

U.S. Department of
Homeland Security

United States
Coast Guard



Commander
Maintenance & Logistics Command
Pacific

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9041
DEC 6 2007

MEMORANDUM

From: 
D. C. Johnson, CDR
CG MLC PAC (vr)

Reply to: vra-2
Attn of: LT G. Morrow
(510) 637-5807

To: CG ELC (01)

Subj: ENGINEERING CHANGE REQUEST (ECR); SCIENCE COMPUTER LAB
RENOVATION

Ref: (a) Naval Engineering Manual, COMDTINST M9000.6D, Chapter 041

1. In accordance with reference (a), the subject ECR is attached as enclosure (1) and is forwarded to you for review and approval. I have reviewed this ECR per the guidance set forth in reference (a) and strongly recommend approval for the reasons noted in enclosure (1).
2. Please contact me if you have any questions with this letter or the enclosed ECR. My point of contact for this project is LT Ken Burgess at (510) 637-5812.

#

Enclosures: (1) CG-5682, Engineering Change Request dtd 12 Jan 06
(2) Recommended "World of Work" Priority Ranking

Copy: CGC HEALY ✓
CG NESU Seattle

ECR "World of Work" Priority Ranking

(Circle One)

Field/System Need	0	1	(2)	3	4	5
Safety	(0)	1	2	3	4	5
Program/Capability Need	0	(1)	2	3	4	5
Risk Categories	0	-1	-2	(-3)	-4	-5

F/S Need (0 to 5)	Does the change: improve system functionality? improve system supportability? improve operational availability? realize an OE Cost Savings? result in Labor Savings (PMS etc.)?
Safety (0 to 5)	Does the change: improve safety for the crew or for maintenance personnel?
P/C Need (0 to 5)	Does the change: meet a new capability requirement? resolve an outstanding capability issue? improve capability within current requirements? improve fleet standardization?
Risk Categories (0 to -5) (more negative = more risk)	Does the change: have a high development or implementation cost? have a great deal of complexity or risk of success in it's development? have a great deal of complexity or risk of success in it's implementation? bring about a higher recurring cost to support or operate the platform?

DEPARTMENT OF HOMELAND SECURITY U.S. COAST GUARD CG-5682 (3/2003)	ENGINEERING CHANGE REQUEST (Instructions on page 2)	ELC CASE FILE NUMBER
	4/24/06	DATE ENTERED:

ORIGINATING UNIT		ELC USE ONLY
UNIT NAME: USCGC HEALY (WAGB-20)	UNIT POC/TEL.#: MSTC Snider/206-217-6300	
UNIT SIGNATURE/DATE: <i>D.K. Johnson, Capt, 1/3/06</i>	E-MAIL: dsnider@healy.uscg.mil	
TITLE: Science Computer Lab Renovation		
BACKGROUND/PURPOSE: Current arrangement and computer facilities of the Computer Room are insufficient for adequate monitoring and coordination of active science missions. Renovation installs a proper Watch Station for science, electronics support, and MST personnel.		
IMPACT ON CUTTER/BOAT MISSION CHARACTERISTICS/CAPABILITIES (IF ANY): Significantly improves scientific data gathering capability.		
ATTACHMENTS/REFERENCES: Draft Specification for modifications "Computer Lab SpecII.doc" Technical POC: Mr Dale Chayes, dale@ldeo.columbia.edu		

Route to servicing MLC, with copy to ELC (01). Group units route to servicing MLC with copy to ELC(01) via Group and District

APPROVE <input checked="" type="checkbox"/>		SIGNATURE: D.C. JOHNSON, CDR		TITLE: CHIEF, VESSEL SUPPORT BRANCH		DATE: 6/2007	
DISAPPROVE (comments required) <input type="checkbox"/>							
Weight Estimate LBS <input type="checkbox"/>	LT <input type="checkbox"/>	<u>NEGOTIABLE</u>		CENTER OF GRAVITY LOCATION			
				FEET AFT OF FWD PERPENDICULAR: _____			
				FEET ABOVE BASELINE: _____			
				FEET PORT/STBD OF CENTERLINE: _____			
PROTOTYPE RECOMMENDED?	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	Mission Critical	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>		
RECOMMENDED ECR CATEGORY	PLATFORM <input type="checkbox"/>		SYSTEM <input checked="" type="checkbox"/>				
RECOMMENDED ECR CLASSIFICATION	A <input type="checkbox"/>		B <input checked="" type="checkbox"/>		C <input type="checkbox"/>		
LIST HULLS AFFECTED (i.e. all 210s, or 723-725) <u>(WAGB 4120)</u>							
RECOMMENDED FUNDING SOURCE							
AFC:	30 (unit) <input type="checkbox"/>	30 (program) <input type="checkbox"/>	42 <input type="checkbox"/>	45 (POP) <input type="checkbox"/>	45 (MLC) <input type="checkbox"/>	OTHER <input checked="" type="checkbox"/>	72 <input type="checkbox"/>
ESTIMATED ONE-TIME COST	30 <input type="checkbox"/>	42 <input type="checkbox"/>	45 <input type="checkbox"/>	OTHER <input type="checkbox"/>			
ESTIMATED ANNUAL RECURRING COST (SAVING)	30 <input type="checkbox"/>	42 <input type="checkbox"/>	45 <input type="checkbox"/>	OTHER <input type="checkbox"/>			
COMMENTS:							

Route approved ECRs to ELC (01). Route disapproved ECRs back to originator with a copy to the ELC (01).

ENGINEERING LOGISTICS CENTER			
CATEGORY	PLATFORM <input type="checkbox"/>	SYSTEM <input type="checkbox"/>	
DISAPPROVE (comments required) <input type="checkbox"/>	SIGNATURE:		
FORWARDED TO:	TITLE:	DATE:	
COMMENTS:			

Route all Platform ECRs to G-SEN. Route all System ECRs for SMEF managed systems to appropriate SMEF (copy to G-SCE). If disapproved, route back to originator.

ENCLOSURE(1)

ENGINEERING CHANGE REQUEST

G-SEN (PLATFORM ENGINEERING CHANGES ONLY)

APPROVED FOR DEVELOPMENT <input type="checkbox"/>	SIGNATURE:		
DISAPPROVE (comments required) <input type="checkbox"/>	TITLE:	DATE:	
ENGINEERING CHANGE CLASS	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>
FUNDING SOURCE			
AFC:	30 (unit) <input type="checkbox"/>	30 (program) <input type="checkbox"/>	42 <input type="checkbox"/>
			45 (POP) <input type="checkbox"/>
			45 (MLC) <input type="checkbox"/>
			OTHER <input type="checkbox"/>
COMMENTS (include that address scope and funding boundaries):			

Routing: APPROVED: For HM&E Forward to ELC (01); ELECTRONICS, forward to SMEF w/copy to ELC (01).
DISAPPROVED: Return to originator, with copy to ELC (01).

INSTRUCTIONS

Much of this form is self explanatory, but the following is provided to further describe selected sections of the form. Continue on blank sheet and indicate appropriate block headings.

Originating Unit: Fill in section titled "Originating Unit" and if known, the weight and cost data in the section titled "HQ Units and MLCs".

Background/Purpose: Provide a brief description of the problem and recommendation of how you feel it should be corrected. You are encouraged to attach sketches, photos, etc that support your explanation. Digital photos compatible with SWIII are acceptable. A proper evaluation of the request is dependent on the accuracy and detail of the information provided here.

Impact on Cutter/Boat Mission Characteristics/Capabilities: Describe how the recommended change will impact the cutter or boats mission characteristics. Examples of mission characteristics include fuel consumption, speed, range, crew size, etc.

Attachments?References: List any attachments you have included and list any references that you fell apply to this change. References may include manufacturer's technical publications, Maintenance Procedure Cards, drawings, etc.

Headquarters Units & MLCs: Fill in the section titled "HQ Units and MLCs". Forward all ECRs to the ELC (01).

Recommended Engineering Change Class: Check A, B, or C to match definition provided in the COMDTINST M9000.6 (series), chapter 041.

List Hulls Effected: Provide a list of applicable hull numbers. If it applies to an entire class, then just the class designation.

Estimated One-Time Costs (Savings): Provide a total development/installation cost estimate.

Estimated Annual Recurring Costs (Savings): Provide an estimate of the change in recurring costs associated with this change. If the change results in a savings, indicate so by using parenthesis around the estimate.

G-SEN: Comments shall provide scope and funding boundaries beyond which the ELC or SMEF would be required to resubmit to the ECR to the HQ CCB.

ITEM 1: COMPUTER LAB MODIFICATIONS

1. SCOPE - The intent of this item is to rearrange the Computer Lab to make it more useful for the gathering and processing of scientific data.
2. Government Furnished Property: All equipment to be installed will be provided by LDEO. LDEO will provide a list.

3. REFERENCES

3.1. Coast Guard Drawings:

- 3.1.1. 420-WAGB 330-006, Rev B, Lighting Sys-DK Plan-Main DK
- 3.1.2. 420-WAGB 332-008, Rev A, Dial Tel Directory
- 3.1.3. 420-WAGB 332-009, Rev A, Ships Dial Tel Sys (Ckt J) Iso Wrg Diag
- 3.1.4. 420-WAGB 332-010, Rev A, Science Data Network Sys Iso Wrg Diag
- 3.1.5. 420-WAGB 393-002, Rev A, Science Data Network Sys Iso Wrg Diag
- 3.1.6. 420-WAGB 393-003, Rev C, Science Data Network Sys Blk Wrg Diag
- 3.1.7. 420-WAGB 334-001, Rev A, Ships Entertainment/Radio & Tv Antenna
Distr Sys Ckt Rb Iso Wrg Diag
- 3.1.8. 420-WAGB 434-002, Rev-, Ships Entertainment/Radio & Tv Antenna
Distr Sys Ckt Rb Iso Wrg Diag
- 3.1.9. 420-WAGB 304-002, Rev B, Ww Master Plan-Sensitive Cables
- 3.1.10. 420-WAGB 304-003, Rev B, Ww Master Plan-Non-Sensitive Cables
- 3.1.11. 420-WAGB 635-001, Rev C, Insulation Layouts & Dets, 5.7.1998
- 3.1.12. 420-WAGB 320-002, Rev D, Pwr Sys One Line Diag
- 3.1.13. 420-WAGB 304-001, Rev A, Typ Methods of Electrical Installation &
Dets
- 3.1.14. 420-WAGB 423-002 Radio Elek Nav Sys (GPS, RDF, ECDIS) Blk Wrg
Diag
- 3.1.15. 420-WAGB 423-003 Radio Electronics Nav Sys (GPS, RDF, ECDIS)
Cable Running Shts
- 3.1.16. 420-WAGB 423-004 Radio Electronics Nav Sys (GPS & RDG) Iso Wrg
Diag
- 3.1.17. 420-WAGB 424-008 Bottom Mapping Sonar Sys Block Wrg Diag
- 3.1.18. 420-WAGB 424-009 Bottom Mapping Sonar Sys Cable Running Sht
- 3.1.19. 420-WAGB 424-010 Bottom Mapping and Sonar Sys Ism Wrg Diag
- 3.1.20. 420-WAGB 426-001 Wind Speed & Direction Ind Sys Ckt Hd & HE Iso
Wrg Diag
- 3.1.21. 420-WAGB 426-002 Wind Speed & Direction Ind Sys Ckt Hd & HE
Elem Wrg Diag
- 3.1.22. 420-WAGB 433-001 Ships Public Announcing, Loudhailer & Ships
Alarm Ckts 1MC & 6MC Iso Wrg Diag
- 3.1.23. 420-WAGB 433-002 Public Announcing, Loudhailer & Ships Alarm
Ckts 1MC & 6MC Elem Wrg Diag

- 3.1.24. 420-WAGB 433-005 Research Operations CKt 45MC
Intercommunication Sys Iso Wrg Diag
- 3.1.25. 420-WAGB 433-006 Research Operations Ckt 45MC
Intercommunication Sys Iso Wrg Diag
- 3.1.26. 420-WAGB 434-001 Ships Entertainment/Radio & TV Antenna Distr Sys
Ckt RB Iso Wrg Diag
- 3.1.27. 420-WAGB 434-002 Ships Entertainment/Radio & TV Antenna Distr Sys
Ckt RB Elem Wrg Diag
- 3.1.28. 420-WAGB 434-003 Ships Closed Ckt TV Sys CKt CCTV Iso Wrg Diag
- 3.1.29. 420-WAGB 434-004 Ships Cloased Ckt TV Sys Ckt CCTV Elem Wrg
Diag
- 3.1.30. 420-WAGB 436-021 Transducer Wtr Salinity & Lower Lvl Alarm Ckts
12SB & 31TD Iso Wrg Diag
- 3.1.31. 420-WAGB 436-022 Transducer Wtr Sys Alarms Ckt 12SB & 31TD
Elem Wir Diag
- 3.1.32. 420-WAGB 440-002 Automated Single Audio Sys Blk Wrg Diag
- 3.1.33. 420-WAGB 440-003 Automated Signle Audio Sys Cable Running Shts
- 3.1.34. 420-WAGB 440-004 Automated Single Audio Sys Iso Wrg Diag
- 3.1.35. 420-WAGB 446-001 Secure Voice Communications Blk Wrg Diag
- 3.1.36. 420-WAGB 446-002 Secure Voice Communications Cable Running Shts
- 3.1.37. 420-WAGB 446-003 Secure Voice Communication Iso Wrg Diag
- 3.1.38. 420-WAGB 640-001, Rev D, Furniture Schedule
- 3.1.39. 420-WAGB 621-006, Rev C, Joiner Arr-01 Lvl
- 3.1.40. 420-WAGB 634-001, Rev B, Deck Covering and Carpet Sched, 8/14/1998
- 3.1.41. 420-WAGB 621-002, Rev B, Typical Joiner Dets
- 3.1.42. 420-WAGB 510-002, Rev E, HVAC Diag 01 Lvl & Above, 6/25/1999
- 3.1.43. 420-WAGB 624-001, Rev E, Joiner Door & Hardware Sched
- 3.1.44. 420-WAGB 465-001 Expendable Bathythermograph Sys Blk Wrg Diag
- 3.1.45. 420-WAGB 465-002 Expendable Bathythermograph Sys Cable Running
Shts
- 3.1.46. 420-WAGB 465-003 Expendable Bathythermograph Sys Iso Wrg Diag
- 3.1.47. 420-WAGB 493-002 Science data Network Sys Iso Wrg Diag
- 3.1.48. 420-WAGB 493-003 Science Data Network Sys Blk Wrg Diag
- 3.1.49. 420-WAGB 493-004 Science Data Network Sys Cable Running Sheets
- 3.1.50. 420-WAGB 666-002 Gen Arr of Elec Eqpt Science Comm Center
- 3.1.51. 420-WAGB 111-003 12-05-11 Misc Deck Sockets
- 3.1.52. Drawing of Proposed Compartment Lay Out A

3.2. Applicable Documents

- 3.2.1. Naval Ships' Technical Manual, Chapter 635, 2, Thermal, Fire and
Acoustic Insulation The Society for Protective Coatings (SSPC)-SP 3, 11-1-
1982, Power Tool Cleaning, 1-Sep-2000
- 3.2.2. COMDTINST M10360.3B, Coast Guard Coating and Color Manual Chg
2, 11/3/2004
- 3.2.3. DOD-STD-2003, Notice 1, Electrical Plant Installation Standard Methods
for Surface Ships & Submarines, 12/17/1990

- 3.2.4. IEEE Std 45-2002, Recommended Practice for Electrical Installations on Shipboard
- 3.2.5. IEEE Std 34-2002, Recommended Practice for Electrical Installations on Shipboard
- 3.2.6. MIL-C-24543B SUP 1, Cable and Cord, Electrical, Low Smoke for Shipboard Use, General Specifications for, 8/22/2002
- 3.2.7. MIL-Std-1689A, Fabrication, Welding, and Inspection of Ships Structure, 11/23/1990
- 3.2.8. MLC PAC Standard Specification 085.1, General Requirements for Drawing Preparation, 3/1/2000
- 3.2.9. MLC PAC Standard Specifications 304.1, Shipboard Electrical Cable Test, 3/1/2000
- 3.2.10. MLC PAC Standard Specification 304.2, Shipboard Electrical Cable Removal, Relocation, Splice, Repair and Installation, 3/1/2000
- 3.2.11. NAVSEA 0900-LP-001-7000, Fabrication and Inspection of Brazed Piping Systems
- 3.2.12. NAVSEA S9074-AR-GIB-010/278, Requirements for Fabrication Welding & Inspection & Casting Inspection & Repair for Machinery, Piping & Pressure Vessels
- 3.2.13. NSTM 634: Deck Coverings, S9086-VG-STM-010
- 3.2.14. Healy Specific Attachment B to DOD-Std-2003 (EPISM)
- 3.2.15. Specifications for building WAGB 20 Polar Icebreaker

4. GENERAL REQUIREMENTS

- 4.1. The contractor shall provide all labor and material to accomplish the following in accordance with the General Requirements:
- 4.2. In the company with the Coast Guard (CG) inspector, the contractor shall inspect and test all equipment, systems, and interferences to be affected to ascertain and document existing equipment condition. This includes an inspection of the work area for cleanliness. A Condition Found Report will be submitted to the CG inspector for all affected spaces noting any discrepancies in equipment or system operation or function, and condition of the work areas.
- 4.3. In the presence of the contractor, the CG inspector will isolate, tag out and secure all affected mechanical, piping and electrical systems in accordance with COMDTINST 9077.1C, Equipment Tag-Out Procedure. Cutter personnel will assist in identifying all items to be secured and will accompany the contractor for the purpose of verifying and signing tags. The contractor shall drain all piping systems associated with this contract.
- 4.4. CG representatives will disconnect all electronics equipment from the power source and data lines.
- 4.5. The CG inspector will have final approval of the exact location of all new and relocated equipment. It is the responsibility of the contractor to remove and reinstall all interferences necessary to complete required work. The contractor shall ensure that there is adequate maintenance access for all new, related and adjacent equipment.

- 4.6. The contractor shall provide and install new label plates for new and re-located equipment.
- 4.7. The contractor shall restore all work areas to a clean condition, disposing of all removed material in accordance with all applicable local, state, and federal requirements.
- 4.8. Following installation, all systems and equipment affected shall be restored to, at a minimum, its previous operational condition, including items stored for re-use. For all equipment or systems under contractor control during performance of this item, contractor shall be responsible for protecting open equipment/ systems, renewing losses and repairing damage.
- 4.9. In the presence of the contractor, the CG inspector shall clear all danger and caution tags from all affected mechanical and electrical equipment in accordance with COMDTINST 9077.1C: Equipment Tag-Out Procedure. The CG inspector will restore all affected mechanical and electrical equipment to normal operating condition. In company of the contractor, the CG inspector shall inspect and test all interferences affected by this contract to verify proper operation. The contractor shall submit a final CFR report documenting the completion of verification of the proper operation of all affected systems.
- 4.10. The contractor shall coordinate tests and inspections with the CG inspector to minimize production delays.
- 4.11. The contractor is responsible for the proper documentation and delivery of documentation to the CG inspector for all modifications made to the Electronics Computer Lab.
- 4.12. Upon completion of work, the contractor will mark-up and submit to the CG inspector for approval two sets of re-lines mark-ups of as-built drawing modifications.
- 4.13. The contractor will submit all technical documentation, manuals, and information of new equipment to the CG inspector.

5. HOTWORK REQUIREMENTS

- 5.1. Before any hot work can begin, a gas-free "SAFE FOR HOT WORK, SAFE FOR PERSONNEL" certificate must be obtained from a contractor furnished NFPA certified marine chemist for the affected space in accordance with Naval Ships' Technical Manual, Chap 074, Vol. 3; Gas Free Engineering. The designated area must maintain this certification for the duration of hotwork being conducted.
- 5.2. Gas free certificates shall be posted in main control and at each compartment access where hot work is being performed.
- 5.3. The contractor shall provide and assign fire watch personnel for each hot work operation. Fire watch requirements shall be in accordance with Naval Ships' Technical Manual, Chap 074, Vol 1: Welding and Allied Processes, Section 10 and Naval Ships' Technical Manual, Chap 074, Vol. 3: Gas Free Engineering, Section 22, and the following:
- 5.4. Fire watch personnel shall be trained to combat various classes and types of fires, and shall know the regulations, procedures and facilities for sounding an alarm, and shall carry them out in the event of a fire. Fire watch personnel will be on

location prior to the start of hot work operation. Roving fire watches will not be permitted. Fire watch personnel will remain on station during the entire hot work operation. If it becomes necessary for the fire watch to leave the scene, hot work will be halted and the person previously performing the hot work will become the fire watch until relieved by a qualified fire watch. Fire watch personnel shall remain at the scene following the completion of hot work for a minimum of 30 minutes and until the hot work area is cool to the touch and no smoldering embers remain.

- 5.5. The fire watch personnel will be equipped with suitable contractor furnished fire extinguishing equipment to combat and extinguish Class A, B, and C fires. Any discharged fire extinguishers shall be refilled/re-charged by the start of the next workday. Selection of fire extinguishing equipment will be based on the nature and extent of the flammables or combustibles present during the hot work operations and type fires that has the potential to occur. Fire watch personnel shall attempt to extinguish fires only when obviously within the capability of the equipment available. In all cases the alarm shall be sounded.
- 5.6. The contractor shall remove or protect all interferences to the work that is to be performed. All interferences that are removed shall be tagged to facilitate proper reinstallation. The contractor shall ensure that all removed equipment is kept in a clean, dry, protected location. The contractor shall cap all open piping to prevent system contamination. The contractor shall obtain verification from the CG inspector for the protective measures taken for equipment not removed and before disposing of any equipment or material removed.
- 5.7. Welding and brazing will be done in accordance with MIL-Std-1689: Welding and Inspection of Ships Structure, and NAVSEA 0900-LP-001-7000: Fabrication and Inspection of Brazed Piping Systems.

6. ELECTRICAL NOTES

- 6.1. Except as otherwise indicated in this specification, modifications shall be designed and installed in accordance with the applicable requirements of IEEE Std 45.
- 6.2. All new cables shall be of unarmored construction with low smoke insulation conforming to MIL-C-24643. Each cable shall be continuous from terminal end to terminal end; no splicing is permitted.
- 6.3. Test all new and rerouted cables per MLCPAC Standard Instruction 304.1 in the presence of the CG inspector.
- 6.4. Wiring installation methods and cable supports shall be in accordance with MLCPAC Standard Specification 304.2 and DOD-Std-2003.
- 6.5. Newly vacated bulkhead penetrations shall be filled with appropriate stuffing.
- 6.6. Install cable tags on all new and rerouted cables in accordance with MLCPAC Std Spec 304.2. Tags will be located at equipment cable entrances and on each side of a deck or bulkhead penetration.
- 6.7. All labeling and markings will be consistent with HEALY's existing labels. Label and information plates shall of be laminated phenolic with inner and outer layers of contrasting colors to match similar existing markings.

- 6.8. The contractor will accomplish all electrical equipment installation and relocation in accordance with reference drawings.
- 6.9. It is the responsibility of the contractor to determine the actual lengths and routing of cables aboard HEALY and to reflect these estimates in the contractor's bid.

7. ELECTRICAL MODIFICATIONS

7.1. REMOVALS

- 7.1.1. Remove and dispose of relics of compartments old communications system as indicated by CG inspector, including:
 - 7.1.1.1. One (1) duplex outlet
 - 7.1.1.2. FO junction boxes
 - 7.1.1.3. Lights
 - 7.1.1.4. Speakers
 - 7.1.1.5. The following duplex outlets from the shelf and replace with quad outlets on the upper (steel) portion of the bulkhead:
 - 7.1.1.5.1. RSQ-120
 - 7.1.1.5.2. RSQ-106
 - 7.1.1.5.3. RSQ-95

7.2. RELOCATIONS

- 7.2.1. Science network HP4MV printer to a shelf on the Unistrut in the location indicated by the CG inspector. WS printer to a shelf hung from a new Unistrut in vicinity of the MST WS3 "seat" in the Future Lab. Outfit to be a fully networked, shared SW3 printer.
 - 7.2.1.1. Science Network Lexmark C910 printer to the 02-deck copy room.
- 7.2.2. Heater relay box (fan 17-01-42-4-4PN-B) from starboard bulkhead up two feet and inboard two feet.
- 7.2.3. Sound powered phone on bulkhead above relocated TA970.
- 7.2.4. Existing 45MC intercom to a Unistrutt mounting on the outboard bulkhead in the vicinity of the watchstander's workstation. Store slack cable in the overhead.
- 7.2.5. Existing TA970 radio, speaker and amplifier to aft bulkhead immediately adjacent to aft door but not to interfere with movement of door.
- 7.2.6. All receptacles, junction boxes and network boxes up onto the steel portion of the bulkheads.
- 7.2.7. Install a junction box above the new racks.
- 7.2.8. Wire the two (one existing & one new) junction boxes together.
- 7.2.9. Relocate power from old to new rack locations (11)
- 7.2.10. Junction box R-DD145 and R-DD146 to bulkhead above the height of the vertical Unistrut.
- 7.2.11. RS-07, RS-06, and RS-08 junction boxes to a less intrusive location near deck in the vicinity of frame 119 (outboard current SB2112 location) so it will not interfere with the new Unistrut or the mounting of a 30" high work surface.
- 7.2.12. Duplex AC 0-119-4-1PS-A on side of ADCP rack.

- 7.2.13. Two XBT junction boxes up above the upper shelves and between the Unistrutt. Route proper cables into the junction box above the new rack location.
- 7.2.14. Three (3) duplex outlets to the steel bulkhead between vertical Unistruts up to steel portion and between vertical Unistruts. Move the "Alarm Panel salinity and Low Water Level" and associated wiring to be mounted on Unistrutt. Existing cable length is sufficient.
- 7.2.15. Relocate two light fixture as directed by CG inspector.
- 7.2.16. Relocate power supply from SDN enclosure to new racks as indicated by the CG inspector.
- 7.2.17. The seabeam AC cable needs to be relocated to the furthest rack on the port.

8. DESKS/TABLES

- 8.1. Remove and dispose of the following units:
 - 8.1.1. All "computer" and "print" desks.
 - 8.1.2. Table holding WS3 printer.
 - 8.1.3. Table under 1055CM.

9. CABINETS

- 9.1. Remove and deliver the following cabinets to the Coast Guard representative.:
 - 9.1.1. Five (5) drawer horizontal file cabinet
 - 9.1.2. Two four (4) drawer filing cabinets from foundations.
 - 9.1.3. One (1) roll front cabinet after contents have been removed by ship representatives.
 - 9.1.4. Two (2), two drawer file cabinets after contents have been removed by ship representatives.
 - 9.1.5. One (1) cabinet sitting on the deck.
 - 9.1.6. One (1) front cabinet.

10. BOOKSHELVES

- 10.1. Remove all existing bookshelves.
- 10.2. Mount new bookshelves on Unistrut per 11.2.

11. RACKS

- 11.1. Remove and save the following for relocation:
 - 11.1.1. Existing ADCP rack.
 - 11.1.2. Tower ADCP computer for ADCP 75.
- 11.2. Install the following and the associated rack bases and top restraints similar to existing SDN rack:
 - 11.2.1. New ADCP 75 rack.
 - 11.2.2. All contents of existing ADCP rack to new rack
 - 11.2.3. Rack mount for ADCP 75 computer.
 - 11.2.4. Re-rack the existing logging computers, disks and interfaces in the new racks.
 - 11.2.5. New networking hardware in new racks.

- 11.2.6. Workstations including watch stander's station.
- 11.2.7. Monitors and displays.
- 11.2.8. Relocate the SB2112 rack (without equipment removal) to a new location as indicated by Drawing of Proposed Compartment Lay Out A
- 11.2.9. Shorten the current SDN/SCS rack top retaining structure to the level of the existing light fixture mounts.

12. UNISTRUT

- 12.1. Provide Unistrut on approximately two (2) foot centers on all vertical from deck to the height of the structural beams in the overhead and back as close to the existing bulkheads as practical. Unistrut will be uniformly spaced from the bulkhead (e.g. all verticals along a given bulkhead will be in the same place.)
- 12.2. Verticals will be uniformly and symmetrically placed between the major framed with three verticals between frames.

13. FOUNDATIONS

- 13.1. Remove the foundations for the following pieces of equipment:
 - 13.1.1.1. Current SB2112 rack.
 - 13.1.1.2. Removed "computer" and "printer" desks.
 - 13.1.1.3. Existing SDN/SCS foundation.
 - 13.1.1.4. Current vertical foundation for science Inmarsat A communications hardware along the athwart ship bulkhead.
- 13.1.2. Existing "ADCP" rack.

14. DECK SOCKETS

- 14.1. Fill out starboard side of compartment with deck socket pattern established on current decking.
- 14.2. Approximately 20 new sockets will need to be added.
- 14.3. Sockets are on approximately two-foot centers.
- 14.4. New foundationS will be bolted (not welded) to deck sockets by CG personnel.

15. DOORWAY

- 15.1. Install in the outboard bulkhead one Left Hand, 36inx72in clear opening, radius corner, aluminum, Premium Duty, two dog, with fixed 24inx24in untinted Window, Weathertight door (Freeman Marine 1130 or equal). Door shall be inserted 6 inches aft of frame 133 with a 6 inch bulkhead coaming remaining at the deck level.
- 15.2. Fire station 01-132-2 shall be cropped off and reinstalled with the piping going forward vice aft. This will require the pipe penetration in the weather protective station box to be shifted to the aft side by cutting a new hole and inserting the old.

16. MISCELLANEOUS

- 16.1. Repair broken welds in bulkhead at exhaust vent 1-116-2 between the forward end of the lab and passageway 01-117-2-L.

- 16.2. Remove cable mounts and top bracket from old SB2112 rack.
- 16.3. Relocate compartment check off list to a location specified by the CG inspector.
- 16.4. Shorten one (1) vent by two feet and relocate diffuser foundation forward two feet to be mounted onto overhead frame. Cut off existing bracket
- 16.5. Remove steel cable support structure behind the existing SDN/SCS rack.

17. DECKING

17.1. GENERAL

- 17.2. The concerned work area is approximately forty (40) square feet- see the Coast Guard Drawings referenced above for arrangements and details of the work area.
- 17.3. Before commencing work, the Contractor shall erect a suitable barrier to minimize dust travel beyond the immediate work area. The Coast Guard Inspector shall approve location, material, and erection of the barrier before any work is commenced. Additionally, the Contractor shall clean the work area at the end of the day to reduce accumulation and prevent migration of dust.

17.4. REMOVAL

- 17.4.1. Remove and scrap all existing decking in electronics computer lab. Approximately forty (40) square feet.
- 17.4.2. The Contractor shall supply a suitable container for the disposal of all removed materials. The materials shall be disposed of in accordance with applicable local, state, and federal regulations.
- 17.4.3. Power tool clean to bare metal the decks in accordance with the new deck coatings manufacturer instructions.
- 17.4.4. In the presence of the Coast Guard Inspector, conduct a visual inspection of the decks. Surfaces shall be completely free of corrosion products, mill scale, dirt, oil, grease, moisture, deteriorated paint, and other surface contaminants. Apply appropriate deck covering system primer coat (per manufacturer's instructions) as soon as practicable after cleaning, but in no instance longer than 24 hours.

17.5. INSTALLATION

- 17.5.1. Install polymeric deck covering system (MIL-PRF-24613, Type III, Epoxy) in accordance manufacturer's instructions as soon as possible after cleaning and priming the decks. Epoxy material can be found at: http://www.hitechflooring.com/epoxy_flooring_colors.shtml
Specific color should be Salt and Pepper
- 17.5.2. During all periods of curing, the Contractor shall ensure the decks are protected from excessive traffic. The Contractor shall coordinate deck protection with the Coast Guard Inspector.
- 17.5.3. Area shall be prepped, appropriate underlayment put in place, and the finished decking applied to ensure deck is level and where necessary pitched to deck drain openings. Followed by sealer coat.

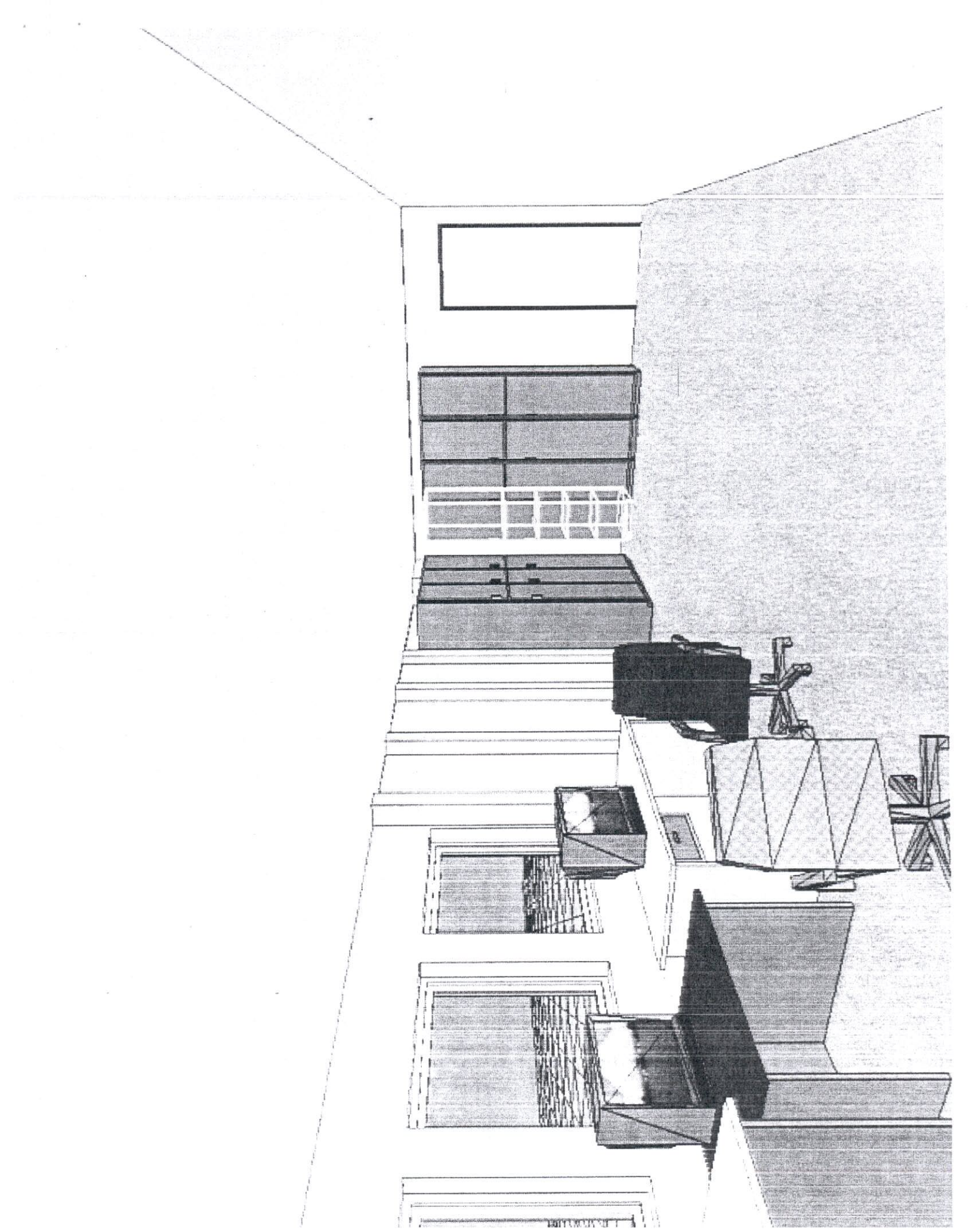
18. RESTORATION

18.1. LAGGING

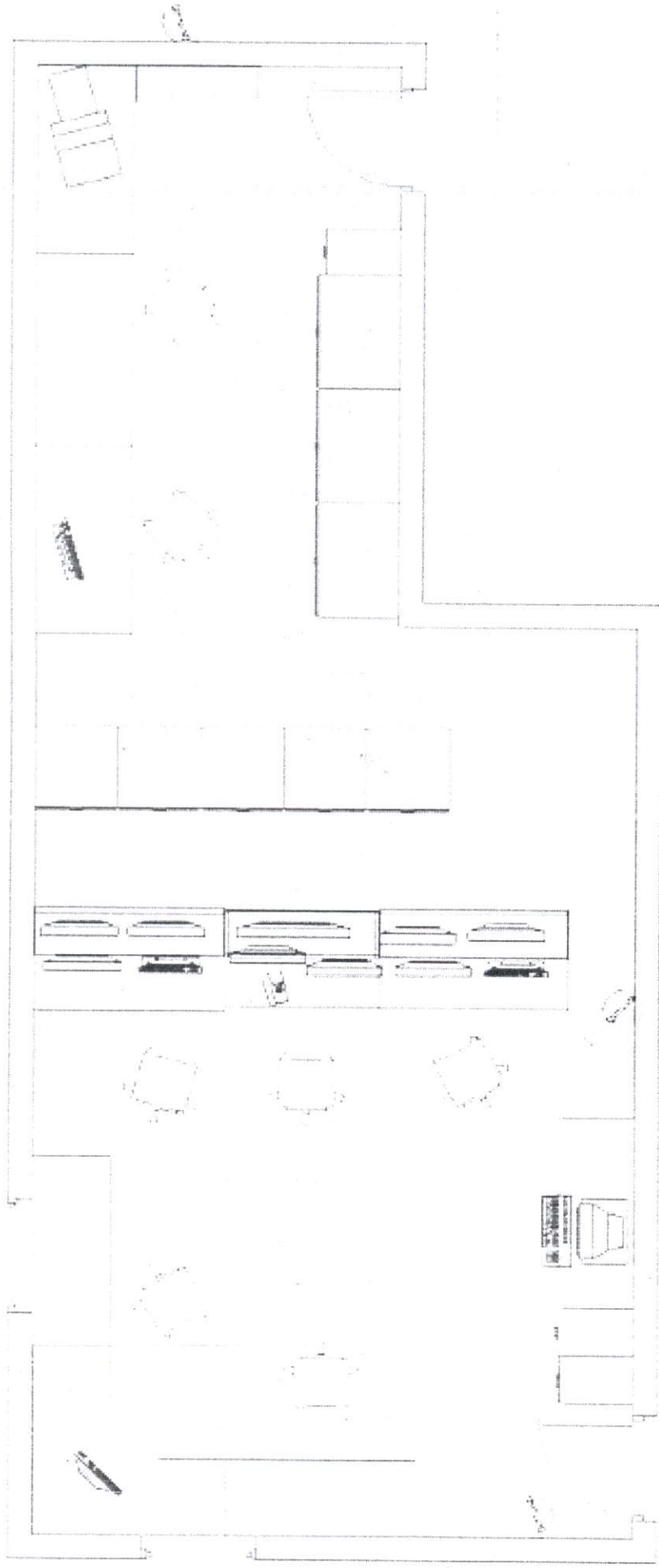
- 18.1.1. Repair all lagging and insulation damaged by modifications detailed in contract.
- 18.1.2. After removal of the damaged insulation, solvent wipe and power tool clean the bulkhead areas to a tight paint film (SSPC SP-3).
- 18.1.3. Then paint the bulkhead areas with one coat of epoxy paint to match the existing paint system.
- 18.1.4. Following the guidance in NSTM 635 install new lagging and insulation in place of the removed lagging and insulation.
 - 18.1.4.1. Paint the new lagging and insulation as described in NSTM 635. Restore any piping or compartment number stencils.
- 18.2. Prepare and paint all new and disturbed surfaces in accordance with the General Requirements.
- 18.3. Clearing Tags – Restore all affected systems and clear any remaining tags in accordance with the General Requirements.
- 18.4. Restore all interferences to their original condition in accordance with the General Requirements.
- 18.5. Clean space.
- 18.6. Red line all and submit to the CG Inspector all affected drawings (e.g. wrg drawings).



Aft Conn: add lockers,
remove desk and shelves



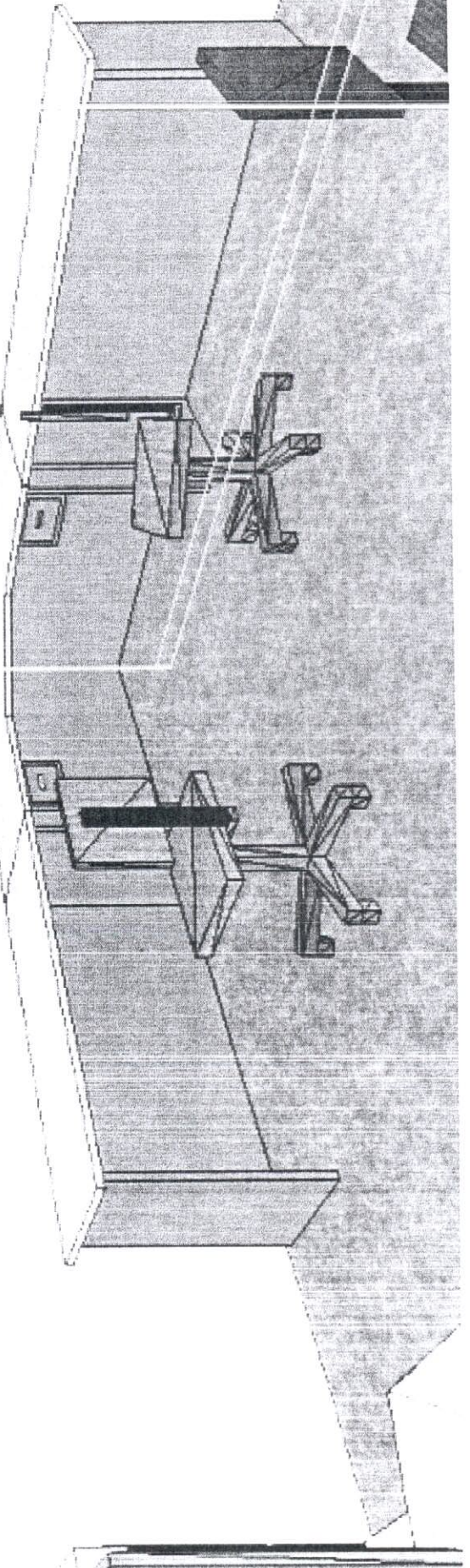
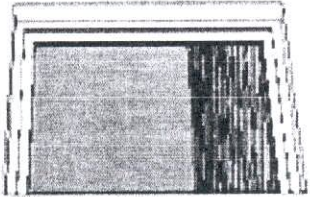
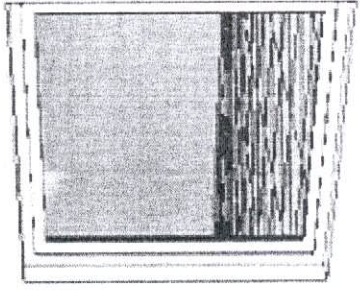
Computer Lab:

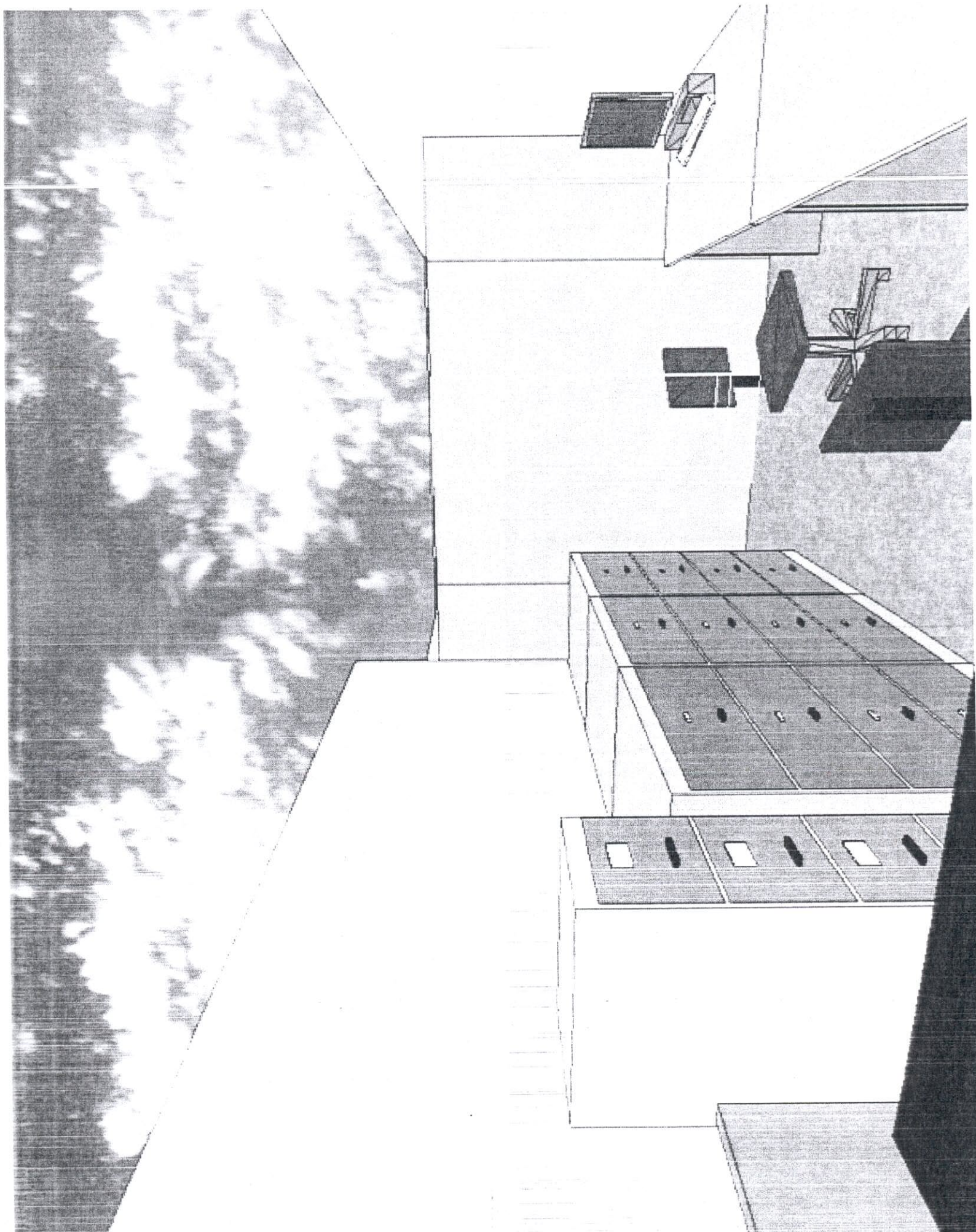


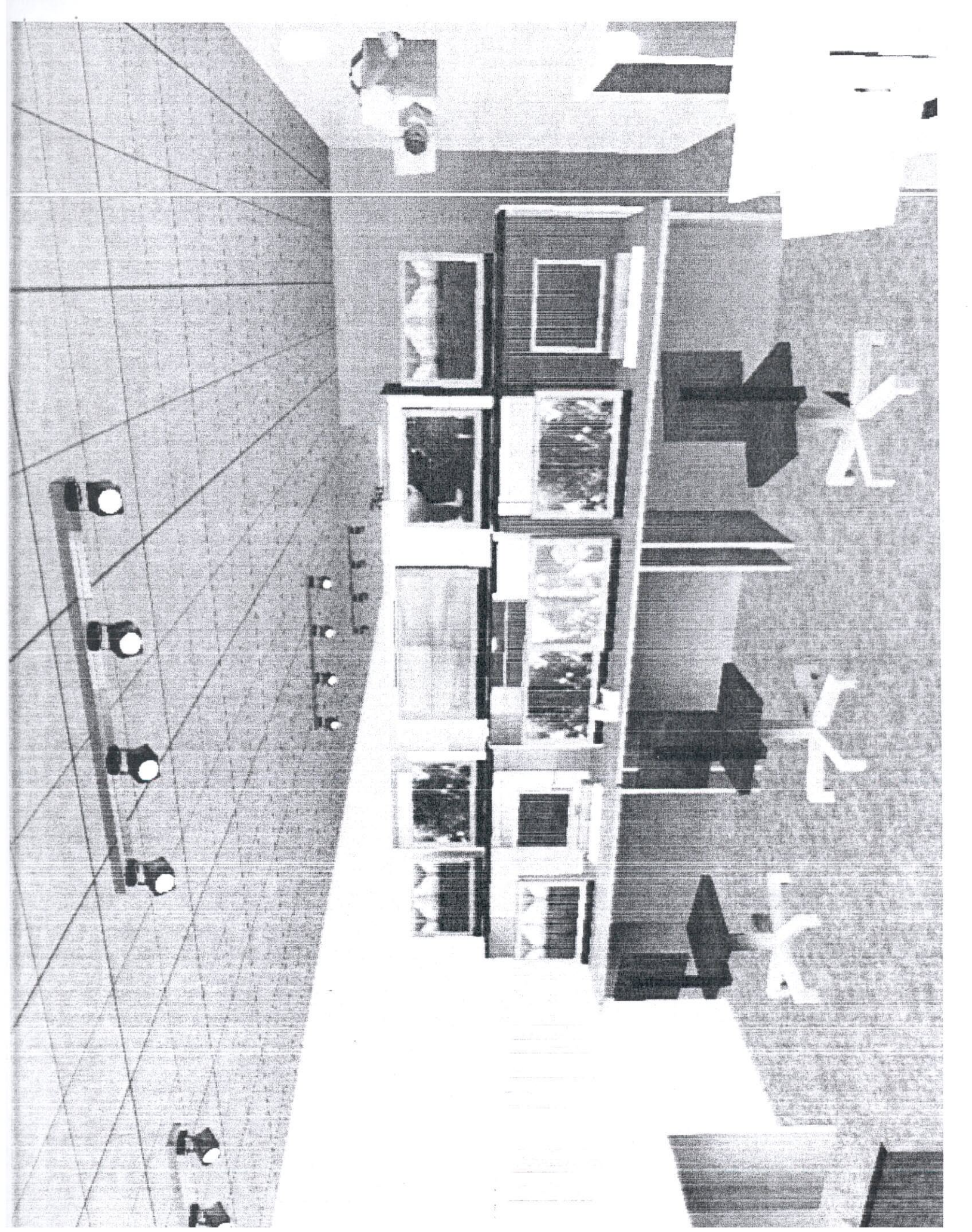
Convert prototype Watch Stander Work Station

Unify the racks

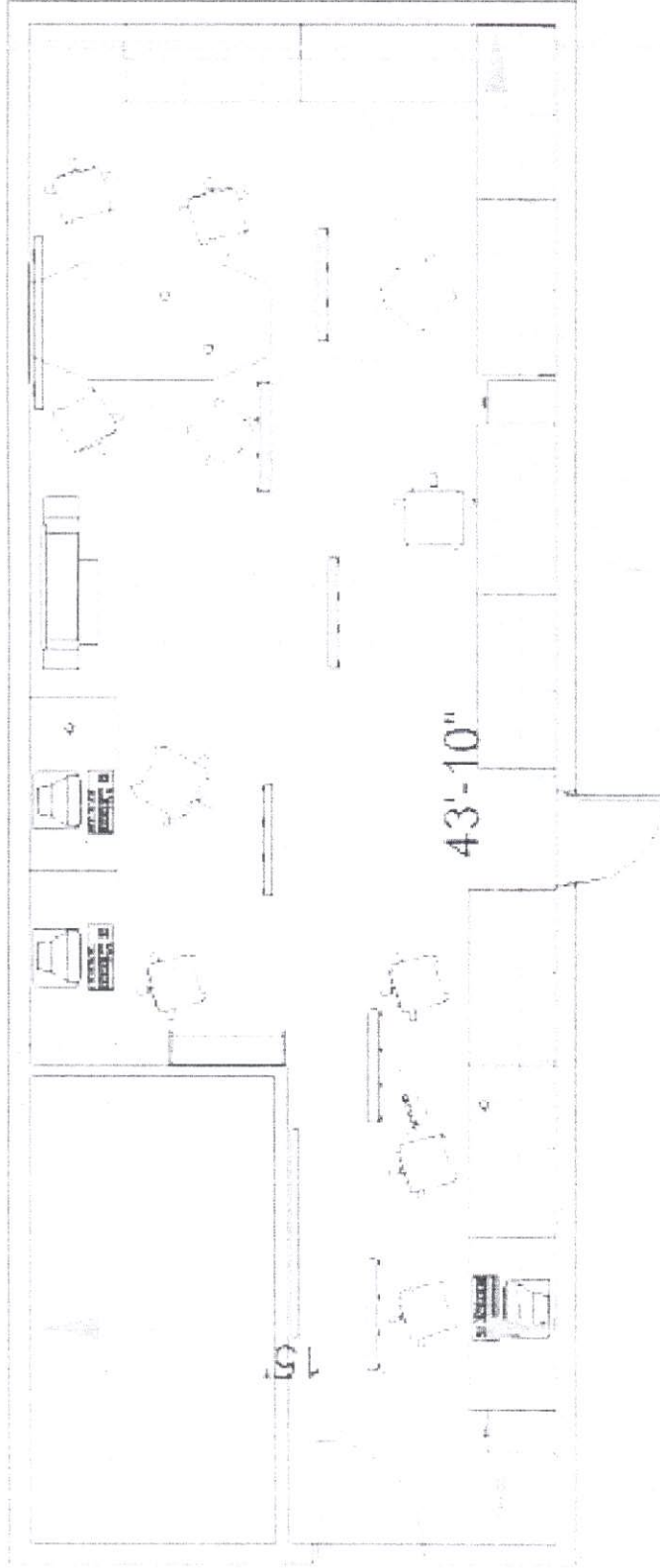
Add window

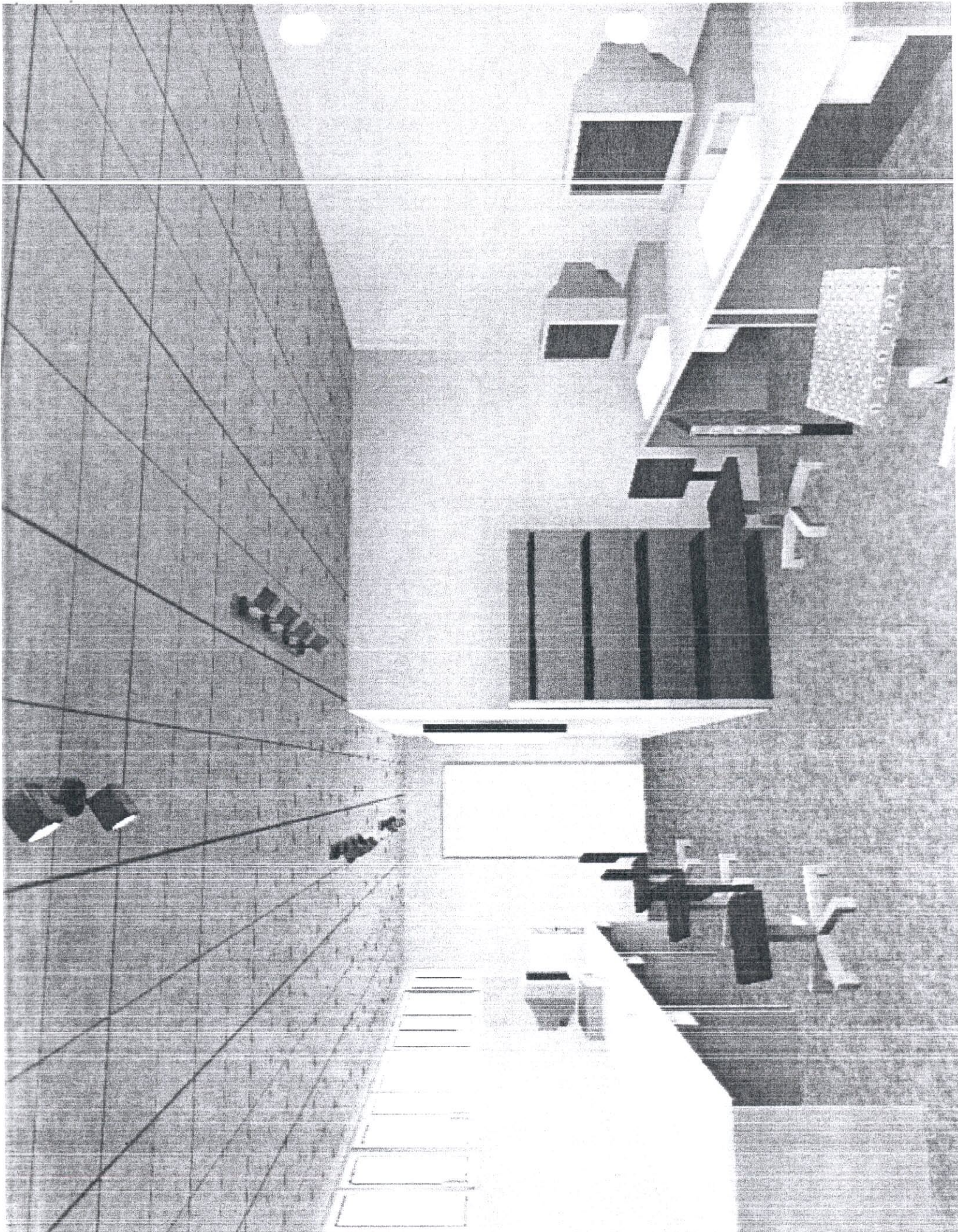






Future Lab w/ Darkroom





Future Lab without Darkroom

