

Total Project Cost	\$ 5,371,000
Approval Level:	BOR

SCHEMATIC DESIGN APPROVAL REQUEST

TO:	Pat Gamble	
10.	President	
to/through:	Kit Duke AVP Facilities at	The B. 19.14
THROUGH:	John Pugh Chancellor	2 T
THROUGH:	Michael Ciri Vice Chancellor	Julichard C:
THROUGH:	W. Keith Gerkei Director	"WRBenl
DATE:	August 15, 2014	1
SUBJECT:	Project Type: Project Name:	DM &R&R Juneau Campus Modifications 2014 - 2016 Phase 1 – Hendrickson Renovations
	Project No.:	2013-13

Cc:



SCHEMATIC DESIGN APPROVAL

Name of Project:	Juneau Campus Modifications 2014 - 2016 Phase 1 – Hendrickson Renovations		
Project Type:	Deferred Maintenance and R&R		
Location of Project:	 University of Alaska Southeast, Juneau Campus JS101 Hendrickson Building JS137 BAS Building 		
Project Number:	2013-13		
Date of Request:	August 15, 2014		
Total Project Cost:	\$5,371,000 (Phase 1)	(TPC all Phases \$12,771,000)	
Approval Required:	Full Board		
Prior Approvals:	Formal Project Approval	February 22, 2014	

A Schematic Design Approval (SDA) is required for all Capital Projects with a Total Project Cost in excess of \$250,000.

SDA represents approval of the location of the facility, its relationship to other facilities, the functional relationship of interior areas, the basic design including construction materials, mechanical, electrical, technology infrastructure and telecommunications systems, and any other changes to the project since formal project approval. Unless otherwise designated by the approval authority or a material change in the project is subsequently identified, SDA also represents approval of the proposed cost of the next phases of the project and authorization to complete the design development process, to bid and award a contract within the approved budget, and to proceed to completion of project construction. Provided however, if a material change in the project is subsequently identified, such change will be subject to the approval process.

Action Requested

The Facilities and Land Management Committee recommends that the Board of Regents approve the Schematic Design Approval request for the University of Alaska Southeast Campus Modifications 2014-16, Phase 1, Hendrickson Building Renovations as presented in compliance with the campus master plan, and authorizes the university administration to complete construction bid documents to bid and award a contract within the approved budget, and to proceed to completion of project construction not to exceed a Total Project Cost of \$5,371,000. This motion is effective September 18, 2014.

Project Abstract

The Hendrickson and Whitehead buildings require upgrades to major building systems including mechanical and electrical systems, exterior envelope, and building controls. These improvements are

needed to improve energy efficiency, reduce operational costs, and replace systems and components that are at or nearing the end of their service lives.

In early 2014, we evaluated the current space use at the Juneau Auke Lake campus and identified needs. The working group saw opportunities to create a more vibrant, collaborative, student-centered campus community by reorganizing current spaces in a number of campus locations, starting with the Hendrickson and Whitehead buildings. Co-location of departmental spaces fosters a strong and connected academic community where various departments can collaborate and share resources -- a community of scholars compatible with the UAS Mission and Core Values.

As described in the Formal Project Approval, UAS plans to repurpose the spaces to find efficiencies within departments assigned to the spaces as part of the remodel to replace original building heating, ventilating and electrical systems. Upgrades to major building systems including mechanical and electrical systems, exterior envelope, and building controls are needed to improve energy efficiency, reduce operational costs, and replace systems and components that are nearing the end of their useful service lives.

At the Formal Project Approval, UAS identified two phases of the project beginning with the Whitehead building as Phase 1. Since the FPA, Phases 1 and Phase 2 were swapped. Renovation of the Hendrickson Building is now Phase 1, and Whitehead Building is Phase 2. Since both buildings were built during the same time period the mechanical, electrical and building envelope renovation work is similar in scope.

In this phase current Hendrickson occupants will be moved to other locations so that the contractor can have total access to the building. When completed the Chancellor and Provost's offices will occupy the upper floor of the Hendrickson Building. Information Technology Services (ITS) will move from the Whitehead Building to the ground floor of Hendrickson Building and UAS Health Sciences (currently in Hendrickson) and UAA Nursing will be co-located in the former UAS Bookstore space.

RATIONALE AND REASONING

<u>Phase 1A – Health Sciences classroom labs</u>: UAS School of Career and Technical Education Health Sciences/CNA program is temporarily housed (previously located in Bill Ray Center) on the upper floor of Hendrickson. In order to co-locate the UAS Health Sciences program with the UAA Nursing program, these two groups would move to the former UAS Bookstore space. This project would construct two new three-bed classroom/labs for that purpose. This work must be the first element of this project in order to vacate the Hendrickson Building. Other current Hendrickson occupants will be moved to vacant or current classroom space in the Whitehead Building.

Phase 1B - renovation of Hendrickson Building

This phase will include:

- Replace heating system with an energy efficient air to water heat exchange system;
- Replace existing ventilation system;
- Replace exterior windows for greater energy efficiency;
- Upgrade building automation controls;
- Replace electrical systems and lighting;
- Integrate open office schemes with flexible furniture and "right to light" design.
- Upper Floor co-locating administrative and academic functions including the Chancellor, Provost and staff, Alumni Relations and Development, Public Relations and Human Resources. Combining these offices will strengthen and enhance UAS' academic mission, as well as creating efficiencies through shared resources.

• Ground Floor design to centralize *Information Technology Services* management and staff, including Network and Desktop Support, Media Services, campus infrastructure and Information systems.

Project Scope

The scope of the project is twofold:

- to renovate and replace failing building systems with energy efficient systems; and
- re-purpose and reorganize spaces for greater efficiencies for sharing resources and with the intent to create a more vibrant, collaborative and student-centered campus in line with UAS mission and values.

Project Impacts

Funding for this phase is currently in place. The campus bookstore through a change in its service model will move to smaller campus space. The current bookstore space will be remodeled for UAA's Nursing program and UAS Health Sciences CNA program. UAA expressed a strong desire for its 2-year nursing program in Juneau to be co-located with UAS Health Sciences/CNA program. Through a MOU with UAA, costs to build the classroom lab will be shared between UAS and UAA. The design includes two 3-bed classroom labs with shared common spaces including a control room for testing, storage, a student lounge space and video-conference room. CNA classes are scheduled on Tuesday and Thursday, and UAA nursing classes are scheduled on M-W-F allowing flexibility for classroom lab set up if both classroom labs are needed. Five offices are provided for UAS, UAA and UAF faculty and one shared staff coordinator.

Variances

Since the FPA was granted in February, the Whitehead and Hendrickson R&R phases were swapped:

- Hendrickson Building Renovation is now Phase 1; Whitehead R&R is Phase 2;
- IT Services will still move out of Whitehead but to the Hendrickson Building instead of the Egan Library; and
- UAS Health Sciences will move from Hendrickson and be co-located with UAA Nursing at the BAS building rather than moving to new space in the lower Hendrickson Building.

Total Project Cost and Funding Sources

Funding Title	Fund Account	Amount
FY09 Capital appropriation	77101-563118	\$3,000,000
FY15 DM&R Funding	77101-563145	\$1,788,325
UAA Nursing contribution		\$582,675
Phase 1 Project Funding		\$5,371,000

Annual Program and Facility Cost Change Projections <u>Program Costs</u>:-program costs are not affected

<u>Facilities Cost Changes:</u> Energy costs are anticipated to be reduced due to more efficient lighting and ventilation systems.

Project Schedule -

DESIGN – Phase 1 Conceptual Design Formal Project Approval Schematic Design Schematic Design Approval

completed February 22, 2014 August 2014 September 19, 2014

Construction Documents	January 2015
BID & AWARD - Phase 1A and 1B	· · · · ·
Advertise and Bid	January 2015
Construction Contract Award	February 2015
CONSTRUCTION-Phase 1	
Start of Construction (1A CNA/UAA classroom labs)	February 2015
Construction Complete (1A CNA/UAA classroom labs)	Fall 2015
Start of Construction (1B Hendrickson Renovation)	October 2015
Construction Complete (1B Hendrickson Renovation)	Spring 2016
Date of Beneficial Occupancy	2015-2016
Warranty Period	1 year from substantial completion

Project Delivery Method Design-Bid-Build

Project Design Team

The project Design team is:

Northwind Architects, Evelyn Rousso, Prime Consultant Murray and Associates, Mechanical Consulting Engineers Begenyi Engineering, Electrical Engineer Jay Lavoie, Cost Estimator Alaska Energy Engineering, Energy consultant

Supporting Documents

One-page Project Budget Design Narrative Documents Schematic Floor plans

Affirmation

This project complies with Regents Policy, the campus master plan and the Project Agreement.

Approvals

The level of approval required for SDA shall be based upon the estimated TPC as follows:

- TPC > \$4.0 million will require approval by the board based on the recommendations of the Facilities and Land Management Committee (FLMC).
- TPC >\$2.0 million but not more than \$4.0 million will require approval by the FLMC.
- TPC > \$1.0 million but not more than \$2.0 million will require approval by the Chair of the FLMC.
- TPC < \$1.0 million will require approval by the AVP of Facilities and Land Management.

UNIVERSITY OF ALASKA				
Project Name: Juneau Campus Modifications 2013-2015				
MAU: UAS				
Building: Several Date: Jul-14				
Campus: Juneau	Prepared by:	Gerken		
Project #: 2013-13	Acct #: various			
Total GSF Affected by Project:			14,464	GSF
		FPA Budget Total	FPA Budget	Schematic
PROJECT BUDGET		Project	Phase 1	Phase 1
A. Professional Services				
Advance Planning, Program Development		120,000	120,000	120,000
Consultant: Design Services	12.0%	1,092,080	431,436	321,000
Consultant: Construction Phase Services	3.0%	273,020	107,859	108,000
Consul: Extra Services (List:)			
Site Survey				
Soils Testing & Engineering				
Special Inspections				
Plan Review Fees / Permits		40,000	20,000	20,000
Other				
	Professional Services Subtotal	1,525,100	679,295	569,000
B. Construction				
General Construction Contract(s)		9,100,666	3,595,302	
Hendrickson				2,861,000
Health Sci				865,000
Other Contractors (List:)				
Construction Contingency	10.0%	910,067	359,530	373,000
	Construction Subtotal	10,010,733	3,954,832	4,099,000
Construction Cost per GSF				283.39
C. Building Completion Activity				
Equipment				
Fixtures				
Furnishings		350,000	250,000	350,000
Signage not in construction contract				
Move-Out Costs		50,000	25,000	25,000
Move-In Costs				
Art				
Other (Interim Space Needs or Temp Reloc. Costs)				
OIT Support				
Maintenance Operation Support				
Bui	Iding Completion Activity Subtotal	400,000	275,000	375,000
D. Owner Activities & Administrative Costs				
Project Plng, Staff Support	3.0%	358,075	147,274	151,000
CIP Indirect Costs	3.5%	417,754	171,819	177,000
Misc. Expenses: Advertising, Printing, Supplies, Etc.				
Owner Activitie	es & Administrative Costs Subtotal	775,829	319,093	328,000
E. Total Project Cost		12,711,662	5,228,221	5,371,000
Total Project Cost per GSF				371.34



Project Overview

As a result of the 2013 UAS Masterplan the University sold the Bill Ray Center in downtown Juneau. That property housed two health sciences programs; a Certified Nursing Certificate Program within the School of Career Education and an Associate of Applied Science in Nursing program taught partially by distance from the University of Alaska Anchorage School of Nursing.

After the sale of Bill Ray the UAS program moved into a classroom on the main campus while the UAA program is currently housed in the Career Tech Center. Neither space was considered permanent and neither is ideal. Furthermore there are definite synergies, space efficiencies and benefits for students in housing these two programs in the same building.

In 2014 the University of Alaska Southeast decided to relocate their bookstore from the satellite bookstore and administrative services (BAS) building to a smaller space on the main campus. The BAS building is a heavy wood frame sloped structure with concrete walls. It was originally built in 1966 or 1967 as a hardware store. UAS purchased the building in 1999 and in 2006 it was renovated to house administrative offices and the Bookstore.

The combined nursing programs are a good fit for backfilling the space that will be left vacant by the bookstore. The size approximates what is needed for the labs and offices required for both program. The UAA program requires access to a video conference room for lectures from Anchorage; such a room already exists in the BAS and is adjacent to the Bookstore space. Furthermore once students in the nursing programs complete their prerequisite classes they have little need of the services located on the main campus.



Features of the Design

- ✤ Two skills labs each designed for three hospital beds
- ♦ A control room for overseeing testing at bedside
- Muliple sinks to teach proper hygiene
- ♦ An informal student hang out area
- ✤ Five offices which will include a health sciences advisor.
- ♦ An existing overhead window will provide a source of natural light in the corridor.
- ♦ Offices will have windows onto the corridor
- The removal of an overhead door provides an opportunity to install high windows in one of the labs
- ♦ Casework and equipment designed for use in health science teaching environments.
- ♦ New lighting
- ✤ Reconfiguration of existing ventilation and heating systems to meet the new need.

Building Code

The building is construction type VB with a Business Occupancy. The building has an automatic sprinkler system which is used for one hour substitution.

Fire rated construction – One hour fire ratings are required for shafts and storage rooms over 100 s.f.

Means of Egress – the largest classroom is 1,023 square feet which has a code defined occupancy for means of egress of 20 people. Since this is less than 49 one means of egress is sufficient for this classroom. Since the building has a sprinkler system the maximum allowd exit access travel is 300'; the actual maximum travel distance in the proposed layout is 130'.

Accessibility – The building entrance is accessible, and all teaching spaces will also be accessible per CBJ codes and standards.

Materials

Exterior walls – The existing walls are concrete. The infilled areas will be a wood stud wall with cemenetitous panels.

Exterior windows – We are installing two new windows. They should be aluminum framed, thermally broken windows that match the other windows in the building. They will not be operable.

Walls – All interior partitions will have some acoustic treatment. Walls will be terminated at the underside of the structure above to ensure sound does not transfer. Walls will have batt insulation and sound board on one side.



Interior glass walls - hollow metal with 3/8" tempered glass.

Interior Doors – 7' standard hollow metal with metal frames

Flooring – Carpet will be used in all offices and the corridor. The teaching labs will have a sheet vinyl marketed to the medical industry such as Armstrong's Connection Corlon series. The break rooms and storage rooms will be linoleum 0.125" thick. Wall base to be 4" rubber.

Ceilings – Ceilings in the offices will be 2x2 ACT suspended. The area under the lower roof between gridlines 5 & 6 will retain their existing 12" x 12" adhered tile ceiling, which will require some patching. The wood decking will be left exposed in the corridor, labs and storage room.

Casework – cabinets will be plastic laminate with edge banding. Countertops will be a solid surface.



Mechanical Design

Report by Roger Smith, Murray and Associates

DESIGN CRITERIA: The mechanical systems will be designed and constructed in accordance with the following codes and standards:

2009 International Building Code (IBC)
2009 International Mechanical Code (IMC)
2009 Uniform Plumbing Code (UPC)
2009 International Fire Code (IFC)
CBJ Title 19 and State of Alaska Code Modifications
National Fire Protection Association (NFPA)
ASHRAE - American Society of Heating, Refrigeration, and Air-conditioning Engineers

DESIGN PARAMETERS

Inside Air Temperature: 70F Outside Air Temperature: 0F Outside air per ASHRAE 62.1-2010

GENERAL SCOPE OF WORK

The scope of mechanical work for the Health Science Renovation includes modifications to the duct distribution system and sprinkler system, relocation of thermostats, and additions to the plumbing systems as needed to accommodate the revised architectural layout.

Contractor shall provide submittal data, O&M data, as-built drawings, adjustment of ventilation and heating systems with report log, and training of the mechanical systems.

HEATING SYSTEM

The existing heating/cooling system will be retained. The existing rooftop air handlers (AC-1 and AC-2) serving the renovated area will be reused along with the existing duct mounted booster coils to provide the heating for the renovated Health Science classrooms and offices.

Each zone shall be controlled by its own respective wall mounted DDC room thermostat connected to the existing booster coils. Each Skills Lab will have its own heating/cooling zone. The interior office spaces will be on another zone, also with its own heating/cooling thermostat. There will be a total of 4 zones for the renovated area; 2 zones each for AC-1 and AC-2 systems.

Except for the removal of the existing unit heater and heating piping in the loading area (new Skills Lab), modifications to the existing heating piping system are not anticipated.

COOLING SYSTEM

Cooling air is provided by the rooftop AC-1 and AC-2 units when required.



VENTILATION AND EXHAUST AIR SYSTEM

The existing ductwork, diffusers, and grilles will be modified as needed for the new Architectural layout.

Supply air ductwork will be removed back to the existing AC-1 and AC-2 rooftop units and their existing booster coils located at the discharge of these rooftop units. New supply air ductwork will be routed to provide outdoor air ventilation and heating/cooling air to the renovated spaces. Each room will have new supply air diffusers/grilles. Installation of transfer air openings and ductwork will allow air from each room to relieve to the large spaces where existing return air grilles and ductwork are located at the inlet to the existing rooftop units. Relief air grilles and ductwork will be installed and connected to existing exhaust air louvers to allow relief air to be exhausted from the building.

Dryer duct exhaust will be installed to an exterior wall cap as required for the clothes dryer located in the center storage room.

Modifications to the existing rooftop AC-1 and AC-2 units are not anticipated. Existing booster coils (4 total) will be re-used to provide heating of the 4 reconfigured zones.

CONTROLS

Existing building Direct Digital Control System (DDC) will be modified only as needed to accommodate the new zone thermostat locations.

PLUMBING SYSTEM

The proposed renovation work area does not currently have a plumbing system. New plumbing piping will be extended from the boiler room to new plumbing fixture locations shown on the architectural layout.

New domestic cold water, hot water, and hot water re-circulating piping will be routed to the renovated spaces from the existing boiler room, located approximately 80 feet away. 1-inch cold water and hot water piping mains are anticipated as well as ¾-inch hot water re-circulating piping. Once in the Health Sciences area, the piping will branch to the new plumbing fixtures. The domestic water piping material shall be hard-drawn copper tubing, ASTM B 88, Type L with 95-5 solder fittings or equivalent. Press fit joints will also be acceptable.

New underground sanitary waste piping will be routed to a centrally located underfloor sewage ejector located in the new Storage room. Pumped waste piping (2-inch size) will be routed at the ceiling to existing 4-inch waste main location at the existing toilet room, approximately 75 feet away. New vent piping will be installed and routed to a new vent-through-roof. Concrete slab cutting and patching will be required for routing of the underground waste piping to the new sewage ejector basin. Trenching and backfill will also be required.



Sanitary waste and vent piping shall be cast-iron hub-and-spigot below grade and no-hub castiron above the floor. Copper DWV shall be acceptable for above ground waste and vent for pipe sizes 2-inch and under. Equipment drains will be copper DWV or Schedule 40 black steel.

PLUMBING FIXTURES AND EQUIPMENT

Fixtures complying with the Americans with Disabilities Act (ADA) will be specified where required by the architectural floor plan.

Existing toilet room plumbing fixtures and drinking fountain are located down the hallway from the Health Sciences spaces.

The sinks in the skills labs will consist of stainless steel single compartment bowls with gooseneck faucets and lever handles. At least one of these sinks will be ADA with shallow 6-1/2 inch depth.

A clothes washer and washer box will be located in the center storage room between the two skills labs.

The sewage ejector is anticipated to be a duplex type with 36-inch deep by 30-inch diameter sump basin, similar to Liberty 1100 Series. The sewage ejector shall be a factory pre-assembled unit including a 110 gallon basin, (1 hp) primary pump, (1 hp) backup pump, floats and controls, and 30-inch diameter basin cover. The removable basin cover will contain (2) pump covers, 2-inch discharge piping and vent piping, and 10-inch inspection cover. The sewage ejector will be located in a corner of the new Storage room with control panel adjacent.

PIPE AND EQUIPMENT INSULATION

Vent piping within 10 feet of roof penetration and all domestic cold water, hot water, and hot water recirculating piping will be insulated with sectional pipe covering with vapor retardant jacket, mineral fiber, 1 inch IPS thick.

VALVES

Domestic and heating water valves shall be provided rated for 400 psig working pressure. Valves are to be lead-free bronze body, two piece, quarter-turn full port ball valves. Valves will be installed accessibly to individually shut off domestic/heating water piping to each room/heating unit/fixture. Domestic water drain valves shall have vacuum breakers and caps. Heating water drain valves shall have caps.

SPRINKLER SYSTEMS

The existing wet sprinkler system within the renovated area will be modified to accommodate the new room and ceiling layout.

Sprinkler heads to be semi-recessed where ceilings are present. Sprinkler piping will need to be installed in the structural joist space. The Sprinkler system shall be designed and installed per NFPA 13.

NorthWind Architects July 2014



Electrical Narrative Report by Barry Begenyi, Begenyi Engineering

General

The electrical systems will comply with accepted codes, standards and recommended practices common to the electrical industry and as required by local and state authorities, including but not necessarily limited to the following:

- National Electrical Code (NEC)
- International Fire Code (IFC)
- National Fire Protection Association (NFPA)
- ASHRAE 90.1 Energy Standard
- Illuminating Engineering Society (IES)
- National Electrical Manufacturers Association (NEMA)
- National Electrical Contractors Association (NECA)

All equipment will be listed and labeled by a nationally recognized testing agency acceptable to the State of Alaska.

General

The building was renovated into administrative space and a bookstore in 2007. The existing electrical systems are in good condition. This renovation will utilize the existing equipment as much as possible, with the addition of devices and components as required to coordinate with the new floor plan.

Utility Services and Distribution Equipment

Power for the renovation will be sourced from existing Panelboard A, located in Hall 116. The panelboard is configured 120/240 volts, 1 phase and is equipped with an integral transient voltage surges suppressor unit.

Communications Services and Distribution Equipment

A new 48-port patch panel will be installed on the existing data rack in Work Room 113 to terminate workstation cables. The patch panel will be 110-style, 48-port, with insulation displacement connectors.

Feeders and Branch Circuits

Feeders and branch circuits will be single conductors in conduit. All conductors will be copper with insulation Type THHN-THWN. Connectors and splices will be of size, ampacity rating, material, type, and class for application and service required. Feeders and branch circuits will be concealed, except in unfinished spaces, or where otherwise approved by the Architect.

Grounding and Bonding

Insulated copper equipment grounding conductors will be provided with all feeders and branch circuits.

Hangars and Supports

The project will comply with NECA for application of hangars and supports for electrical equipment and systems. Interior support devices will be steel; exterior will be hot-dip galvanized with stainless steel hardware.



Raceways and Boxes

Exposed, outdoor conduit and interior locations subject to damage will be galvanized rigid steel. Electrical metallic tubing will be utilized for interior raceways not subject to damage or concealed in finished surfaces. Connections to vibrating equipment shall be flexible metal conduit, except liquid-tight flexible metal conduit will be applied in damp or wet locations. Outlet and devices boxes will be sheet metal.

Identification for Electrical Systems

Branch circuit conductors will be identified with self-adhesive vinyl labels where conductors are accessible in panels, junction and pull boxes. All feeders and branch circuits will be color-coded for phase identification with factory applied color or half-lapped tape.

Equipment identification labels will be provided on each unit of equipment including disconnect switches and protection equipment, central or master units, control panels, control stations, and terminal cabinets. Systems include power, lighting, control, communication, signal, monitoring, and alarm.

Mechanical Equipment

Branch circuits and connections for all mechanical equipment will be provided. Motors rated ½ HP and larger will be wired 240 volts, single phase. Motors less than ½ HP will be wired 120 volt, single phase. Disconnect switches will be heavy-duty type with fuses as required. Motor starter switches will be quick-make, quick-break toggle with on/off indication. Full voltage, across the line, magnetic controllers with bimetallic overload relays will be used for equipment requiring automatic control.

Lighting Systems

The instructional spaces are planned to be open to structure and will be illuminated by linear direct fluorescent light fixtures in pendant mount configurations. The offices will be illuminated using pendant mounted, linear indirect/direct fluorescent light fixtures with a lay-in grid. Specification grade troffers will be utilized in the hallway. Illumination levels shall comply with recommended practices outlined by IES. All spaces will be controlled by occupancy sensors. Exit signs and emergency illumination will be provided as required along the means of egress.

Wiring Devices

Receptacles will be provided for workstations and equipment. The design will provide sufficient devices to allow for flexibility. Convenience receptacles in the hallway will be located so that no point is more than 20-feet away from a receptacle. Four receptacles will be located in each office. The instructional spaces will be provided with devices spaced approximately 6-feet apart, and as required for equipment. Receptacles with special configurations will be provided as required by the Owner.

All devices will be specification grade, or better. Convenience receptacles will be 125V, 20A. Ground fault devices will be provided as required by the NEC, non-feed through type. Toggle switches will be 120/277V, 20A. Smooth, high-impact thermoplastic wall plates will be used, except in unfinished spaces where galvanized steel will be allowed. Wet location device plates will be NEMA 250, Type 3R with lockable cover.

Low Voltage Devices and Wiring



All components of the data system will comply with Category 6 performance criteria. Two data outlets with three jacks per outlet will be provided in each office. Instructional spaces will be provided with data outlets at the counters, spaced 4-feet apart.

Cables shall be 100-ohm, four-pair unshielded twisted pair with thermoplastic jacket. Cables will terminate at the existing rack in Work Room 113. Conduit for the data system will be 1" minimum. Conduit will be utilized in concealed and exposed conditions, except above accessible ceilings where unenclosed cabling methods may be used.

Fire Alarm

Notification devices will have to be reconfigured to coordinate with the new floor plan. Combination horn/strobe units will be relocated to the hallway and each instructional space. Relocated devices will be connected to existing initiating and indicating circuits using new conduit and wire.

Access Control System

The building is equipped with an access control system that secures and monitors the exterior doors. The system will be expanded to monitor the exterior storage room doors and the exterior door from the Nursing CNA space.

Camera Surveillance System

The existing camera surveillance system monitors the receiving are and the bookstore. The system shall be removed.





(1)-

FIRST FLOOR SCALE: 1/8" = 1'-0"



<u>GENE</u> 1.

2.

3. 4

FLO1
2

SCHEMATIC DESIGN COST ESTIMATES

FLOOR PLAN LEGEND

- (E) WALL/ITEM TO REMAIN
- ====== (E) WALL/DOOR TO BE DEMOLISHED
- MEW WALL

GENERAL NOTES

- VERIFY ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO STARTING WORK. NOTIFY THE OWNER IMMEDIATELY OF DISCREPENCIES OR CONFLICTS PRIOR TO PROCEEDING.
- 2. SEE MECHANICAL & ELECTRICAL DWGS FOR SCOPE OF DEMOLITION FOR THOSE TRADES. COORD REQUIRED NEW PENETRATIONS FOR ROUTING NEW SYSTEMS..
 - REMOVE ALL EXISTING FLOOR FINISHES AND BASES.
 - PORTIONS OF THE EXISTING CONCRETE SLAB WILL BE REMOVED TO INSTALL A SEWAGE EJECTOR UNDER STORAGE ROOM. TRENCHING OF THE SLAB WILL BE REQUIRED TO CONNECT NEW PLUMBING FIXTURES TO THE EJECTOR. WHERE POSSIBLE FIXTURES IN THE SAME CABINET WILL SHARE TRENCHED PLUMBING LINES AND CONNECT WITHIN THE CABINET.

FLOOR PLAN KEY NOTES

- REMOVE OVERHEAD DOOR
- REMOVE DOOR AND FRAME
- REMOVE CASEWORK



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▲ 1" ACTUAL →
IF THE ABOVE DIMENSION DOES NOT MEASURE ONE INCH (1") EXACTLY, THIS DRAWING WILL HAVE BEEN ENLARGED OR REDUCED, AFFECTING ALL LABELED SCALES.





SCHEMATIC DESIGN **COST ESTIMATES**



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1" ACTUAL —>> IF THE ABOVE DIMENSION DOES NOT MEASURE ONE INCH (1") EXACTLY, THIS DRAWING WILL HAVE BEEN ENLARGED OR REDUCED, AFFECTING ALL LABELED SCALES.

Administrative Building Juneau. AK

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Bookstore

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NEW WALLS 2X6 MTL STUD 16" O.C. TO UNDERSIDE OF WOOD DECK ABOVE; 5" INSULATION, SOUND BOARD ONE SIDE, 5/8" GWB BOTH SIDES, PT.

GENERAL NOTES



SEE MECHANICAL & ELECTRICAL DWGS FOR SCOPE OF DEMOLITION FOR THOSE TRADES. COORD REQUIRED NEW PENETRATIONS FOR ROUTING NEW SYSTEMS.

VERIFY ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO STARTING WORK. NOTIFY

PATCH CONC SLAB REMOVED FOR INSTALLATION OF PLUMBING PIPING

FLOOR PLAN KEY NOTES

- 1 CARPET AND RUBBER BASE
- 2 LINOLEUM AND RUBBER BASE
- 3 ACT CEILING SUSPENDED AT 9'
- EXISTING EXPOSED WOOD DECK CEILNG
- EXISTING 12" X 12" ADHERED TILE CEILING
- HOLLOW METAL BORROWED LIGHT
- EXISTING LOUVERS
- 8 INFILL EXTERIOR WALL SEE ELEVATION
- 9 INSTALL 3' X 3' WINDOWS 5'-4" AFF IN NEW EXTERIOR WALL.
- 10 CASEWORK
- 11 UPPER CABINETS
- 12 TEACHING WALL TO HAVE 12' X 6' WHITEBOARD
- 13 SHELVING BY OWNER
- 14 HOSPITAL BED BY OWNER
- 15 HOSPITAL PRIVACY CURTAIN & TRACK SUSPEND FROM CEILING ABOVE
- 16 WALL MOUNT HEAD WALL SIMULATOR (AIR, OXYGEN SUCTION)
- 17 EXIST FLOOR FINISH
- 18 EXISTING BEAM ABOVE

SHEET TITLE:

FLOOR PLAN

DATE: JULY 18, 2014

REVISION:

CHECKED BY:

DRAWN:

SHEET #







PROPOSED INFILL CONSTRUCTION NOT TO SCALE

SCHEMATIC DESIGN COST ESTIMATES



-1" ACTUAL ----IF THE ABOVE DIMENSION DOES NOT MEASURE ONE INCH (1') EXACTLY, THIS DRAWING WILL HAVE BEEN ENLARGED OR REDUCED, AFFECTING ALL LABELED SCALES.



CEMENTITIOUS SIDING, PATCHED/NEW AS REQ'D FOR SEAMLESS APPEARANCE CDX PLYWD, SHEATHING BUILDING PAPER 2X6 STUDS @ 16" O.C. BATT INSULATION VAPOR BARRIER GWB, PATCHED/NEW AS REQ'D FOR SEAMLESS APPEARANCE



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NOTE SECTIONS SHOWN FOR INFORMATION ONLY ON BUILDING VOLUME & CONFIGURATION. THEY ARE NOT REPRESENTATVIE OF FULL EXTENT OF WORK. SEE PLANS

SCHEMATIC DESIGN COST ESTIMATES



IF THE ABOVE DIMENSION DOES NOT MEASURE ONE INCH (1") EXACTLY, THIS DRAWING WILL HAVE BEEN ENLARGED OR REDUCED, AFFECTING ALL LABELED SCALES.



DATE: JULY 18, 2014

REVISION:

DRAWN:

CHECKED BY:





Project Overview

The Hendrickson Building was constructed as a one story building in 1976 to house a woodshop. In 1979 a second floor was added for classroom space. Since that time the ground floor has been completely renovated to create classrooms and storage space, while many of the classrooms on the upper floor have been co-opted for office space. Based upon our review of University Records we have constructed a timeline of substantive work on the building since 1976.

- 1976 construction one story building
- 1979 construction of second story classroom wing
- 1983 renovation of wood shop to create classrooms
- 1993 window and door replacement
- 1999 roof replacement
- 2007 Code upgrades including restrooms
- 2008 fire alarm system replacement

As a result of the 2013 UAS Masterplan NorthWind Architects and THA Architecture developed a plan to reorganize the campus that will be implemented as monies are available to renovate buildings in the course of regularly scheduled major maintenance projects. Although Hendrickson has been repurposed since it was built it has never been totally renovated, and the mechanical systems, windows and doors and electrical panels are nearing the end of their useful lifespans.

Renovation of Hendrickson allows UAS to implement some of the goals and priorities identified in the planning process. Relocating IT Services from Whitehead and Egan to the ground floor of Hendrickson will not only consolidate locations for IT staff but will open up Whitehead so the School of Arts and Sciences can co-locate their faculty and staff. Co-location of the Chancellor and Provost offices to the top floor brings the two top executives together in the same suite, and allows with School of Education to co-locate all of their faculty and staff in the space vacated by the Provost. Additionally this location is more convenient and more visible to students and the public than the annex buildings the Chancellor and Provost currently occupy.

The building is two stories and sits on a hillside. The back half of the ground floor is buried in to the hillside and is constructed with concrete. The remainder of the exterior walls are wood framed with a rustic shingle siding. The main structural elements (columns and beams) are steel. The original roof was supported by Truss Joists and has $1 \frac{1}{8}$ plywood; $1 \frac{1}{2}$ of concrete was added when the second story was built. The second story roof is made of structural panels supported on sloped truss joists. The roof design features a parapet which is sloped and sheathed in shingles creating a feeling of a mansard roof.



Features of the Design

- A key design principal of the planning process is access to natural light to all workstations; this plan calls for installation of structural skylights to bring light into the center of the building. Additionally the window sill height will be lowered on the upper floor, which will also allow views to the lake when seated. The main space on the ground floor will be open to the high ceilings of the original wood shop; new taller windows will allow light to penetrate deep into the building. Small openings will be made into the concrete wall on the south to allow light to filter in and additional windows will be added to the side walls.
- ♦ Banks of walls will be glazed to allow transparency and light to enter spaces.
- ✤ Each floor will have a new break room or break area.
- In order to create an open office environment that is functional it is necessary to control noise. We propose using acoustical panels on select walls of the open office areas. This also provides an opportunity to introduce color and texture into the office areas.
- ♦ The executive suite features a sculptural wall that will serve several purposes.
 - It will provide a natural focal point and draw people into the suite, while creating privacy for those working in the open office area.
 - We propose featuring local wood and woodworking skills, potentially designed and built by a local artist.
 - The shape and material will help control noise by absorbing sound waves.
- ♦ The windows will be replaced.
- ♦ There will be no work in the restrooms.
- The upper floor will feature one large and one small conference room that can be used by anyone on campus. The large room will have a view of the lake.
- The Alumni and Development Relations office will feature a lounge and conference room for students and alumni.
- The existing server room in Whitehead will not be located to Hendrickson. When Whitehead is renovated the three data racks for the network which are maintained by the IT department will be relocated to the lower level near the fiber backbone entrance. This space will have mechanical cooling.
- The ventilation system will be replaced. The new system will employ air to water heat pump technology for 50% of the heating load.
- The original construction included a 600 square foot mezzanine for mechanical equipment. This will be retained for the new equipment. A new folding ladder will be installed to improve access.
- Heating piping and terminal heating units will be replaced. New units will be sized for a low temperature heating system.



The building is construction type VB with a Business Occupancy. The building has an automatic sprinkler system which is used for one hour substitution.

Fire rated construction – One hour fire ratings are required for shafts and storage rooms over 100 s.f.

Plumbing fixtures – The local authority CBJ uses the Uniform Plumbing Code to determine the required number of restrooms. An analysis of plumbing requirements was performed assessing the restrooms available between the three buildings on the east end of campus; Hendrickson, Soboleff and Whitehead. Occupancy was based on actual use for a total of occupancy of 146 for the three buildings. As the table below shows there is more than an adequate number of restrooms to serve the populations of these three buildings.

	toilet	urinal	lavatory
Required - Classrooms			
MEN	2	2	2
WOMEN	2		2
	Required	- Offices	
MEN	2	2	1
WOMEN	3		3
TOTAL REQ.	9	4	8
Existing			
MEN	3	5	5
WOMEN	8		6
UNISEX	1		1
TOTAL EXIST.	12	5	12

The restrooms in Hendrickson are on the lower floor. It is more convenient for occupants of the upper floor to use the restrooms on the upper floor of Soboleff as they would need to leave the building to access the Hendrickson restrooms.

Accessibility – Currently there is no elevator in Hendrickson however the walkways between Hendrickson and Soboleff are enclosed on both levels, providing easy access via the elevator in Soboleff.

Materials

Exterior walls – A Life Cycle Cost Analysis for Whitehead has determined that improving the thermal rating of the existing walls by add insulation is not a worthwhile investment. The energy engineer James Rehfeldt feels it is reasonable to extend this conclusion to Hendrickson, which is similar in size and construction materials.



Exterior windows – We are replacing all existing windows and installing several new windows. All new windows will be fiberglass with insulated glazing units; basis of design Milgard Ultra casement and picture units. Triple Glazing will be used as advised by the Life Cycle Cost Analysis.

Exterior doors – The only exterior door scheduled for replacement is the door on the ground in the north elevation. That door will be a fiberglass swing door to match the surrounding windows. The basis of design is the 3000 series by Milgard.

Skylights – We are proposing two aluminum framed 6' x 6' skylights; the basis of design is the pre engineered and pre-assembled skylight system by Versalight.

Roofing – EPDM on tapered insulation over 2" rigid insulation.

Walls – All interior partitions will have some acoustic treatment. Walls will be terminated at the underside of the structure above to ensure sound does not transfer. Walls will have batt insulation and sound board on one side.

Interior glass walls - there are two alternative options for the walls designated as glass walls in the floor plans. The first is to use an aluminum storefront system; an alternate approach is the Lightline series by KI, in which case it will be part provided and installed by the furnishings vendor. In either case doors within these walls will match the adjacent system. The glass walls in the IT conference room are to be colored and have the ability to serve as marker boards.

Interior Doors – Doors into the office suites will be 7' standard storefront aluminum doors in aluminum frames. All other doors will be hollow metal with metal frames

Flooring – Carpet will be used in all offices and conference rooms. The break rooms and storage rooms will be linoleum. Wall base to be 4" rubber.

Ceilings – Most ceilings will be 2x4 suspended ACT. Soffits will be drywall on a suspended framing system such as Quikstix by Armstrong Ceilings. In the information technology open office area we will replace the 12" x 12" adhered ceiling tiles.

Acoustical Panels – we are proposing using materials by Unika Vaev as the basis of design. We are proposing installing ecoustic moov panels above head height on selected walls in the information technology open office area, and propose installing tackable ecoustic print panels in select location in the Executive Suite open office area as well as in conference rooms.

Accessories – the large conference room will have a recessed pull down screen. The large conference room, the Chancellor's office and the Provost's office should all be outfitted for full teleconference capabilities. All conference rooms will have pull down screens.



Mechanical Design

Report by Roger Smith, Murray and Associates

DESIGN CRITERIA: The mechanical systems will be designed and constructed in accordance with the following codes and standards:

- 2009 International Building Code (IBC)
- 2009 International Mechanical Code (IMC)
- 2009 Uniform Plumbing Code (UPC)
- 2009 International Fire Code (IFC)
- CBJ Title 19 and State of Alaska Code Modifications
- National Fire Protection Association (NFPA)
- ASHRAE American Society of Heating, Refrigeration, and Air-conditioning Engineers

DESIGN PARAMETERS

- Inside Air Temperature: 70F
- Outside Air Temperature: 0F
- Outside air per ASHRAE 62.1-2010 Ventilation Rate Procedure, Chapter 6.2

GENERAL SCOPE OF WORK

The scope of mechanical work includes a substantial renovation to the Hendrickson building mechanical systems including demolition of existing mechanical systems and the installation of a new heating system, new ventilation system, new exhaust air system, new low voltage DDC automatic controls, and new building fire sprinkler system. New fire sprinkler system will be connected to the existing 4-inch sprinkler main where it enters the building from the adjacent Soboleff Building and the location of the existing sprinkler header. New domestic water plumbing and sanitary waste piping system will be added for new plumbing fixtures and connected to the existing toilet room plumbing systems. The new heating system will be a low temperature heating water system consisting of perimeter finned pipe convectors, heating piping distribution system, circulation pumps, air handling unit heating coil, and air-water heat pumps. The air-to-water heat pump heating plant will be sized to provide 60% of the maximum design hourly heating load and approximately 90% of the yearly heating requirements. Supplemental heating will be provided by injecting heating water into the Hendrickson Building heating distribution system from the existing lower campus heating piping circulation loop.

Demolition of mechanical systems including the Hendrickson building's heating distribution system and heating units, building domestic water and waste piping systems outside of the existing toilet rooms, the building ventilation systems, sprinkler systems, and the entire pneumatic and electric control system will be required. Demolition shall be complete including hangers, rods, supports, conduit, wiring, tubing, and related appurtenances.

Contractor shall provide submittal data, O&M data, as-built drawings, adjustment of ventilation systems with report log, and training of the mechanical systems.

HEATING SYSTEMS

All existing heating piping, heating equipment, terminal heating units, and related accessories located in the Hendrickson Building shall be removed in the renovation and replaced with new. The Hendrickson building heating system is currently connected to the lower campus heating circulation piping loop that routes heating water from boilers located in (3) adjacent buildings to the Hendrickson building and other lower campus buildings. These boilers are located in the Mourant Building (Primary Electric Boiler), NorthWind Architects Page 5 of 12 July 2014



Novatney Building (Back-up Oil-Fired Boiler), and Soboleff Building (Alternate Back-up Oil-Fired Boiler System).

An air-water heat pump heating plant sized for 60% of design hourly heating load (90% of yearly heating requirements) is anticipated for primary heating of the Hendrickson Building. Supplemental heating will be provided from the existing lower campus heating piping distribution loop and injected into the Hendrickson building heating loop only when required.

The air-water heat pump heating plant will consist of the following equipment:

- 2 Outdoor units: (2) 8 ton units. Similar to Mitsubishi Hyper Heat Y-Series (PUHY-HP96-BS). Outdoor units with seacoast (anti-corrosion) protection coating.
- 3 Indoor heat exchanger units. (2) 6 ton and (1) 3 ton units. Similar to Mitsubishi HEX (PWFY-P72NMU-E-AU and P36NMU-E-AU)
- 3 Hydronic controllers
- Buffer Tank (To reduce defrost cycles). 250 gallon insulated tank located as close to the mechanical mezzanine as possible.
- Each outdoor unit's dimensions would be approximately 48"x30".
- Concrete Pad and Shed Roof. Approximate size of 144"x42".
- Outdoor Electrical (2 circuits) at 71 MCA, 75 MOCP, 208 volt, 3 phase
- Circulating Pump for each of the 3 indoor units. See below.
- · Refrigeration Piping between indoor and outdoor units
- · Communication and power wiring between indoor and outdoor units

The lower campus heating distribution piping mains routed through the Hendrickson building mechanical room will be demolished and revised to better integrate with the new air-water heat pump heating system. Minor modifications to the existing Soboleff building heating plant piping will be required for modified piping/pumps serving the two existing Hendrickson building heating loops.

Low Temperature Water Heating System: The building heating plant, distribution system, and terminal heating units will be designed to allow for the low temperature heating water of 100F- 110F produced by the energy efficient air-water heat pumps. Pipe configuration, pipe sizing, equipment sizing, finned pipe convectors, terminal heating units (heating coils), etc will be designed, configured, and sized to allow for this low temperature water.

The following heating circulation pumps are anticipated:

- P-1A and P-1B (Lead and Back-Up) Main Building Circulation Pumps: 47 GPM at 25'TDH, 1 hp, 208volt/3 phase. Located in Hendrickson Building Mechanical room.
- P-2, P-3, and P-4 Air-Water Heat Pump Heat Exchangers: 8 GPM at 14 ft Head. 1/8 hp, 115 volt/1 phase. Located in Hendrickson Building Mechanical room.
- P-5 District Heat Loop Injection Pump: 15 GPM at 20 ft Head. 1/3 hp, 115 volt/1 phase. Provides supplemental heating from lower campus heating loop. Located in Soboleff Boiler room.
- New pumps will be Grundfos for standardization.

The building heating will be provided primarily by perimeter wall mounted metal finned pipe convectors typically located beneath the exterior windows. 24 total perimeter heating zones served by finned pipe convectors are anticipated. Due to the low temperature heating water supplied, 3-tier finned pipe convectors are required with 24-inch total cabinet height. Flowsetters and automatic valves will be



installed for all heating units and shall be located within the heating unit cabinets for improved maintenance access. Each zone shall be controlled by its own respective wall mounted DDC room thermostat.

Heating for interior spaces including the open office area will be provided by (2) booster coils and respective room thermostats.

A heating coil in the air handling unit (AHU-1) will provide tempered ventilation air supply to the building.

Heating piping mains and branch piping shall be hard-drawn copper tubing, ASTM B 88, Type L with press-fit joints, 95-5 solder fittings or equivalent. Press fit joints will also be acceptable.

VENTILATION AND EXHAUST AIR SYSTEM

The existing ventilation system shall be removed and replaced in its entirety, including fans, ducts, VAV boxes, louvers, controls, and related systems.

Ventilation will be provided to the Hendrickson building by a new constant volume air-handling unit, AHU, with supply and return fans in an internally isolated insulated cabinet, located in the Mechanical Mezzanine. Preliminary size of the AHU unit is 7,200 cfm supply fan and 5,850 cfm return fan (7200 CFM SF at 2.175 TSP with 5hp 480 volt/3 phase motor; 5850 CFM RF at 1.2" TSP with 3 hp 480 volt/3 phase motor). The AHU would include a return fan RF section with airfoil backward-inclined centrifugal fan and exhaust air dampers, mixing box section with outside and return air dampers, MERV 13 high efficiency filter section, water heating coil, and airfoil backward-inclined centrifugal supply fan section. AHU outside air will be taken in through an intake louver and the AHU will exhaust/relieve air out a separate exhaust louver on opposite side of the Mechanical Mezzanine. The outdoor air louvers will be replaced with new. A new exhaust air louver with new exterior wall penetration will be required. The mezzanine exterior wall will need to be demolished/re-built in order to remove existing air handlers and install the new air handler.

Supply, return, and exhaust air ductwork distribution shall be installed above the lower floor and main floor ceilings to provide ventilation and exhaust for individual rooms as needed. Supply diffusers and return air grilles would be located in the ceiling tiles. Exhaust air will be provided for the toilet rooms and storage rooms as needed. Preliminary size of the EF unit is 1100 CFM @ 1.75"TSP with a 3/4hp, 480 volt/3phase motor. It is anticipated that the exhaust fan will be located on the roof (downblast type). Duct silencers would be installed on the return and supply air duct mains to limit transfer of sound from the fans to occupied spaces as needed. All ductwork shall be galvanized steel sheet metal.

Air handling system controls will be of the low voltage direct digital (DDC) type.

COOLING SYSTEM

The new building ventilation system will not include a mechanical cooling system. The air handling system (AHU) shall utilize natural outdoor cooling air as necessary. Space in the air handling unit for a future cooling coil can be included if desired by UAS.

The UPS Room will contain heat generating equipment that will require cooling. A 1-1/2 ton (18,000 Btu/hr) cooling capacity split system air conditioning unit, similar to Mitsubishi Slim PKA-A18HA indoor unit and PUZ-A18NHA3-BS outdoor unit is anticipated. Indoor unit will be mounted on the UPS room



wall. Outdoor unit will be located adjacent to air-water heat pumps under shed roof. Refrigeration piping, electrical, and controls will be routed to the outdoor condenser unit.

CONTROLS

Existing building electric and pneumatic control systems will be demolished in their entirety and replaced with a new Direct Digital Control System (DDC). Demolition includes removal of thermostats, control devices, control panels, pneumatic tubing, control wiring, and all related control accessories. Control tubing will be removed to Soboleff Building pneumatic controls air compressor and plugged. Mechanical heating and ventilating units will be controlled through a new Direct Digital Control System (DDC) integrated into the existing UAS Siemens building automatic control system and graphics screens. If desired by the University, the automatic controls for the Hendrickson building could be opened up to other pre-approved control manufacturers. A new computer station and large screen monitor with graphics of the new building mechanical systems will be provided for ease in monitoring, trending, and scheduling operation of mechanical systems. An Ethernet BLN connection would be utilized for interbuilding communications. Terminal equipment controllers will be installed at each air handling system and possibly in several locations throughout the building for control of heating zones. Individual room temperature control will be provided for each heating zone. The room thermostats will be capable of remote monitoring and overrides.

The control system will be capable of remote monitoring and control from the UAS maintenance office. Feedback to the building automation system from the heating system, room temperature sensors, ventilation controls, and other heating/ventilation systems provide the maintenance crew with the ability to monitor the operation and energy use of the HVAC system on-site or remotely. We estimate that a total of 60 input-output control points will be required.

PLUMBING SYSTEM

The existing toilet rooms on the lower floor will be retained. The remainder of the plumbing system outside of the existing toilet rooms will be demolished, including all plumbing fixtures and piping, abandoned plumbing piping, and related accessories. Existing cold water service and domestic hot water is provided from the adjacent Soboleff building. The new domestic water system will be connected to this existing domestic cold and hot water piping where it currently enters the Hendrickson building. Due to the piping distance to the last plumbing fixture, a hot water recirculating system for the Hendrickson building is anticipated utilizing a hot water recirculating pump to be located in the Soboleff building Mechanical room.

The domestic water piping material shall be hard-drawn copper tubing, ASTM B 88, Type L with 95-5 solder fittings or equivalent. Press fit joints will also be acceptable.

Sanitary waste and vent piping shall be cast-iron hub-and-spigot below grade and no-hub cast-iron above the floor. Copper DWV shall be acceptable for horizontal above ground waste and vent for pipe sizes 2-inch and under. Equipment drains will be copper DWV or Schedule 40 black steel. New sanitary waste piping will be connected to the existing waste piping entering the toilet room in the lower floor ceiling space. New vent piping will be installed and connected to an existing VTR in the main floor ceiling space. PLUMBING FIXTURES AND EQUIPMENT

Fixtures complying with the Americans with Disabilities Act (ADA) will be specified where required by the architectural floor plan.

Existing toilet room plumbing fixtures and drinking fountain will be retained.



The sink in the main floor Break Room will be an ADA stainless steel double compartment bowl with single lever gooseneck faucet. The sink in the lower floor Break Room will be an ADA stainless steel single compartment bowl with single lever gooseneck faucet. These sinks will have a shallow 6-1/2 inch depth in order to meet ADA requirements.

ROOF DRAINAGE SYSTEM

Existing roof drains will be re-used. Due to revised room layout, new roof drain piping is anticipated to be installed in the main floor and lower floor ceiling spaces to route drainage to existing underground roof drain piping. Roof drainage piping shall be no-hub cast-iron.

PIPE AND EQUIPMENT INSULATION

Vent piping within 10 feet of roof penetration, roof drainage piping, and all domestic cold water, hot water, and hot water recirculating piping will be insulated with sectional pipe covering with vapor retardant jacket, mineral fiber, 1 inch IPS thick. Heating piping insulation will be mineral fiber, 1-1/2 inch thick. Outside air duct from louver to fan and exhaust ducts from exterior wall to backdraft damper or automatic damper will be insulated with faced 1-1/2 inch thick glass-fiber blanket having a minimum density of 1 pound per cubic foot and vapor barrier.

VALVES

Domestic and heating water valves shall be provided rated for 400 psig working pressure. Valves are to be lead-free bronze body, two piece, quarter-turn full port ball valves. Valves will be installed accessibly to individually shut off domestic/heating water piping to each room/heating unit/fixture. Terminal heating unit isolation valves will be located inside the respective heating unit cabinets for ease of maintenance. Domestic water drain valves shall have vacuum breakers and caps. Heating water drain valves shall have caps.

SPRINKLER SYSTEMS

The entire existing wet sprinkler system within the Hendrickson building will be removed and replaced with new. A new wet sprinkler system shall be installed to serve the warm spaces of the building according to the new room and ceiling layout. The new sprinkler system will connect to the existing 4-inch sprinkler main where it enters the building through the corridor wall from the adjacent Soboleff building and the existing sprinkler header serving both buildings. The new Hendrickson building sprinkler system will be installed with its own sprinkler zone and flow alarms, separate from the Soboleff Building, as currently installed.

Sprinkler heads to be semi-recessed where ceilings are present. Clerestories and skylights will have exposed piping and high temperature heads. Sprinkler piping will need to be installed in the structural joist space throughout. The Sprinkler system shall be designed and installed per NFPA 13.



Report by Barry Begenyi, Begenyi Engineering

General

The electrical systems will comply with accepted codes, standards and recommended practices common to the electrical industry and as required by local and state authorities, including but not necessarily limited to the following:

- National Electrical Code (NEC)
- International Fire Code (IFC)
- National Fire Protection Association (NFPA)
- ASHRAE 90.1 Energy Standard
- Illuminating Engineering Society (IES)
- National Electrical Manufacturers Association (NEMA)
- National Electrical Contractors Association (NECA)

All equipment will be listed and labeled by a nationally recognized testing agency acceptable to the State of Alaska.

Utility Services and Distribution Equipment

Power for the Hendrickson Building will be sourced from the main distribution panels in the Soboleff Building electrical room, similar to the existing configuration. A 225 amp, 277/480 volt panelboard will be provided to supply large mechanical equipment and special equipment. A 60 amp, 277/480 volt panelboard with electronically operated circuit breakers will be sub-fed from the 225 amp panel to serve the lighting system. A two section 225 amp, 120/208 volt panelboard will be provided to supply workstations, convenience receptacles, and small mechanical equipment. Separate feeders for each panelboard will be provided from the Soboleff Building electrical room.

The emergency power system was upgraded in 2004 with new 277/480 volt distribution equipment to provide power to several existing 120/208 volt panelboards, including the Soboleff Building. Emergency branch circuits for egress lighting and the fire alarm system will be sourced from the existing 120/208 volt panelboard in the Soboleff Building electrical room.

Back-up power will be provided by a 15kVA UPS. The UPS output will feed a 60 amp, 120/208 volt, 3 phase panelboard dedicated to computer workstation branch circuits and other convenience loads that require back-up power.

Indoor equipment will be NEMA 250, Type 1. Equipment buses and conductor connections will be tinplated aluminum. Panelboards will be flush mounted, except in unfinished spaces where surface mounting is acceptable. Overcurrent protective devices will be molded case circuit breakers. All equipment will be commercial grade.

The UPS and panelboards will be located in a dedicated electrical room that also houses the communications services and distribution equipment described below. Cooling will be provided for the space.



Communications Services and Distribution Equipment

A new space will be provided on the ground floor for communication equipment. The space will house termination provisions for copper and fiber optic outside plant cables, network racks, and the UPS mentioned above. Two data racks will be provided for servers, voice-over-IP components, and patch panels and switches for local data terminations.

Connecting blocks, cross-connects, and patch panels will be 110-style with insulation displacement connectors. Patch panels will be 48-port, minimum. The racks will be equipped with horizontal and vertical cable management and power strips.

Feeders and Branch Circuits

Feeders and branch circuits will be single conductors in conduit. All conductors will be copper with insulation Type THHN-THWN. Connectors and splices will be of size, ampacity rating, material, type, and class for application and service required. Feeders and branch circuits will be concealed, except in unfinished spaces, or where otherwise approved by the Architect.

Grounding and Bonding

Insulated copper equipment grounding conductors will be provided with all feeders and branch circuits.

Hangars and Supports

The project will comply with NECA for application of hangars and supports for electrical equipment and systems. Interior support devices will be steel; exterior will be hot-dip galvanized with stainless steel hardware.

Raceways and Boxes

Exposed, outdoor conduit and interior locations subject to damage will be galvanized rigid steel. Electrical metallic tubing will be utilized for interior raceways not subject to damage or concealed in finished surfaces. Connections to vibrating equipment shall be flexible metal conduit, except liquid-tight flexible metal conduit will be applied in damp or wet locations. Outlet and devices boxes will be sheet metal.

Identification for Electrical Systems

Branch circuit conductors will be identified with self-adhesive vinyl labels where conductors are accessible in panels, junction and pull boxes. All feeders and branch circuits will be color-coded for phase identification with factory applied color or half-lapped tape.

Equipment identification labels will be provided on each unit of equipment including disconnect switches and protection equipment, central or master units, control panels, control stations, and terminal cabinets. Systems include power, lighting, control, communication, signal, monitoring, and alarm.

Mechanical Equipment

Branch circuits and connections for all mechanical equipment will be provided. Motors rated ½ HP and larger will be wired 480 volts, 3 phase. Motors less than ½ HP will be wired 120 volt, single phase. Disconnect switches will be heavy-duty type with fuses as required. Motor starter switches will be quick-make, quick-break toggle with on/off indication. Full voltage, across the line, magnetic controllers with bimetallic overload relays will be used for equipment requiring automatic control.



Lighting Systems

The ground floor and open area of the main floor will predominately use linear indirect/direct fluorescent light fixtures in pendant mount configurations. The remainder of the main floor will use recessed indirect light fixtures placed in an acoustic tile ceiling. Illumination levels shall comply with recommended practices outlined by IES. The enclosed offices, storage rooms, conference rooms, and break room will be controlled by occupancy sensors. Exterior lighting will be provided along decks, walkways, and stairs. Exit signs and emergency illumination will be provided as required along the means of egress, including the exit discharge. Lighting circuits will be connected to a separate panelboard with electronically operated circuit breakers.

Wiring Devices

Receptacles will be provided for workstations and equipment. The design will provide sufficient devices to allow for flexibility. Convenience receptacles throughout corridors and common areas will be located so that no point is more than 20-feet away from a receptacle. Four receptacles will be located in each enclosed office. Systems furniture will be electrified with separate power and communications raceway systems. Common areas, conference room walls will be provided with devices spaced approximately 6-feet apart. Receptacles with special configurations will be provided as required by the Owner.

All devices will be specification grade, or better. Convenience receptacles will be 125V, 20A. Ground fault devices will be provided as required by the NEC, non-feed through type. Toggle switches will be 120/277V, 20A. Wall box dimmers will be modular, full-wave, solid-state units with integral, on-off switches. Smooth, high-impact thermoplastic wall plates will be used, except in unfinished spaces where galvanized steel will be allowed. Wet location device plates will be NEMA 250, Type 3R with lockable cover.

Low Voltage Devices and Wiring

All components of the data system will comply with Category 6 performance criteria. Two data outlets with three jacks per outlet will be provided in each enclosed office and workstation. Common work spaces will be provided with jacks as required for convenience and equipment.

Cables shall be 100-ohm, four-pair unshielded twisted pair with thermoplastic jacket. Cables will terminate on rack mounted patch panels in the communications room. Conduit for the data system will be 1" minimum. Conduit will be utilized in concealed and exposed conditions, except above accessible ceilings where unenclosed cabling methods may be used.

Fire Alarm

The fire alarm system was recently replaced with a digital, addressable configuration. The fire alarm control panel, annunciator, digital alarm communicator, smoke and heat detectors and notification appliances shall be reused. Anticipate approximately 25% new initiating and notification appliances will be required to coordinate with the new architectural configuration. New conduit, cables, and wire will be provided. The sprinkler system will be monitored for valve tamper, water flow, and low pressure in the dry system. Duct smoke detectors will be provided on the supply side of mechanical equipment in excess of 2000 cubic feet per minute.

HENDRICKSON RENOVATION

SCHEMATIC DESIGN COST ESTIMATE - 07/16/2014

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HENDRICKSON RENOVATION #Site City, #Site State NWA-1404.2

SHEET #



PLOT DATE:



SCALE





DEMOLITION GENERAL NOTE

- 1. VERIFY ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO STARTING WORK. NOTIFY THE OWNER IMMEDIATELY OF DISCREPENCIES OR CONFLICTS PRIOR TO PROCEEDING.
- 3. SEE SHEET A1.2 AND A1.3 FOR EXTENT OF DEMOLITION OF EXTERIOR WINDOWS, WALLS AND SIDING.
- 4. REMOVE ALL FINISHES, CEILING (ACT) & FLOORING (CPT & VINYL) EXCEPT IN RESTROOMS.
- 5. PATCH (N) ROOF OPENING TO MATCH (E).

DEMOLITION KEY NOTES

- (1) REMOVE CASEWORK & SINK.
- REMOVE STAGE AND ASSOCIATED STAIRS & RAMPS.
- REMOVE EPDM MEMBRANE, INSULATION & ROOF SHEATHING TO $\langle 3 \rangle$ PREPARE FOR NEW SKYLIGHTS.
- (4) REMOVE 5' WIDE X 1'-8" HIGH CONC WALL 7'-6" AFF.
- SREMOVE ROOF CRICKET AS REQUIRED TO INSTALL (N) SKYLIGHTS

WALL TO BE REMOVED



2. SEE MECHANICAL & ELECTRICAL DWGS FOR SCOPE OF DEMOLITION FOR THOSE TRADES. COORD REQUIRED NEW PENETRATIONS FOR ROUTING NEW SYSTEM.



-1" ACTUAL -----IF THE ABOVE DIMENSION DOES NOT MEASURE ONE INCH (1") EXACTLY, THIS DRAWING WILL HAVE BEEN ENLARGED OR REDUCED, AFFECTING ALL LABELED SCALES.





PLOT DATE:

7/16/2014



NORTH ELEVATION

SCALE: 1/4"

DEMOLITION GENERAL NOTE



-1" ACTUAL ----IF THE ABOVE DIMENSION DOES NOT MEASURE ONE INCH (1") EXACTLY, THIS DRAWING WILL HAVE BEEN ENLARGED OR REDUCED, AFFECTING ALL LABELED SCALES.



DATE:	07/16/2014
REVISION:	
CHECKED BY:	
DRAWN:	
SHEET #	1.3

7/16/2014

PLOT DATE:





-1" ACTUAL ----IF THE ABOVE DIMENSION DOES NOT MEASURE ONE INCH (1*) EXACTLY, THIS DRAWING WILL HAVE BEEN ENLARGED OR REDUCED, AFFECTING ALL LABELED SCALES.



A	1.4
SHEET #	
DRAWN:	
CHECKED BY:	
REVISION:	
DATE:	07/16/2014

7/16/2014

PLOT DATE:





IF THE ABOVE DIMENSION DOES NOT MEASURE ONE INCH (1") EXACTLY, THIS DRAWING WILL HAVE BEEN ENLARGED OR REDUCED, AFFECTING ALL LABELED SCALES.



SHEET TITLE:

GROUND FLOOR PLAN

DATE:

REVISION:

CHECKED BY

DRAWN



07/16/2014



PLOT DATE:

7/16/2014



GENERAL NOTE

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- 3. SEE SHEET A1.2 AND A1.3 FOR EXTENT OF DEMOLITION OF EXTERIOR WINDOWS, WALLS AND SIDING.
- 5. PATCH (N) ROOF OPENING TO MATCH (E).

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-1" ACTUAL -----IF THE ABOVE DIMENSION DOES NOT MEASURE ONE INCH (1*) EXACTLY, THIS DRAWING WILL HAVE BEEN ENLARGED OR REDUCED, AFFECTING ALL LABELED SCALES.



SHEET TITLE:

ROOF PLAN & ENTRY

DATE:

REVISION:

CHECKED BY:

DRAWN: SHEET #



07/16/2014

PLOT DATE:

GENERAL NOTE

- SYSTEM.



VERIFY ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO STARTING WORK. NOTIFY THE OWNER IMMEDIATELY OF DISCREPENCIES OR CONFLICTS PRIOR TO PROCEEDING.

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DATE:

REVISION:

CHECKED BY:

DRAWN:

SHEET #





SCALE: 1/4" = 1'-0"



IF THE ABOVE DIMENSION DOES NOT MEASURE ONE INCH (1") EXACTLY, THIS DRAWING WILL HAVE BEEN ENLARGED OR REDUCED, AFFECTING ALL LABELED SCALES.



SHEET TITLE:

BUILDING ELEVATIONS

DATE:

REVISION:

CHECKED BY DRAWN:

SHEET #



07/16/2014



