



SCHEMATIC DESIGN APPROVAL

Name of Project: UAA Science – Geology Phase 1

Location of Project: Anchorage, Alaska

Project Number: 564303

Date of Request: September 1, 2009

Estimated Total Project Cost: \$11,400,000

Approval Required: F&LM Committee

Supporting Documents

1. Design Narrative
2. Budget
3. Space Summary
4. Site Plan
5. Lower Level Floor Plan
6. Upper Level Floor Plan
7. Elevations (all sides)
8. Sections (cross, longitudinal and wall sections)

UAA Science Building Renovation Design Narrative

A. BUILDING SITE

The existing building is situated along the campus “spine” and connected by walkways to the engineering building toward the west (on the other side of University Drive) and the Parking Garage to the east. Little site development is expected but there will be some minor site modifications required at entries, for utility (electrical service) upgrades, and other minor upgrades to the exterior of the building.

B. EXTERIOR DESIGN OF THE BUILDING

This is an existing facility that has a design typical of the 1970’s. The existing building has insulated metal vertical panels with “strip” aluminum windows and is fairly monolithic. The design of the new exterior was primarily focused on a functional upgrade to improve the thermal performance of the exterior building envelope by eliminating window openings where they are either not required for the program, or where program requirements were such that removal of most or all of the existing windows best suits program needs. Removal / replacement of existing windows and infilling areas of exterior wall provides a unique opportunity to improve the appearance of the building, in addition to the functional upgrade. While at complete renovation of the exterior shell of the building is beyond the scope of the project, the new work will significantly improve both the thermal envelope of the building and the aesthetic qualities of it.

New building entries on the south, north, and east elevations will be provided with new doors and sidelights, and a new covered canopy provided on the north entry. New building arctic entry vestibules will also be provided at the primary entrance on the north. Some of the exterior panels at the north entry are damaged, so new panels are being provided, which also improve the appearance of the revised entry. The entry design is intended to assist students in “wayfinding” by delineating the building entries, as well as encourage use of the pedestrian walkway “spine” by creating more inviting and visible entries.

A new mechanical outside air intake is required. Currently, the air intake is located on the west side of the building under the pedestrian overpass directly adjacent to University Drive, and consequently drawing vehicle exhaust into the building’s mechanical system. The new design proposes a shaft enclosure extending up through the interior of the building and above the roofline; drawing air from above and bringing it down and into the mechanical room, located on the ground level at its current location. This will eliminate the current deficiency of bringing exhaust fumes into the building and will improve the air quality of the building. It also provides an architectural design element that is articulated on the exterior of the building, improving the building appearance.

A new exterior entry to the building is being provided on the east side of the building to accommodate field gear storage area serving all of the departments. The articulation of the entry is downplayed because this is not a primary entrance, and we do not want to draw attention to it.

C. PRINCIPAL MATERIALS

The primary exterior materials of the exterior of the building will be a combination of re-use of the existing insulated metal panels (mostly on the upper portion of the building), new textured metal insulated metal panels and a proprietary exterior “Swisspearl” Fiber-Reinforced Cementitious Panel

System manufactured by Pacific Architectural Products. These materials will be used in a composition that will add visual interest and some variation to the existing monolithic appearance.

The general architectural approach for interior construction will be to retain many of the existing interior walls and the existing ceiling suspension grid. The existing ceiling tile and lighting fixtures will be removed and replaced with new tile and lighting. Where necessary for mechanical or electrical work, minor areas of the ceiling grid may be removed and new grid elements installed. Architectural floor finishes will be removed and new finishes provided throughout.

Where new walls are required, the new interior wall systems will consist primarily of metal stud assemblies with painted gypsum wallboard finish in most of the office areas, laboratories, and other program areas. Additionally, more highly durable finishes will be used in the common use areas, such as corridors and student gathering areas.

New Interior door frames will be of aluminum frame construction, to be consistent with some of the newer facilities on campus. Doors will be wood construction with clear wood finish. Where appropriate, interior side lites will be used to share exterior natural light to interior spaces. Where privacy is required, frosted or fritted glass will be used so that both privacy and shared natural light are possible.

Interior finishes of program spaces are detailed in the space data sheets included with the building program documents.

D. FUNCTIONAL RELATIONSHIP OF INTERIOR SPACES

The building's existing architecture is based on a modular building layout with a 5' x 5' grid throughout the building. This is not uncommon for the time of initial construction, and is similar to other UAA buildings on campus. It makes sense to maintain this module, since there is no technical or program reason for altering it. Therefore, when the program was developed most program elements were designed to fit within a space defined in increments of 5 feet. Fortunately, this provides a very workable building module for the programs that are to fit in the building. The program for the building has been prepared as a separate document- see the program document section of the schematic design binder.

The major program elements for the Geology and Physics/Astronomy departments are located on the first floor, along with storage space. The major program elements for Biology and Liberal Studies Integrated Science departments are located on the second floor, along with a Computer Instructional Lab, offices for Math and the aforementioned departments, and other support spaces. The layout also allows for student gathering areas to encourage and facilitate informal learning and study outside of the classroom, and foster a sense of educational community within the facility itself.

E. MAJOR SYSTEMS

The existing exterior wall systems consist of insulated metal panels with metal furring on the interior side and gypsum wall board finish. Existing exterior windows are of aluminum frame with 1" insulating glass (2-ply). The windows are arranged as a "band" continuously around the west, south, and east sides of the building. Because of program changes, exterior natural light is not required in all of these spaces. (Natural light is not necessarily desirable in mass quantity in some spaces and explicitly problematic in other spaces.) The physics and astronomy labs in particular are sensitive to light- light is problematic when performing certain lab functions. Reducing the amount of exterior

windows to satisfy program requirements also provides the single best opportunity for improving the heat loss performance of the building.

Some of the exterior window areas will be removed and infilled with new construction with a higher insulating value. Walls will consist of 6" metal stud framing with R-21 batt insulation within the cavity, and the exterior finish will be a metal panels installed over furring strips with 1 1/2" rigid insulation (R-7.5). This additional insulation will improve the energy performance in addition to providing a thermal break for the metals stud.

Existing doors and frames are of hollow metal construction and the paint is deteriorating. They will be removed and replaced with new thermally broken aluminum doors and frames.

The existing roof is an inverted membrane roof system with concrete pavers. The membrane itself is a built-up asphalt roof system with multiple plies. Destructive testing was not conducted to determine the number of plies. The roof has had some report leaks, but mostly associated with roof penetrations and flashing. The membrane is 30 years old and due for replacement within the next five years. The membrane itself is not in a state of imminent failure, it probably has a few years of life left. However, there are numerous patched areas around the roof, particularly with roof mounted mechanical equipment. These areas are suspect and the mostly likely locations for leaks.

Since the roof appears to have some remaining life, the approach will be to retain the existing membrane roof system where possible and simply repair and patch areas where known leaks have occurred. Also, new penetrations will be flashed and areas where any mechanical equipment is removed will be covered with membrane and re-insulated.

See additional descriptions of the structural, mechanical, electrical, and hazardous materials systems included within the Schematic Design Narrative.

F. BUILDING CODE REQUIREMENTS

The basic building code requirements are as follows:

Building Code:	2006 International Building Code (IBC)
Occupancy Classification:	B (business, higher education)
Construction Type:	V-B Combustible, non-rated (Note, building is non-combustible, though not required by code)
Sprinkler system:	Not required for B occupancy, but included (Chapter 9). Inclusion of a sprinkler system relaxes other requirements of the code, such as corridor and stair construction and allowable area.
Corridor Construction:	Fire-resistive assembly not required, since the building has a sprinkler system.
Stair Enclosure:	Fire-resistive assembly not required since the stairs only connect two adjacent floors, and the building has a sprinkler system.
Separation of Occupancy:	No occupancy fire separation assemblies are required since the building's laboratories do not contain materials in excess of the quantities permitted in B occupancies.

G. BUILDING EFFICIENCY

The building on both levels is organized along a double loaded corridor, with program spaces on either side. By most standards, this is considered the most efficient use of space. In particular, it proved to be an appropriate organizational form for the specific program spaces for this facility.

The building is approximately 25,000 square feet on both levels. Note that there is a difference between this number and the square footage included in the building code analysis. A portion of this building is part of the Campus "spine" system, which connects this facility to the engineering building and the parking garage. The program is based on the area of the building that is actually used for the science department program. The area used in the building code analysis must include the total area.

Program spaces (excluding mechanical, electrical, custodial, restrooms, corridors, stairs, and student gathering areas) account for approximately 17,500 square feet. This gives the facility a net to gross ratio of 0.70. Corridor and vertical circulation space accounts for approximately 4,000 square feet (15% of the total building area).

I. CONFORMANCE WITH UAA MASTER PLAN

To the extent possible and relevant, the building will comply with the Key Design Guidelines delineated in the UAA Campus Facilities Master Plan (2004). The building's placement on site is already defined (existing), but its location and development are compliant with the UAA Campus Master Plan. The building is located along the campus spine. This is consistent with the master plan to use the spine as an organizing element of the campus. The building's entry points will be altered slightly to make them more recognizable and visible to the campus surroundings.

The building exterior will be modified using quality materials of known longevity. Roof structure and mechanical equipment will be screened or set back from the roof edge so that they are not visible. The building's visual appearance will be improved to enhance the quality of the built environment of the campus, a key element of the master plan's design guidelines.

Other technical considerations required by the master plan and addressed in the design include upgrading the structure to current seismic standards and assuring adequate space within the building for HVAC and other equipment.

J. LIFE CYCLE COST/ENERGY MANAGEMENT

The primary tool used for analyzing this building's energy management is the US Green Building Council (USGBC) LEED Program. While the University is not mandated to comply with the USGBC guidelines, it is the best tool to measure the performance of the building based on a national standard. It is a more comprehensive standard than simply addressing a building's energy efficiency. It addresses environmental responsibility and reducing impact. It focuses on five categories including sustainable site development, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality.

UNIVERSITY OF ALASKA			
Project Name:		UAA Science - Geology Phase 1	
MAU:		UAA	
Building:	Science	Date:	9/1/2009
Campus:	Anchorage	Prepared by:	FP&C
Project #:	564303	Acct #:	564303/564310
Total GSF Affected by Project:		27,166	4,000
PROJECT BUDGET		FPA Budget (Full Project)	SDA Budget (Phase 1)
A. Professional Services			
Advance Planning, Program Development		\$ 50,000	\$ 50,000
Consultant: Design Services		\$ 720,000	\$ 820,000
Consultant: Construction Phase Services		\$ 200,000	\$ 50,000
Consul: Extra Services (List: Hazardous Materials)		\$ 80,000	\$ 20,000
Site Survey		\$ 30,000	\$ 5,000
Soils Testing & Engineering			\$ -
Special Inspections		\$ 80,000	\$ -
Plan Review Fees / Permits		see below	see below
Other (List: _____)			
<i>Professional Services Subtotal</i>		\$ 1,160,000	\$ 945,000
B. Construction			
General Construction Contract(s)		\$ 7,800,000	\$ 1,400,000
Other Contractors: (List: _____)			
Construction Contingency 12%		\$ 936,000	\$ 168,000
<i>Construction Subtotal</i>		\$ 8,736,000	\$ 1,568,000
<i>Construction Cost per GSF</i>		\$ 322	\$ 392
C. Building Completion Activity			
Plan Review Fees/Permits		\$ 174,720	\$ 20,000
Equipment		\$ 262,080	\$ -
Fixtures		\$ -	\$ -
Furnishings		\$ 349,444	\$ -
Signage not in construction contract		\$ -	\$ -
Move-In Costs		\$ 262,080	\$ 7,000
Art		\$ -	\$ -
Other (Interim Space Needs or Temp Reloc. Costs)		\$ -	\$ -
Maintenance Operation Support		\$ -	\$ 42,000
<i>Equipment and Furnishings Subtotal</i>		\$ 1,048,324	\$ 69,000
D. Owner Activities and Administrative Costs			
Project Plng, Staff Support			
Project Management		\$ 436,800	\$ 62,500
Misc. Expenses: Advertising, Printing, Supplies, Etc.		\$ 68,880	\$ 1,100
<i>Administrative Costs Subtotal</i>		\$ 505,680	\$ 63,600
E. Total Project Cost		\$ 11,450,004	\$ 2,645,600
<i>Total Project Cost per GSF</i>		\$ 421	\$ 661
F. Total Appropriation(s)		\$ 11,400,000	\$ 2,645,600

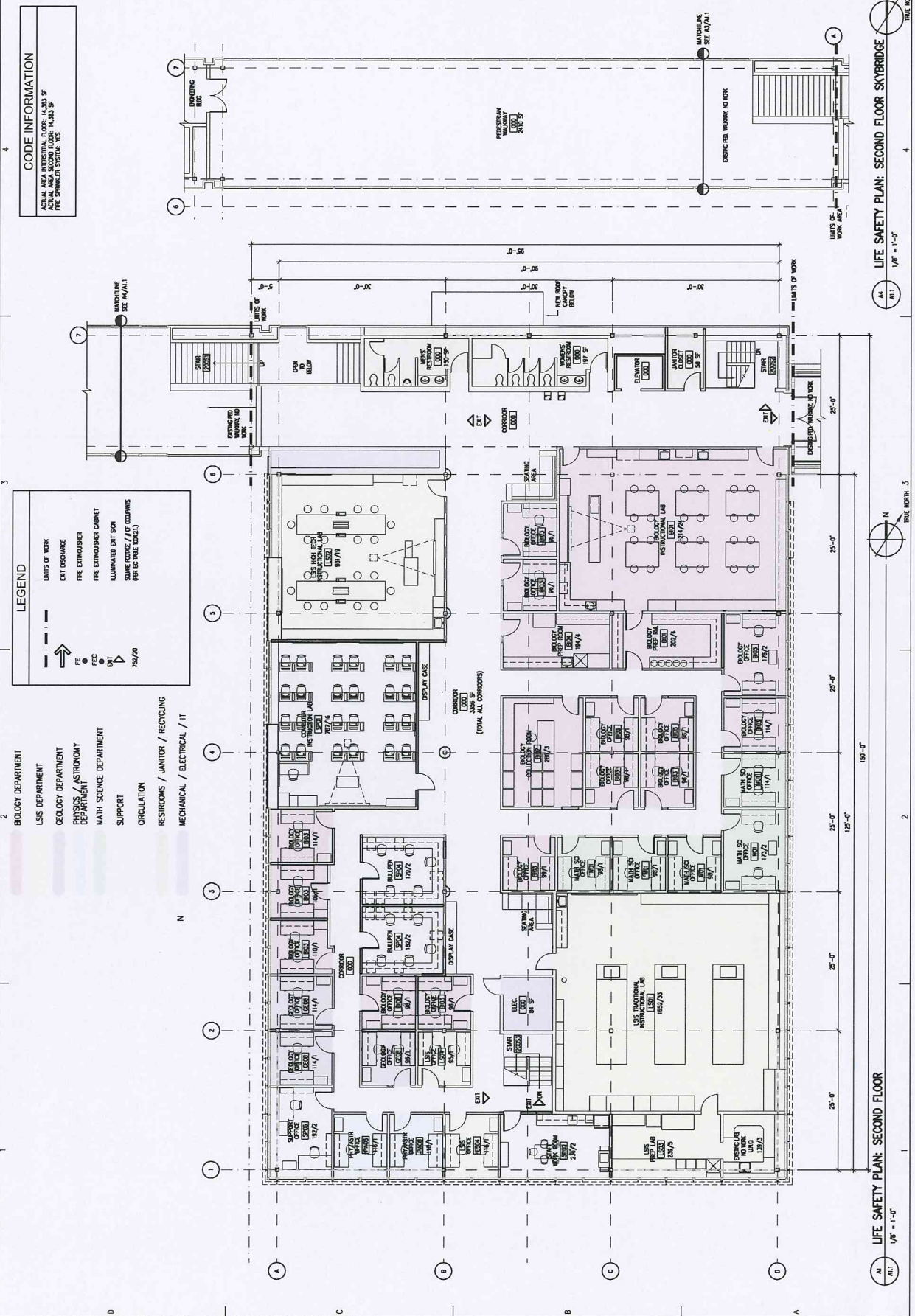
Note: \$661 /sf is inaccurate as this includes design for all 27,166 sf.

Revisions	No	Description	Date

Drawn by	Date
Checked	Job No.

Sheet Contents
 LIFE SAFETY PLANS
 INTERIOR, & SECOND FLOORS

Category	Sheet No.
A	1.1



CODE INFORMATION

ACTUAL AREA INTERIOR FLOOR: 14,340 SF
 FINISHED AREA: 14,340 SF
 FIRE SEPARATION SYSTEM: YES

LEGEND

- LIMITS OF WORK
- EXIT DISCHARGE
- FIRE EXTINGUISHER
- FIRE EXTINGUISHER CABINET
- ILLUMINATED EXIT SIGN
- SMOKE PULLER / IF OCCUPIES (FOR IBC 104.2.1)
- 750/20
- PE
- FECC
- UP
- DOWN

DEPARTMENT

- BIOLOGY DEPARTMENT
- LSIS DEPARTMENT
- GEOLOGY DEPARTMENT
- PHYSICS / ASTRONOMY DEPARTMENT
- MATH SCIENCE DEPARTMENT
- SUPPORT
- CIRCULATION
- RESTROOMS / JANITOR / RECYCLING
- MECHANICAL / ELECTRICAL / IT

REVISIONS

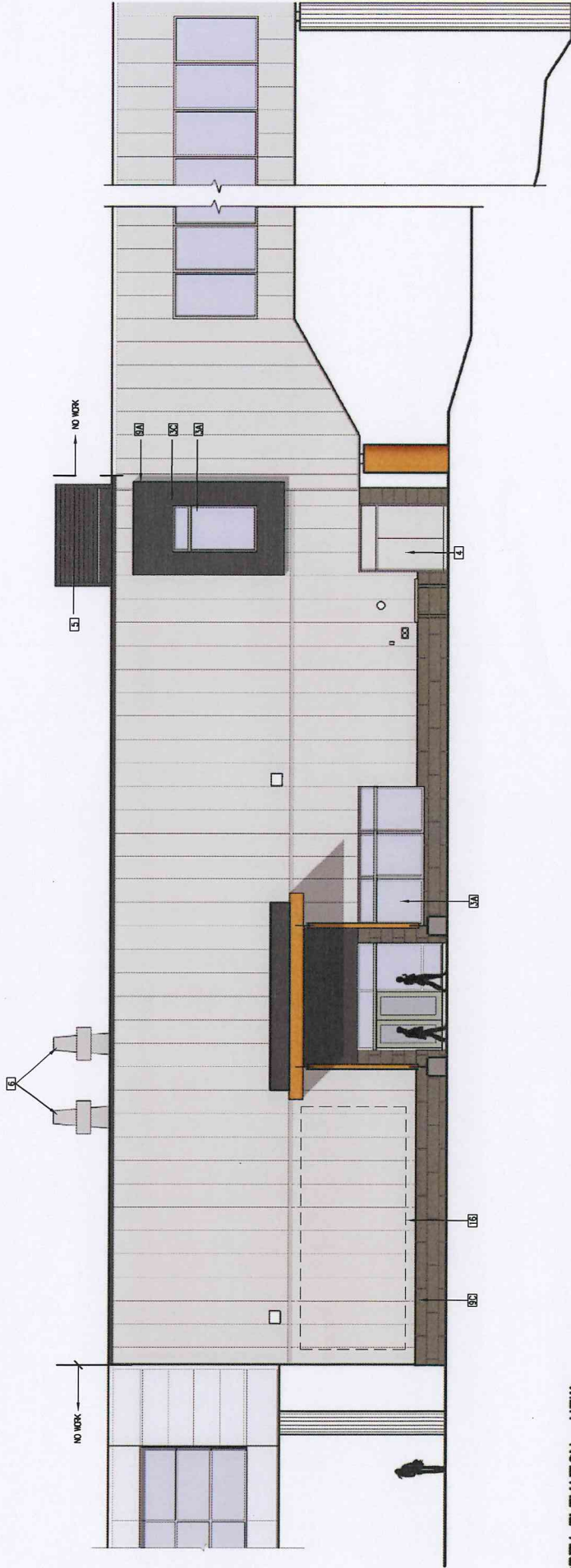
1. 12/2/20

NOTES

1. ALL CORRIDORS TO BE FINISHED TO MEET LIFE SAFETY REQUIREMENTS.

PLANNING

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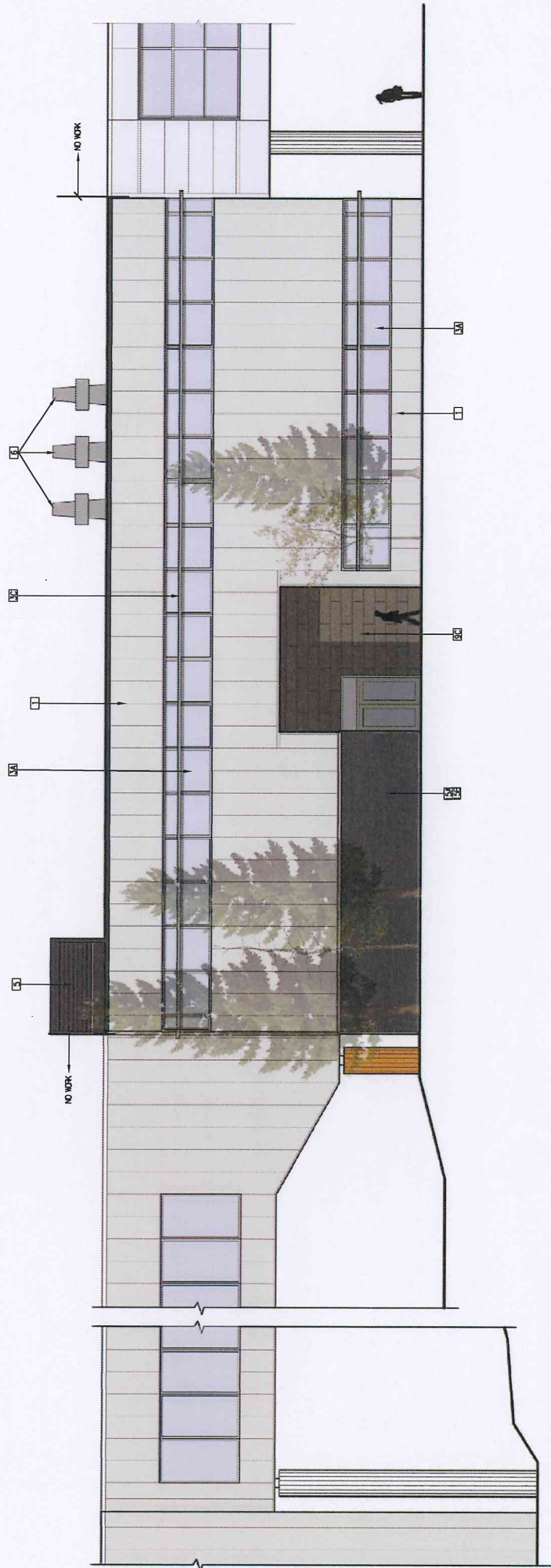


NORTH ELEVATION— NEW

C1
N22

SHEET NOTES

- 1 EXISTING INSULATED METAL WALL PANEL
- 2 EXISTING ALUM. SIDEROON WINDOW ASSEMBLY TO REMAIN IN PLACE
- 3 NEW FLOOR METAL INSULATED DOOR ASSEMBLY
- 4 NEW 4"x6" FRENCHED ALUMINUM HORIZONTAL MEMBER, ATTACH TO F.O.
- 5 EXISTING SIDEROON WINDOW ASSEMBLY IN 1/2 SECTIONS, ATTACHMENT TO HOLD MEMBER OFF OF FACE OF WINDOW SURFACE, 4" MIN.
- 6 NEW ROOFTOP MECHANICAL INTAKE AIR SUPPLY/0 SEED LOWER ASSEMBLY ON 2" HIGH CURB
- 7 NEW ROOFTOP MECHANICAL HOOD EXHAUST, QUANTITY & LOCATIONS TO BE COORD. W/ MECHANICAL
- 8 NEW BUILDING SIDING, FIBER CONCRETE PANEL, UNMODIFIED ASSEMBLY, PREPARED / FIBER CONCRETE PANELS, THROUGH FASTENED W/ METAL STRIPS, MODIFIED BUTIMULOUS ALUMINUM STRIPS OVER EXISTING METAL PANEL WALL SIDING
- 9 SAME AS 8, EXCEPT INSTALL OVER AREAS OF REMOVED SIDEROON WINDOW ASSEMBLIES WHICH HAVE BEEN FILLED WITH 6" MIN. FRAMING W/ 200 MIN. BATT INSULATION & SEALED W/ EXTERIOR FIBERGLASS FACED COPOLYMER PANELS W/ WEATHER BARRIER
- 10 NEW ENTRY CANOPY W/ EXPOSED STRUCTURAL STEEL SUPPORTING COLUMNS & BEAM, EPDM ROOF OVER STEEL DECK, CONC. FOUNDATIONS FOR COLUMNS, REINFORCED CONCRETE FLOOR PANELS, RAIN LEADER RUN AND DRAIN, RED W/ DRAINING DUES
- 11 STRUCT. STL. BEAM— ROUND TUBE STL. SECTION
- 12 STRUCT. TUBE STL. COLUMN ON CONC. BASE
- 13 NEW BLDG. SIDING, THROUGH FASTENED PREFINISHED KYNAR CORRUGATED METAL SIDING OVER SIDING OF SELF SEALS/ADHERING MODIFIED BUTIMULOUS ALUMINUM STRIPS OVER EXIST. INSUL. METAL PANEL SIDING
- 14 SAME AS 13A, EXCEPT SUBST. NEW 6" MIN. FRAMING W/ 200 MIN. BATT INSULATION & SEALED W/ EXTERIOR FIBERGLASS FACED COPOLYMER PANELS W/ WEATHER BARRIER FOR EXIST. WINDOW ASSEMBLY FOR AREAS OF WALL INFILL, EXIST. REMOVED WINDOWS & NEW NORTH ENTRY (WEST).
- 15 EXIST. BIKE RACK LOCATION



SOUTH ELEVATION - NEW

A1
A2.2

SHEET NOTES

- A1 EXISTING INSULATED METAL WALL PANEL.
- A2 EXISTING ALUM. STOREFRONT WINDOW ASSEMBLY TO REMAIN INTACT.
- A3 NEW 4"x6" PREFINISHED ALUMINUM HORIZONTAL MEMBER, ATTACH TO F.O. EXISTING STOREFRONT WINDOW ASSEMBLY IN 10' SECTIONS. ATTACHMENT TO H.O.D MEMBER OFF. OF FACE OF WINDOW SURFACE 4" MIN.
- A4 NEW ROOFTOP MECHANICAL TRIMME AIR SUPPLY(S) SIDED LOWER ASSEMBLY ON 2" HIGH CURB.
- A5 NEW ROOFTOP MECHANICAL HOOD EXHAUST; QUANTITY & LOCATIONS TO BE COOR. W/ MECHANICAL.
- A6 NEW BUILDING SIDING REER CONCRETE ED. PANEL. RAMSCREEN ASSEMBLY; PREFABULLED / PRECUT PANELS. THOUGH FASTENED W/ METS. SID. FASTENERS, OVER METS. SID. SURFRAME, OVER SELF-SEALING/ADHERING MODIFIED BITUMINOUS MEMBRANE STRIPS OVER EXISTING INSUL. MET. PANEL WALL SIDING.
- A7 SAME AS IN EXCEPT INSTALL OVER AREA OF REMOVED STOREFRONT WINDOW ASSEMBLY WHICH HAS BEEN REINFORCED W/ 4" MET. FRAMING W/ 200 MIN. BUT INSULATION & SEALED W/ EXTERIOR REEADRESS FACED OPSLM PANELS W/ WEATHER BARRIER.
- B1 SAME AS IN EXCEPT INSULATION IS FOR FABRIC OF ENTRY ROOF CANOPY BITUMINOUS MEMBRANE STRIPS.
- B2 NEW ENTRY CANOPY W/ EXPOSED STRUCTURAL STEEL SUPPORTING COLLARS & CORNICES OVER CONCRETE FOUNDATIONS FOR COLLARS. REER CONCRETE FOUNDATIONS OVER EXISTING CONCRETE FOUNDATIONS. REINFORCED WITH 10" DIA. REBAR. FIN. LEADER TO WIND BLS & 10" INTO EXISTING LINES.
- B3 STRUCT. STL. BEAM - ROUND TUBE STL. SECTION.
- B4 STRUCT. TUBE STL. COLUMN ON CONC. BASE.
- B5 NEW BLDG. SIDING: THROUGH FASTENED PREFINISHED KTYMAR CORRUGATED MET. SIDING OVER STRIPS OF SELF-SEALING/ADHERING MODIFIED BITUMINOUS MEMBRANE STRIPS OVER EXIST. INSUL. MET. PANEL SIDING.
- B6 SAME AS IN EXCEPT SURST. NEW 6" MET. FRAMING W/ 200 MIN. BUT INSULATION & SEALED W/ EXTERIOR REEADRESS FACED OPSLM PANELS W/ WEATHER BARRIER FOR INSUL. MET. PANELS. (THIS ASSEMBLY FOR AREAS OF WALL INFILL @ EXIST. REMOVED WINDOWS & NEW NORTH ENTRY WEST).
- B7 EXIST. BIKE RACK LOCATION.

