

TAC

#10

THE ARCHITECTS COLLABORATIVE INC.

AUG 20 Recd

15 August 1979

UNIV. OF MINN.
HEALTH SCIENCE
PLANNING OFFICE

Mr. Clinton N. Hewitt
Assistant Vice President
Office of Physical Planning
University of Minnesota
340 Morrill Hall
Minneapolis, Minnesota 55455

Dear Mr. Hewitt:

It is with pleasure that we submit to the University an interim report of our work on the Unit B/C Phase II Leasing Study.

Although we recommend that we have a continuing involvement in the packaging of the Unit B/C Shell Space Completion Phases and the analysis of other phasing issues, the bulk of work on the study was accomplished with Phase II. The provisions for contractor staging, access and circulation, the methods of working with Shell Space Users and the assigning of financial responsibilities which were developed with Phase II all appear to be working quite well.

If we can be of further assistance or provide additional information, please let us know.

Very truly yours,

THE ARCHITECTS COLLABORATIVE Inc.



John M. Patterson
Senior Associate

JMP:lmg

INTRODUCTION

In mid-1976 the need for an organized approach to the completion of Unit B/C Shell Space was recognized by the University and the Architects. TAC was thus authorized to proceed with the Unit B/C Phase II Leasing Study* based on TAC's proposed outline dated 18 June 1976.

At the end of June 1976, the Architects were authorized to proceed with the first Shell Space Design Package: Phase II. As a result of the proximity of these events, the major portion of the initial effort put into the Unit B/C Phasing Study was in direct support of the Phase II effort. As a result of the magnitude of the Phase II effort, its critical schedule and subsequent events resulting in personnel changes on the Architect's team, the documentation of the Phasing Study effort has previously given way to other priorities.

At the writing of this report, Unit B/C Phases I and II are completed and occupied by the University; Phases III and VI are under construction; Phase IV has been completed through the Construction Documentation stage (and is undergoing revision to bid the office areas only); and Phase V is in the Schematic Design/Design Development Phase. In light of the present status of the Shell Space Development this report will be beneficial to the University in two respects:

- 1) It will provide historical documentation of the bulk of the Phasing Study effort which took place in conjunction with the design and documentation of Phase II during 1976 and 1977.
- 2) It will present recommendations to the University for approaching the completion of the remaining Shell Space Packages; recommendations which are based on three years of experience in dealing with the Shell Space Completion effort.

This report is organized to follow the format of TAC's original outline for the Phasing Study. This outline is presented in the first column of the fold-out charts on the following four pages.

Opposite each line item of the outline are four columns. The first identifies the party with primary responsibility for accomplishing the task listed opposite in the outline. The second references the event(s) which have occurred relative to that line item: an index of these events may be found in the Table of Contents of the Appendix to this report and is followed by documentation as appropriate. The documents are numerically referenced to the Table of Contents. The third and fourth columns of the fold-out charts, which follow, give a capsule summary of the work performed or to be performed relative to that line item.

Immediately following these charts are TAC's current comments and recommendations relative to the completion of all Unit B/C Shell Space. This section of the

*This study is more appropriately referred to herein as the "Unit B/C Phasing Study".

report reflects our experience to date in the Shell Space completion effort. The recommendations are designed to help build on this experience and make the completion of this effort as problem free and cost efficient as possible.

This report, though documenting the bulk of the Unit B/C Phasing Study effort, does not represent the termination of this effort. It is important that the Architect be involved (more than in the past) in the packaging of the remaining Phases of the Shell Space Completion Program if the benefit of his knowledge of project scheduling, planning and construction are to be of benefit to the University. We are confident that we can make this contribution while staying within our original budget for this effort.

1. ASSEMBLE CURRENT DATA CONCERNING FUNDING FOR SHELL SPACE DEVELOPMENT

Funding has been, and will remain, the primary schedule determinate for completion of all Shell Space. To date the Health Sciences Planning Office (HSPO) has been periodically updating the Shell Space Completion Schedule based on the funding projections of the University Hospital and the Medical School. The success of this effort is obviously dependent on the users ability to meet their own funding deadlines and HSPO's ability to properly project construction costs.

The Architect, though not primarily involved in questions of funding, has undertaken on occasion very quick feasibility studies of Shell Space areas to support these efforts. These studies can serve three basic purposes for the University:

- A. They identify immediately major space or planning problems in accommodating given users in specific areas in the building and thus allow the user to adjust at an early stage to the realities of the space he will be occupying.
- B. They allow a more meaningful cost estimate to be made at the pre-funding stage of the project, thus increasing the chances of being able to award the construction contract within the limits of the funding obtained.
- C. They may be used as a fund raising tool to show donors, be they agencies, organizations or individuals, how their funds will be utilized.
- D. They may be used in Certificate of Need applications, where applications are required, and thus help eliminate delays due to the planning requirements of this approval process.

We would thus recommend that the funding schedule continue to be updated on a regular basis by HSPO and that the feasibility study approach be considered as a practical alternative to insure funding and C.O.N. guarantees. This will help avoid delays or revisions to projects which are now often well underway prior to receipt of these guarantees.

2. REVIEW OF CONTRACT DOCUMENTS

As stated in the chart above, an extensive evaluation of building systems and services was conducted concurrently with the design of Phase II. At that time it was determined that the majority of building systems would be completed incrementally with the Shell Space areas directly utilizing them. There are, however, a few items which do not fall directly into this category:

A. Elevators:

Six of the planned twelve elevators in Unit B/C were installed under the initial Phase One Contract: #4, 5, 6, 7, 8 and 9. One additional

elevator: #1, was installed with a temporary cab as the contractor's elevator with Phase II. This elevator will serve the contractors through all the Shell Space Completion work and thus is scheduled as the last elevator to be completed and turned over to the University.

Some changes have occurred in the useage of Shell Space areas and thus effect not only floor populations, but also the mix of public versus student/staff occupancy of those floors: i.e. the development of laboratory space on Floors 5 and 7 where clinic space was originally planned. Due to these changes, one could justify a reanalysis of the elevating of the building to see if the original elevating requirements are still valid. The results of such a study might suggest, for instance, that five rather than six public elevators are sufficient for the present use of the building.

It is recommended, however, that all the elevators be installed with the completion of the Shell Space for two reasons:

1. Unit B/C has been designed to be flexible: to easily allow changes in function without the necessity of "major" remodeling efforts. The addition of an elevator, which could be necessitated in the future by a functional change with occupancy implications, would have major cost impact on such an undertaking and thus potentially inhibit the exercise of the potential for flexibility which the building provides.
2. The cost of adding an elevator will continue to increase as time passes. Thus the sooner the elevating of the building is complete, the more economical an investment it will be.

Due primarily to the location, it was determined in the analysis of the Phase II work that only the contractor's elevator need be added at that time. Now with the recent completion of Phase II, however, the planning/construction effort has brought us through Phase VI. In light of this, an analysis of elevating for Unit B/C is once again appropriate.

With the completion of Phase I, 199,598 net square feet (NSF) of Shell Space remained in the building and six elevators remained to be put into service. A direct relationship between the number of elevators remaining and the remaining NSF to be built may be established:

Remaining Shell Space = 199,598 NSF
Remaining Elevators = 6

199,598 NSF = 33,266 NSF/Elevator

Using this method, one elevator should be added for each 33,266 NSF of Shell Space completed.

A summary of Phases II - VI indicated that with the completion of these Phases three of the remaining six elevators should be added to the building:

Phase II	-	34,402 NSF (completed)
Phase III	-	5,610 NSF (under construction)
Phase IV	-	13,099 NSF (in planning)
Phase V	-	56,005 NSF (in planning)
Phase VI	-	7,874 NSF (under construction)
<hr/>		
Total	-	116,990 NSF

$$\frac{116,990 \text{ NSF}}{33,266 \text{ NSF/Elevator}} = 3.5 \text{ or } 3 \text{ Elevators}$$

In as much as the student/staff elevators, 1 - 6, serve all fifteen floors of the building and public elevators, 7 - 12, serve only floors B - 9, it is worthwhile to examine where Shell Space will remain after the completion of Phases II - VI:

Shell Space remaining above Floor 10 = 49,120 NSF
 Shell Space remaining below Floor 10 = 33,488 NSF

Floors served above Floor 10 = 11, 12, and 15: 3
 Floors served below Floor 10 = B thru 9: 10

In light of the fact that Floors 13 and 14 do not require any elevator service at this time and that the majority of unfinished Shell Space remains above Floor 10, it is recommended that immediate emphasis be placed on the completion of the public elevators, 10 - 12.

From a purely space analysis point of view, it would be logical to complete elevators 10, 11, and 12 at this time. It must be noted, however, that it is the student/staff elevators which are used for maintenance and service to the building. These needs should be analyzed in relation to the present elevating of the building. If it is felt that the present provisions are not sufficient to assume the additional burden that will be imposed by the occupancy of Phases III through VI, then it is recommended that two public and one student/staff elevator be added at this time.

In either instance, it is evident that three elevators should be added to correspond to the completion of Phase V, which will be the last and largest of the Phases presently underway to be occupied.

From the awarding of an elevator contract, one must allow nine months lead time and four months for installation.

*Estimated Cost of Public Elevators (Low-Rise) = \$ 130,000/Elevator

*Estimated Cost of Student/Staff Elevators (High-Rise) = \$ 180,000/
Elevator

B. Mechanical/Electrical Systems

Selected Mechanical/Electrical Systems within Unit B/C have been installed under Phase I incomplete or with central equipment deferred.

Deferred or incomplete systems can be divided into three categories:

1. Central Systems -
Those which serve the entire building.
2. Regional Systems -
Those which serve a group of floors or a zone which encompasses several potential users.
3. Special Service Systems -
Those which serve a single user or type of user.

The present status of these systems by type is as follows:

1. Central Systems

All building central systems equipment has been installed in Unit B/C with the exception of the stand-by radiation converters and pumps associated with the buildings perimeter heating system.

*Estimate of System Cost = \$ 17,000.

2. Regional Systems

In general these systems services are available on each floor and are tapped for extension as needed to user locations. These systems may be limited as to output as installed, with additional equipment required to reach ultimate capacity. Our present expectations as to these requirements are:

- A. One additional vacuum pump will be required to allow the lab vacuum pump station to reach the ultimate capacity.

*Estimate of system cost = \$ 40,000.

- B. One additional 20 PSI air compressor and refrigerant dryer will be required to complete the 20 PSI air compressor station.

*Estimate of system cost = \$ 50,000.

- C. One additional 100 PSI air compressor and refrigerant dryer will be required to complete the 100 PSI compressed air stations.

*Estimate of system cost = \$ 90,000.

- D. At present distilled water is being transferred from the stills and storage tank in Unit A. A still and demineralizer must be added in Unit B/C to meet the expected ultimate requirements of Unit B/C.

*Estimate of system cost = \$ 75,000.

- E. The expected ultimate requirements for 180° hot water in Unit B/C will mean the addition of two instantaneous heaters.

*Estimate of system cost = \$ 12,000.

3. Special Systems

These systems will have to be added in their entirety to meet the needs of specific users and as such will be chargeable directly to those users. Space has been provided for expected equipment in mechanical rooms and in cores for expected piping and ductwork. These systems include:

- A. In-floor heating panels for animal quarters.
- B. Steam humidifiers for environmental rooms.
- C. Fume hood fans and risers.

All remaining electrical work is in this Special Systems category or in support of mechanical systems in the other two categories. No major electrical systems or equipment remain to be installed.

The timing on completing these Mechanical/Electrical systems is difficult to project, since they are primarily dependent on user loads. Installation will be determined by engineering judgement as more Shell Space is built and by feedback on the capacity of the existing systems from users and University engineers.

C. Major Architectural Construction

The only remaining elements of major construction anticipated at this time are the bridge links at Floor 5 to Unit A and the VFW Hospital

Detailed cost estimates will be prepared for these elements as part of the Design Development work on Phase V.

*All the costs presented above are rough estimates at today's costs and are presented for general budgeting purposes. When schedules are developed for systems or equipment installation, a current detailed cost estimate should be undertaken.

3. DEVELOP CONCEPTS FOR SHELL SPACE DEVELOPMENT

Due to the immediate demands of Phase II during the bulk of work on the Phasing Study, a conceptual approach to the development of Shell Space was never formally stated. In the prosecution of the Shell Space work, however, certain approaches have been developed as guidelines and often verbalized.

Due to the tremendous dependency the Shell Space development effort has on the uncertainties of funding, the Architect has had little opportunity for involvement in the packaging of the Shell Space Phases. This effort has by necessity been in the hands of the University Hospital and the Medical School as coordinated by the HSPO.

When consulted, however, the Architect has continuously made the following recommendations as to the best conceptual approach:

- A. Economies of scale - Whenever possible put together large packages of Shell Space to benefit from "the higher-the-quantity, the lower-the-price" realities of the construction industry. Benefit is derived both from the contractor's price relative to the size of the project and through stiffer bidding competition on larger projects. Benefit is also gained from paying for the contractor's initial staging costs the fewest number of times possible over the life of the Shell Space completion. In addition, the completion schedule can be shortened through this "large package" approach.
- B. Consideration of Proximities - In the completion of the Shell Space construction, consideration must be given to the impact of individual projects on adjacent space. This consideration applies particularly to the spaces on the floor below a construction project. Not only is inconvenience to users of those floors a consideration, but construction cost is also. A look at floors thirteen and fourteen would be a good example.

The completion of floor thirteen will by necessity disrupt user activities on floor twelve. Not only is this an inconvenience to the users, but also to the contractor. This inconvenience to the contractor will be reflected by additional dollars in his bid. This is already given for floor thirteen, but not for floor fourteen. These additional costs could be avoided on floor fourteen if it is completed prior to, or with, floor thirteen. Obviously this latter is preferable from the economy of scale point of view.

These considerations may have no relationship to the funding possibilities for these two floors, but they do have very real cost and schedule implications. In light of that, they should be part of the University's considerations when developing and scheduling Shell Space Packages.

- C. Benefits of the Modification Approach - It is generally assumed that the public bidding process is the most economical approach to be used on construction projects and thus also on the Unit B/C Shell Space projects. With larger packages of work and a reasonable lead time to complete the work, this assumption would hold true.

With smaller packages, however, which it appears will inevitably occur during the Shell Space completion effort, this assumption may well not hold true. The smaller package generally tends to occur because of a tight schedule commitment to a particular user. In light of this, the month's consumed with the bid, review and award processes may well mean the difference between meeting the schedule or not. In addition, inflation insures us that the later a project gets under construction the higher the cost. Finally, it should be noted the contractor's bidding and set up costs represent a greater proportion of the construction costs the smaller the project.

Due to the fact that each contractor must submit a schedule of values and other documentation of costs, it is quite possible to check the value of quotations on modifications to insure that the University is getting a fair price.

In light of these considerations it is recommended that the University not rule out the modification route for selected small projects.

Experience to date in the Shell Space completion effort has shown that there is a great deal of flexibility in how Shell Space can be packaged. The concepts listed above are observations on how that packaging can recognize savings for the University and help realize critical scheduling dates.

Where there have been packaging problems to date they relate to funding or Certificates of Need issues which may have been resolved for one part of a package, but not for another. These problems have in some instances caused delays or revisions to drawings which in both cases represent additional costs to the University. They may be unavoidable.

It is recommended, however, that the largest lead time possible be identified and utilized to gain full funding and approvals before design work is begun and a firm schedule established. The feasibility study approach discussed above may be of aid in this process.

Finally, it is recommended that the HSP0 hold periodic meetings to review the schedule and packaging plans for the remaining Shell Space with the Hospital, Medical School and the Architect. This would allow the Architect to be more fully informed and perhaps raise some relevant considerations from a planning, scheduling and construction point of view.

4. ASSIGNMENT OF ATTRIBUTABLE COSTS
5. REVIEW OF IMPACT REPORT
6. REVIEW OF PHASE I CONSTRUCTION SCHEDULE

The HSP0 has developed a system for assigning attributable costs to each building user.

The Architect contributes to the cost updating and scheduling of future projects as requested. As mentioned above, his contribution could be increased by becoming more fully informed through periodic meetings with the parties involved.

7. IDENTIFY PROCEDURES NECESSARY FOR COMPLETION OF SHELL SPACE CONSTRUCTION DOCUMENTS

A format for meetings with users and completing the planning, review and approval processes was developed on Phase II and has been used successfully on subsequent Phases.

Specific scheduling has been done on Phases II through VI, and it is recommended that meetings be held in the near future to do more specific scheduling of the remaining Shell Space Phases. Specifically there should be meetings very soon on Phases VII and VIII if the projected 1980 bid date is to be met.

8. REVIEW INFLUENCE OF METHOD OF CONTRACT AWARD

This is an ongoing process which is undertaken with each Shell Space Package. It considers the bid versus modification approach, the need for interface modifications and the form of the specifications when contractors need concurrent access to the same facilities.

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<u>CHRONOLOGY</u>	<u>DOCUMENT NUMBER</u>	
Nov. 75 1 May 75	1*	B/C Phase I Bids Received, Deducts Selected (Affect B/C Phase II), Impact Report.
21 Jan. 76	2*	Meeting with HSPO on Phase II Study.
Apr. 76	3*	B/C Deduct Alt./Status List - Phase I.
18 Jun. 76	4	TAC Letter - Proposal Outline for Phasing Study.
29 Jun. 76	5	B/C Phase II - Design Services. TAC to Maupin.
10 Aug. 76	6	Maupin Letter Authorizing Proceeding with Phase II Design.
17 Aug. 76	7	Phase II Shell Space Development Meeting.
17-19 Aug. 76	8	Meeting - Zeller, HSAE Engineers.
30 Aug. 76	9	HSAE Task Outline.
30 Aug. 76	10	Elevator Consultant Task Outline.
31 Aug. 76	11	Meeting with Hospital and HSPO.
31 Aug. 76	12	Questionnaire - Funding Source/Timing, etc.
1 Sep. 76	13	Meeting with Sheehy Construction - Schedule Influences on Phase II by Phase I.
2 Sep. 76	14	Meeting with Campbell and Co.
9 Sep. 76	15	Completion Schedule - B/C Phase II
10 Sep. 76	16	HVAC Survey Diagram - Systems
7 Oct. 76	17	Letter, Maupin to TAC Directing B/C Phase II be bid.
14 Oct. 76	18	Letter, TAC (Scott) to Hewitt - Bid vs. MOD
15 Oct. 76	19*	Hewitt Verbally Relays Brinkerhoff MOD Decision
28 Oct. 76	20	Bid vs. Modification Meeting, Brinkerhoff, et. al.: develop options for bidding work.
18 Nov. 76	21*	Meeting with HSPO: General Conditions, Phase II Bid Documents
9 Dec. 76	22	Letter, TAC (Zeller) to Maupin defining Mod. Work. Phase II: Separation.
14 Dec. 76	23	Meeting to Discuss Points of 9 Dec. 76 Letter; Reconsider 1 and 2 as Mod. Work.

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<u>CHRONOLOGY</u>	<u>DOCUMENT NUMBER</u>	
15 Dec. 76	24	Meeting - D. Brown, et. al. Decision 1 and 2 Mod., 9 Bid.
14 Jan. 77	25	Letter - Maupin to TAC - Bid All.
19 Jan. 77	26*	Meeting - Hewitt
31 Jan. 77	27	Letter - Hewitt to TAC - Bid.
4 Feb. 77	28	B/C Phase II - Completion Dates.
14 Mar. 77	29	Letter, TAC (Zeller) to Maupin - Phase II Contract Requirements Clarification
21 Apr. 77	30	Meeting - Phase I/Phase II Schedule - Hospital's Concerns
3 May 77	31	Meeting with Scheffler Code Considerations Phase II Access Pts.
5 May 77	32	Meeting with HOSP: B/C Phase I Occupancy before Completion of II. Westinghouse information Shaft No. 1 permanent equipment.
11 May 77	33	Letter - Maupin to TAC - Temp. elev. as change order.
24 May 77	34	HSAE Letter to Kogl - temp. power/lighting Phase II.
26 May 77	35	Maupin to TAC - Response to 30 March 77.
26 May 77	36	TAC to Maupin - Proposed layout of Contractor and University offices.
3 June 77	37	Letter - TAC to Hewitt - Singles Primes, Access Routes, etc.
13 June 77	38	HSPO Letter to TAC - Contractor/University offices.
22 Sept 77	39	Unit B/C Phase II Contract Documents completed - temporary facilities for all shell space incorporated.

* Documentation not included.

THE ARCHITECTS COLLABORATIVE INC.

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ROBERT TURNER
ROBERT WILSON
LAURENCE ZUELKE

18 June 1976

Mr. Paul Maupin
Health Sciences Planning Coordinator
University of Minnesota
4104 Powell Hall
Minneapolis, Minnesota 55455

Re: University of Minnesota
Health Sciences Expansion
Unit B/C - Phase II 76012

Dear Paul:

We have attached for your review a draft proposal entitled Unit B/C-
Phase II - a study of phasing, financing and completion of shell
space 11 June 1976.

The scope of work outlined is based on previous discussions with your office and consist of two parts. The first part deals with developing a program for financing and finish the Unit B/C shell space. The second part deals with the construction implementation of the B/C shell space program. At this time, it is our opinion the most of part two effort should be developed as a separate contractual agreement.

Once you have reviewed the enclosed draft, we would like to meet with you to expand, elaborate or modify the proposed scope of work. At that time, we would also like to discuss the time frame and planning procedures you anticipate employing.

Based on that meeting, we will finalize the scope of work, including a fee proposal which we will formally submit as the basis for the development of a contractual agreement.

Very truly yours,

THE ARCHITECTS COLLABORATIVE, INC.

John J. Scott

John J. Scott

jms

cc: HSAE
Clint Hewitt
TOM JONES
CHERIE

THE ARCHITECTS COLLABORATIVE, INC.

UNIVERSITY OF MINNESOTA
HEALTH SCIENCES EXPANSION

UNIT B/C - PHASE II - A study of the phasing, financing and
completion of shell space.

11 June 1976

A. DEVELOP A PROGRAM FOR FINANCING AND FINISHING OF UNIT B/C SHELL SPACE.

1. Assemble current data concerning funding for shell space development.
 - a. Review with the 21 Users and ascertain the likely amounts and sources of funding for completing their space.
 - b. Verify that extent of funding coverage being sought is adequate to cover indicated costs.
 - c. Determine when funds will be available.
 - d. Determine the extent of prefunding documentation necessary, grant application required, and coordination of joint funding applications.
2. Review of Contract Documents
 - a. Evaluate the extent of Mechanical, Electrical, and Vertical Transportation services deleted from the project, the areas served by these systems, and the affected Users.
 - b. Review contract alternates added and deleted from Phase I Construction.
 - c. Determine which systems must be supplemented, extended, modified, or added to the project in order for shell space to be completed.
3. Develop concepts for shell space development.
 - a. Using future occupants' schedules and funding availability suggest phasing or packaging of shell space development.
 - b. Consider packaging of development based upon integration into the construction schedule, minimizing of Phase I work and occupants, efficiency of prosecuting the work and method of contract award.
 - c. Suggest size of packages based upon User needs for new or existing Mechanical, Electrical, and Elevator services, their location in the building, the scope of front end expenditures, economics of scale, etc.
 - d. Study User originated schedule demands on shell space development such as their needs for expansion from existing space, relocation, etc.
 - e. Consider influence of currently funded Medical Records, Business Office, Ophthalmology, and Food Service Departments on overall development program.

- f. Ascertain the flexibility of phasing and packaging as influenced by changes in schedule, User program, space requirements, etc.
4. Assignment of Attributable Costs.
 - a. Identify value of front end costs necessary to complete shell space packages.
 - b. Suggest methods of assessing these costs against new Users, current Users, the Hospital, Medical School, or the Health Sciences in total.
5. Review of ^NIMPACT Report.
 - a. Check validity of basic assumptions.
 - b. Verify cost projections against Phase I bidding experience, indicated funding schedule, current escalation factors, etc.
 - c. Update projected schedules against costs.
6. Review of Phase I Construction Schedule.
 - a. Consider timing of shell development with Phase I Construction. Establish critical dates for completion of systems and spaces for optimum efficiency.
 - b. Review influence on schedule of completion.
 - c. Project shell space construction schedule and estimate lead time for occupancy dates.
7. Identify procedures necessary for completion of shell space construction documents.
 - a. Establish format for meeting with Users to verify original program and extent of changes comparison original design development drawings with new User program development.
 - b. Project a schedule for development of revised contract documents.
 - c. Establish schedule for review and approval.
 - d. Determine maximum/minimum lead time necessary prior to contract award.
8. Review influence of method of contract award.
 - a. Funding agency requirements.
 - b. Phase I construction cost record in unit prices and change orders.
 - c. Influences resulting from shell space development schedule on construction schedule.

8. Issue a report of findings and recommendations.

B. CONSTRUCTION IMPLEMENTATION OF B/C SHELL SPACE

The second phase will be implementation of this program by the actual preparation of B/C Contract Documents for Shell Space Development. This work will be under a separate contract arrangement as each package proceeds.



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29 June 1976

Mr. Paul Maupin
Health Sciences Planning Coordinator
Health Sciences Planning Office
University of Minnesota
4104 Powell Hall
Minneapolis, MN 55455

Re: Unit B/C Phase II

Dear Paul:

As agreed in our meeting of 23 June 1976, we are writing to confirm our offer to begin the design effort associated with the finishing of the Unit B/C shell space.

We stated that we would provide the necessary design services on an hourly basis since at this time we do not have an understanding relative to the individual user or departmental work scope or an understanding of the methods, procedures and guidelines by which the Phase II shell space will be implemented. We suggest further that after the initial meetings with the user groups that we produce an outline of tasks requiring investigation, together with a schedule for doing the work. The outline and schedule will form the scope of the work on which we can establish an upset cost figure and reimbursable expenses. Depending on the complexity of the individual packages, the schedule and planning circumstances, the hourly fee arrangement could remain the basis of compensation or be converted in total or part as a credit against a percentage fee compensation.

The areas of shell space we understand the users are presently ready to proceed with are the following:

- Medical Records (Floors 1 and 2)
- Food Service (Floor 2)
- OPD Administration (Floor 2)
- Business Office/Admissions (Floor 2)
- Ophthalmology (Floor 9)

We should note at this time that we did proceed with Medical Records (Floors 1 and 2) in accordance with the understanding outlined above. As you know, this was necessitated by a desired change on the part of the user to relocate the Medical Record File Storage area from Floor 1 to Floor 2.



THE ARCHITECTS COLLABORATIVE

Paul Maupin
Page 2
29 June 1976

Due to the induced load of the files, an architectural and structural redesign was required. The resulting effort was incorporated into the ECS-II bid package as an add alternate. Subsequent to accepting ECS-II bids and the add alternate we have issued Mod 14P which incorporates the general, mechanical modifications to the floor structure we were not able to incorporate during the bidding process.

Please advise us of your concurrence with this approach and when you might wish us to begin the effort. We would also appreciate it if you could give us your initial thoughts on the planning procedures and time frame so that we can arrange for the appropriate staff to be available at the time you wish the work to commence.

Very truly yours,

THE ARCHITECTS COLLABORATIVE Inc.

A handwritten signature in dark ink, appearing to read "John J. Scott", is written over the typed name.

John J. Scott

JJS:kvb

cc: C. Hewitt
R. Dickler
T. Jones
J. Nelson
E. Kogl
HSAE
C. Perlmutter



UNIVERSITY OF MINNESOTA
TWIN CITIES

Health Sciences Planning Office
Physical Planning
Box 75 Powell Hall
4103 Powell Hall
Minneapolis, Minnesota 55455
(612) 373-8981

August 10, 1976

Mr. John Scott
The Architects Collaborative, Inc.
46 Brattle Street
Cambridge, Massachusetts 02138

SUBJECT: Building B/C
Phase II

Dear John:

Your letter of June 29, 1976, outlining your approach to providing the necessary design service relative to Building B/C shell space has been reviewed. I concur with this approach and confirm that your initial planning effort should be billed on an hourly fee basis.

We are presently gathering information from the occupants which will determine the rate and method of proceeding. Mr. Bob Swanson and Mrs. Linda Satorius are meeting this week and next with Hospital and Ophthalmology shell space occupants to explore the funding status and level of 'redesign for each of the programmatic spaces. This information will provide us with a better insight and approach to planning procedures and time frame necessary for the Phase II development.

RECEIVED

AUG 13 1976

THE ARCHITECTS COLLABORATIVE, INC.

I have received a letter from the Hospital authorizing us to proceed with the design services for the following shell space:

Medical Records (floors 1 and 2)
O.P.D. Administration (floor 2)
Business Office/Administration (floor 2)

Please call our office to establish the appropriate meetings.

Yours truly,



Paul J. Maupin
Health Sciences Planning Coordinator
Health Sciences Planning Office

PJM:rm

cc: Tom Jones
Robert Dickler
Greg Kujawa

UNIVERSITY OF MINNESOTA
HEALTH SCIENCES EXPANSION

MEETING NOTES

DATE: 17 August 1976
TAC JOB: 76012, Unit B/C Phase II Shell Space
SUBJECT: Shell Space Development
PLACE: Room 4112, Powell Hall
NOTES BY: Herman Zinter, Herb Zeller
PRESENT: Tom Jones, Lee Larson, Robert Dickler, Greg Kujawa (U/M)
Paul Maupin, Bob Swanson, Linda Satorius (HSPO)
John Scott, Herb Zeller, Herman Zinter (TAC/HSAE)

The purpose of the meeting was to establish general scope and guidelines for development of shell space in Unit B/C. The following items were discussed:

ITEM

ACTION REQUIRED

1. Greg Kujawa distributed three lists as follows:

a) list of General Concerns

These matters are to be considered by TAC in the Phase II leasing study and in the development of individual shell space areas. Graphics is a University responsibility.

b) Requests for additional space requirements in B/C Phase II

TAC will study plans and make suggestions for location of these added areas. Use of pedestrian corridor on level 2 will be considered for uses that could be readily moved. TAC has been directed to consider feasibility of computer room on level 2.

c) list of spaces that are developed on Phase I plans but are to be considered unallocated to those departments shown.

TAC in making suggestions for added areas, these spaces will be considered open.

ITEM

ACTION REQUIRED

2. Hospital is concerned that completion of Phase I and Phase II users on levels 1 and 2 be together because they will have difficulty in operating the floors with construction going.
3. Review of requested additional B/C space.

TAC is beginning redesign of Medical Records, OPD Admin., and Business Off/Admissions immediately.

ITEM

COMMENT BY HOSPITAL

1. Environmental Services
2. Nutrition
3. Outpatient Administration
4. Social Service
5. Medical Records
6. Business Office
7. Operations Analysis
8. Transportation and Distribution
9. Radiology Room
10. Pediatric Pulmonary Laboratory
11. Business Office
Computer Equipment

locate in "a corner somewhere"

Access to waiting room required.

Extra space may come from Business Office if B. O. can use pedestrian corridor.

Space requested is probably greater than needed. This area could be compressed.

Additional space could be taken from locker/lounge on level 1.

Pedestrian corridor will probably never be built and the space could be used by Bus. Office and allow for additional areas to be accommodated.

Would like near a materials transport station. Could be back portion of existing social service and combined with pharmacy or medical records transport station.

Could go in unallocated urology space next to surgery.

This has been added to Phase I development.

Should be considered in Business Office area south of corridor Feasibility Study is needed for this use.

ITEM

Unallocated B/C Space

1. Employee Health Services

2. Social Service

3. Urology

c.c.: All Present

COMMENT BY HOSPITAL

This space could be used by others on request list.

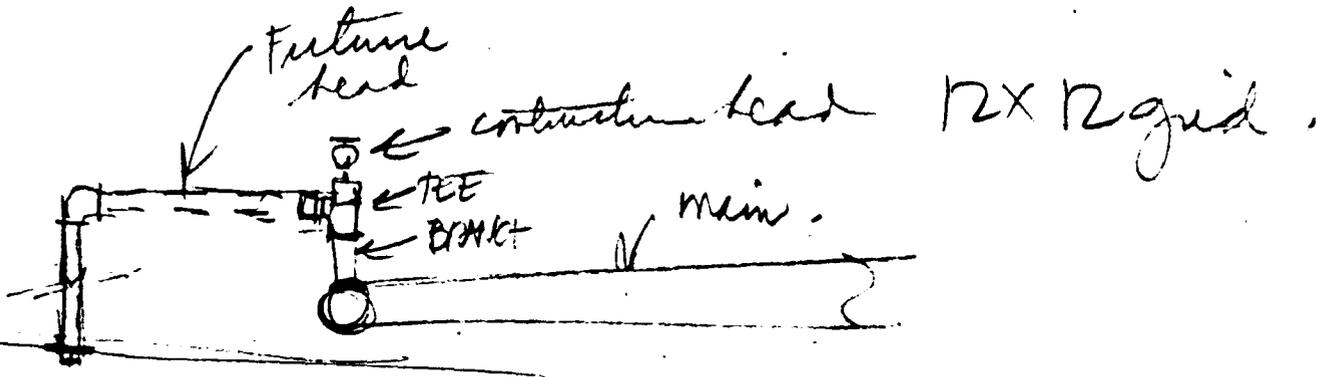
Will go in B/C Phase II but not necessarily of size requested. Requests are probably excessive.

This room will not be used for urology.

Meeting Notes: Bob Nelson - HVAC
8-19-76 Gary Hall - Elect

Building design under Uniform Bldg Code
Fire Protection System = P.1807

Sprinkler are installed on an
unoccupied with upright head (see sketch)



Final head location will be established at
time of development of shell space copper
supply will be replace upright head
and branch piping added to specific
location.

No first aid stations are required.

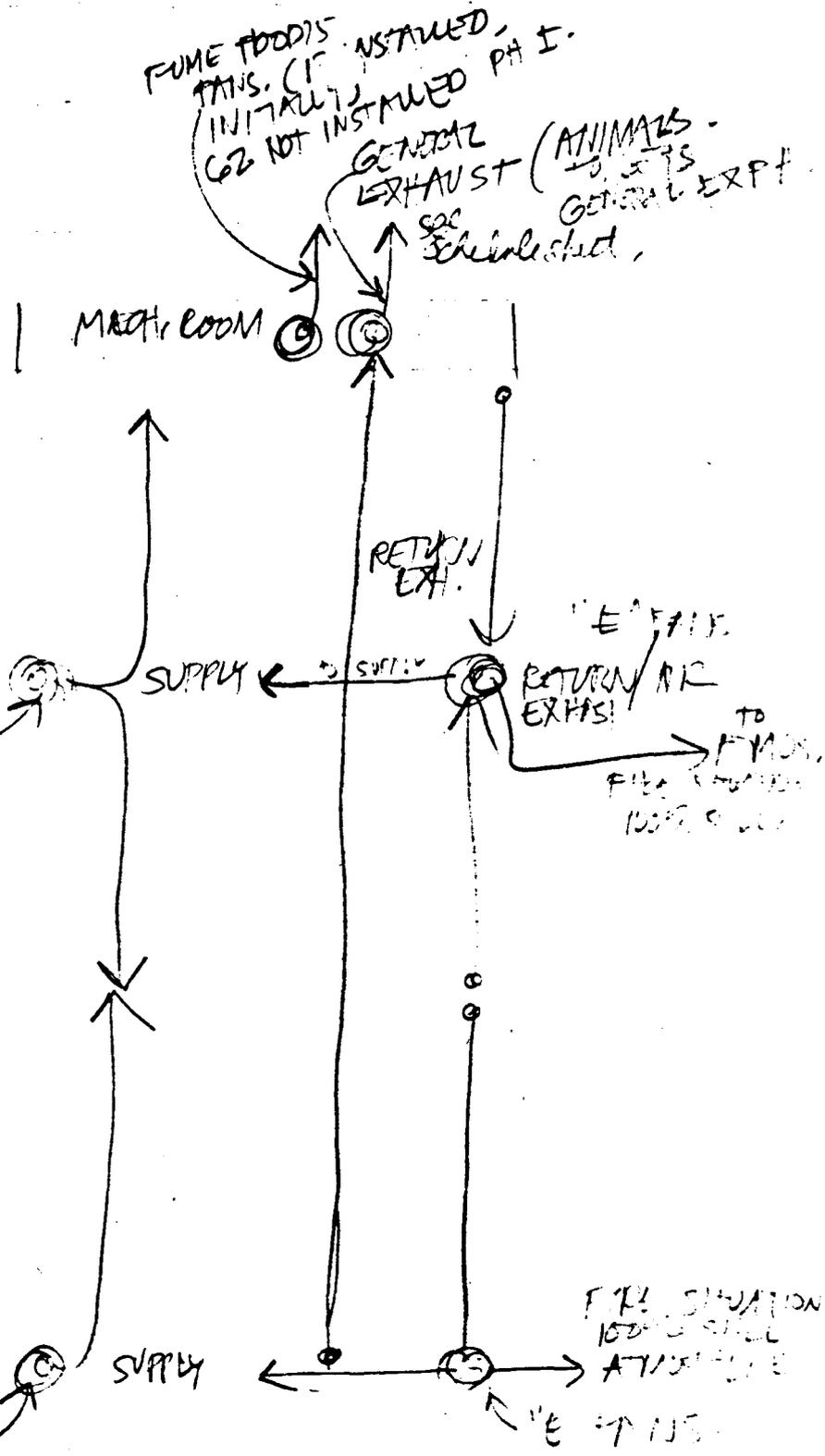
AIR SYSTEM :

15 HOSP

- 14
- 13
- 12
- 11
- 10
- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1
- B

MECHANICAL
FIRE SITUATION
100% OUTSIDE

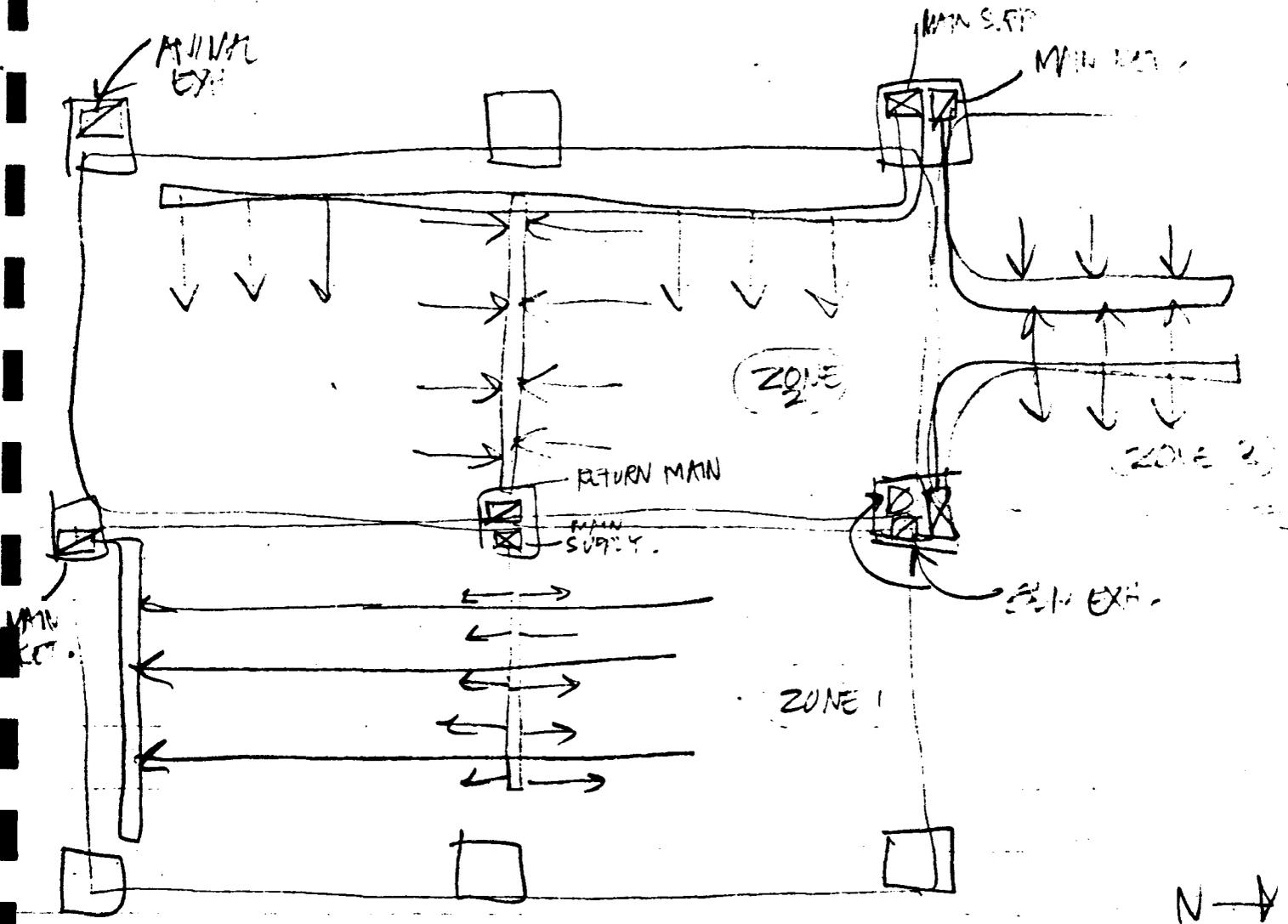
MECHANICAL
FIRE SITUATION
100% OUTSIDE



SUPPLY & RETURN FAN INTERLOCKS LIST BELIEVED - FROM B.

FUME HOOD FANS:

1. 13 installed in P# 5
2. 62 future for P# 5 no risers installed but space allowed in cores. See core plans. M-67 & M-68 stat (risers located per eng D.D. memo.



AIR DISTRIBUTION,
12th Floor typical above 10.

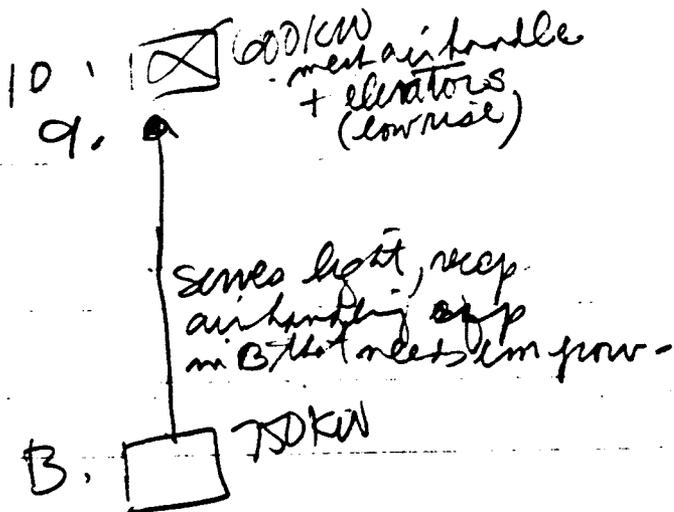
Location: North and South zones
 Room from B to 5 and 6-15 (from 10)

Electrical

Main bus duct uses Core 32 and Core 29 from basement to 9th floor with emergency and regular dist. Main panels are installed (PT I) on all floors B-9 with breakers. Distribution panel tabs installed with empty conduit stub to ceiling. Conduit + wire to main panel board not installed. No breakers in main panel.

EMERGENCY GENERATORS

5 600 KW handle load mech + elevs. - in + lights except to 10th floor.



Power Substation on 10 rows - 10 to 15
Main panels.

Power Substat on 15 rows equip on 15 only.

Lighting is served from main user closets
Power from floor distribution panels,
No underfloor duct system - all power
and telephone in walls or poke thru.

Cable tray system only start back into
ceiling area from elect user closets.
will have to be completed in shell of floor.
a minimum of a cross connection must be
made, telephone terminal panels
located as needed.

Fire Alarm:

1. Wrote in elect wire on data panels recording from - smoke, pull station, smoke detector, ^{control center} alarm to third floor flow devices, shut off valves on sprinkler system. Speaker gives prerecorded signal, message.

To store smoke detectors, module at main panel need to be added in room to take care of added device.

ELECTRICAL:

Intercom involves conduit stubs and boxes in walls to ceiling for supplying from cable tray and equipment by Owner. Individual rooms.

Security monitors - University supplied systems may require electrical surge. May require conduit system. Mary is looking at and it should be a central

Cable tray -

Speakers + horns - speakers and wiring and modules in parcel.

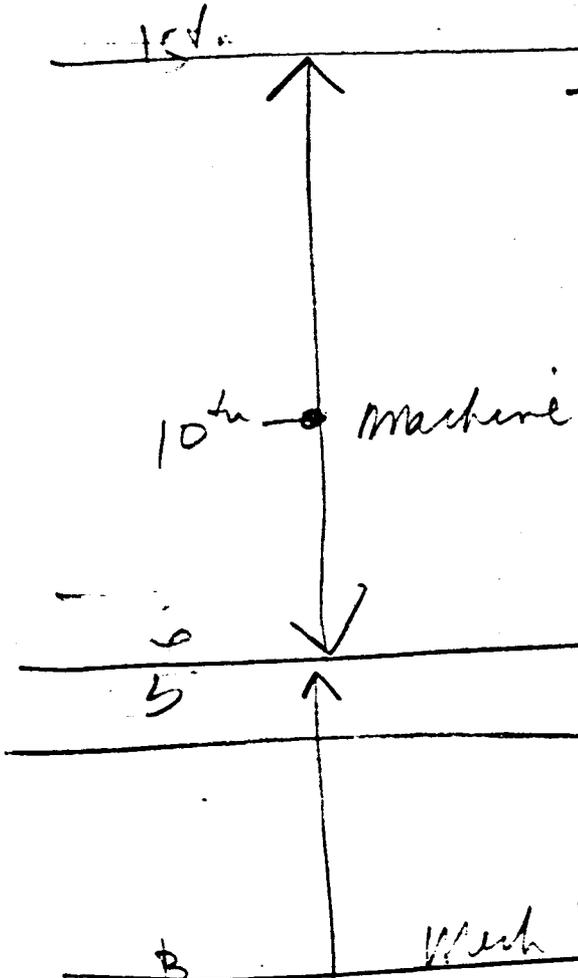
Fire Alarm - motor dampers, smoke det.

Meeting No 5 8-17-76

①

Present: Zeller, BTV-Nielson, Duane Blawie d (part)

- 18 fans in basement all torqued down to a lower output serving up to and incl. 5th floor (See output of fan on schedule)



Also more fans on 10th floor which come from 15th floor have been torqued down and coils and intake blocked off to lower output. All duct run capacity designed for future demand brought to beams and capped. Fans are to be adjusted to increase output (Cost?)

Change in fans (axial in lieu of centrifugal) more complicated ^{to} _{output} 16 positions in supposedly can be achieved with new fans.

Reheat piping on floors ~~is~~ ^{is} out at.

Unit 8.

AHU For 2nd Fl Food Service

1. Located on mezzanine level
2. Limited ductwork install per Add 4 (2nd Fl)
3. All ductwork, coils, dampers.
4. Service only Food Service area.
5. Floor openings ~~and~~ not provided
6. Cost probably doesn't take into account the work installed in Add 4.
7. Fan itself, speed, isolation system have been installed.

Vacuum ^{Pump} and tank.

1. Installation to be in unit A, will add capacity to medical vacuum system piping.
2. Check with Plumber on who in shell will be using this.
3. Again distribution riser will be stubbed at shell space.

Air Pump

1. Install in unit A to increase capacity 20[#] system + 100[#] system.
2. Similar riser stubbed to shell space.
3. Add dryer associated with each system not installed.

Still and Demineralizer (Demineralizer)

1. 15th floor space provided for demineralizer and still for distilled water. Tank is being served by Unit A still.
2. Distribution going in dpc, where shell space stubbed out.
3. Water supply may be needed
4. Pads may be needed.

Sand by system

1. Pumps ^{#200 + #200} and pressure converters #5 and #10, also future panel system for dog runs (in animal area).
2. Location #5 = 10th floor
#10 = Basement
3. Serves entire building

Nitrogen, Oxygen, N₂O, CO₂

1. B/C tapped existing system in A. Had run, user piping stubbed at shaft into shell space
2. Additional storage and shell space units may be needed

Booster and Humidification

1. Steam humidifiers within the shell space which require it will have to be added. The steam piping is brought to the shell and will have to be traced.

Chiller not installed (

1. Located in basement of Unit 6
2. Two chillers were installed which can serve B/C Phase I + 50,000 sq. ft. of additional capacity at which time an additional chiller will be needed.
3. This was not listed in IMPACT report but should have been included in P&ID system needed for shell space

Mechanical System of B/C:

1. Compressor ducted supply and ducted return. All air conditioning provided by ductwork.
2. Floors are divided into quadrants for air distribution from risers. The fans being reduced in output to serve only Phase I area but with residual capacity to cover shell space. Fans must be adjusted and coils and intakes to produce additional air.

3. Heat provided by air and perimeter hot water radiation units. Covers for perimeter may not be in base contract; Check(?)

4. Cooling tower capacity is available for B/C Phase II and is provided on the work of Unit A. This was reinstated in Mod 12-E for Alt. M-5.

Elevators — discussion with D. Barakat

1. Outside consultant did design
Name: _____

2. 1/2 of lowrise and 1/2 of highrise were shelled. NO entrances as walls are core wall (not sure if studs hold deleted), no rails, no machine. Machine location and structure at machines is a mistake. Power? Control panel? Ventilation?
1157100 NO 1157100

Status of Contract Alternates

1. Copy of list received from D. Barakat

2. No statement regarding emergency power status; NEVER IN ATTENTION THEREFORE ALWAYS INURED.

AN OUTLINE OF HSAE TASKS ASSOCIATED WITH UNIT B/C PHASE II LEASING STUDY
TAC JOB NO. 76012
AUGUST 30, 1976

A. Objective

To evaluate mechanical, electrical and plumbing systems and make recommendations concerning the completion of the system in a logical engineering sequence as part of B/C Phase II shell space finishing work.

B. Systems Evaluation

Deferred or incomplete system can be divided into three groups:

1. Central systems

Those which serve the entire Unit B/C building. These systems have a limiting capacity established in B/C Phase documents which will be exceeded during the course of Phase II work, or they have yet to be installed. Identify these systems and provide data about their residual capacity unused in Phase I and recommend when these systems should be installed.

Deferred central systems include:

- a) Chiller No. 6
- b) Standby pumps and convertors for perimeter radiation
- c) Intrusion detection system

2. Regional systems

Those which serve a group of floors or a zone which encompasses several potential users. These systems have been installed in the Phase I construction with builtin capacity for Phase II but have been limited in output. Identify the systems, give data about their residual capacity unused in Phase I. Recommend the basic steps necessary to complete them and the minimum increment of output increase.

Deferred regional systems include:

- a) Fans at Basement Mechanical Room
- b) Fans at 10th Floor Mechanical Room
- c) Fans at 15th Floor Mechanical Room
- d) Reheat systems
- e) Laboratory vacuum pump and tank
- f) Still and demineralizer
- g) Nitrogen system
- h) Oxygen system

- i) N₂O system
- j) CO₂ system
- k) Fire alarm system
- l) Cable tray
- m) Intercom system
- n) Air pumps 20 psi and 100 psi

3. Special Service Systems

Systems which serve a single user or type of user. These systems have been only partially installed or deferred entirely. Identify the systems and give recommendations regarding the proper time to install them.

Special Service Systems include:

- a) Air handling unit for Food Service 2nd Floor
- b) Panel heating system for Animal Quarters
- c) Steam humidifiers for environmental rooms
- d) Fume hood fans and risers

C. Relationship of systems to Shell Space users:

- 1. List all systems serving each shell space user on design development drawings. Give system numbers, loads, etc.
- 2. List additional system requirements for each shell space riser, if available, vacuum, air distilled water, nitrogen, oxygen, N₂O, CO₂, steam humidifier, fume hood, fire alarm, intercom, intrusion detection.
- 3. Architectural requirements associated with systems deferred, such as, louvers, walls, pads, waterproofing, floor structure, acoustical isolation, lighting, accessories, beam openings, etc.

D. Make recommendations concerning development of shell space based upon phasing the installation of critical mechanical, electrical, elevator systems or combinations of same.

E. Review status of code requirements that may have changed and influence development of Phase II shell space.

F. Estimate time necessary to complete contract documents for recommended shell space packages.

G. Evaluate Phase I cost records and advise concerning method of contract award for shell space packages.

H. Consider influence of completion of Medical Records (Floors 1 and 2) OPD Administration (Floor 2), Business Office/Admissions (Floor 2), and Ophthalmology (Floor 9) on completion of building systems and packaging of development.

AN OUTLINE OF TASKS FOR ELEVATOR CONSULTANT

Unit B/C Phase II Leasing Study

TAC Job No. 76012

30 August 1976

A. OBJECTIVE:

To evaluate elevator system and make recommendations concerning the completion of the system in a logical engineering and construction sequence as part of B/C Phase II shell space development.

B. Systems Evaluation:

1. Explain the operation of the elevators as installed in B/C Phase I. What are the capabilities, the time intervals, etc.? When will these be exceeded if shell space is developed on a floor by floor basis or if it is completed randomly throughout the building.
2. Will completion of shell space on Floors B, 1 and 2 only have a substantial effect on elevator service? Explain.
3. At the time elevator equipment was deleted what was the proposed method of completing the installation? Are there any logical steps or phases in the completion that could be taken?
4. Give status of the following in Phase I and the anticipated method of completing in Phase II: Elevator control panel and wiring, rails, ropes, brackets, platforms, cabs, entrance frames, entrance thresholds, machine beams, hoisting motors, motor generators, fire emergency controls, etc.
5. Are there any code changes that have occurred or are likely to occur that would materially affect the Phase II work or the entire elevator system?
6. Are there peculiar construction problems involved with completing elevators in the completed Phase I building? Service interruptions, integration of control wiring, entrance installations, hoisting problems, access problems.
7. Give recommended phased completion of elevator system.
8. Estimate time necessary to complete contract documents for recommended completion of elevator system.

THE ARCHITECTS COLLABORATIVE, INC.
HEALTH SCIENCES ARCHITECTS & ENGINEERS, INC.

UNIVERSITY OF MINNESOTA
HEALTH SCIENCES EXPANSION

MEETING NOTES

DATE : August 31, 1976
PRESENT : Robert Dickler, Greg Kujawa, U of M; Paul Maupin,
Bob Swanson, Linda Satoris, HSPO; John Scott, Herb
Zeller, TAC
NOTES BY : Herb Zeller
SUBJECT : Funding of Shell Space Users

The development of B/C Shell Space must respond to the schedule demands of the users. Preliminary indications from the B/C Shell Space Leasing Study are that mechanical equipment items will have a limited influence on the completion of shell space with two exceptions - elevators and chiller No. 6. Therefore, information is needed about projected dates of occupancy for the various users. The latest source of this information is in the IMPACT Report.

Speaking for the Hospital space, Bob Dickler stated that IMPACT dates are not representative. He said no additional clinical areas can be funded until a clinical census is completed and this cannot begin until the Phase I work is complete because present clinical areas are at capacity. It will take approximately a year to complete such a census. Once this is done, a Certificate of Need can be prepared and submitted to the Metropolitan Health Board. Assuming it is approved and the money is available, work could begin on the 4th Floor clinics in 1979 at the earliest.

The 15th Floor may be developed as a Detoxification Center which is a departure from its intended use for an ambulatory care unit. This decision is heavily influenced by the governor's office and political considerations outside the Hospital but it is likely that it will be made by January, 1977. TAC is not to consider the 15th Floor as going ahead nor as a De-Tox facility in pursuing the Shell Space Study.

Dickler listed his best guess as to when the various clinics will start construction as follows:

Level 4 - Dermatology	1979
Level 5 - Neurology	1979 - 1981
Neurosurgery	1979 - 1981
Level 6 - Psychiatry	1981 - 1983
Psychology	1981 - 1983
Level 7 - Unknown	
Level 15 - Food Services	1983 - 1985

All of the Hospital space is considered growth space and should remain so in the B/C Shell Space Study.

Dickler will confirm his projections in a memorandum on the subject for distribution to all present.

Departmental space in the shell space areas will be developed sooner indicated Maupin. He indicated that IMPACT Report dates can be considered start dates rather than finish dates for construction.

Food Service will be developed very shortly but after a study is made by a food service consultant hired by the department.

A fund drive to begin in Fall, 1976 will heavily influence the actual completion of shell space areas and dates will be easier to project. In addition, the result of the November, 1976 national election will influence these projections.

Bob Swanson will review and update this information and advise.

cc: All present

UNIT B/C SHELL SPACE LEASING QUESTIONNAIRE
AUGUST 31, 1976

FUNDING INFORMATION:

1. Give certification of need application date and projected approval date. Explain what is needed from Architect to complete this application.
2. Give date of funding application. If no application has been made give projected date.
3. Amount and source(s) of funds sought?
4. Date when funds will be received?
5. What are the constraints placed on the method of contract award by the funding agency? Give any special contract document requirements or bidding requirements.

OTHER INFORMATION:

1. Required date of occupancy in Unit B/C?
2. Are major changes in program and/or HVAC, electrical and plumbing requirements anticipated. If so, explain.
3. Date ready for preliminary design meetings with architects.

THE ARCHITECTS COLLABORATIVE, INC.
HEALTH SCIENCES ARCHITECTS & ENGINEERS, INC.

UNIVERSITY OF MINNESOTA
HEALTH SCIENCES EXPANSION

MEETING NOTES

NOTES BY : Herb Zeller
DATE : September 1, 1976
SUBJECT : Construction Schedule Influences on Shell Space Development
PRESENT : Dan Walgenback, Sheehy Construction Co.; Bob Swanson, HSPO;
Herb Zeller, TAC

A review of shell space areas which have been authorized to be completed was made. These areas are currently in program review and preliminary layout work has begun by TAC. The areas include:

Level 1 - Medical Records located in the area below the auditorium.

Level 2 - Medical Records in the block of shell space in the Southeast corner within Stacks 7 and 8.

Outpatient Administration and Business Office and Admissions in the shell space in the Northeast corner.

Level 9 - Ophthalmology comprising all unfinished area on the floor.

On the current schedule of construction dated August 17, 1976 finish work in the above areas is indicated to start with integrated ceiling work as follows:

Level 1 - Early Start: December 3, 1976

Late Start : April 26, 1977

Level 2 - Early Start: March 1, 1977

Late Start : May 2, 1977

Level 9 - Early Start: February 18, 1977

Late Start : May 6, 1977

Sheehy having first hand knowledge of the progress of the work was asked to recommend critical dates which contract information must be available to include the finishing of these shell space areas in harmony and sequence with the Phase I work. Since general construction work cannot proceed until electrical distribution and ductwork above ceilings is roughed in, Sheehy will review the projected schedules of these items with the Electrical and HVAC contractors.

Dan Walgenback confirmed that completion of these shelled areas out of sequence would create additional costs because of the greater difficulty of bringing materials through areas more advanced in construction and the lack of continuity and efficiency of the construction operation. Similarly, the upper floors of the building would be best completed in their entirety on a floor by floor basis because the difficulty of bringing materials and workmen into the area. Currently the materials hoist is located in the unused high-rise elevator shaft. Once this hoist is removed the only alternative will be to bring materials up an elevator. If shell space is not completed until after the Phase I areas are occupied the problems of materials access are compounded. An elevator would have to be taken out of service, temporary partitions erected to demise off the construction area from occupied spaces.

Dan Walgenback indicated that the recent construction schedule printout was reasonably representative of the construction sequence for the shell of the building but less so for finishing. He said it is already being revised. Although he will be turning over Floors 11 and 12 first and that finish work will therefore start earlier at these floors than below, he intends to move forward with completion with any other areas that are ready.

The completion of contract work in shelled areas essentially coincides with the completion of corewall work and the final sealer coat on concrete slabs.

A logic diagram of the recent computer schedule printout has not been made available to Sheehy.

Copies of Floors 1, 2 and 9 giving block layouts of shell space to be completed will be forwarded to Dan Walgenback.

Walgenback recommended that contract letting be handled as a change order rather than a complete bid procedure to facilitate its inclusion into the project.

MISSISSAUGA P-000000
J. SCOTT

THE ARCHITECTS COLLABORATIVE, INC.
HEALTH SCIENCES ARCHITECTS & ENGINEERS, INC.

UNIVERSITY OF MINNESOTA
HEALTH SCIENCES EXPANSION

MEETING NOTES

DATE : September 2, 1976
PRESENT : Charles Hodges, Campbell & Co.; Bob Swanson, HSP0;
Herb Zeller, TAC
SUBJECT : Shell Space Development and Phase I Schedule Implications
NOTES BY : Herb Zeller

Meeting discussion topics:

1. Discussion of schedule demands and effect on schedule associated with shell space development on Levels 1, 2 and 9.
2. Review Phase I Schedule and familiarization of terms.

All areas of shell space on Levels 1, 2 and 9 are currently being developed by TAC for inclusion in the construction. Medical Records on Levels 1 and 2 is located in Stacks 7, 8, and 9 where construction is far less advanced (steel is being erected) than the balance of Floor 2 where Outpatient Administration, Social Services, Admission/Business Office and Nutrition are located. The spaces on Levels 1 and 2 consist all of office areas of the same level of quality as elsewhere. On Level 9 shell space development will be for Ophthalmology and will consist of research laboratories in the B-link and office space in building C.

Hodges was asked to provide the critical dates for beginning of various trades associated with development of these areas assuming contract information is made available to the contractors so that shell space work can be completed in sequence with the balance of the floor, or alternatively, to consider shell space completion within the overall contract schedule by absorbing float time within it and/or by extending durations as necessary but minimizing overall project delay. Consideration of preconstruction time for shop drawings, fabrication, etc. will be made.

Assuming contract information can be made available to phase in with construction on the three floors - and this appears likely because of the intent of finishing from the top down and the lag in finishing of Stacks 7-8-9 - the information would have to be in the form of a Change Order to the base contract; to let separate contracts would result in difficulties in coordinating responsibilities on the project and may require duplication of costs for temporary facilities, storage, etc.

Small scale plans were given Hodges to use as reference to describe the amount and type of work to be done.

Hodges will provide a report in two weeks on his findings.

The B/C Phase I schedule was reviewed. Hodges clarified that 4 - series numbers were the last operations in shell space areas. This work involves completion of core drywall. The start of finishing work is indicated by 5- and 6- series numbers beginning with integrated ceiling work. It was pointed out however; that horizontal ductwork, horizontal sprinkler work and branch ceiling conduit included distribution associated with space development on the floor and this work proceeded prior to integrated ceiling. In the case of Level 2, this horizontal ductwork and sprinkler work has begun.

Hodges stated that he has completed a logic diagram for the 12th Floor which is representative of all finished floors and will provide copies to the Hospital and to TAC. In addition, a more detailed work schedule computer printout will be available next week and a copy will be given to TAC.

In response to questions about long float times between early start and late start Hodges stated that this should not be a matter of concern because the contractor has been close to the early start dates. Overall float through the sequence of work items on a given floor must be shared by all trades which keeps pressure on the up front trades to start early.

Logic errors were discussed and Hodges indicated that they are being cleared up and should be brought to their attention for correction.

"Horizontal" work versus "Finish" work on items such as ductwork means are horizontal main ducts and branches with finish including only final connection to diffusers.

A schedule for B/C Phase II Leasing Study was handed Hodges and Swanson. Participation by Campbell and Co. will be needed to complete the study. The primary focus of that participation will be on the development of shell space described above and that for Food Service.

CC: ALBERT
C.S.D.

THE ARCHITECTS COLLABORATIVE INC.

MEMORANDUM

TO: John Scott, Herman Zinter

FROM: Herb Zeller

DATE: 9 September 1976

RE: B/C Shell Space Floors 1, 2, and 9
Completion Schedule

Attached is a schedule for completing B/C Shell Space design work, contract documents, and contract modification in order to permit construction to begin in sequence with Phase I work. This will allow the work to be completed and the areas to be occupied at the same time as the balance of the floor in accordance with the desire of the U/M Hospital.

Campbell and Company has advised that the installation of integrated ceiling marks the beginning of finish work. However, in any finished area work above ceilings must be completed beforehand. This includes plumbing, ductwork, sprinkler piping and branch ceiling electrical conduit. In addition, a period of time is necessary for shop drawing preparation, fabrication and delivery on the floor itself. However, the Ninth Floor Ophthalmology Department research laboratories require plumbing work that could affect Eighth Floor ceiling installation. The 17 August 1976 schedule indicates that all items usually following plumbing (that is, ductwork, sprinkler work, ceiling conduit) installed above the ceiling have sufficient float time on the dates to absorb the Ninth Floor plumbing work without delay to the job. This assumes the attached schedule is adhered to.

Adequate time required to prepare shop drawings, approve, and fabricate finish work, primarily casework, appears to be available between the projected Change Order date and the Phase I casework installation dates.

The B/C Phase I Schedule acknowledges a second phase sequence of construction operations on Levels B, 1 and 2 resulting from the later start of Stacks 7 - 8 - 9 at the south end of the building. Therefore, a series of comeback operations have been scheduled for horizontal ductwork, plumbing, sprinkler and branch ceiling conduit. After this second series of operations is completed the work following proceeds on a full floor basis beginning with cable tray, integrated

Memorandum
U Minn/Zeller
9 September 1976
Page Two

ceiling, partition studs, etc. -The critical start date for inclusion of shell space on Levels 1 and 2 is selected to integrate the new work with this second phase series of construction operations.

The critical date to meet in the Phase I Schedule is established as 31 January 1977 for start of installation of horizontal ductwork on Floors 1, 2, and 9. This date is past the late Start Date of 19 January 1977 for Level 1 but this is not considered serious since the area (Stacks 7, 8, 9) is behind the balance of the floor throughout.

It falls midway within the float time allowed for starting horizontal ductwork on Levels 2 and 9. This means that overall float time on these floors is reduced and subsequent finishing operations must be ready to proceed immediately as work ahead of them is completed. It is not desirable to allow the critical start date to slide beyond 31 January 1977 as it further erodes float time.

It may be desirable to expedite Medical Records for a critical start date of 19 January 1977 coinciding with the late start for this area on Level 1. Medical Records being a two floor occupancy should have both floors included in the same construction package in any event.

Working backwards from the critical date for start of construction the following activities and time durations have been estimated.

	<u>Activity</u>	<u>Start Date</u>	<u>Duration</u>
1.	Fabrication and Deliver Ductwork and Sprinklers	1- 3-77	4 weeks
2.	Prepare and Approve Shop Drawings, Ductwork, and Sprinklers	12-20-76	3 weeks
3.	Review/Approve Modifications Issue Change Order	12-13-76	1 week
4.	Price Modification	11-22-76	3 weeks
5.	Prepare Modification	11-15-76	1 week
6.	Prepare Contract Documents	10-18-76	4 weeks

Memorandum
U Minn/Zeller
9 September 1976
Page Three

	<u>Activity</u>	<u>Start Date</u>	<u>Duration</u>
7.	U/M Hospital Approval Design Development Drawings	10-11-76	1 week
8.	Prepare and Review Schematic Design/Design Development	8-23-76	7 weeks
9.	Start Interview Users Assemble Program	8-18-76	

This first package of B/C Phase II Shell space should include all undeveloped areas on Levels 1, 2 and 9 for efficient prosecution of the work and at minimum cost.

Therefore, other proposed users of these floors must be authorized to proceed. These include:

Level 1

Environmental Services
Social Services (part)

Level 2:

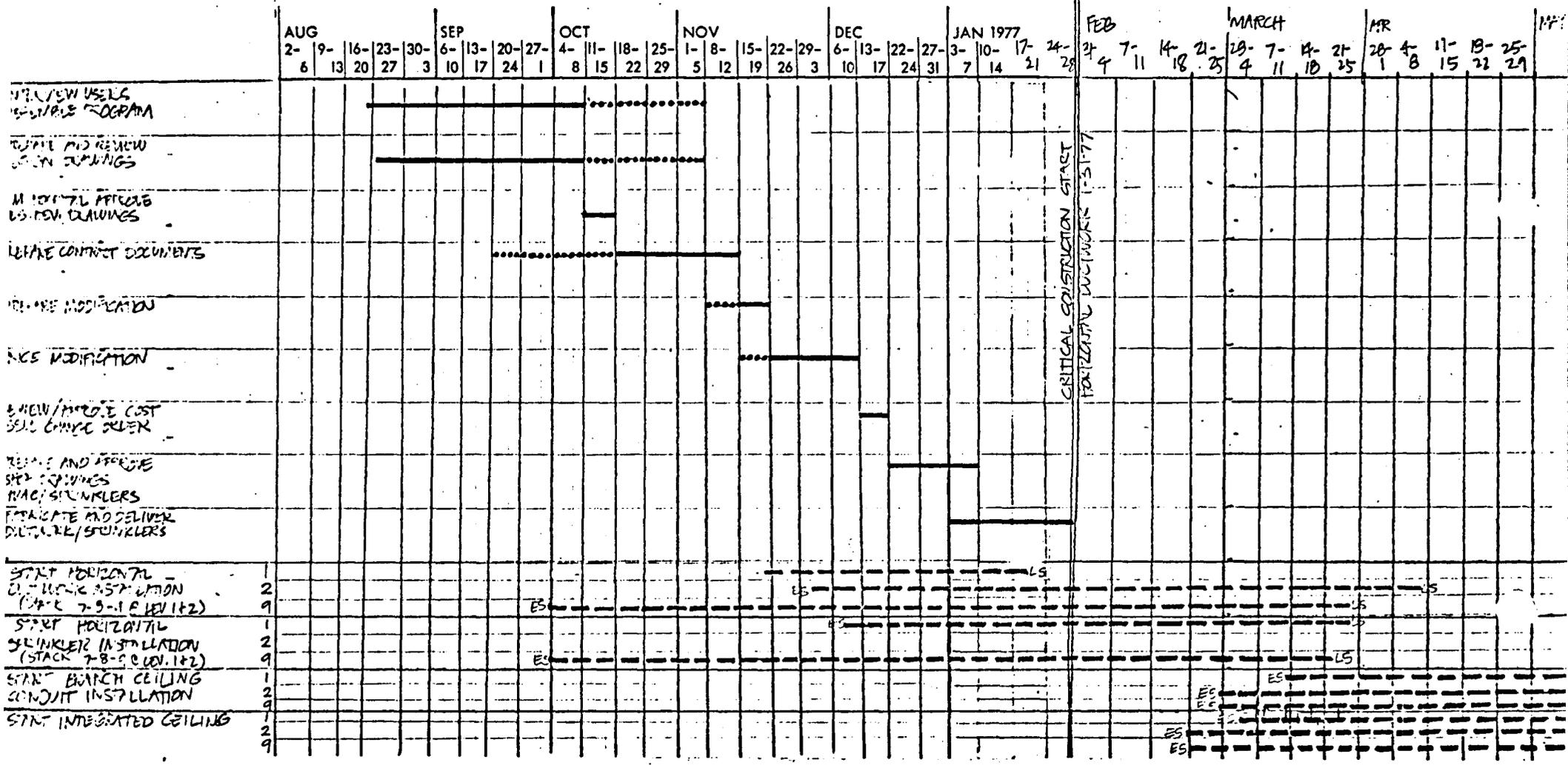
Nutrition
Transportation Distribution
Social Services (part)
Pedestrian Concourse

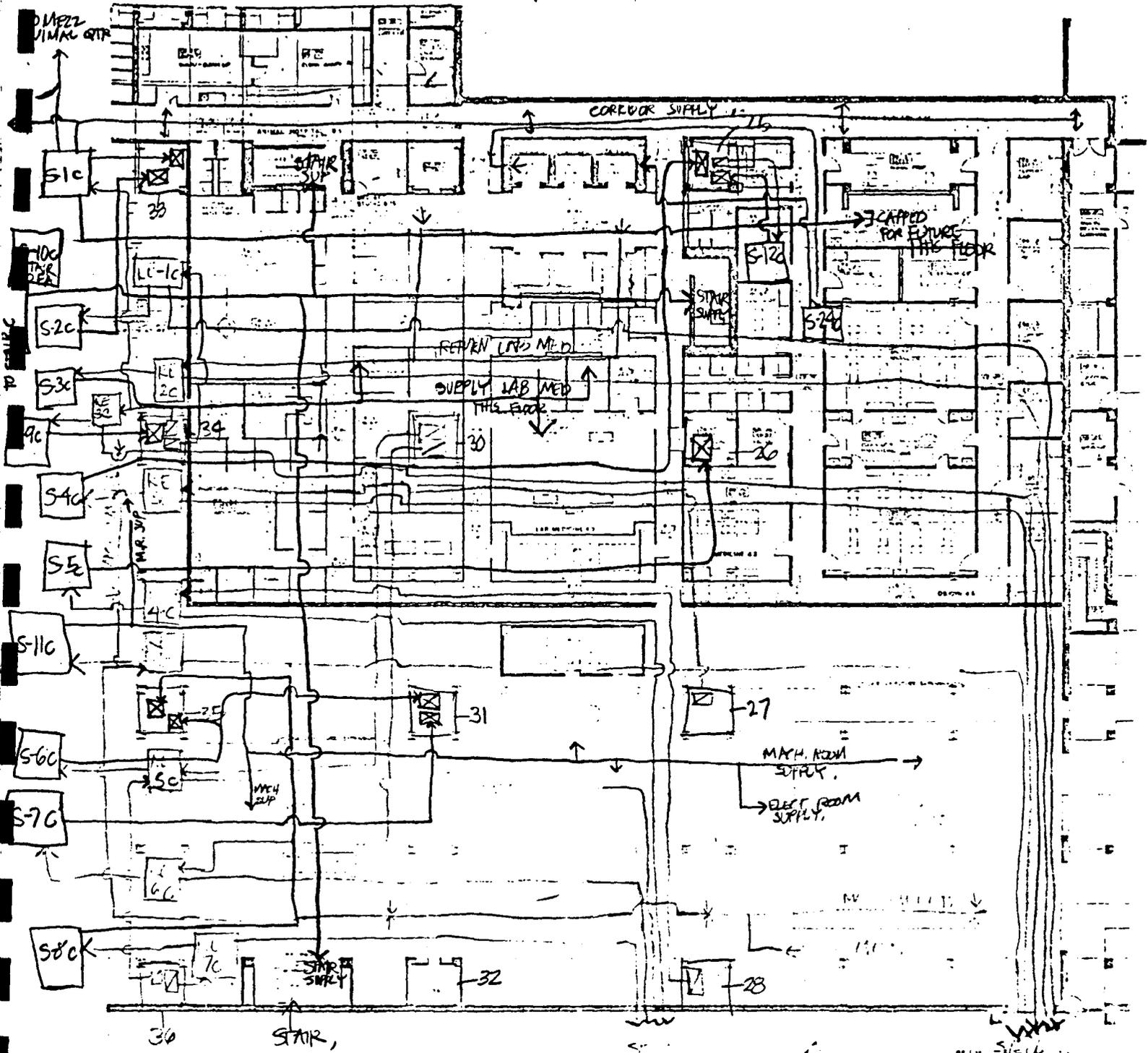
Review with the Schedule Consultant and the Contractors is necessary so that they can consider the 31 January 1977 start date in planning the start of Phase I work on these floors. The schedule allows for early start of ductwork and sprinklers far in advance of 31 January 1977, which still could happen provided the B/C shell space work follows directly in sequence with it.

HGZ:MR

SCHEDULE FOR COMPLETION REDESIGN B/C STEEL SPACE FLOORS 1, 2 AND 9.

EARLY START FLOAT LATE START 847-76 SCHEDULE





STACKS
9
8
7

STACKS
4
5
6

STACKS
1
2
3

STACK ZERO
(LINK)

TOTAL SFN 5706

ASSG SFG 8332

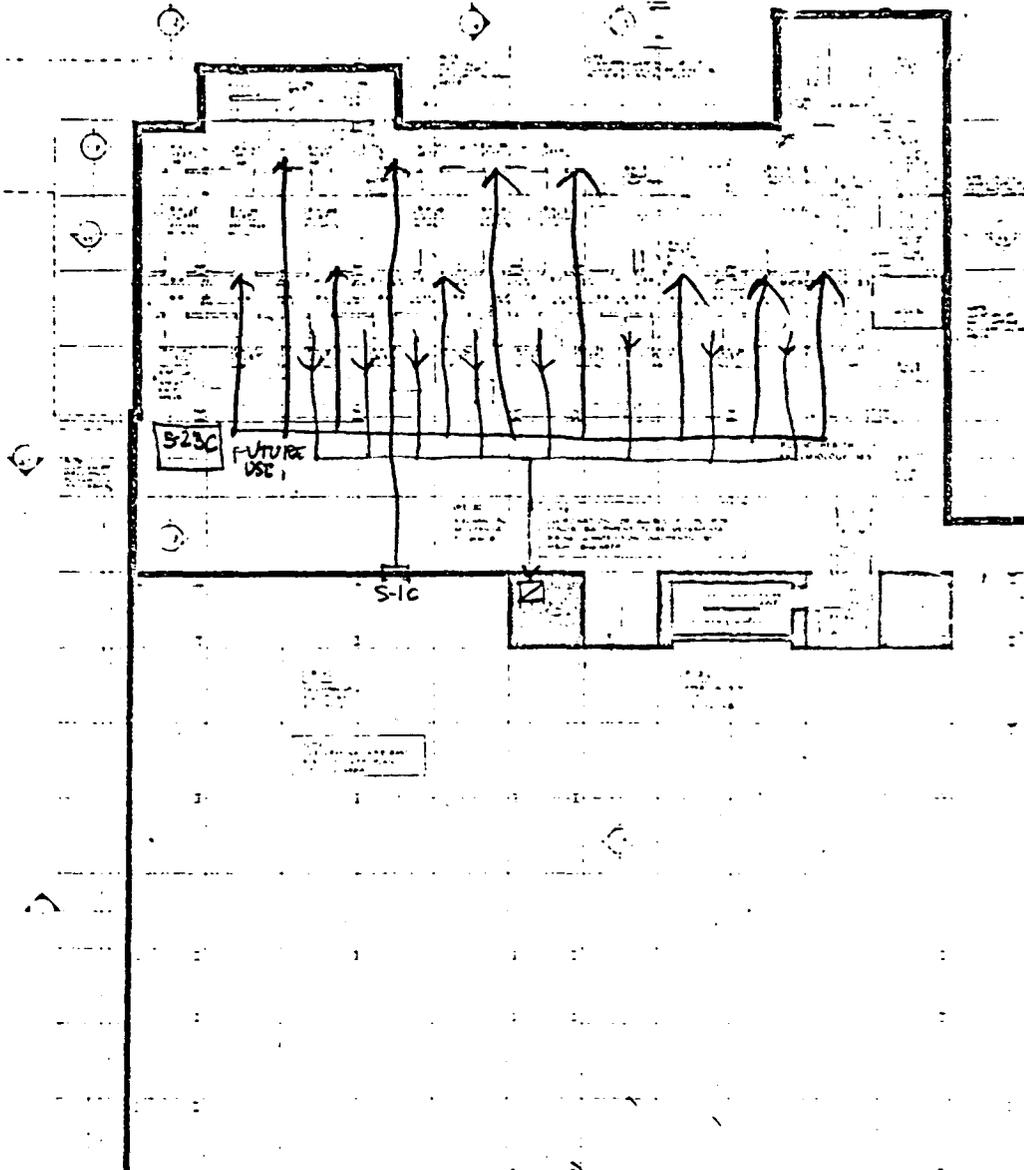
TOTAL SFG 55771

MEDICAL ART & PHOTOGRAPHY

LAB

UNFINISHED SPACE

11077



TOTAL SFN 4,593

ASSOC SFG 7872

TOTAL SFG 11077

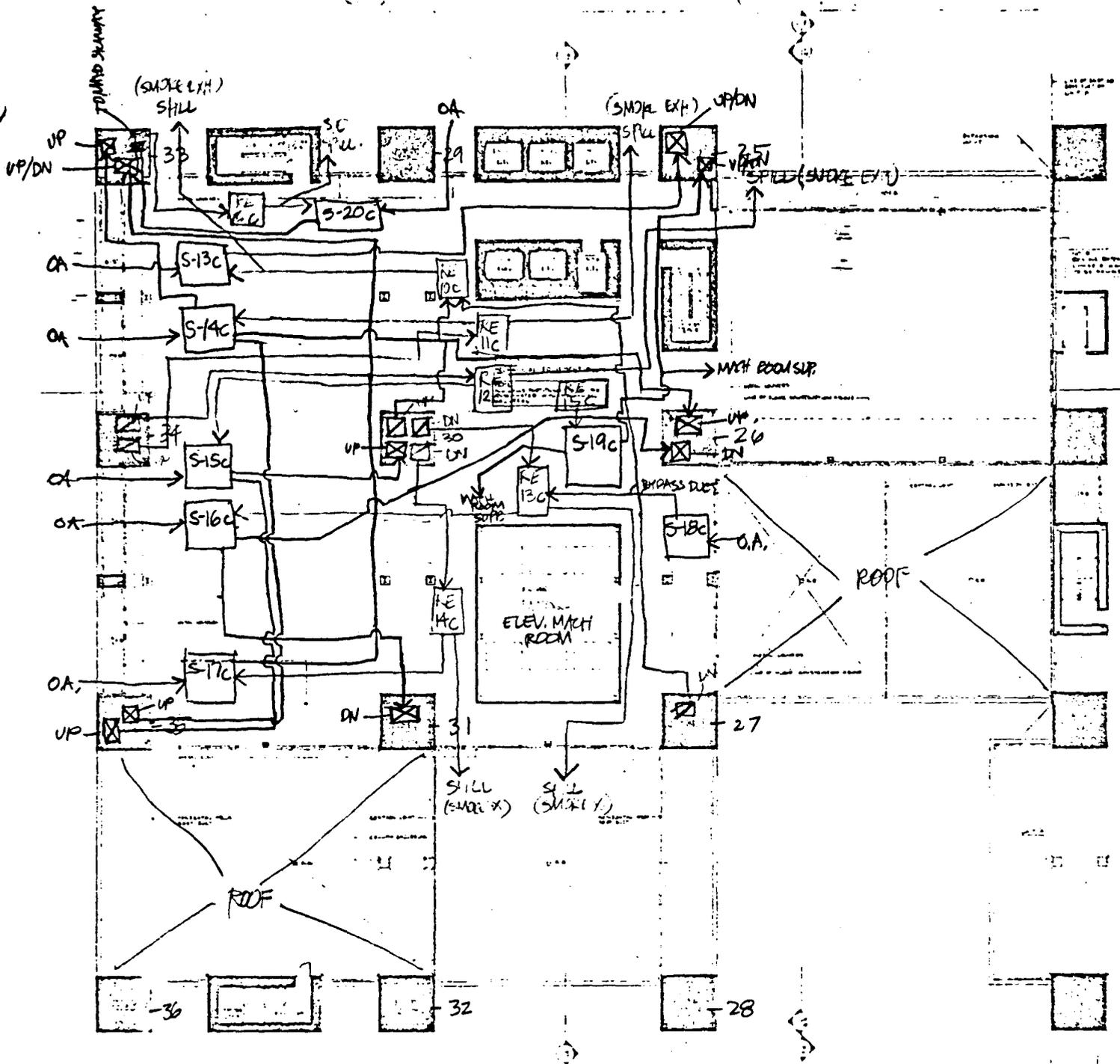
MICROBIOLOGY



UNIVERSITY OF MINNESOTA
HEALTH SCIENCES EXPANSION

THE ARCHITECTURAL FIRM OF CAMPBELL, MASSER & ENGINEERS, INC.

B·C E₁



TOTAL SFG 23471

MECHANICAL EQUIPMENT SPACE

9-10-76

HVAC SYSTEM SERVICING STEEL SPACE LEVELS 1, 2 + 9

AREA-	SUPPLY	RETURN	OTHER AREA ON SAME LEVEL SERVED BY SYSTEM
BUSINESS OFFICE/ ADMISSIONS	S-6c (SHOULD BE S5c)	RE-4c	CONCOURSE (PART) STEELED CONCOURSE (PART)
ACCOUNTING (SOUTH OF S2a) OPD ADMIN, SOC. SERV.	S-7c	RE-3c	MEDICINE OPD CLINIC (NO.) STEELED CONCOURSE (PART)
NUTRITION (IF TO SOUTH OF ELEVATORS)	S-6c		ELEVATOR LOBBY MEDICINE OPD CLINIC (WEST)
	THIS POSITION IN SHALL PROVIDES CONCOURSE SERVICE	RE-5c (SHOULD BE RE-6c) ?	ELEVATOR LOBBY MEDICINE OPD CLINIC (WEST)
MEDICAL RECORDS (LEVEL 2)	S-8c*		MEDICINE OPD CLINIC (SOUTH)
		RE-7c* RE-14?	MEDICINE CLINIC (SOUTH)
MEDICAL RECORDS (LEVEL 1)	S-2c	RE-1c*?	

*

TO MAKE TAPS TO TRUNK CEILING OF B/C PHASE I
SPACE MUST BE OPENED IF SHELL SPACE COMPLETION
NOT SCHEDULE WITH BALANCE OF FLOOR.



UNIVERSITY OF MINNESOTA
TWIN CITIES

Health Sciences Planning Office
Physical Planning
Box 75 Powell Hall
4103 Powell Hall
Minneapolis, Minnesota 55455
(612) 373-8981

October 7, 1976

Mr. John Scott
The Architects Collaborative, Inc.
46 Brattle Street
Cambridge, Massachusetts 02138

SUBJECT: Building B/C
Phase II

Dear John:

This letter verifies our telephone conversation of October 5, 1976, pertaining to Phase II of Building B/C.

The University directs the architects to prepare the necessary Building B/C Phase II drawings and specifications for standing bidding procedures. It is my understanding that your staff and Campbell & Company personnel have developed a schedule logic for this effort.

Yours truly,

Paul J. Maupin
Health Sciences Planning Coordinator
Health Sciences Planning Office

PJM:rm

cc: Robert Dickler
Clinton Hewitt
Eugene Kogl
Paul Kopietz

RECEIVED
OCT 15 1976
THE ARCHITECTS COLLABORATIVE, INC.



THE ARCHITECTS COLLABORATIVE, INC.

JEAN B. FLETCHER
1945 1965
ALTER GROPIUS
1945 1969
ORMAN FLETCHER
JOHN C. HARKNESS
SARAH P. HARKNESS
DUIS A. MEMILLEN
RICHARD BROOKER
ALEX CVIJANOVIĆ
HERBERT GALLAGHER
WILLIAM J. GEDDIS
ROLAND KLUVER
PETER W. MORTON
H. MORSE PAYNE
ERNEST L. BIRDSALL
TREASURER

14 October 1976

Mr. Clinton N. Hewitt
Assistant Vice President
Physical Planning
University of Minnesota
340 Morrill Hall
Minneapolis, Minnesota 55455

ROBERT F. CRANE
HOWARD ELKUS
ALLISON GOODWIN
BASIL HASSAN
JOHN HAYES
JOSEPH HOSKINS
LEONARD NOTKIN
RICHARD SABIN
DAVID SHEFFIELD

Dear Mr. Hewitt:

GAZI B. AHMED
ROBERT BARNES
KENDALL P. BATES
SERGIO BERIZZI
SERGE CVIJANOVIĆ
ROYSTON DALEY
ROBERT DEWOLFE
GREGORY DOWNES
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EDMUND SUMMERSBY
KENNETH TAYLOR
MALCOLM TICKNOR
ROBERT TURNER
ROBERT WILSON
LAURENCE ZUELKE

As you know TAC has been authorized to proceed with design work for shell space areas on Floors 1, 2 and 9 of Unit B/C. The Hospital has indicated that the areas on these floors for Medical Records, Business Office, Admissions and Outpatient Administration are necessary components to the operation of Unit B/C and their intent is to take occupancy at the same time as the Phase I work is completed. We have also pointed out that these functions are presently occupying areas elsewhere in the Health Science complex and that their B/C move-in schedule bears a direct relationship to the start of Diehl Hall remodeling and the Pharmacy - Nursery Options.

There are two methods of contract award that can be employed to incorporate the B/C Shell Space work, (a) a negotiated Change Order to the Phase I construction contracts, and, (b) competitive bidding or a new prime contract(s). The IMPACT Report indicates that the construction cost of shell space work is approximately \$785,000 for Floors 1 and 2 and \$1,040,000 for Floor 9. The method of contract award for this volume of work is an important and urgent decision needed from the University.

There are two alternatives available for awarding this work, (a) a negotiated Change Order to the Phase I construction contract, and (b) competitive bidding of a new prime or multiple prime contract.

When making this decision, we believe several important matters must be considered.

1. Effect on Schedule

As indicated above, the date of completion of the Shell Space areas will influence the operation of Unit B/C as a whole. Furthermore, the date that the users take

occupancy in Unit B/C will establish the schedule for beginning other projects being contemplated. Therefore, a delay to completion of B/C Shell Space will be compounded, and costs resulting from a delay will be multiplied, for projects elsewhere in the Health Sciences complex.

We have reviewed the extent of work involved on Floors 1, 2 and 9 with Campbell and Co. and with Sheehy Construction Co. Both have assured us that the work can be completed without an extension of the present floor occupancy dates by adding the required manpower to the project. With a very intensive effort on our part, and with the full cooperation of the users and the HSPO, we have stated that modified contract documents can be completed by mid-November. This will be in time for the added work to be included as a negotiated Change Order to the Phase I contract. This procedure maintains the current schedule.

In order to issue the work for competitive bidding an entirely separate set of Contract Documents will have to be prepared. We estimate that to complete them, to have them reviewed, approved and bid, to have new contracts prepared, and to have work begin will result in an overall delay of 5 months. Thus, at the earliest, work would begin mid May, 1977. This would require new prime contractor(s) to work in the building simultaneously with Phase I contractors. We believe this will cause conflicts in the Phase I construction operation and result in a delay to it as well as create other problems mentioned below.

If construction under a competitive bid procedure is initiated after the completion of B/C Phase I, work on the shell space areas would begin about October, 1977, a delay of 12 months over the Change Order method.

The time required to complete the work will be extended under a separate contract agreement because of the necessity to repeat the process of submittals and approvals of manufacturers products and setup for production.

Attached is a diagram showing the impact on the schedule of occupancy of Floors 1, 2 and 9 that we have described.

2. Effect on Cost

The impact of method of award on costs is difficult to predict. The track record of the existing contractors

regarding pricing of modifications may temper or aggravate the concern that a negotiated Change Order would carry an inherent cost penalty.

Escalation in the cost of construction during the coming months will affect the cost of the work under both the negotiated Change Order and the bid procedure. The longer the delay in the start of construction, the greater the increase. The bid procedure would be at a greater disadvantage in this case.

It is likely that there will be added costs resulting from overlaps and duplications contained in two or more separately bid contracts for work on the same site. Included would be added overhead, insurance, temporary facilities, hoisting, supervisory personnel, coordination responsibilities and scheduling. Other costs are likely to arise out of conflicts between new multiple prime contractors working in the same area and on the same building systems. The Phase I contractors may claim additional payment for disruption, damage and delay to their work.

Cost escalation to future projects dependent upon the completion of shell space is an indirect cost factor to consider.

3. Responsibility for Phase I Systems

The Phase I contract includes the installation of all major mechanical systems some of which will have to be modified, supplemented or extended as part of shell space work. Maintaining a clear definition of who is responsible for the performance of these systems in accordance with Specifications, the maintenance of valid guarantees, and the overall coordination of the component parts of the systems could become seriously compromised if a new contractor becomes involved.

It would not be unreasonable for a Phase I supplier or contractor to refuse to warrantee his equipment or honor his guarantee if an outside contractor modifies the equipment during the period of coverage. To avoid this problem, the necessary changes to the equipment would have to be given to the Phase I contractors by a Change Order. This further complicates and multiplies the contract Documents necessary to complete the work.

4. Continuity of Quality Standards

The Unit B/C Phase I work has progressed to the point where many manufacturers products, equipment, and finishes have been approved and have established the basic standard of quality, appearance and workmanship for the building. Enlarging the scope of these items in the shell space areas by Change Order would afford longterm advantages in maintenance, and operation as well as provide visual continuity in the building. The competitive bid procedure may result in different products and systems being provided. The time required to submit and review new manufacturers products, prepare and approve new shop drawings, fabricate and deliver the material will extend the schedule. The alternative, to limit bidders to previously approved products, will impair the competitive bidding process.

5. Contract Document Preparation

The extent of Architectural services required to modify the existing construction contract is substantially less than that required to prepare documents for a separate construction contract. Under the change order procedure, our work involves adding additional information to an existing set of contract documents. If the work is to be let for bidding, an entirely new set of contract documents is required including General and Special Conditions, Technical Specifications, and a new set of Drawings. Essentially, we would be required to prepare documents for a remodeling project.

We do not have a contract for architectural services for preparing either a Phase II Contract Modification or Contract Documents for a new construction contract.

It is very critical for us to proceed immediately if we are to complete documents for a modification by mid November, 1976. Schedules submitted to the Planning Office and the Hospital show that design development is to conclude on October 15, 1976 at which time we have not been authorized to proceed further.

Clearly, it is of utmost importance to determine the method of Contract award for B/C Shell Space on Floors 1, 2 and 9. Further,

TAC

THE ARCHITECTS COLLABORATIVE

Page 5

we must agree on the basis for architectural services for this work. We are available to discuss this decision with you further at your convenience.

Sincerely,

THE ARCHITECTS COLLABORATIVE, INC.

John Scott

John Scott

cc: Messrs Jim Brinkerhoff
Paul Maupin
E.A. Kogl
Tom Jones
Robert Dickler
HSAE

kw

THE ARCHITECTS COLLABORATIVE Inc.
HEALTH SCIENCES ARCHITECTS AND ENGINEERS, INC.

UNIVERSITY OF MINNESOTA
HEALTH SCIENCES EXPANSION

MEETING NOTES

DATE: 28 October 1976

TAC JOB: 76012

SUBJECT: B/C Phase II - Bid vs. Modification, Floors 1, 2, and 9.

PLACE: Powell Hall, University of Minnesota

NOTES BY: H. Zeller

PRESENT: Messrs: Kogl, Maupin, Hewitt, Brinkerhoff, James - U/Minn.
Messrs: : Scott, Zeller, Blanchard - TAC

Brinkerhoff opened the meeting with a series of questions indicating that he did not see a serious problem pertaining to the Schedule of Occupancy for the shell spares uses. He stated that the users are presently housed elsewhere and can operate away from the clinics in B/C Phase I. Admittedly, this will be a problem for them.

He said that negotiations could be initiated to resolve problems with Phase I Contractors. The Phase I contract allows the University to write additional contracts for the work. He also stated that TAC must have or should have provided for adding Phase II Shell Space.

John Scott stated that Shell Space was selected based upon program rather than a logical construction approach. He further reiterated that problems were likely to occur with two separate contractors on the jobsite simultaneously, such as temporary storage, staging space. There was a need to identify the responsibilities of the two contracts precisely and to deal with problems of voiding warranties and guarantees.

Brinkerhoff agreed that two contracts being carried out simultaneously would not be desirable and questioned the necessity of such a situation. He stated that all work that could not be bid should proceed as a modification. He said that a study should be conducted that focused on problems of contract management with two separate contracts leading to a decision on the timing of the biddable portions of the work. If it is not found that interference is "overwhelming", bid work could proceed.

He expressed a concern about delaying Phase I construction and about cost penalties under Phase I.

THE ARCHITECTS COLLABORATIVE Inc.
HEALTH SCIENCES ARCHITECTS AND ENGINEERS, INC.

UNIVERSITY OF MINNESOTA
HEALTHSCIENCES EXPANSION

28 October 1976

Page 2

Brinkerhoff acknowledged that there would be ramifications for Diehl Hall remodeling. He said that Pharmacy-Nursing feasibility studies should acknowledge potential later occupancy for these users in B/C and a later availability of the space presently occupied.

The question of packaging the work was raised. Brinkerhoff stated that it should go out as a single bid package including Floors 1, 2, and 9. Kogl stated that it should be multiple primes to afford the present contractors the opportunity to bid because he thinks they are likely to be low bidders. Also, he thinks this allows them to see a range of bids for each trade and select the low one, eliminating Premier Electric, which he guesses will be high. Brinkerhoff agreed that the work should be multiple primes, although he expressed reservations about the University doing scheduling and coordination of multiple contracts.

Maupin said that he thought outside pressure from the construction contractors was the fundamental reason for bidding the shell space work. Brinkerhoff agreed that the building was a major multi-million dollar structure, which the industry is watching carefully. He said that there will be continuous construction going on there for many years ahead and many separate contracts let.

TAC will proceed to investigate the implications of bidding and the timing of same, and identify the work that must be issued as a modification.



THE ARCHITECTS COLLABORATIVE INC.

JEAN B. FLETCHER 1965
WALTER GROPIUS 1969
NORMAN FLETCHER
JOHN C. HARKNESS
SARAH P. HARKNESS
LEWIS A. McMILLEN

9 December 1976

RICHARD BROOKER
ALEX CVIJANOVIĆ
HERBERT GALLAGHER
WILLIAM J. GEDDIS
FRANKLAND KLUPER
PETER W. MORTON
H. MORSE PAYNE
ERNEST L. BIRDSALL
TREASURER

Mr. Paul Maupin, Health Sciences Planning Coordinator
Health Sciences Planning Office
4104 Powell Hall
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Minneapolis, MN 55455

ROBERT F. CRANE
EDWARD ELKUS
ALLISON GOODWIN
BASIL HASSAN
JOHN HAYES
JOSEPH HOSKINS
RONARD NOTKIN
RICHARD SABIN
DAVID SHEFFIELD

Dear Paul:

HAZI B. AHMED
ROBERT BARNES
ENDALL P. BATES
SERGE CVIJANOVIĆ
ROYSTON DALEY
ROBERT DEWOLFE
GREGORY DOWNES
PAUL FLYNN
GERALD FOSTER
THOMAS LARSON
RALPH MONTGOMERY
ERRY NEUBAUER
GEO. G. PLATOUNOFF
RICHARD PUFFER
WALTER ROSENFELD
JOHN J. SCOTT
EDMUND SUMMERSBY
KENNETH TAYLOR
MALCOLM TICKNOR
ROBERT TURNER
ROBERT WILSON
LAURENCE ZUELKE

As you know, we have been studying B/C Phase II work on Floors 1, 2, and 9 in order to identify items of work to be completed by modification and reviewing three options for bidding the balance of the Phase II work on these floors. The following report includes a list of items of Phase II Shell Space work we have identified that are most appropriately completed by modification to the Phase I contract. Included in this list are items under the following categories:

1. Work which will be concealed by Phase I construction; such as work above Phase I ceilings.
2. Work necessary to minimize disruption of areas occupied under Phase I.
3. Work which is outside of Phase II contractors zones as identified by the attached drawings.
4. Work required to maintain validity of warranties and guarantees in Phase I contracts.
5. Work included in Phase I but recently redesigned to meet new requirements of Phase II program.

MODIFICATION ITEMS

Floor 1: Architectural

1. Relocate Toilet Room 1-103, revise door 1-101B
2. Relocate South Wall Corridor 1-86 and door 1-85B.
3. Revise South Wall Core 33 and West Wall of Core 38 to Corewall from concrete block. Also lengths of Block wall at passageway to Door 1-101B and at Door 1-101A, changing them to drywall construction (alternatively, revise Doors 1-101A, 1-102A, 1-102B to accomodate furred drywall, type II construction).
4. Relocate South Wall of Cores 37 and 38 to accomodate materials transport access (or include with materials transport general contract modifications).
5. Revise Installation Doors 1-102A and 1-102B.

9 December 1976

Page 2

6. Complete Storage Space (crawl space) below Auditorium.
7. Make provisions to accomodate support of Materials Transport Station.

Floor 1: Mechanical/Electrical

1. Adjust supply air fan to needs of area.
2. Extend return air ductwork to space and resize as required.
3. Tap and extend reheat supply and return piping to area.
4. Delete shell space lighting and associated electrical work.
5. Delete shell space fire speakers and associated work.
6. Stub conduit for lighting and for emergency lighting into area.
7. Add power panel, breakers, and power feeder stubbed into space.
8. Make all changes necessary to relocate Toilet Room 1-103.
9. Install floor outlet conduit in ceiling of machine room or cast in slab, if not poured.

Floor 2: Architectural

1. Revise Storage Room 2-90A and Door 2-90A.
2. Revise Door 2-107B if required for files.
3. Delete Corridor 90 and Door 2-107A.
4. Revise North Demising Partition to carry to structure. Use Type 1B construction to structure in lieu of 6A. Revise ceiling at Medicine Clinic using wall moulding per detail 6/A4-10.
5. Add new door 2-203 at West Wall.
6. Revise Door 2-107B to 3'-0" Door with drywall partition on East Jamb to allow for future files.
7. Provide partition to support Materials Transport Control Station.
8. Make provisions for support of Materials Transport Stations (2).
9. Revise Admissions Area and finish per new layout.
10. Revise Cashiering Windows per new layout. Construct block walls which enclose cashiering function, but leave interior shelled.
11. Revise demising partition at South Wall of OPD (North Wall Medicine Clinic) to type 1B construction between Grids E-10 and E-18 with corresponding ceiling revisions.
12. Revise demising partition enclosing shell space as required to accomodate new plan, except for Glass Entry Wall to Business Office.
13. Revise West Wall of Xerox Room at OPD Area adding door.
14. Complete OAD Relay Room and Nutrition Office because area cannot be isolated for occupied Phase I areas (see plans attached).

9 December 1976

Page 3

Floor 2: Mechanical/Electrical

1. Rough in soil and waste piping for toilet rooms, drinking fountains and sink. Install drinking fountain complete at Admissions.
2. Make all mechanical/electrical provisions to complete Nutrition, OAD Relay Room and Admissions Office.
3. Install trunk and branch ductwork in shelled Cashiering Area, stubbing through block wall to Business Office. Revise as necessary to accomodate new partitioning.
4. Furnish and install reheat coils and piping to serve space.
5. Extend supply and return air branch ductwork from main to wall of Medical Records. Provide branch takeoff devices at main.
6. Run temperature control monitoring signals to control panels as required.
7. Delete shell space lighting and associated work.
8. Delete shell space fire speakers and associated work.
9. Stub conduit for lighting and for emergency lighting into area.
10. Add power panels, breakers, and power feeders stubbed into space.
11. Install conduit and wire in ceiling of First Floor as required to service desks in open landscaped office areas.
12. Install additional address points for all fire management items in data gathering panel.

We request your authorization to issue a modification, or a series of modifications, for the scope of work outlined above.

In order to evaluate the bid options and to open discussion regarding the general and special conditions of the bid contract, we have developed a set of plans showing a proposed Phase II Contractor's Zone. It is intended that Phase II Contractors will be confined to this zone and to the shell space areas they are completing.

The areas included in this zone and the shell space will require early completion, acceptance and turnover for use by Phase II contractors. We propose that the areas be enclosed in temporary partitions in order to isolate them from the balance of Phase I work and the later occupancy of the building.

An overlap in elevator usage will be required, or alternatively, Phase I Contractors should be required to use only Elevators 4, 7, 8, or 9. All materials and workmen for Phase II will enter at Delaware Street where a two truck loading area and outside storage area would be fenced off. A major staging and storage area is proposed for the 8th Floor Shell Space, which will also facilitate installation of plumbing work for the 9th Floor. Lesser staging and storage areas are provided at the First and Second Floors.



THE ARCHITECTS COLLABORATIVE INC.

9 December 1976

Page 4

We are recommending that the Nutrition Offices, the OAD Relay Room, and the Admissions Office be completed by modification. The admissions Office can function when Phase I occupancy is taken and access to the Medicine Clinic, escalators, and elevators is maintained along the passageway south of the Staff/Student elevator bank.

In order to maintain separation of the Phase II work, the East Corridor of the Medicine Clinic will be closed and devoted to Phase II Contractors' use. Only emergency egress to the stairs will be allowed. Two examination rooms will be inaccessible and temporary doors are necessary for use of the devisible seminar room until Phase II is complete. Alternatively, relocate existing doors as a modification.

We are also recommending that demising partitions on the North and South sides of the Medicine Clinic and the East side of the Admissions area be extended to the structure above to afford maximum isolation of the areas from construction noise and dust.

We have indicated that Elevators 5 and 6 will be devoted to Phase II personnel and materials respectively. Elevator 4 will not stop at the First Floor. Therefore, student, staff, and patient circulation between Floors 1, 2, and 3 would be directed more heavily to the escalators. For access to upper floors, elevators 4, 7, 8, and 9 would be used. Service to Floor 1 from the service corridor must go to Floor 2 via Unit A elevators and then to Floor 1 via B/C Patient elevators.

It is the intent to provide distinctly defined areas for Phase I and Phase II contractors operations. However, the extent to which these areas are separated by partitions could be the subject of negotiation with Phase I contractors and the timing of the Phase II work. We anticipate that at a minimum, secure storage areas will be required.

The schedule of completing Phase II is being studied and we will shortly issue a more detailed review of the bid options available. There are the following basic steps established. Contract Document preparations for the bid work is already in progress. We estimate that we will have bid documents completed approximately June 1, 1976, assuming completion of design development for 9th Floor by the end of December, 1976, and a timely decision on modification work.

Modification Drawings must be issued no later than 1 February 1976 for work above ceilings. It should be noted that the change in the construction schedule and the contract time requirements (Section 01200, Para. 3.1G) for finishing the Second Floor has resulted in integrated ceiling proceeding earlier than originally anticipated. This means that items that should be installed above this ceiling will have to be accomplished by working through the ceiling grid, a more difficult procedure which may increase the cost of the modification work.



THE ARCHITECTS COLLABORATIVE INC.

9 December 1976

Page 5

The bid portion of Phase II is estimated to be awarded approximately 1 August 1976, if the work is bid immediately after the documents are available. There will be a period of time required for the contractor to mobilize, which could take anywhere from one to two months under normal conditions. Thus, an effective work force will probably not be on the job site until about 1 October 1977.

This bid procedure is not distinctly different from a "fast track" approach or from the delayed bid approach. We will demonstrate this more clearly with a construction schedule of the three bid options.

The important issue that we cannot assess is the impact of the Phase II work on the Phase I schedule and cost. This must be determined by direct negotiation with Phase I contractors. The attached plans were developed to act as the basis for such a negotiation.

It is suggested that the approach that we have outlined be reviewed, commented upon, and further detailed discussion and negotiation be pursued with appropriate parties. We hope that this can begin during the week of 13 December 1976.

Very truly yours,

THE ARCHITECTS COLLABORATIVE, Inc.

HERBERT G. ZELLER

Herbert G. Zeller

Encl.
HGZ:ld

- cc: J. Scott
- J. Patterson
- C. Hewitt
- P. Kopietz
- E. Kogl
- R. Dickler
- J. Nelson
- HSAE

MEETING NOTES:

DATE: 14 December 1976

PLACE: Powell Hall

PRESENT: Messrs: Dickler, Kujawa - U/Minn Hospital
Maupin, Swanson - HSPO
Zeller, Scott - TAC
Planchard - HSAE

SUBJECT: Unit B/C Phase II

TAC letter of 9 December 1976 to Paul Maupin was discussed. The letter lists the modifications that must be completed by Phase I contractors if Phase II is to be bid. It also proposed the interface on the construction site, and later occupied building, of the Phase II construction operation. A schedule of modifications and three bid options was presented.

Dickler believes the areas used by Phase II Contractors and the construction operation will make it very difficult, if not impossible, to provide acceptable patient care. He cited the problems of access by patients, noise, dust, and the lack of an elevator capable of handling a litter as examples.

Dickler asked what would be the difference in time between completing Phase I and Phase II. Scott stated that the current Campbell schedule printout showed a delay to substantial completion of 40 days, which had not been explained. He estimated that Phase I contractors would seek a 2-month extension for Phase II modification items and for interference caused by Phase II contractors. Based upon Unit A experience, complications with prime contractors in finishing work would probably result in another 2-month delay. This means that Phase I probably would not be completed until 1 April 1978. If an early completion date for Phase II work on Floors 1 and 2 was required by bid documents, these areas could be available by 1 June 1978, two months after Phase I is completed.

Dickler stated that the Hospital's fiscal year ended 30 June 1978 and it would be difficult to plan now for costs to operate B/C for only one month. Thus, he guessed that his planning should look to 1 July 1978 as the start of occupancy. This would include two months to install communications, equipment setup, move-in, and orientation.

Maupin expressed his intention to seek reconsideration of the decision to bid Floors 1 and 2 work and ask that it be done by modification. This would presumably allow Phase I and Shell areas on Floors 1 and 2 to be completed simultaneously with occupancy earlier than projected under the separate bids. He will set up meeting (See Meeting Notes for 15 December 1976).

MEETING NOTES:

DATE: 15 December 1976

PLACE: Morrill Hall

PRESENT: Messrs: Brown (Acting VP), Jones, Kopietz, Hewitt, Dickler, Maupin
Kogl, Scott, Zeller.

SUBJECT: Unit B/C Phase II Method of Contract Award.

Maupin reintroduced the question of whether it was in the best interest of the University to continue to pursue completion of Floors 1 and 2 Shell Space in B/C by competitive bidding.

Scott reviewed TAC letters of 14 October 1976 to Clint Hewitt and 9 December 1976 to Paul Maupin. The October letters described the problems of schedule, cost, responsibility, quality standards, and contract documents in the bid versus modification approach.

It was reiterated that hospital occupancy of the building would be influenced by the decision since it was the feeling of Dickler that the Hospital could not provide acceptable medical services while construction occurred on Floors 1 and 2. This meant that they preferred not to open the hospital areas until Phase II was complete, assuming a lag in completion of less than three months. The Hospital stated that they could readily document their problems and the costs involved with not opening the building and with operating during Floors 1 and 2 construction.

Scott restated his belief that costs of Phase II would be increased by 50% if the work is bid due to the complications with Phase I contractors and the delays to Phase I. The complications to schedules for Pharmacy/Nursing and Diehl Remodeling were mentioned.

The letter of 9 December 1976 presented the minimum modification work that needed to be done if the work is bid. A very rough estimated cost of this work was set at \$200,000 including 9th Floor items not presented in the letter. The letter also defined Phase II Contractor's Zones on Floors 1, 2, 3, 8, and 9 and proposed Elevators 5 and 6 be devoted to Phase II contractors' use during Phase I construction and after Phase I areas are occupied. Dickler indicated concern about loss of Elevator 6, which is the only elevator capable of handling a litter.

The discussion focused on the Schedule of Bid Options presented by TAC, dated 13 December 1976. It was noted that the latest Phase I Schedule printout (7 December 1976) had

extended the completion date of the Phase I construction by 40 days with Substantial Completion at 2 December 1977, rather than 28 October 1977 as required by the Contract. This meant that completion of Phase II and Phase I would be closer because further delays to Phase I could be claimed because of Phase II modification and bid work and delays may occur due to Phase I complications during finishing operations.

There was still a concern that Phase II work on Floors 1 and 2 was so immersed in the Phase I work that it was clearly advantageous to complete it by modification. Although the increased scope would likely result in an extension to Phase I, it was felt that the overall completion schedule could be improved over a split bid arrangement. Kogl agreed that he "could sell" the idea of modification for Floors 1 and 2 and bid for Floor 9 to the contractors. He said the option of bid was still open if Phase I contractors' prices were too high.

It was agreed by all, and directed by Brown, that Floors 1 and 2 be issued as a modification to Phase I contracts and Floor 9 by bid competitively. It was further agreed that an early modification should be issued for items that must be installed prior to Phase I finishing operations as outlined in TACs 9 December 1976 letter.

Maupin indicated that an answer to TACs December letter would be prepared.

Meeting Notes by H. Zeller
cc: Maupin
Scott, Patterson
File 925



UNIVERSITY OF MINNESOTA
TWIN CITIES

Health Sciences Planning Office
Physical Planning
Box 75 Powell Hall
4103 Powell Hall
Minneapolis, Minnesota 55455
(612) 373-8981

January 14, 1977

Mr. John Scott
The Architects Collaborative, Inc.
46 Brattle Street
Cambridge, Massachusetts 02138

SUBJECT: Unit B/C
Phase II Construction

Dear John:

We have been directed to inform you that all Phase II construction shall be achieved by competitive bidding only. No change orders shall be permitted.

Yours truly,

A handwritten signature in cursive script, reading "Paul J. Maupin".

Paul J. Maupin
Health Sciences Planning Coordinator
Health Sciences Planning Office

PJM:rm

cc: Don Brown
Clinton Hewitt
Eugene Kogl
Robert Dickler

RECEIVED
JAN 17 1977



UNIVERSITY OF MINNESOTA
TWIN CITIES

Physical Planning
340 Morrill Hall
100 Church Street S.E.
Minneapolis, Minnesota 55455

January 31, 1977

The Architects Collaborative
ATTENTION: John Scott
46 Brattle Street
Cambridge, Massachusetts 02138

SUBJECT: Health Sciences Expansion - Unit B/C

Dear John:

At our meeting on January 19, 1977, you requested clear instructions as to how to proceed with the design of work for any portions of Unit B/C construction not covered by present contract documents. Basically, the work involved falls into the following two divisions:

1. Completion of areas scheduled to be unfinished on the original Phase I, B/C plans.
2. Revisions in Phase I work to meet changed conditions or requirements. This should include work integral to Phase I contracts necessary to provide a completed Phase I project compatible with future Phase II construction.

It has been definitely decided that none of the space shown as unfinished on the Phase I plans be completed by change orders under the present contracts. Bids shall be taken for all finishing operations necessary to complete construction of such spaces. This principle shall apply regardless of where these unfinished spaces lie. It is recognized that this may leave some isolated small areas to be finished later, but it is intended that all such areas will be completed by bids.

It is intended that revisions in the Phase I portions, necessitated by job conditions or programmatic changes of similar effects, be done by change orders as is normal in any construction project. Further, it is intended that, where present contract work must be modified or minor extensions or additions must be effected to accommodate future Phase II work, such revisions shall be accomplished by change orders on present contracts.

RECEIVED
FEB 4 1977
THE ARCHITECTS COLLABORATIVE INC.

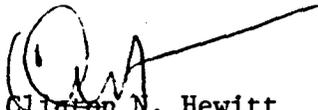
Mr. John Scott

Page 2

January 31, 1977

Generally, economics more than convenience will be the incentive to use the change order method. Should any major items not seem to conform to the above categories, we will be glad to give you instruction on an individual basis. Meanwhile, we appreciate your cooperation and patience in preparing Phase II documents.

Sincerely,



Clinton N. Hewitt
Assistant Vice President
Physical Planning

CNH:cs

cc: Donald P. Brown
E. A. Kogl
Paul Maupin



THE ARCHITECTS COLLABORATIVE INC.

EAN B. FLETCHER
148 1968
WALTER GROPIUS
148 1969
ORIN FLETCHER
JOHN C. HARKNESS
JAHAM P. HARKNESS
OUIA A. McMILLEN
RICHARD BROOKER
ALEX CVIJANOVIĆ
HERBERT GALLAGHER
WILLIAM J. GEDDIS
ROLAND KLUVER
PETER W. MORTON
H. MORSE PAYNE
ERNEST L. BIRDSALL
TREASURER

HOWARD ELKUS
ALLISON GOODWIN
BASIL HASSAN
JOHN HAYES
JOSEPH HOSKINS
LEONARD NOTKIN
RICHARD SABIN
DAVID SHEFFIELD

QASIM B. AHMED
ROBERT BARNES
KENDALL R. BATES
SERGE CVIJANOVIĆ
ROYSTON DALEY
ROBERT DEWOLFE
GREGORY DOWNES
GAIL FLYNN
GERALD FOSTER
THOMAS LARSON
RALPH MONTGOMERY
PERRY NEUBAUER
IGOR G. PLATOUNOFF
RICHARD PUFFER
WALTER ROSENFELD
JOHN J. SCOTT
EDMUND SUMMERSBY
KENNETH TAYLOR
MALCOLM TICKNOR
ROBERT TURNER
ROBERT WILSON
LORRENCE ZUELKE

4 February 1977

Mr. Duane Blanchard
Health Sciences Architects & Engineers, Inc.
University Park Plaza, Suite 704
2829 University Avenue, SE
Minneapolis, MN 55414

7 February 1977:

Please note: Revised completion
date for: 3. Interface Modification
floor 9.

Re: B/C Phase II

Dear Duane:

I have established the following dates for completion of Contract Documents for
B/C Phase II work:

- | | |
|---|-----------|
| 1. Interface Modification for above ceiling work | 4 Feb 77 |
| 2. Interface Modification for Admissions/Cashiering Office,
Nutrition, Medical Records (Floor 2) | 22 Feb 77 |
| 3. Interface Modification for Floor 9 | 11 Mar 77 |
| 4. Bid Documents for Floors 1, 2, and 9 | 20 May 77 |

Dick Carlson has assured me that Item 1 will be released on schedule.

Architectural Drawings have been made available to the engineers on a bi-weekly basis as I have left progress prints with them on my trips to Minneapolis. While HVAC work is progressing quite satisfactorily, I am concerned about the progress with the electrical work. It is time to get design work into working drawing form.

It is also necessary to begin work on Specifications. I want to start this effort during the week of 22 February 1977. The engineers should be ready to participate in this process.

We anticipate your continued cooperation in completing this work in a timely fashion.

Very truly yours,
THE ARCHITECTS COLLABORATIVE, Inc.


Herbert G. Zeller

cc: J. Scott, J. Patterson

HGZ:ld

THE ARCHITECTS COLLABORATIVE INC.

TAC

JEAN D. FLETCHER
1945 1965
WALTER GROPLS
1945 1969
NORMAN FLETCHER
JOHN C. HARKNESS
SARAH P. HARKNESS
LOUIS A. McMILLEN

RICHARD BROOKER
ALEX CVIJANOVIĆ
HERBERT GALLAGHER II
WILLIAM J. GEDDI
ROLAND KILVICK
PETER W. MORTON II
H. MORSE PAYNE
ERNEST L. BIRDSALL
TREASURER

HOWARD ELKUS
ALLISON GOODWIN
BASIL HASSAN
JOHN HAYES
JOSEPH HOSKINS
LEONARD NOTKIN
RICHARD SAPHIR
DAVID SHEFFIELD

QAZI B. AHMED
ROBERT BARNES
KENDALL P. BATES
SERGE CVIJANOVIĆ
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ROBERT DEWOLFE
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GAIL FLYNN
GERALD FOSTER
THOMAS LARSON
RALPH MONTGOMERY
PERRY NEUBAUER
IGOR G. FLAOUNOFF
RICHARD PUFFER
WALTER ROSENFELD
JOHN J. SCOTT
EDMUND SUMMERSBY
KENNETH TAYLOR
MALCOLM TICKNOR
ROBERT TURNER
ROBERT WILSON
LAURENCE ZUELKE

14 March 1977

RECEIVED

MAR 16 1977

Mr. Paul J. Maupin, Health Sciences Planning Coordinator
Health Sciences Planning Office
University of Minnesota
4104 Powell Hall
Minneapolis, MN

UNIV. OF MINN.
HEALTH SCIENCE
PLANNING OFFICE

Dear Paul:

There has been much discussion about the complications of bidding the B/C shell spaces. We have outlined some of the issues in our letter of 14 October 1976 to Clint Hewitt and my 9 December 1976 letter to you. The attached outline attempts to be more specific regarding the many issues that will influence the Phase II Contract Requirements and Conditions.

The format of the outline follows that of Volume I of Unit B/C Contract Documents and itemizes paragraphs that are relevant to B/C Phase II bidding requirements, contract forms, conditions of the contract, and general requirements. A number of questions are raised that require decisions on the part of the University. We are recommending that certain relationships between Phase I and Phase II must be the subject of negotiations with Phase I Contractors.

We are asking for direction in regard to a number of key issues. The work is proceeding with the understanding derived from the 28 October 1976 meeting with Jim Brinkerhoff that work will be bid as a multiple prime contract. We would appreciate that this be confirmed as soon as possible.

It is necessary for the University to decide on the role of a Schedule Consultant for the Phase II work. There has been no significant involvement to date by Campbell and Co. in scheduling of B/C Phase II and in the interfacing of that schedule with Phase I. If such a consultant is to be involved in Phase II, we see a need for him to review the scope of the project, develop the necessary turnover dates of Phase I areas and vertical transportation systems, and to prepare a preliminary construction schedule for Phase II.

The question of when the Hospital can occupy the space should be based upon schedule data derived from an assessment of the Phase I progress as influenced by the Phase II contracts and its schedule requirements. The 7 February 1977 Schedule prepared by TAC was only a rough approximation coupled with some assumptions based upon past experience.



THE ARCHITECTS COLLABORATIVE INC.

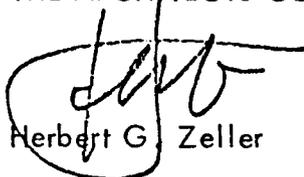
14 March 1977
Page 2

Other major areas yet to be resolved which are raised in the outline are: site management, site access, hoisting and vertical transportation, fire safety, temporary facilities, coordination responsibilities, and contractors' zones.

We view the development of the contract requirements and conditions as the major item of work to be completed before bid documents can be released. Careful negotiations are needed with Phase I Contractors, possibly involving claims for additional payment and delays. It is, therefore, advisable to begin this process immediately by receiving your comments on the attached document. Should you have any questions, we will be available to meet with you.

Very truly yours,

THE ARCHITECTS COLLABORATIVE, Inc.


Herbert G. Zeller

cc: Eugene Kogl
Clint Hewitt
Robert Dickler
HSAE
Jim Kellett

Unit B/C
Phase I/Phase II Schedule Interface
Hospital Concerns

- I. Occupancy of Phase I prior to Phase II completion
 - A. Reasonable best estimates of potential occupancy dates
 1. Phase I - December 21, 1977; July 1, 1978; other
 2. Phase II - July 1, 1978 (floors 1 and 2); October 1, 1978; other
 - B. Final definition of Site Access and Staging/Storage Areas
 - C. Final definition of elevator constraints - especially as relates to elevator #6 (large elevator)
 - D. Noise conditions by floor and stages of construction - especially adjacent areas
 - E. Vibration conditions by floor and stages of construction - especially adjacent areas
 - F. Dust and Dirt conditions by floor and stages of construction
 - G. Definition of timing and duration of utility and service cut-off periods
 - H. Impact on patient, staff, etc. horizontal and vertical flow
 - I. Impact on and viability of using Materials Transport system
 - J. Potential degree of liability and danger to individuals
 - K. Impact of staging on warranty dates of construction and equipment
 - L. Impact of staged occupancy on Phase I and Phase II construction cost
 - M. Necessity of construction entering Phase I areas for interface
 - N. Impact on other Health Sciences projects
 - O. Impact on Hospital and University operating costs
 - P. Impact on, and cost of, temporary graphics, phone system, security systems, etc.
 - Q. External conditions as relate to patient flow, etc.

II. Occupancy of Phases I and II simultaneously

A. Construction conditions at time of occupancy

1. Food Service areas
2. 8th floor
3. Diehl Hall
4. Other B/C areas

Relate above to concerns under Section 'I'

B. Best estimate of potential occupancy dates

C. Impact on other Health Sciences projects

D. Responsible party for costs of building maintenance during delay period (as relates to completed areas)

E. Impact on Ambulatory Care growth, program development, etc.

F. Impact of delayed occupancy on public and University credibility

G. Impact on warranty dates of construction and equipment

H. Impact on costs of equipment storage, later purchasing etc.

MEETING NOTES

DATE: 3 May 77

PRESENT: Scheffler, Swanson, Zeller

SUBJECT: Code Considerations related to B/C Phase II Contractor Access Routes

Half-scale plans of Floors B, B-Mezz., 1, 2, 3, 6, 7, 8, and 9 were reviewed, which showed contractor access to complete B/C Phase II. The following comments were made:

NINTH FLOOR:

1. Sprinkler and smoke detector coverage of the staff elevator lobby, which will be divided into two halves, must be maintained on the occupied side. Similarly, where other dust partitions restrict coverage, reasonable fire protection shall be maintained.
2. Exit lights and signage which are concealed or do not apply must be corrected to define a clear direction to the exits from any occupied Phase I area. The University will assume responsibility for temporary signage in the occupied area.

EIGHTH FLOOR:

1. Same as 9th Floor.

SEVENTH FLOOR:

1. Limited Phase II access creates no problems except security for stored material.

SIXTH FLOOR:

1. Contractors' offices will have to be sprinklered.
2. Two means of egress from Contractors' offices is necessary. An exit through shell space to a stair is acceptable.

THIRD FLOOR:

1. The fire management room must be accessible to the Fire Department. Provide emergency doors in all three dust partitions enclosing Phase II contractors' access route to elevators. Keys to these doors shall be in a box which has a lock openable with Fire Department key.
2. Fire truck access to the plaza area should be made possible by providing a set of gates at both ends of the loading area.
3. Dead end corridors created by the dust partitions can be alleviated by emergency exit doors. These must be provided.
4. Same as 9th Floor.

SECOND FLOOR:

1. Same as 9th Floor.
2. Provide doors on opposite sides of the access corridor for emergency use to eliminate dead end corridor on north side of access route.
3. Emergency door at ends of Medicine Clinic corridors are satisfactory for egress from that area.

FIRST FLOOR:

1. Emergency door at end of Corridor to allow access to stair is required. This door is already part of Phase I and will be maintained open.
2. Same as 9th Floor.

BASEMENT AND B-MEZZANINE:

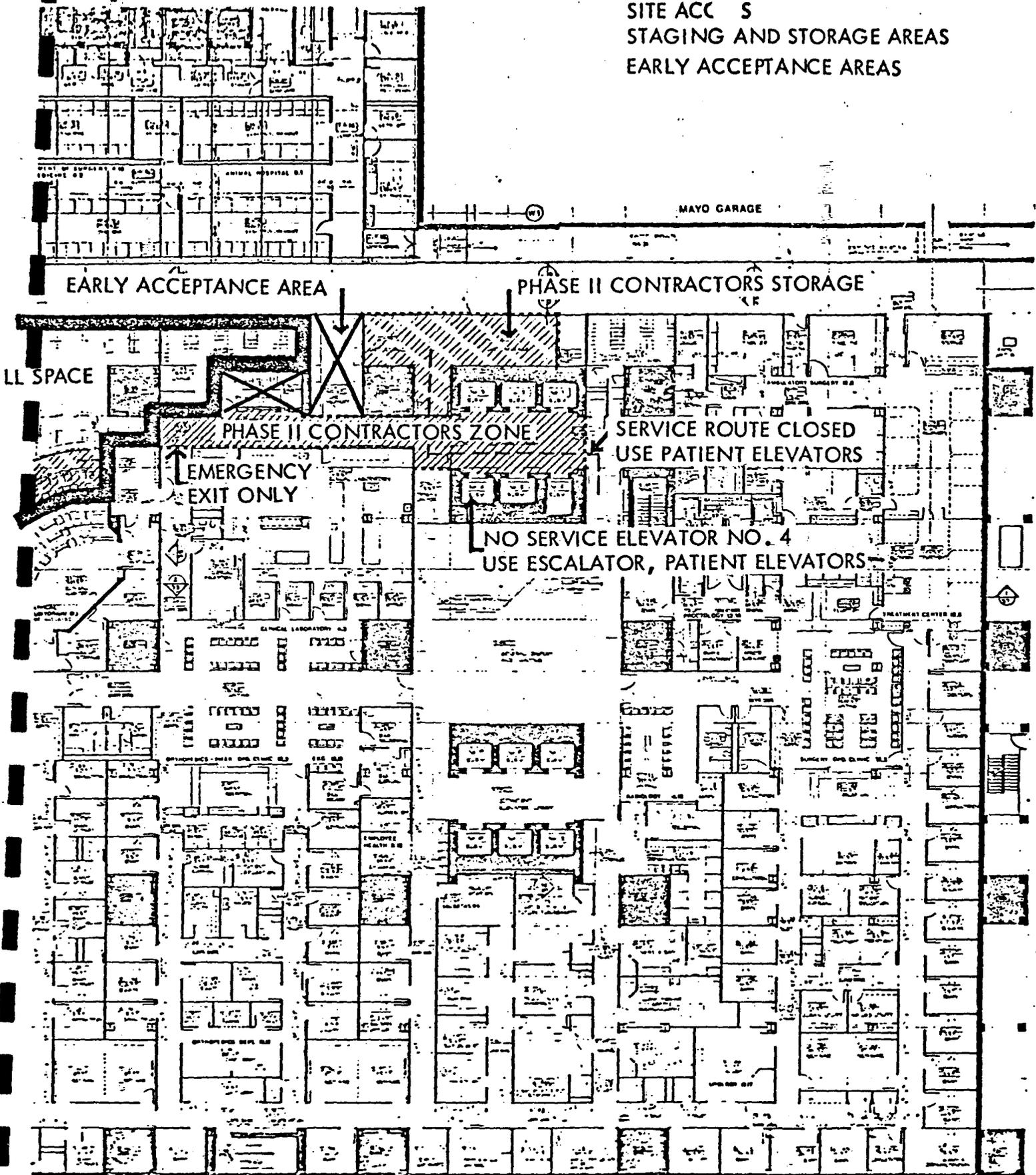
1. No dust partitions are to be installed on these floors; therefore, no code problems are created.

OTHER ITEMS:

1. Adequate emergency lighting will be maintained.
2. Scheffler indicated his opinion that rooms rendered inaccessible to occupants by Phase II contractors' access routes should not be used.

cc: Messrs: Kogl
Maupin
J. Kellet
File (2)

PHASE II;
 SITE ACC S
 STAGING AND STORAGE AREAS
 EARLY ACCEPTANCE AREAS



TOTAL SFN 36,135

ASSOC SFG 64,807

TOTAL SFG 71,072

ORTHOPEDICS PHARM EMPLOYEE HEALTH AMBULATORY SURGERY
 CLINICAL LAB CA GYN OPD CLINIC RADIOLOGY PROCTOLOGY ERG

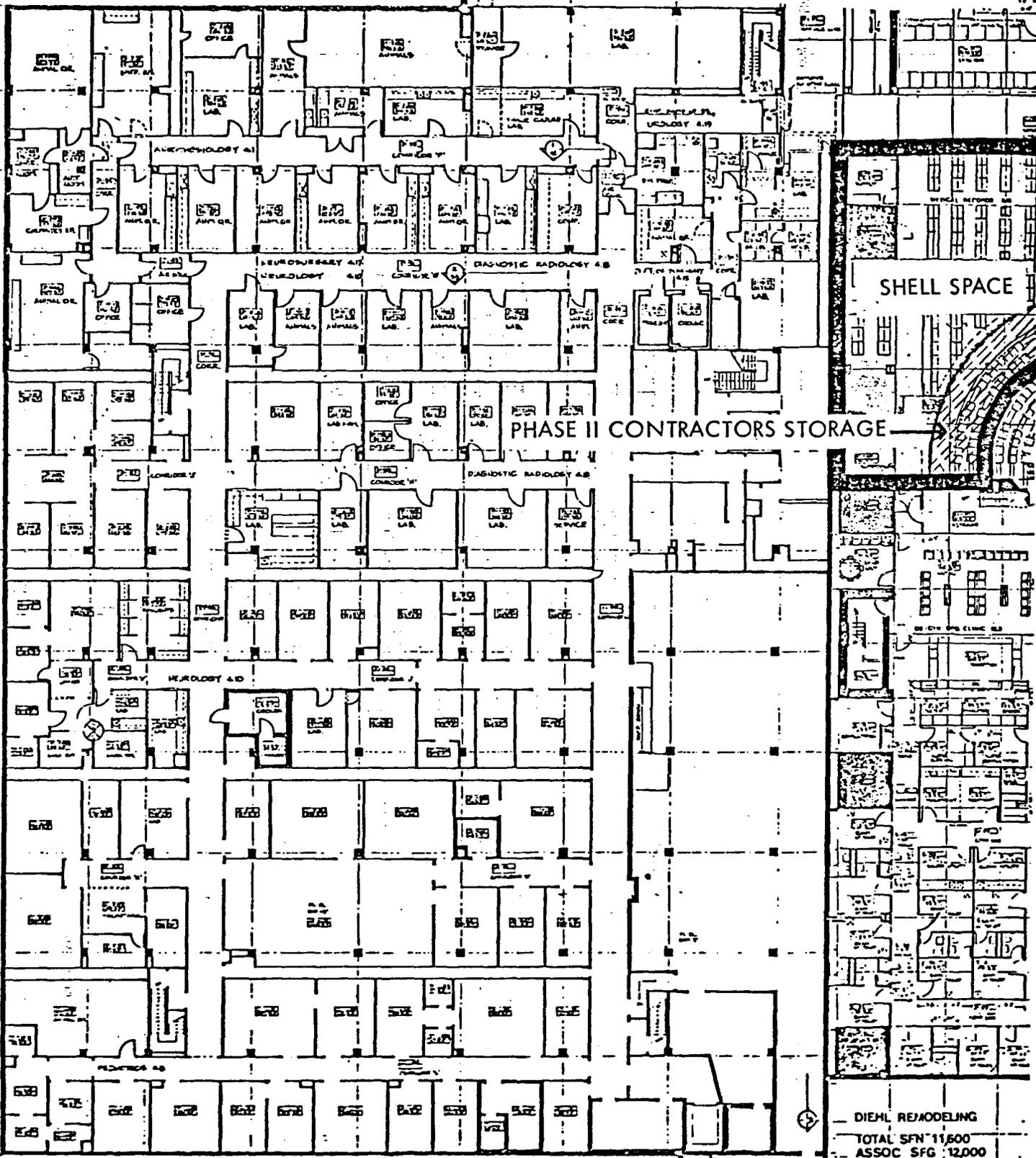


UNIVERSITY OF MINNESOTA
 HEALTH SCIENCES EXPANSION

THE ARCHITECTS COLLABORATIVE, INC. CAMBRIDGE, MASS &
 THE HEALTH SCIENCES ARCHITECTS & ENGINEERS, INC.
 ST. PAUL, MINN.

UNIT
B-C
 FLOOR
1
 EAST

PHASE II:
 SITE ACCESS
 STAGING AND STORAGE AREAS
 EARLY ACCEPTANCE AREAS



DIEHL RE/MODELING
 TOTAL SFN 11,600
 ASSOC SFG 12,000



UNIVERSITY OF MINNESOTA
 HEALTH SCIENCES EXPANSION
 MINNEAPOLIS MINNESOTA

THE ARCHITECTS COLLABORATIVE, INC. CAMBRIDGE, MASS &
 THE HEALTH SCIENCES ARCHITECTS & ENGINEERS, INC.
 THE ARCHITECTS COLLABORATIVE, INC.
 100 STATE STREET, 10TH FLOOR
 CAMBRIDGE, MASSACHUSETTS 02142
 THE HEALTH SCIENCES ARCHITECTS & ENGINEERS, INC.
 100 STATE STREET, 10TH FLOOR
 CAMBRIDGE, MASSACHUSETTS 02142

DIEHL MALL

FLOOR UNIT
 1 B-C
 WEST

PHASE II:
SITE ACCESS
STAGING AND STORAGE AREAS
EARLY ACCEPTANCE AREAS

ENTRANCE MEDICINE CLINIC

FINISH BY MOD.

PHASE II CONTRACTORS STORAGE

FINISH BY MOD.

PHASE II
CONTRACTORS ZONE

TEMP
TOILETS

FINISH BY MOD.

EARLY ACCEPTANCE
AREA

SHELL SPACE

EMERGENCY
EXIT ONLY

PHASE II CONTRACTORS ZONE

TOTAL SFN 14,984

EARLY ACCEPTANCE AREA

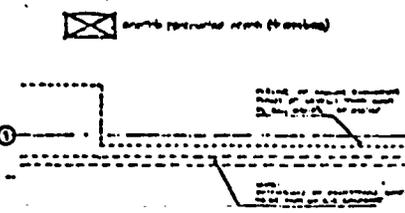
TOTAL SFG 75,333

CLINICAL AUDITORIUM SOCIAL SERVICE OPD PHARMACY MED OPD ADMITTING BUSINESS

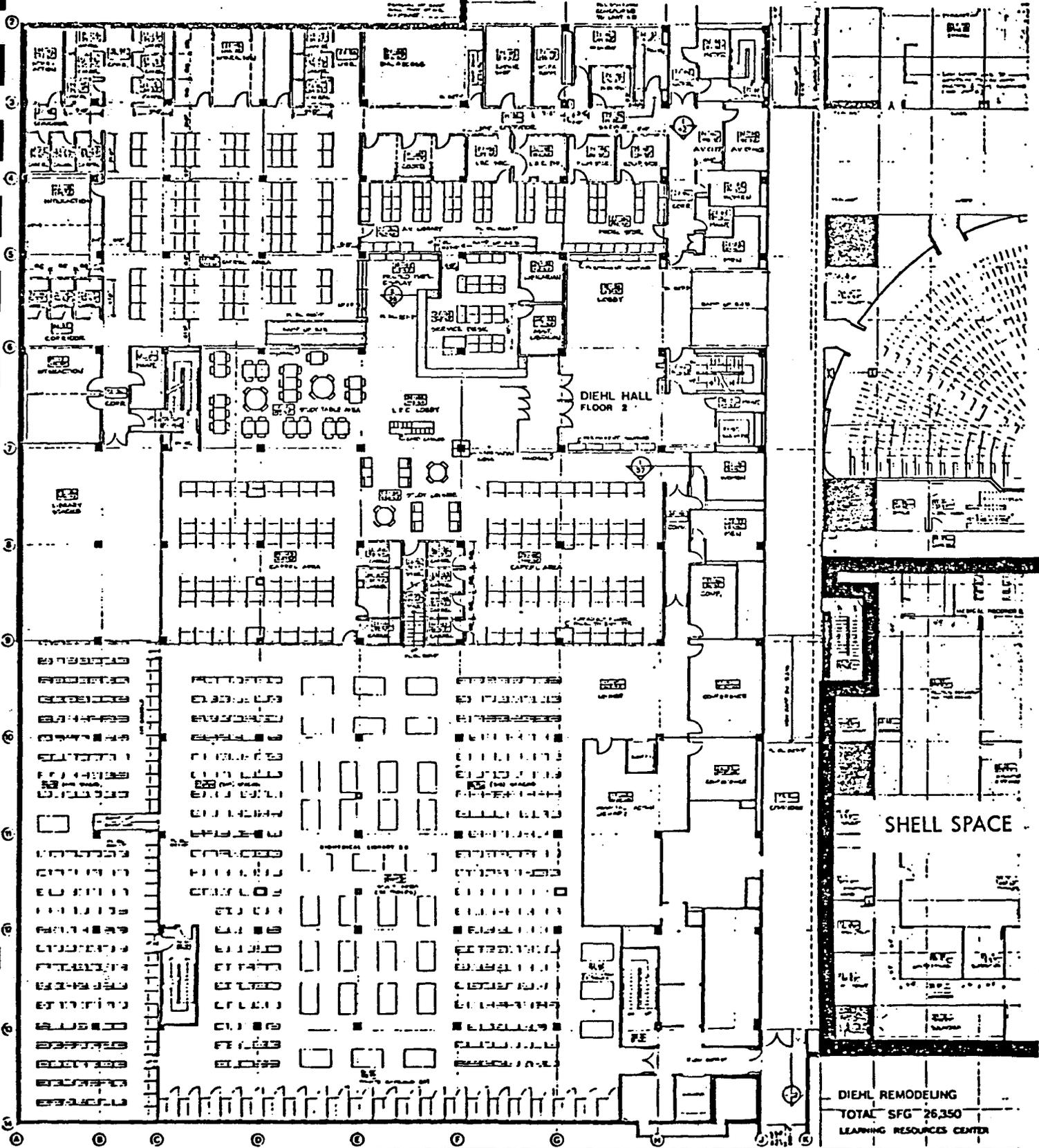
UNIVERSITY OF MINNESOTA
HEALTH SCIENCES EXPANSION

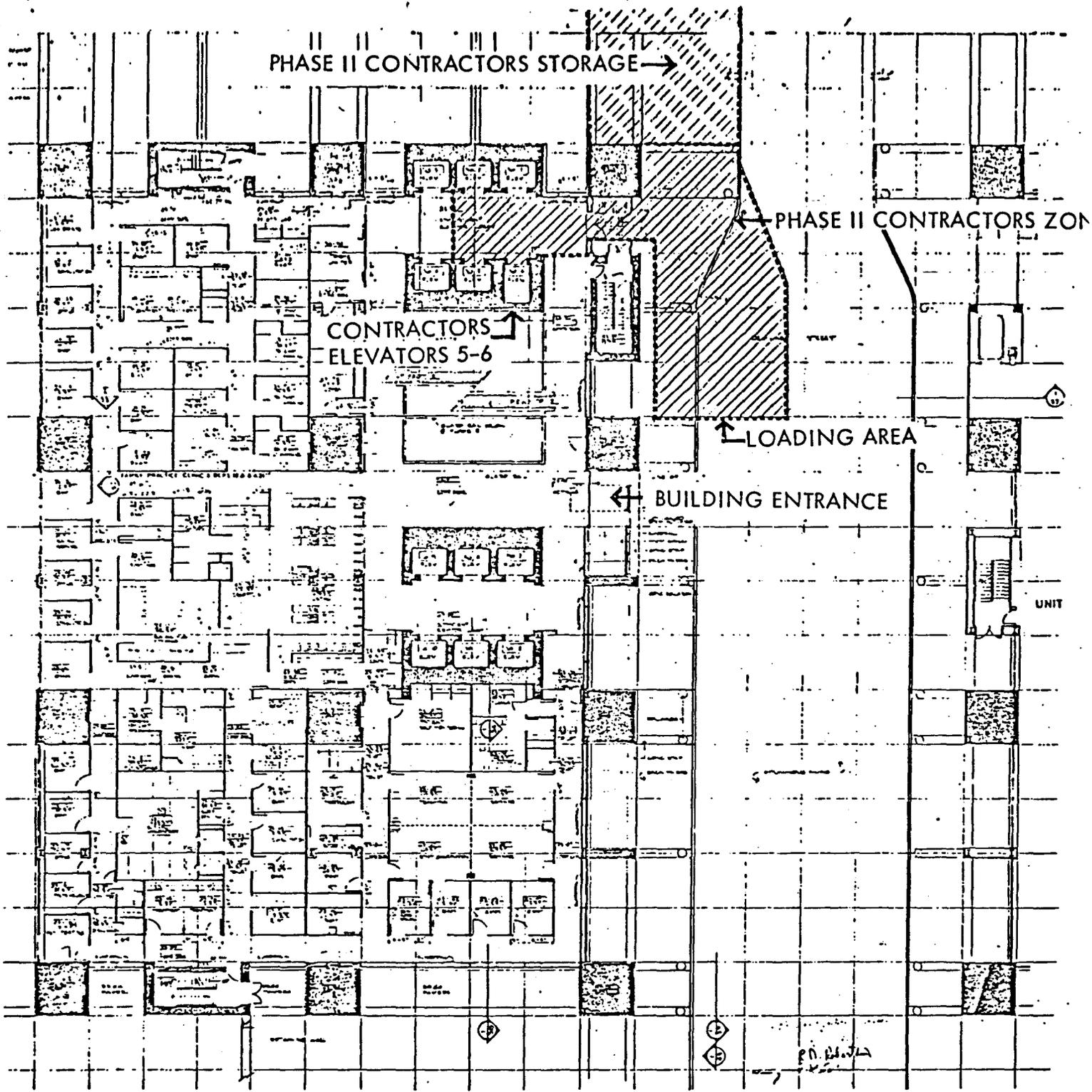
THE ARCHITECTS COLLABORATIVE, INC. CAMBRIDGE, MASS. &
THE HEALTH SCIENCES ARCHITECTS & ENGINEERS, INC.

UNIT FLOOR
B-C 2
EAST



PHASE II:
SITE ACCESS
STAGING AND STORAGE AREAS
EARLY ACCEPTANCE AREAS





PHASE II:
 SITE ACCESS
 STAGING AND STORAGE AREAS
 EARLY ACCEPTANCE AREAS

TOTAL SFN 9,134

TOTAL SFG 19,940

TOTAL SFG 26,587

FAMILY PRACTICE CLINIC & DEPT

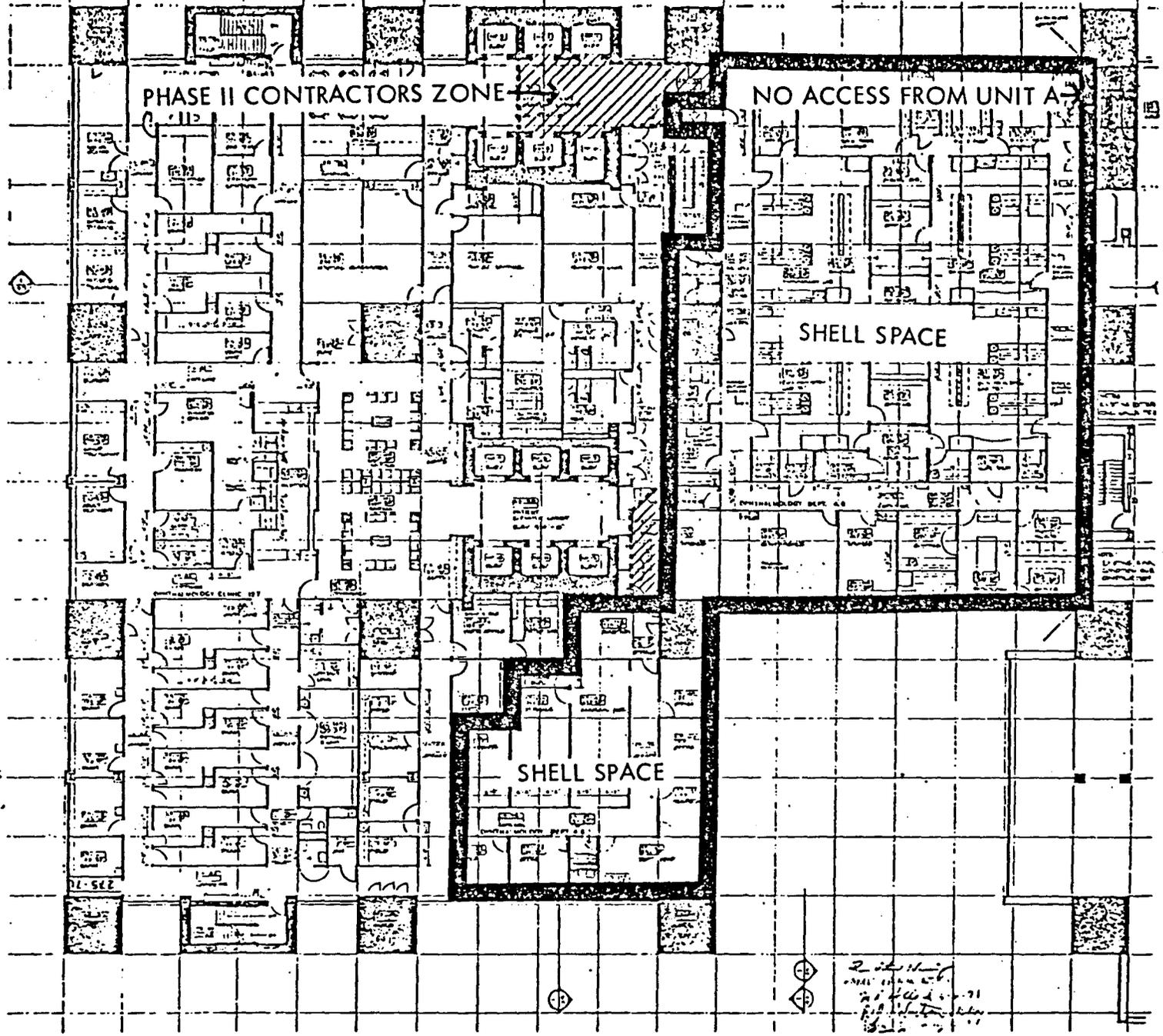


UNIVERSITY OF MINNESOTA
 HEALTH SCIENCES EXPANSION
 MINNEAPOLIS MINNESOTA

THE ARCHITECTS COLLABORATIVE, INC. CAMBRIDGE, MASS &
 THE HEALTH SCIENCES ARCHITECTS & ENGINEERS, INC.
 THE OTHER ARCHITECTS ARE
 LOCAL OFFICES & AFFILIATES OF
 THE ARCHITECTS COLLABORATIVE, INC.

UNIT	FLOOR
B-C	3
EAST	

PHASE II:
 SITE ACCESS
 STAGING AND STORAGE AREAS
 EARLY ACCEPTANCE AREAS



TOTAL SFN 10,215

ASSOC SFG 16,562

TOTAL SFG 33,191

OPHTHALMOLOGY CLINIC

PROGRAMMED - UNFINISHED SPACE
 GEN. PUMP CLASSROOMS

UNIVERSITY OF MINNESOTA
HEALTH SCIENCES EXPANSION
 MINNEAPOLIS MINNESOTA

THE ARCHITECTS COLLABORATIVE, INC. CAMBRIDGE, MASS. &
 THE HEALTH SCIENCES ARCHITECTS & ENGINEERS, INC.
 MINNEAPOLIS, MINN.

UNIT **B-C** FLOOR **9**
 EAST

MEETING NOTES

DATE: 5 May 77

PRESENT: Dickler, Kopietz, Maupin, Hewitt, Swanson, Campbell, Scott, Zeller, Patterson, Blanchard

PLACE: Morrill Hall

SUBJECT: Occupancy of B/C Phase I prior to Completion of B/C Phase II.

The meeting was called to followup the 21 April 1977 meeting concerning Hospital concerns regarding occupancy of B/C Phase I prior to completion of B/C Phase II. The subject of the meeting was to report on the probable date of Hospital occupancy, having taken into account all University move-in work (equipment, telephone, intercom, paging, furnishings, graphics, etc).

Campbell had produced a new schedule on 2 May 77, incorporating information on the University work. There appeared to be a number of questions regarding the durations of the activities included, whether all activities were accounted for, and whether the sequences were correct. There was also a concern as to whether the major modifications would influence the completion of the project, in particular the first interface modification and the Admission/Cashiering modification. Campbell said 17 days was allowed for the interface, with start of work assumed immediately. Prices have just been received and are under review.

Scott said the Architect needs the following schedule information:

1. The dates of completion for areas needed by Phase II Contractors.
2. The date of possible Owner-Occupancy of Phase I, assuming move-in upon completion of Phase I construction. This is necessary to establish the progress of Phase II and evaluate the Hospital concerns.

Maupin said Floors 1, 2, and 3 are indicated to be occupied on 6 February 1978 in Campbell's Schedule. Furnishings are expected to be delivered on 30 January 1978. There was doubt expressed that proper durations had been allowed for moveable equipment installation.

Dickler said the Schedule calls for floor by floor turnover by the Contractor for installation of University purchased new equipment. However, this requires use of union labor for installation. If the equipment is not installed until after substantial completion of the project, University labor, which is non-union and less costly, can be used. This alternative must be studied. Another consideration is whether occupancy occurs before or after completion of Phase II.

Maupin said University equipment will be brought in via Unit A dock and Unit A freight elevator to the 7th Floor of B/C for staging and storage.

5 May 77

Page 2

Scott strongly suggested the University must investigate and plan the procedure. The problems are more complex than Unit A because the welfare of patients is involved. Decisions must be made on the readiness of equipment, mechanical systems, operating procedures, etc.

Dickler said his off-the-cuff estimate was that it would take approximately two months to move-in existing Hospital equipment. The actual physical closing of present facilities and shift to B/C of personnel would be accomplished in 4 - 5 days. He said he must discuss this further with moving companies to fix the time.

It was decided that more work was needed on this schedule and a followup meeting would be set for two weeks to discuss progress.

Dickler raised two other items:

1. The critical area of Phase II finishing is Medical Records on Floors 1 and 2. TAC said the finishing work in this area makes it likely that an early completion date could be established. This will be studied.
2. The costs submitted for modifications are significant concern. If they continue to come in high, the Hospital may not be able to fund them.

It was agreed that the University construction coordinator was in the position to deal with the contractors. The Architect could only advise the University, it is the University who must require the Contractors to justify their prices. The base of high cost of a substitute VAT for the pedestrian concourse was discussed as an example.

Scott pointed out that the University is considering finishing food service on Floor 2. Plumbing drains required to service the area should be installed prior to 1st Floor plaster ceiling in Animal Areas being completed under Phase I. Maupin said food service equipment layout is complete and work should start. Scott said there is a need to work out an agreement for professional services.

Zeller said discussion this week with Westinghouse was productive. They indicated that permanent elevator equipment could be installed in Shaft No. 1 for hoisting of B/C Phase II materials. They said it would be possible to install the equipment, which would serve all floors of B/C, by mid-October 1977 if contract was let during May 1977. The cost was estimated at about \$100,000. Westinghouse will prepare a letter this week.

cc: All present



UNIVERSITY OF MINNESOTA
TWIN CITIES

Health Sciences Planning Office
Physical Planning
Box 75 Powell Hall
4103 Powell Hall
Minneapolis, Minnesota 55455
(612) 373-8981

May 11, 1977

Mr. Herb Zeller
The Architects Collaborative, Inc.
46 Brattle Street
Cambridge, Massachusetts 02138

SUBJECT: Health Sciences Expansion
Unit B/C - Phase II
Westinghouse Temporary Elevator

Dear Herb:

The purpose of this letter is to confirm our telephone conversation of May 10, 1977 directing The Architects Collaborative to proceed with the necessary drawings and specifications for the subject elevator as a change order to the current Unit B/C Phase I contractor. This approach has been discussed with the University's Purchasing Department, Mr. Clinton Hewitt and Mr. Paul Kopietz, and they all concur with this approach.

It is our understanding that Westinghouse will provide the necessary equipment and labor to meet our projected schedule at a price of \$123,000.

Yours truly,

Paul J. Maupin
Health Sciences Planning Coordinator
Health Sciences Planning Office

PJM:rm

cc: Clinton Hewitt
Oliver Hughes
Eugene Kogl
Paul Kopietz

RECEIVED

MAY 13 1977

THE ARCHITECTS COLLABORATIVE INC.

health sciences architects & engineers, INC.

34

RECEIVED

MAY 26 1977

THE 24 HOURS COOPERATIVE, INC.

THE CERNY ASSOCIATES INC.
HAMMEL GREEN & ABRAHAMSON INC.
SETTER LEACH & LINDSTROM INC.

113 HUBBARD BUILDING, 2875 UNIVERSITY AVENUE
SAINT PAUL, MINNESOTA 55114

612/646-8875

NEW ADDRESS
University Park Plaza - Suite 704
2829 University Avenue S. E.
MINNEAPOLIS, MINN. 55414

Mr. E. A. Kogl
Project Analyst, B/C Coordinator
Physical Planning
321 Morrill Hall
University of Minnesota
Minneapolis, Minnesota 55455

Re: Unit B/C Phase II Construction

Dear Mr. Kogl:

We have reviewed the possibilities for obtaining temporary construction electric service to serve the Unit B/C Phase II construction. We believe the most practical approach is as outlined below:

- 1 - Service point to be the Unit B/C permanent building electrical distribution system. Typically this would be a 120/208, 3P panelboard installed under B/C Phase I interface modification.
- 2 - The B/C Phase II contractor would provide and install a 70A-3P circuit breaker in these panelboards and extend a 70 ampere, 3 phase service to a temporary panelboard located within the construction area for temporary branch circuit outlets and additional lighting that may be required.
- 3 - Shell space was provided with a minimum of fluorescent lighting under B/C Phase I contract which can be utilized initially for temporary lighting until needed for permanent lighting.

As the U/M is currently paying the electrical energy costs for B/C Phase I construction, it is assumed that energy costs would also be handled in the same manner for the B/C Phase II construction.

It is our concern that the B/C permanent electrical distribution system may not be completed and accepted by the U/M prior to the start of B/C Phase II construction. This would leave Premier Electric, the B/C Phase I contractor, as responsible for the B/C Phase I electrical distribution system. It would be necessary, then, that the University arrange with Premier Electric for the use of certain portions of the electrical distribution system by the B/C Phase II contractors.

Mr. E. A. Kogl
Page 2
24 May 1977

We will proceed to develop the specifications for B/C Phase II temporary electric service on the basis as outlined above and with the assumption that the permanent electric distribution systems serving the Phase II construction areas will be completed and accepted by the University.

We are available and would be pleased to discuss any of your concerns at your request.

Sincerely,

HEALTH SCIENCES ARCHITECTS & ENGINEERS, INC.



Gary A. Hall

GAH:la

cc: Mr. Herb Zeller, TAC



UNIVERSITY OF MINNESOTA
TWIN CITIES

Health Sciences Planning Office
Physical Planning
Box 75 Powell Hall
4103 Powell Hall
Minneapolis, Minnesota 55455
(612) 373-8981

May 26, 1977

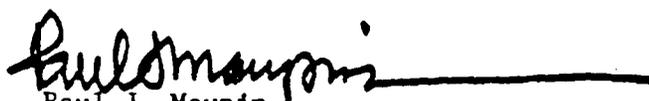
Mr. Herb Zeller
The Architects Collaborative, Inc.
46 Brattle Street
Cambridge, Massachusetts 02138

SUBJECT: Unit B/C - Phase II

Dear Herb:

The University submits the attached summary of verbal instructions given to you on Wednesday, March 30, 1977. Some of the answers to your questions are now obsolete. For example, multiple prime contract versus single prime contract. TAC has been directed to prepare documents for a single prime contract since March 30th.

Yours truly,


Paul J. Maupin
Health Sciences Planning Coordinator
Health Sciences Planning Office

PJM:rm

cc: Eugene Kogl
Greg Kujawa
Robert Swanson

B/C PHASE II - Floors 1, 2 & 9
CONTRACT REQUIREMENTS & CONDITIONS

PROJECT TITLE:

1. What is the U/M project number?

Since federal funds are not involved in Building B/C Phase II, Vic Scott indicated that TAC's project number is sufficient.

2. What is the project name?

Unit B/C - Phase II Shell Space Completion

ADVERTISEMENT FOR BIDS:

1. Approximate cost of the project?

Project Cost: \$2,403,306

Construction Cost: \$2,000,000

Non-Building Cost: \$ 403,306

2. Where will the bids be received?

U/M Purchasing Office

3. Where will the documents be picked up?

Architects' Office

Deposit?

Yes

4. What will bid security be?

5%

INSTRUCTION TO BIDDERS:

1. TAC/HSA&E are proceeding with documents for bidding a multiple prime contract consisting of:

- a) General Contract
- b) Mechanical Contract
- c) Electrical Contract

Use multiple prime contracts consisting of items a) thru c).

2. Will bid procedures be the same as Unit B/C?

Yes

3. Will bid security be the same as Unit B/C?

Redundant question

4. Will contractor bond be required?

Yes

5. Will qualification of bidders be required?

No

6. Does the University intend to sign a lump-sum agreement for the work?

? → Yes, three contracts.

7. Paragraph 12.1.4 allows for acceptable equals for products named on drawings and specifications. While in principle this is correct, in practice it is unlikely that certain substitutions can be allowed due to the precedents established in the existing construction.

Where necessary specify the previous Building B/C manufacturers.

8. Examination of existing conditions by interested bidders is required. The areas to be used by the Phase II contractors must be defined and available for his use prior to completion of Phase I. Proposed contractor zones were submitted to the University for comment.

University will review the Phase II contractor zones submitted, and forward any comments to TAC.

9. Will alternate deducts be requested?

Yes

Define.

Eighth (8th) floor Otoneurology space as a deduct alternate.

GENERAL CONDITIONS:

1. Paragraph 3.2.3 regarding benchmarks by the University should be clarified.

This item is not required since we are dealing with completion of shell space within an existing structure.

2. Paragraph 3.3.4 involves the University in the proper scheduling of the work. Coordination with Phase I scheduling is involved.

Yes

3. Paragraph 4.16 - There is the potential for confusion of responsibility between Phase I and Phase II contractors for clean up.

Yes, however, the Phase II contractor will be restricted by dust partitions to certain areas within Building B/C for which he will be directly responsible for clean-up.

4. Article 5 - The University may wish to consider whether subcontractors to Phase I contractors, which may also be subcontractors to different Phase II contractors, present any special contractual problems.

Don't foresee more than normal problems.

5. Paragraph 6.2 - The mutual responsibilities of Phase I and Phase II contractors for coordination between themselves and the University needs to be clarified. There is a need to negotiate the extent of additional coordination responsibilities being asked of Phase I contractors.

Not required.

6. Paragraph 7.12.5 - It is necessary to negotiate the substantial completion dates of Phase I areas to be turned over to Phase II contractors.

Possibly.

7. Paragraph 11.2 - The extent insurance coverage and the overlap between Phase I and Phase II contractors needs consideration.

Standard insurance coverage.

SUMMARY OF WORK AND SPECIAL REQUIREMENTS:

1. Paragraph 1.2 - The location, general scope, and contractual breakdown must be appropriate to the project.

Yes.

2. Paragraph 1.3 - An updated list of related work not under Phase II documents is needed from the University.

Similar to Unit B/C - Phase I.

3. Paragraphs 1.4 and 1.5 - A narrative discussing the work performed by Phase I contractors is necessary (see Site Management).

As necessary under the scope of work.

4. Paragraph 1.6 - A definition of construction limits appropriate to Phase II is needed.

Yes, as per the contractor access drawing.

Will the University retain same test and balance consultant as in Phase I?

Yes.

5. Paragraph 1.9 - The University must decide the scope and responsibilities of their Schedule Consultant. Scheduling should include early occupancy of floors 1 and 2.

No.

6. Paragraph 1.11 - The University must decide the extent of liability and property insurance required.

All risk by U/M best way to go.

7. Paragraph 1.12 - The University must decide the extent of site management to be provided by Phase II contractors and the interface of same with Phase I contractors if necessary.

Phase I contractor has jurisdiction until he is completed, and Phase II contract should be written accordingly.

8. Paragraph 1.14 - Does the University desire project photographs of Phase II?

No.

9. Will the University retain a testing and balancing consultant?

Yes.

10. Paragraph 1.16 - Does the University desire to record the condition of Phase I work or any other work prior to beginning Phase II? The purpose presumably to avoid disputes over damaged work.

Yes, by photograph.

11. Paragraph 1.17 - Staging and storage areas have been proposed by TAC. Negotiation with Phase I contractors is recommended. The University should provide direction per paragraph 1.17.D.

Arrangements will have to be made.

12. Paragraph 1.19 - The condition and care of the site by Phase II contractors must dovetail with Phase I. Negotiations on this subject with Phase I contractors is recommended.

Arrangements will have to be made.

13. Paragraph 1.25 - The responsibility for site fencing for exterior storage, unloading or staging areas for Phase II must be negotiated with Phase I contractors.

Arrangements will have to be made.

14. Paragraph 1.26 - A review of site access restrictions appropriate to Phase II is needed.

Done. See the contractor access drawing.

15. Paragraphs 1.31, 1.32, and 1.33 - Responsibility for Fire Safety by Phase I contractors and Phase II contractors must be coordinated.

Yes.

16. Paragraph 1.37 - A complete list of Group II equipment items has not been received from the University. Rough-in requirements specified must be revised to reflect job conditions under Phase II.

Group II equipment lists were only requested for floor 9, which have to be issued for architects' review

17. Paragraph 1.39 - The University must indicate the extent of coordination required between Phase I and Phase II contractors as well as between individual Phase II contractors.

Will not define; interface should eliminate.

Negotiations with Phase I contractors is recommended regarding their position as "Prime Coordinator" for the project, defined in Phase I documents.

Omit "Prime Coordinator" from specs.

18. Paragraph 1.40 - Review appropriate special requirements and cautions.

Yes.

19. Paragraph 1.42 - Cleaning up responsibilities of Phase I and Phase II contractors need to be negotiated and defined, particularly in commonly used areas in the building or on the site.

No common areas using site access.

20. Paragraph 1.46 - The University must develop the scope of any restricted work areas within or outside of Unit B/C.

None required.

SECTION 01100 - ALTERNATES:

1. Does the University desire to develop alternates for Phase II work?

Redundant question.

SECTION 01150 - PAYMENT:

1. It is assumed that the same provisions are applicable in Phase II. It is assumed a lump sum contract will be the basis of payment.

Yes.

SECTION 01200 - CONTRACT TIME:

1. The substantial and final completion dates for Phase II must be established.

Yes.

2. The early completion dates for floors 1 and 2 must be established.

Yes.

3. Specifications should indicate completion date of Phase I, which must be established by the University.

Will indicate the overall Phase I completion date.

4. The University should establish other constraints on timing of the work if necessary.

If necessary.

5. The University Schedule Consultant (if one is used) must develop a construction sequence logic diagram, a preliminary schedule for the project, and supporting narrative.

Delete.

SECTION 01250 - CONSTRUCTION SCHEDULE:

1. Will the University retain a Schedule Consultant?
No.
2. Will the Schedule Consultant prepare a preliminary schedule for bidding of Phase II?
No.
3. Will the Schedule Consultant work out the interface of Phase I and Phase II schedules (turnover dates for spaces, systems, elevators, etc.)?
No.

SECTION 01300 - SUBMITTALS:

1. It is assumed that the same provisions are applicable to Phase II.
Yes.

SECTION 01400 - TESTING AND INSPECTION:

1. The University must list any areas needing testing under Phase II and any fabrication plant inspections they wish to make.
None.

SECTION 01500 - TEMPORARY FACILITIES:

1. Paragraph 1.1 Temporary Heat. It is assumed building systems will be used.
Yes.
Provisions for installation of temporary filters, replacement of filters, cleaning of heating systems should be considered. Responsibility for this work with mechanical or general contractor?
Mechanical contractor.
2. The responsibility of Phase II contractors for ventilation, temperature levels, and dehumidification must be reviewed.
Only if occupied areas are affected.

3. Responsibility of Phase I contractors, who are in custody of systems as required by Phase I specifications, to provide proper environmental conditions to Phase II contractors needs to be negotiated. Payment for heat, etc., must be decided. It is assumed that conditions similar to "Heating Period C" in Phase I specifications will be provided for part of the Phase II contract and conditions similar to "Heating Period D" for the remainder.

Arrangements will have to be made.

4. Paragraph 1.2 Construction light and power - It is assumed that temporary construction service will be drawn from floor lighting and power panels.

Yes.

The quantity of service must be defined.

May require special circuits.

The University should decide on the necessity of metering this service.

No.

5. Paragraph 1.2H - The University must decide on extent of safety and security lighting they wish maintained on site.

Minimum lighting already supplied under Phase I.

6. Paragraph 1.3 Construction Water - It is assumed the water will be available from janitors' closets located within the shell space areas, the contractors making temporary connections as required.

Yes.

7. Paragraph 1.4 Telephone - Same as B/C Phase I; that is, each contractor provides his own.

Yes.

8. Article 2.1 Fire Safety - It is assumed that provisions are applicable to Phase II except for standpipe systems.

Yes.

9. Article 3.1 Construction Offices - The University must decide where they will locate their offices and where the contractor offices will be located. It is assumed the latter will be within the 1st., 2nd., 8th. or 9th floor shell spaces.

Construction Offices to use Unit B/C floor 6 shell space.

10. Article 3.2 Sanitary Facilities - It is assumed contractors will use one or both Rooms 2-75 and 2-76 on the second floor of Unit B/C.

Yes.

If facilities are needed on the 9th floor, they will be temporary facilities or contractors will be allowed access to facilities on the 9th floor. The University must decide this issue.

Ninth floor must have temporary facilities.

11. Article 4.2 Hoisting Facilities and Article 4.2 Building Elevators - Building elevators 5 and 6 are specified for passenger and freight use respectively by Phase I contractors. These elevators are scheduled to be available as early as 15 September 77 and no later than 22 August 77 (No. 5) and 8 November 77 (No. 6) per B/C schedule dated 31 January 77.

If Phase I contractors turn elevators 5 and 6 over to the University prior to Phase II, usage of these elevators by Phase II contractors would follow a "chip" system similar to Phase I. Any Phase I usage after turnover would be on a "chip" system controlled by Phase II contractors. Since Phase I contractors have contractual obligation to turnover these elevators in "like-new" condition, it is desirable to have them do so early enough not to hinder access by Phase II.

Hoisting of bulky, heavy materials could be handled by use of a crane to the 9th floor, with access through a window, via the K/E tunnel for floors 1 and 2, or by use of the Unit A elevator No. 11 (animal elevator), as well as by use of B/C elevator No. 6. Hoisting with temporary hoisting equipment in one of the unused elevator shafts would seem to involve greater costs than the scope of the project warrants.

Studies done by TAC seem to make it possible for Hospital litters of a given size to use a passenger elevator. On a scheduled usage basis, this proposal seems viable, but further consideration is needed by the University.

University usage of elevators 5 and 6 and transportation of furnishings through Phase II areas to outfit Phase I (see Paragraph 4.2R.10) should be reviewed. Unnecessary circulation through Phase II areas should be avoided.

Car 6 must be turned over to the U/M upon completion of Phase I. Phase II contractors to use car No. 4, and temporary hoist in shaft No. 3.

12. Article 6.5 Fencing and Barricades - The University may wish to retain a limited amount of fenced area on the site for outside storage or for Phase II contractors' parking area, which were installed as part of Phase I specifications.

Use Powell Hall site.

Phase II contractors should be responsible for fencing any other areas requiring security such as the proposed loading and entry area at floor 3 along Delaware Street.

Yes.

13. Article 6.6 Temporary Closures - It is proposed that Phase II contractors zones be enclosed in temporary closures. Closures similar to Phase I having a smooth painted drywall surface facing the occupied area are suggested.

Yes.

SECTION 01700 - PROJECT CLOSEOUT:

It is assumed that all portions of this section are applicable to Phase II work with the following exceptions and comments:

1. University will pay for temporary utilities.
Yes.
2. Contractor will restore elevators.
Yes.
3. No radiation or radio frequency shielding testing is required.
Yes.
4. Contractor shall wash inside of all exterior windows.
Yes.
5. Electrical contractor shall clean all pensl in which work was done by him.
Yes.
6. Mechanical contractor shall replace filters on all HVAC systems serving areas worked on under this contract.

Yes.

SECTION 01800 - ALLOWANCES:

The University must decide if any items are to be carried as an allowance (Hardware, carpeting?).

Hardware - No

Carpeting - No, Group II furnishings item.

SECTION 01910 - CUTTING REMOVAL AND PATCHING:

It is assumed that provisions are generally appropriate to Phase II, except Phase I work will be salvaged and extended and minimal demolition is necessary.

Yes.

This section should address the job condition requiring Phase II contractors to utilize previously installed raceways, conduits, panels, ducts, plumbing work, ceiling suspension, etc.

Yes.

The University should review whether any materials are to be salvaged from Phase I, such as doors, frames, hardware, ceiling materials, casework, etc.

Any items from Phase I that are removed under Phase II should be turned over to the University for storage.

SECTION 01920 - TEST BORINGS:

Not Applicable.

THE ARCHITECTS COLLABORATIVE INC.

JUAN B FLETCHER
1945 1965
WALTER GROPIUS
1945 1969
ORMAN FLETCHER
JOHN C. HARKNESS
SARAH F. HARKNESS
LOUIS A. McMILLEN

RICHARD BROOKER
ALEX CVIJANOVIĆ
HERBERT GALLAGHER
WILLIAM J. GEDDIS
ROLAND KLUVER
PETER W. MORTON
MORSE PAYNE
ERNEST L. BIRDSALL
TREASURER

HOWARD ELKUS
ALLISON GOODWIN
BASIL HASSAN
JOHN HAYES
JOSEPH HOSKINS
LEONARD NOTKIN
RICHARD SABIN
DAVID SHEFFIELD

GAZI B AHMED
ROBERT BARNES
KENDALL P. BATES
SERGE CVIJANOVIĆ
ROYSTON DALEY
ROBERT DEWOLFE
GREGORY DOWNES
GAIL FLYNN
GERALD FOSTER
THOMAS LARSON
RALPH MONTGOMERY
PERRY NEUBAUER
IGOR G. PLATOUNOFF
RICHARD PUFFER
WALTER ROSENFELD
JOHN J. SCOTT
EDMUND SUMMERSBY
KENNETH TAYLOR
MALCOLM TICKNOR
ROBERT TURNER
ROBERT WILSON
LAURENCE ZU

26 May 1977

Mr. Paul Maupin
Health Sciences Planning Coordinator
Health Sciences Planning Office
4104 Powell Hall
University of Minnesota
Minneapolis, MN 55455

Dear Paul:

Enclosed is a proposed layout of Contractor and University Offices on the 6th Floor of Unit B/C. These offices are for use during Phase II finishing operations.

We have located the offices in an interior area because of its proximity to the existing toilets, ready access to elevators and exit stairs and to avoid finishing of the exposed surfaces around the windows such as insulation, fireproofing, heating, piping, etc.

If the offices are to be used for several years we believe that they should be reasonably finished. The following finishes are suggested:

Partitions: 1/2" drywall on 3-5/8" metal studs 8'-0" high, with provisions for acoustical privacy as required above ceiling. Perimeter walls carry to structure.

Base: 2-1/2" resilient.

Painting: Prime plus one finish coat.

Ceiling: Suspended 2 x 4 layin type 8'-0" above finished floor.

Floor: Sealed concrete exposed.

Doors/Frames: 3 x 7 economy solid core wood with stock hollow metal frames complete with hardware.

Light Fixtures: 2 x 4 layin type supported by ceiling.

Power: 110V circuits as required.

HVAC: Supply ductwork only, ceiling plenum used as return.

Plumbing: Toilets for men and women, 1 WC and 1 lavatory each.

Sprinklers: Pendant type as required.



THE ARCHITECTS COLLABORATIVE INC.

Mr. Paul Maupin
26 May 1977
Page Two

The attached layout uses about 3500 square feet of the 6th Floor shell space. If a second contractor becomes involved simultaneously, additional space could be provided to the south as indicated. Clearly, the finishing work necessary to accommodate these offices will increase the cost of the project. A rough estimate of construction cost for this space finished as described above is \$15 per square foot or about \$50,000. It is also going to take time to accomplish this work at the outset of Phase II construction contract. During this period the contractor would have to operate from off the site.

If we are to design, engineer and prepare additional contract documents for this area, it may delay the scheduled release of the Phase II Documents. This work is beyond the scope formally authorized by you to date.

It is requested that you review this information together with Gene Kogl and provide us with your comments and direction to proceed.

Very truly yours,

THE ARCHITECTS COLLABORATIVE Inc.

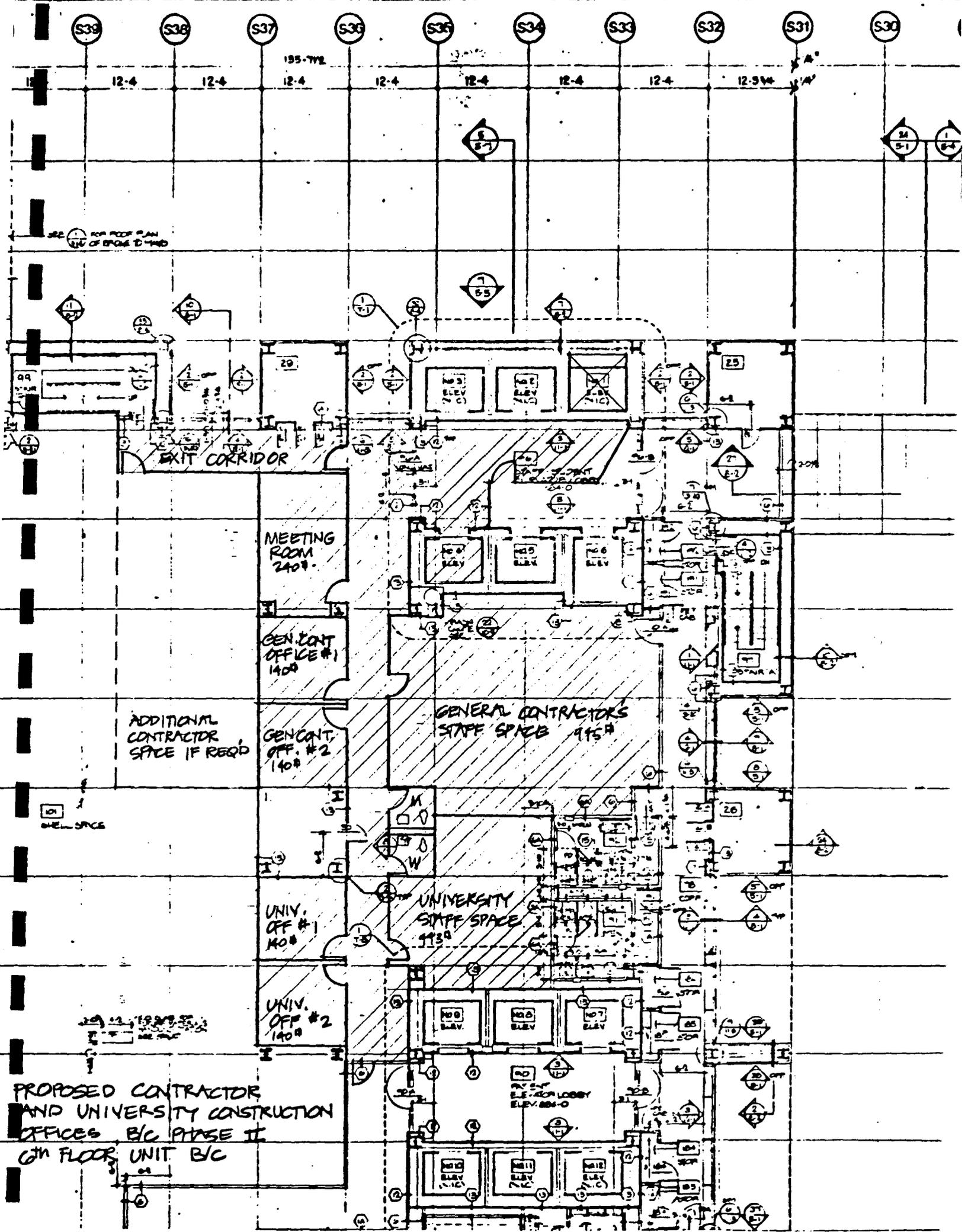
A handwritten signature in black ink, appearing to read "HGZ", is written over the typed name "Herbert G. Zeller".

Herbert G. Zeller

HGZ/rk

enc.

cc: Hewitt
Kogl
Scott
Patterson
HSAE



S39 S38 S37 S36 S35 S34 S33 S32 S31 S30

12-4 12-4 12-4 12-4 12-4 12-4 12-4 12-5

195-TYE

195-TYE

195-TYE

SEE FOR ROOF PLAN
OF PAGE D-140

EXIT CORRIDOR

MEETING ROOM
2409

GEN. CONT.
OFFICE #1
1409

ADDITIONAL
CONTRACTOR
SPACE IF REQ'D

GEN. CONT.
OFF. #2
1409

GENERAL CONTRACTORS
STAFF SPACE 915#

UNIV.
OFF. #1
1408

UNIVERSITY
STAFF SPACE 913#

UNIV.
OFF. #2
1408

PROPOSED CONTRACTOR
AND UNIVERSITY CONSTRUCTION
OFFICES, B/C PHASE II
6TH FLOOR, UNIT B/C

ELEVATOR LOBBY
ELEV. 884-0

ELEV. 884-0

ELEV. 884-0

ELEV. 884-0

THE ARCHITECTS COLLABORATIVE INC.

JEAN B. FLETCHER
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JOHN HAYES
JOSEPH HOSKINS
LEONARD NOTKIN
RICHARD SABIN
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JOHN J. SCOTT
EDMUND SUMMERSBY
KENNETH TAYLOR
MALCOLM TICKNOR
ROBERT TURNER
ROBERT WILSON
LAURENCE ZUELKE

3 June 1977

Mr. Clinton Hewitt
Vice President, Physical Planning
340 Morrill Hall
University of Minnesota
Minneapolis, MN 55455

Re: Unit B/C Phase II Finishing Work

Dear Clint:

This shall confirm our recommendation, given at our 21 April 1977 meeting, that the construction contract for finishing shell on Floors 1, 2, 8, and 9 of Unit B/C be a single prime contract. We further recommend that future B/C shell space finishing contracts be single prime contracts.

As you know, the program of finishing shell space in Unit B/C is just beginning with the completion of 40,000 square feet in the initial package. A second package is being considered involving space on Floors 2, 5, and 8. As other users obtain funding, additional packages will be developed. This process may extend over several years before all shell space is completed.

These packages will be bid and separate contracts signed. It is possible that two or more different packages will be under construction simultaneously. The work under each package will be at a different stage of construction, requiring different demands for supervision and administration by the University.

The bid package we are now completing will overlap the present construction schedule of Unit B/C by four to six months. The process of interfacing the new finishing work has been a topic of our earlier letters of 9 December 1976 and 14 March 1977 to Paul Maupin and of discussions with you, Don Brown, and Jim Brinkerhoff.

The mixing of separate construction contracts on the same site is prone to disputes over jurisdiction and responsibility and claims for delays and extras. The complications resulting from joint usage of the building by contractors and the University are enormous, particularly when the welfare of hospital patients is involved. Bob Dickler has presented his concerns in this regard.

THE ARCHITECTS COLLABORATIVE INC.

B/C Phase II Finishing Work
3 June 1977
Page 2

We believe we have found a way to minimize some of these problems by establishing separate access routes, dedicated corridors, and elevators for Phase II Contractors. In addition, by careful scheduling, it will be possible to achieve timely turnover dates, maintain contractual responsibilities and valid warranties. By accomplishing certain critical work by modification, disruption of future University occupancy will be reduced.

A single prime construction contract will augment this process. In our opinion, it will centralize the responsibility for the work leading to better cooperation between the separate trades. The general contractor is able to enforce performance by subcontractors and assure on-time project delivery. The general contractor is able to be more selective in choosing subcontractors with whom he can work in harmony, without sacrificing his competitive position.

By providing permanent elevator equipment for hoisting, the University will be assuming responsibilities for vertical transportation for contractors. There will be a need to coordinate B/C physical plant operations, Hospital and departmental functions in B/C, and the work under separate construction contracts at different stages of construction. We believe this will be facilitated by writing single prime agreements for the work.

We hope this clarifies and amplifies the discussion at our 21 April 1977 meeting. Based upon your approval at that meeting, we are finalizing construction documents for the finishing of shell space on Floors 1, 2, 8, and 9 as a single prime construction contract.

Very truly yours,

THE ARCHITECTS COLLABORATIVE, Inc.



Herbert G. Zeller

CC: Scott, Patterson, HSAE



UNIVERSITY OF MINNESOTA
TWIN CITIES

Health Sciences Planning Office
Physical Planning
Box 75 Powell Hall
4103 Powell Hall
Minneapolis, Minnesota 55455
(612) 373-8981

June 13, 1977.

Mr. Herbert Zeller
The Architects Collaborative, Inc.
46 Brattle Street
Cambridge, Massachusetts 02138

SUBJECT: Unit B/C - Phase II
Contractor/University Offices
Floor 6

Dear Herb:

Upon reviewing your May 26, 1977, proposed layout for providing University/Contractor construction offices on floor 6 of Unit B/C, Gene Kogl and I suggested the following changes be made to the finishes described:

- Partitions: use a single layer of 1/2" drywall on 3-5/8" metal studs; perimeter walls to carry up to structure.
- Base: none required.
- Painting: none required, just tape the drywall joints and fill the screw and/or nail heads.
- Ceiling: none required.
- Floor: sealed concrete exposed.
- Doors and Frames: 3 x 7 economy solid core wood doors with stock hollow metal frames could be used, but the University has a number of the Unit A and B/C door and door frames in stock which could be used to cut the cost.
- Light Fixtures: since the Fenwick apartment will be demolished under the Unit F contract, the University will have a number of used fixtures which could be utilized in this area.
- Power: 110V circuits as required.

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JUN 30 1977

ARCHITECTS COLLABORATIVE, INC.

- HVAC: supply and return duct work may be required, since the ceiling is to be deleted.
- Plumbing: toilets marked contractor and University with one lavatory and one WC in each is required. Women can use the general public toilet located on floor 6.
- Sprinklers: use the units installed under Unit B/C - Phase I for shell spaces.

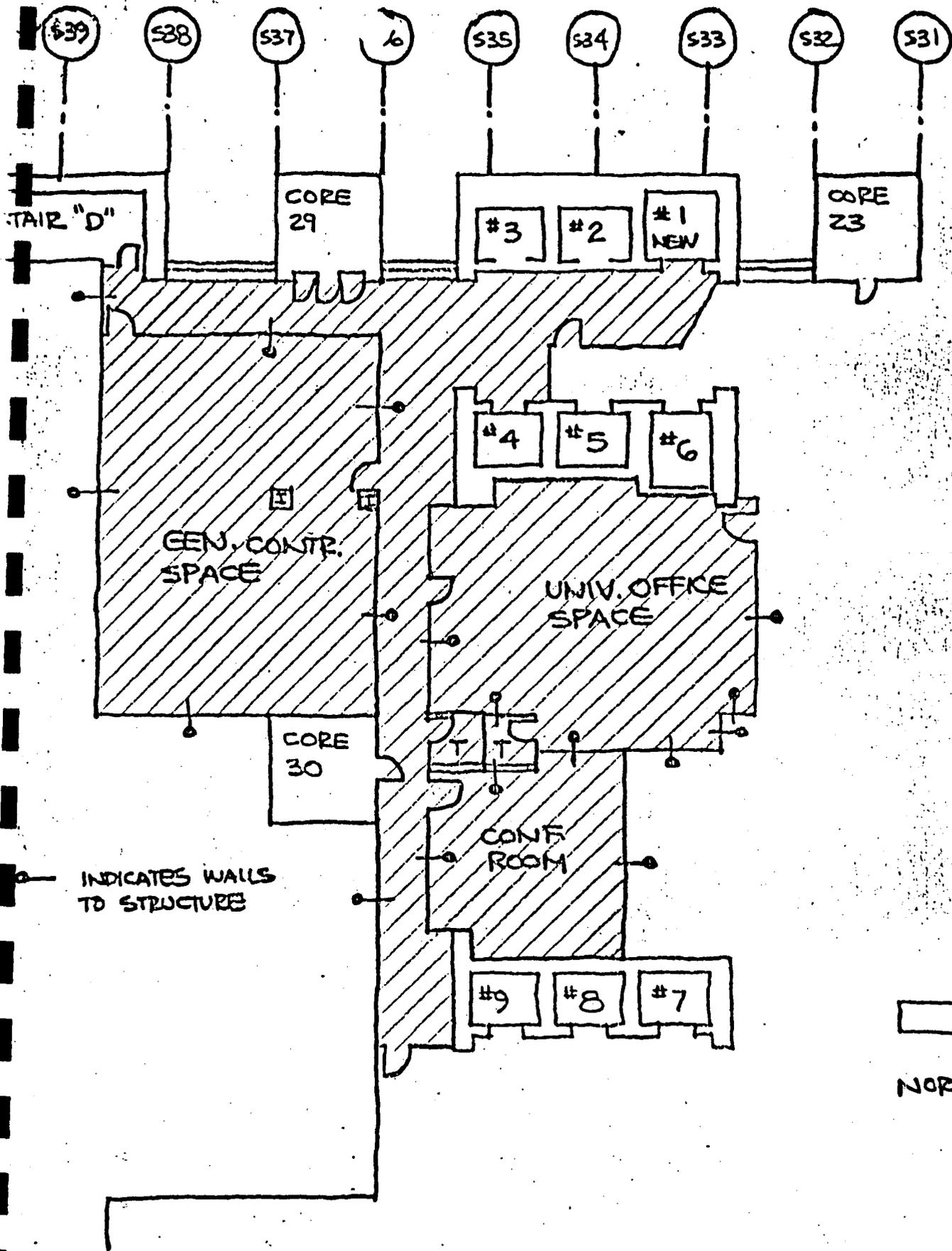
In addition to the above information, see the attached sketch for the University's desired layout of floor 6. If you have any questions regarding this information, please contact me at your convenience.

Sincerely,



Paul J. Maupin
Health Science Planning Coordinator
Health Science Planning Office

cc: Ginton Hewitt
Eugene Kogl
John Scott
/John Patterson
Health Sciences Architects & Engineers



PROPOSED CONTRACTOR/UNIVERSITY
OFFICES - UNIT B/C FLOOR 6

JUNE 14, 1977

SECTION 01010SUMMARY OF WORK AND SPECIAL REQUIREMENTS1.1 DIVISION ONE

A. The requirements of all Sections of Division I apply to and shall govern the Contractor and all Subcontractors for this Project. Where provisions and requirements are referred to as the responsibility of a particular Contractor, or a Subcontractor, he shall have the primary responsibility to accomplish, provide, assume, and enforce, but all Contractors and all Subcontractors shall be governed by the requirements and cooperate fully in fulfilling the requirements.

1.2 GENERAL SUMMARY OF WORK UNDER THE CONTRACT DOCUMENTS

A. Location: The Project site is located on the Minneapolis Campus of the University of Minnesota, on Delaware Street, bounded generally on the east by the VFW Hospital and Masonic Memorial Research Center, on the north by Unit A of the Health Sciences Complex, on the west by Mayo Court and Mayo Memorial Hospital and on the south by Diehl Hall.

B. General Scope: The Project under these Contract Documents consists of the finishing of "shell" spaces on Floors 1, 2, 6, 8 (add alternate) and 9 of Unit B/C of the Health Sciences Complex within the scope of the Contract Documents. Singular notations in specifications shall be considered plural where plural application is required for completion. Mention or indication of extent of work under any work Division or specification Section is done only for the convenience of Contractor and shall not be construed as describing all work required under that Division or Section.

C. Separate Contracts under these Documents: The construction will be accomplished under a single contract.

1. The Index to Drawings is on the first sheet of the Architectural drawings, The Mechanical and Electrical drawings primarily apply to those trades and the remainder of the drawings to the General Construction trades; however, Contractor and all Subcontractors shall be bound by the information and requirements provided by the complete set of drawings.

1.3 RELATED WORK NOT UNDER THESE CONTRACT DOCUMENTS

A. In addition to the work under these Contract Documents, and the previously awarded B/C Contract the Owner has, and will continue to award contracts for work to complete this Unit B/C Project, for work that is related to this Project or related to the progress of the entire Health Sciences Complex. A listing of anticipated work is provided for the general information of the Contractor; do not construe the list as complete, nor affecting the Owner's rights in any way. Items marked with an asterisk (*) indicates work in progress, or anticipated to be in progress prior to the on-site commencement of work under this Contract.

1. By University

*a. Maintenance of exit ways from adjacent buildings.

b. Maintenance of heating, ventilating and air conditioning systems and electrical distribution systems of Unit B/C and adjacent buildings as they are completed and placed in service by other B/C Contractors.

*c. Providing energy for construction heat, light, and power for B/C Phase II, after completion of the B/C Contracts.

d. Equipping University's field office and utilities for same.

*2. By Utility Companies or Other Contractors

a. Installation of telephone equipment, in building.

b. Installation of audio-visual, intercom and TV systems, in buildings.

c. Installation of graphics work, for building and site.

d. Test and Balance service on the air and hydronic and other systems of the Mechanical Contract for Unit B/C.

e. Major remodeling of Diehl Hall. (No specific date has been established.)

f. Construction of Unit F, north and east of the northeast corner of Unit A, (No specific date has been established.)

g. Remodeling of the Jackson-Owre-Millard-Lyon complex, west of Unit A. (Anticipated to commence in the summer of 1977).

h. Completion of other "shell" spaces in Unit B/C.

1.4 ADDITIONAL DEFINITIONS

A. Schedule Consultant for B/C Contract: Richard Campbell, Minneapolis Minnesota, retained by the University.

B. B/C General Contractor: Sheehy Construction Company who is under a separate contract with the University.

C. B/C Mechanical Contractor: Lamb Plumbing and Heating, Division of Hayes Contractors, Inc., who is under a separate contract with the University.

D. B/C Electrical Contractor: Premier Electric Construction Company, who is under a separate contract with the University.

E. B/C Vertical Transportation Contractor: Westinghouse Electric Company, Elevator Division, who is under a separate contract with the University.

F. JOML-A Contractor: Adolfsen and Peterson, Inc. who is under a separate contract with the University.

G. JOML-B Contractor:

H. JOML Surgical Pathology Renovation Contractor: EDS Construction Company, who is under a separate contract with the University.

I. Test and Balance Consultant: An independent firm specializing in testing and balancing services of air and hydronic systems in building construction, which will be retained by the University to perform the services outlined in Section 15010.

J. Owner: Where used, the term is synonymous with the University.

K. Site: In general, the term refers to the actual site within the construction limits indicated, adjacent areas outside the construction limits where work must be performed to complete the Contract, the nearby adjacent areas indicated as staging/storage areas and the access to these areas.

L. Construction Site Limits: The area within the limits indicated on the drawings, which are the ultimate or maximum limits, except for related isolated work which must be accomplished outside the limits to complete the Contract. The construction limits are variable, up to the indicated maximum. The specified requirements to maintain access, constraints as to when certain phases or areas of the Work can be accomplished or other restrictions shall mean the construction limits will be necessarily otherwise located, or restricted to other locations, resulting in staged construction limits. The Construction limits and site fencing shall not infringe on access to adjacent buildings, existing streets or pedestrian traffic until work in the specified area is scheduled to commence. At various times during construction, the University reserves the right, in consultation with the Contractors, to designate other actual construction limits to accommodate the phased areas of work in progress.

1.5 PRECONSTRUCTION CONFERENCE AND SITE MEETINGS

A. After award of contracts, at time designated by the University, the Contractor and major subcontractors shall attend a Pre-Contract Conference at a location in the Metropolitan Twin City area. The requirements, procedures to be followed, coordination matters will be reviewed. These matters will be reviewed.

B. During construction, periodic site meetings with Contractor and supervision of the University at times directed by the University. Presentatives meetings will be held weekly (unless job conditions for recording be held more frequently if job progress and interested parties. Excused as being not necessary due to the construction Schedule. major subcontractors shall have one or more representatives, and In attendance. The General Contractor shall coordinate meetings, "minutes" of the meeting and distribute.

A separate monthly meeting may be held with the Contractor and subcontractors when appropriate, involving other contractors who have developed the construction integrated with certain

1.6 CONSTRUCTION LOGIC AND SEQUENCES

A. The University's Schedule logic and sequences for

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established constraint dates and constraints which are critical to the University. Refer to Section 01200. The B/C Phase II Contractors will be guided by this logic and sequences until such time as the B/C Contracts are complete.

B. The logic and sequencing will be available at the Pre-Bid Conference.

C. The Unit B/C logic and sequencing shall be used by the Contractor, to develop the Phase II Construction Schedule as specified under Section 01200.

1.7 PERMITS AND FEES

A. Refer to Paragraph 4.7 of the General Conditions. The University will obtain and pay for all permits and connection charges of the State, City of Minneapolis and utility companies, at no cost to the Contractors, except as noted in C. following.

B. The University will pay all fees to the State, as may be required for review and inspection services.

C. The Contractor shall make his own arrangements and pay any charges including parking costs and bonds, for use of public streets or roads in transporting, loading/unloading or use of construction equipment on the streets.

1.8 INSURANCE

A. Contractor's Liability Insurance: Refer to General Conditions, Sub-paragraph 11.1.10, Clause .8. Each Contractor shall provide Umbrella Excess Liability Coverage to supplement the Specified underlying limits of all required coverages. The minimum excess liability amounts of the umbrella policy of each Contractor shall be:

General, Contractor	\$ 5,000,000.
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B. Property Insurance: Refer to General Conditions, Paragraph 11.2.

1.9 SITE MANAGEMENT - SUMMARY OF SITE RESPONSIBILITIES UNDER THIS AND OTHER CONTRACTS

A. Refer to Division C, General Conditions for general requirements; in particular Articles: 4.3 and 4.9 for superintendence on the site; 4.14 and 7.11 for use of site and premises; 10 for protection, safety and storage; 3,4,5 and 6 for coordination and cooperation in general, 4.16 for condition and care of site; and other Articles of this Section 01010 for more specific requirements.

B. The B/C Phase II Contractor shall assume site management of his assigned portions of the building within seven days after award of Contract and shall carry responsibility for the site management until final completion of his contract. The B/C General Contractor (Phase I) remains on the site and has overall responsibility for site management; the B/C Phase II Contractor shall cooperate and coordinate his own site management activity

with those of the earlier contract.

C. Site management and maintenance shall include, but not be limited to: maintenance of fences in good condition; providing and maintaining temporary facilities as specified; fire safety management, as specified in this Section; general security of his project areas; and similar overall or general management of the site and adjacent public and other property to fulfill the obligations of this Contract,

D. Site management shall include all areas of the site, including storage/staging areas.

1.10 CONTRACT DOCUMENTS PROVIDED TO THE CONTRACTORS

A. The Contractors will be provided, free of charge, the number of sets of drawings and specifications as scheduled below. Additional sets may be obtained at the cost listed in the Instructions to Bidders as the "Deposit" amount. (No refunds will be given). Subcontractor's shall obtain sets from the Prime Contractors; free sets will not be issued to Subcontractors, by the Architect/Engineer or University.

B. Schedule of sets:

<u>Contract</u>	<u>Complete Sets Including all Other Contracts</u>	<u>Sets Which are Primarily for Work of Individual Contracts.</u>	
		<u>Drawings</u>	<u>Specs</u>
General Construction	4	16	16
Mechanical Work	3	12	12
Electrical Work	3	12	12

1.11 PRE-CONSTRUCTION PHOTOS

A. Prior to beginning any work, at a prearranged date agreed to by the University, preconstruction photos shall be taken recording the condition of floors, walls, ceilings in shell space access and staging areas, defined on Drawings, and in shell space to be finished. Upon completion of dust and smoke partition and protection required on the Drawings, additional photos shall be taken recording the condition of existing work on each side of the partition.

B. Refer to Section 01300 for submittal procedures.

C. Copies of the photos shall be sent to the University and to the Architect.

1.12 TEST AND BALANCE SERVICE

A. Under a separate contract, the University will retain a qualified consultant to provide test and balance services of the HVAC and piped/pumped systems of the Project, as further specified under Section 15010.

B. All Contractors shall coordinate and cooperate with the test and balance consultant, including permitting access to the Work as necessary to properly test and balance all systems.

C. In addition to the Work under the Mechanical Contract, all Contractors shall provide the test and balance consultant with any required shop drawings (ie: fume hoods) other data and characteristics the consultant may require to complete the services.

1.13. CONDITION AND CARE OF SITE AND PROJECT

A. Refer to Article 4.14 of General Conditions. From the time the Contractor for this Project commence work at the site until the Contract is completed, Contractor is responsible for the care of the site and Project to the extent his work, acts, operations or use of the site affects the site and Project, subject to the rights of the University and the University's workmen thereon.

B. The Contractor shall confine his apparatus, materials, equipment, shacks and operations of workmen to the site and construction limits indicated on drawings or otherwise imposed by law or ordinance. The site and Project shall not be unreasonably encumbered with materials and equipment. Neat and orderly stockpiling and other operations shall be maintained and debris shall be regularly removed from the site. Before any work is started, Contractor shall meet with the University and agree to the use of available areas for storage. The Contractors shall then confine their storage and operations to said agreed limits and to University directions.

C. All improvements on or about the site and adjacent property which are not shown to be altered, removed or otherwise changed shall be maintained or restored to the conditions which existed previous to starting work. All existing buildings, structures, or other features shall be protected from damage by any operation in connection with the Project. Contractor shall replace or repair, at his own expense (and to the satisfaction of the University), all damage to existing buildings, sidewalks, curbs, drives, lawns, plants, trees, shrubbery, and other property resulting from work of his Contract, from whatever cause.

D. The Contractor shall protect existing trees and features of adjacent buildings (including Unit A) which are to remain and are susceptible to damage from ordinary operations of the Contractors, trucking, or other activity. Tree trunks shall be boxed and barricades set up at sufficient distance to prevent damage to major tree branches, unless such protection remains from earlier contracts.

E. Utilities or other services which are shown, or not shown but encountered or otherwise found, shall be protected by the Contractor from any damage from work and operations of this Contract, unless or until they are abandoned.

If the utilities or services are not abandoned, or to be abandoned, the Contractor shall immediately restore any damage from his work or operations to place the utilities and services in an equal or better condition to that which existed. Where utilities or services are shown to be abandoned or moved, they shall remain in service, and be protected by the Contractor, until new utilities and services have been provided, tested and are ready for use.

F. The normal functions of the University and Campus shall not be disturbed, except within the construction limits and storage/staging areas of this Contract. Except when work is in progress at areas indicated for Work to be performed, or as otherwise necessary to complete the Contract, all walks, driveways, park areas, and entrances shall be kept clear and free of all Contractor's equipment, material and debris at all times. Remove debris promptly.

G. The University will continue to occupy the surrounding buildings and continue the normal functions, including parking and delivery. The University's employees and staff shall have full access to surrounding areas and shall be allowed to perform their duties therein without any restriction.

H. During the life of this B/C Phase II Contract, the University will occupy other completed portions of the Unit B/C building. Contractor shall cooperate fully to ensure that the University's staff and employees and students and public can commence and continue normal operation of the completed portions of the building with full access to perform operations without restriction.

1.14 LAYOUT OF THE WORK

A. The Contractor shall locate and layout his Work with relation to existing reference points. The Contractor shall consult with the University and demonstrate to the University's satisfaction that significant points and elevations are correctly established.

B. Each Contractor or subcontractor shall correctly locate his work in relation to the building and site features, to all requirements imposed by the drawings and good construction practice. Each Contractor shall verify the locations of all existing work to which his Work must fit and all grades, lines, levels and dimensions shown on the drawings and report any errors or inconsistencies in above to University before commencing work.

C. As the Work progresses, the Contractor shall lay out the exact location of grids, partitions and similar features, as guide to all trades. Partitions shall be laid out (marked) by using permanent color paint, (not including curing agent) and before any materials are stored on the floors. Grids shall be laid out as may be required, using temporary marking methods except where floor covering will be installed.

D. The Contractor shall recognize that the drawings necessarily are diagrammatic, in many instances. All work, and in particular, exposed piping, ducts, conduit and similar items shall be neatly and carefully laid out to provide the most useful space utilization and the most orderly appearance. Piping and similar work shall be installed as close to ceilings and walls as conditions permit, located to prevent interference with other work or with the use of the spaces in the manner required by the functions of the room and staff. Valves shall be located in inconspicuous places. Before proceeding with any work, particularly where exposed, the Contractor shall carefully plan the layout and review it with the University for acceptability of location.

1.15 REFERENCES TO STANDARDS AND CODES

A. If the Contractor observes that the drawings and specifications are at variance with any applicable code or regulation of a governmental unit having authority, he shall promptly notify the University and Architect in writing, and any necessary changes shall be adjusted as provided in the Contract for Changes in the Work. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the University, he shall bear all costs and damages arising therefrom.

B. The standards referred to, such as ASTM, Federal Specifications and similar standards, shall have full force and effect as though printed in the specifications, except as modified in the specification. These standards are not furnished to bidders and the Contractor as it is assumed that manufacturers and trades involved are familiar with their requirements.

C. Any material specified by reference to the number, symbol or title of a specific standard, such as ASTM, Commercial Standard, a Federal Specification, a trade association standard, or other similar standard, shall comply with the requirements in the latest revision thereof and any amendment or supplement thereto in effect on the date of The Contract Documents, unless otherwise noted.

D. For products specified in accordance with a Federal Specification, ASTM Standard, American National Standards Institute or similar association standards, upon request the Contractor shall provide an acceptable affidavit by independent testing laboratory, or other source approved by the University and Architect, certifying that product furnished for this Project complies with particular standard specifications. Where necessary, requested or specified, supporting test data shall be submitted to substantiate compliance. The manufacturer is subject to Architect's acceptance.

1.16 CHARACTER OF WORK, MATERIALS AND INSTALLATION

A. The Work shall conform in all respects with requirements of all Contract Documents, and workmanship shall be first quality, the best obtainable at the present state of the crafts. Incompetent or careless workmanship shall not be permitted by the Contractor and will not be accepted by the University.

B. If, in opinion of the Contractor (or any Subcontractor) any Work is indicated on drawings or specified in such manner as to make it impossible to produce Work of highest quality, within space shown, or which may be considered improper for use and conditions, including the effects of expansion and contraction, or should discrepancies appear between drawings, or drawings and specifications, the Contractor shall refer same to the University and the Architect before proceeding. If the Contractor does not request such interpretation, no excuse will be entertained thereafter for failure to carry out and guarantee the Work in a satisfactory manner. Elements of the Work intended to protect against weather and water shall be guaranteed weather and water tight.

C. Proper performance of the Contract shall imply, among other things, correct and proper placement, proper or published results for products and equipment, fitting and operation of fixed or movable and operating parts of the Work, including doors, windows, hardware and all systems and equipment. All materials

and equipment shall be complete in every respect, with all parts, connections, anchors, devices, backing, fittings and other necessary items, and shall be completely installed, anchored, fitted and placed in operating condition. Before buying, constructing or installing work, the Contractor shall notify the University and the Architect of any conditions which may exist in the Contract Documents which will affect proper operation or first quality installation.

D. Throughout project, various materials and pieces of equipment are fitted to others, various materials are applied to which other materials attach and similar installation relationship. Each manufacturer, Contractor and subcontractor shall take all reasonable precautions to insure his materials, devices, items, equipment or other products can be satisfactorily applied or installed to each other or work of others and he shall make necessary adjustments during preparation of shop drawings or in advance of field or shop work to accommodate other work to prevent unsatisfactory items or installation.

E. All materials or equipment shall be installed or applied according to directions of the manufacturer or recommendations of an association dealing primarily with materials, unless specifically designated otherwise. In no case shall the installation, including any temporary work necessary (i.e. shoring), be below the standard recommended by the manufacturer. Where specified requirements exceed the manufacturer's standards, the specification shall govern. Fabrication (including reinforcing and accessories) and installation shall be provided to insure proper placement and use of the item or material under the location, use, condition and available space to serve intended function and to meet code requirements.

F. Equipment and devices shall be provided and installed to "fail safe" in all circumstances and it shall be Contractor's obligation to provide and install work in such manner.

1.17 PROPOSED MATERIALS AND EQUIPMENT

A. Refer to Article 12 of the Instructions to Bidders, Paragraph 7.13 of the General Conditions and Article 2.3 of Section 01300, Submittals. The Contractor shall provide materials, articles, equipment, systems and other items (products) that have been specified, or listed in addenda, under the specified conditions and criteria. Requests for the use of alternate products after bids have been received will not be considered, nor changes allowed in the accepted list of products, except when the specified or accepted product subsequently is determined as not meeting the requirements of the Contract Documents or the product becomes unavailable, and then only under the following conditions:

1. The Contractor (or subcontractor) has placed orders for the specified materials and equipment (products) promptly upon award of contract and acceptance of list. No excuse or proposed substitution will be considered for products due to unavailability unless proof is submitted that firm orders were placed immediately.

2. The reason for unavailability is beyond the control of the Contractor. Unavailability will be construed as being due to prolonged strikes or lockouts which will seriously delay the entire Project to an extent the University finds unacceptable, bankruptcy, discontinuance of manufacture of a product or Acts of God.

3. The request for the use of an alternate product is submitted in writing within 10 days after the date the Contractor has ascertained the product does not comply with the specifications or has become unavailable, accompanied by supporting evidence.

4. The Contractor proposes to use an alternate product that was specified or listed in an addendum, along with complete data on the product.

5. There is no extra cost to the University.

6. The alternate product is acceptable to the University and Architect.

B. If, after acceptance of the Contractors proposed list of materials, required under Section 01300, by subsequent evidence or investigation the University or Architect determines a product has been misrepresented and will not comply with, or perform in accordance with, the Contract Documents, they shall have the right to require a change to a complying product without increase in cost to the University.

1.18 DOCUMENTS OF OTHER CONTRACTS

A. Documents of other contracts provide for constraints that may relate to the work of this B/C Phase II Contract.

B. Copies of these documents are on file in the Unit B/C University Project Office and may be examined there for coordination with this B/C Phase II Contract.

1.19 SECURITY AND FIRE SAFETY SURVEILLANCE

A. The Unit B/C General Contractor has provided for surveillance services during construction. The service will continue until the University accepts the Project or starts to occupy the Project. As areas are occupied, the University will provide surveillance at the occupied areas, and the B/C General Contractor will continue the service at unoccupied parts and storage areas including the areas of this B/C Phase II Contract.

B. The surveillance service will guard against fire and similar disasters, within and about the building, as well as vandalism and pilferage within and about the building and at all storage, staging and work areas of the site, including such areas which are separated from the building site but used by the Contractors.

C. The general surveillance service provided by the Unit B/C General Contractor is intended to guard against pilferage and vandalism for all Contractors. However, the Unit B/C General Contractor shall not be held responsible for losses of other Contractors, should they occur under the surveillance service provided by him. Should B/C Phase II Contractor want increased surveillance, such as to his individual offices or fabrication work areas, he shall provide his own surveillance or arrange for additional service through the Unit B/C General Contractor.

D. The surveillance service will be in force, operational and on guard at all times when work is not in progress, including nites, weekends and holidays. The service shall be coordinated with and be in cooperation with the normal activities of the University's police force.

E. At the completion of the Unit B/C Contract, the University will take over any remaining surveillance service as it may require inside the building but will not provide such services to the B/C Phase II Contractor's materials or equipment and will not be held responsible for Contractor or subcontractor losses.

F. When Unit B/C Contract surveillance ceases, the B/C Phase II Contractor shall provide all surveillance and security precautions as he deems necessary to protect the material and equipment of his work. He shall cooperate fully with the University with respect to its security measures for buildings and contents.

1.20 FIRE SAFETY DIRECTOR

A. The B/C Phase II Contractor shall appoint a responsible member of his organization to act as Fire Safety Director, whose duty it shall be to minimize fire hazards and to enforce fire safety precautions. The Fire Safety Director shall develop procedures and regulations acceptable to the University, to guide all subcontractors.

B. All Contractors and Subcontractors shall conform to and abide by all reasonable requirements or recommendations of the Fire Safety Director and the University. The Fire Safety Director shall consult and coordinate with the Fire Department of the City of Minneapolis in the development of the fire protection planning.

C. The Unit B/C Phase I General Contractor continues with similar responsibilities for Fire Safety Director for his and other B/C Contractors' work. The two Fire Safety Directors shall cooperate so that all fire safety precautions are followed under all contracts.

1.21 FIRE SAFETY PRECAUTIONS

A. The Contractor shall exercise extreme care to maintain and exercise adequate fire safety precautions throughout the work. This shall include providing sufficient fire fighting devices, watchmen, standby helpers or other precautions during construction, in use of temporary heat, welding, brazing, sweating, testing or other phases of work. Refer to Section 01500 for temporary fire fighting devices to be provided under the Contract.

B. All welding, brazing, cutting and sweating operations performed in vicinity of or accessible to combustible materials shall be adequately protected to make certain that sparks or hot slag does not reach the combustible material and start a fire.

C. Materials shall be protected from sparks, hot slag or hot splatter. All glass, glazed materials and other finishes, in the vicinity of welding, brazing and cutting, shall be masked by the Contractor performing the welding work.

D. When necessary to do cutting, welding, brazing, sweating and similar work in vicinity of wood, in shafts, or vicinity of any combustible material (and the combustible material cannot be removed), the materials shall be adequately protected with asbestos blankets or similar approved coverings. In addition, a helper shall be stationed nearby with proper fire extinguishers (provided by the Contractor performing the work) to guard against sparks and fire.

F. Whenever combustible materials have been exposed to sparks, molten metal, hot slag or splatter, a man shall be kept at the place of work for at least two hours after completion to make sure that smoldering fires have not been started.

F. Whenever cutting or welding operations are carried on in a vertical pipe shaft a man to act as a fire guard shall be employed to examine all floors below the point of cutting or welding. This fire guard shall be kept on duty at least two hours after completion of work to guard against fires and he shall examine each level after this time, prior to leaving. There shall be no exceptions to this requirement and failure to comply will be construed as negligence.

G. Before starting work involving cutting, welding, brazing or sweating operations, consult with the Fire Safety Director and the University as to particular precautions to be employed.

1.22 PROTECTION OF SPRAY-ON THERMAL BUILDING INSULATION

A. The spray-on building insulation, such as at the backs of precast panels, shall be protected from moisture and damage. Any damaged by the work of this Contractor shall be repaired at no cost to University.

1.23 PROTECTION OF SPRAY-ON FIREPROOFING

A. Refer to Section 01500 for temporary heat and Section 01200 for anticipated sequence of work. At all times, the sprayed-on fireproofing shall be protected from damage. The Contractor shall protect the fireproofing from water or weather damage.

B. Contractor shall exercise extreme care to prevent damage and to avoid removal of the fireproofing, including accidental knocking-off of the fireproofing. The General Contractor shall remove and replace any damaged fireproofing and at no cost to University.

C. Where fireproofing is removed to make an attachment, or where fireproofing is removed from attachments to make connections, the General Contractor shall reapply the fireproofing as required to maintain full thickness and fire rating, with the cost of such re-application paid for by the subcontractor responsible for the attachment.

1.24 INSTALLATION OF OWNER'S EQUIPMENT

A. Refer to drawings. On the schedules the equipment under the column "Group II by Owner", where an "X" occurs, as well as equipment shown on other sheets as being "by Owner", "Not in Contract" (N.I.C.) or merely dotted in, is to be provided by the University and final connections made by the University. Some equipment will be new, others will be relocated from other areas of the campus.

B. The University will deliver the equipment to the Project, uncrate or unpack, assemble, clean and otherwise make the equipment ready for installation and connection. The University will deliver the equipment to the particular room in which it is to be installed, set in its final place and make any necessary connections.

C. The University will assume responsibility for damage found during unpacking and for damage which may occur in moving the equipment. The University will assume responsibility for caring for accessories or other loose items.

D. The University will remove any debris from the unpacking, uncrating or assembly work.

E. The University and Contractor shall jointly prepare a schedule of when each item of equipment should be delivered. The schedule shall establish priorities of deliveries. In general, the schedule shall indicate the earliest time when the equipment can be installed, dependent upon the stage of completion for the space, and the latest time for delivery to prevent delay of the Contractor's completion schedule.

1.25 EQUIPMENT LAYOUTS AND ROUGH-IN

A. It is the intent that for equipment for Unit B/C, full layout and rough-in data is to be provided by the Contractor or subcontractor supplying the equipment, to the Contractor or subcontractor requiring the data, in sufficient time to facilitate proper and accurate rough-in, insofar as practicable. For existing equipment of the University, the University will provide the rough-in data. For equipment to be purchased by the University, the University will arrange to have the data furnished to the appropriate Contractor.

B. When rough-in details are not available at the time service systems are being installed the final rough-in shall be postponed until the data is available. At all times, prior to roughing-in for Group II equipment (by University) the Contractor shall consult with the University to verify the status of rough-in data.

C. When equipment rough-in data is not available at the time the service systems are being installed, the services shall be run to the approximate locations and temporarily capped, for later extension. For down-feed services in service chases or service columns, the services may be stubbed down below the ceiling line, for later completion even after walls and ceilings are installed. The face panels of service chases or service columns shall temporarily be left off, if the service work is incomplete, when the remainder of the wall surfaces are installed, to permit later completion of the rough-in. The panel faces shall be installed when the rough-in is complete.

D. When a horizontal run of services may be necessary between a service chase and the equipment, with the permission of the University, the service may be run exposed along the wall. The exposed piping will be permitted, however, only: if job progress requires the wall finish to be applied prior to the piping; if the piping will be concealed behind equipment; the equipment installation allows for such exposed work; and the necessary final rough-in data is not available.

E. For waste and other services passing through the floor, with the permission of the University, core drilling for holes may be done to facilitate job progress or to accurately locate the holes, with such core drilling done without additional cost to the Owner.

F. If layout information for Group II equipment (by University) is not available at the time required for sleeving, core drilling shall be employed as above. The University will pay the extra core drilling cost.

G. At core drilled holes, the specified sleeves will generally be required, except where the omission is specifically approved by the University. Refer to Article 1.43, this Section. Where omission of a sleeve is approved, the hole shall be drilled approximately one inch larger than the outside diameter of the pipe or conduit, or one inch larger than the outside diameter of the insulation, where insulated. When the pipe is installed, centering wedges shall be inserted to insure the pipe remains in the center of the hole, with the wedges held down one inch minimum below the floor line. An approved rod-stock backing for sealant shall be inserted around the pipe, held down 1/2 inch below the floor. Sealant shall then be applied, level with the floor at the concrete edge, sloped up about 20 degrees to the pipe to form a watershed. The sealant shall be a two-part urethane type, Eternaflex or approved equal, with a Shore A hardness of 40 to 50, color as selected by Architect. All sealant work shall be provided by the Contractor installing the pipe or conduit and shall be installed in accordance with the workmanship provisions, including clean surfaces, of Section 07900 of these specifications.

1.26 FIELD DIMENSIONS FOR CASEWORK AND EQUIPMENT

A. The need to obtain accurate field dimensions in ample time to permit fabrication of casework and equipment, for delivery and installation in accordance with the schedule, shall be recognized. Contractor shall complete work phases to accommodate the schedule for obtaining dimensions and to prevent fabrication delay. In the event it is impractical to have work done in place to permit field dimensions, the Contractor shall guarantee necessary dimensions, before construction, to the various fabricators and be responsible to insure the dimensions.

1.27 COORDINATION REQUIREMENTS

A. Refer to Paragraph 6.2 of the General Conditions, Section 01200 - Contract Time, Section 01250 - Construction Schedule, Section 01500 - Temporary Facilities and other articles of this Section 01010.

B. The nature of the Project makes it imperative that Contractor and all subcontractors coordinate their work and cooperate with each other and the University and other contractors from the start of the Project to completion. The Contractor shall be the Prime Coordinator for the Project and shall establish the general overall schedule for the progress of the Project, the sequence of completion and general use of the site.

C. With the restricted site, the Contractor is encouraged to utilize off site fabrication as much as possible and schedule deliveries so materials and equipment can be installed immediately after delivery. The Contractor shall alert and advise subcontractors and suppliers of the need to hold deliveries until they are notified the materials are required.

D. Contractor shall cooperate with all others with due respect for the methods and schedules of the other and shall work in close coordinated effort to the benefit of the completion of the Project and so as not to delay or impede the work of others. In the event of conflict or need to establish priority, the University shall make the determination of the precedence or other required decision to the benefit of the overall Project and its progress, which shall be binding on all.

F. If layout Information for Group II equipment (by University) is not available at the time required for sleeving, core drilling shall be employed as above. The University will pay the extra core drilling cost.

G. At core drilled holes, the specified sleeves will generally be required, except where the omission is specifically approved by the University. Refer to Article 1.43, this Section. Where omission of a sleeve is approved, the hole shall be drilled approximately one inch larger than the outside diameter of the pipe or conduit, or one inch larger than the outside diameter of the insulation, where insulated. When the pipe is installed, centering wedges shall be inserted to insure the pipe remains in the center of the hole, with the wedges held down one inch minimum below the floor line. An approved rod-stock backing for sealant shall be inserted around the pipe, held down 1/2 inch below the floor. Sealant shall then be applied, level with the floor at the concrete edge, sloped up about 20 degrees to the pipe to form a watershed. The sealant shall be a two-part urethane type, Eternaflex or approved equal, with a Shore A hardness of 40 to 50, color as selected by Architect. All sealant work shall be provided by the Contractor installing the pipe or conduit and shall be installed in accordance with the workmanship provisions, including clean surfaces, of Section 07900 of these specifications.

1.26 FIELD DIMENSIONS FOR CASEWORK AND EQUIPMENT

A. The need to obtain accurate field dimensions in ample time to permit fabrication of casework and equipment, for delivery and installation in accordance with the schedule, shall be recognized. Contractor shall complete work phases to accommodate the schedule for obtaining dimensions and to prevent fabrication delay. In the event it is impractical to have work done in place to permit field dimensions, the Contractor shall guarantee necessary dimensions, before construction, to the various fabricators and be responsible to insure the dimensions.

1.27 COORDINATION REQUIREMENTS

A. Refer to Paragraph 6.2 of the General Conditions, Section 01200 - Contract Time, Section 01250 - Construction Schedule, Section 01500 - Temporary Facilities and other articles of this Section 01010.

B. The nature of the Project makes it imperative that Contractor and all subcontractors coordinate their work and cooperate with each other and the University and other contractors from the start of the Project to completion. The Contractor shall be the Prime Coordinator for the Project and shall establish the general overall schedule for the progress of the Project, the sequence of completion and general use of the site.

C. With the restricted site, the Contractor is encouraged to utilize off site fabrication as much as possible and schedule deliveries so materials and equipment can be installed immediately after delivery. The Contractor shall alert and advise subcontractors and suppliers of the need to hold deliveries until they are notified the materials are required.

D. Contractor shall cooperate with all others with due respect for the methods and schedules of the other and shall work in close coordinated effort to the benefit of the completion of the Project and so as not to delay or impede the work of others. In the event of conflict or need to establish priority, the University shall make the determination of the precedence or other required decision to the benefit of the overall Project and its progress, which shall be binding on all.

F. As Prime coordinator, the Contractor shall give adequate and timely notice of various work phases and operations which will affect the work of other contractors or the University.

F. Special coordination and cooperation efforts are required for certain inter-related phases of the work, such as: removals and relocations of existing services and facilities; the integrated ceiling work; connecting the Owner's equipment; installation of equipment which receive connections by others; and maintaining temporary facilities; and similar work.

G. All necessary information required for coordination and proper execution of the work shall be provided by the Contractor or appropriate Subcontractor. Shop drawings, layout drawings, rough-in details, service requirements, product data, equipment details and similar information shall be provided to Contractor (or Subcontractor) who have an interest in, and need for, the data or have other material or equipment that attaches to, or otherwise involved in, the particular item or layout. Such information shall be provided free of charge to the interested party. It shall be the responsibility of each Contractor or Subcontractor to request, obtain or exchange shop drawings and other pertinent data directly from or with each other (not from the University or Architect) to properly coordinate the Work. Such data shall be requested in sufficient time to allow reasonable time for preparation of the data and to prevent any delay to Contractor or Subcontractor. For coordination with the University's equipment or materials, the information shall be obtained from the University.

H. With respect to mechanical and electrical features of equipment of other Contracts, complete data must be exchanged directly between Subcontractors as the progress of the Project requires. The person requesting the information shall advise when it will be required. The Subcontractors for casework and equipment are expressly required to provide large scale layout drawings showing the required rough-in locations of all services (dimensioned from building features) service characteristics, and locations of studs where the location is critical to mounting or otherwise installing equipment and casework. Mechanical and Electrical Contractors are expressly required to furnish sizes and spacing required for cutouts, and a complete brochure of fittings, sinks, outlets, or other information to provide complete data on the items and accessories being furnished. In the event of incorrect, incomplete, delayed or improperly identified information, the Contractor (or Subcontractor) causing the delay or error shall be responsible and pay for any modifications or replacements necessary to provide a correct, proper and new installation, including relocations required.

1.28 ANCHORAGE, SUPPORTS AND SLEEVING

A. The requirements of technical sections of the specifications or as shown on drawings, which are more specific or in excess of the general requirements herein, shall take precedence over these general requirements.

B. The Contractor and his subcontractors shall furnish and install proper anchorage devices to securely and in the best manner, fasten, hang, mount, anchor, support all work in a neat and substantial way. Unless otherwise specified, subcontractors shall furnish all devices for fastening their work together and for fastening to the structure.

C. The Contractors and each subcontractor shall furnish and install (including cutting) all their own sleeves, anchors, inserts and other devices as work progresses to accommodate their own materials or work. Methods and devices, as well as location, may be subject to the Architect's and University's approval and shall not impair, violate or alter structure, water integrity or aesthetic value of the Work.

D. In general, provide bolts and shields for anchorage to solid materials, toggle bolts into hollow construction or through bolts and washers where necessary, unless otherwise shown or specified. Wood plugs into solid materials, toggle bolting to vertical lath and plaster, or bolting into shields at hollow units, will not be acceptable. The Contractor shall provide adequate backing for all fastenings and supports to prevent pull-out, deflection or undue stresses. For concrete, anchorage devices shall generally be cast-in, not drilled in later, unless otherwise specified.

E. At concrete, shot or drilled-in anchor devices will be permitted provided they will not damage the concrete or cause any spalling around the anchor. Shot anchors will not be permitted in bottoms of joists, in the underside of slabs 4" or less in thickness nor where spalling may result. Any shot anchors at concrete joists shall be at the side of the joist, above centerline. A representative number of anchors shall be field loaded above anticipated loads to insure their adequacy. Drilled-in expansion anchors, which have the same hole size as the bolt size, such as "Kwik-Bolt" or "Wej-it" will be permitted provided there is no spalling around the holes, the holes are neatly drilled and approved test reports indicate adequate shear and pull-out strength with ample safety factor.

F. Sleeves shall be provided for all pipes, conduit and similar features that pass through walls, floors, roof slabs, concrete joists, concrete beams or girders, or concrete bridging, whether specifically indicated or not. (No sleeves permitted thru columns). Sleeves shall be provided by the Contractor or the Subcontractor requiring the hole for his work. At all concrete penetrations, including concrete over metal deck, sleeves shall be uncoated or galvanized pipe, not less than Schedule 40 steel pipe. At exposed or concealed masonry walls, sleeves shall be same as for concrete penetrations. Unless otherwise called for, sleeves passing through walls, slabs, beams, bridging, shall be 1/2" greater in inside diameter than external diameter of pipe (including insulation), or conduit passing through the sleeves. All sleeves shall be of new material, cut square, reamed. Sheet metal sleeves may be used only where specifically approved. Unless otherwise called for: sleeves through walls shall extend full thickness of wall and be cut flush with finished surface; sleeves through exterior building walls, above or below grade shall extend full thickness of wall and be cut flush with finished surface; sleeves through floor slabs for piping where piping or conduit will be exposed shall extend 1-1/2" above finished floor; where concealed, sleeves through floor shall extend 1-1/2" above floor. Where sleeves occur in rows or clusters, a minimum of 4" of concrete shall be left between sleeves and if the normal spacing of reinforcing bars cannot be maintained, or are interrupted because of sleeve size or cluster locations, extra reinforcing shall be provided as directed by the Architect. In no case shall sleeves impair the structural capability of the Work.

G. Where glass or plastic piping over 1" in diameter (o.d.) pass through roof and floor slabs, fire and smoke rated walls or partitions and shaft or core enclosing walls, the steel sleeve shall extend one foot below the slab, one foot beyond the shaft or core wall into the adjacent space or one foot beyond each side of a fire or smoke wall dividing a space. The extension of the sleeve shall be insulated with 1" Fiberglass sectional type pipe insulation, with Owens-Corning ASJ all service jacket.

H. Sleeves at core drilled holes shall conform in dimension, material and height to the requirements of paragraph F above. The sleeves shall provide a good fit to core drilled hole and shall be set in place with a full coating of approved epoxy adhesive to insure remaining in place and a good seal between the hole and the sleeve.

I. As pipe, conduit or other feature is installed through a sleeve, it shall be wedged to keep in the center of the sleeve, with wedges held 1" back from end of sleeve. Pipe, conduit or other features through walls or other vertical surfaces, shall be caulked both sides of wall, exposed or concealed. Pipe, conduit or other features through floors and roofs shall be caulked at the top in all cases, and at the bottom where exposed in a finished space. An approved rod-stock backing for sealant shall be inserted around the pipe, conduit or other feature, held back 1/2 inch from end of sleeve. Sealant shall then be applied, sloped up about 20 degrees to the pipe to form a watershed. The sealant shall be G. E. Silpruf Sealant, or approved equal, primeless, with service temperature up to 250 degrees F., color as selected by Architect. All sealant work shall be provided by the Contractor installing the pipe or conduit and shall be installed in accordance with the workmanship provisions, including clean surfaces, of Section 07900 of these specifications. At all penetrations through roof and floor slabs, fire and smoke rated walls or partitions and shaft or core enclosing walls, the space between the sleeve and pipe shall be provided with an approved fire stop. Prior to placing the rod stock backing and sealant, insert Johns-Manville, Cerablanket-FS ceramic fibre blanket insulation filling the entire space between sleeve and pipe or conduit, a minimum of 1-1/2" in depth. Hold back from edge of sleeve to allow for rod stock backing and sealant. Installation shall be made to maintain an effective fire stop.

1.29. PENETRATION OF METAL DECK

A. The requirements apply to non-cellular and cellular floor decking. Except for holes shown on the structural drawings, forming, sleeving and cutting of the deck shall be provided and accomplished by the SubContractor requiring the opening for his work. Sleeves shall be provided as specified.

I. Openings thru metal deck:

a. Openings up to and including six inches wide, measured at right angles to the deck span, may be cut through the deck and sleeves installed for the opening prior to placing concrete. No additional reinforcement is required at the openings.

b. Openings greater than six inches and up to ten inches wide, measured at right angles to the deck span may be formed prior to placing concrete. When the concrete has attained 75% of its design strength, the deck can be cut out for the opening. By following this method no additional reinforcement of the deck is required at the openings.

c. For openings ten inches to 30 inches, reinforce the deck prior to the concrete pour, with reinforcing bars or small angles or channels, welded to the deck around the perimeter of the opening, to distribute the loads to the adjacent panels. Weld the reinforcing on the bottom of the deck with the welds made through the valleys of the deck units. No typical sizes of reinforcing can be given; they must be designed for each situation. Consult the Architect/Engineer.

d. For openings greater than 30 inches, provide supplemental structural steel framing around the openings as directed by Architect/Engineer.

e. For all cases under notes a, b, and c the openings must be adequately spaced to avoid a weakening of the floor in the vicinity of the openings. In general no more than one opening is to be cut in a 24 inch wide deck unit and the adjacent 24 inch wide units straddling the opening shall remain free of openings for proper load distribution.

2. Openings at cellular floor deck:

a. Comply with requirements above for metal deck.

b. In all cases where penetrations are anticipated or desirable at cellular floor deck, the Contractor shall coordinate with work with the Electrical Contractor and the University. Where penetrating the deck is permitted, sleeving shall be done in a manner that the penetrated cells are sealed when sleeving is complete. Penetrating cellular deck shall be avoided as far as possible.

c. Only one (1) cell of a given three (3) cell deck panel run (trench header to trench header) may be cut and sleeved, generally.

Two (2) cells of a given three (3) cell deck panel run may be cut and sleeved if permission is granted by the University.

Three (3) cells of a given three (3) cell deck panel run can be cut and sleeved only if written permission is secured from the University, and Architect/Engineer

d. Any cell run which has been penetrated must be identified by the Contractor making the penetration by marking the trench header cell in an approved manner. Marking methods shall be determined and coordinated by the Electrical Contractor and University.

e. Any cell run which has been penetrated will be abandoned for electrical use, except as authorized by the University.

f. Deck penetrations shall be located so as to minimize cell penetrations. Use offsets where necessary to adhere to these requirements. Exposed offsets will not be acceptable unless no other alternative is available and approved by the University.

g. Conditions not covered by these requirements shall be brought to the attention of the University for decision.

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PART 1: CONSTRUCTION HEAT, LIGHT AND POWER, WATER, TELEPHONE

1.01 TEMPORARY (CONSTRUCTION) HEAT

A. Temporary Heat: As used in this specification, temporary heat shall mean all heat required and provided during construction, whether by temporary heating units and devices, or the permanent existing or new heating system and devices, until the Project is occupied or accepted by the Owner.

B. Existing Heating System:

1. The existing heating systems shall be kept operative throughout the entire construction. Contractor shall cooperate with University personnel to effect any required modifications to systems with minimum interruption to building services.

2. In existing spaces, the University will make no charge for temporary heat. Contractor and subcontractors, however, shall not waste University furnished heat. Openings cut and windows removed during remodeling shall be provided with insulated and secure temporary closures until permanent closure is installed and sealed.

C. Electrical Energy: Cost of energy for using temporary systems will be paid as specified under Article 1.02 of this Section. Electric heaters will not be permitted for temporary heat. Electrical lines furnishing temporary current to pumps and other equipment of heating system shall be adequately sized to deliver the required rate voltages and amperage to equipment.

D. Ventilation: During construction and particularly during painting work, and similar finishing operations, adequate ventilation shall be provided, including spaces without windows. Use power exhausts where necessary, with flexible ducts to outside. Frosting or sweating of walls or roof will be an indication of excess humidity to be corrected. General Contractor shall be responsible for the ventilation.

E. Miscellaneous Requirements: Provide temporary heat such that no damage results to building, materials or installed work as may be caused by dampness, cold, thermal shock, smoke or similar damage related to heat. Maintain adequate and continuous temperatures to prevent any such damage.

1.02 CONSTRUCTION LIGHT AND POWER

A. Reference: Refer to Section 16010 for additional details.

B. Energy Costs and Objectives: Except as otherwise specified, the University will furnish electrical energy free to Contractor and Subcontractors throughout the construction of the Project, which is provided within the capacity of the existing and new services described in Sections 16010 and 16300, provided the privilege is not abused. However, the University will assume no responsibility or liability for power outages, or damages resulting from outages, and the Contractor shall hold the University harmless from all claims and costs from outages. Not only the conservation of energy but minimum expense to the

University are objectives, within the intent to provide good lighting conditions and adequate working conditions for high quality workmanship, as well as safety and security measures. The Contractor shall comply with University directions on the temporary installations, lighting conditions and use of energy.

C. General:

1. Except as otherwise specified, throughout construction, Contractor and Subcontractors shall provide their own temporary wiring, cords, outlets, lamps, devices and connections as required. Installation, service, wiring and devices shall be safe, substantially supported and adequately connected and meet all codes. Demand shall not exceed the service and any damage resulting from misuse, faulty equipment or overloading shall be paid for by responsible persons.

2. Electric heaters shall not be used for heating unless approved by the University as the only reasonable solution.

3. Energy costs and services for cranes, hoists, large welders and similar heavy loads shall be provided and paid for by Contractor and Subcontractors requiring such service and they shall arrange for their own service and meters. Limited use of energy and service, when being paid for by the University will be permitted for loads of others for such equipment as grinders and pipe threaders provided their use does not limit the service for normal lighting and power tool loads. In the event such equipment use indicates the available service may reach capacity the Contractor and Subcontractors requiring such service shall provide their own service after being advised by the University when such condition is likely to exist.

D. Existing Service: During "down" time in any area, procedures for temporary building service specified in paragraph E, below, shall be used.

E. Temporary Building Service: As work progresses, the Electrical Subcontractor shall install and energize the permanent secondary electrical system to the work areas as soon as practicable and when approved by the University. Permanent service characteristics are specified in Section 16300.

1. The Electrical subcontractor shall provide temporary wiring, sockets and outlets for lighting and hand tools, as specified herein and in Section 16010.

2. Permanent convenience outlets shall not be used, and permanent fixtures shall not be installed until finish operations are in process but fixtures shall be installed prior to equipment installation. Other temporary wiring and devices shall be provided by each contractor as required, safe, substantially supported and adequately connected. Electrical Subcontractor shall install the permanent convenience outlets when approved by the University, just prior to occupancy.

1. Lamps, Incandescent Bulbs and Fluorescent Tubes: Throughout the construction period, lamps in temporary lighting systems shall be provided, including replacements, by the General Contractor and installed by the Electrical Subcontractor. In general, lamps shall not be over 200 watts, except where necessary. The Electrical Contractor shall also remove and replace burned out lamps as they occur.

1. As work progresses and permanent incandescent light fixtures are used for lighting, the General Contractor shall provide the lamps and the Electrical Subcontractor shall install as specified in preceding paragraph. Just prior to final inspection the Electrical subcontractor shall remove all construction bulbs and install proper new bulbs. The University shall be advised when this replacement is being made so they may verify the installation of new bulbs.

2. In permanent fluorescent fixtures, the Electrical Subcontractor shall install new lamps as the fixtures are installed. The Electrical Subcontractor shall replace tubes as they burn out during construction and replace all burned out lamps just prior to final inspection so all lamps are good at the time of inspection.

3. Mercury vapor fixtures and/or lamps shall not be used for temporary lighting.

1.03 CONSTRUCTION WATER

A. General: Contractor, and subcontractors where appropriate, shall provide their own hoses (or piping), connections and other equipment to use water, and protect their own equipment. Needless and wasteful running of water, when provided through the General Contractor's or the University's service, will not be permitted. When water is being used, the service shall be protected from freezing and damage at all times.

B. Temporary Service: During periods when water service to the work areas is shut down or is otherwise not available to accommodate the remodeling work, the General Contractor shall arrange for a source of water from other areas (coordinate with University), have all connections made to provide water for use of all trades. The University will pay for water used (but not cost of meter) and the General Contractor shall consult with the University, and follow its direction, on arrangements for payment whether directly to the City or through the Contractor. The Contractor shall provide all connections and valves to utilize the water service, which shall include outlet connections to which other contractors may connect piping or hoses. Contractor shall be responsible for preventing any damage to water service, including damage from freezing.

C. There is no permanent water service under this Contract.

D. The Owner will allow free use of water, provided the privilege is not abused and unnecessary running of water is prevented.

PART 2 FIRE SAFETY

2.01 FIRE SAFETY DEVICES AND SYSTEM

A. General: Contractor shall be alert to fire hazards and remove or protect against hazards and shall comply with directions of the University on hazards and fire safety.

B. Fire Extinguishers: Except for units in individual Contractor's offices, The General Contractor shall provide and maintain adequate and proper fire extinguishing devices in and about the construction area, available for use by all workmen. The devices shall not be the units to be later installed in the Project. Appropriate devices shall be provided for the class of the potential hazard (ie. oil, electrical) at those areas where unusual hazards may exist, including in mechanical rooms. Fire hoses shall be connected to adequate sized water lines. As construction proceeds, or materials which create a hazard are moved onto various floors, extinguishing devices shall be available on each floor. The number and distribution of devices shall be adequate for effective fire control, to the satisfaction of the University.

C. Fire Hydrants: The area fire hydrants and existing building fire hose cabinets must be accessible at all times. Fences and construction work must be arranged and accomplished to provide immediate access to hydrants.

PART 3 OFFICE, TOILETS, STORAGE ENCLOSURES

3.01 CONSTRUCTION OFFICES AND CONFERENCE SPACE

A. Contractor shall construct offices and conference space as shown on the drawings.

B. Space designated for offices for the entire life of the Contract is 6th Floor Shell Space.

C. Within 30 days after award of Contract or Notice to Proceed, General Contractor shall complete the construction of Project Offices in designated spaces as shown on drawings. All materials used in Project Offices shall be "shelf" or "stock" items readily available during this initial mobilization period.

D. University will provide all necessary heat and power as required for the space. University will make arrangements with B/C Phase I Contractors for activation of mechanical and electrical systems necessary for occupancy of construction offices. University will arrange for any tie-ins to existing systems where shutdowns, draining, etc. are required or service interruptions are necessary.

E. Contractor, in cooperation with the University, shall arrange for any necessary occupancy permits required for use of 6th Floor Construction Offices.

F. University reserves the right to construct additional offices for future contractors on the 6th Floor and to require joint usage of corridors, toilets and conference facilities by this Contractor and future contractors.

G. Quantity of electrical and telephone outlets shall be as shown on Drawings. Locale per furniture layout of occupant of space. Additional outlets shall be at the occupant's cost.

H. All work shall conform to the requirements of the Contract Documents unless specifically noted otherwise.

I. Additional partitioning, beyond that shown on the Drawings, within the designated offices, shall be at the cost of the occupant and subject to the prior approval of the University. Added partitioning shall be installed so as not to restrict fire protection, egress, lighting and ventilation of space. Added costs necessary to meet code requirements shall be paid for by the occupant.

J. Contractor shall maintain his offices, elevator lobby and public corridors, public toilet, and conference room in a clean and sanitary condition. Provide toilet tissue and paper towels. University shall be responsible for maintenance of its space and toilet facilities. Corridors shall not be used for storage and shall be maintained free of obstructions.

K. Contractor Access: shall be via designated construction elevators only. Contractor shall refrain from entering areas outside construction limits without the approval of the University except in the event of an emergency.

L. Contractor shall repair all damage to his space, corridors, toilets and conference room, and leave in clean condition at completion of the Project.

M. Furnishings: University shall provide and install its own furnishings. Contractor shall provide his own furnishings and furnishings for the conference room.

3.02 TELEPHONES

A. Contractor's Telephones: Contractor shall arrange and pay for telephone service to his own construction office space (that assigned to him). Contractor's telephone service shall be separate from University telephone service.

B. Contractor shall be reimbursed costs of long distance telephone calls made on his service by the party making the call.

3.03 SANITARY FACILITIES

A. The University has designated on the Drawings toilet rooms in the existing building for the use of Contractor and his employees. Contractor shall require proper use and care of these facilities.

B. Project Office Toilet Rooms shall be completed by the General Contractor at the same time as Project Offices specified in Article 3.01, above.

C. Refer to Section 01500, Article 5.12 for additional requirements.

3.04 STORAGE

A. General: Refer to drawings for areas of storage. The Contractor (and each subcontractor) shall provide adequate enclosures and coverings to protect and preserve all materials stored at the site. Materials such as wood, finished metal, cement, masonry materials, equipment of any type, conduit and similar materials, shall not be piled directly on ground. Any material subject to damage, deterioration or weathering when exposed shall be covered or in protective enclosures. The University reserves the right to

direct such protection, which shall be complied with by the Contractor. Coverings shall be durable, watertight, fully cover sides as well as top, substantial and well anchored to prevent blowing away. Shed type of enclosures shall be provided for easily damaged and small items, shall be neatly constructed, well maintained and subject to University approval. Any protection which becomes damaged shall be replaced immediately.

I. When no longer required, the Contractor shall remove the storage enclosures, except fences.

B. Limited Area: With the extremely limited storage area, the Contractor shall carefully schedule material deliveries for immediate installation to minimize the need for storage area. Any storage structures required shall be located on the Contractor's allocation of site space. Inside existing buildings, storage shall be restricted to the areas being remodeled and designated access route as indicated.

PART 4: MISCELLANEOUS PROVISIONS

4.01 PARKING AND LOADING - UNLOADING

A. General: All campus regulations, signs and directions regarding parking and loading - unloading shall be followed. The Contractor is responsible to instruct his workmen. For unusual conditions, the Contractor shall consult with the University on proposed procedures and locations, should a temporary variance be required, and follow the instructions issued.

B. Absolute Zones: All zones which are marked NO PARKING - NO STOPPING ANY TIME, must be strictly adhered to. All deliveries and pickups by contractors, subcontractors and suppliers must be made on side streets, alleys, or on University driveways and loading zones.

C. Parking is available for cars of contractors' foreman and workmen working on campus in University parking lots at regular parking rates.

4.02 PROTECTION IN GENERAL

A. Refer to Article 10 of the General Conditions, other Articles of this Section 01500 and Section 01010 for more specific requirements. The University may require the Contractor to provide additional protection, where protective measures appear inadequate, but assumes no obligation to do so nor accepts any responsibility of the Contractor to provide all protection required for persons or property.

B. When it is noted or specified for a particular Contractor to provide protection, it is the intent that Contractor provides the basic routine or normal protection, but shall not be construed to establish the total responsibility, as each Contractor shall have the protection responsibility as affected by his Work, labor, operations, materials, equipment spaces and similar conditions.

C. Each Contractor shall provide protection for all his own equipment, hoists, and other facilities used in the prosecution of the work, to prevent operation of unauthorized personnel.

D. Any work on the roof or other membranes, after membrane has been installed, shall be done over planking, plywood or other suitable protection, to spread loads under walkways and at all work areas, including around ventilating bases, with the protection provided by the Contractor whose work is being done over the membrane. There shall be no exceptions to this requirement and the General Contractor shall advise the University of any violations by other Contractors.

4.03 SIGNS

- A. Job Sign: Custom job sign not required.
- B. Office Sign: Contractor may provide a sign to identify his office and directional signs from nearest main street to project area; professional lettered signs only.
- C. No other signs permitted, including signs on structure.

PART 5: ACCESS TO WORK AREAS AND TEMPORARY CONTROLS

5.1 GENERAL

- A. Refer to Drawing Sheet A-1a for site access plans.
- B. All (Code Numbers) indicated in this specification are references to the circled numbers appearing on the Site Access Plans.
- C. It is intended that all vertical transportation of materials and workmen be limited to the designated elevators shown on the Drawings. Stairs shall not be used by construction personnel for interfloor traffic except in an emergency or if specifically authorized by the University to complete work outside of the construction limits. See Article 5.4.
- D. Prior to beginning finishing work, at a time agreed upon with the University, the B/C-II Contractor shall enter the site and construct fences and dust partitions, remove doors, frames and glass and install protection to finishes and other work as required to enclose the designated access routes as shown on the Drawings and herein specified.

5.2 ELEVATOR SERVICE, GENERAL

A. Charges for use of Elevator Service: Except for passenger service, the University will charge for the use of the construction elevator service during the normal day time of the services, based on \$20.00 per hour. For other than the normal work day (after hours, Saturdays and similar) the charge for both passenger and freight use will be based on \$20.00 per hour plus the additional premium time cost for the operators. Passenger service during the normal day time shall be free. University will provide operators.

1. A unit of time shall be 15 minutes, or fraction thereof, with a cost of \$5.00 per unit of time.

2. Free passenger service shall include the person and any small items the one individual is carrying. If one (or more) passenger carries a large bulky item, or moves an item onto the elevator floor or sets an item down on the floor in the elevator, it will be considered as freight use and the passenger charged for the time.

3. Any and all use of elevators for transporting materials, equipment, tools and other freight will be considered freight use. Charges will be based on the units of time the elevator is tied up for the load, including loading and unloading time. There will be no charge for passengers riding with the freight. Multiple freight users on the same load will each be charged for their unit(s) of time.

4. Unless another system is agreed upon by the University, a "chip" system shall be used to determine and tally the elevator use. The Contractor shall assign colors for chips for his use and the use of his subcontractors. Each chip will be worth one unit of time. At the time an elevator is used for freight, the operator will collect a chip for each unit of time (or fraction thereof) from the workmen who use the elevator.

5. Should the Contractor have an agreement under which a subcontractor (or subcontractors) is responsible for the cost of his own elevator use, the Contractor shall imprint a distinctive mark on chips of his color, for the Contractor's use in obtaining repayment.

6. For elevator service at other than the normal working hours, the Contractor shall make arrangements in advance with the University. The chip system or some other method of recording, as agreed upon by the University, may be used. However, the Contractor will be charged for the entire time period he has exclusive use of the elevator, whether it is in continuous service or not.

7. The Contractor shall bill his subcontractors (responsible for their own service) each month for the units of time used by the subcontractors. Payment shall be made promptly to the Contractor. The B/C Phase II Contractor is not responsible for billing subcontractors of other Contractors, which shall be the responsibility of the other Contractors.

8. Periodically, generally on a weekly basis, the University will tabulate the units of time used by the Contractor (and his subcontractors) and return the chips collected by the operator to the Contractor, along with a copy of the tabulation. These tabulations, along with any recorded time of off-hour service shall be the basis of the billings.

9. The Contractor is solely responsible for the control and issuing of chips to their own workmen and subcontractors, as well as instructions for use. The operator will keep track of time, during normal work time hours, only by the collection of chips and will not move freight without collecting the required chips.

10. Elevator use by the University, the Architect/Engineer and their representatives shall be without charge. It is the intent of the University to move its materials, equipment and furnishings by way of other elevators as far as possible to minimize the use of the B/C-II construction elevators.

5.3 MATERIALS ELEVATOR (CODE 1)

A. Materials Elevator is anticipated to be available for use on October 15, 1977; however, the actual date of availability will be announced by the University at the Pre-Bid Conference.

B. University will operate and collect chips and bill the Contractor monthly. Refer to Article 5.1 herein.

C. The Contractor shall schedule use of the elevator and establish priorities with his subcontractors.

D. University reserves the right to provide elevator service for future construction contracts and to establish priorities for elevator usage between this contract and future construction contracts.

E. University will maintain the elevator equipment.

F. Contractor shall install adequate protection for elevator entrances on Floors 1, 2, 3, 6, 8 and 9. See 5.3C.

G. Upon completion of the Project, remove protection at entrances on all floors, except 3.

5.4 PERSONNEL ELEVATOR (CODE 2)

A. Contractor shall install adequate protection for elevator interior and entrances on Floors 1, 2, 3, 6, 8 and 9.

B. University will arrange for modifications to controls to allow separate operation of the Car #4 and for registering floor calls. University will provide operator for the car.

C. Protection: All permanent elements, subject to damage, shall be protected from damage or defacement during construction use. The Contractor shall provide and install the protection. Walls, floors and ceilings shall be lined with not less than 1/2" plywood, with a cushion board between the plywood lining and car enclosure at the walls. Lining shall not be fastened to the permanent enclosure. The protection shall be in addition to any pads used.

D. Personnel elevator service will be provided free of charge to Contractor and his subcontractors and suppliers during normal working hours. Overtime elevator usage will be at an hourly charge of \$20.00 billed to the Contractor. Overtime elevator usage will be on a chip system, similar to freight operator. See Article 5.1.C herein.

5.5 CONTRACTOR'S ACCESS AREA AND STAGING AREA (CODE 3)

A. Areas designated on the Drawings as contractor's access and staging area are dedicated passage ways for use as access to the shell space to be finished. Contractor access to the work areas shall be confined to the access routes. It is acknowledged that additional access is required by the Contractor to complete certain limited work shown on the Contract Documents. For example, installation of fume hood ductwork and fans will require access to areas on Floors 10 and 15. Similarly, installation for piping and plumbing work will require access to shell space and finished space in the Basement, Basement Mezzanine, and Floors 7, 8, and 10. Access to areas outside the construction limits shall be scheduled with the University before beginning the work.

B. Under no circumstances shall work be done outside of the construction limits on Floors, 1, 2, 3, 8 and 9 without advance approval and scheduling with the University. Work on Floors B, B-Mezz, 7, 11 - 14 shall be completed promptly once entry to the area is arranged. Materials shall have been prefabricated and/or immediately available to complete the work without delay. All work outside the designated access areas and shell space except floors 10 and 15 shall be completed prior to March 1, 1978, the anticipated date of University occupancy of B/C Phase I. The University reserves the right to require the work be interrupted or completed on overtime basis at no change in Contract Sum, if it is not completed on the prior arranged schedule.

C. Plumbing work serving the 9th Floor which must be installed in the ceiling cavity of the 8th Floor shall be completed by March 1, 1978 and the area vacated except as required to complete finishing work under Alternate. Staging and storage use of the 8th Floor will be permitted after March 1, 1978 if approved by the University.

D. Staging and Storage by the Contractor shall be confined to the designated areas and the shell space to be finished. The University, at its option, will provide additional staging area on the 6th Floor shell space if the need can be demonstrated.

E. In general, Contractor shall plan deliveries to correspond with job progress and installation due to limited site storage facilities.

F. At a time arranged with the University, in cooperation with the B/C Contractors, this B/C-II Contractor shall enter the site and construct temporary dust partitions, doors and protection as described on the Drawings and herein specified.

G. Contractor shall take precautions to protect ceiling, walls, light fixtures, outlets, doors, etc. along access routes. Any damage shall be repaired to like new condition or replaced with new materials. Protection shall include but is not necessarily limited to items identified on the Drawings. Contractor assumes full responsibility for the care and condition of all existing work along the access routes and staging areas and shall correct any damage at no additional cost to the University.

H. Upon early completion of Medical Records Department on Floor 1 and 2, the Contractor shall vacate access routes to these spaces, clean up and restore all surfaces as specified.

5.6 DUST PARTITIONS (CODE 4)

A. Dust partitions shall consist of 1/2" firecode gypsum board on each side of 3-5/8" metal studs at 16" o.c. Attach top channel of partition to metal ceiling runners similar to Detail 12, Drawing A-10. Provide continuous compressible gasket between existing finish ceiling and top channel of partition. Base channel shall be attached to floor with double faced tape. Studs attached to existing walls shall have a continuous compressible gasket between the studs and the existing surface. Attach studs to existing gypsum board walls with drywall screws.

B. Finish side of partitions exposed to public with 3 coats tape and compound and paint with one prime coat and one finish coat of white eggshell paint. Color to match existing basic white wall color.

C. Provide 4" resilient base on public side to match existing.

D. Work side surface of partition shall be left unfinished.

E. Maintain partitions dust-tight until no longer required, then remove all traces. Partitions on floors 3 and 8 shall be left in place at completion.

5.7 EMERGENCY DOORS/SMOKE DOORS (CODE 5)

A. Doors and frames in dust partitions and in smoke partitions shall consist of stock knockdown 16 ga. drywall frames for 1-3/4" doors, furnished pre-mortised and reinforced for hardware consisting of 4-1/2 x 4-1/2 standard weight template hinges and ASA universal strike. Frames shall be phosphate coated and painted with a baked-on rust inhibitive primer. Finish paint public side of frame to match wall or as directed. Sizes shall be 3'-6" x 6'-8" for single leaf doors, and 6'-0" x 6'-8" for pairs of doors as indicated on the Drawings. Provide anchors for connection to drywall studs.

B. Doors shall be 1-3/4" thick solid core wood of sizes indicated. Undercut 3/4". Paint public side, two coats. Hardware: Butts, silencers, closer (surface), lockset, surface bolts at pairs.

C. Maintain and remove upon completion, except leave doors on floors 3 and 8 in place.

D. Maintain free access for use in emergency as egress from work area or for passage of building occupants.

5.8 SMOKE PARTITION (CODE 6)

A. Same as Dust Partition. See Article 5.6 herein.

5.9 REMOVE DOOR AND REMOVE OR PROTECT DOOR FRAME (CODE 7)

A. Remove existing doors where indicated on the Drawings to facilitate access of materials and personnel. Store in a location provided by University and reinstall and restore to like new condition prior to completion of the work. Protect frames and sidelights by boxing in with plywood. No mechanical fasteners, screws or nails shall be used to attach protection to doors or frames.

B. Remove door frames at north end of elevator lobby at Floors 2, 8 and 9. Store frames on floor and doors in location designated by the University. Reinstall prior to completion of the work and restore to like new condition.

C. Removal of the door frames and a portion of the adjacent drywall partition is acceptable, provided removed material and partition is returned to like new condition at no additional cost.

5.10 PROTECT DOOR(S) AND FRAME(S) (CODE 8)

- A. Protection shall consist of protective facing of wood fiberboard, hardboard or plywood so arranged to maintain access through the door. No mechanical fasteners, screws or nails shall be used to attach protection to doors or frames.
- B. Except on floors 3 and 8, remove protections and restore doors and frames to original condition at completion.

5.11 PROTECT PLASTIC LAMINATE (CODE 9)

- A. Contractor shall construct a partition or provide other acceptable protection of plastic laminate work at stair entrances designated on the Drawings. Acceptable protection shall consist of plywood, wood fiberboard or hardboard covering on plastic laminate surfaces or by a partition faced with same protection material.
- B. Provide cut outs allowing access to fire pull stations and cut outs or access doors for fire hose cabinets and maintain access to stair entrance doors.
- C. At completion, remove protections and restore to original condition.

5.12 PROTECT MTS STATION AND TRACK (CODE 10)

- A. Materials Transportation System stations indicated on the Drawings shall be protected with barriers as necessary to prevent damage. Exercise care to avoid damage to existing MTS track in the ceiling cavity of the First Floor. Wrap exposed track in heavy gauge polyethelene cover and remove prior to closing ceiling.
- B. University shall arrange for removal of temporary supports for track at MTS stations at time of installation of supporting walls and plastic laminate casework provided under this Contract. Arrange with University for work required by MTS supplier to complete installation including attachment of MTS track to counters and walls.

5.13 EXISTING TOILETS FOR USE BY CONTRACTOR (CODE 11)

- A. Men's toilet room noted on the Drawings is available for use by the Contractor. Contractor shall maintain in clean condition and provide tissue and towels. Upon completion, clean up, replace any damaged fixtures, mirrors, partitions, etc. at no cost to the University.
- B. Contractor, at his option, or as required by trade agreements, shall provide additional temporary toilets as required within the construction limits. If temporary plumbing connections are not available, provide suitable chemical toilets.

5.14 INSTALL ELECTRICAL ROUGH-IN AND COMPLETE PARTITION WORK (CODE 12)

A. Immediately upon completion of site access routes, the Contractor shall install rough electrical work, insulation and gypsum wallboard at designated partitions on the Second Floor. This shall be done prior to beginning finishing work elsewhere in the adjacent shell spaces.

5.15 RELOCATE MECHANICAL AND ELECTRICAL FIRE PROTECTION EQUIPMENT TO MAINTAIN COVERAGE IN THIS AREA (CODE 13)

A. Remove existing sprinkler heads and extend piping to maintain coverage in areas indicated on the Drawings. Generally, sprinkler heads shall be extended in the area indicated to provide sprinkler protection on the public side of the dust partition.

B. University will relocate fire management equipment to public side of partition in areas where the dust partitions restrict coverage.

C. University will relocate exit lights and provide additional signage as required in occupied area.

D. At completion remove temporary lights and signage and relocate remaining lights, sprinklers and signage to final location.

5.16 SHELL SPACES TO BE FINISHED (CODE 14)

A. Contractor may utilize shell spaces for storage, staging and working areas to such extent as he finds necessary until such time as work progress demands completion of the space.

5.17 PROTECT WINDOW, RADIATION ENCLOSURES AND HANDRAIL (CODE 15)

A. Protection shall consist of a covering of wood fiberboard, hardboard or plywood over the handrail and radiation enclosure. No mechanical fasteners, screws or nails shall be used to attach protection.

B. At completion, remove protections and restore to original condition

5.18 CONSTRUCTION FENCE (CODE 16)

A. Painted plywood construction fence 8'-0" high. Paint with fire-retardant paint. Plywood on public side. Brace adequately to precast concrete bollards or to plank protection over plaza. Fence construction shall include 4" x 12" wood, guardrail continuous at tailgate height. Provide 4" x 12" plank protection over each concrete bollard. Fence shall be constructed on top of and secured to 2" plank protection over plaza. No anchorage shall be made to plaza paving or to building without the approval of the University. Planking may extend 4'-0" maximum beyond outside of fence at fence braces as required. Color approved by Architect.

B. Maintain fence until completion of the work and leave in place for future use by University.

5.19 GATE IN CONSTRUCTION FENCE (CODE 17)

A. Install two gates, one each at the north and south ends of the loading area. Gates shall be 8'-0" high and of similar construction as fence. Gates shall be lockable and University shall be provided with keys. Gates shall swing as shown on the Drawings and be so constructed to allow passage of emergency fire fighting equipment through the loading area.

B. Loading area shall not be used as a storage area and shall be readily cleared of vehicles at any time during working hours. Loading areas shall be left clear overnight and during non-working hours and vehicles shall be parked in areas designated by the University.

5.20 PROTECT PLAZA PAVING, DRAINS, CURBING (CODE 18)

A. Use minimum 2" planking laid continuously over plaza, drains and curbing. Maintain during construction and leave in place for future use by University. Secure planks together to prevent shifting. Do not fasten to plaza.

B. Maintain throughout the Project and leave in place at completion.

5.21 PROTECT BUILDING WALL (CODE 19)

A. Protection shall consist of 3/4" plywood 8'-0" secured to wood studs similar in construction to the construction fence. A 4" x 12" continuous wood guardrail shall be installed at truck tailgate height. Protection shall not be anchored to the precast concrete unless such anchorage leaves no permanent holes. Bolts through caulking joints will be permitted. Seal all such penetrations watertight. Paint wood with fire-retardant paint in color approved by Architect.

B. Maintain throughout the Project and leave in place at completion.

5.22 WINDOW ACCESS (CODE 20)

A. Remove lite of glass to provide approximate 6'-0" x 8'-0" entrance for construction materials and personnel. Crate and store lite in a location designated by University.

B. Protect window frame and remaining light of glass by encasing the window mullions in 2" dimension lumber and covering glass with 3/4" plywood.

C. Construct a ramp between exterior and interior grade level over radiation enclosure and window sill.

D. Provide weather resistant wearing surface on ramp. Ramp shall be strong enough to support movement of men and materials and to protect radiation unit and window sill from damage.

E. Construct pair of temporary entry doors approximately 2'-9" x 8'-0" with locks, self-closing.

- F. Paint wood with fire retardent paint. Color selected by Architect.
- G. Maintain throughout the Project and leave in place at completion.

5.23 PROTECT FINISH FLOORING (CODE 21)

- A. Protection shall consist of 1/4" hardboard laid over the existing floor finish. Butt hardboard sheets tightly and tape continuously with 2" wide duct tape. Tape edges at emergency doors and elevator entrances down to existing floor finish.
- B. Maintain protection during construction and remove at completion. Restore finish flooring to original condition.

5.24 SITE ACCESS, USE OF STREETS AND ALLEYS, ACCESS TO BUILDINGS

- A. Access to the building site shall be only from Delaware Street.
- B. Except as permitted under Part 5 of Section 01500, there shall be no trucking or deliveries through the adjacent alleys and drives, across plaza areas or through existing buildings. The use of existing loading docks shall not be restricted by the Contractor's operations.
- C. The alley east of Unit A shall be kept open and unencumbered at all times for access to the existing buildings, Unit A loading dock and church. The church property will remain occupied during construction of this Project, and the existing buildings may remain occupied throughout a major period of construction of this Project. Pedestrian traffic in the alley will be allowed.
- D. The alley west of the Masonic Memorial Hospital and the VFW Hospital shall generally be kept open and unencumbered to permit deliveries to these units and their loading docks.
- E. Fire truck access must be maintained at all times to Mayo Hospital.

5.25 USE OF PLAZA AREAS

- A. Stockpiling in the area shall not endanger the structure and all loads are subject to approval of the University and the Architect/Engineer. The design live load does not imply construction loads may be placed to that capacity. In evaluating loading, consideration shall be given to age and strength of concrete, type of load, placement of load and duration of loading. For any contemplated reasonably heavy loading, Contractor shall outline the type of load, weight, placement, and duration, and submit to University in advance for review.
