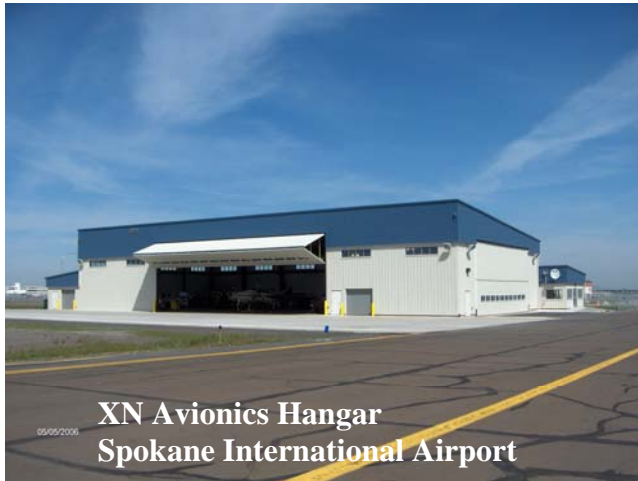


WASHINGTON ENGINEERING

STATEMENT OF QUALIFICATIONS



WASHINGTON ENGINEERING

4040 Wheaton Way, Suite 202
Bremerton, WA 98310
Phone: 360-405-1420
Fax: 360-377-4153

933 West Third Ave, Suite 214
Spokane, WA 99201
Phone: 509-535-7292
Fax: 509-242-0840



TABLE OF CONTENTS

Project Type	Page
Aircraft Hangars	1
Aircraft and Heavy Duty Pavements	3
Buildings – New Construction	6
Pre-Engineered Structures	7
Building Additions and Alterations	10
Stormwater Projects	16
Roads and Parking Lots	18
Security Projects	19
Fuel System Projects	20
Miscellaneous Projects	20

WASHINGTON ENGINEERING - STATEMENT OF QUALIFICATIONS

Aircraft Hangars



This project designed a new 10,000 sf aircraft hangar for Gulfstream IV aircraft and provided an additional 13,500 sf of space for a Fixed Base Operator, an aircraft repair shop and a two-story personnel support area including offices, conference rooms, training rooms, restrooms and a breakroom. Our work included:

- Pre-planning, Planning, Programming, Interior Design and Signage
- Site Layout and Pavement and Landscaping design
- Architectural, structural, mechanical and electrical design of 23,500 sf hangar
- Design of Fire Protection Systems
- Coordination of environmental review and permitting
- Construction support, including review of contractor submittals, processing “requests for information”, progress reviews, change order management, and review of contractor payment requests

Port of Bremerton
Aviation Maintenance Hangar



Washington Engineering is designing a new 87,000 sf aircraft hangar to be constructed at Olympia Regional Airport. The facility will be owned by the State of Washington and provide space for the aviation operations of the Department of Natural Resources, the Department of Fish and Wildlife and the Washington State Patrol. In addition to providing hangar space for 23 aircraft and helicopters, the building will include office space for the three agencies, parts storage, shared personnel support spaces and a common maintenance shop. Sitework will include construction of access roads, extension of utilities to the site, construction of a 100-vehicle parking lot, construction of approximately 340,000 sf of aircraft ramp aprons and the heliport, and landscaping. The complete facility is projected to have a construction cost of \$14,600,000. The total project budget requirement is approximately \$20,000,000.

State of Washington
Multi-Agency Aircraft Hangar



The Port Townsend Aero Museum is an 18,000 SF, antique airplane and restoration hangar and museum to display vintage aircraft capable of flight. The building design incorporated a strong emphasis on UV light protection and control due to the age and type of materials used in the construction of vintage aircraft; this was accomplished by solar orientation, sunshades, screen and reflective interior lighting. The building is constructed with structural steel high and low bays displaying hanging and ground level airplanes protected by metal insulated wall panels, insulated standing seam metal roof, glass curtain walls. Aircraft entry into the building is provided by 16' high by 52' long bifold hangar bay doors. The building also features an elevated perimeter observation deck suspended from the roof and stabilized by a series of wall/deck panels.

Port Townsend Aero Museum



Washington Engineering provided complete architectural design and structural engineering and electrical engineering services and construction support for an 18,000 sf avionics hangar facility. The structure is a metal building system with a height of 38-feet, a length of 170-feet and width of 105-feet. The controlling design feature is an 11,500 sf hangar bay with a vertical clear inside height of 20-feet. The hangar is accessed through two large bi-fold hangar doors. The building is supported on a reinforced concrete foundation with a concrete slab-on-grade floor designed to support corporate jet aircraft. Adjacent to the hangar bay, is a 27-foot wide by 125-foot long, one-story bay that provides space for shop, warehousing and administrative functions.

Spokane International Airport
XN Avionics Hangar

WASHINGTON ENGINEERING - STATEMENT OF QUALIFICATIONS

Aircraft Hangars



**Alter Hangar 1 and 2 Side Shop Structures
McChord AFB**

Upgrade of the maintenance lean-to areas of Hangars 1 and 2 at McChord AFB. Work in Hangar 1 included upgrading existing rooms into a Long Distance Learning Center with High Tech Maintenance Classrooms for maintenance personnel. Work in Hangar 2 included upgrading of shops and administrative areas for maintenance personnel. Renovated shops include the Hydraulic Machine Shop, Structural Maintenance Shop, Corrosion Control Shop, Aircraft Tire Shop, Paint Booth, and A/R Hydraulics Shop. Renovated areas also included breakrooms, bench stock areas, tool rooms, general storage rooms, locker rooms, vestibules, and office space. Work on both Hangars included upgrade of HVAC, Electrical, Communication, and Fire Control systems, and renovation of all interior finishes.



**Alter Aircraft Maintenance Unit
Hangar 304
McChord AFB**

Alteration of the Aircraft Maintenance Unit Hangar involved design of complete renovation of 6,000 sf of space. The project included interior demolition, construction of new administrative and shop spaces including floor coverings, wall coverings, suspended ceilings and installation of associated utilities. These projects included design features to provide fire code compliance between different UBC occupancy groups, as well as accessibility improvements. New HVAC and EMCS systems were provided in the facility.



**Alter Corrosion Control
Hangar 310
McChord AFB**

Alteration of the Corrosion Control Hangar involved design of complete renovation of 6,000 sf of space. The project included interior demolition, construction of new administrative and shop spaces including floor coverings, wall coverings, suspended ceilings and installation of associated utilities. This projects included design features to provide fire code compliance between different UBC occupancy groups, as well as accessibility improvements. New HVAC and EMCS systems were provided in the facility.



**Upgrade Hangar 1166
McChord AFB**

This project was for renovation of a 30,000 sf aircraft hangar, including: Replacement of steam fired hot air heating system with a hot water heating system; Alterations to ventilation and piping systems; Modernize electrical service and lighting systems; Install factory finished insulated metal interior wall panels; Provide electrically operated insulated metal rollup doors; Remove existing floor finish/joint sealant and install new elastomeric joint sealants and provide a reflective urethane coating with grit surface over the entire floor slab. ACASS Rating: Excellent

WASHINGTON ENGINEERING - STATEMENT OF QUALIFICATIONS

Aircraft Hangars



This project was for renovation of a 30,000 sf aircraft hangar, including: Replacement of steam fired hot air heating system with a hot water heating system; Alterations to ventilation and piping systems; Modernize electrical service and lighting systems; Install factory finished insulated metal interior wall panels; Provide electrically operated insulated metal rollup doors; Remove existing floor finish/joint sealant and install new elastomeric joint sealants and provide a reflective urethane coating with grit surface over the entire floor slab.

**Upgrade Hangar 1167
McChord AFB**



This project was for renovation of a 42,000 sf aircraft hangar, including design of a new AFFF fire protection system, including a 130,000 gallon water supply tank and a pumphouse with diesel driven supply pumps; Replacement of steam fired hot air heating system with a hot water heating system; Alterations to ventilation and piping systems; Modernization of electrical service and lighting systems; Installation of factory finished insulated metal interior wall panels; Providing electrically operated insulated metal rollup doors; Removing the existing floor finish/joint sealant and installing new elastomeric joint sealants and providing a reflective urethane coating with grit surface over the entire floor slab.

**Washrack Hangar 1178
McChord AFB**



Washington Engineering has designed numerous T-Hangars and Box Hangars located at General Aviation Airports. The projects typically include:

- Concrete Foundation and Slab-on-grade
- Pre-engineered metal building with factory finishes
- Bifold, Hydroswing or track mounted hangar bay access doors
- Two half-bays with access via 11-foot high rollup doors for material storage
- Compliance with NFPA 409 for fire protection
- Electrical power and lighting to each bay; perimeter exterior lighting
- Oily waste collection system and alarmed dead-end sump
- Stormwater collection and disposal system
- Aircraft aprons and taxiways

**Aircraft T/Box Hangars
Bremerton, Shelton, Port Townsend**

Aircraft and Heavy Duty Pavements



This project designed a 10,000 sy addition to apron E to accommodate basing of 24 A10 aircraft at McChord. Utilities extensions and relocations were designed, along with taxiway lighting modifications and the installation of security lighting. A major realignment of the perimeter road was required to provide clearance around the apron addition.

**Add/Alter Aircraft Apron E
McChord AFB**

WASHINGTON ENGINEERING - STATEMENT OF QUALIFICATIONS

Aircraft and Heavy Duty Pavements



As part of the A10 beddown at McChord, Taxiway L was widened from 75 feet to 150 feet; recycled asphalt was used as base material for new asphaltic pavements. The project included utilities relocations and design of 2920 lf of taxiway edge lighting. The project also included design of a 1500 lf aircraft tow road to a new trim pad. The project also included design of a 25' wide by 200' long addition to Hazardous Cargo Loading Pad L to support both C141 and A10 aircraft.

**Add/Alter Taxiways
McChord AFB**



This project included a condition survey of the 11,000 foot long by 150 foot wide primary runway to identify pavement deficiencies, followed by design of asphalt patching and crack sealing and portland cement concrete repairs and slab replacement. The project construction was coordinated for accomplishment in a 21 day window.

**Repair Runway
McChord AFB**



This project performed design for expansion of the alert apron for additional KC135R aircraft parking. The work included design of a 3,000 sy addition to an existing apron to accommodate basing of 12 additional KC135R tanker aircraft; Utilities relocations; Cathodic Protection on piping systems; Modification of taxiway lighting systems.

**KC135 Aircraft Apron
Malmstrom AFB**



**Hot Refueling Point
Fort Lewis**

This project designs three 1,100 sy concrete hardstand areas with underground fueling pits for refueling helicopters at Gray Army Air Field. The hardstands are connected to the runway via 1,000 feet of asphalt taxiways which are provided with semi-flush edge lighting fixtures for night operations. Two 20,000 gallon, underground, double walled fuel tanks and a fuel off-loading station were designed. Fuel piping was designed as double walled fiberglass piping with leak detection monitoring capability. A 500 sf operations control building was designed along with pavements, utilities extensions and security fencing.

WASHINGTON ENGINEERING - STATEMENT OF QUALIFICATIONS

Aircraft and Heavy Duty Pavements



- Field Surveys and As-Built documentation
- Removed 1400 SY of Roller Compacted Concrete
- Constructed 1400 SY of 15-inch thick Reinforced Concrete
- Constructed storm drainage improvements
- Construction support, including review of contractor submittals, processing "Requests for Information", and weekly construction progress meetings
- Design work included preparation of Schematic Design, Design Development, Final construction drawings and specifications and support during bidding.
- All drawings were prepared in AutoCAD

Port of Tacoma
South Intermodal Yard



Washington Engineering provided complete design services to relocate and reconfigure the primary vehicle/truck entrance into the Port of Everett. The work included preparation of AutoCad drawings, specifications and cost estimates. We are currently performing construction support services on the project. Key features included:

- Relocation/Realignment of Terminal Avenue
- Widening sidewalks, construction of curbs/gutters
- Design of three vehicle/truck queuing lanes
- Coordination of Pedestrian trails with City of Everett
- Port perimeter security fence and gate relocations

Port of Everett
Terminal Avenue Improvements



- Field Surveys and As-Built documentation
- Raised and re-ballasted 12,000 linear feet of Railtrack
- Designed 280 lf pre-cast concrete panel railtrack/vehicle crossing
- Constructed 31,000 SY high density asphalt pavement overlay with thicknesses up to 17-inches for movement of intermodal shipping containers
- Constructed 12,000 lf of storm drainage improvements, including catch basins, oil pollution control structures and piping
- Construction support, including review of contractor submittals, processing "Requests for Information", and weekly construction progress meetings
- Design work included preparation of Schematic Design, Design Development, Final construction drawings and specifications and support during bidding.

Port of Tacoma
South Intermodal Yard
Pavement, Railtrack and Drainage



- Field Surveys and As-Built documentation
- Raised and re-ballasted 1100 linear feet of Railtrack
- Rebuilt two railtrack/straddle carrier crossings
- Removed 1400 SY of failed roller compacted concrete pavements and replaced the panels with reinforced concrete pavement with a depth of 12-inches
- Construction support, including review of contractor submittals, processing "Requests for Information", and weekly construction progress meetings
- Design work included preparation of Schematic Design, Design Development, Final construction drawings and specifications and support during bidding.

Port of Tacoma
North Intermodal Yard
Pavement, Railtrack and Drainage

WASHINGTON ENGINEERING - STATEMENT OF QUALIFICATIONS

Buildings - New Construction



**Academic Training Complex
Fairchild AFB**

This project was for complete design of a 46,000 sf training and classroom facility at the Survival School. The facility provides interior spaces for administrative personnel, classroom instruction, personnel support areas, and a 10,000 sf Exhibits Lab with a woodshop and associated dust collection systems. Three large auditorium style classrooms were provided, utilizing rear screen projection technology. The structure was a reinforced concrete foundation and slab on grade, structural steel framing, brick veneer walls and a standing seam metal roof. Site improvements included design of 1500 feet of access roads, parking for 68 vehicles, access sidewalks and extension of all utilities to the site. Work included all architectural, civil, structural, mechanical and electrical features.



**Parachute Training Facility
Fairchild AFB**

This project was for complete design of a 13,700 sf training and classroom facility at the Survival School. A central feature of the facility is a 75 foot high , 16 station parachute drying tower, with associated mechanical hoisting equipment and air handling units. The structure was a reinforced concrete foundation and slab on grade, structural steel framing, CMU walls with exterior brick veneer and a standing seam metal roof. The facility provides interior spaced for administrative functions, classroom instruction, parachute repair and packing areas, and two large mockup training rooms. Site improvements included design of parking for 12 vehicles, access sidewalks and extension of all utilities to the site. Work included all architectural, civil, structural, mechanical and electrical features.



**WRSK/AGS Warehouse
McChord AFB**

This project was for design of a new 10,000 sf, high bay warehouse facility to support A10 aircraft. The structure consists of a reinforced concrete foundation and slab on grade, CMU walls to a height of 12 feet with metal panel upper walls, and a standing seam metal roof. The facility has a clear span of about 70 feet and includes a 900 sf personnel support area. The project included demolition of a substandard 7,000 sf warehouse, rerouting of utilities and design of a full EMCS system.



**Hazardous Waste Transportation
Facility
McChord AFB**

Design of a 1600 sf building for hazardous waste storage and recycling; Hazardous material storage/spill containment areas; Extension of water, sewer, storm drainage, electrical service and other utilities; Office, toilet and laundry spaces; Masonry building with structural steel frame and standing seam metal roof; Interior electrical package including power distribution, lighting, convenience outlets, fire detection and alarm, telephone and emergency lighting.

WASHINGTON ENGINEERING - STATEMENT OF QUALIFICATIONS

Buildings - New Construction



**Mental Health Clinic
Malmstrom AFB**

Construction of a new structural steel framed, insulated metal panel structure to serve as a mental health clinic. Facility included reception areas, office, counseling rooms, conference room and a records storage area; Extended utilities and provided customer parking areas; Designed HVAC and plumbing systems; Designed power distribution and lighting systems



**Victorian Hardware Store
Port Townsend, WA**

Washington Engineering was "Engineer-of-Record" for this 24,000 sf retail hardware store and warehousing facility. Structural work included foundation, footing and floor slab design and design of interior bearing walls. Washington Engineering also performed the complete site design, including access roads, construction of 5th Street between Thomas and McPherson, parking spaces, sidewalks, curbs and gutters. The stormwater management system included a cartridge filter oil/water treatment device to improve water quality prior to discharge to the City stormwater system. Work also included extension of water and sewer services to the building.



**Remote Switch Facility
Navy, Diego Garcia**

The project designed a 357 square meter (3,842 SF) single story, concrete slab, walls and roof structure fully air conditioned (moisture sensitive design), back-up power generator, grounding/lighting protected communications facility. The project also included design for sustainability sensitive to green architecture in accordance with the "Green Building Rating System of the US Green Building Council" as and earth-friendly structure.

- Tactical radio room
- LAN room/Telephone/Communication switch room
- Battery/UPS room
- Administration room, Janitor/store room and Circulation/corridor area
- Mechanical/electrical equipment room
- Restrooms

Pre-Engineered Structures



**City of Bremerton
Fire Department Storage Building**

This project designed a 3,300 sf pre-engineered storage building for the Bremerton Fire Department. The building was 50-feet wide, 66-feet long and 17-feet high at the eave. Large motorized doors (12-feet wide by 14-feet high) were provided for movement of fire fighting vehicles and other equipment. The floor slab and foundation system was designed for heavy vehicle loading. Two interior bays and the exterior washbay were provided with trench drains, connected to an oil/water separator. The project included site development, foundation design and extension of utilities. This building included power, gas, stormwater and pavement design. This facility included an open bay at the south end for a vehicle wash facility and required significant site development on an existing fire station compound. Completion of this project included conforming to a tight design schedule and construction budget.

WASHINGTON ENGINEERING - STATEMENT OF QUALIFICATIONS

Pre-Engineered Structures



NAPA Retail Store/Warehouse
Port Hadlock, WA

Washington Engineering provided multi-disciplinary architectural and engineering services to construct a 10,000 sf commercial store for use as an auto parts warehouse and retail facility. Site design included an underground stormwater infiltration pit and an oil/water separator. Exterior improvements included parking, a fenced concrete pad for compressed gas storage and a concrete dumpster pad. Four heat pumps were installed for ventilation and air conditioning. Lighting consisted of fluorescent fixtures in the office and personnel support areas and high intensity compact fluorescent fixtures in the high bay work areas.



Pest Control Facility
Fort Lewis

This project designed a 3,000 sf Pest Control Facility for construction at Fort Lewis. The facility consists of a pre-engineered metal building which is positioned on a concrete foundation and floor slab. Specific features have been included for pesticide and herbicide storage and mixing. Vehicle bays are provided for parking/loading vehicles and a washdown bay is also provided. Design includes heating, ventilation, lighting and power distribution systems. Hazardous chemicals will be stored in the facility. We prepared the design and the associated PULSAR cost estimate for accomplishment by the JOC contractor. In addition to the standard design services, we also performed contractor submittal reviews and on-call construction support.



Covered Storage Facility McChord
AFB

This project consisted of design of a 4,000 sf covered storage warehousing facility. The structure consists of a concrete foundation and slab-on-grade, a pre-engineered metal structure enclosed on three sides, brick veneer on the primary wall to match the architectural theme of adjacent structures and a standing seam metal roof. Site improvements included asphalt paving for access, storm drainage control, extension of electrical power to the site and security fencing.



HazMat Receipt/Reuse Center Addn
McChord AFB

This project provided design of a 1,000 sf building addition and an 8,000 sf structural steel framed canopy with a standing seam metal roof to provide weather protection for an outdoors hazardous materials storage area, and included spill containment features. Site work included extension of water, sewer, storm drainage, electrical power and other utilities and widening of the access road from 12 to 24 feet. The building addition provided office, toilet and laundry spaces. The interior electrical package included power distribution, lighting, convenience outlets, fire detection and alarm, telephone and emergency lighting.

WASHINGTON ENGINEERING - STATEMENT OF QUALIFICATIONS

Pre-Engineered Structures



**Vehicle Maintenance Facility
Mission Creek Youth Camp**

This project provided for demolition of an existing pole building used for equipment storage, and construction of a 4,000 GSF Maintenance Facility with shops, administrative spaces, and restrooms. The structure is a Pre-Engineered metal building, on a reinforced concrete foundation and slab on grade. The facility includes high intensity lighting and power distribution systems, and is heated with electric space heaters and unit heaters in the high bay areas. This facility was designed to provide four maintenance bays utilized for parts replacement and lubrication for wheeled vehicles, and a small motor repair shop for maintenance equipment, a woodworking shop, and an electronics repair shop.



**Outdoor Adventure Center
McChord AFB**

This project was for the renovation of a 7,000 s.f. outdoor recreational retail area, storage and maintenance room, and fire rated (hazardous occupancy) battery room. Work included the replacement of exterior metal siding with an Exterior Insulation Finish System, design features for compliance with ADA standards, facade details, and exterior concrete ramp and new main entry to retail area, selection and coordination of all interior finishes, and upgrading mechanical, electrical, and fire protection systems. Specific project features included:



**Building 1218 Alterations
McChord AFB**

Building 1218 is a forty year old structure which was previously used for office functions. This design was a complete interior and exterior renovation to convert the facility to a secure warehouse facility. Extensive interior demolition was accomplished. Improvements included replacement of exterior metal panels walls, installation of a standing seam metal roof, installation of new exterior doors and windows with canopies over primary entrances for weather protection. Also included was the design of a new electrical space heating system and the removal of a 1000 gallon underground fuel storage tank.



**Ancillary Explosives Facility
McChord AFB**

Clear and Grub Project Site; Construct a 3500 SF pre-engineered building over a new 10,000 SF concrete slab; Construct 1,866 LF of AC Concrete Road and 1,866 LF of chain link fence; Explosion proof electrical and lighting.

WASHINGTON ENGINEERING - STATEMENT OF QUALIFICATIONS

Pre-Engineered Structures



**Pest Control Facility
Yakima Training Center**

This project designed a 2,400 sf Pest Control Facility for construction at the Yakima Training Center. The facility consists of a pre-engineered metal building which is positioned on a concrete foundation and floor slab. Specific features have been included for pesticide and herbicide storage and mixing. Vehicle bays are provided for parking/loading vehicles and a washdown bay is also provided. Design includes heating, ventilation, lighting and power distribution systems. Hazardous chemicals will be stored in the facility. We prepared the design and the associated PULSAR cost estimate for accomplishment by the JOC contractor. In addition to the standard design services, we also performed contractor submittal reviews and on-call construction support.



**Entomology Shop
McChord AFB**

This project was for design of a 980 sf facility with an exterior 630 sf vehicle washdown facility. The facility was designed for the handling and storage of pesticides and related pest control equipment. Work included:

- Site improvements and extension of utilities
- Concrete foundation and floor slab, with water containment features
- Hazardous material storage areas with explosion proof electrical systems
- Complete mechanical and electrical systems
- Locker, toilet, shower and breakroom facilities
- Installation of emergency eyewash facilities.

Building Additions and Alterations



**Addition to the Youth Center
McChord AFB**

This project provided a 7,000 sf addition for classrooms and administrative areas and a 1200 sf addition for bleachers and equipment storage on an existing Youth Center Facility. The project also included renovation of 14,000 sf of existing space, including new resilient gym floor coverings, and new interior wall and floor coverings throughout the facility. The facility provides interior spaces for administrative personnel, classroom instruction, dancing instruction, and play areas. Work included all architectural, civil, structural, mechanical and electrical design, along with asbestos and lead based paint sampling and design of EMCS for the complete facility. Site work included design of a passenger drop off area, expansion of the parking area and design of outdoor play areas.



**Crash/Rescue Fire Station Addition
Gray Army Airfield, Ft Lewis**

This project was for design of a 6,000 sf addition to the fire station, including a high bay, vehicle storage area with a motorized rollup door. An additional 12,000 sf of space within the existing fire station was renovated with relocated partition walls, new wall, floor and ceiling finishes and a modernized kitchen area. The work included asbestos and lead based paint sampling and development of drawings and specifications for abatement.

WASHINGTON ENGINEERING - STATEMENT OF QUALIFICATIONS

Building Additions and Alterations



This project was for design of a 1,600 sf addition to the Fleet Service Facility, consisting of a reinforced concrete foundation and slab-on-grade, CMU walls and a standing seam metal roof. The project included complete HVAC, lighting and power systems.

**Fleet Service Facility Addition
McChord AFB**



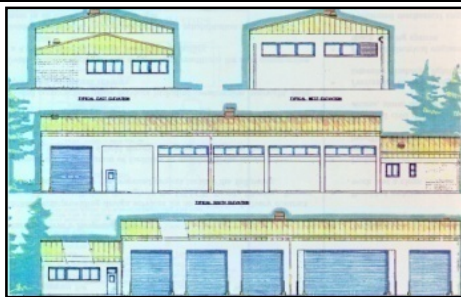
This project constructs a 25' wide by 50' long wax bay addition to an existing building. The wax bay addition was designed to match the existing facility with a concrete foundation and slab on grade, metal panel walls on a structural steel frame and a standing seam metal roof. Interior features included the installation of unit heaters, high intensity discharge (HID) vaportight luminaries and 16 foot high rollup doors. Asbestos and lead paint in all work areas was remediated. Special design was provided for underground settling and separation tanks, an oil/water separator, level switches and alarms, an automatic make-up water system and a packaged pumping and filtration system. A recirculation system was designed for wash water, installation of a high pressure wand washing system and for freeze protection.

**Vehicle Wash Rack Addition
McChord AFB**



This project designed complete renovation of the interior of a 30,000 sf air passenger terminal. The project included demolition of various walls, mechanical and electrical systems. Upgrades included the design of new administrative spaces, ticketing counters and a glass block enclosed passenger enplaning area. All bathroom facilities were modernized to comply with Federal Accessibility standards. The project scope also included seismic analysis of the structure to identify future improvements.

**PAX Terminal Renovation
McChord AFB**



**Renovation of Vehicle Maintenance
Facilities
Fort Lewis**

This project was for renovation of sixteen existing motor vehicle maintenance facilities. The project entailed replacement of existing flat roofs with low pitch standing seam metal roofs, installation of new motorized rollup vehicle bay doors, structural additions to construct a double width vehicle bay in all sixteen buildings, and upgrading of all mechanical and electrical systems. The project also included repair of asphaltic paved parking areas and design of portland cement concrete pavements for movement of M1A1 Tanks. Asbestos and Lead Based Paint sampling and analysis were completed; construction documents included the remediation of these hazardous materials.

WASHINGTON ENGINEERING - STATEMENT OF QUALIFICATIONS

Building Additions and Alterations



**Renovation of Five Schools
Fort Lewis/McChord AFB**

This project upgraded five elementary schools, the work included: Architectural alterations to comply with ADA Code requirements for ramps, ingress/egress, door widths, toilet facilities; single pane glazing was replaced with double pane, insulated glazing; Kitchen renovations for space enlargement and replacement of outdated equipment; Asbestos and lead based paint sampling, analysis and remediation; Installation of fire sprinkler systems, including extension of the water distribution piping system; Seismic analysis and structural improvements to increase lateral force resistance; Covered interconnecting walkways were repaired or replaced with new metal roofing systems. Roofing on several buildings was replaced. Interior finishes were repaired or replaced in classrooms, offices and hallways, including new wall and floor coverings and installation of new reflected ceilings.



**Repairs and Alterations to NCO
Academy
McChord AFB**

This project was for renovation of an existing two story concrete masonry and precast concrete structure to change usage from an NCO Club to an NCO Professional Military Education Academy. The work included structural upgrades to meet seismic protection standards. The renovation included providing seven classrooms, a student break lounge, computer rooms, offices, mechanical rooms and new restrooms to meet the increased occupant load and ADA requirements. An existing, high bay recreational area was converted to a 120 person auditorium/classroom with a rear screen projection room. Mechanical and electrical design was provided to provide a new HVAC system, including EMCS, new plumbing, a dry pipe fire sprinkler system, upgraded electrical distribution panels and upgraded lighting.



**Repairs to Commissary
Fort Lewis**

This project involved a wide range of repairs to an existing 60,000 sf Commissary, including renovation of walls, doors, ceilings and lighting in the Grocery, Meat, Produce and Bakery Departments. Work also included installation of handicap stalls and lighting in public restrooms, upgrade of electrical system and emergency lighting, interior and exterior painting, carpeting, repairs to the roof, and repairs to water mixers and storage coolers.

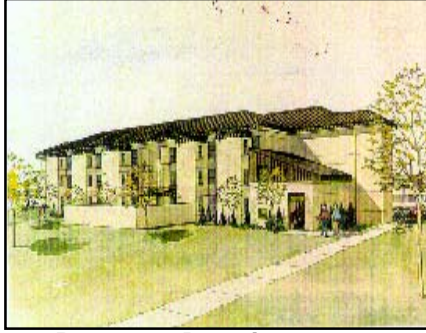


**Convert Bldg 1169 to Fiberglass
Shop
McChord AFB**

This project converted an existing nosedock hangar to a fiberglass repair shop. Improvements included design of separate interior rooms for anodizing, dirty work and a clean room. The new rooms had extensive HVAC system requirements and certain rooms had to meet Division 1, Class 1 hazardous requirements for electrical service. The design included replacement of the hangar heating system and connection into the Base EMCS. Design work also included installation of a fire sprinkler system and installation of a zoned fire alarm system. General repair work included replacement of existing hangar bay lighting with high intensity discharge lighting, roof repairs, floor repairs and design of an exterior air compressor enclosure. Asbestos and lead based paint sampling and remediation were also accomplished.

WASHINGTON ENGINEERING - STATEMENT OF QUALIFICATIONS

Building Additions and Alterations



**Renovate Dormitory 631
Malmstrom AFB**

This project converted existing dormitory 631 to meet new standards for personnel occupancy and included complete interior renovation of the building to meet revised standards for two personnel sharing common kitchen and bathroom facilities; Construction of exterior tower structures to house kitchen facilities; Comprehensive interior design and coordination of wall, floor and ceiling finishes; Replacement of builtup roofing with structural steel overbuild supporting a standing seam metal roof; HVAC, plumbing and fire protection upgrades; Electrical upgrades to replace outdated service panels, provide new lighting, provide exterior security lighting.



**Renovate Dormitory 742
Malmstrom AFB**

This project converted existing dormitory 742 to meet new standards for personnel occupancy and included complete interior renovation of the building to meet revised standards for two personnel sharing common kitchen and bathroom facilities; Construction of exterior tower structures to house kitchen facilities; Comprehensive interior design and coordination of wall, floor and ceiling finishes; Replacement of builtup roofing with structural steel overbuild supporting a standing seam metal roof; HVAC, plumbing and fire protection upgrades; Electrical upgrades to replace outdated service panels, provide new lighting, provide exterior security lighting.



**Renovate Wellness Center
Malmstrom AFB**

This project renovated an existing 11,000 sf recreational facility to serve as the Base Wellness Center; Provided new wall, ceiling and floor coverings throughout. Demolished and constructed new walls to reconfigure spaces; Provided climate controlled rooms for cardiovascular testing equipment; Complete renovation of the mechanical and electrical systems, including HVAC, plumbing, fire sprinkler, heat detectors, power distribution and lighting and the intercom system.



**Renovate Warehouses
Fort Lewis**

This project consisted of a wide variety of repairs and modifications to two large warehouses at the Logistics Center. The design included installation of fourteen electrically controlled dock levelers, replacement of two vertical lift doors with motorized rollup doors, installation of metal halide lighting in three bays, installation of natural gas fired radiant heating in two bays, installation of a public address system and installation of exterior high pressure sodium lighting on loading docks. The design also included a large battery charging station with special floor treatment. Site improvements included exterior grading, pavement repairs and relocation of the water distribution system to increase the size of the truck access area.

WASHINGTON ENGINEERING - STATEMENT OF QUALIFICATIONS

Building Additions and Alterations



**Grandstaff Library Roof Replacement
Fort Lewis**

This work order provides abbreviated design services to replace an existing composition roof with a structural steel support system, a sloped standing seam metal roof on the library, heat detector fire protection system, and includes specific features to reduce water infiltration into the building. We prepared the complete abbreviated design package, including the PULSAR cost estimate. The work scope included asbestos and lead paint sampling. We provided support during negotiations with the JOC Contractor and preformed review of contractor submittals.



**Weapons Release Facility
Kingsley Field, OANG**

This project provides for the conversion of a former 12,000 SF Missile Weapon Shop and Missile Storage Facility into a new mission essential Weapons Armament Release Facility to support F-15 aircraft weapon's personnel training, armament release equipment repair/maintenance, equipment handing and storage. The scope of the project consisted of a complete interior demolition, roof repair and new interior spatial/area criteria arrangements to support the building weapons operations and storage requirements. This also required the complete replacement of the electrical power distribution system and converting the mechanical system from oil to natural gas upgrading the buildings HVAC and plumbing systems and adding a new fire sprinkler system and upgrading the fire alarm system.



**In-Flight Kitchen Alterations
McChord AFB**

Modernization of the In-Flight Kitchen at McChord AFB - This project involved modernization of the kitchen in Building 1419 at McChord AFB, including removal of existing kitchen equipment, repairs to the building structure, design changes to install new equipment and specifications to procure new kitchen equipment



**Health and Wellness Center
McChord AFB**

This project was for conversion of an existing gymnasium to function as the Health and Wellness Center for the Base. Work included reconfiguration of spaces to provide new climate controlled cardiovascular testing rooms, six administrative offices, a reception area, waiting room, vending area, relaxation room and a "Cool Down Cafe". New partitions and wall ceiling and floor finishes were provided; The exterior entry was enhanced to provide a prominent entry into the facility with appropriate exterior signage, sidewalks and landscaping; A new HVAC system was installed including remote air cooled condensers and refrigerant piping, VAV air handling units, steam heating coils, a roof top packaged air conditioner, distribution ductwork and an Energy Management and Control System (EMCS); Asbestos and lead paint sampling, analysis and remediation was included in the design package.

WASHINGTON ENGINEERING - STATEMENT OF QUALIFICATIONS

Building Additions and Alterations



**Regional Operations Center
Submarine Base Bangor**

Construction drawings and specifications were prepared for demolition and remodel of spaces in the ROC. The work involved walls, ceilings, floor coverings, mechanical and electrical systems. The facility was upgraded to meet the security requirements of SECNAV INST 5510.36. The main operations room was designed with a six-inch raised floor to provide access for installation of up to 20 computer workstations, overhead projectors, TV monitors and other equipment. Dimmable lighting was provided in the operations room with scene lighting for the podium, projection screens, and the desk that enables one-touch operation of the dimming. The existing mechanical HVAC system was modified and expanded to accommodate the increased heat load in the ROC. Mechanical and electrical design was in accordance with the Washington State Indoor Air Quality and Energy Codes.



**State of Washington
Newhouse Building HVAC Upgrades**

- Field Surveys and Development of "As-Built" Drawings for the building
- Design Alternatives Report for Alternate HVAC Concepts
- Installation of 30-ton roof mounted DX Air Handling Unit and 29 Variable Air Volume (VAV) boxes and associated ducting and controls
- Design of Steam-to-Hot Water converter and hot water distribution piping to the VAV boxes
- Integration of controls into the campus-wide MetaSys control system
- Designed new communications and Data System throughout building
- Construction Support, including review of contractor submittals, processing "Requests for Information", and conducting progress review meetings



**Mason Transit Authority
Vehicle Maintenance Facility**

Washington Engineering provided complete engineering and architectural services for conversion of a machine shop building into a bus maintenance facility for Mason Transit. The work included:

- New vehicle exhaust system and general area ventilation
- New power and lighting systems
- Two Drive-thru bays and two drive-in bays, including motorized doors
- A trench drain and Oil/Water Separator were installed
- A new restroom/shower room and supervisory office were constructed
- The floor slab was cleaned/degreased and coated with reflective epoxy



**Upgrade Dental Clinic
McChord AFB**

McChord Air Force Base contracted for Architectural and Engineering Services to replace interior finishes throughout the Dental Clinic in compliance with AMC interior design standards. Work included renovation of the existing X-Ray suite, expansion of computer room, reconfiguration of existing sub-sterile room into a recovery room, alteration of laboratory, reconfiguration of conference room and Central Instrument Processing area, and addition of a 1500 sf area including the Dental Surgeon's office, Provider work area, and conference room. We provided preliminary, intermediate, and final designs which included drawings in AutoCAD format, specifications, and cost estimates.

WASHINGTON ENGINEERING - STATEMENT OF QUALIFICATIONS

Building Additions and Alterations



**Naval Legal Services Office
Naval Base Kitsap**

This project renovated approximately 5,000 sf of existing space in Building 433 to provide administrative work space for the Naval Legal Support Office. Specific work items included:

- Complete interior demolition of all ceiling and floor coverings and replacement with new materials in 11 offices, a new conference room, a new break room and existing restrooms
- Complete demolition of the existing HVAC system and replacement with a new outdoor mounted 20-ton packaged air handling unit, 5 VAV boxes and new supply and return ducting, diffusers and grilles
- New electrical power and lighting systems
- Modernized building entry meeting ADA standards



**Aeromed Staging Facility
McChord AFB**

Revitalize Aeromed Staging Facility - Renovation of a portion of the first floor and all of the second floor of lean-to Hangar 4 at McChord AFB. Approximately 11,000 sf. of existing structure was remodeled. Work included removal of known asbestos/lead based paint materials, removing/replacing interior finishes, reconfiguring existing offices to new user functional plan, removing/replacing windows, adding insulation and finishing the interior of exterior walls throughout the area, renovation of men's and women's toilets, and associated mechanical/electrical work.

Stormwater Projects



**Six Oil/Water Separators
McChord AFB**

This project was for hydrologic studies of six drainage basins which discharge into Clover Creek, followed by design of grit chambers, pre-manufactured concrete vault type oil/water separators, manholes, piping and outfall structures. Each site also included installation of a 500 gallon underground waste oil collection tank. Due to head losses in the system, two of the sites included float switch activated storm water lift stations. The design included the ancillary paving repairs and utility relocations.



**Stormwater Outfall 2
Fort Lewis**

Washington Engineering designed upgrades to Outfall 2. Discharges from the existing system were not meeting the NPDES permit requirements for oil/grease. Hydrological studies were conducted to quantify the peak flow and runoff volumes associated with the 6-month/24-hour Water Quality Design storm and various other frequencies. Outfall 2 was upgraded to remove the existing floatation thickener and install coalescing plate oil/water separators. The principal items installed for this project at this site were:

- Two coalescing plate oil separators
- One Stormwater inlet chamber
- One oil pump and two sludge pumps
- One waste oil storage tank

Two separators, each designed for one half of the capacity, were constructed instead of one separator designed at full capacity. Installation of a two separator unit allows one separator to be shut off for maintenance during the dry weather flow season.

WASHINGTON ENGINEERING - STATEMENT OF QUALIFICATIONS

Stormwater Projects



**Stormwater Outfall 3
Fort Lewis**

Washington Engineering designed upgrades to Outfall 3. Discharges from the existing system were not meeting the NPDES permit requirements for oil/grease. Hydrological studies were conducted to quantify the peak flow and runoff volumes associated with the 6-month/24-hour Water Quality Design storm and various other frequencies. Outfall 3 was upgraded to remove the existing floatation thickener and install coalescing plate oil/water separators. The principal items installed for this project at this site were:

- Two coalescing plate oil separators
- One Stormwater inlet chamber
- One oil pump and two sludge pumps
- One waste oil storage tank

Two separators, each designed for one half of the capacity, were constructed instead of one separator designed at full capacity. Installation of a two separator unit allows one separator to be shut off for maintenance during the dry weather flow season.



**Stormwater Outfall 7
Fort Lewis**

Washington Engineering designed upgrades to Outfall 7 at Fort Lewis. Discharges from the existing system were not meeting the NPDES permit requirements for oil/grease. Hydrological studies were conducted at all three sites to quantify the peak flow and runoff volumes associated with the 6-month/24-hour Water Quality Design storm and various other frequencies. Outfall 007 had a relatively large amount of land adjacent to the outfall. Improvements at Outfall 007 included construction of an upstream sedimentation basin and a moderate capacity infiltration/detention pond to control discharge quantities through the OWS. A pre-engineered oil/water separator and by-pass structure was installed at Outfall 7



**Port of Shelton
John's Prairie Industrial Park
Road and Stormwater Improvements**

- Updated the Port's existing Stormwater Pollution Prevention Plan (SWPPP), to verify compliance with Washington State Department of Ecology standards
- Performed comprehensive stormwater runoff calculations to quantify the runoff volumes, infiltration rates and storage requirements to accommodate the various frequency design storms.
- Designed the Port's common drainage system components, ie, bioswales, sedimentation ponds, infiltration ponds, oil/water separators and associated piping.
- Assisted in design and obtaining permits for the Port's new railroad car transloading facility



**Oil/Water Separators
at Jet Fuel Farms
McChord AFB**

This Delivery Order designs spill containment features around two existing jet fuel areas. Work includes the addition of curbing to contain spills and construction of a concrete vault type oil/water separator at each site. Since the jet fuel may contain de-icing agents, the effluent from the separators cannot be discharged directly to surface waters. The project includes connections to the sanitary sewer system at each site. Work at the POL site near Building 1158 includes design of a lift station and force main since there is insufficient elevation to permit installation of a gravity flow system.

WASHINGTON ENGINEERING - STATEMENT OF QUALIFICATIONS

Roads and Parking Lots



Mason Transit Authority
Operations Base Site Improvements

Washington Engineering provided complete site planning, design and construction support for the Mason Transit central operations base in Shelton, WA. The work included:

- Design of 2.5 acres of pavement for parking and servicing transit vehicles/buses
- Design of a new 24-foot wide access road into the operations base
- Design of stormwater management facilities, including catch basins, piping and oil/water separator and a large detention pond
- Design of security fencing and automated vehicle gates
- Design of a sanitary sewage lift station, piping and controls
- Design of parking lot and perimeter security lighting



Kitsap County
Ryen Road Extension

Washington Engineering provided complete design and construction support for a 1700 linear foot extension of Ryen Road in Kitsap County to provide access to Kitsap Industrial Park. Key features included:

- Topographic/location surveys to establish road alignment adjacent to a Class 2 wetland
- Design of pavements (roadway/sidewalks)
- Design of stormwater management facilities (bioswales, catch basins, manholes, piping, and stormwater detention vault)
- Design of a 2,500 linear foot extension of the City of Poulsbo 12-inch ductile iron water line to serve Kitsap Industrial Park
- Extension of Electrical Power and Communications



State of Washington
Olympic College Bremerton/Shelton
Parking and Storm Drainage

- Topographic surveys for each site
- Hydrological studies for establishing flowrates for the 6-month, 2-year, 10-year and 100-year storm events per the Washington State Stormwater Management Manual for Western Washington
- Design of asphalt parking lots and concrete sidewalks
- Design of vandal-proof lighting for the parking lots and pedestrian sidewalks
- Design of storm drainage systems, including catch basins, piping, a detention vault, a leaf compost filter system at Bremerton and a detention pond at Shelton
- Coordination of environmental review and permitting
- Traffic study of adjacent arterial street in Bremerton



City of Bremerton
11th Street Road Repairs

Washington Engineering provided the pavement design for this project. 11th Street, as it approaches Warren Avenue is six lanes wide, with a steep grade, and carries over 20,000 vehicles per day. The existing asphalt pavement was being shoved by the braking action of vehicles descending the steep grade to the stop light, creating a severe washboard deformation in the asphalt pavement. The project called for demolition of existing asphalt and replacement with concrete pavement to correct the problem. Our personnel researched the cost and practicality of various concrete designs, including standard concrete paving, continually reinforced concrete pavement, fiberglass reinforced concrete and fast track paving. The final pavement report included the structural design, typical pavement sections, a jointing plan and joint details for inclusion into the construction drawings.

WASHINGTON ENGINEERING - STATEMENT OF QUALIFICATIONS

Roads and Parking Lots



Engineering work on these residential developments has included design, permitting and construction support for:

- Curbs, gutters, sidewalks, roads, streets and traffic calming features
- Sanitary sewer collection piping, manholes and lift stations
- Domestic and fire protection water systems, including piping, fire hydrants, valve boxes and meter boxes.
- Stormwater quantity and quality management features, including, piping, catch basins, manholes, outlet structures, detention ponds, oil/water separators, filter vaults and sedimentation vaults.
- Low impact development (pervious pavements, bioswales, rain gardens)

Residential Development
Multiple Clients/Locations



Washington Engineering completed the site design for a new 11,000, two-story medical office facility.

- Design of a 65-vehicle parking lot
- Low impact storm drainage system consisting of a drainage swale and underground detention system
- Sidewalks, curbs and gutters
- Improvements to Sheridan Street, including paving and construction of a transit bus turnout
- Pavement and drainage improvements to 9th Street, 10th Street and Grant Street
- Extension of City Water and Sewer Utilities to the building

Port Townsend Medical Building
Site Development

Security Projects



Washington Engineering was selected to design the TSA Round 2 Security Improvements for the Port of Tacoma. This project included improvements to the perimeter security fencing and gates at the Maersk Terminal, Husky Terminal, the Washington United Terminal, the Blair Terminal, The Pierce County Terminal, Auto Warehousing areas and Konoike-Pacific. Lighting improvements were designed for the Maersk Terminal, Konoike-Pacific, Jones Stevedoring, the Carghill Grain Terminal and the Washington United Terminal. The project included major upgrades to the 11th Street perimeter fence and upgrading of the west vehicle entry gate and installation of five automated railtrack and vehicle gates.

Port of Tacoma
Security Improvements



Washington Engineering completed design of the TSA Round 2 Security Improvements for the Port of Everett. This project upgraded and replaced approximately 7,000 linear feet of perimeter fencing around the Port's three marine terminals and provided a new hardened security guardhouse at the primary marine terminal gate. Additionally, the project installed four automated gates at the railtrack entrances to the Marine Terminals. Washington Engineering performed field investigation and prepared CAD drawings, specification and cost estimates for the work. This project was constructed in 2004 and we provided construction support services for the project.

Port of Everett
Security Improvements

WASHINGTON ENGINEERING - STATEMENT OF QUALIFICATIONS

Fuel System Projects



**Design Jet Engine Test Cell and Administration Building
McChord AFB**

This project was for site adaptation of a standard AF plan for a T9 noise suppressor. The standard plan was modified to accommodate local geotechnical conditions and Washington State regulations regarding fueling facilities. Utilities were extended to the site and a paved access road was designed. The project included design of a 10,000 gallon above ground JP4 fuel tank and associated double walled piping to the hush house. The project also included design of a 350 sf administrative and control facility, consisting of brick veneer walls, a standing seam metal roof, with a concrete slab-on-grade. The design also included demolition of the older, substandard test facility.



**Ground Fuel Issue Stations
McChord AFB**

This project was for design of structures and tankage to consolidate vehicle fueling operations at the petroleum storage site. Work included: Removal of two 25,000 gallon single wall underground fuel storage tanks and associated piping and pumping equipment; site remediation of petroleum contaminated soil; Design of two 12,000 gallon, double walled above ground fuel storage tanks (one for unleaded gasoline and one for diesel fuel). The tanks are located on a diked concrete slab with a structural steel cover for weather protection; a 27' wide by 70' long diked concrete apron was provided for vehicle loading and fuel truck off-loading stations; the stations were designed with a 300 gpm pumping capacity; Underground fuel piping was double walled fiberglass with leak detection monitoring capability; Extension of utilities and design of an access road were included in the design.



**ALCM Fuel Tank
Fairchild AFB**

Installation of ALCM Fuel Tank at Fairchild AFB - This project involved design of a 7000 gallon underground tank to support defueling of Air Launched Cruise Missiles. The tank is being added to an existing system and includes underground piping, pumping controls and remote tank level indication and associated civil, mechanical and electrical work to connect to the existing facilities.

Miscellaneous Projects



**Connect Well 22
Fort Lewis**

This project provided repairs to an existing pumphouse and connected a new deep well into the Fort Lewis water distribution system. The scope included structural and architectural repairs to existing pumphouse; Abandonment of existing shallow well and closure in accordance with Washington State Standards; Connection of a new deep well to the pumphouse piping system, including installation of a 200 gpm submersible pump and associated controls.

WASHINGTON ENGINEERING - STATEMENT OF QUALIFICATIONS

Miscellaneous Projects



State of Washington
Olympic College
Hot Water Distribution System

This project included field surveys and mapping of underground utilities throughout the campus area and provided for demolition of an existing direct-buried AC piping system with new piping located in a 7,000 linear foot utilidor for hot water supply and return piping. The utilidor included a cable tray and fiber optic cabling for future expansion of the college's data network. Our work included:

- Complete civil engineering for utility re-routing and restoration of parking areas and sidewalks
- Mechanical Engineering design and construction support
- Electrical engineering for fiber optic network, fire alarm cabling, energy monitoring system and telephone services
- Complete construction support and documentation of As-Built work



**Upgrade Central Vehicle Wash
Facility
Yakima Training Center**

This project involved design of repairs to a closed cycle wash facility for wheeled and tracked vehicles. Major work items included installation of trench drains and curbing to control water losses, paving improvements, installation of an HPDE liner in a large equalization basin and rebuilding of the sand filter system.



**Repair and Paint the Main Water
Storage Reservoir
Yakima Training Center**

This project accomplished design for interior and exterior painting of a 600,000 gallon water reservoir. Work included structural repairs and modifications for compliance to OSHA regulations, design of draindown piping and a discharge headwall structure.



**Installation of Backflow Preventers
Fort Lewis**

This project involved the design of backflow prevention devices in 131 separate buildings for compliance to the "Cross Connection Control Manual". The usages involved a wide variety of facilities, including high hazard areas such as, veterinary facilities, medical/dental facilities, as well as, boiler plants, barracks and kitchen facilities.

WASHINGTON ENGINEERING - STATEMENT OF QUALIFICATIONS

Miscellaneous Projects



Wing HQ Renovation Study McChord AFB

Feasibility study for phased renovation of Building 100 at McChord AFB. The building was originally designed in 1943 as a dormitory. It is a three story building with approximately 236,000 s.f. of existing space. Over the past few years, the building has been converted from a dormitory to a wing headquarters and administrative facility. Numerous renovations have occurred to accommodate various tenants and functions. The purpose of this study was to develop a plan for long range improvements to accommodate additional tenants and to separate the wing headquarters functions from the customer service functions throughout the building



Economic Analysis of Incinerator/Landfill Options Fort Lewis

This project was an economic analysis of options for completing construction of the waste incinerator at Fort Lewis, WA. Some of the options included long haul to a regional landfill, usage of the on-post landfill for both an ash cell and a municipal solid waste cell and operating options, including third party contracting option for operation of the incinerator. Our performance was rated as Outstanding by the Seattle District COE on this project.



Port of Tacoma On-Call A/E Services

Washington Engineering performed the following projects on a task order A/E Services contract for the Port:

- Relocation of the PacRail Trailer to the UP Expansion Site
- Installation of Oil/Water Separators at the UP Expansion Site
- Installation of the North Intermodal Yard Red Light System
- Uninterruptable Power Supply for IT at Port Admin Building
- Third Party Quality Reviews on Four Design Projects
- Vehicle Exhaust Ventilation Study at Port Maintenance Bldg
- Evergreen Terminal Pavement Repairs
- Security Building Condition Assessment

The projects involved field investigation and the preparation of CAD drawings, specifications and cost estimates.



Replace "A" Street Electrical Feeder McChord AFB

This project replaced a 50 year old underground 13.8 kv, three phase lead sheathed cable of about 3100 feet in length with a new 15kv cable with provisions for overcurrent and surge protection for both feeder circuits and service laterals. The design provided 15kv pad mounted liquid vacuum switch gear with load break elbow connectors above each manhole, and provided the ability to pump the manholes to accommodate seasonal groundwater. A key element in the design was the ability to maintain uninterrupted service to nine critical operations facilities during construction. The project included abatement of asbestos wrapping in the existing system.

WASHINGTON ENGINEERING - STATEMENT OF QUALIFICATIONS

Miscellaneous Projects



Modernize Drydock 4 Puget Sound Naval Shipyard

This project was implemented to permit refueling of nuclear powered ships at Drydock 4. The work included upgrading of AC and DC Electrical Power Distribution System, including underground ductbanks; Installation of Supervisory Control and Data Acquisition (SCADA) remote panels and sensing transducer interface; Design of new 2000 KVA substation and modifications to two existing substations; Construction of Utility Tunnels; Asbestos Assessment; Demolition and rebuilding of 1500 linear feet of standard gage railtrack on a concrete foundation to support high industrial loading conditions.



Port of Tacoma Port Business Center Building Condition Assessment

The Port Business Center Building has five floors, an additional mechanical penthouse, and a crawl space constructed below the ground floor level. It consists of approximately 14,400 GSF per floor or approximately 72,000 GSF. The following were evaluated in this assessment:

- Architectural Systems
- Electrical Systems
- HVAC Systems
- Fire Suppression and Alarm Systems
- Air Quality/Asbestos/Mercury Issues
- Costs Associated With Recommendations



Port of Seattle Princess Cruise Line Shore Power Holland America CL Shore Power

Washington Engineering provided complete design and construction support services to provide shore power to Princess Cruise Lines and Holland America Cruise Lines docked at Terminal 30 at the Port of Seattle. Key Features included:

- Site planning to locate a new electrical substations, and routing of underground ductbanks
- Coordination of design with equipment manufacturer's, Seattle City Light and the Port of Seattle
- Design of substation concrete pads, ductbanks and security fencing
- Design of Jib Crane and Hoist to transfer large electrical cables from dockside to ship through a full range of tidal conditions



State of Washington Olympic College Physical Plant Building Demolition

- Field Surveys and As-Built documentation
- Portions of this 11,500 sf building were a hazard due to non-reinforced masonry construction and were prone to catastrophic collapse during a seismic event
- The portion of the building that posed the greatest risk to occupants and students was demolished, including a forty-foot tall abandoned chimney; the demolition work included sampling and abatement of asbestos roofing, floor tiles and insulating materials.
- Portion of the building to be retained were modernized with new heating and electrical services and a new mechanical room
- We provided full construction support for the project.