary III		17.94
01320 - Service Order Dispatcher		11.54
01410 - Supply Technician		19.33
01420 - Survey Worker		13.16
01531 - Travel Clerk I		11.20

01532 - Travel Clerk II	11.93
01533 - Travel Clerk III	12.67
01611 - Word Processor I	12.41
01612 - Word Processor II	13.92
01613 - Word Processor III	15.58
05000 - Automotive Service Occupations	
05005 - Automobile Body Repairer, Fiberglass	19.71
05010 - Automotive Electrician	19.33
05040 - Automotive Glass Installer	17.76
05070 - Automotive Worker	17.76
05110 - Mobile Equipment Servicer	15.82
05130 - Motor Equipment Metal Mechanic	19.71
05160 - Motor Equipment Metal Worker	17.76
05190 - Motor Vehicle Mechanic	19.71
05220 - Motor Vehicle Mechanic Helper	14.83
05250 - Motor Vehicle Upholstery Worker	16.17
05280 - Motor Vehicle Wrecker	17.76
05310 - Painter, Automotive	18.99
05340 - Radiator Repair Specialist	17.76
05370 - Tire Repairer	11.68
05400 - Transmission Repair Specialist	19.71
07000 - Food Preparation And Service Occupations	
07010 - Baker	13.08
07041 - Cook I	11.58
07042 - Cook II	13.08
07070 - Dishwasher	8.48
07130 - Food Service Worker	8.48
07210 - Meat Cutter	13.62
07260 - Waiter/Waitress	9.32
09000 - Furniture Maintenance And Repair Occupations	
09010 - Electrostatic Spray Painter	17.05
09040 - Furniture Handler	11.47
09080 - Furniture Refinisher	17.05
09090 - Furniture Refinisher Helper	13.34
09110 - Furniture Repairer, Minor	15.17
09130 - Upholsterer	17.05
11000 - General Services And Support Occupations	
11030 - Cleaner, Vehicles	8.90
11060 - Elevator Operator	8.90
11090 - Gardener	13.69
11122 - Housekeeping Aide	9.40
11150 - Janitor	9.40
11210 - Laborer, Grounds Maintenance	10.22
11240 - Maid or Houseman	8.05
11260 - Pruner	9.16
11270 - Tractor Operator	12.44
11330 - Trail Maintenance Worker	10.22
11360 - Window Cleaner	10.49
12000 - Health Occupations	
12010 - Ambulance Driver	14.47
12011 - Breath Alcohol Technician	15.98
12012 - Certified Occupational Therapist Assistant	23.49
12015 - Certified Physical Therapist Assistant	23.49
12020 - Dental Assistant	15.81
12025 - Dental Hygienist	29.84
12030 - EKG Technician	24.17
12035 - Electroneurodiagnostic Technologist	24.17
12040 - Emergency Medical Technician	14.47
12071 - Licensed Practical Nurse I	14.29
12072 - Licensed Practical Nurse II	15.98
12073 - Licensed Practical Nurse III	17.83
12100 - Medical Assistant	12.14
12130 - Medical Laboratory Technician	17.08
12160 - Medical Record Clerk	12.81
12190 - Medical Record Technician	14.33
12195 - Medical Transcriptionist	15.43
12210 - Nuclear Medicine Technologist	33.19
12221 - Nursing Assistant I	9.44
12222 - Nursing Assistant II	10.61
12223 - Nursing Assistant III	11.58
12224 - Nursing Assistant IV	12.99

12235 - Optical Dispenser	15.99
12236 - Optical Technician	14.25
12250 - Pharmacy Technician	17.03
12280 - Phlebotomist	12.99
12305 - Radiologic Technologist	23.06
12311 - Registered Nurse I	22.96
12312 - Registered Nurse II	28.09
12313 - Registered Nurse II, Specialist	28.09
12314 - Registered Nurse III	33.98
12315 - Registered Nurse III, Anesthetist	33.98
12316 - Registered Nurse IV	40.72
12317 - Scheduler (Drug and Alcohol Testing)	20.57
13000 - Information And Arts Occupations	
13011 - Exhibits Specialist I	16.27
13012 - Exhibits Specialist II	20.17
13013 - Exhibits Specialist III	24.67
13041 - Illustrator I	16.27
13042 - Illustrator II	20.17
13043 - Illustrator III	24.67
13047 - Librarian	22.33
13050 - Library Aide/Clerk	11.32
13054 - Library Information Technology Systems Administrator	20.17
13058 - Library Technician	15.22
13061 - Media Specialist I	14.61
13062 - Media Specialist II	16.27
13063 - Media Specialist III	18.15
13071 - Photographer I	14.21
13072 - Photographer II	15.85
13073 - Photographer III	19.62
13074 - Photographer IV	23.41
13075 - Photographer V	28.34
13110 - Video Teleconference Technician	16.35
14000 - Information Technology Occupations	
14041 - Computer Operator I	14.20
14042 - Computer Operator II	15.88
14043 - Computer Operator III	18.75
14044 - Computer Operator IV	19.68
14045 - Computer Operator V	21.79
14071 - Computer Programmer I	(see 1) 22.75
14072 - Computer Programmer II	(see 1)
14073 - Computer Programmer III	(see 1)
14074 - Computer Programmer IV	(see 1)
14101 - Computer Systems Analyst I	(see 1)
14102 - Computer Systems Analyst II	(see 1)
14103 - Computer Systems Analyst III	(see 1)
14150 - Peripheral Equipment Operator	14.20
14160 - Personal Computer Support Technician	19.68
15000 - Instructional Occupations	
15010 - Aircrew Training Devices Instructor (Non-Rated)	30.58
15020 - Aircrew Training Devices Instructor (Rated)	36.99
15030 - Air Crew Training Devices Instructor (Pilot)	41.77
15050 - Computer Based Training Specialist / Instructor	30.11
15060 - Educational Technologist	25.36
15070 - Flight Instructor (Pilot)	41.77
15080 - Graphic Artist	21.52
15090 - Technical Instructor	18.45
15095 - Technical Instructor/Course Developer	22.57
15110 - Test Proctor	14.89
15120 - Tutor	14.89
16000 - Laundry, Dry-Cleaning, Pressing And Related Occupations	
16010 - Assembler	8.27
16030 - Counter Attendant	8.27
16040 - Dry Cleaner	10.20
16070 - Finisher, Flatwork, Machine	8.27
16090 - Presser, Hand	8.27
16110 - Presser, Machine, Drycleaning	8.27
16130 - Presser, Machine, Shirts	8.27
16160 - Presser, Machine, Wearing Apparel, Laundry	8.27
16190 - Sewing Machine Operator	10.85
16220 - Tailor	11.49

16250 - Washer, Machine	8.90
19000 - Machine Tool Operation And Repair Occupations	
19010 - Machine-Tool Operator (Tool Room)	20.22
19040 - Tool And Die Maker	22.18
21000 - Materials Handling And Packing Occupations	
21020 - Forklift Operator	12.45
21030 - Material Coordinator	17.84
21040 - Material Expediter	17.84
21050 - Material Handling Laborer	10.32
21071 - Order Filler	10.09
21080 - Production Line Worker (Food Processing)	12.45
21110 - Shipping Packer	13.41
21130 - Shipping/Receiving Clerk	13.41
21140 - Store Worker I	11.35
21150 - Stock Clerk	15.84
21210 - Tools And Parts Attendant	12.45
21410 - Warehouse Specialist	12.45
23000 - Mechanics And Maintenance And Repair Occupations	
23010 - Aerospace Structural Welder	21.35
23021 - Aircraft Mechanic I	20.34
23022 - Aircraft Mechanic II	21.35
23023 - Aircraft Mechanic III	22.92
23040 - Aircraft Mechanic Helper	15.11
23050 - Aircraft, Painter	19.31
23060 - Aircraft Servicer	17.20
23080 - Aircraft Worker	18.24
23110 - Appliance Mechanic	17.05
23120 - Bicycle Repairer	13.11
23125 - Cable Splicer	23.00
23130 - Carpenter, Maintenance	17.05
23140 - Carpet Layer	16.29
23160 - Electrician, Maintenance	20.76
23181 - Electronics Technician Maintenance I	20.99
23182 - Electronics Technician Maintenance II	22.91
23183 - Electronics Technician Maintenance III	24.22
23260 - Fabric Worker	15.24
23290 - Fire Alarm System Mechanic	17.96
23310 - Fire Extinguisher Repairer	14.25
23311 - Fuel Distribution System Mechanic	18.40
23312 - Fuel Distribution System Operator	14.31
23370 - General Maintenance Worker	16.30
23380 - Ground Support Equipment Mechanic	20.34
23381 - Ground Support Equipment Servicer	17.20
23382 - Ground Support Equipment Worker	18.24
23391 - Gunsmith I	14.13
23392 - Gunsmith II	16.30
23393 - Gunsmith III	18.40
23410 - Heating, Ventilation And Air-Conditioning Mechanic	18.40
23411 - Heating, Ventilation And Air Contditioning Mechanic (Research Facility)	19.42
23430 - Heavy Equipment Mechanic	18.81
23440 - Heavy Equipment Operator	17.31
23460 - Instrument Mechanic	18.40
23465 - Laboratory/Shelter Mechanic	17.41
23470 - Laborer	10.32
23510 - Locksmith	17.05
23530 - Machinery Maintenance Mechanic	20.47
23550 - Machinist, Maintenance	18.40
23580 - Maintenance Trades Helper	13.34
23591 - Metrology Technician I	18.40
23592 - Metrology Technician II	19.42
23593 - Metrology Technician III	20.40
23640 - Millwright	20.34
23710 - Office Appliance Repairer	17.05
23760 - Painter, Maintenance	17.05
23790 - Pipefitter, Maintenance	18.17
23810 - Plumber, Maintenance	17.26
23820 - Pneudraulic Systems Mechanic	18.40
23850 - Rigger	18.40
23870 - Scale Mechanic	16.30

23890 - Sheet-Metal Worker, Maintenance	18.40
23910 - Small Engine Mechanic	16.11
23931 - Telecommunications Mechanic I	23.46
23932 - Telecommunications Mechanic II	24.76
23950 - Telephone Lineman	21.84
23960 - Welder, Combination, Maintenance	18.40
23965 - Well Driller	18.40
23970 - Woodcraft Worker	18.40
23980 - Woodworker	14.25
24000 - Personal Needs Occupations	
24570 - Child Care Attendant	11.68
24580 - Child Care Center Clerk	14.58
24610 - Chore Aide	9.33
24620 - Family Readiness And Support Services Coordinator	13.63
24630 - Homemaker	16.20
25000 - Plant And System Operations Occupations	
25010 - Boiler Tender	19.87
25040 - Sewage Plant Operator	19.00
25070 - Stationary Engineer	20.69
25190 - Ventilation Equipment Tender	14.40
25210 - Water Treatment Plant Operator	19.00
27000 - Protective Service Occupations	
27004 - Alarm Monitor	14.25
27007 - Baggage Inspector	12.21
27008 - Corrections Officer	15.39
27010 - Court Security Officer	16.56
27030 - Detection Dog Handler	14.10
27040 - Detention Officer	15.39
27070 - Firefighter	15.64
27101 - Guard I	12.21
27102 - Guard II	14.10
27131 - Police Officer I	17.27
27132 - Police Officer II	19.18
28000 - Recreation Occupations	
28041 - Carnival Equipment Operator	11.38
28042 - Carnival Equipment Repairer	12.16
28043 - Carnival Equipment Worker	8.90
28210 - Gate Attendant/Gate Tender	12.73
28310 - Lifeguard	11.34
28350 - Park Attendant (Aide)	14.24
28510 - Recreation Aide/Health Facility Attendant	11.10
28515 - Recreation Specialist	14.99
28630 - Sports Official	11.34
28690 - Swimming Pool Operator	18.94
29000 - Stevedoring/Longshoremen Occupational Services	
29010 - Blocker And Bracer	16.04
29020 - Hatch Tender	16.04
29030 - Line Handler	16.04
29041 - Stevedore I	15.00
29042 - Stevedore II	17.13
30000 - Technical Occupations	
30010 - Air Traffic Control Specialist, Center (HFO) (see 2)	35.77
30011 - Air Traffic Control Specialist, Station (HFO) (see 2)	24.66
30012 - Air Traffic Control Specialist, Terminal (HFO) (see 2)	27.16
30021 - Archeological Technician I	15.11
30022 - Archeological Technician II	18.98
30023 - Archeological Technician III	22.25
30030 - Cartographic Technician	22.36
30040 - Civil Engineering Technician	19.11
30061 - Drafter/CAD Operator I	15.11
30062 - Drafter/CAD Operator II	16.96
30063 - Drafter/CAD Operator III	18.98
30064 - Drafter/CAD Operator IV	22.83
30081 - Engineering Technician I	14.39
30082 - Engineering Technician II	16.14
30083 - Engineering Technician III	18.06
30084 - Engineering Technician IV	22.38
30085 - Engineering Technician V	27.38
30086 - Engineering Technician VI	33.12
30090 - Environmental Technician	19.53

30210 - Laboratory Technician	22.43
30240 - Mathematical Technician	22.25
30361 - Paralegal/Legal Assistant I	15.95
30362 - Paralegal/Legal Assistant II	19.77
30363 - Paralegal/Legal Assistant III	24.18
30364 - Paralegal/Legal Assistant IV	29.25
30390 - Photo-Optics Technician	21.48
30461 - Technical Writer I	21.77
30462 - Technical Writer II	26.63
30463 - Technical Writer III	32.22
30491 - Unexploded Ordnance (UXO) Technician I	22.74
30492 - Unexploded Ordnance (UXO) Technician II	27.51
30493 - Unexploded Ordnance (UXO) Technician III	32.97
30494 - Unexploded (UXO) Safety Escort	22.74
30495 - Unexploded (UXO) Sweep Personnel	22.74
30620 - Weather Observer, Combined Upper Air Or (see 2)	18.98
Surface Programs	
30621 - Weather Observer, Senior (see 2)	20.69
31000 - Transportation/Mobile Equipment Operation Occupations	
31020 - Bus Aide	10.37
31030 - Bus Driver	14.98
31043 - Driver Courier	11.73
31260 - Parking and Lot Attendant	8.42
31290 - Shuttle Bus Driver	12.85
31310 - Taxi Driver	9.29
31361 - Truckdriver, Light	12.85
31362 - Truckdriver, Medium	14.80
31363 - Truckdriver, Heavy	16.27
31364 - Truckdriver, Tractor-Trailer	16.27
99000 - Miscellaneous Occupations	
99030 - Cashier	8.14
99050 - Desk Clerk	9.83
99095 - Embalmer	22.74
99251 - Laboratory Animal Caretaker I	10.07
99252 - Laboratory Animal Caretaker II	11.07
99310 - Mortician	22.74
99410 - Pest Controller	13.60
99510 - Photofinishing Worker	11.95
99710 - Recycling Laborer	12.53
99711 - Recycling Specialist	15.25
99730 - Refuse Collector	11.23
99810 - Sales Clerk	11.08
99820 - School Crossing Guard	12.86
99830 - Survey Party Chief	18.64
99831 - Surveying Aide	11.03
99832 - Surveying Technician	15.12
99840 - Vending Machine Attendant	13.63
99841 - Vending Machine Repairer	16.43
99842 - Vending Machine Repairer Helper	13.63

ALL OCCUPATIONS LISTED ABOVE RECEIVE THE FOLLOWING BENEFITS:

HEALTH & WELFARE: \$4.27 per hour or \$170.80 per week or \$740.13 per month

VACATION: 2 weeks paid vacation after 1 year of service with a contractor or successor; 3 weeks after 8 years, and 4 weeks after 20 years. Length of service includes the whole span of continuous service with the present contractor or successor, wherever employed, and with the predecessor contractors in the performance of similar work at the same Federal facility. (Reg. 29 CFR 4.173)

HOLIDAYS: A minimum of ten paid holidays per year, New Year's Day, Martin Luther King Jr's Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day, and Christmas Day. (A contractor may substitute for any of the named holidays another day off with pay in accordance with a plan communicated to the employees involved.) (See 29 CFR 4174)

THE OCCUPATIONS WHICH HAVE NUMBERED FOOTNOTES IN PARENTHESES RECEIVE THE FOLLOWING:

1) COMPUTER EMPLOYEES: Under the SCA at section 8(b), this wage determination does not apply to any employee who individually qualifies as a bona fide executive, administrative, or professional employee as defined in 29 C.F.R. Part 541. Because most Computer System Analysts and Computer Programmers who are compensated at a rate not less than \$27.63 (or on a salary or fee basis at a rate not less than \$455 per week) an hour would likely qualify as exempt computer professionals, (29 C.F.R. 541.400) wage rates may not be listed on this wage determination for all occupations within those job families. In addition, because this wage determination may not list a wage rate for some or all occupations within those job families if the survey data indicates that the prevailing wage rate for the occupation equals or exceeds \$27.63 per hour conformances may be necessary for certain nonexempt employees. For example, if an individual employee is nonexempt but nevertheless performs duties within the scope of one of the Computer Systems Analyst or Computer Programmer occupations for which this wage determination does not specify an SCA wage rate, then the wage rate for that employee must be conformed in accordance with the conformance procedures described in the conformance note included on this wage determination.

Additionally, because job titles vary widely and change quickly in the computer industry, job titles are not determinative of the application of the computer professional exemption. Therefore, the exemption applies only to computer employees who satisfy the compensation requirements and whose primary duty consists of:

(1) The application of systems analysis techniques and procedures, including consulting with users, to determine hardware, software or system functional specifications;

(2) The design, development, documentation, analysis, creation, testing or modification of computer systems or programs, including prototypes, based on and related to user or system design specifications;

(3) The design, documentation, testing, creation or modification of computer programs related to machine operating systems; or

(4) A combination of the aforementioned duties, the performance of which requires the same level of skills. (29 C.F.R. 541.400).

2) AIR TRAFFIC CONTROLLERS AND WEATHER OBSERVERS - NIGHT PAY & SUNDAY PAY: If you work at night as part of a regular tour of duty, you will earn a night differential and receive an additional 10% of basic pay for any hours worked between 6pm and 6am.

If you are a full-time employed (40 hours a week) and Sunday is part of your regularly scheduled workweek, you are paid at your rate of basic pay plus a Sunday premium of 25% of your basic rate for each hour of Sunday work which is not overtime (i.e. occasional work on Sunday outside the normal tour of duty is considered overtime work).

HAZARDOUS PAY DIFFERENTIAL: An 8 percent differential is applicable to employees employed in a position that represents a high degree of hazard when working with or in close proximity to ordnance, explosives, and incendiary materials. This includes work such as screening, blending, dying, mixing, and pressing of sensitive ordnance, explosives, and pyrotechnic compositions such as lead azide, black powder and photoflash powder. All dry-house activities involving propellants or explosives.

Demilitarization, modification, renovation, demolition, and maintenance operations on sensitive ordnance, explosives and incendiary materials. All operations involving regrading and cleaning of artillery ranges.

A 4 percent differential is applicable to employees employed in a position that represents a low degree of hazard when working with, or in close proximity to ordnance, (or employees possibly adjacent to) explosives and incendiary materials which involves potential injury such as laceration of hands, face, or arms of the employee engaged in the operation, irritation of the skin, minor burns and the like; minimal damage to immediate or adjacent work area or equipment being used. All operations involving, unloading, storage, and hauling of ordnance, explosive, and incendiary ordnance material other than small arms ammunition. These differentials are only applicable to work that has been specifically designated by the agency for ordnance, explosives, and incendiary material differential pay.

** UNIFORM ALLOWANCE **

If employees are required to wear uniforms in the performance of this contract

(either by the terms of the Government contract, by the employer, by the state or local law, etc.), the cost of furnishing such uniforms and maintaining (by laundering or dry cleaning) such uniforms is an expense that may not be borne by an employee where such cost reduces the hourly rate below that required by the wage determination. The Department of Labor will accept payment in accordance with the following standards as compliance:

The contractor or subcontractor is required to furnish all employees with an adequate number of uniforms without cost or to reimburse employees for the actual cost of the uniforms. In addition, where uniform cleaning and maintenance is made the responsibility of the employee, all contractors and subcontractors subject to this wage determination shall (in the absence of a bona fide collective bargaining agreement providing for a different amount, or the furnishing of contrary affirmative proof as to the actual cost), reimburse all employees for such cleaning and maintenance at a rate of \$3.35 per week (or \$.67 cents per day). However, in those instances where the uniforms furnished are made of "wash and wear" materials, may be routinely washed and dried with other personal garments, and do not require any special treatment such as dry cleaning, daily washing, or commercial laundering in order to meet the cleanliness or appearance standards set by the terms of the Government contract, by the contractor, by law, or by the nature of the work, there is no requirement that employees be reimbursed for uniform maintenance costs.

The duties of employees under job titles listed are those described in the "Service Contract Act Directory of Occupations", Fifth Edition, April 2006, unless otherwise indicated. Copies of the Directory are available on the Internet. A links to the Directory may be found on the WHD home page at <http://www.dol.gov/esa/whd/> or through the Wage Determinations On-Line (WDOL) Web site at <http://wdol.gov/>.

REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND WAGE RATE {Standard Form 1444 (SF 1444)}

Conformance Process:

The contracting officer shall require that any class of service employee which is not listed herein and which is to be employed under the contract (i.e., the work to be performed is not performed by any classification listed in the wage determination), be classified by the contractor so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination. Such conformed classes of employees shall be paid the monetary wages and furnished the fringe benefits as are determined. Such conforming process shall be initiated by the contractor prior to the performance of contract work by such unlisted class(es) of employees. The conformed classification, wage rate, and/or fringe benefits shall be retroactive to the commencement date of the contract. {See Section 4.6 (C)(vi)} When multiple wage determinations are included in a contract, a separate SF 1444 should be prepared for each wage determination to which a class(es) is to be conformed.

The process for preparing a conformance request is as follows:

- 1) When preparing the bid, the contractor identifies the need for a conformed occupation(s) and computes a proposed rate(s).
- 2) After contract award, the contractor prepares a written report listing in order proposed classification title(s), a Federal grade equivalency (FGE) for each proposed classification(s), job description(s), and rationale for proposed wage rate(s), including information regarding the agreement or disagreement of the authorized representative of the employees involved, or where there is no authorized representative, the employees themselves. This report should be submitted to the contracting officer no later than 30 days after such unlisted class(es) of employees performs any contract work.
- 3) The contracting officer reviews the proposed action and promptly submits a report of the action, together with the agency's recommendations and pertinent information including the position of the contractor and the employees, to the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, for review. (See section 4.6(b)(2) of Regulations 29 CFR Part 4).
- 4) Within 30 days of receipt, the Wage and Hour Division approves, modifies, or disapproves the action via transmittal to the agency contracting officer, or

notifies the contracting officer that additional time will be required to process the request.

- 5) The contracting officer transmits the Wage and Hour decision to the contractor.
- 6) The contractor informs the affected employees.

Information required by the Regulations must be submitted on SF 1444 or bond paper.

When preparing a conformance request, the "Service Contract Act Directory of Occupations" (the Directory) should be used to compare job definitions to insure that duties requested are not performed by a classification already listed in the wage determination. Remember, it is not the job title, but the required tasks that determine whether a class is included in an established wage determination. Conformances may not be used to artificially split, combine, or subdivide classifications listed in the wage determination.

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REFERENCES, INSTRUCTIONS, DIRECTIVES

<u>Reference</u>	<u>Title</u>
EM 385-1-1	U.S. Army Corps of Engineers Safety and Health Requirements
P.L. 91-596	Occupational Safety and Health Act
Code of Federal Regulations 40 CFR	Environmental Protection Regulations
Code of Federal Regulations 49 CFR	Department of Transportation (DOT) Regulations
Code of Federal Regulations 29 CFR	Occupational Safety and Health Regulations (OSHA)
Public Law 94-580	Resource Conservation and Recovery Act (RCRA) of 1976
NAVFAC Instruction 11013.40A	Partnering Policy
NAVSUPPACT 5090.1	Reporting, Response and Cleanup of Oil and Hazardous Substance Spills
NFPA 70	National Electric Code
NFPA 101	Life Safety Code
OPNAVINST 5090.1B (latest change)	Environmental and Natural Resources Protection Manual
OPNAVINST 5100.23F	Navy Occupational Safety and Health Program Manual
P.L. 91-190	National Environmental Policy Act (NEPA) of 1969
AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)	
ANSI/ARI 400	Liquid to Liquid Heat Exchangers with Addendum 1
ANSI/ARI 430	Central Station Air Handling Units
ANSI/ARI 460	Remote Mechanical-Draft Air-Cooled Refrigerant Condensers
ANSI/ARI 495	Refrigerant Liquid Receivers
ANSI/ARI 540	Positive Displacement Refrigerant Compressors and Compressor Units
ANSI/ARI 560	Absorption Water Chilling and Water Heating Packages
ANSI/ARI 580	Non-Condensable Gas Purge Equipment for Use with Low Pressure Centrifugal
ANSI/ARI 640	Commercial and Industrial Humidifiers
ANSI/ARI 750	Thermostatic Refrigerant Expansion Valves
ANSI/ARI 1060	Rating Air-to-Air Energy Recovery Ventilation Equipment
ANSI C57.13	IEEE Standard Requirements for Instrument Transformers
ANSI Z21.22	Relief Valves for Hot Water Supply Systems

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AIR-CONDITIONING AND REFRIGERATION INSTITUTE (ARI)

<u>Reference</u>	<u>Title</u>
ARI 310/360	Commercial and Industrial Unitary Air-Conditioning Equipment
ARI 365	Commercial and Industrial Unitary Air-Conditioning Condensing Units
ARI 450	Water-Cooled Refrigerant Condensers, Remote Type
ARI 460	Remote Mechanical-Draft Air-Cooled Refrigerant Condensers
ARI 480	Refrigerant-Cooled Liquid Cooler, Remote Type
ARI 490	Remote Mechanical-Draft Evaporative Refrigerant Condensers
ARI 495	Refrigerant Liquid Receivers
ARI 500	Variable Capacity Positive Displacement Refrigerant Compressors and Compressor Units for Air-Conditioning and Heat Pump Applications
ARI 520	Positive Displacement Condensing Units
ARI 550/590	Performance Rating of Water Chilling Packages Using the Vapor Compression Cycle
ARI 560	Absorption Water Chilling and Water Heating Packages
ARI 700	Specification for Fluorocarbon Refrigerants
ARI 710	Liquid-Line Driers
ARI 720	Refrigerant Recovery/Recycling Equipment
ARI 740	Refrigerant Recovery/Recycling Equipment
ARI 760	Solenoid Valves for Use with Volatile Refrigerants
ARI 770	Refrigerant Pressure Regulating Valves
ARI 840	Unit Ventilators
ARI 850	Commercial and Industrial Air Filter Equipment
ARI 880	Air Terminals with Addendum
ARI 940	Desiccant Dehumidification Components

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REFERENCES, INSTRUCTIONS, DIRECTIVES

AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR-CONDITIONING ENGINEERS, INC.
(ASHRAE)

<u>Reference</u>	<u>Title</u>
ASHRAE 127	Method of Testing for Rating Computer and Data Processing Room Unitary Air-Conditioners
ASHRAE 15	Safety Standard for Refrigeration Systems
ASHRAE 34	Designation and Safety Classification of Refrigerants
ASHRAE 52.1	Gravimetric and Dust-Spot Procedures for Testing Air-Cleaning
ASHRAE 64	Methods of Testing Remote Mechanical-Draft Evaporative Refrigerant Condensers
ASHRAE Gdn3	Reducing Emission of Halogenated Refrigerants in Refrigeration and Air-Conditioning Equipment and Systems
ASHRAE HA	HVAC Applications Handbook
ASHRAE Hdbk-IP	Fundamentals Handbook, I-P Edition

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

<u>Reference</u>	<u>Title</u>
ASME B.1.20.1	Pipe Threads, General Purpose, Inch
ASME B16.1	Cast Iron Pipe Flanges and Flanged Fittings
ASME B16.11	Forged Fittings, Socket-Welding and Threaded
ASME B16.15	Cast Bronze Threaded Fittings Classes 125 and 250
ASME B16.18	Cast Copper Alloy Solder Joint Pressure Fittings
ASME B16.21	Nonmetallic Flat Gaskets for Pipe Flanges
ASME/ANSI B16.22	Wrought Copper and Copper Alloy Solder Joint Pressure Fittings
ASME B16.26	Cast Copper Alloy Fittings for Flared Copper Tubes
ASME B16.3	Malleable Iron Threaded Fittings
ASME B16.34	Valves Flanged, Threaded, and Welding End
ASME B16.39	Malleable Iron Threaded Fittings
ASME B16.4	Gray Iron Threaded Fittings
ASME B16.5	Pipe Flanges and Flanged Fittings
ASME B 16.9	Factory-Made Wrought Steel Buttwelding Fittings

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AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR-CONDITIONING ENGINEERS, INC.
(ASHRAE)

<u>Reference</u>	<u>Title</u>
ASME B31.1	Power Piping
ASME B31.5	Refrigeration Piping and Heat Transfer Components
ASME B40.1	Gauges - Pressure Indicating Dial Type - Elastic Element
ASME BPVC SEC	Boiler an Pressure Vessel Codes
ASME BPVC SEC IX	Boiler an Pressure Vessel Code; Section IX, Welding and Brazing Qualifications
ASME BPVC SEC VIII	Boiler and Pressure Vessel Codes: Section VIII Rules for Construction of Pressure Vessels, Division 1
ASME BPVC SEC VIII D1	Boiler and Pressure Vessel Codes: Section VIII Pressure Vessels, Division 1 – Basic Coverage
ASME PTC 23	Atmospheric Water Cooling Equipment

AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE)

<u>Reference</u>	<u>Title</u>
ASSE 1003	Water Pressure Reducing Valves
ASSE 1017	Temperature Actuated Mixing Valves for Hot Water Distribution Systems

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

<u>Reference</u>	<u>Title</u>
ASTM A 105/A 105M	Carbon Steel Forgings for Piping Applications
ASTM A 106	Seamless Carbon Steel Pips for High-Temperature Service
ASTM A 123/A 123M	Zinc (Hot –Dip Galvanized) Coating on Iron and Steel Products
ASTM A 126	Gray Iron Castings for Valves, Flanges, and Pipe Fittings
ASTM A 153/A 153M	Zinc (Hot –Dip) Coating on Iron and Steel Hardware
ASTM A 183	Carbon Steel Track Bolts and Nuts
ASTM A 193/A 193M	Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service
ASTM 234/A 234M	Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate an High
ASTM A 36/ A 36M	Carbon Structural Steel

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AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

<u>Reference</u>	<u>Title</u>
ASTM A 307	Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength
ASTM A 366/A 366M	Commercial Steel, Sheet, Carbon, (0.15 Maximum Percent Cold Rolled **
ASTM A 47/A 47M	Ferritic Malleable Iron Castings
ASTM A 48/A 48M	Gray Iron Castings
ASTM A 53/A 53M	Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
ASTM A 536	Ductile Iron Castings
ASTM A 653/A 653M	Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process
ASTM A 733	Welded and Seamless Carbon Steel and Austenitic Stainless Steel Pipe Nipples
ASTM B 117	Operating Salt Spray (Fog) Apparatus
ASTM B 251	General Requirements for Wrought Seamless Copper and Copper-Alloy Tube
ASTM B 280	Seamless Copper Tube for Air Conditioning and Refrigeration Field Service
ASTM B 32	Solder Metal
ASTM B 395/B 395M	U-bend Seamless Copper and Copper Alloy Heat Exchanger and Condenser Tubes
ASTM B 42	Seamless Copper Pipe
ASTM B 62	Composition Bronze or Ounce Metal Castings
ASTM B 687	Brass, Copper, an Chromium-Plated Pipe Nipples
ASTM B 75	Seamless Copper Tube
ASTM B 813	Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube
ASTM B 828	Making Capillary Joints by Soldering of Copper and Copper Alloy Tube
ASTM C 1071	Fibrous Glass Duct Lining Insulation (Thermal and Sound Absorbing Material)
ASTM C 1126	Faced or Unfaced Rigid Cellular Phenolic Thermal Insulation
ASTM C 1136	Flexible, Low Permeance Vapor Retarders for Thermal Insulation
ASTM C 195	Mineral Fiber Thermal Insulating Cement
ASTM C 449	Mineral Fiber Hydraulic-Setting Thermal Insulating and Finishing Cement
ASTM C 553	Calcium Silicate Block and Pipe Thermal Insulation
ASTM C 534	Preformed Flexible Elastomeric Cellular Thermal Insulation In Sheet And Tubular Form
ASTM C 547	Mineral Fiber Pipe Insulation

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AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

<u>Reference</u>	<u>Title</u>
ASTM C 552	Cellular Glass Thermal Insulation
ASTM C 553	Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications
ASTM C 591	Unfaced Preformed Rigid Cellular Polyisocyanurate Thermal Insulation
ASTM C 592	Mineral Fiber Blanket Insulation and Blanket-Type Pipe Insulation (Metal-Mesh Covered) (Industrial Type)
ASTM C 610	Molded Expanded Perlite Block and Pipe Thermal Insulation
ASTM C 612	Mineral Fiber block and Board Thermal Insulation
ASTM C 647	Properties and Tests of Mastics and Coating Finishes for Thermal Insulation
ASTM C 665	Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing
ASTM C 795	Thermal Insulation for Use in Contact with Austenitic Stainless Steel
ASTM C 916	Adhesives for Duct Thermal Insulation
ASTM C 920	Elastomeric Joint Sealants
ASTM C 921	Jackets for Thermal Insulation
ASTM C 930	Potential Health and Safety Concerns Associated with Thermal Insulation Materials and Accessories
ASTM D 1238	Flow Rates of Thermoplastics by Extrusion Plastometer
ASTM D 1248	Polyethylene Plastics Extrusion Materials for Wire and Cable
ASTM D 1693	Environmental Stress-Cracking of Ethylene Plastics
ASTM D 1784	Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
ASTM D 3308	PTFE Resin Skived Tape
ASTM D 3833	Water Vapor Transmission of Pressure-Sensitive Tapes
ASTM D 4397	Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications
ASTM D 520	Zinc Dust Pigment
ASTM D 596	Reporting Results of Analysis of Water
ASTM F 1040	Filter Unit, Air Conditioning: viscous-Impingement and Dry Type, Replaceable
ASTM F 1120	Circular Metallic Bellows Type Expansion Joints for Piping Applications
ASTM F 1199	Cast (all Temperatures and Pressures) and Welded Pipe Line Strainers (150 psig and 150 degrees F Maximum)
ASTM F 872	Filter Units, Air Conditioning: viscous-Impingement and Dry Type, Cleanable

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AMERICAN WATER WORK ASSOCIATION (AWWA)

<u>Reference</u>	<u>Title</u>
AWWA C606	Grooved and Shouldered Joints

AMERICAN WELDING SOCIETY (AWS)

<u>Reference</u>	<u>Title</u>
AWS A5.8	Filler Metals for Brazing and Braze Welding
AWS BRH	Brazing Handbook
AWS D1.1	Structural Welding Code - Steel
AWS Z49.1	Safety in Welding, Cutting and Allied Processes

COOLING TOWER INSTITUTE (CTI)

<u>Reference</u>	<u>Title</u>
CTI ATC-105	Acceptance Test Code
CTI Std-103	Redwood Lumber Specifications
CTI Std-111	Gear Speed Reducers
CTI Std-112	Pressure Preservative Treatment of Lumber
CTI Std-114	Douglas Fir Lumber Specifications (Coast Type)
CTI Std-134	Plywood for Use in Cooling Towers
CTI Std-137	Fiberglass Pultruded Structural Products for Use in Cooling Towers

EXPANSION JOINT MANUFACTURERS ASSOCIATION (EJMA)

<u>Reference</u>	<u>Title</u>
EJMA Stds	EJMA Standards

HYDRAULIC INSTITUTE (HI)

<u>Reference</u>	<u>Title</u>
HI 1.1-1.5	Centrifugal Nomenclature

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HYDRONICS INSTITUTE DIVISION OF GAMA (HYI)

<u>Reference</u>	<u>Title</u>
HYI Rating	I=B=R Rating for Boilers, Baseboard Radiation and Finned Tube (Commercial)

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

<u>Reference</u>	<u>Title</u>
IEEE C62.41	Recommended Practice for Surge Voltages in Low-Voltage AC Power Circuits

MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS INDUSTRY (MSS)

<u>Reference</u>	<u>Title</u>
MSS SP-110	Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends
MSS SP-25	Standard Marking System for Valves, Fittings, Flanges and Unions
MSS SP-58	Pipe Hangers an Supports – Materials, Design and Manufacturer
MSS SP-67	Butterfly Valves
MSS SP-69	Pipe Hangers an Supports – Selection and Application
MSS SP-70	Cast Iron Gate Valves, Flanged and Threaded Ends
MSS SP-71	Gray Iron Swing Check Valves, Flanged and Threaded Ends
MSS SP-72	Ball Valves with Flanged or Butt-Welding Ends for General Service
MSS SP-78	Cast Iron Plug Valves, Flanged and Threaded Ends
MSS SP-80	Bronze Gate, Globe, Angle and Check Valves,
MSS SP-85	Cast Iron Globe & Angle Valves, Flanged and Threaded Ends

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

<u>Reference</u>	<u>Title</u>
NEMA 250	Enclosures for Electrical Equipment (1000 Volts Maximum)
NEMA ICS 1	Industrial Control and Systems: General Requirements
NEMA ICS 2	Industrial Controls and Systems: Controllers, Contactors, and Overload Relays Rated Not More than 2000 Volts AC or 750 Volts DC
NEMA ICS 6	Industrial Control and Systems: Enclosures
NEMA MG 1	Motors and Generators
NEMA MG 2	Safety Standard for Construction and Guide for Selection, Installation, and Use of Electric Motors and Generators
NEMA MG 11	Energy Management Guide for Selection and Use of Single Phase Motors

NEMA ST 1	Specialty Transformers (Except General Purpose Type)
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ATTACHMENT J-0200000-03
REFERENCES, INSTRUCTIONS, DIRECTIVES

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

<u>Reference</u>	<u>Title</u>
NFPA 31	Standard for the Installation of Oil-Burning Equipment
NFPA 37	Installation and Use of Stationary Combustion Engines an Gas Turbines
NFPA 51B	Standard for Fire Prevention During Welding, Cutting, and Other Hot Work
NFPA 54	National Fuel Gas Code
NFPA 70	National Electrical Code
NFPA 70 B	Recommended Practice for Electrical Equipment Maintenance
NFPA 70 E	Standard for Electrical Safety in the Workplace
NFPA 72	National Fire Alarm Code
NFPA 85	Boiler and Combustion Systems Hazards Code
NFPA 90A	Installation of Air Conditioning and Ventilating Systems
NFPA 90B	Installation of Warm Air Heating an Air Conditioning Systems
NFPA 96	Ventilation Control and Fire protection of Commercial Cooking Operations
NFPA 101	Life Safety Code
NFPA 214	Water-Cooling Towers
NFPA 255	Method of Test of Surface Burning Characteristics of Building Materials
NFPA 326	Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair

PLUMBING-HEATING-COOLING CONTRACTORS NATIONAL ASSOCIATION (PHCC)

<u>Reference</u>	<u>Title</u>
NAPHCC NSPC	National Standard Plumbing Code

UNDERWRITERS LABORATORIES INC. (UL)

<u>Reference</u>	<u>Title</u>
UL 1096	Electric Central Air Heating Equipment
UL 1236	Battery Chargers of Charging Engine-Starter Batteries
UL 1449	Transient Voltage Surge Suppressors
UL 1995	Heating and Cooling Equipment
UL 207	Refrigerant-Containing Components and Accessories, Nonelectrical
UL 484	Room Air Conditioners
UL 506	Specialty Transformers
UL 507	Electric Fans

ATTACHMENT J-0200000-03
REFERENCES, INSTRUCTIONS, DIRECTIVES

UNDERWRITERS LABORATORIES INC. (UL)

<u>Reference</u>	<u>Title</u>
UL 555S	Smoke Dampers
UL 586	High-Efficiency, Particulate, Air Filter Units
UL 705	Power Ventilators
UL 867	Electrostatic Air Cleaners
UL 883	Fan-Coil Units and Room Fan-Heater Units
UL 900	Air Filter Units
UL 916	Energy Management Equipment
UL 998	Humidifiers

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

<u>Reference</u>	<u>Title</u>
CID A-A-50541	(Basic; Notice 1) Valves, Tank Float, Angle and Globe Pattern (Inch Pound)
FS A-A-59223	(Basic; Notice 1) Cooling Towers, Liquid
FS F-F-2790	(Basic) Filter, Air-Extended Area, Initial Installation
FS F-F-320	(Rev C) Filters, Electronic Air Cleaning Ionizing Plate Type
FS WW-F-2743	(Rev A) Furnaces, Warm Air and Heaters, Unit, Forced Air Circulation, Oil – Gas

J-0200000-04
Recommended Spare Parts Listing

Quantity	Part Description
Pump Parts	
1	Lovejoy Spiders L/190 #12274/Secondary
6	Lovejoy Spiders L/150
6	Lovejoy Spiders L/100 #11494
2	Pilot Valve Repair Kits #9169805A DOM
3	P.R.V. Repair Kits #9170002B
2	Pilot Valve Kits #9169811J
2	Gaskets #60640414
4	Gaskets #60640380
2	Gaskets #12-1301-002
2	Gaskets #12-1301-003
6	2584AGasket 008
5	2584AGasket 007
2	2584AGasket Y014
3	2584AGasket Y011
2	2584AGasket Y007
1	Clean Steam Generator Make-Up Water Pump
3	Chiller Barrel Gaskets
2	Key #11A96736
Electrical Parts	
3	#21Heater
3	#23Heater
3	#24 Heater
3	#31Heater
3	#32Heater
3	#36Heater
3	#42Heater
3	#47Heater
3	#49Heater

J-0200000-04
Recommended Spare Parts Listing

Quantity	Part Description
Controls	
2	Water Temperature Sensors #TE211CA2B1E6
2	Water Temperature Sensors #TE211CA2B1E6
8	Temperature Sensors #TE-211ZDF11E3
Medical/Dental Vacuum Compressors	
4	Browning Compressor Belts
2	Flex Connector
2	Flex Connector
2	Flex Connector
Boiler Parts	
1	Program Module
2	Switching Relays
1	Honeywell Flame Detector C7027A-1049
3	Boiler Signal Light sockets
1	Honeywell Pressuretrol L404C-1162
4	Manway Gaskets #904-001-009
14	Handhole Gaskets #904-001-002
3	Rear Door Gaskets #871-421-062
3	Front Door gaskets #871-101-062
60	LF of Fire Box Roping
3	Sight Port Lens Kit #909-019-001
24	Oil Nozzle Seals #247
4	Electrodes
3	Sight Glass gaskets
1	Alarm Horn Assembly
2	Martin Fuel Oil Pump Spiders
1	Martin Fuel Oil Motor Coupling
2	Liquid Level Controls #1G1D0-1A
2	Sight Glass Tubes
3	Magnatrol Gaskets #12-1301-003
4	Gaskets
1	Macdonald Miller #150
Steam	
1	Spence Diaphragm
1	Powers Diaphragm
1	Powers Diaphragm
2	2-1/2 inch Gate Valves #F637-31
2	4 inch Gate Valves #F637-31
4	1 inch 600-LB Rated Ball Valves
1	3/4 inch T.D. Trap

ATTACHMENT J-0200000-05
EXHIBIT LINE ITEM NUMBERS

ELINS attached as a separate spreadsheet

ATTACHMENT J-1601000-01
DEFINITIONS AND ACRONYMS

	Definitions
Hydronic Systems	The chilled water and condensing water loops used to produce the chilled media. The chilled water and condensing water loops may be closed loops or open loops.
Integrated Maintenance Plan (IMP)	Is a recurring state-of-the-art, reliability-centered inspection, testing, maintenance and repair program that determines best practices for managing the functions and consequences of failures of facilities equipment and system components. IMP encompasses accepted commercial practices, including reactive, preventive, predictive and proactive maintenance, into one optimal program. The IMP approach gives the Contractor full responsibility to maintain systems and equipment and perform repairs whenever necessary to ensure equipment and systems are operational and remain in a constant state of readiness.
Media	The substance distributed or used to produce cooling. Normally the cooling media is chilled water.
	Acronyms
ANSI	American National Standards Institute
ARI	Air-Conditioning and Refrigeration Institute
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
IMP	Integrated Maintenance Program
OMSI	Operation and Maintenance Support Information
PM	Preventive Maintenance

ATTACHMENT J-1601000-02
 BUILDING 4390 CHILLER PLANT AND HVAC MAJOR EQUIPMENT INVENTORY

Equip #	Description	Manufacturer	Model No.	Serial No.	Capacity	Year
1	Chiller	Trane	CVHE032	LO3M08312	240 Ton	2004
2	Chiller	Trane	CVHE032	L12MO5021	240 Ton	2013
3	Chiller	Trane	CVHE500	L99L04524M	450 Ton	2001
P-4	Primary Chill Water Pump	Ingersol-Rand	5X4X8 BT-E	1189/4065	476 gpm	2014
P-5	Primary Chill Water Pump	Ingersol-Rand	5X4X8 BT-E	0493/4054	476 gpm	1993
P-6	Primary Chill Water Pump	Flowserve	D814 5X4X12	1199/9858	500 gpm	1999
P-1	Secondary Chill Water Pump	Flowserve	D8 14 5X4X1 2F	0806-1302	720 gpm	2006
P-2	Secondary Chill Water Pump	Flowserve	D814 5X4X12F	414741	720 gpm	2008
P-3	Secondary Chill Water Pump	Ingersoll-Rand	5X4X12 BT-E	0193/4103	710 gpm	1993
P-7	Condenser Water Pump	Ingersol-Rand	12EML	9912NP001 840-1	740 gpm	2008
P-8	Condenser Water Pump	Ingersol-Rand	12EML	93068070	740 gpm	2012
P-9	Condenser Water Pump	Ingersol Rand	14EMM-1	9912MP001900-1	1200 gpm	2012
CT-1	Cooling Tower	Marley	NC3011 SS	036153-002-93B	1100 gpm	1993
CT-2	Cooling Tower	Marley	NC3011 SS	036153-002-93B	1100 gpm	1993
CT-3	Cooling Tower	Marley	NC3011 SS	036153-002-93B	1100 gpm	1993
CT-4	Cooling Tower	Marley	NC8402PAN1SGF	NC10029645-A1	720 gpm	2011
CTP-4	Condenser Water Pump	Taco	VT12IC-1	G4871	720 gpm	2011
CP-1	Chemical CT Pump	Stenner	85MHP17	3081204599	17 gpd	2014
VFD 4	Variable Frequency Drive-P-1	Allen-Bradley	PowerFlex 700	1JAY3JW9	N/A	2004
VFD 5	Variable Frequency Drive-P-2	Allen-Bradley	PowerFlex 700	1JAY2SW5	N/A	2004
VFD 6	Variable Frequency Drive-P-3	Allen-Bradley	PowerFlex 700	1JBE8MY0	N/A	2004
P-10	Heating Hot Water Pump	Ingersoll-Rand	4X3X1 2 -BTE	0193/4017	430 gpm	1993
P-11	Heating Hot Water Pump	Ingersoll-Rand	4X3X1 2 -BTE	0193/4020	430 gpm	1993
P-12	Heating Hot Water Pump	Ingersoll-Rand	4X3X1 2 -BTE	0193/4018	430 gpm	1993
VFD 1	Variable Frequency Drive P-10	Allen-Bradley	PowerFlex 700	1JAW2CY2	N/A	2004
VFD 2	Variable Frequency Drive P-11	Allen-Bradley	PowerFlex 700	1JAX2SD7	N/A	2004

ATTACHMENT J-1601000-02
 BUILDING 4390 CHILLER PLANT AND HVAC MAJOR EQUIPMENT INVENTORY

Equip #	Description	Manufacturer	Model No.	Serial No.	Capacity	Year
VFD 3	Variable Frequency Drive P-12	Allen-Bradley	PowerFlex 700	1JAX2SD3	N/A	2004
HE-1	Heat Exchanger	Taco	G14210s	K11640	430 gpm	1993
HE-2	Heat Exchanger	Taco	G14210s	K11641	430 gpm	1993
HE-3	Heat Exchanger	Taco	G14210s	K11642	430 gpm	1993
VFD 7	Variable Frequency Drive Fan1	Allen-Bradley	PowerFlex 753	22340440	N/A	2013
VFD 8	Variable Frequency Drive Fan2	Allen-Bradley	PowerFlex 753	22340423	N/A	2013
VFD 9	Variable Frequency Drive Fan3	Allen-Bradley	PowerFlex 753	22340412	N/A	2013
VFD 10	Variable Frequency Drive Fan4	Allen-Bradley	PowerFlex 753	22340439	N/A	2013

ATTACHMENT J-1601000-03
TYPICAL WORK PERFORMED OPERATING AND MAINTAINING
THE CHILLER PLANT PORTION OF THE CENTRAL ENERGY PLANT

Typical work performed includes:

Monitoring the Chiller Plant systems including the chillers and their auxiliaries, and make minor adjustments and repairs to ensure proper operation. Take readings and record them and test results on the chiller log. Review the operational records and logs in order to identify abnormal data or potential problems.

- a. Cooling Water Towers and Evaporative Coolers: Remove accumulations of dust dirt and other debris from around and inside the cooling water towers and evaporative coolers; repairing water leaks in the tower/cooler, piping and pans; repairing or replacing strainers, nozzles, make-up water valves, worn, loose, missing or damaged mechanical and electrical components, bent blades, worn or loose belts, unbalanced moving parts, noisy bearings, misalignment, shaft end play, motors and ineffective sound isolators.
- b. Closed Loop Heating and Cooling Water Systems and Condenser Water Systems: Perform inspections, tests, and maintaining the quality of these systems and their related equipment. The related equipment includes all water treatment monitoring and control equipment such as controllers, sensors, chemical pumps and associated piping.
- c. Chillers and Condensers: Maintain air conditioning condensers and chillers. This includes repair or replacement of the cooling/heating coils; maintaining the proper operation of modulating and mixing valves, operators and automatic temperature and pressure controls; cleaning dust, dirt and other foreign matter, particularly between fins in order to maintain proper water flow; repairing or replacing worn, loose, missing or damaged mechanical and electrical components; motors; worn or loose belts; unbalanced moving parts; noisy bearings; misalignment; end play of shafts; clogged or dirty exchangers; maintain refrigerant levels; compressors; and start-up of chillers and air condition systems.
- d. Heat Exchangers: Clean all heat exchangers annually and ensure all connections are tight and no leaks are present.
- e. Direct Digital Control System: Monitor the hospital direct digital control system. Print out all alarm conditions at least once a shift. Notify appropriate hospital facilities personnel of all alarm conditions. The Contractor will not be responsible for maintaining or component replacement for the existing DDC equipment.

ATTACHMENT J-1601000-03
HISTORICAL REQUIREMENTS FOR MAINTENANCE AND TESTING OF WATER TREATMENT SYSTEMS
(CHILLER PLANT)

Operate, maintain, and repair all water treatment equipment, components and distribution system in the Central Energy Building. Work includes the pumping, treatment, storage and distribution of treated and potable water, systems including, but not limited to: the water softener, demineralizers, storage tanks, meters, valves, system alarms, and piping; corrective and preventative maintenance and repair of plants and systems; water testing, completing records and reports in order to provide treated and potable water twenty-four (24) hours per day, seven (7) days per week.

Daily: Inspect water supply systems, including water treatment equipment, components, distribution lines, etc., and perform any and all adjustments, maintenance and repair work needed for optimal operation of the systems. The Contractor shall evaluate the operation of equipment and test water samples to monitor the performance of water treatment systems.

Perform daily and weekly operation and maintenance services in accordance with the OEM Instruction on the following equipment:

1. Cooling Towers
2. Chillers

Perform water analysis in accordance with the testing procedures described below.

Provide, at a minimum, the quarterly testing of duplicate samples by a commercial laboratory approved by the KO, for the following parameters:

1. Total Dissolved Solids
2. Total hardness
3. Calcium Hardness
4. Conductivity
5. M-Alkalinity
6. Total Iron

The results of all samples shall be provided to the KO and the Hospital's Facility Manager within five (5) working days. Correct any deficiencies in treatment procedures indicated by the results of the samples. Submit the proposed testing facilities for chemical analysis to the KO for approval. Sample soft water once a shift to determine hardness. Regenerate water softeners whenever total hardness exceeds 1 ppm. After each regeneration, refill brine tank in accordance with the manufacturer's instructions. Conduct chemical test of hot water heating, chill water, and cooling tower water once a day. Record results. Adjust chemical feed to systems as required to maintain parameters as set by the water treatment consultant.

ATTACHMENT J-1601000-03
 HISTORICAL CHEMICAL INVENTORY
 (ALL SYSTEMS)

Historical Chemical and Product Code	
Chemical	Product Code
Acid Starch Indicator Powder	ST5205-J
Conductivity Standard	35307
Filter Paper	100384
Hardness Indicator Solution	42532
Liquid Neutralizing Solution	129033
Molybate Reagent	50945
Phenol Red Indicator Solution	67533
Phenolphthalein Indicator	50639
Potassium Iodide N/80	83265
Stannous Chloride Reagent	100357
Sulfuric Acid N/10	50957
Total Hardness Buffer	83299
Trace Hardness Titrant	67589
Molydenum 1 Low Range	66887
Molydenum 2 Low	83298
Adjunct HL	67205
Amercort 8750	83490
Catalzed Sulfite	83588
Advantage Pluss 6445	51659
Performax 5399	735595
Biosperse 261T Microbiocide	67529
Drewgard 4109	67676
Salt	

ATTACHMENT J-1601000-04
 BUILDING 4390 CHILLER PLANT AND HVAC HISTORICAL WORK UNDER \$2,500.00 LABOR & MATERIALS
 FY-15

Date	Minor Repair Number	Equipment	Project Description
Dec 19, 2014			Removed #2 Dom Water Tank and Heat Recovery Tank
Dec 28, 2014			Replaced #1 CS generator's feedwater pump
Jan 10, 2015	002	P-1 Pump	Replace P-1 Pump Coupling
Jan 10, 2015			Removed #1 Dom Water Tank, completed on demand hot water system
Jan 17, 2015	003	P-9 Motor	Replace P-9 Motor
Apr 15, 2015	009	Chiller #3	Replace #3 Chiller's Vane Arm Pin
Apr 24, 2015		P-11 Pump	P-11 O.O.S. Pump Mechanical seal leaks
May 4, 2015		P-11 Pump	P-11 Pump Rebuilt
May 6, 2015		P-19 Pump	P-19 suction valve broked, closed
Jun 18, 2015	010	CT Chemical Pump	Repair CT Chemical Pump Line
Jun 24, 2015	011	P-4 Pump	Replace P-4 Coupling
Jul 9, 2015		P-26	Replaced P-26

ATTACHMENT J-1601000-04
 BUILDING 4390 CHILLER PLANT AND HVAC HISTORICAL WORK UNDER \$2,500.00 LABOR & MATERIALS
 FY-14

Date	Minor Repair Number	Equipment	Project Description
Jan 8, 2014		P-4	Replaced P-4 Motor with old P-6 motor
Feb 4, 2014		P-4	Replaced P-4 Motor controller's overload relay, installed new couplings
Feb 9, 2014	009	P-2	Repair P-2 Variable Frequency Drive
Feb 20, 2014		P-16	P-16 OOS
Feb 24, 2014		P-18	P-18 OOS
Feb 25, 2014		P-29	P-29 OOS
Mar 1, 2014		P-16	Replaced P-16 pump & motor
Mar 3, 2014		P-29	Replaced P-29 Sump Pump
Mar 30, 2014		P-18	Replaced P-18 pump & motor
Apr 10, 2014	029	P-9	Replace P-9 Transformer
Apr 10, 2014	030	P-9	Replace P-9 Pump (Government supply pump)
Apr 19, 2014	038		Replace Low Water Level Alarm Cond. Tnk.
Apr 19, 2014	039	P-2	Repair P-2 Variable Frequency Drive
May 7, 2014		Chiller #2	Replaced driftpin on operating arm
Aug 18, 2014			Removed #2 Dom Hot Wtr Pump and Replaced #2 Cold Wtr Pump
Aug 20, 2014			Installed new pump on #2 Hot Dom. Water System

ATTACHMENT J-1601000-04
BUILDING 4390 CHILLER PLANT AND HVAC HISTORICAL WORK UNDER \$2,5000.00 LABOR & MATERIALS
FY-13

Date	Minor Repair Number	Equipment	Project Description
Jan 13, 2013	001	Chiller #3	Replace two vane pins
Jan 24, 2013		Chiller #2	Replaced P-8 Condenser Water Pump and Motor
Sep 28, 2013	019		Replaced Coupling P-4

ATTACHMENT J-1601000-04
 BUILDING 4390 CHILLER PLANT AND HVAC HISTORICAL WORK UNDER \$2,500.00 LABOR & MATERIALS
 FY-12

Date	Minor Repair Number	Equipment	Project Description
Jan 13, 2012	007	Pump P-7	Repair P-7 Pump Packing Gland
Feb 20, 2012		P-26	Replaced P-26 Chemical Pump
Mar 13, 2012	019		Repair #1 CT Fan Controller
Apr 12, 2012	021		Rebuild P-1 Secondary Chill Water Pump Motor
May 1, 2012			Replaced CT Chemical Pump
May 5, 2012	025		Repair CT Chemical Pumps Discharge Header
May 26, 2012	026	P-4	Replace P-4 Coupling
Aug 18, 2012	031	P-8	Replace P-8 Motor
Aug 18, 2012	032	P-7	Replace P-7 Motor
Aug 21, 2012	034	P-8	Replace P-8 Pump
Aug 25, 2012	033	P-7	Replace P-7 Pump

ATTACHMENT J-1601000-05
 BUILDING 4390 CHILLER PLANT AND HVAC HISTORICAL PM WORK
 (Schedule Based on DMLSS Facilities Maintenance PM Program)

EQUIPMENT ID	DESCRIPTION	FREQUENCY
P-1	Secondary Chill Water Pump	Quarterly
P-2	Secondary Chill Water Pump	Quarterly
P-3	Secondary Chill Water Pump	Quarterly
P-4	Primary Chill Water Pump	Quarterly
P-5	Primary Chill Water Pump	Quarterly
P-6	Primary Chill Water Pump	Quarterly
P-7	Condenser Water Pump	Quarterly
P-8	Condenser Water Pump	Quarterly
P-9	Condenser Water Pump	Quarterly
#1	Chiller	Monthly
#2	Chiller	Monthly
#3	Chiller	Monthly
#1	Chiller	Annually
#2	Chiller	Annually
#3	Chiller	Annually

ATTACHMENT J-1601000-05
 BUILDING 4390 CHILLER PLANT AND HVAC HISTORICAL PM WORK
 (Schedule Based on DMLSS Facilities Maintenance PM Program)

EQUIPMENT ID	DESCRIPTION	FREQUENCY
CT-1	Cooling Tower	Quarterly
CT-2	Cooling Tower	Quarterly
CT-3	Cooling Tower	Quarterly
CP-1	Chemical-Ct Pump	Annually
CP-2	Chemical-Ct Pump	Annually
CP-3	Chemical-Ct Pump	Annually
HE-1	Heat Exchanger #1	Annually
HE-2	Heat Exchanger #2	Annually
HE-3	Heat Exchanger #3	Annually
VFD-4	Variable Frequency Drive-P1	Annually
VFD-5	Variable Frequency Drive-P2	Annually
VFD-6	Variable Frequency Drive-P3	Annually
VFD-1	Variable Frequency Drive-P-10	Annually
VFD-2	Variable Frequency Drive-P-11	Annually
VFD-3	Variable Frequency Drive-P-12	Annually
ET-1	Chill Water Expansion Tank	Annually
ET-2	Chill Water Expansion Tank	Annually
Brine Tank	Clean And Service The Brine Tank.	Annually

ATTACHMENT J-1601000-06
10 CENTIMETER OR LARGER VALVE INVENTORY

Identification Number	Description	System	Manufacturer
CDW-1	#1 Chiller Condenser Water Inlet	Chiller	Not Available
CDW-2	#1 Chiller Condenser Water Inlet Blow Down	Chiller	Not Available
CDW-3	#1 Chiller Condenser Water Outlet	Chiller	Not Available
CDW-4	#1 Chiller Condenser Water Outlet Blow Down	Chiller	Not Available
CDW-5	#2 Chiller Condenser Water Inlet	Chiller	Not Available
CDW-6	#2 Chiller Condenser Water Inlet Blown Down	Chiller	Not Available
CDW-7	#2 Chiller Condenser Water Outlet	Chiller	Not Available
CDW-9	#3 Chiller Condenser Water Inlet	Chiller	Not Available
CDW-11	#3 Chiller Condenser Water Outlet	Chiller	Not Available
CDW-13	P-7 Condenser Outlet	Chiller	Not Available
CDW-14	P-8 Condenser Outlet	Chiller	Not Available
CDW-15	P-9 Condenser Outlet	Chiller	Not Available
CHWR-1	#1 Chiller Chill Water Inlet	Chiller	Not Available
CHWR-3	#2 Chiller Chill Water Inlet	Chiller	Not Available
CHWR-5	#3 Chiller Chill Water Inlet	Chiller	Not Available
CHWR-7	P-4 Chill Water Primary Inlet	HVAC	NIBCO
CHWR-8	P-4 Chill Water Primary Outlet	HVAC	NIBCO

ATTACHMENT J-1601000-06
10 CENTIMETER OR LARGER VALVE INVENTORY

Identification Number	Description	System	Manufacturer
CHWR-9	P-5 Chill Water Primary Inlet	HVAC	NIBCO
CHWR-10	P-5 Chill Water Primary Outlet	HVAC	NIBCO
CHWR-11	P-6 Chill Water Primary Inlet	HVAC	Not Available
CHWR-12	P-6 Chill Water Primary Outlet	HVAC	Not Available
CHWS-1	#1 Chiller Chill Water Outlet	Chiller	Not Available
CHWS-3	#2 Chiller Chill Water Outlet	Chiller	Not Available
CHWS-5	#3 Chiller Chill Water Outlet	Chiller	Not Available
CHWS-7	P-1 Chill Water Secondary Inlet	HVAC	NIBCO
CHWS-8	P-1 Chill Water Secondary Outlet	HVAC	NIBCO
CHWS-9	P-2 Chill Water Secondary Inlet	HVAC	NIBCO
CHWS-10	P-2 Chill Water Secondary Outlet	HVAC	NIBCO
CHWS-11	P-3 Chill Water Secondary Inlet	HVAC	NIBCO
CHWS-12	P-3 Chill Water Secondary Outlet	HVAC	NIBCO

ATTACHMENT J-1601000-07
 BUILDING 4390 CHILLER PLANT AND HVAC HISTORICAL IDIQ WORK BY FISCAL YEAR

Date	Project Number	Project Description	Total Dollar Amount
Sep 17, 2012	7	Install Four Variable Frequency Drive Controls on Cooling Towers Fan Motors	\$42,000.00
Sep 27, 2012	11	Replace Chiller #2	\$202,624.00
		Sub-Total for FY-12	\$244,624.00
		None	
		Sub-Total for FY-13	\$0.00
Apr 15, 2014	15	Repair Chillers Oil Heater and Motor Starter Control	\$5,718.00
Apr 16, 2014	16	Replace Gear Reducer Cooling Tower #2	\$9,036.00
		Sub-Total for FY-14	\$14,754.00
		None	
		Sub-Total for FY-15	\$0.00

J-1605000-01
DEFINITIONS AND ACRONYMS

Definitions	
Central (Heating or Power) Plant	A plant that exports a heated medium and/or electricity to more than one user.
Cogeneration Plant	A plant producing a heated medium for the purpose of space or process heating and electricity.
Condensate Return System	Piping and associated equipment used to return condensate from equipment or facilities using steam/hot water to the generation plant.
Generation Plant	The facility, equipment and piping used to produce steam or hot water for distribution to multiple structures, including piers.
Heating Boiler	A boiler operated at pressures not exceeding 15 pounds per square inch gage (psig) for steam, or at pressures not exceeding 160 psig and temperatures not exceeding 250 degrees Fahrenheit for water.
Heating Plant	Any plant producing steam, hot water, or other medium for the purpose of space or process heating.
High Pressure Power Boiler	A power boiler operated at pressures exceeding 300 psig for steam or hot water or at temperatures exceeding 400 degrees Fahrenheit for hot water.
Integrated Maintenance Program (IMP)	IMP is a recurring state-of-the-art, reliability-centered inspection, testing, maintenance and repair program that determines best practices for managing the functions and consequences of failures of facilities equipment and system components. IMP encompasses accepted commercial practices, including reactive, preventive, predictive and proactive maintenance, into one optimal program. The IMP approach gives the Contractor full responsibility to maintain systems and equipment and perform repairs whenever necessary to ensure equipment and systems are operational and remain in a constant state of readiness.
MBTU(H)	A measurement of steam equivalent to 1,000 British Thermal Units per Hour.
Power Boiler	A boiler operated at a pressure of greater than 15 pounds per square inch gage (psig), but not exceeding 300 psig for steam, or pressure greater than 160 psig and a temperature of greater than 250 degrees Fahrenheit for hot water.
Steam/Hot Water Distribution System	Piping and associated equipment used to distribute steam/hot water from the generation plant to the equipment or facilities requiring steam/hot water to operate.
Acronyms	
AGA	American Gas Association
ANSI	American National Standards Institute
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
HRSG	Heat Recovery Steam Generator
MBTU	Million British Thermal Units
OMSI	Operation and Maintenance Support Information
PSIG	Pounds per Square Inch, Gage
UFC	Uniform Facilities Criteria
UPV	Unfired Pressure Vessel

ATTACHMENT J-1605000-02
REFERENCE AND TECHNICAL DOCUMENTS

Reference	Title
UFC 3-430-07	Operations and Maintenance: Inspection and Certification of Boilers and Unfired Pressure Vessels
UFC 3-430-08N	Central Heating Plants
NAVFACINST 11300.37A	Energy and Utilities Policy Manual

ATTACHMENT J-1605000-03
BUILDING 4390 STEAM PLANT EQUIPMENT INVENTORY

Equip #	Description	Manufacturer	Model No.	Serial No.	Capacity	Year
1	150 HP Boiler	Superior	4-5-751	11968	150hp	1993
2	150 HP Boiler	Superior	4-5-751	11969	150hp	1993
3	150 HP Boiler	Superior	4-5-751	11970	150hp	1993
1	670 Gal. Clean Steam	Cemline	H670USG1484	52089	670 gal	1999
2	670 Gal. Clean Steam	Cemline	H670USG1484	53506	670 gal	2003
P-16	Condensate Tank Pump	Grund-Fos	CR10-02	0628		2014
P-17	Condensate Tank Pump	Grund-Fos	CR10-02	126-07	2 HP	2007
P-18	Boiler Feed Water Pump	Grund-Fos	CR10-06	0406	10 HP	2014
P-19	Boiler Feed Water Pump	Grund-Fos	CRN8-60	H89	10 HP	2009
P-20	Fuel Oil Transfer Pump	Viking	GG4195	10274595	1/2 HP	1993
P-21	Fuel Oil Transfer Pump	Viking	GG4195	10274594	1/2 HP	1993
P-22	Condensate Transfer Pump	Dunham-Bush	G01141	170687		2010
P-23	Condensate Transfer Pump	Dunham-Bush	G01141	170687-1		2010
P-25	Boiler Chemical Standby Pump	Helwig	V10-1560-12	0029		2010
P-26	Boiler Chemical Pump	Helwig	V10-1560-12	206173		2014
P-27	Chemical DA Tank Pump	Helwig	V10-1560-12	0116		2009
P-28	Domestic Hot Water Recirculation Pump	Grund-Fos	MAGN A3 40-120	10000156		2014
P-29	Drain Sump Pump #1	Barnes Pumps	3SE 544L	C1670883-021		2014
P-30	Drain Sump Pump #2	Barnes Pumps	3SE 544L	C631 982-1299		2009
FOP-1	#1 Boiler Fuel Oil Pump	Parker	D17AA2A	0709-27044	N/A	2009
FOP-2	#2 Boiler Fuel Oil Pump	Parker	D17AA2A	1109-05234	N/A	2010

ATTACHMENT J-1605000-03
BUILDING 4390 STEAM PLANT EQUIPMENT INVENTORY

Equip #	Description	Manufacturer	Model No.	Serial No.	Capacity	Year
FOP-3	#3 Boiler Fuel Oil Pump	Parker	D17AA2A	1109-05233	N/A	2010
DFT-1	Deaeration Tank (Spray Type)	Precision	DF-48-010	12269	N/A	1993
ET-3	Hot Water Expansion Tank	TACO	ET-RA 100	L1162		1993
ET-4	Hot Water Expansion Tank	TACO	ET-RA 100	L1163		1993
ET-5	Hot Water Expansion Tank					
T-6	Fuel Oil Day Tank	Pryco	PY275UL	717399	275 Gal	1993
T-4	680 Gal. Condensate Tank	Precision	4890-V-300-PS	122690	680 Gal	1993
UST-1	Underground Storage Tank	Owens Corning	DWT-TYPE2		8000 Gal	1993
UST-2	Underground Storage Tank	Owens Corning	DWT-TYPE2		8000 Gal	1993
VR-1	UST Monitoring Unit	Veeder Root	TLS 350	018142	N/A	1993
DCWP-1	Domestic Cold Water Pump	Bell & Gosset	1531-2.5AB	C009623-01		2014
DCWP-2	Domestic Cold Water Pump	Bell & Gosset	1531-2.5AB	187010	2-1/2"	2007
P-28	Domestic Hot Water Recirculation Pump	Grundfos	MAGN A3 40-120	10000156		2014
WS-1	Duplex Water Softener	Kinetico	CP210 S	00598598	35 Gal/Min	2005
WS-2	Duplex Water Softener	Kinetico	CP210 S	00598599	35 Gal/Min	2005
DHWT-1	Domestic Hot Water Tank	Digital-Flo	DF665DWP50-50			2014
DHWT-2	Domestic Hot Water Tank	Digital-Flo	DF665DWP50-50			2014
DHWP-1	Domestic Hot Water Pump #1	Bell & Gosset	1531-2.5AB	C009623-02	2-1/2"	2006
DHWP-2	Domestic Hot Water Pump #2	Bell & Gosset	1531-2.5AB	CN5752-01		2014

ATTACHMENT J-1605000-03
10 CENTIMETER OR LARGER VALVE INVENTORY

Identification Number	Description	Pressure High/Medium/Low	Manufacturer	Make and Model
HPS-4	#1 Boiler Steam Header	High Pressure	NIBCO	Gate F-637-31
HPS-5	#2 Boiler Steam Header	High Pressure	NIBCO	Gate F-637-31
HPS-6	#3 Boiler Steam Header	High Pressure	NIBCO	Gate F-637-31
HPS-7	Boiler Room Steam Header	High Pressure	Walworth	Gate 671854
HPS-8	Clean Steam Generator Steam Header	High Pressure	NIBCO	Gate F-637-31
HPS-13	Pressure Reducing Valve #1 Inlet	High Pressure	NIBCO	Gate F-617-0
HPS-14	Pressure Reducing Valve #2 Inlet	High Pressure	NIBCO	Gate F-617-0
HPS-15	Pressure Reducing Valve #1 Bypass	High Pressure	NIBCO	Not Available
MPS-1	Pressure Reducing Valve #1 Outlet	Medium Pressure	NIBCO	Gate F-617-0
MPS-2	Pressure Reducing Valve #2 Outlet	Medium Pressure	NIBCO	Gate F-617-0
MPS-3	Pressure Reducing Valve #3 Inlet	Medium Pressure	NIBCO	Gate F-617-0
MPS-4	Pressure Reducing Valve #4 Inlet	Medium Pressure	NIBCO	Gate F-617-0
MPS-5	Pressure Reducing Valve #3 Bypass	Medium Pressure	NIBCO	Not Available
MPS-16	#1 Clean Steam Generator Outlet	Medium Pressure	NIBCO	Not Available
MPS-17	#2 Clean Steam Generator Outlet	Medium Pressure	NIBCO	Not Available
DTFO	Deaeration Tank Feed Water Outlet	Low	Not Available	Not Available

ATTACHMENT J-1605000-04
TYPICAL WORK PERFORMED OPERATING AND MAINTAINING
THE STEAM PLANT PORTION OF THE CENTRAL ENERGY PLANT

Typical requirements for daily operation, maintenance, and preventive maintenance to be performed on steam plant equipment and components.

a. Heating System: Monitor the heating system including boilers and their auxiliaries and make minor adjustments and repairs to ensure proper operation. Take readings and record them and the test results on the Boiler Record Sheet. Review the operation records and logs in order to identify abnormal data or potential problems. Operate the steam system as required by demand. Start up and take down boilers as required by demand. Rotate the lead boiler at least once a week to even usage of each boiler. Record fuel consumption at least once a day.

- (1) Check water level.
- (2) Blow down the boiler and water column.
- (3) Check flame visually.
- (4) Visually check for combustion gas leaks around the firebox.

b. Boilers and Auxiliaries: Inspection, testing, maintaining and repairing of steam boilers and the boiler auxiliaries. This includes, but is not limited to: cleaning the boiler fire side and tubes; adjusting, repairing and/or replacing parts to the systems; boiler components including, but not limited to; the fuel oil tank, fuel oil pumps, piping, valves, gauges, thermometers, monitors, safety devices, the burners, blower motors, air registers, oil metering valves, nozzles, gas valves, gauges, expansion tank, circulating pumps, motors, heat exchanger, and control devices. The Contractor shall make adjustments, repairs or replacements as necessary to correct deficiencies and supporting the annual U.S. Government boiler certification procedures.

c. Motors, Drive Assemblies and Fans: Remove accumulations of dust, dirt, and grease from the motors, drive assemblies and fans; maintaining, repairing or replacing; worn, loose, missing, or damaged mechanical and electrical components; bent blades; worn or loose belts; unbalanced moving parts; noisy bearings; end play or shafts; motors, and ineffective sound isolators.

d. Steam Generators: Remove sediment and other accumulations in steam generators; maintaining, repairing or replacing: worn, loose, missing, or damaged mechanical and electrical components; valves; temperature and pressure controls; and insulation. Currently (1) of (2) steam generators is in a dry lay-up. The Contractor shall be responsible to maintain this condition and rotate this status between the steam generators each April.

e. Piping: Repair or replace pipes so that they are free from leaks, corrosion, deformation, and material defects. All pipe or fittings replaced shall be compatible with the adjoining materials.

f. Valves and Gauges: Pneumatic, Electrical and Manual Control: Adjust, calibrate, repair or replace valves and gauges, pneumatic, electrical and manual controls.

ATTACHMENT J-1605000-04
TYPICAL WORK PERFORMED OPERATING AND MAINTAINING
THE STEAM PLANT PORTION OF THE CENTRAL ENERGY PLANT

- g. Valves, Regulators, and Gauges: Repair or replace the valves, regulators and gauges. The components shall be adjusted, calibrated, repaired, or replaced as required in order to ensure proper operation. The Government will certify all backflow preventers.
- h. Potable Water Systems: Maintain, repair or replace all components of the potable water system including, but not limited to: the water softener, demineralizer, thermostatic water blenders, meters, valves, system alarms, and piping.
- i. Underground Storage Tanks: Remove dust, dirt, and other accumulations atop the storage tanks. Maintain, repair or replace the leak detection system, fuel oil pumps, valves, system alarms, and piping.
- j. Domestic Hot Water Converters: Maintain, repair or replace worn, loose, missing or damaged components of the domestic hot water heater; including, valves, pumps, meters, and piping.
- k. Direct Digital Control System: Monitor the hospital direct digital control system. Print out all alarm conditions at least once a shift. Notify appropriate hospital facilities personnel of all alarm conditions. The Contractor will not be responsible for maintaining or component replacement for the existing DDC equipment.

ATTACHMENT J-1605000-04

HISTORICAL REQUIREMENTS FOR MAINTENANCE AND TESTING OF WATER TREATMENT SYSTEMS
(STEAM PLANT)

Operate, maintain, and repair all water treatment equipment, components and distribution system in the Central Energy Building. Work includes the pumping, treatment, storage and distribution of treated and potable water, systems including, but not limited to: the water softener, demineralizers, storage tanks, meters, valves, system alarms, and piping; corrective and preventative maintenance and repair of plants and systems; water testing, completing records and reports in order to provide treated and potable water twenty-four (24) hours per day, seven (7) days per week.

Daily: Inspect water supply systems, including water treatment equipment, components, distribution lines, etc., and perform any and all adjustments, maintenance and repair work needed for optimal operation of the systems. The Contractor shall evaluate the operation of equipment and test water samples to monitor the performance of water treatment systems.

Perform daily and weekly operation and maintenance services in accordance with the OEM Instruction on the following equipment:

1. Water Softeners
2. Domestic Hot Water Converters
3. Heating Boilers
4. Clean Steam Generators

Perform water analysis in accordance with the testing procedures described below.

Provide, at a minimum, the quarterly testing of duplicate samples by a commercial laboratory approved by the KO, for the following parameters:

1. Total Dissolved Solids
2. Total hardness
3. Calcium Hardness
4. Conductivity
5. M-Alkalinity
6. Total Iron

The results of all samples shall be provided to the KO and the Hospital's Facility Manager within five (5) working days. Correct any deficiencies in treatment procedures indicated by the results of the samples. Submit the proposed testing facilities for chemical analysis to the KO for approval. Sample soft water once a shift to determine hardness. Regenerate water softeners whenever total hardness exceeds 1 ppm. After each regeneration, refill brine tank in accordance with the manufacturer's instructions. Conduct chemical test of hot water heating, chill water, and cooling tower water once a day. Record results. Adjust chemical feed to systems as required to maintain parameters as set by the water treatment consultant.

ATTACHMENT J-1605000-05
 BUILDING 4390 CHILLER PLANT AND HVAC HISTORICAL WORKING UNDER \$2,500.00 LABOR & MATERIALS
 FY-15

Date	Minor Repair Number	Equipment	Project Description
Dec 1, 2014	001		Replace #1 CS Gen's feedwater pump
Feb 5, 2015	004	Boiler #1	Replace #1 Boiler Gauge Glass
Feb 9, 2015	005	Boiler #2	Replace Fire eye sensor #2 Boiler
Apr 27, 2015	006	Boiler #2	Replace #2 Boiler Gauge Glass
May 6, 2015	007	Boiler #3	Replace #3 Boiler Gauge Glass
Jun 6, 2015	008	P-19	Replace P-19 Suction Valve
Jun 24, 2015	012		Replace copper lines to blowdown tank
Jun 26, 2015	013	DA Tank	Install D A Tank Alarm Light
Jul 9, 2015	014	P-26	Replace P-26 Chemical Pump

ATTACHMENT J-1605000-05
 BUILDING 4390 CHILLER PLANT AND HVAC HISTORICAL WORK UNDER \$2,500.00 LABOR & MATERIALS
 FY-14

Date	Minor Repair Number	Equipment	Project Description
Oct 2, 2013	001	Boiler #2	Replace #2 Boiler Fuel Oil Pump
Oct 13, 2013	002		Replace PRV-1's inlet steam trap & valves
Oct 18, 2013	003		Replace PRV-1's outlet steam trap & valves
Nov 5, 2013	004		Replace PRV-3's inlet steam trap & valves
Nov 19, 2013	005		Replace PRV-5's outlet steam trap & valves
Dec 15, 2013	006		Replace PRV-2's inlet steam valve leak
Jan 21, 2014	007		Replace PRV-5's inlet steam leak
Feb 4, 2014	008		Replace low water level alarm cond. Tank
Feb 23, 2014	010		Replace steam trap #2 CSG outlet
Feb 23, 2014	011	B-26	Repair P-26 Boiler Chemical Pump
Mar 10, 2014	012		Replace steam trap #2 CSG inlet
Mar 10, 2014	013		Repair Steam Leak #2 CSG
Mar 12, 2014	014		Replace PRV-5 Relief Valve
Mar 12, 2014	015	P-27	Replace P-27 Suction Valve
Mar 12, 2014	017	Boiler #1	Replace Mercoid Switch #1 Boiler
Mar 12, 2014	018	Boiler #1	Replace #1 Blr Continuous Blowdown Valve
Mar 17, 2014	019		Replace #2 C.S. Gen's Steam Trap Gasket
Mar 17, 2014	020		Replace #2 C.S. Gen's Steam Strainer
Mar 17, 2014	021		Replace #1 C.S. Gen's Backflow Preventer
Mar 19, 2014	022	P-18	Replace P-18 (Gov Supplied Pump)
Mar 20, 2014	023	Boiler #2	Replace Mercoid Switch #2 Boiler
Mar 23, 2014	024	Boiler #1	Replace LWCO #1 Boiler
Mar 23, 2014	025	Boiler #2	Replace Petcock Valve #2 Boiler
Mar 27, 2014	026		Replace D.A. Tank's Float Assembly
Apr 1, 2014	027	Boiler #2	Replace Mercoid Switch #2 Boiler
Apr 5, 2014	028		Repair D.A. Tank Chemical Inlet Line
Apr 10, 2014	031	Boiler #2	Replace #2 Blr Fuel Oil Pump
Apr 12, 2014	032		Replace PRV-1's Inlet Steam Trap & Valves
Apr 12, 2014	033		Replace PRV-1's outlet Steam Trap & Valves
Apr 12, 2014	034		Replace PRV-3's Inlet Steam Trap & Valves
Apr 12, 2014	035		Replace PRV-5's Inlet Steam Trap & Valves

Date	Minor Repair Number	Equipment	Project Description
Apr 18, 2014	036		Repair PRV-2's inlet steam valve leak
Apr 18, 2014	037		Repair PRV-5's inlet steam leak
May 2, 2014	040		Replace Steam Trap #2 CSG outlet
Jul 10, 2014	041		Repair P-26 Blr Chemical Pump
Jul 10, 2014	042		Replace Steam Trap #2 CSG Inlet
Jul 13, 2014	043		Repair Steam Leak #2 CSG
Aug 9, 2014	044		Replace PRV-5 Relief Valve
Aug 10, 2014	045		Replace Steam Trap #1 CSG outlet
Sep 6, 2014	046		Replace #3 Blr Continuous Blowdown Valve
Sep 15, 2014	047		Replace Steam Trap #1 CSG Inlet
Sep 20, 2014	048		Repair Leak #1 Dom, Hot Water Tank

ATTACHMENT J-1605000-05
 BUILDING 4390 CHILLER PLANT AND HVAC HISTORICAL WORK UNDER \$2,500.00 LABOR & MATERIALS
 FY-13

Date	Minor Repair Number	Equipment	Project Description
Jan 17, 2013	002		#2 CS Gen, replaced gauge glass
Jan 21, 2013	003	Boiler #1	Replace #1 Boiler Manhone cover gasket
Jan 22, 2013	004	Boiler #1	Replaced upper petcock valves
Jan 26, 2013	005		Replaced bellow assembly #1 CS Gen
Jan 28, 2013	006	Boiler #1	Replaced fire eye senser
Jan 15, 2013	007	Boiler #2	Replace petcock vavle
Jan 28, 2013	008		Replaced feedwater pump #2 CS Gen
Mar 15, 2013	009	Boiler #1	Replace outlet valve
Apr 15, 2013	010		Replaced #2 CS Gen inlet check & ss
Apr 17, 2013	011		Replaced gasket McDonnell Miller #1 CSG
Apr 9, 2013	012	Boiler #2	Replaced pressretrol
Apr 17, 2013	013	Boiler #2	Replaced fire-eye sensor
Apr 27, 2013	014	Boiler #1	Replaced lower petcock valve
Jun 9, 2013	015		Replaced pressure controller #2 CS Gen
Sep 7, 2013	016	Boiler #1	Replaced gauge glass
Sep 28, 2013	017	P-26	Replace P-26

ATTACHMENT J-1605000-05
 BUILDING 4390 CHILLER PLANT AND HVAC HISTORICAL WORK UNDER \$2,500.00 LABOR & MATERIALS
 FY-12

Date	Minor Repair Number	Equipment	Project Description
Nov 1, 2011	003		Repair PRV Station Outlet Flange
Jan 1, 2012	005		Replace PRV1 & 2 Outlet Drain Valve
Jan 11, 2012	006	Boiler #2	Replace #2 Boiler Fan
Jan 20, 2012	008		Replace #1 CSG outlet steam trap
Jan 24, 2012	009		Replace #1 CSG inlet steam trap with a F&T trap
Jan 24, 2012	010		Open and Clean #1 CSG's large steam trap
Jan 24, 2012	011		Replace #1 CSG's inlet steam press gauge
Jan 28, 2012	013		Replace #2 CSG's inlet steam trap with a F&T trap
Jan 28, 2012	014		Replace #2 CSG's inlet steam press gauge
Jan 28, 2012	015		Replace #2 CSG's sample line valve
Feb 21, 2012	016	Boiler #2	Replaced #2 Boiler Fuel Oil Pump
Mar 8, 2012	017	Boiler #2	Replace #2 Boiler Meter Valve
Mar 13, 2012	018	Boiler #2	Replace #2 Boiler's F.O. inline check valve
Apr 3, 2012	020		Replace Gasket #1 C.S. Generator's tube bundle
May 5, 2012	024	P-25	Replaced P-25 suction valve
Jun 1, 2012	027	P-17	Replace P-17 Motor
Jun 1, 2012	028	P-17	Replace P-17 Discharge Valve
Jul 13, 2012	029		Repair #2 C S Gen. bottom blow leak
Jul 13, 2012	030		Repair #1 C S Gen. drain tee leak

ATTACHMENT J-1605000-06
 BUILDING 4390 STEAM PLANT HISTORICAL PM WORK
 (Schedule Based on DMLSS Facilities Maintenance PM Program)

EQUIPMENT ID	DESCRIPTION	FREQUENCY
DAT-1	Deaeration Tank-Spray Type	Quarterly
DAT-1	Deaeration Tank-Spray Type	Annually
DCWP-1	Domestic Cold Water Pump	Quarterly
DCWP-2	Domestic Cold Water Pump	Quarterly
P-10	Heating Hot Water Pump	Quarterly
P-11	Heating Hot Water Pump	Quarterly
P-12	Heating Hot Water Pump	Quarterly
P-16	Condensate Transfer Pump	Quarterly
P-17	Condensate Transfer Pump	Quarterly
P-18	Boiler Feed Water Pump	Quarterly
P-19	Boiler Feed Water Pump	Quarterly
P-20	Fuel Oil Transfer Pump #1	Quarterly
P-21	Fuel Oil Transfer Pump #2	Quarterly
#1	Boiler	Monthly
#2	Boiler	Monthly
#3	Boiler	Monthly
#1	Boiler	Quarterly
#2	Boiler	Quarterly
#3	Boiler	Quarterly
#1	Boiler	Semi-Annual
#2	Boiler	Semi-Annual
#3	Boiler	Semi-Annual
#1	Clean Steam Generator	Monthly

ATTACHMENT J-1605000-06
 BUILDING 4390 STEAM PLANT HISTORICAL PM WORK
 (Schedule Based on DMLSS Facilities Maintenance PM Program)

EQUIPMENT ID	DESCRIPTION	FREQUENCY
#2	Clean Steam Generator	Monthly
#1	Clean Steam Generator	Annually
#2	Clean Steam Generator	Annually
T-6	Boiler Oil Day Tank	Quarterly
#1	Boiler	Annually
#2	Boiler	Annually
#3	Boiler	Annually
WS-1	Duplex Water Softener	Annually
WS-2	Duplex Water Softener	Annually
P-22	Condensate Transfer Pump #1	Quarterly
P-23	Condensate Transfer Pump #2	Quarterly
P-25	Boiler Chemical Standby Pump	Monthly
P-26	Boiler Chemical Pump	Monthly
P-27	Chemical DA Tank Pump	Monthly
P-28	Domestic Hot Water Recirculation Pump	Quarterly
P-29	Drain Sump Pump #1	Quarterly
P-30	Drain Sump Pump #2	Quarterly
ET-3	Hot Water Expansion Tank	Annually
ET-4	Hot Water Expansion Tank	Annually
ET-5	Hot Water Expansion Tank	Annually
T-4	680 Gal. Condensate Tank	Annually
UST-1	Underground Storage Tank #1	Quarterly
UST-2	Underground Storage Tank #2	Quarterly

ATTACHMENT J-1605000-06
 BUILDING 4390 STEAM PLANT HISTORICAL PM WORK
 (Schedule Based on DMLSS Facilities Maintenance PM Program)

EQUIPMENT ID	DESCRIPTION	FREQUENCY
#1 Boiler	Clean firesides and tubes on steam boilers	Annually during the month of April.
#2 Boiler	Clean firesides and tubes on steam boilers	Annually during the month of April.
#3 Boiler	Clean firesides and tubes on steam boilers	Annually during the month of April.
P-25	Deaeration Tank Boiler Chemical Pump	Weekly Check
P-26	Boiler Tank Chemical Pump	Weekly Check
P-27	Deaeration Tank Chemical Pump	Weekly Check

ATTACHMENT J-1605000-07
 HISTORICAL BOILER, HRSG AND UPV TESTING AND CERTIFICATION SCHEDULE

Equip #	Description	Manufacturer	Model No.	Serial No.	Capacity	Year	Last Certification
1	150 HP Boiler	Superior	4-5-751	11968	150hp	1993	May 2015
2	150 HP Boiler	Superior	4-5-751	11969	150hp	1993	May 2015
3	150 HP Boiler	Superior	4-5-751	11970	150hp	1993	May 2015
1	670 Gal. Clean Steam Generator	Cemline	H670USG1484	52089	670 gal	1999	Apr 2013
2	670 Gal. Clean Steam Generator	Cemline	H670USG1484	53506	670 gal	2003	Apr 2013

ATTACHMENT J-1605000-08
 BUILDING 4390 STEAM PLANT HISTORICAL IDIQ WORK BY FISCAL YEAR

Date	Project Number	Project Description	Total Dollar Amount
Sep 14, 2012	6	Replacement of #3 Boiler's Burner and Controls	\$43,098.00
Sep 19, 2012	9	Replace P-8 Condensor Water Pump and Motor	\$11,970.00
		Sub-Total for FY-12	\$55,068.00
		None	
		Sub-Total for FY-13	\$0.00
Apr 28, 2014	17	Rebuild P-4 Primary Chill Water Pump and Motor	\$3,540.38
July 1, 2014	18	Replace the Exhaust breeching on Scotch Marine Boilers #1, #2, #3	\$92,755.00
Sep 15, 2014	20	Up-Grade Potable Water Heating System	\$205,842.00
Sep 29, 2014	21	Replace domestic cold water pumps	\$4,930.00
		Sub-Total for FY-14	\$307,067.38
Mar 11, 2015	23	Replace Steam Outlet Valve on Boiler #1	\$1,528.00
Jun 1, 2015	25	Replace Boilers BottomBlow Piping	\$6,368.00
Jun 1, 2015	26	Rebuild P-11 Heat Pump	\$717.00
		Sub-Total for FY-15	\$8,613.00

ATTACHMENT J-1608000-01
 BUILDING 4390 COMPRESSED AIR PLANT EQUIPMENT DESCRIPTION AND INVENTORY

Equip #	Description	Manufacturer	Model No.	Serial No.	Capacity	Year
MAC-1	Medical Air Compressor	Powerex	SLAE05E	KL5278	16.4 SCFM@ 50 PSI	2011
MAC-2	Medical Air Compressor	Powerex	SLAE05	EH4164	16.4 SCFM@ 50 PSI	2005
DAC-1	Dental Air Compressor	Powerex	SLAE05	EH4168	16.4 SCFM@ 50 PSI	2005
DAC-2	Dental Air Compressor	Powerex	SLAE05	EH4167	16.4 SCFM@ 50 PSI	2005
DAC-3	Dental Air Compressor	Powerex	SLAE05	EH4162	16.4 SCFM@ 50 PSI	2005
DAC-4	Dental Air Compressor	Powerex	SLAE05	EH4173	16.4 SCFM@ 50 PSI	2005
DM-1	Dew Point Monitor-Medical	Xentaur	XDT-NEMA	14601		2005
DM-2	Dew Point Monitor-Dental	Xentaur	XDT-NEMA	14604		2005
VAC-1	Medical Vacuum Unit	Powerex	CVPD0754B4KIHT	U143700471		2014
VAC-2	Medical Vacuum Unit	Powerex	CVPD0754B4KIHT	U143700470		2014
MASD-1	Dryer, Absorption - Medical	Zander	KMT 4 MED	05 / 36643		2005
MASD-2	Dryer, Absorption - Medical	Zander	KMT 4 MED	05 / 36646		2005
DASD-1	Dryer, Absorption - Dental	Zander	KMT 7 MED	04 / 33854		2005
DASD-1	Dryer, Absorption - Dental	Zander	KMT 7 MED	06 / 37917		2005
CAC-1	Control Air Compressor	Powerex	SLAE05	FC0818	16.4 SCFM@ 50 PSI	2005
CAC-2	Control Air Compressor	Powerex	SLAE05	KD4629	16.4 SCFM@ 50 PSI	2010
CASD-1	Control Air Dryer, R134a	Hankinson	HPR15-115	H015A1150605010		2005
MCMM-1	Carbon Monoxide Monitor (Medical)	Enmet	ISA-RAL-M	2157		2005
DCMM-2	Carbon Monoxide Monitor (Dental)	Enmet	ISA-RAL-M	2165		2005
DA1	Dental Air System Tank	Campbell Hausfeld	NB-1 338421	1338421	120 gal	2005
MA1	Medical Air System Tank	Campbell Hausfeld	NB-1340123	1340123	80 gal	2005
CA1	Control Air System Tank	Campbell Hausfeld	NB-1 390007	1390007	80 gal	2005

ATTACHMENT J-1608000-02
TYPICAL WORK PERFORMED OPERATING AND MAINTAINING
THE STEAM PLANT PORTION OF THE CENTRAL ENERGY PLANT

The work includes requirements for daily operation, maintenance, and preventive maintenance to be performed on compressed air plant equipment and components.

- a. **Reciprocating Air Compressors: (Medical and Dental)** Remove accumulations of dust, dirt, and grease from the air compressors. Maintain, repair or replace: worn, loose, missing, or damaged mechanical and electrical components and controls; pressure switches; safety valves; worn or loose belts; unbalanced moving parts; misalignment; damaged couplings; end play of shafts, compressors, motors; and ineffective sound isolators, replace filters and lubricants, drain tanks and oil separators.
- b. **Air Dryers – Mechanical, Electrical and Chemical:** Remove accumulations of dust, dirt, and grease from the air dryers. Maintain, repair or replace: worn, loose, missing, or damaged mechanical and electrical components; temperature and pressure controls; unbalanced moving parts; misalignment; end play of shafts; clogged or dirty heat exchanger; refrigerant levels; motors; compressors; and ineffective sound isolators. The Contractor is responsible for replacement or regeneration of drying chemicals.
- c. **Piping:** Repair or replace pipes so that they are free from leaks, corrosion, deformation, and material defects. All pipe or fittings replaced shall be compatible with the adjoining materials.
- d. **Valves and Gauges: Pneumatic, Electrical and Manual Control:** Adjust, calibrate, repair or replace the valves and gauges, pneumatic, electrical and manual controls.
- e. **Direct Digital Control System:** Monitor the hospital direct digital control system. Print out all alarm conditions at least once a shift. Notify appropriate hospital facilities personnel of all alarm conditions. The Contractor will not be responsible for maintaining or component replacement for the existing DDC equipment.

ATTACHMENT J-1608000-03
 BUILDING 4390 COMPRESSED AIR PLANT HISTORICAL WORK UNDER \$2,500.00 LABOR & MATERIALS

FY-12

Date	Minor Repair Number	Equipment	Project Description
Nov 1, 2011	001		Replace Control Air Regulator
Nov 1, 2011	002		Replace Control Air Compressor Wiring
Nov 1, 2011	004		Replace Control Air Compressor #1 Check Valve
Jan 27, 2012	012		Repair Medical Air Comp ½ inch copper pipe
Apr 22, 2012	022		Replace Control Air Compressor's Check Valve
Apr 22, 2012	023		Replace #1 Medical Air Comp. Belts

ATTACHMENT J-1608000-04
 BUILDING 4390 COMPRESSED AIR PLANT HISTORICAL PM WORK
 (Schedule Based on DMLSS Facilities Maintenance PM Program)

EQUIPMENT ID	DESCRIPTION	FREQUENCY
CAC-1	Control Air Compressor #1	Monthly
CAC-1	Control Air Compressor #1	Quarterly
CAC-2	Control Air Compressor #2	Monthly
CAC-2	Control Air Compressor #2	Quarterly
DAC-1	Dental Air Compressor #1	Monthly
DAC-1	Dental Air Compressor #1	Quarterly
DAC-2	Dental Air Compressor #2	Monthly
DAC-2	Dental Air Compressor #2	Quarterly
MAC-1	Medical Air Compressor #1	Monthly
MAC-1	Medical Air Compressor #1	Quarterly
MAC-2	Medical Air Compressor #2	Monthly
MAC-2	Medical Air Compressor #2	Quarterly
VAC-1	Medical Vacuum Unit #1	Quarterly
VAC-2	Medical Vacuum Unit #2	Quarterly

ATTACHMENT J-1608000-05
 HISTORICAL UPV TESTING AND CERTIFICATION SCHEDULE

Equip #	Description	Manufacturer	Model No.	Serial No.	Capacity	Year	Last Certification
DA1	Dental Air System Tank	Campbell Hausfeld	NB-1338421	1338421	120 gal	2005	May 15
MA1	Medical Air System Tank	Campbell Hausfeld	NB-1340123	1340123	80 gal	2005	May 15
CA1	Control Air System Tank	Campbell Hausfeld	NB-1390007	1390007	80 gal	2005	May 15
VAC-1	Medical Vacuum Unit	Powerex		U143700471		2014	
VAC-2	Medical Vacuum Unit	Powerex		U143700470		2004	

ATTACHMENT J-1608000-06
 BUILDING 4390 COMPRESSED AIR HISTORICAL IDIQ WORK BY FISCAL YEAR

Date	Project Number	Project Description	Total Dollar Amount
Sep 17, 2012	8	Rebuild 2 Dental Air Desiccant Dryers and 2 Medical Air Desiccant Dryers	\$10,614.00
Sep 19, 2012	10	Rebuild Medical Air Compressors Number 1 and 2	\$1,002.00
		Sub-Total for FY-12	\$11,616.00
		None	
		Sub-Total for FY-13	\$0.00
Feb 20, 2014	14	Replace Medial Vacuum Vane Pump Number 2	\$3,815.00
Sep 15, 2014	19	Replace Existing Powerex Units as part of Medical Upgrade	\$73,035.00
		Sub-Total for FY-14	\$76,850.00
Apr 23, 2015	24	02 and N02 Upgrades	\$33,520.00
		Sub-Total for FY-15	\$33,520.00