

DESIGN CHANGE NOTICE				PAGE 1 OF 10
				DCN NUMBER: CNMS-01
				RFI NUMBER
CONTRACT NO: 03F-2.2.7-01	PACKAGE AFFECTED Center For Nanophase Materials Sciences CFC dated December 9, 2002	DWG (DOC#): SEE BELOW	SHEET NO: SEE BELOW	REV NO 0
KAT PROJ#: L0230.30		SPEC NO: See Below	SECTION: See Below	
REASON FOR CHANGE: This design change notice is the result of a client request (DVD CNMS-001) for various changes listed below.				
OTHER DOCUMENTS AFFECTED BY THIS CHANGE: None				
DESCRIPTION OF CHANGE: See below.				
<u>GENERAL SECTION</u>				
<ol style="list-style-type: none"> 1. Increase the size of the scrubber. 2. Revise the DI pipe material from PVC to polypropylene. Increase the size of some pipes. 3. Modify the MUA design to allow for future installation of DX coils. 4. Add Nitrogen distribution to the labs in the 4-story portion of the facility. 5. Remove the nitrogen piping from the cleanroom scope. 6. Provide emergency backup for the process cooling supply to the cleanroom by switching over to city water on loss of power. Route once-through water to storm drains. 7. Add a data and telephone outlets and connections to the E-beam Lithography area. 8. Add that the cleanroom ceiling shall be walkable. 9. Add that the Fan Filter Units be replaceable from below. 10. Increase the exhaust flow requirements for the gas storage rooms in the cleanroom and the hazardous material storage areas. 11. Add that the Fan Filter Units have low EMI generation. 12. Increase the fire rating of the doors to the following rooms: B1-7-4, B1-7-5 and B1-7-7 are ¾ hour rated; B1-7-8 is 1 ½ hour rated. 13. Clarify the manufactured wall panel method of attachment to the slabs and slab loading limits. 14. Add a position switch to Proximity Card access controlled doors. 15. Specify that the lab furniture shall be procured from UNICOR if their products meet the specifications. 16. Add a handicap post outside the main entrance for remote door opening. 17. Change the data cabling from Cat 5e to Cat 6. 				
PREPARED BY: K. McKEAN	CHECKED BY: K. McKEAN	RESPONSIBLE DESIGNER: K. McKEAN		
SUBMITTED BY: DESIGN CENTER MANAGER K. McKEAN. 4/17/03		APPROVED BY: SNS TASK MANAGER/DATE		

DESIGN CHANGE NOTICE

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CONTRACT NO: VARIOUS	PACKAGE AFFECTED	DWG (DOC#): SEE BELOW	SHEET NO: N/A	REV NO 0
KAT PROJ#: VARIOUS		SPEC NO: See Below	SECTION: N/A	

REASON FOR CHANGE: This design change notice is the result of a client request (DVD CNMS-001) for various changes listed below.

OTHER DOCUMENTS AFFECTED BY THIS CHANGE: None

DESCRIPTION OF CHANGE: Modify roof plan regarding MUA size increase. Specify walkable ceiling. Revise fire rating of four doors. Modify drawings and specifications of exterior enclosure system to clarify structural support requirements based upon CLO experience. Modify specifications to include Unicor as a listed Manufacturer of Metal Laboratory Casework. Add a bollard at the main entrance containing provisions for accessibility for the handicapped. Add emergency and exit lighting. Re-label doors in hazardous materials storage area. Revise background for furnaces. Eliminate paragraph 1.1.C from Specifications Section 01112. Other miscellaneous changes as described below.

ARCHITECTURAL SECTION

SPECIFICATIONS:

1. Section 01110 Cleanroom Construction Protocol
2. Section 01111 Cleanroom Special Construction and Cleaning Procedures
3. Section 01112 Cleanroom Testing and Acceptance
4. Section 07412 Manufactured Wall Panels
5. Section 08900 Exterior Wall Systems-General
6. Section 08920 Glazed Aluminum Curtain Walls
7. Section 12347 Metal Laboratory Casework
8. Section 14240 Hydraulic Elevator
9. Section 13020 Gasketed Cleanroom Ceiling System

Drawings:

1. A1.B1.41 Building and Egress Plan, Level B1
2. A1.01.41 Building and Egress Plan, Level 1
3. A1.02.41 Building and Egress Plan, Level 2
4. A1.03.41 Building and Egress Plan, Level 3
5. A2.B1.66 Floor Plan, Level B1, Sector 66
6. A2.B1.67 Floor Plan, Level B1, Sector 67
7. A2.01.67 Roof Plan, Level 1, Sector 67
8. A2.04.66 Roof Plan, Level 4, Sector 66
9. A3.11.40 Exterior Elevations
10. A3.21.48 Building Sections Between Column 18 & 19
11. A3.21.49 Building Sections, Theory Area
12. A3.31.40 Wall Sections, Partial Elevations, Partial Plans Between Column 13 & 14
13. A3.31.42 Wall Sections, Partial Elevations, Partial Plans Between Column 19 & 20
14. A3.31.43 Wall Sections, Partial Elevations, Partial Plans Between Column 21 & 22 (South)
15. A3.31.44 Wall Sections, Partial Elevations, Partial Plans Between Column 23 & 24

PREPARED BY: E. DENSON	CHECKED BY: E. DENSON	RESPONSIBLE DESIGNER: C. FINROCK
SUBMITTED BY: DESIGN CENTER MANAGER K. MCKEAN. 2/6/03		APPROVED BY: SNS TASK MANAGER/DATE

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DESCRIPTION OF CHANGE: See previous page.

DRAWINGS:

16. A3.31.45 Wall Sections, Partial Elevations, Partial Plans Between Column J & L
17. A3.31.46 Wall Sections, Partial Elevations, Partial Plans Between Column L & M1
18. A3.31.47 Wall Sections, Partial Elevations, Partial Plans Between Column 22 & 23
19. A3.31.48 Wall Sections, Partial Elevations, Partial Plans Between Column 21 & 22 (North)
20. A5.11.40 Interior Elevations, Corridors
21. A5.11.42 Interior Elevations, Offices, Conference Rooms, Coffee/Copy/Fax & Computer Room
22. A5.11.43 Interior Elevations, Elevator Lobby, Corridors, Laboratories
23. A5.31.40 Stair No. 1, Enlarged Plans & Sections
24. A5.31.41 Stairs No. 2, No. 3 & No. 4, Enlarged Plans & Sections
25. A6.B1.66 Reflected Ceiling Plan, Level B1, Sector 66
26. A6.B1.67 Reflected Ceiling Plan, Level B1, Sector 67
27. A7.31.40 Door Schedule
28. A7.31.41 Door Schedule
29. A7.41.40 Door Details
30. A8.21.40 Exterior Enclosure Details, Wall Panels
31. A8.21.43 Roof Details, Expansion Joints
32. A9.42.40 Clean Room Interior Ceiling Details: Detail 6 revised to incorporate a walkable ceiling blank panel and to reflect gasketing at deflection head of wall. See sketch A-SK-001-8

Sketches:

1. A-SK-001-8 Blank Ceiling / Wall Connection
2. A-SK-002-8 Gowning Room Wall Elevations
3. A-SK-003-8 Wipe Down Room Wall Elevations
4. A-SK-004-8 SIM FIB Room Wall Elevations

END OF ARCHITECTURAL SECTION

PREPARED BY: E. DENSON	CHECKED BY: E. DENSON	RESPONSIBLE DESIGNER: C. FINFROCK
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OTHER DOCUMENTS AFFECTED BY THIS CHANGE: None

DESCRIPTION OF CHANGE: See below.

STRUCTURAL SECTION

SPECIFICATIONS:

None

SHEETS:

1. S2.01.67: Rev. #1
 - a. Revise mechanical opening sizes and locations
 - b. Provide typical dimensions for slab opening framing members.
 - c. Add requirement to fill holes in concrete walls with concrete or grout.
 - d. Revise nomenclature at several locations.
 - e. Add shelf angle along 33-line.

2. S2.B1.67: Rev. #1
 - a. Revise concrete stair between 26.1 and 27

3. S4.30.41: Rev. #1
 - a. Show access doorframe on elevation 1.
 - b. Bill shelf angle on elevation 1.
 - c. Show shelf angle on elevation 2.
 - d. Show access door frame on elevation 3
 - e. Revise stair section 9.

END OF STRUCTURAL SECTION

PREPARED BY: W. SONNA	CHECKED BY: R. WALKINGTON	RESPONSIBLE DESIGNER: W. SONNA
SUBMITTED BY: DESIGN CENTER MANAGER K. McKEAN. 4/17/03		APPROVED BY: SNS TASK MANAGER/DATE

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DESCRIPTION OF CHANGE: See below.

MECHANICAL SECTION

SPECIFICATIONS:

1. 15300, Rev.00, Fire Suppression System.
 - a. Add painting reference to specification 9900.
2. 15501, Rev.00, Heating, Ventilation and Air Conditioning Systems, Installation and Equipment.
 - a. Add vibration isolation requirements.
3. 15502, Rev.00, Make Up Air Handling Units—Cleanroom.
 - a. Expand vibration isolation requirements.
4. 15503, Rev.00, Recirculation Air Handling Units—Cleanroom.
 - a. Expand vibration isolation requirements.
5. 15455, Rev.00, Nitrogen System Tubing and Components.
 - a. Clarify piping requirements for utility nitrogen.
6. 15545, Rev.00, High Purity Deionized Water.
 - a. Add polypropylene piping for DI water distribution.
7. 15755, Rev.00, Scrubbed Exhaust System.
 - a. Expand vibration isolation requirements.
8. 15930, Rev.00, Fan Powered Hepa Filters Units.
 - a. Specify fan to be replaceable from below
 - b. Add THD (Total Harmonic Distortion) requirements.
 - c. Add vibration isolation requirements.

SHEETS:

Plumbing:

1. P2.B1.66 Rev .0, Piping Floor Plan.
 - a. Add nitrogen to labs
2. P2.B1.67, Rev.0, Piping Floor Plan.
 - a. Add Nitrogen to labs
 - b. Reconfigure the DI distribution loop for the cleanroom.
 - c. Add sanitary water backup to the Process Cooling Water loop for the Cleanroom tools.
 - d. Clarify that the high purity nitrogen piping for the cleanroom is Not In Contract (NIC), and that, if install, it must be 316L electropolished stainless steel with orbital weld.

PREPARED BY: K. McKEAN	CHECKED BY: B. JOHNSON	RESPONSIBLE DESIGNER: J. GONZALEZ
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DESCRIPTION OF CHANGE: See below.

Plumbing (cont.):

3. P2.01.66, Rev.0, Piping Floor Plan.
 - a. Add nitrogen to labs
4. P2.01.67, Rev.0, Piping Roof Plan.
 - a. Update the DI water line size.
5. P2.02.66, Rev.0, Piping Floor plan.
 - a. Add nitrogen to lab
6. P2.03.66, Rev.0, Piping Floor Plan.
 - a. Add nitrogen to labs.
7. P6.11.40, Rev.0, Plumbing Details.
 - a. Revise detail 12 and 44.
8. P7.11.40, Rev.0, Compressed Air Flow Diagram.
 - a. Revise routing to match plan drawings.
9. P7.11.41, Rev.0, Nitrogen Flow Diagram.
 - a. Add nitrogen to labs.
 - b. Clarify that the high purity nitrogen piping for the cleanroom (to be 316 L electropolished with orbital welding) is Not In Contract (NIC).
10. P7.11.43, Rev.0, Process Vacuum Flow Diagram.
 - a. Revise routing to match plan drawings.
11. P7.11.46, Rev.0, DI Water Flow Diagram.
 - a. Reconfigure routing of the DI water for the cleanroom and the labs.
12. P7.11.47, Rev.0, Process Cooling Water Distribution Flow Diagram.
 - a. Add sanitary water back up to the process cooling water pipe for the cleanroom. This includes the 3-way valve and the flow meter on the return line, as shown.

Mechanical:

1. H0.00.03, Rev.0, Pipe Material Schedule.
 - a. Changed the DI water Pipe material to polypropylene.
2. H2.B1.67, Rev.0, HVAC Floor Plan.
 - a. Increase the size of the exhaust duct
 - b. Add a second fan.
 - c. Relocate the 2x1 transfer grille.

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DESCRIPTION OF CHANGE: See below.

3. H2.01.67, Rev.0, HVAC Roof Plan
 - a. Add Space for future DX coil to MUA-CN-01 and MUA-CN-02 and reposition the units.
 - b. Reposition AH-CN-15
 - c. Added EF-CN-20 and reposition EF-CN-15.
 - d. Reposition AH-CN-01 and AH-CN-03
 - e. Add space for future condensing unit CU-CN-01
4. H4.B1.67, Rev.0, HVAC Makeup and Exhaust Ductwork.
 - a. Extend supply air line to room B1-7-8
 - b. Increase air supply amount to room B1-7-8.
 - c. Reposition the supply and return duct locations to match equipment on the roof.
 - d. Increase size of GE exhaust duct to 26"
5. H5.11.40, Rev.0, HVAC Section.
 - a. Added Nitrogen to labs.
6. H5.11.41, Rev.0, HVAC Sections.
 - a. Increase size of GE exhaust duct to 26".
 - b. Added BOD elevation to 30x16 supply air duct.
7. H6.11.40, Rev.0, Mechanical Details.
 - a. Update size of scrubber.
 - b. Revise detail 12 as shown.
8. H7.11.46, Rev.0, Heat Exhaust Plan and Flow Diagram.
 - a. Modify exhaust flows and duct sizes as shown.
9. H7.11.47, Rev.0, Scrubbed Exhaust Floor Plan and Flow Diagram.
 - a. Modify exhaust flows and duct sizes as shown.
10. H8.11.46, Rev.0, Miscellaneous Equipment Control Diagram.
 - a. Added controls for city water backup to the process cooling water.
11. H9.11.40, Rev.0, HVAC Schedules.
 - a. Increase capacity of AH-CN-15 to accommodate greater exhaust amount for room B1-7-8.
 - b. Increase the size of EF-CN-06 and EF-CN-07 to match new scrubber capacity.
 - c. Add EF-CN-20. This new fan will serve room B1-7-8.
12. H9.11.41, Rev.0, HVAC Schedules.
 - a. Increase capacity of scrubber SC-CN-01 to 22000 CFM.

END OF MECHANICAL SECTION

PREPARED BY: K. MCKEAN	CHECKED BY: B. JOHNSON	RESPONSIBLE DESIGNER: J. GONZALEZ
SUBMITTED BY: DESIGN CENTER MANAGER K. MCKEAN. 4/17/03		APPROVED BY: SNS TASK MANAGER/DATE

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OTHER DOCUMENTS AFFECTED BY THIS CHANGE: None

DESCRIPTION OF CHANGE: See below.

ELECTRICAL SECTION

SPECIFICATIONS:

1. Section 16129, R00 Fiber Optic Cable & Accessories
 - a. Revise entire section.
2. Section 16700, R00 Control/Signal Transmission Media
 - a. Move sentence about reflectometer from section 3.3B to 3.4C.
3. Section 16720, R00 Data/Communication System
 - a. Revise entire section to accommodate Category 6 cable in lieu of Category 5e.

SHEETS:

13. Sheet E0.01.41 Rev # 0:
 - a. Change data/phone outlet box to Category 6 from Category 5e. See sketch E-SK-001-8.
14. Sheet E3.B1.67 Rev # 0:
 - a. Add exit light in Room B1-7-6; added emergency lights in Rooms B1-714 and B1-7-17. See sketch E-SK-002-8.
15. Sheet E4.B1.67 Rev # 0:
 - a. Add tag for Key Note N004 near Gowning Room B1-7-14. Corrected Key Note tag N015 at CR exit door. Added future VFD in Room B1-7-1. See Sketch E-SK-003-8.
 - b. Add Keynote N018 for process cooling water switch to city water. See Sketch E-SK-019-8.
 - c. Add 120V emergency circuit in Room B1-7-2 for process cooling water switch to city water. See Sketch E-SK-020-8.
 - d. Changed feeds to PCW and CHW pumps in Room B1-7-2. See Sketch E-SK-020-8.
16. Sheet E6.B1.67 Rev # 0:
 - a. Add tel/data outlet in E-Beam/Litho Room B1-7-30. See sketch E-SK-004-8.
17. Sheet E8.11.42 Rev # 0:
 - a. Revise Security Door Detail 10/E8.11.42. See sketch E-SK-005-8.
 - b. Revise Security Door Detail 11/E8.11.42. See sketch E-SK-006-8.
 - c. Revise Security Door Detail 12/E8.11.42. See sketch E-SK-007-8.
 - d. Add Main Entrance security door detail 2/E8.11.42. See sketch E-SK-025-8.
18. Sheet E8.11.43 Rev # 0:
 - a. Revise Detail 7/E8.11.43 for Category 6 wiring. See sketch E-SK-008-8.
19. Sheet E8.21.40 Rev # 0:
 - a. Correct reference bubble 7/E8.11.43. See sketch E-SK-009-8.
20. Sheet E8.21.41 Rev # 0:
 - a. Change symbol list to Category 6 wire. See sketch E-SK-010-8.
 - b. Change number of data drops in Cleanroom wing to 78. See sketch E-SK-011-8.

PREPARED BY: K. MCKEAN	CHECKED BY: V. STEFFEN	RESPONSIBLE DESIGNER: C. RUNNG
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SUBMITTED BY: DESIGN CENTER MANAGER K. MCKEAN. 4/17/03	APPROVED BY: SNS TASK MANAGER/DATE
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OTHER DOCUMENTS AFFECTED BY THIS CHANGE: None

DESCRIPTION OF CHANGE: See below.

SHEETS:

21. Sheet E8.31.40 Rev #0
 - a. Change all wire references from Cat 5e to Cat 6. Add drop #78 to Room B1-7-30. See Sketch E-SK-012-8.
22. Sheet E8.31.41 Rev # 0:
 - a. Change all wire references from Cat 5e to Cat 6. Add drop to Room B1-7-30. See Sketch E-SK-013-8.
23. Sheet E2.12.41 Rev # 0:
 - a. Add arrow, indicating future VFD connecting to Panel CN-2DPC-2. See Sketch E-SK-014-8.
 - b. Change feed to PCW pumps P-CN-03 and 04 from VFDs to direct feed from Panel CN-2DPC-2. See Sketch E-SK-014-8.
 - c. Change feed to CHW pumps P-CN-01 and 02 from direct feed to VFD's from CN-2MCC1. See Sketch E-SK-014-8.
24. Sheet E8.11.46 Rev # 0:
 - a. Add future VFD in Room B1-7-1 of Detail 2/E8.11.46. See Sketch E-SK-015-8.
25. Sheet E9.23.44 Rev # 0:
 - a. Add future 100A breaker in Panel CN-2DPC-2 for future condensing unit. See Sketch E-SK-016-8.
 - b. Remove references to VFD's for PCW pumps in Panel CN-2DPC-2. See Sketch E-SK-016-8.
26. Sheet E4.01.67 Rev # 0:
 - a. Add rooftop exhaust fan EF-CN-20. See Sketch E-SK-017-8.
 - b. Indicate position of future condensing unit. See Sketch E-SK-022-8.
27. Sheet E9.23.46 Rev # 0:
 - a. Panel CN-2EPPC-1: Increase rating for EF-CN-15 from 1/3 to 1/4 HP. Add exhaust fan EF-CN-20. See Sketch E-SK-018-8.
 - b. Add circuit #17 in Panel CN-2EPPC-1 for process cooling water switch to city water. See Sketch E-SK-018-8.
28. Sheet E9.13.40 Rev # 0:
 - a. On CN-2MCC!, change feeds to CHW pumps from motor starters to VFD's. See Sketch E-SK-021-8.
29. Sheet E4.B1.66 Rev # 0:
 - a. Add underground conduit to bollard at main entrance door. See Sketch E-SK-023-8.
 - b. Add Keynote N020 regarding connection to main entrance bollard. See sketch E-SK-024-8.

PREPARED BY: K. McKEAN	CHECKED BY: V. STEFFEN	RESPONSIBLE DESIGNER: C. RUNNG
SUBMITTED BY: DESIGN CENTER MANAGER K. McKEAN. 4/17/03		APPROVED BY: SNS TASK MANAGER/DATE

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List of Attached Sketches:

Sketch Number:	Description:	Sheet Number:
E-SK-001-8	COMMUNICATIONS SYMBOLS	E0.01.41
E-SK-002-8	CLEANROOM EMERGENCY LIGHTING	E3.B1.67
E-SK-003-8	CLEANROOM POWER PLAN	E4.B1.67
E-SK-004-8	CLEANROOM COMMUNICATIONS PLAN	E6.B1.67
E-SK-005-8	SECURITY DOOR DETAIL 10	E8.11.42
E-SK-006-8	SECURITY DOOR DETAIL 11	E8.11.42
E-SK-007-8	SECURITY DOOR DETAIL 12	E8.11.42
E-SK-008-8	TELEPHONE BACKBOARD	E8.11.43
E-SK-009-8	TELEPHONE RISER DIAGRAM	E8.21.40
E-SK-010-8	DATA SYMBOLS	E8.21.41
E-SK-011-8	DATA DROP DETAIL	E8.21.41
E-SK-012-8	DATA SYSTEM SCHEDULE	E8.31.40
E-SK-013-8	TELEPHONE SYSTEM SCHEDULE	E8.31.41
E-SK-014-8	SINGLE LINE DIAGRAM	E2.12.41
E-SK-015-8	VFD ROOM DETAIL	E8.11.46
E-SK-016-8	PANEL CN-2DPC-2 SCHEDULE	E9.23.44
E-SK-017-8	SUPPORT AREA ROOF PLAN	E4.01.67
E-SK-018-8	PANEL CN-2EPPC-1 SCHEDULE	E9.23.46
E-SK-019-8	KEYNOTES – SHEET E4.B1.67	E4.B1.67
E-SK-020-8	ROOM B1-7-2 POWER PLAN	E4.B1.67
E-SK-021-8	CN-2MCC1 DETAILS	E9.13.40
E-SK-022-8	CLEANROOM ROOF PLAN	E4.01.67
E-SK-023-8	MAIN ENTRANCE DETAIL	E4.B1.66
E-SK-024-8	KEYNOTES – SHEET E4.B1.66	E4.B1.66
E-SK-025-8	MAIN ENTRANCE SECURITY DOOR DETAIL	E8.11.42

END OF ELECTRICAL SECTION

END OF DCN

PREPARED BY: K. MCKEAN	CHECKED BY: V. STEFFEN	RESPONSIBLE DESIGNER: C. RUNNG
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SUBMITTED BY: DESIGN CENTER MANAGER K. MCKEAN. 4/17/03	APPROVED BY: SNS TASK MANAGER/DATE
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