

RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER

September 7, 1976

Subject: Monitoring Report #1

St. Lawrence Hospital, Lansing, Michigan

The Christman Company - Construction Managers

Project: 76:44

Date of Monitoring: September 1, 1976 (working day 172)

Monitored from Issue #3 dated August 3, 1976

Actions taken:

- **Inspected project**

- **Conferred with construction manager's staff re job progress**

- **Completed diagramming interior work for patient areas at first, second and third floors**

- **Reviewed long lead time delivery items**

General Summary

Presently floor pours are actively underway at the second floor of the structure. Pours 1 and 2 have been made and are partially stripped. Pours 3 and 4 have been made and are now curing. Pours 5 and 6 are being readied for pouring out shortly. Work so far is within 1 or 2 days of our anticipated schedule and it appears that the remaining decks will be meeting target goals. Thus, the project is on schedule and maintaining pace with the Issue #3 network.

A major part of our work today consisted of reviewing and completing the logic and quantification of interior networks for areas 1A, 1B, 1D, 1E, 2A, 2B, 3A and 3B. These correspond to the areas shown on the working drawings with the prefix of the floor level. It has been decided that second and third floor work will be sequenced starting at 2A, moving to 2B, then up to 3A and to 3B. Rough work at the second floor will begin as soon as the third deck is partially stripped and reshored. Finish work will begin as soon as the upper structure is substantially closed in.

At the first floor interior rough work will begin at the 1A area and proceed into 1B and 1D. 1B and 1D will be considered a single interior space which will be completed concurrently. The 1E area which is the intensive care unit will proceed independently of the other first floor areas since it is smaller and by virtue of the float time available, will provide a reservoir space for trades to work as they encounter field delays in other sections of the building.

Presently it appears that the longest construction period will be consumed in completing the 1B and D areas. Rough calculations show that this portion of the building probably will be complete sometime in February 1978. This was derived from preliminary manual computations which must be checked. Therefore, the date should be considered tentative until such a check can be made. Target finishes for the other areas have been spaced out to allow a successive movement of trades through the building at the upper floors and across the first floor of all four units.

As part of our discussion, we also reviewed in some depth, long lead time delivery items with special attention to those pieces of equipment that require over and above attention during the detailing and approval periods. The individual items are shown on sheets 1, 2 and 3 of Issue #4 dated September 1, 1976.

A brief review of the material contained on those sheets is given below.

Sheet 1

- Color schedule

Christman has submitted their material suppliers to the architect and HDR is presently reviewing the data. From this information they will prepare a color schedule for submission to St. Lawrence. The hospital and the architect will then make their final approval of colors and materials.

The color schedule is becoming very critical since several long lead time items are affected by it. I recommend that immediate and prompt attention be given the preparation, submission and approval of the schedule for issue to the various contractors.

- **Food service equipment**

Presently we are assuming a delivery of food service equipment by April 7, 1977 (working day 324). Final fabrication of food service equipment must await field measurement of surrounding walls.

- **Food service equipment rough-in**

Rough-in drawings are being reviewed and it is hoped that these can be made available no later than mid-September so underground utility work at the food service area can proceed. This is critical and should be expedited.

- **Communications system contracts**

Work on in-wall work at first floor stud partitions could be initiated as early as November 19, 1976 (working day 228). When in-wall work begins it would be wise to have a communications contract let so that the system can be installed in walls and above ceiling as required. Work on in-wall work will be an ongoing activity and a very critical part of the total project. I suggest an early resolution of the contract matter.

- **Central processing**

Since this work may involve some underground installation, it would be wise to let the contract so that the contractor and his materials could be on the job no later than mid-September. This is the date by which floor slabs on grade will probably get underway at full tilt.

- **Automatic doors**

Wiring for these probably will be needed sometime in October. Since there may be some difficulty getting early materials needed on the job, it would be wise to let this contract as quickly as possible.

- **Parking controls contract**

Site work will be installed next year and probably paving and other hard surfaces will be put down sometime in mid or late summer. I suggest the parking controls contract be let no later than July 1, 1977 (working day 384) or earlier if possible.

- Radiography equipment

It will be essential to select the radiography equipment early and have working drawings prepared so if there is any underground service to the equipment it can be installed prior to construction of the floor slab. Underground utilities at the radiography area are presently due to begin about early October. This contract should be let so working drawings could be available no later than October 19, 1976 (working day 205) or earlier if possible.

- Hospital equipment

Rough-in drawings will be needed for this work so that whatever piping or wiring is required in walls or other spaces can be accommodated. Rough-in data should be provided as quickly as possible, preferably sometime in September.

- Owner furnished toilet accessory blocking details

Blocking will go in with the stud walls and as such, will be needed beginning November 19, 1976 (working day 228).

- Surgical light details

Surgical lights are heavy pieces of equipment and inserts are being located in the supported deck to the best of present knowledge. If additional information can be provided, it would be wise to get this to the field forces immediately since construction of supported floor decks at the operating area is in work.

- Surgicator

No information was available on this piece of equipment. If it requires rough-in or under floor work, it would be wise to provide details of this at a very early point, preferably within the next month.

Sheet 2

- Cooling tower

Presently in fabrication, expected to be delivered by October 8, 1976 (working day 198).

- **Cooling tower basin resteel**

Resteel available; construction is presently underway.

- **Boiler**

Boiler delivery is presently set at January 11, 1977 (working day 262).

- **Medical equipment**

Shop drawings are presently in for review and approval. Delivery of medical equipment is tentatively set for March 29, 1977 (working day 317).

- **De-aerator**

Shop drawings have been approved and fabrication is underway. Delivery is expected by January 24, 1977 (working day 271).

- **Chillers**

Shop drawings have been reviewed and approved. Fabrication is in work. Chillers are expected on the job by November 9, 1976 (working day 220).

- **Cabinet unit heaters**

Shop drawings have been approved and fabrication is in work. Delivery is expected in late November.

(Note: This brings up a problem that should be addressed now - that of storage. Undoubtedly many early items arriving on the job will have to be stored. Some of these will undoubtedly be finish pieces of equipment. Provision of adequate storage space should be considered now so that space will be available as items arrive at the job site and must be protected from damage and theft.)

- **Air handling units**

Shop drawings have been approved and fabrication is in work. Delivery is expected by October 12, 1976 (working day 200).

- Primary switchgear

Preparation of shop drawings is presently in work. Allowing normal approval times, it is expected to have the switchgear on the job by February 22, 1977 (working day 292).

- Motor control center

This equipment is presently being held by the architect/engineer and no shop drawing preparation is in work. Delivery is expected 95 working days after receipt of approved shop drawings.

- Main switchboard

This equipment is being held by the architect/engineer and no word is available as to when it will be released. Delivery is expected 60 working days after shop drawing approval.

- Operating room panels

Delivery of operating room panels is anticipated by October 12, 1976 (working day 200).

- Cable trench

Expected on the job October 5, 1976 (working day 195).

- Transformer

Expected on the job October 1, 1976 (working day 193).

Sheet 3

- Brick masonry

Delivery of masonry is anticipated by October 1, 1976 (working day 193).

- Hollow metal frames

Presently the goal is to get adequate frames to initiate masonry work on the job no later than November 15, 1976 (working day 224). Some frames will be needed in September and will be obtained on a one by one basis. Frames are critical and should be expedited.

- Hollow metal doors

Hollow metal doors are to be on the job by December 7, 1976 (working day 239).

- Hardware

Expected on the job March 21, 1977 (working day 311).

- Exterior precast panels

Fabrication is due to start shortly and delivery is anticipated November 15, 1976 (working day 224).

- Exterior sash

Delivery of exterior sash is presently scheduled for November 10, 1976 (working day 221).

- Exterior glass

No word at present.

- Exterior entries

Following approval of entry shop drawings, fabrication and delivery takes about 50 working days. They probably will be on the job about December 10, 1976 (working day 242).

Summary

Overall, the project is presently moving very well with concrete work on supported decks meeting targets between early and late starts and finishes. Of crucial importance is initiation of slab on grade work at the first floor so rough interior work can begin as quickly as possible. The first floor is a critical area of the project and it will be absolutely essential to give over and above attention to all owner and contractor elements located below the floor slab at the first floor, particularly at the food service and operating areas.

**Monitoring Report #1
St. Lawrence Hospital
Page eight**

**RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER**

It is also important that any item requiring in-wall or other concealed wiring or piping be contracted for as quickly as possible. Rough wall work at the first and upper floors will be proceeding rapidly once slabs are available. Thus, time available for letting these in-wall contracts is getting short.

I shall draft the completed logic sheets and prepare them for computer processing. Meanwhile, the manually computed drawings will be printed in two sets and forwarded to Mr. Branoff as soon as the rough manual computations have been made. This should be some time early next week. I shall be in touch with Mr. Branoff soon to set the next monitoring session.

Ralph J. Stephenson, P.E.

**RJS
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**To: Mr. Mike Branoff
(Original and 2 copies)**

RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER

October 21, 1976

Subject: Monitoring Report #2

St. Lawrence Hospital, Lansing, Michigan

The Christman Company - Construction Managers

Project: 76:44

Date of Monitoring: October 18, 1976 (working day 204)

Monitored from Issue #4 dated September 1, 1976

Target End Date: March 1978 (to be confirmed upon completing final network for issue)

Actions taken:

- Inspected project
- Conferred with construction manager staff re job progress
- Reviewed entire project in detail and updated network to reflect current job status
- Made detail review of long lead time delivery items

General Summary

As of October 18, 1976 (working day 204) supported floor decks one, two, three, four, five, six, seven, eight, nine, ten, eleven and thirteen have been completed. Supported deck pours are running approximately 4 to 6 working days behind established target dates but it appears that for the entire structural frame construction sequence the lag will run between 2 and 3 working days.

The major problem facing construction progress presently is on slabs on grade. These are being poured as areas become available but several items are delaying continuity of construction at the first floor level. Some of these are revisions being made and covered by pending change order 2. Mr. Branoff has given authorization for work affected by change order 2 to proceed, but it would be wise to formalize this work by receipt of an official notice to proceed. In addition, some revisions to the

secondary electrical service area at the mechanical equipment room must be resolved. These are covered in change proposals 7, 8 and 9.

Another item of importance is providing and approving rough-in at the food service area. Presently we are anticipating this approval will be available in about 27 working days on November 24, 1976 (working day 231). The reason for the additional time required is that the original rough-in drawings were returned not approved.

Also needed is the layout for underground rough-in at the sterilization area. We anticipate this will be available within the next three weeks.

At x-ray areas, in-floor data is needed for the radiology equipment. This presently is in work.

At the ICU, under floor monitoring system data is needed. We are anticipating this will be available within three weeks.

The most critical of the areas is rough-in at the food service area since this release will give us a sizable amount of floor slab freed up to start work at the 1A area of the building. It was originally anticipated that work would move from 1A to 1B/D with work in the 1E, the ICU area, proceeding concurrently. If further delays occur at the north end, it might be wise to consider beginning the interior sequence at 1B/D since that area will require the longest time to complete. However, for our initial run we will maintain the sequence originally established starting at 1A.

As part of our monitoring, we also reviewed major delivery items. A brief review of each sheet is given below:

Sheet 1

- Color schedule

Basic exterior elements have been identified insofar as the colors are concerned. However, we are now approaching the point where interior color schedules are required. We have made an assumption in the network that all color schedules will be available with final approval by the hospital no later than November 15, 1976 (working day 224).

- Food service equipment

Food service equipment fabrication will generally follow field measuring for the equipment. Because of delays to the slab on grade, masonry is scheduled slightly later than previously and food service equipment is expected on the job the end of April or early May, 1977. This date will be set more exactly when the network is run.

- Food service equipment rough-in

Rough-in work is being reviewed and the layout is expected to be available within the next four weeks. This is critical and should be expedited to the greatest extent possible.

- Communications systems contracts

Presently we are assuming a communications contract will be let no later than December 7, 1976 (working day 239). Steps necessary are to submit recommendations, review and approve the recommendations, prepare the communications working drawings, price out the systems and let the contracts.

Interior stud work will be starting near the end of the year in all likelihood and it will be critical to have the communications contract let in adequate time to maintain progress on in-wall work.

- Central processing

Central processing recommendations have been reviewed and approved and working drawings are presently in work. We have assumed a central processing contract can be let by November 15, 1976 (working day 224). This design work affects underground installation at the sterilization area.

- Automatic Doors

We are assuming that letting of an automatic door contract does not affect pouring of the floor slab on grade. It is expected now that this contract could be awarded any time within the next three or four months. However, it is recommended that as with other contracts, it be consummated as quickly as possible.

- **Parking Controls Contract**

We have identified February 21, 1977 (working day 291) as a target date by which it would be desirable to have the parking controls contract let. This should allow us to have materials on the job in time to install next spring.

- **Radiography equipment**

Radiography equipment area working drawings are presently being prepared and should be available shortly. Information restrains completion of underground work at the floor slab on grade in the radiography area.

- **Hospital equipment**

Mr. Branoff is making a detailed review of hospital equipment and will establish those pieces that may require special services either above or below grade. These then will be identified relative to the date that the information is needed and the data conveyed to the owner and the architect by conference and memo. It is possible that some hospital equipment may require underground rough-in and this should be identified quickly.

- **Owner furnished toilet accessory blocking details**

We have assumed that adequate information is available for installation of blocking and this item is no longer a critical element.

- **Surgical light details**

Inserts have been provided for installing existing surgical lights at several locations in the operating areas. These should be adequate to handle most any positioning that might be required.

Now it will be necessary to obtain details of the new surgical lights so that support brackets can be detailed and fabricated. We have assumed we will have the surgical light supports on the job, ready for installation, no later than January 24, 1977 (working day 271). These restrain ceiling work and it would be wise to have them fabricated early so as to make certain they fit and are appropriate for the light fixtures selected.

- **Surgicator**

Has been deleted from the project.

Sheet 2

- **Cooling tower**

The cooling tower is expected on the job by November 8, 1976 (working day 219).

- **Boiler**

The boiler is in fabrication, expected on the job by January 11, 1977 (working day 262).

- **Medical equipment**

Medical equipment is in fabrication and to be delivered no later than April 22, 1977 (working day 335). This could become a critical item since it has an impact upon in-wall work at stud walls. I suggest an earlier delivery date be obtained on the material and equipment if possible.

- **De-aerator**

The de-aerator will be on the job by January 19, 1977 (working day 268).

- **Chillers**

Chillers are being fabricated and are due on the job December 1, 1976 (working day 235).

- **Cabinet unit heaters**

Cabinet unit heaters are in fabrication and will be on the job by March 29, 1977 (working day 317).

- **Primary switchgear**

Shop drawings are being redone and it is expected, after approval of shop drawings, fabrication of the switchgear will take about 19 weeks. Delivery is expected by April 25, 1977 (working day 336).

- **Motor control center**

Expected on the job by April 25, 1977 (working day 236).

- **Main switchboard**

Shop drawings are being redone and fabrication will take approximately 60 working days after approval of shop drawings. This will bring the main switchboard to the job by February 21, 1977 (working day 291).

- **Operating room panels**

These are in fabrication and should be on the job by about November 1, 1976 (working day 214).

- **Cable trench**

Cable trench will be fabricated as soon as the in-floor data for the area is available. We expect cable trench to be on the job by about the first of the year.

- **Transformer**

On job.

Sheet 3

- **Brick masonry**

Masonry is expected on the job by October 25, 1976 (working day 209).

- **Hollow metal frames**

Early hollow metal frames for masonry at the first floor are on the job. Later hollow metal frames are due ranging from November 15, 1976 (working day 224) to early in 1977.

- **Hollow metal doors**

Presently expected on the job by December 7, 1976 (working day 239).

- Hardware

Expected on the job March 10, 1977 (working day 304).

- Exterior precast panels

Delivery is being held at November 15, 1976 (working day 224).

- Exterior sash

Sash is being fabricated and expected on the job by November 10, 1976 (working day 221).

- Exterior glass

Expected on the job no later than December 29, 1976 (working day 254).

- Exterior entries

In fabrication and should be delivered by about December 10, 1976 (working day 242).

Summary

Currently floor pours are moving very well and are within four to six working days of the original targets. Slab on grade work is encountering difficulties and since this is a critical item, should be given high priority attention. Very critical to maintaining continuity of work on the slab on grade will be obtaining adequate in-slab and under-floor information for utilities and in-slab work. The problem with slab on grade construction is that even though above floor rough work such as sheet metal, piping and electrical conduit could start off fill, when work on the slab starts it interferes with above floor work and interrupts the sequence. Therefore, it is strongly recommended that the slab on grade be poured out so that above floor rough trades can move smoothly from area to area. It is expected that the sequence moving from first floor north to south with the ICU area being concurrent will be maintained. This is the sequence which will be shown in the final network although consideration should be given, starting at the south end, if the north end does not soon become available for slab on grade in the near future.

Work at the upper floors is expected to be concurrent with that at the first floor and with the present pouring schedules, we should be able to maintain good progress at the second and third floors.

**Monitoring Report #2
St. Lawrence Hospital
Page eight**

**RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER**

Delivery of exterior precast is an important item and presently is scheduled for November 15, 1976 (working day 224). Heavy efforts will have to be made beginning prior to that point and continuing on as precast is erected to achieve close-in of the structure as scheduled.

We have now completed the network diagram for the structure, close-in, interior rough work and interior finish work. I shall complete processing the diagram and issue the entire network sometime in the near future.

I shall also be in touch with Mr. Branoff soon to establish the next monitoring date.

Ralph J. Stephenson, P.E.

**RJS
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**To: Mr. Michael Branoff
(Original and 2 copies)**

December 7, 1976

Subject: Monitoring Report #3
St. Lawrence Hospital, Lansing, Michigan
The Christman Company - Construction Managers

Project: 76144

Date of Monitoring: December 2, 1976 (working day 236)

Monitored from Issue #5 dated October 18, 1976

Target End Date: April 10, 1978 (working day 580)

Actions taken:

- Distributed 11 copies of Issue #5 dated October 18, 1976 to Mr. Jim Cross
- Reviewed job progress with construction manager and architect/engineer
- Prepared project status report for period from December 2, 1976 (working day 236) to January 11, 1977 (working day 262)
- Reviewed technique of using network drawings and computer printouts with field staff of Christman

General Summary

As of December 2, 1976 (working day 236) all supported deck pours have been made except for the last three - #21, #22 and #23. #21 is formed and ready to pour as soon as the very cold weather subsides. #22 and #23 will follow shortly after, probably within a period of one week. Thus, if the weather does warm within the next three or four days, it should be possible to meet the present target date of pouring out the entire structure by December 16, 1976 (working day 246).

Slab on grade work has moved reasonably well although there are still delays due to the need for secondary electrical service revisions, layout of the underground rough-in at the sterile area, in-floor data for radiology and information on the under-floor monitoring data for area 1E.

Precast materials are on the job and erection has started. Close-in of the structure is presently meeting dates between early and late starts and finishes. Some above floor mechanical work has begun at area 1A and is slightly ahead of the schedule.

A review of the job shows that there are still some holdups on obtaining information and clearing items for detailing. As part of our monitoring, we reviewed the major delivery items. A brief description by sheet is given below.

Sheet 1

- Color schedule

Color schedule B (interior elements) has not yet been issued. The architect/engineer anticipated this can be given to the owner for approval by December 27, 1976 (working day 252). The color schedule is, of course, becoming increasingly critical since many interior materials it will concern are long lead time items.

- Communications systems contracts

Communication recommendations have not yet been submitted and there was no current word on this. It should be pointed out that the communications contract must be let in adequate time to insure that in-wall work can be installed on time in walls at the various levels. I recommend strongly that every effort be made to free this communications recommendation up now.

- Central Processing

Central processing working drawings have not yet been issued. They should be available, according to the architect on December 9, 1976 (working day 241) for pricing.

- Automatic Doors

Automatic door recommendations have not yet been made. They should be available next week.

- Parking Controls Contract

Recommendations from the architect will be available by December 30, 1976 (working day 255).

- Radiography equipment

Working drawings are presently in work. It is estimated they will be available from the architect by December 9, 1976 (working day 241).

- Hospital equipment

No word available at this meeting.

- Owner furnished toilet accessory blocking details

This item is presently being followed and apparently causes no major difficulties.

- Surgical light details

The surgical light support working drawings apparently have been substantially completed and are available. Mr. Cross will check the current status of these.

Sheet 2

- Boiler

No current word. Assumed in fabrication.

- Medical equipment

In fabrication.

- De-aerator

No current word - assumed in fabrication.

- Chiller

No current word - considered available as needed.

- Cabinet unit heaters

No word - assumed in fabrication.

- Primary switchgear

Shop drawings were revised due to power company request. Presently these are being priced.

- Motor control center

Shop drawings were revised due to power company request. Presently these are being priced.

- Main switchboard

Shop drawings were revised due to power company request. Presently revisions are being priced.

- Operating room panels
In fabrication, no current word.
- Cable trench
No current word - assumed in fabrication.

Sheet 3

- Brick masonry
On the job.
- Late hollow metal frames
In work.
- Hollow metal doors
In fabrication.
- Hardware
In fabrication.
- Precast panels
On job.
- Exterior sash
In fabrication.
- Exterior glass
No word - assumed to be in fabrication.

Summary

Currently the project is moving well within field target early and late starts and finishes. Floor pours have generally maintained target schedules set for them and might possibly finish out as early as December 13, 1976 (working day 243). The target end date was December 15, 1976 (working day 246).

Cold weather currently being experienced in Lansing has delayed work on supported decks.

Monitoring Report #3
St. Lawrence Hospital
Page five

RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER

Floor slab on grade work is well along although it would be desirable to complete pouring out all remaining slabs on grade just as quickly as possible. This work will depend to a large extent on the availability of information.

Most deliveries appear to be in fairly good shape although there are some lags being experienced in some of the items and these should be given careful attention.

At this session I issued 11 sets of drawings and computer runs to Mr. Cross for Issue #5 dated October 18, 1976. This is the official monitoring run as of December 2, 1976 and will be used to gage the job as a standard of performance.

I reviewed with Mr. Cross and other members of the field staff the use of the network diagram and the computer printout. At the meeting we also prepared a project status report for the period from December 2, 1976 (working day 236) to January 11, 1977 (working day 262). This is a computerized evaluation of the project measured against late starts and late finishes. I will send five copies of this evaluation directly to Mr. Branoff. Meanwhile, I shall be in touch with Mr. Branoff or Mr. Cross regarding the next monitoring session.

Ralph J. Stephenson, P.E.

RJS
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To: Mr. Michael Branoff
(Original and 2 copies)

RALPH J. STEPHENSON, P. E.
CONSULTING ENGINEER

January 13, 1977

Subject: Monitoring Report #4
St. Lawrence Hospital, Lansing, Michigan
The Christman Company - Construction Managers

Project: 76,44

Date of Monitoring: January 11, 1977 (working day 262)

Monitored from Issue #5 dated October 18, 1976

Target End Date: April 10, 1978 (working day 580)

Actions taken:

- Inspected project
- Reviewed job status with Mr. Jim Cross and Mr. Wes Jones
- Reviewed status of mechanical/electrical work with subcontractors
- Prepared project status report for period from January 11, 1977 (working day 262) to February 23, 1977 (working day 293)

General Summary

As of January 11, 1977 (working day 262), all supported deck pours have been made and totally stripped. Exterior close-in of the building is in work and rough mechanical and electrical work is well along at the first floor, and just starting at the second. Several slabs on grade yet remain to be poured but these are not interfering excessively with overhead work. However, it is becoming increasingly critical to resolve all items that deal with underground and in slab information that restrains construction of slabs on grade. Slab on grade work will proceed as soon as all data in any given area is available. Exterior precast panels are in work and all close-in items are moving fairly well although presently slightly behind desired target dates.

There still are some holdups on deliveries and approvals. One of the more critical of these deals with electrical equipment which has not yet been released for fabrication. Electrical equipment is a long lead time item and it will be important to clear this as quickly as possible.

A brief review of major delivery items is given below.

Sheet 1

- Color schedule

Color schedule B (interior elements) has not yet been issued. This color schedule is important and I recommend it be released as quickly as possible.

- Communications systems contract

Recommendations are presently being reviewed by the hospital.

- Central processing

Central processing work is being priced.

- Automatic doors

Presently being priced.

- Parking controls contract

Recommendations have not yet been provided.

- Radiography equipment

Working drawings have been provided and are being priced.

- Owner furnished toilet accessory blocking details

Mr. Cross will check. These blocking details will be needed shortly since studs are about ready to begin at interior areas.

- Surgical light supports

Light supports are being fabricated.

Sheet 2

- Boiler

Expected on the job February 3, 1977 (working day 279).

- Medical equipment

No current word. Hold to delivery of April 21, 1977 (working day 334).

- De-aerator

To be delivered February 24, 1977 (working day 294).

- Chiller
On job.
- Cabinet unit heaters
Available.
- Primary switchgear
Cost has been submitted for revisions. Need owner decision to release equipment.
- Motor control center
Same as switchgear.
- Main switchboard
Same as switchgear.

Note: Delivery of equipment ranges presently from 60 to 95 working days. These long lead times make it imperative that immediate attention be given to releasing all possible electrical equipment. I strongly recommend this item be cleared now.

- Operating room panels
In fabrication, no current word.
- Cable trench
Being revised. This item is presently becoming critical.

Sheet 3

- Hollow metal frames
All on job except for at third floor.
- Hollow metal doors
In fabrication.
- Hardware
In fabrication.

- Precast panels
Most on job, some still arriving.
- Exterior sash
On job.
- Exterior glass
No current word. Should be checked.
- Exterior entry material
No word.

Close-In

The structural concrete frame was poured out on our target of December 15, 1976 (working day 245). This was the day projected from our Issue #5 network. It was a good performance and should be complimented.

Close-in of the building is presently lagging slightly on erection of precast, studs and board backup. This is not a critical delay item but shortly, particularly with the cold weather being experienced, will delay installation of interior work. It should be noted that most of the holdup has been attributable to the unseasonably cold weather experienced in December and early January. It appears this weather is here to stay for the rest of the winter and therefore, heavy efforts will have to be made to pick up the lags despite problems of weather. We are still holding to close in the building substantially by late March or early April.

Floor Slabs on Grade

All have been completed except those located at areas where additional data is needed.

Area 1A (first floor north end)

Most work here is currently meeting targets between early and late starts and finishes except sprinkler piping. This work has not yet begun. Sprinkler work has a late start of February 4, 1977 (working day 280) and I suggest that immediate attention be given this item to obtain all required approvals. Apparently there is some confusion about what is needed for full approval on sprinkler piping. This matter should be worked out immediately.

Monitoring Report #4
St. Lawrence Hospital
Page five

RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER

Area 1B/D (first floor south end)

Most major work here is meeting targets between early and late starts and finishes. Same comments for sprinkler piping apply here as for 1A.

Area 1E (ICU)

No interior rough work started as yet.

Area 2A (North second floor)

Sheet metal ductwork and some studs are just getting underway at the second floor. Work is meeting targets between early and late starts and finishes.

Area 2B (south second floor)

Work not started here.

Area 3A (North third floor)

Work not started here.

Area 3B (south third floor)

Work not started here.

General Summary

Overall the project is in fair condition except for close-in work and some deliveries, particularly electrical equipment. Close-in delays probably can be recaptured or taken care of with temporary protection.

I strongly recommend that a heavy program of expediting be initiated with pending equipment deliveries.

Ralph J. Stephenson, P.E.

RJS
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To: Mr. Michael Branoff
(Original and 2 copies)

Monitoring Report #4
St. Lawrence Hospital

RALPH J. STEPHENSON, P. E.
CONSULTING ENGINEER

THIS PARAGRAPH WAS DICTATED WITH MONITORING REPORT #4 - ST. LAWRENCE
HOSPITAL. HOWEVER, IT WAS DELETED FROM REPORT AND THIS IS BEING
COPIED FOR RJS' USE ONLY.....

Also, it is beginning to appear that there are large numbers of change proposals being issued and it would be wise for all parties concerned - the architect/engineer, the owner and the contractors - to make a comparison between these change proposals and the numbers of change orders issued. It should be realized that an unresolved change proposal tends to delay work on the project. Therefore, prompt resolution of change proposals is generally appreciated and helpful to maintaining job progress. I discussed this briefly with the people concerned and suggested they might want to prepare some graphic displays regarding this particular matter.

February 11, 1977

Subject: Monitoring Report #5
St. Lawrence Hospital, Lansing, Michigan
The Christman Company - Construction Managers

Project: 76:44

Date of Monitoring: February 9, 1977 (working day 283)

Monitored from Issue #5 dated October 18, 1976

Target End Date: April 10, 1978 (working day 580)

Actions taken:

- Inspected project
- Reviewed job status with Mr. Jim Cross, Mr. Wes Jones and Mr. Steve McGarry
- Reviewed status of mechanical and electrical work with sub-contractors
- Prepared project status report for period from February 9, 1977 (working day 283) to March 21, 1977 (working day 311)

General Summary

As of February 9, 1977 (working day 283) the project is proceeding well in the field with most major tasks currently meeting or slightly bettering target dates between early and late starts and finishes. The weather has allowed work in some areas but presently is not seriously affecting general job progress. Masonry veneer at the second and third floors is slightly behind our projected target dates, however, exterior stud work and board have now been installed at the second floor and are almost complete at the third so vertical closure of the building is substantially accomplished.

Roofing was planned to begin after exterior masonry veneer was complete. However there is a possibility that roofing may go concurrently with the veneer and then the roofer would come back at a later date and complete trim and flashing. It is still projected that the building will be substantially closed to weather by early or mid-March.

There is a possibility that if a break in the weather occurs, the mason could pick up the current lag and actually complete most of the exterior work where it adjoins roofing.

Penthouse roof deck has been approved and this material should be on the job shortly. Siding is available so closing in of the penthouse will proceed in the very near future. This is not a present deterrent to other work but will soon be required to be closed in so finish trades may proceed at the lower levels.

There still are problems with approvals and releases. It is suggested here that a careful check be kept of the relation of change proposals requested and priced to change orders issued. I suggested to the field management that they prepare a graphic tabulation of the relation. We will review this as the job proceeds.

A brief review of major delivery items is given below.

Sheet 1

- Color schedule

The hospital has given final approval to color schedule B.

- Communications systems contract

Recommendations have been provided. Working drawings are just starting.

- Central processing

This work is now being priced out and can be released for contracts in the near future.

- Automatic doors

These are still being priced out according to recent revisions made to the layout and details.

- Parking controls contract

Recommendations not provided.

- Radiography equipment

Working drawings have been provided with the information adequate to begin work on the slab on grade. This slab will probably be held until slightly warmer weather so the sub-base can be thawed. It should be noted here this could become critical and I suggest it be reviewed for an early start.

- Owner furnished toilet accessory blocking details

Resolved.

- Surgical light supports

Light supports are still in fabrication.

Sheet 2

- Boiler

On job and set.

- Medical equipment

No current word. Still hold delivery of April 21, 1977 (working day 334).

- De-aerator

Date has been revised to deliver on March 4, 1977 (working day 300). This is another revision of these dates and the item is now one that should be watched carefully since usually revisions to initial delivery dates mean difficulty in fabrication.

- Chiller

On job and set.

- Cabinet unit heaters

All warehoused.

- Primary switchgear

Has been released - now in fabrication. Delivery expected in 60 working days.

- Motor control centers

Has been released - now in fabrication. Delivery expected in 95 working days.

- Main switchboard

Has been released - now in fabrication. Delivery expected in 60 working days.

- Operating room panels

Back boxes are available.

- Cable trench

Has been resubmitted. Delivery is about 50 working days after approval. The floor slab on grade to receive the cable trench can be recessed to receive it. However, this item is needed for in-wall work also.

- Transformer

The revised transformer will require approximately 60 working days for delivery. Drawings have been approved and returned.

Sheet 3

- Hollow metal doors
In fabrication.
- Hardware
In fabrication.
- Precast panels
All on job and erected.
- Exterior glass
On job.
- Exterior entry material
No current word.

Close-in

The building is presently closed vertically to most weather with the exception of some local areas where access is being maintained to the inside of the building or where studs and exterior board are yet to be erected. No roofing has been laid as yet although it is expected this work will start sometime in the near future provided the weather remains comfortable.

Generally we are holding to an early or mid-March date by which we can expect the building to be substantially closed to most weather. If this date can be maintained, close-in can generally be considered on schedule.

Area 1A (first floor north end)

Most work here continues to meet major targets between early and late starts and finishes. It should be noted that there are three major field measurements required - for food service equipment, for kitchen coolers and for sterilization equipment.

It would be helpful to get the central processing areas cleared for the slab on grade as soon as possible since the slab must be poured there before masonry can be erected and masonry must be erected before field measurements can be taken.

Fire protection approvals have been cleared and work is now underway. It is not presently lagging late starts and late finishes but is uncomfortably close to them due to the late start. I suggest careful attention be given this item.

It should be noted it will be necessary to install and connect kitchen hoods prior to start of acoustic ceiling grid and conduit.

Area 1B/D (first floor south end)

Most work here is meeting targets between early and late starts and finishes. Sprinkler piping is falling close to its late starts and should be watched. Also, it would be wise to begin field planning for start of work in the D Unit. The B and D areas were considered together in the planning of this area and although there is no major lag as yet, if the floor slab on grade is not completed sometime shortly, there may arise a lag for D. This matter was discussed briefly with Mr. Cross and Mr. Jones.

Area 1E (ICU)

No major interior rough work started as yet.

Area 2A (north second floor)

Above ceiling work, including sheet metal, piping and rough electrical, has started. Interior masonry is also underway. Wall studs are moving well with some in-wall work just starting. There may be some fabrication problems with the spiral duct at the second floor since the fabricating plant has been affected by the energy problem brought on by the cold weather. However, we are presently assuming that production of ductwork can maintain the current plan of work.

There are no major lags at the second floor over late starts and late finishes.

Area 2B (south second floor)

Work here is about at the same stage as at area 2A. Work is generally meeting targets between early and late starts and finishes.

Area 3A (north third floor)

Work just starting. All major items currently meeting targets between early and late starts and finishes.

Area 3B (south third floor)

Work just starting. Currently meeting targets between early and late starts and finishes.

General Summary

Overall the project is in good to excellent shape with most work meeting goals between early and late starts and finishes. Major difficulties are still being encountered with releases of approvals, particularly at the first floor on underground work and some rough-in areas. It is urged that all unresolved matters be closed out just as quickly as possible since with the return of workable weather, the project shows signs of being able to move rapidly in most areas. Therefore, it would be wise to provide all information needed so no delays will be experienced because of administrative lags.

Monitoring Report #5
St. Lawrence Hospital
Page six

RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER

As part of this monitoring I prepared a project status report for the period from February 9, 1977 (working day 283) to March 21, 1977 (working day 311). This will be issued concurrently with the monitoring report.

Ralph J. Stephenson, P.E.

RJS

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To: Mr. Michael Branoff
(Original and 2 copies)

March 11, 1977

Subject: Monitoring Report #6

St. Lawrence Hospital, Lansing, Michigan

The Christman Company - Construction Managers

Project: 76:44

Date of Monitoring: March 9, 1977 (working day 303)

Monitored from Issue #5 dated October 18, 1976

Target End Date: April 10, 1978 (working day 580)

Actions taken:

- Inspected project
- Reviewed job status with Mr. Jim Cross, Mr. Wes Jones, Mr. Steve McGarry and Mr. Mike Branoff
- Reviewed status of mechanical and electrical work with subcontractor representatives
- Prepared project status report for period from March 9, 1977 (working day 303) to April 13, 1977 (working day 328)

General Summary

As of March 9, 1977 (working day 303) the project continues to move well in the field with most major tasks currently meeting or slightly bettering targets between early and late starts and finishes. Of some concern is total close-in of the building since it is expected that within the next few weeks interior finish work will require that substantial close-in be accomplished. Close-in areas lagging include exterior masonry, exterior sash and erection of penthouse metal deck, siding and roofing. It is presently anticipated that main building roofing will start probably about March 14, 1977 (working day 306), the current target starting date from the network, Issue #5.

Now that some break in the weather has been experienced it would be wise to take advantage of the good days in this month to do as much exterior work as possible since it can be expected that additional cold

weather, precipitation and high winds will be common over the next couple of months. This matter was reviewed in detail with the field and office management and it was agreed that heavy concentration will be placed on completing close-in of the building.

Approvals and releases are proceeding well in some areas although there still are potentially important delays being experienced. A brief review of major delivery items by network model sheets is given below.

Sheet 1

- Communications systems contract

Apparently working drawings are being prepared although there is no definitive data on this as of this meeting. This item continues to be a very critical part of the work since a good share of the communications system must be installed in walls and above ceilings. I suggest a concerted effort be made to clear this work now.

- Central processing

A contract has been let.

- Automatic doors

A contract has been let.

- Parking controls contract

Recommendations have not yet been provided. If it is expected that exterior paving be initiated shortly, it will be required to clear this parking controls contract. As has been pointed out earlier, it is essential to complete paving within the good weather available in 1977 since paving weather will not be available prior to opening once the '77 season has closed out.

- In-floor and underground data at radiology area

This information is still needed. It is the intent to begin work on the slab on grade at the radiography area in the very near future. Thus, this information is now critical.

- Surgical light supports

Fabricated and available.

Sheet 2

- Medical equipment

Most in-wall medical equipment and other critical equipment items are on the job. Finish trim elements will be delivered at a later date.

- De-aerator

Still not on job. Delivery delayed again.

- Primary switchgear

Presently waiting for fabricator's shop drawings. These should be in April 1, 1977 (working day 320). Delivery is about 20 weeks after approval. Arrangements should be made to expedite approval of shop drawings as they arrive.

- Motor control center

Shop drawings were approved February 21, 1977 (working day 291). Delivery expected in mid-June.

- Main switchboard

Presently waiting for shop drawings. This is a long lead time item and is critical for temporary heat. Thus, it will be essential to have the equipment on the job and installed by mid-October 1977. Must be expedited.

- Cable trench

In-wall elements can only be fabricated after studs are in place and field measurements have been taken. Thus, it is now very important that the remaining first floor slab on grade be completed and studs started there just as quickly as possible so measurements can be made.

- Transformer

Shop drawings were approved February 8, 1977 (working day 282).
Delivery expected by late July 1977.

Sheet 3

- Hollow metal doors

In fabrication.

- Hardware

In fabrication.

- Exterior entry material

In fabrication.

Close-in

The building is closed in adequate for all rough work presently in progress. However, it will soon be essential that close-in be adequate to start interior finish work, primarily hanging, taping and sanding board. This will be a critical pivot point.

Area 1A (first floor north end)

All major tasks at this area are currently meeting targets between early and late starts and finishes. Stud work is expected to begin within two weeks and to proceed on through with minimal interruption. Field measurements have been made for food service equipment and presumably for kitchen coolers.

There was some confusion about whether field measurements are necessary or have been made for sterilization equipment. This matter should be clarified at an early date since the equipment is large, complex and does have considerable electrical and mechanical hookup along with closing tight to some adjoining walls.

Kitchen hoods are still in fabrication and expected on the job about May 4, 1977 [working day 343]. This date is suitable but it would be better if delivery of hoods could be expedited.

Monitoring Report #6
St. Lawrence Hospital
Page five

In relation to this item, it should be pointed out again that a careful check should be initiated to see if and to what extent the exhaust ductwork from the hoods must be fireproofed. This work has to be done before any major ceiling work can start in the area and is usually a very difficult task.

Area 1B/D (first floor south end)

The critical element here is to get the slab on grade in the radiography area poured out so that above floor work can begin in full production. The B/D area is the most complex on the project and work is expected to be going on there on a continuous basis from now until the target end date. Therefore, it becomes essential to maintain ongoing progress. So far work has moved relatively well although it shows present signs of slowing down.

Area 1E (ICU)

Close-in is still proceeding at area 1E and no major interior rough work has started as yet. As soon as the frost is out of the ground, it is expected the slab on grade will be installed. This should be sometime within the next few weeks. I suggest it be done as soon as possible to free up reservoir areas for trades to move into as they are temporarily shunted from other areas.

Area 2A (north second floor)

All major work at the second floor is meeting or exceeding current target late start/late finish dates and board work has begun above the corridor ceilings. Again, because of the nature of fire code interpretation, it would be wise to make an additional check on the requirements of board at the corridors in the event that any additional work is needed. Once all above ceiling work is in and ceiling grid begins, above ceiling work, particularly installation of board, becomes very difficult.

Area 2B (south second floor)

Work here is about at the same point as at area 2A. Work is meeting targets between early and late starts and finishes.

Area 3A (north third floor)

Rough work has moved well here over the past month and all work is currently meeting targets between early and late starts and finishes.

Monitoring Report #6
St. Lawrence Hospital
Page six

RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER

Area 3B (south third floor)

Work here is about at the same point as at area 3A.

General Summary

Overall, the project continues in good shape in the field with most major rough work currently meeting goals between early and late starts and finishes. Although there has been some progress with releases and approvals, it is again urged that all unresolved matters with respect to approvals, deliveries, detailing and other such front end work, be completed immediately. It is probable with the onset of good weather there will be an intensification of work efforts and it will be important that no delays be encountered because of unavailable materials or because of areas that are held due to unresolved installation details.

I shall plan to monitor the project again on Wednesday, April 13, 1977 (working day 328).

As part of today's monitoring I prepared a project status report for the period from March 9, 1977 (working day 303) to April 13, 1977 (working day 328). This will be issued concurrently with the monitoring report. It was decided at our meeting that a copy of the monitoring report, along with a copy of the project status report, will be forwarded directly to Mr. Jim Cross at the Lansing office concurrently with sending four copies of the project status report and the original of the monitoring report to Mr. Branoff.

Ralph J. Stephenson, P.E.

RJS
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To: Mr. Mike Branoff
(Original and 2 copies - M/R
4 PSR)

Mr. Jim Cross
The Christman Company
P. O. Box 14120
Lansing, Michigan 48901
(1 cc - M/R
1 PSR)

RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER

April 18, 1977

Subject: Monitoring Report #7

St. Lawrence Hospital, Lansing, Michigan

The Christman Company - Construction Managers

Project: 76:44

Date of Monitoring: April 13, 1977 (working day 328)

Monitored from Issue #5 dated October 18, 1976

Target End Date: April 10, 1978 (working day 580)

Actions taken:

- Inspected project
- Reviewed job status with Mr. Mike Branoff, Mr. Jim Cross, Mr. Wes Jones and Mr. Steve McGarry
- Reviewed status of electrical work with subcontractor
- Reviewed communications system in detail with owner, architect, construction manager and electrical contractor

General Summary

As of April 13, 1977 (working day 328) the project shows signs of slowing at all floor levels. The major reason for this is that stud work, particularly at the upper floors, has reached a point where an intensive boarding operation could start if in-wall work was further along. This was the subject of considerable discussion at our session today. Apparently the problem stems from selection of the various contractors communications systems and devices.

Mr. Jarousek said they will have working drawings for the intercom, nurses' call, paging and TV systems available April 20, 1977 (working day 333) for the second and third floors. Drawings for first floor work will be available May 2, 1977 (working day 341). Soon after receipt of working drawings, it is assumed installation of in-wall work can begin.

The electrical contractor feels that at the second floor, board work could probably begin by May 2, 1977 (working day 341) at patient and inner corridor areas. Core area board could probably begin about May 23, 1977 (working day 356).

At the third floor the electrical contractor estimates board work could begin at patient rooms and the inner corridor by June 1, 1977 (working day 362). Board at the core areas on the third floor could begin by June 20, 1977 (working day 375). These dates are later than planned and it would be helpful to expedite this work to the greatest extent possible.

Another element that must be kept in mind is the need to have TV brackets available and installed by the time board work begins. These are very important since for each supplier the bracket tends to be different. This matter is now being followed by Mr. Branoff with Sister Mary Janice Belen and Mr. Jariousek.

At the first floor, if studs are ready in area 1A by May 2, 1977 (working day 341), the area could probably be ready for board by May 23, 1977 (working day 356). This is about a month later than had been originally intended. However, it should be noted that there is float time available in area 1A and so in relation to the total job, this is not presently an overly serious problem.

At 1B the delay to start of board may be considerably longer although presently it appears that we could begin by a date somewhere between the current early and late starts of the task. The early start was May 24, 1977 (working day 357) and the late start is June 27, 1977 (working day 380). This is a very critical set of dates and board at area 1B will be hard pressed to maintain these dates. Thus, it behooves everyone to expedite installation of work at 1B to the greatest extent possible. This area should also be cleaned as quickly as possible since it is being used for storage and work space. Since it is one of the most complex portions of the building, it will be essential that an uninterrupted work pace be maintained in the area as soon as possible.

Roofing is just beginning. The penthouse has been roofed and the roofer has moved to the third level roof. This work was due to have begun on March 14, 1977 (working day 306) so is about one month late. One of the contributing reasons has been difficult weather experienced in late March and early April.

Approvals and releases are continuing fairly well and a brief review of the major delivery items still pending is given below by network model sheets.

Sheet 1

- Communications systems contract

This matter was discussed above.

- Parking controls contract

Design drawings for the parking controls system will be available May 2, 1977 (working day 341). This coincides fairly well with the desired starting date for site work. It is the intent presently for Christman to begin intensive site work by the latter part of May.

- In-floor and underground data at radiology area

Most information has been obtained, the floor slab is poured and interior work is underway there.

Sheet 2

- De-aerator

On job and set in place.

- Electrical equipment (This section will cover delivery of all outstanding major electrical items)

All electrical shop drawings are now back from the architect/engineer approved as noted. The following data was available for each major piece of equipment.

Primary switchgear

Delivery 60 to 70 working days once returned shop drawings are processed.

Indoor secondary switchgear

Due this week.

Outdoor secondary switchgear

Delivery 70 to 80 working days after returned shop drawings are processed.

Motor control centers

On job by July 15, 1977 (working day 393)

Secondary transformer

On job by June 24, 1977 (working day 379)

Cable trench

Fabrication will require from 20 to 30 working days after field measurements are taken at studs. This is becoming a critical item.

Sheet 3

Most items have either been delivered or are in fabrication.
No major problem.

Close-in

Final close-in work is now starting and the building should be tight to weather within 15 to 20 working days. This is not holding up any interior work at this time.

Area 1A (first floor north end)

With the current projection for start of board work, it appears that this floor lags by about one month. Again, although the delay is not overly critical in terms of finishing of area 1A, it does influence considerably the sequencing of work. Sequencing of the job from here on is going to be doubly important since we are now being forced in some cases past early start dates which were the desirable beginning points for many of the finish trades. Kitchen hoods have begun arriving on the job and are being hung. Most fabrication of food service equipment and other specialty items is in work.

Area 1BD (first floor south end)

The floor slab on grade has been poured out at the BD area and overhead work is underway. The entire BD area is the longest to construct portion of the building and also is one of the most critical. I strongly recommend the space be cleared as soon as possible and made available on an unrestricted basis to all trades.

Monitoring Report #7
St. Lawrence Hospital
Page five

RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER

Area 1E (ICU)

Close-in is still in work at the building. Underground utility work has begun. Floor slab on grade work will probably start there this month.

Area 2A (north second floor)

All major work at the second floor is meeting current target late start/late finish dates.

A brief review of the start of board installation was given earlier.

Area 2B (south second floor)

Work here is at the same point as area 2A.

Area 3A (north third floor)

All major work is meeting current targets between early and late starts and finishes.

Area 3B (south third floor)

All major work is meeting current targets between early and late starts and finishes.

General Summary

Overall the project has not shown as good progress over the past month as in previous monitorings. There is a serious need to clear the communications systems working drawings and to resolve all matters that deal with in-wall work to be put in stud partitions. Our meeting today consisted of an intensive discussion of this matter and most of the problem areas seem to have been resolved. I shall plan to monitor the project again on May 11, 1977 and shall be in touch with Mr. Branoff to set this date.

As a part of today's monitoring I prepared a project status report from April 13, 1977 (working day 326) to May 11, 1977 (working day 348).

Ralph J. Stephenson, P.E.

RJS/m

To: Mr. Mike Branoff (Orig. & 2 copies M/R & 4 PSR)
Mr. Jim Cross (1 cc M/R & 1 PSR)

May 13, 1977

Subject: Monitoring Report #8
St. Lawrence Hospital, Lansing, Michigan
The Christman Company - Construction Managers

Project: 76144

Date of Monitoring: May 11, 1977 (working day 348)

Target Field Completion Dates:

Area 1A	November 1, 1977 (W/D 470)
Area 1BD	April 7, 1978 (W/D 580)
Area 1E	November 1, 1977 (W/D 470)
Area 2A	October 21, 1977 (W/D 463)
Area 2B	November 18, 1977 (W/D 483)
Area 3A	December 19, 1977 (W/D 503)
Area 3B	February 1, 1978 (W/D 533)

Note: The above are late finish field targets. If possible, these will be improved.

Actions taken:

- Inspected project
- Reviewed job status with Jim Cross and Steve McGarry
- Evaluated current job progress

General Summary

As of May 11, 1977 (working day 348) the project has continued over the past month at a slower pace than it had in previous months this year. However, there have been several difficulties resolved and board work is now beginning in production at the second floor. There still are some pending communication and fire alarm decisions, particularly at the first floor. These affect board work since most of the system is built into the walls and the ceilings. Again, as in the past, I urge that these matters be resolved quickly. Delays to floor progress are now almost directly attributable to lack of complete in-wall work since the building is substantially closed in at the second and third levels and is rapidly being put in the dry at the first level.

6/8/77
Skill
to be
released
~~for~~
for start

Work at the north end of the first floor has now dropped behind late starts and late finishes and lags. Work at the south end of the first

floor is moving in fair fashion although it has lost ground over progress there earlier this year. Work at the intensive care unit is just now starting after the winter while work at upper floors is still in reasonably good condition.

Mechanical equipment rooms are in fair shape although there are still questions as to whether electrical equipment for these rooms will be on the job in adequate time to insure that the permanent heating system can be used for the building this winter. It is to be kept in mind that heat will be needed by mid-October '77 and that it is going to be of a critical nature to insure that finish work can proceed in cold weather.

A brief review of major delivery items still pending is given below by network model sheets.

Sheet 1

- Communications systems contract

Some work has been let on this contract but there still remain additional systems to be built into some walls and ceilings. These are being given top priority attention now and will be cleared at an early date.

- Parking controls contract

Apparently there are revisions being considered for the parking areas and the controls are not yet released on working drawings.

Sheet 2

- Electrical equipment

Some switchgear has begun to arrive on the job and over the next several months it is expected that most other equipment will arrive, as discussed in monitoring #7 dated April 13, 1977 (working day 328). It is still planned to have adequate electrical gear on the job so that the permanent heating system can be activated by early or mid-October. This is a critical date.

- Cable trench

Field measurements have been taken and fabrication is in work. This too is an important item since it goes into the stud walls and must be installed before board work can be finished at the floor.

Sheet 3

No major problem.

Close-in

Close-in work has moved slowly with roofing being complete at the pent-house and the high roof. Work is in progress over the second floor at this time and from there will move down to the area over the first floor. Roofing should be complete by the end of May. This is later than had been anticipated although up to now it has caused only minor inconveniences in interior work. At present the building is roofed at the tower unit which allows board work to begin at the second and third floors.

Area 1A (first floor north end)

In-wall work and board lag late starts and late finishes by about 11 - 13 working days. The holdup to finishing wall work is presently revisions to door frames that are being fabricated. This work was revised in Bulletin #14. The major kitchen hoods have been erected and ductwork installed. Fireproofing of ductwork should begin shortly. This is a difficult task and should be completed as early as possible.

Work at the mechanical equipment room is moving well and if electrical equipment can be brought to the job and installed in timely fashion, there should be no difficulty obtaining heat from the system by mid-October.

Area 1BD (first floor south end)

There is a slight lag in above ceiling mechanical and electrical work of about 10 working days. This is not a serious deterrent to work proceeding at the area below the ceiling. Nevertheless it should be completed as soon as possible to free up the area totally so all studs and above ceiling drywall can be completed. Work at the floor is drawing close to late start and late finish dates on in-wall and stud work, along with ceiling and wall drywall.

As mentioned earlier, the communications and fire alarm systems at the first floor are still pending and an early clarification of this should be made so that the system materials can be installed and board work proceed.

Area 1E (ICU)

Interior fine grading is in work along with completion of underground utilities. Probably the slab on grade will not be poured out until about June 2, 1977 (working day 363). This is pushing too close to late starts and late finishes for above ceiling work and if possible, the target for slab on grade being complete should be improved.

Area 1E (EU) (continued)

It will be necessary to begin the above ceiling mechanical and electrical work there by mid-June if we are to meet our target late start/late finish dates.

Area 2A (north second floor)

Board work is starting in production today on walls and drywall ceilings. Work is generally meeting targets between early and late starts and finishes.

Area 2B (south second floor)

Work here is slightly behind the work at the 2A area. Area 2B is meeting all major targets between early and late starts and finishes.

Area 3A (north third floor)

Interior masonry and studs are being completed along with in-wall work. All major tasks are meeting targets between early and late starts and finishes.

Area 3B (south third floor)

Work here is slightly behind work at the north third floor but is currently meeting targets between early and late starts and finishes.

General Summary

Overall, the project is moving at about the same pace as it had between March 9, 1977 (working day 303) and April 13, 1977 (working day 328). This was slower than the pace that had been maintained earlier in the year. Major delays still are being encountered in design and provision of in-wall materials, particularly in the communications and fire alarm systems. However, these are being resolved presently and board work is beginning today in full production at the second floor. It is urged that every effort be made to maintain continuity of board work so that the present lags, particularly on the first floor areas, can be picked up quickly.

Ralph J. Stephenson, P.E.

RJS/m

To: Mr. Mike Branoff (Orig. & 2 copies M/R and 4 PSR)
Mr. Jim Cross (1 cc M/R & 1 PSR)

P.S. R. mailed with M/R.

June 9, 1977

Subject: Monitoring Report #9
St. Lawrence Hospital, Lansing, Michigan
The Christman Company - Construction Managers

Project: 76144

Date of Monitoring: June 8, 1977 (working day 367)

Target Field Completion Dates:

Area 1A	November 1, 1977 (W/D 470)
Area 1BD	April 7, 1978 (W/D 580)
Area 1E	November 1, 1977 (W/D 470)
Area 2A	October 21, 1977 (W/D 463)
Area 2B	November 18, 1977 (W/D 483)
Area 3A	December 19, 1977 (W/D 503)
Area 3B	February 1, 1978 (W/D 533)

Note: The above are late finish field targets. If possible, these will be improved.

Actions taken:

- Inspected project
- Reviewed job status with Jim Cross, Steve McGarry and Wes Jones
- Evaluated current job progress
- Prepared project status report for period from June 8, 1977 (working day 367) to July 13, 1977 (working day 391)

General Summary

As of June 8, 1977 (working day 367) the project has tended to pick up pace, particularly at the upper levels. Work at the first floor north end is still moving slowly primarily because of the delays caused by revisions to the area. At the 1B and 1D south areas work

is moving at about the same pace as previously and is very close to late start/late finish targets.

Work in 1E will proceed rapidly now that the floor slab has been poured and as mentioned above, work at the upper floors is moving reasonably well. Equipment room installation continues although this progress is to be evaluated in more depth at our next monitoring to insure the project will have operating equipment by this fall when needed for heat.

A brief review of major delivery items and a more detailed discussion of each floor progress is given below.

Sheet 1

- Communications systems contract

This work is gradually being released although there still is not complete information on the communications and fire alarm system at the 1A, 1B and 1D areas. The information has been released for the upper floor areas and board work there is proceeding in accordance with the information past along earlier.

- Parking controls contract

Drawings have been prepared and issued and the work is being priced. It is expected to have costs back on the parking controls system within the next 10 working days.

Work is proceeding on concrete curbs and grading at the parking areas and it will be essential to have all parking control information so parking lots can be installed at as early a date as possible. The present goal is to turn the main parking lot over to the hospital by early fall. To meet this date it will be necessary to push remaining work hard.

Sheet 2

- Electrical equipment

This item was not reviewed in detail at our monitoring session. I recommended to Mr. Cross that at our next session in July we request the electrical contractor to make a complete review of all electrical equipment status.

Sheet 2 (continued)

- Cable trench

Cable trench is still not on the job for the 1D area. This is now becoming very critical.

Sheet 3

No major problems.

Area 1A (first floor north end)

Studs, in-wall work and board lag late starts and late finishes by about 25 working days. Although there is very little stud and board work, this installation does restrain taping and sanding and subsequently continuation of painting, erection of acoustic ceiling grid and other such finish items.

The lag in itself is not critical since we had shown the area being complete by November 2, 1977 (working day 470), considerably ahead of the total project completion date. However, the lag is important in respect to delivery of kitchen equipment. Food service equipment is expected on the job sometime in late August and it will be necessary to have the area reasonably well along with finish trades to properly set and hook up kitchen equipment as it arrives. This matter should be discussed in more depth at the next monitoring session.

Again, it should be pointed out that one of the major causes of the delay was revisions in Bulletin 14. Hollow metal frames, which took into account these changes, arrived on the job June 7, 1977 (working day 366) and are being installed.

Area 1BD (first floor south end)

The major lag at this area is in medical gas piping which was due to have been completed no later than April 29, 1977 (working day 340). However, stud work has proceeded ahead at area 1BD and the medical piping is presently not restraining completion of stud work. There is no major lag in drywall and in-wall mechanical/electrical work.

Area 1BD (first floor south end) (continued)

Since the area is so complex and does represent the longest interior area to be finished, the floor should be cleaned and interior work on in-wall work, drywall, taping and sanding moved as rapidly as possible so that float time remains for problems that may be encountered later on.

It should be noted that communications equipment is still not fully available for this area and must be furnished before in-wall work and board work can be completed.

Area 1E (ICU)

The floor slab on grade in area 1E should be poured out today and it is expected to start sheet metal ductwork by the end of the week. The area is presently close to late start/late finish dates but should be able to be moved quite well once the slab is poured out. The building is roofed and can easily be closed to weather.

Area 2A (north second floor)

Taping and sanding are now underway at the second floor north end and there are no major lags over late starts and late finishes. There has been a definite improvement in performance at the second and third floors over the past month and it is expected that work here can proceed without extensive delays.

Area 2B (south second floor)

Board work is well along at area 2B and all jobs there are meeting targets between early and late starts and finishes.

Area 3A (north third floor)

Most overhead work is complete and studs and in-wall work are also substantially complete. Board is being hung at the floor. The floor is meeting most targets between early and late starts and finishes.

Area 3B (south third floor)

Board work is just getting underway at area 3B and all operations are meeting targets between early and late starts and finishes.

**Monitoring Report #9
St. Lawrence Hospital
Page five**

**RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER**

General Summary

Overall, the project performance in the field has improved slightly over the past month and particularly at the upper floors where a continuous work pattern is noticeable. There still remain some difficulties in completing roofing over the first floor mechanical equipment room but this work is well along now and the roof should be on by the end of the week. Thus, the building is now substantially closed to weather and most interior finishes can proceed without anticipating weather or water damage.

Greatest difficulties presently are being experienced in work at the first floor. At the north end work has moved slowly and it is going to have to pick up to accommodate kitchen equipment as it arrives on the job. Work at the north end shows some signs of moving more slowly than had been expected although it still is not missing key late starts and late finishes. However, badly needed are the rest of the communications and other in-wall systems information that will allow board work to proceed without interruption at the south end.

At our next session we expect to make a full review of the job and particularly to evaluate the status of major mechanical and electrical equipment.

As a part of this monitoring I prepared a project status report from June 8, 1977 (working day 367) to July 13, 1977 (working day 391). This will be issued concurrently with the monitoring report.

Ralph J. Stephenson, P.E.

**RJS
m**

**To: Mr. Mike Branoff (Orig. & 2 copies M/R and 4 PSR)
Mr. Jim Cross (1 cc M/R and 1 PSR)**

July 15, 1977

Subject: Monitoring Report #10

St. Lawrence Hospital, Lansing, Michigan

The Christman Company - Construction Managers

Project: 76144

Date of Monitoring: July 13, 1977 (working day 391)

Monitored from Issue #5 dated October 18, 1976

Target field completion dates:

Area 1A	November 1, 1977 (working day 470)
Area 1BD	April 7, 1978 (working day 580)
Area 1E	November 1, 1977 (working day 470)
Area 2A	October 21, 1977 (working day 463)
Area 2B	November 18, 1977 (working day 483)
Area 3A	December 19, 1977 (working day 503)
Area 3B	February 1, 1978 (working day 533)

Note: The above are late finish field targets.
If possible, these will be improved.

Actions taken:

- Inspected project
- Reviewed job status with Jim Cross, Steve McGarry, Wes Jones and major subcontractors
- Discussed job status with Mr. Branoff by phone
- Prepared project status report for period from July 13, 1977 (working day 391) to August 10, 1977 (working day 411)

General Summary

As of July 13, 1977 (working day 391) the project has slowed over the past 24 working days, and at the first floor the lag is serious. The reason for this is that as the lag at the first floor increases and as work at the upper floors is kept in reasonably good alignment with the target dates, the difference between finishing the upper and lower areas becomes greater. This means the difference between finishing the total job and finishing a major portion of the project also becomes greater. Needless to say, in terms of moving off of the job and turning it over, such a discrepancy can cause serious cost and contractual problems.

Thus, I strongly recommend from the monitoring evaluation that immediate efforts be made to pull the LBD and the 1A areas back into line or ahead of our current schedule as rapidly as possible.

The 1A area is not as critical as is the LBD area except insofar as it has tended to continually lose ground in relation to the Issue #5 network dated October 18, 1976.

Work in area 1E is moving rather well although it does tend presently to lag slightly. This is not a serious matter.

At the upper floors there is an increase in lag over the past few weeks, primarily in taping and sanding board. This lag is not yet so serious, however, that it cannot be recaptured.

Relative to temporary heat, there is evolving a potentially serious situation in that electrical equipment deliveries are now later than had been anticipated. This could cause a delay in providing permanent power to the temporary heating system. Adequate alternatives must be found since by the time temporary heat is needed in early November, there will be many areas in the building that will be completed or far enough along so finishes must be protected from low temperatures and excessive humidity.

A brief review of delivery items and each floor's progress is given below.

Sheet 1

- Communications systems contract

Inadequate information about the communication systems is still a major holdup on the job and although the matter is being worked out, it still is causing delays in areas 1A, LBD, 1E and in the corridors and patient rooms at the upper floors. It presently affects the canopy area also where some intercom wiring must be installed.

Lack of formal information and authorization to proceed on installation of communication components still remains a major bottleneck to job progress. I again, as in the past, recommend if the job is to conform to current target field completion date that this work be broken loose now by those who must release it.

- Parking controls contract

A contract has been let for this work.

Sheet 2

- Electrical Equipment

Current anticipated deliveries to the job site, according to the electrical contractor, are as follows:

- Primary switchgear on job October 3, 1977 (w/d 448) { 54 in 9/23/77 + 1 wk
- Secondary outdoor switchgear on job November 28, 1977 (w/d 487) { Oct 29.77 54 in + 1 wk
- Pad mounted transformer on job July 22, 1977 (w/d 398) { 2 in tank 1 wk 1 shipment Sept. 1, 77 1 wk
- Bus duct on job October 3, 1977 (w/d 448) { 54 in Sept 23, 77 + 1 wk
- Generator switchboard on job August 29, 1977 (w/d 679) 64 in Aug 22, 77 + 1 wk.

8/10/77 (411)

The electrical contractor pointed out that all of these except the generator switchboard are needed for activation of temporary heat.

If we assume that activation of switchgear requires ten working days and following activation it requires 15 working days to bring the mechanical heating equipment on line, temporary heat will be available on or about January 3, 1978 (working day 51). This is not acceptable and extensive conversations will be put in work immediately to see what can be done to improve delivery dates.

10 wd if essential
2 if not
468
10
478

Boiler to be lined up Oct 15, 77
Power will be available.

- Cable trench

On job.

- Parking lot light fixtures

Parking lot light fixtures are an added item to this report since apparently the owner desires to reduce the height of the fixture. Fixtures are on the job and have been here several months. Light pole bases are in and conduit is installed. Thus, any change to fixture size now means extensive revisions to the bases and possibly a complete revision to the layout of the lights. This is a very serious matter and should be given immediate attention since parking lot paving will have to proceed in the near future.

Problem settled - will go w/ original note.

Sheet 3

No delivery problems

Area 1A (first floor north end)

The current lag as of July 13, 1977 (working day 391) is in hanging of board which is presently about 51 working days behind late starts and finishes. This is a sizable increase over the past month and indicates little, if any, progress toward completing the area.

8/1/77
66 wd
for 2, 5
sanding

Quarry tile has begun and field measurements for kitchen coolers are presently being taken. Coolers and food service equipment should be on the job in late August with installation due to start in early September. The area, although having considerable float time, is now far enough behind so concern is expressed about its status relative to ongoing work this fall.

It would be wise to bring board work to completion just as quickly as possible so ceilings can start. Normally food service equipment will not be installed in its final position until most overhead work including ceilings and acoustic tile are in. If this proves to be the case here, then it will be necessary to quickly complete all work restraining installation of grid and to begin installing ceilings so double storage and handling of food service equipment is not necessary.

Area 1BD (first floor south end)

The current lag at area 1BD is about 7 working days in board work. Studs and board ceiling iron lag by a greater amount but the fundamental measurement is from drywall status. This is the first actual major lag at the 1BD area since start of monitoring and indicates a progressive loss of time at the area. It is extremely serious since area 1BD is the critical area and it can be anticipated that any lag will be reflected in a lag in total completion.

17 wd
board

Major delays are in completion of studs, in-wall work and in-ceiling work of which a major share is in the communications elements. This has been touched on earlier.

Area 1E (IGU)

Work here has moved rapidly over the past month although there are some slight local lags in rough work, primarily sprinkler piping and electrical rough-in. These could get serious, although if they can both be started within the next week, probably some of the lag could be recaptured. A better evaluation of this will be available at the next monitoring.

Area 2A (north second floor)

The lag in taping and sanding at the 2A area is approximately 7 working days. This is a change from the last monitoring where no lag was reported. It is important if the contractors are to maintain a consistent set of turnover dates to keep pressing work at the upper floors so they are

Area 2A (north second floor) (continued)

delivered in sequence. The lag is not in itself serious as yet but if it increases next month, it should be given high priority attention.

Area 2B (south second floor)

Currently all work here is meeting targets between early and late starts and finishes. However, there should be an increase in taping and sanding activities over the next month or a similar lag to area 2A will be recorded here shortly.

Area 3A (north third floor)

Most board is hung and some taping and sanding are underway. There are no major lags at this area.

Area 3B (south third floor)

Most board is hung here and some taping and sanding have started. This area is meeting targets between early and late starts and finishes.

General Summary

Overall, the project shows a slight decline in maintenance of job progress over the past month. This, in part, can be attributed to delays in obtaining information regarding communications systems and also to delays in getting underway with board installation, taping and sanding at the LBD area. Taping and sanding at upper floors have also tended to lag over the past few weeks.

Although the lags in themselves are just now becoming serious, it would be wise to insure that all loose ends are identified formally as rapidly as possible. This is important so that there is not a later misunderstanding about why delays occurred.

It is critical to reduce the lag at the LBD area since this is the section of the building which is to be finished last. Any lag there represents an increase in the gap between the majority of the building being complete and the LBD area being completed.

Another major area that should be given high priority of attention is delivery of electrical equipment. The equipment is needed for temporary heat this winter and therefore, it is crucial that the best delivery date possible be obtained now, particularly on switchgear equipment.

Monitoring Report #10
St. Lawrence Hospital
Page six

RALPH J. STEPHENSON, P. E.
CONSULTING ENGINEER

As a part of this monitoring I prepared a project status report from July 13, 1977 (working day 391) to August 10, 1977 (working day 411). This will be issued concurrently with the monitoring report.

I shall plan to again monitor the project on August 10, 1977 (working day 666).

Ralph J. Stephenson, P.E.

RJS
m

To: Mr. Mike Branoff (Orig. & 2 copies M/R and 4 PSR)
Mr. Jim Cross (1 cc M/R and 1 PSR)

August 15, 1977

Subject: Monitoring Report #11
St. Lawrence Hospital, Lansing, Michigan
The Christman Company - Construction Managers

Project: 76:44

Date of Monitorings: August 10, 1977 (working day 411)

Monitored from Issue #5 dated October 18, 1976

Target field dates:

Area 1A	November 1, 1977 (working day 470)
Area 1BD	April 7, 1978 (working day 580)
Area 1E	November 1, 1977 (working day 470)
Area 2A	October 21, 1977 (working day 463)
Area 2B	November 18, 1977 (working day 483)
Area 3A	December 19, 1977 (working day 503)
Area 3B	February 1, 1978 (working day 533)

Note: The above are late finish field targets. If possible, these will be improved.

Actions taken:

- Inspected project
- Reviewed job status with Mr. Wes Jones
- Evaluated current job position
- Prepared project status report for period from August 10, 1977 (working day 411) to September 14, 1977 (working day 435)

General Summary

As of August 10, 1977 (working day 411) the project has again picked up tempo at the upper floors so far as board work, taping and sanding are concerned, but is now being delayed by need for approval of labor cost to install ceiling cable

Log 9/14/77
- 1A 65 w b
paints, grid
- 1BD 21-25 w b
board/taping/
sanding
- 1E 16 w b taping/
sanding
paints
- 2A 31 w b clay
paints
- 2B 14 w b paints
& clay
- 3A none
- 3B none

*Control
by
millwork*

Monitoring Report #11
St. Lawrence Hospital
Page two

tray at the ground and upper floors. Cable tray is on the job and apparently available but a go-ahead from the owner is needed to begin installation.

At the ground floor, area 1A has slipped further in taping, sanding and other finish work. Area 1B has also slipped slightly further behind and although the lag is becoming a cause for concern, the board crew is now being concentrated entirely in that area and perhaps an improvement in position will be seen over the next month.

Area 1E is moving well and has maintained a position at about the same lag point as of the last monitoring with the exception of sprinkler piping.

Deliveries are now pretty well squared away with the exception of electrical equipment, and the job should be able to move with relative ease in respect to materials and equipment from here on out. There are some miscellaneous problems such as elevator door frames and other such items but these are presently not major delays to the job.

Temporary heat could still be difficult although it is now felt that if the boilers are ready, that adequate electrical power could be provided by October 15, 1977 (working day 458) to fire them for temporary heat.

A brief review of the various detail elements of the project is given below.

Sheet 1

- Communications systems contract

Apparently the contract is now totally let and most information needed is available with the exception of release of the cable tray installation at the ceilings of the ground, second and third floors. Mr. Cross said he thinks this approval has been given and intends to authorize start of work immediately. This will assist greatly in expediting installation of ceilings at these levels. It is estimated that installation of cable tray will take approximately 10 working days per half floor.

- Electrical Equipment

Current anticipated deliveries to the job, according to the electrical contractor, are as follows. Note there are some slight changes from dates in the previous monitoring report.

equipment, particularly food service, the tempo will have to be picked up now to accommodate arriving equipment.

Area 1BD (first floor south end)

The current lag at area 1BD has increased to 17 working days, primarily in hanging board. We are about at the point in the project in area 1AD that we should have been on July 18, 1977 (working day 394). The 1BD area remains the most critical of all and since there has been a progressive loss of time there, I strongly recommend immediate efforts be made to pull it back in line. This is now more possible than previously since the area is almost complete so far as studs are concerned. In-wall work is substantially complete and this gives the board trades a very large area in which to work. Since board is well along or complete at most other parts of the building, that manpower is now being concentrated at 1BD. This should give the opportunity to pick up considerable time over the next month.

*Plot
lags.*

Area 1E (ICU)

As of August 10, 1977 (working day 411) most studs are erected and in-wall work is moving toward completion. Sprinkler piping is still a problem, having just started this week. It is a question as to whether this will hold up work on board and studs. I suggest every effort be made to expedite sprinkler work so that when board work is complete, ceilings can be installed.

The lag at the area in sprinkler piping is about 39 working days, in board about 12 working days and on in-wall work about 7 working days. Note: this is measured against a target field completion of 1E by November 1, 1977 (working day 470).

*Plot
lags.*

Area 2A (north second floor)

The lag at the 2A area is currently 11 to 15 working days. This is a slight increase over the previous monitoring and is primarily in painting and ceiling grid. The delay element here has been on ceilings caused by lack of approval to proceed with installation of cable tray above the ceiling. This hold has not yet been officially released and it is becoming increasingly important that resolution of the delay be made. Hopefully this matter will be settled within the next few days. If not, ongoing delays can be expected.

Area 2B (south second floor)

Work here is currently meeting targets between early and late starts and finishes. However, cable tray is the same problem here as at other areas and if it is not installed immediately, will impose a delay on installation of

Monitoring Report #11
St. Lawrence Hospital
Page five

ceiling grid. It can be expected that cable tray will require approximately 10 working days per half floor to install. Thus, it is a sizable item and does keep corridor ceiling work from being put in place.

Area 3A (north third floor)

As of August 10, 1977 (working day 411) work at the third floor A area is meeting targets between early and late starts and finishes. Cable tray has the same impact here as at the second floor.

Area 3B (south third floor)

Currently work is meeting major targets between early and late starts and finishes. Cable tray must be installed at 3B also.

General Summary

Overall, the project tends to maintain about the same behind position as of the previous monitoring report. However, area 1A, and area 1BD show a slight increase in the amount of lag and this could become serious if immediate attention is not given it. Most of the lags noted, with the exception of the first floor north end (1BD) can be accommodated within the present float time on the job. However, the 1BD area is critical and the lag there now is of such nature that serious attention must be given to reducing it immediately.

Hopefully, with the start of production board hanging, some of the lag can be regained.

There has been a slight improvement in delivery dates for major electrical equipment and most important, there has been a solution to providing power for temporary heat earlier than previously had been thought possible.

As a part of this monitoring, I prepared the project status report from August 10, 1977 (working day 411) to September 14, 1977 (working day 435). This will be issued concurrent with the monitoring report. I shall plan to monitor the project again on September 14, 1977 (working day 435).

Ralph J. Stephenson, P. E.

RS
m

To: Mr. Mike Branoff (Orig. & 2 copies M/R and 4 PSR)
Mr. Jim Cross (1 cc M/R and 1 PSR)

September 16, 1977

Subject: Monitoring Report #12
St. Lawrence Hospital, Lansing, Michigan
The Christman Company - Construction Managers

Project: 76144

Date of Monitoring: September 14, 1977 (working day 435)

Monitored from Issue #5 dated October 18, 1976

Target field dates:

Area 1A	November 1, 1977 (working day 470)
Area 1BD	April 7, 1978 (working day 580)
Area 1E	November 1, 1977 (working day 470)
Area 2A	October 21, 1977 (working day 463)
Area 2B	November 18, 1977 (working day 483)
Area 3A	December 19, 1977 (working day 503)
Area 3B	February 1, 1978 (working day 533)

Note: The above are late finish field targets. If possible, these will be improved.

Actions taken:

- Inspected project
- Reviewed job status with Mr. Wes Jones
- Evaluated current job position
- Prepared project status report for period from September 14, 1977 (working day 435) to October 12, 1977 (working day 455)

General Summary

As of September 14, 1977 (working day 435) the project lag has increased over the Issue #5 network since the monitoring on August 10, 1977 (working day 411) at several areas. The 1A area is much the same, area 1BD has slipped an additional 4 to 8 working days, area 1E has slipped about 4 additional working days, the lag at area 2A has increased by about 16 working days and the lag at area 2B which was just meeting late starts and finishes at our previous monitoring is now about 14 working days behind. Areas 3A and 3B are still maintaining pace with targets between early and late starts and finishes.

The progressive loss of time, particularly at area 1BD continues to be of strong concern and again, as previously, I suggest every effort be made to complete board, taping and sanding in 1BD as quickly as possible.

Some cable tray installation has been authorized at all floors and is in work at the second floor. The delay in a decision has undoubtedly held other work but since tray is primarily in the corridors and is substantially complete at the 2A area now, it no longer is a major restraint. Material carried in the cable tray will be installed as, or after, the ceiling is put in.

Another serious problem that has caused delays is late delivery on nurse servers and wardrobes at the patient rooms. These, however, are arriving on the job and being installed at 2A and 2B. Probably the installation of 2A will be far enough along by the end of the week so that most painting and ceiling work can proceed.

Temporary heat is still expected to be available by October 15, 1977 (working day 458), if needed.

A brief review of the various detail elements is given below.

Communications Systems Contract

Cable tray has been released on a limited basis for installation. It is not certain at this time how much of the work can be installed for the cost imposed but present work is focusing on ceilings at the second and third floors. Again, I point out that any cable tray that must be installed at the first floor will also have to be done shortly since it appears that ceiling work could start there in major rooms within the next 5 to 10 working days. There has been some difficulties with TV contracts and presently the intent is to move ahead with the ceilings since delaying these any longer will severely penalize the job.

Electrical Equipment

Deliveries have slipped slightly from the previous monitoring and are as follows:

Primary switchgear on job	October 17, 1977 (W/D 458)	<i>on job</i>
Secondary outdoor switchgear on job	November 7, 1977 (W/D 473)	<i>1 piece still not on job</i>
Pad mounted transformers on job	2 are set, the other will be on the job by about Sept. 23, 1977 (W/D 442)	<i>on job & installed</i>
Bus duct on job	September 30, 1977 (W/D 447)	<i>on job</i>
General switchboard	On job and installed	

Again, as noted above, it is the intent to be able to provide temporary heat by mid-October.

Monitoring Report #12
St. Lawrence Hospital
Page three

Area 1A (first floor north end)

The lag at area 1A in painting and ceiling grid is about 65 working days. Thus, progress is holding close to the lag reported in the previous monitoring. Kitchen equipment is arriving on the job and some ceiling rough grid has been put in.

Freezer and cooler work is moving well and is currently in line with target early and late starts and finishes.

Sterilization equipment is substantially on the job and installation of it will proceed within the next two to three working days.

Area 1BD (first floor south end)

The current lag at area 1BD has now increased to from 21 to 25 working days, primarily in hanging, taping and sanding gyp board. This continuous increase in the 1BD lag is a major concern since it is the most difficult of all of the sections of the building and work there is critical. This lag of 21 to 25 working days represents a real lag over the target completion date of the project of April 7, 1978 (working day 580).

It is most critical to complete hanging all board and to get taping and sanding far enough out in front so that painting and ceiling work can begin. This is a complex area and there is a large amount of difficult work yet to be done. Again, cable tray installation in the corridors could be a very serious holdup and should be initiated just as quickly as possible.

Area 1E (ICU)

The current lag at area 1E is approximately 16 working days, a slight increase in the previous lag on drywall finishing. However, this lag is not as critical as those at other areas. It would be wise to keep in mind that this area, 1E, was primarily a fill-in area with the major thrust of ongoing work intended to be placed on 1BD.

Area 2A (north second floor)

The current lag is approximately 31 working days primarily in ceiling work. The reason for the delays is complex. Contributing to it was the problem with cable tray which is now partially resolved and more recently some delays have been caused by the desire to install the wardrobes and nurse servers before starting with the major ceiling grid installation at the patient rooms. Millwork is now arriving on the job and should free up work to start on the ceilings very shortly.

Only limited amounts of painting have been done at the floor and this matter should be checked to see if there is some possibility of doing as much more priming as would be allowed by the areas presently taped and sanded.

Monitoring Report #12
St. Lawrence Hospital
Page four

Area 2B (south second floor)

For the first time work lags at area 2B. The current behind situation is 14 working days primarily in painting and ceiling work. Cable tray is just now being installed there and of course, has contributed to the delay in finishing off the area since it is a disruptive trade and requires extensive work in the above ceiling space at the corridors.

Wardrobes and millwork are expected to be on job shortly for this area.

Area 3A (north third floor)

As of September 14, 1977 (working day 435) work at the third floor A area is still meeting targets between early and late starts and finishes. However, it has been rapidly losing its ahead position.

Cable tray still must be installed at the third floor.

Area 3B (south third floor)

Currently work is meeting major targets between early and late starts and finishes. However, the ahead position has been eroded here also.

General Summary

Overall, the project has tended to maintain a previous position on less important areas while losing ground at the major area, LBD. This is a critical matter and should now be looked at intently.

Another item now becoming crucial is closing in the building. The access from the outside is still being maintained in lieu of having a freight elevator and of course, it will not be long before this outside access must be closed. There are a series of problems in getting a freight elevator operating and these should be examined one by one so internal vertical transportation is available as quickly as possible. Apparently the items restraining its use are not major in nature but collectively they have disrupted work at the elevator so it has not been able to be put in service.

Site work is proceeding and it is the intent to complete all major exterior work by the onset of cold weather.

At this meeting Mr. Jones and I prepared a project status report from September 14, 1977 (working day 435) to October 12, 1977 (working day 455). I shall plan to monitor the project again October 12, 1977 (working day 455).

Ralph J. Stephenson, P.E.

RJS/m

To: Mr. Mike Branoff (Orig. & 2 copies M/R & 4 PSR)
Mr. Jim Cross (1 cc M/R and 1 PSR)

October 14, 1977

Subject: Monitoring Report #13
St. Lawrence Hospital, Lansing, Michigan
The Christman Company - Construction Managers

Project: 76144

Date of Monitoring: October 12, 1977 (working day 455)

Monitored from Issue #5 dated October 18, 1976

Target field dates for completion:

Area 1A	November 1, 1977 (working day 470)
Area 1BD	April 7, 1978 (working day 580)
Area 1E	November 1, 1977 (working day 470)
Area 2A	October 21, 1977 (working day 463)
Area 2B	November 18, 1977 (working day 483)
Area 3A	December 19, 1977 (working day 503)
Area 3B	February 1, 1978 (working day 533)

Note: The above are late finish field targets.

Actions taken:

- Inspected project
- Reviewed job status with field staff
- Evaluated current job position
- Prepared project status report for period from October 12, 1977 (working day 455) to November 16, 1977 (working day 480)

General Summary

As of October 12, 1977 (working day 455) lags at areas 1A, 1BD, 1E and 3A have increased over the previous monitoring September 14, 1977 (working day 435). The area 1A lag is now 76 - 79 working days compared to 65 working days in September. Area 1BD lags 37 - 44 working days compared to 25 working days in September. Area 1E is now about 36 working days behind late starts and late finishes as compared to 16 working days previously. Area 3A has for the first time dropped behind late starts and late finishes and currently lags about 5 - 10 working days.

Again, the progressive loss of time, at 1BD especially, is of great concern and

if the intent presently is to finish the total job on or before April 7, 1978 (working day 580) must be given immediate attention since the lag is large enough to be difficult if not impossible to recapture in its entirety without strong measures being taken. In addition, the loss of time at area 1A and 1E is pushing these high float time areas closer and closer to the required total finish of the project. This, of course, means that area 1E, area 1BD and area 1A will be finishing out concurrently which could create a high demand for finish trade manpower possibly not available.

Cable tray installation is proceeding on 1A with 1B about to start. This work is disruptive and is, to some extent, holding up ceiling work in area 1BD. In addition, there is concern that ceiling work at the first floor will have to be held to allow for installation of TV and fire alarm lines in the cable tray. This is a very important problem because the longer installation of ceiling work is delayed, the greater the lag.

Temporary heat is expected to be available this week and mechanical and electrical contractors are working on final hookup of the system.

Apparently most major critical deliveries to the job have been made with the exception of one more piece of major electrical gear. Mr. McGarry says he expects to have first floor entries installed and glazed in November. This will secure the building against vandalism and weather.

All kitchen equipment is not yet on the job with the remainder of the system to be delivered next Monday, October 17, 1977 (working day 458). Elevator equipment is all on the job and installed with the freight elevator expected to be available later this week.

A detailed review of each area is given below.

Area 1A (first floor north end)

The lag at area 1A is now about 76 - 79 working days which is a sizable increase over the previous monitoring. The lag is basically in acoustic work and painting, as well as being reflected in work affected by kitchen equipment. Although we had a very early total finish date (November 1, 1977 - working day 470), the amount of lag is now of enough significance to consider that careful attention should be given expediting work there immediately.

Of particular importance will be installation of kitchen equipment and the correlation of this installation with the other finish work in the kitchen area.

Presently quarry tile floors are being installed at the freezers and most of the work around the freezer and cooler area is in relatively good shape.

Area 1BD (first floor south end)

The lag at area 1BD has increased to 37 - 44 working days. This delay is basically in installation of wall board and ceiling work. Of special concern at area 1BD is the sizable amount of conductive floor that must be laid. This is a wet trade and is difficult since it does disrupt traffic and therefore, its planning should be done carefully. I suggest that the scheduling of it be accomplished at as early a date as possible. If we plan to update the area 1BD network at our next monitoring session, I recommend we make the conductive flooring an integral part of the replanning. Board work at area 1B is not yet complete and this is one of the major reasons why the lag has increased over the past month.

Since the lag is constantly increasing, this 1BD area continues to be the most important behind area of the job. The present lag can be added directly to the total job target of April 7, 1978 (working day 580) to project a presently anticipated completion date. It is possible that we might compress the time in our next planning session but this will take some careful attention.

Cable tray is not yet started in area 1BD and this, of course, tends to restrain the start of full production on ceiling installation. Some ceiling hangers have been installed and wall moulding put in place but no steady production can be expected on acoustic ceiling suspension until the cable tray in the corridors is well along.

Area 1E (ICU)

The current lag at the ICU area is 36 working days, primarily in taping and sanding the drywall. Very little work has been done there since the last monitoring, primarily because most field attention has been focused on the upper floors and area 1BD. This lag, although it is an increase, is still no major cause for concern.

Area 2A (north second floor)

Area 2A has picked up over the past month and the lag there is between 20 and 25 working days which is a reduction over the previous monitoring lag. Area 2A poses no serious current problems.

Area 2B (south second floor)

The lag at area 2B is 3 - 5 working days, primarily in finish trades. This also is a reduction over the lag noticed at the previous monitoring.

Area 3A (north third floor)

As of October 12, 1977 (working day 455) the lag at area 3A is 5 to 11 working days. This delay is basically in installation of ceiling work but it should be pointed out that room ceiling work was held until the nurse servers and wardrobes are installed. This was a change in the logic and therefore, it can be expected that this lag, if work proceeds as in other sections of the building, will be regained.

Monitoring Report #13
St. Lawrence Hospital
Page four

RALPH J. STEPHENSON, P. E.
CONSULTING ENGINEER

Area 1B (south third floor)

Currently work is meeting major targets between early and late starts and finishes. The ahead position continues to diminish slightly although it is now leveling out.

General

Overall, the project still tends to lose ground each monitoring. There has been some noticeable loss in momentum on the project and this is more a cause for concern than the actual lag in working days. The project at this point in time should be picking up momentum. A major contributor to this slowing is the still unresolved problem of communications and fire alarm systems that holds off work necessary to installing the entire ceiling system at the first floor. The television system is also yet to be decided and it, too, runs in the cable tray and affects field attitude toward installing ceiling work. The problem here is that it is poor policy generally to install the ceiling grid and particularly ceiling tile before all above ceiling installation is complete. However, we are rapidly approaching a point where it is going to be essential to install the ceiling and complete delayed work later if the project is to be finished in accordance with our current plan of work.

Closing in the building is proceeding and from all appearances there should be no problem making it secure to weather sometime this month. Temporary heat will be available shortly and this will, of course, provide convenient working conditions for winter work as well as allowing finish items to be put in place without dimensional or moisture damage.

The vertical transportation needs of the construction period are soon to be relieved by operation of a freight elevator and this should assist in completing work, particularly on light fixtures, millwork, trim and furnishings.

At this meeting Mr. Jones and I prepared the project status report from October 12, 1977 (working day 455) to November 16, 1977 (working day 480). This is issued concurrently with the monitoring report.

I shall plan to monitor the project again on November 16, 1977 (working day 480) at which time I suggest we do an update of areas 1A, 1BD and 1E.

Ralph J. Stephenson, P.E.

RJS
R

To: Mr. Mike Branoff (Orig. & 2 copies N/R & 4 PSR)
Mr. Jim Cross (1 cc N/R and 1 PSR)

November 18, 1977

Subject: Monitoring Report #14
St. Lawrence Hospital, Lansing, Michigan
The Christman Company - Construction Managers

Project: 76:44

Date of Monitoring: November 16, 1977 (working day 480)

Monitored from Issue #6 dated November 16, 1977 (working day 480)
(updated network)

Revised target field dates for completion, in accordance with
Issue #6 dated November 16, 1977:

Area 1A	February 28, 1978	(W/D 551)
Area 1B	April 14, 1978	(W/D 584)
Area 1D	February 6, 1978	(W/D 535)
Area 1E	March 15, 1978	(W/D 562)
Area 2A	February 14, 1978	(W/D 541)
Area 2B	February 28, 1978	(W/D 551)
Area 3A	March 14, 1978	(W/D 561)
Area 3B	March 28, 1978	(W/D 571)

(Note: These dates are all subject to checking since they were obtained through manual computations of the updated network. These checks are presently being made.)

Actions taken:

- Inspected project
- Reviewed current job status with Mr. Cross
- Updated network with general contractor and key subcontractors

Note: A project status report was not prepared at this meeting since the entire network diagram was updated to Issue #6 November 16, 1977

General Summary

As of November 16, 1977 (working day 480) the project is lagging the Issue #5 network but since the target completion dates established in this early diagram ranged from October 21, 1977 (working day 463) to April 7, 1978 (working day 580), it was decided to update the total plan of work to more accurately reflect current desires on the job and present field conditions of project work.

At the 1A area, it was decided to begin active work on December 12, 1977 (working day 497) to bring the work there to a close. Much of the ceiling suspension is in, most kitchen equipment has been set, although not put in final position nor hooked up, and mechanical equipment areas are producing temporary heat. One of the major tasks to be completed is installation of the acoustic spline ceiling in the kitchen area. There was some discussion as to when ceiling work should proceed relative to food service equipment. It was decided that food service equipment would start up again on December 12, 1977 (working day 497) and be managed on out to completion by January 11, 1978 (working day 517). This is about the period of time in which the acoustic ceiling at the kitchen will be going in.

In our evaluation of the various areas, it was agreed that the target end dates as set above for 1A, 1B, 1D, 2A, 2B, 3A and 3B will be kept critical. The early finish for area 1E turned out at January 18, 1978 (working day 522) so it was concluded to give this area float time since it basically is a fill-in field operation.

At area 1B which is the most difficult portion of the building, work will finish approximately one week later than originally projected. Presently most board is hung except at two operating rooms where revisions still have to be made to above ceiling work. Once these two rooms have been boarded out, other finish operations including painting, ceilings, floors, plumbing fixture installation and other such interior work will proceed. The area is large and as such, is expected to take the full period of time from now on out to the end of the job.

On sheet 9, we diagrammed area 1D separately. This was to allow the hospital to establish an early move-in date since the equipment there is quite complex. Presently the goal is to complete area 1D by February 6, 1978 (working day 535).

Area 1E has not been worked upon extensively for the past one or two months but since it is a relatively simple area to finish off, it has been used and will be used in the future as a fill-in. Area 1E is boarded out, there is some minor above ceiling work to be completed, but shortly work will resume there with completion of drywall, priming and installation of ceiling work.

Monitoring Report #14
St. Lawrence Hospital
Page three

On the upper floors, areas 2A and 2B are ready to receive vinyl and to have the ceilings completed. The turnover cycle for the upper floors in our new Issue #6 dated November 16, 1977 is to be maintained on a ten day (two week) per half floor basis. Thus, starting with completion of 2A on February 14, 1978 (working day 541), the half area floors will be turned over successively at February 28, 1978 (working day 551), March 14, 1978 (working day 561) and March 28, 1978 (working day 571). This gives a good turnover pattern and all at the meeting agreed that it was a satisfactory and achievable set of goals if revisions are kept to an absolute minimum.

There are still difficulties with certain systems that are being installed by other than the construction manager and the subcontractors. Disruptions from this work must be kept to a minimum and hopefully the preplanning process we are using will identify conflicts early enough so they can be resolved without disruption to the job.

Since the network diagram was updated at this session no project status report computer run was prepared. I shall update the project, manually compute it and probably issue the manually computed plans rather than making a full computer run on them at this time. The reason is that the project is close enough to completion so it can be monitored and evaluated from the manually computed network plan.

In December I shall plan to monitor the project the week of December 12, 1977 and shall be in touch with Mr. Branoff to set the date.

Ralph J. Stephenson, P.E.

RJS
m

To: Mr. Mike Branoff (Orig. & 2 copies)
Mr. Jim Cross (1 cc)

December 19, 1977

Subject: Monitoring Report #15
St. Lawrence Hospital, Lansing, Michigan
The Christman Company - Construction Managers

Project: 76:44

Date of Monitoring: December 12, 1977 (working day 242 from '77 base calendar) -
(working day 497 from '76 base calendar)

Monitored from Issue #6 dated November 16, 1977

Revised target field dates for completion, in accordance with Issue #6
dated November 16, 1977:

		<u>'76 base</u>	<u>'77 base</u>
Area 1A	February 28, 1978	(W/D 551)	(W/D 296)
Area 1B	April 14, 1978	(W/D 584)	(W/D 329)
Area 1D	February 6, 1978	(W/L 535)	(W/T 280)
Area 1E	March 15, 1978	(W/D 562)	(W/D 307)
Area 2A	February 14, 1978	(W/D 541)	(W/D 286)
Area 2B	February 28, 1978	(W/D 551)	(W/D 296)
Area 3A	March 14, 1978	(W/D 561)	(W/D 306)
Area 3B	March 28, 1978	(W/D 571)	(W/D 316)

Notes: As of this report, all reporting dates will be given in working days referred to a base of January 3, 1977 (working day 1). Reports prior to this time have been based on the 1976/77 working day calendar.

Actions taken:

- Inspected project
- Reviewed current job status with Mr. Cross and Mr. Branoff
- Evaluated current job status

Notes: Project status reports will not be prepared by computer run on Issue #6 dated November 16, 1977 since the network is capable of being fully evaluated manually due to the limited amount of work remaining.

General Summary

As of December 12, 1977 (working day 242) work is proceeding moderately well in all areas. The total job is meeting most targets between early and late starts and finishes. The above revised end dates are reasonable and being used as targets at present.

A detailed review of each area is given below.

Area 1A

The target for starting major efforts to complete this area was today, December 12, 1977 (working day 242). There will be a concerted effort over the next month to bring all rough work into position where finishes can be installed without delay.

Presently there is no major lag.

Area 1B

It has been decided to proceed immediately to complete all board work including that at the two special operating rooms. If this work proceeds promptly, the project critical date which is completion of taping and sanding all drywall will probably be met. All drywall was due to be taped and sanded by December 22, 1977 (working day 250). Some work shown following completion of drywall has been worked upon. However, the area is still the most critical in the entire building because of its complexity.

Area 1D

Board work is almost complete, shielding testing is about to start on drywall areas and generally tasks at 1D are meeting targets between early and late starts and finishes.

Area 1E

This area has about 40 working days of float time using the target late finish of March 15, 1978 (working day 207). Work there lags early starts/early finishes slightly but is well within the late start/late finish limits. It is being used primarily as a fill-in area with most board work now having been taped and sanded, priming being well along and acoustic ceiling grid almost completely installed.

Area 2A

Work here is hitting targets between early and late starts and finishes. Carpet selection which was supposed to have been made by December 6, 1977 (working day 238) has been deferred and is at an indeterminate point. It is critical to make this selection since once carpet is ordered, it could require anywhere from 5 working days to 2 to 3 months to deliver. Carpet is a difficult material to predict deliveries with great accuracy and thus, an early selection is advisable.

Monitoring Report #15
St. Lawrence Hospital
Page three

RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER

Area 2B

Area 2B is currently meeting targets between early and late starts and finishes. The 2A comments on carpet apply here also.

Area 3A

Area 3A is currently meeting targets between early and late starts and finishes. Flushing fixtures have been arriving on the job slowly but no major difficulty is anticipated with completing installation of fixtures at the floor. The same comments for the second floor carpet apply at the third floor.

Area 3B

Most work is meeting targets between early and late starts and finishes. Comments for 3A carpet generally apply for 3B.

General

The project has moved relatively well over the past month although it is still too early to completely measure progress based upon the Issue #6 network.

There still are some difficulties on the job but most of these are being handled on a day to day basis. They usually deal with trades that have to be interfaced with major building work.

The Issue #6 network dated November 16, 1977 will be used to monitor and this is currently being drafted into final form and manually dated.

I shall plan to monitor the project again in January and will be in touch with Mr. Branoff regarding this.

Ralph J. Stephenson, P.E.

RJS
R

To: Mr. Mike Branoff (Orig. & 2 copies)
Mr. Jim Cross (1 cc)

special delivery

January 17, 1978

Subject: Monitoring Report #16

St. Lawrence Hospital, Lansing, Michigan

The Christman Company - Construction Managers

Project: 76:44

**Date of Monitoring: January 11, 1978 (working day 262) from '77 base
calendar; (working day 517) from '76 base calendar**

Monitored from Issue #6 dated November 16, 1977

**Revised target field dates for completion, in accordance with Issue #6
dated November 16, 1977**

		<u>'76 base</u>	<u>'77 base</u>
Area 1A	February 28, 1978	(W/D 551)	(W/D 296)
Area 1B	April 14, 1978	(W/D 584)	(W/D 329)
Area 1D	February 6, 1978	(W/D 535)	(W/D 280)
Area 1E	March 15, 1978	(W/D 562)	(W/D 307)
Area 2A	February 14, 1978	(W/D 541)	(W/D 286)
Area 2B	February 28, 1978	(W/D 551)	(W/D 296)
Area 3A	March 14, 1978	(W/D 561)	(W/D 306)
Area 3B	March 28, 1978	(W/D 571)	(W/D 316)

**Note: All reporting dates are given in working days
referred to a base of January 3, 1977 (working day 1).**

Actions taken:

- Inspected project
- Reviewed current job status with Mr. Cross
- Distributed manually computed and dated Issue #6 networks
for all areas
- Evaluated current job status

General Summary

2/8/78 (284)

As of January 11, 1978 (working day 262) work continues to move moderately well in all areas. There still is the tendency to fall far enough behind early starts/early finishes in areas 1A, B and D to indicate these must be given special attention over the next one to three months. Some items of concern include:

- indeterminate delivery dates on specific carpet for areas at the second and third floors
- completion of communication systems above ceiling wiring so ceilings can be installed at the upper floor corridors
- completion of fire marshall inspections so that ceilings can be installed where smoke barriers run to the floor above
- the condition of sprinkler system controls to provide the zoned panel monitoring required
- completion of installation and hookup on food service equipment so running-in can begin
- delivery of the final major piece of electrical equipment so the building can be fully energized.

- Some on job
- Last carpet to be shipped Feb 20, 78 (294) + 3 wks to slip Feb 27, 78

In progress
Complete 2/13 to be done 2/1 soon
Complete end of Feb.

major job to be energized to day or tomorrow

Overall, however, it appears that the field management forces have the job under good control and the major problem areas identified.

I recommend that the hospital move-in schedule be requested and that the hospital begin their detail planning of how the shift into the new facilities is to take place. This is generally an area of high conflict since contractors are attempting to complete their work and the move-in, sometimes if unplanned, is a constant source of interference with completing the work. Now is the time to plan for the move-in when adequate time to alert the staff to potential conflicts exists.

Not commencing to Christmas or 701.

A brief review of each area is given below.

Area 1A

This area tends to drift too close to late start/late finish targets and some of the work, particularly at the ceiling and in painting and food service equipment shows up as being late although it is doubtful that any of them will seriously affect the total completion date of February 28, 1978 (working day 296).

Ceiling tile is being installed at the kitchen area and installation of food service equipment is proceeding although this work is moving more slowly than had been anticipated.

Area 1B

Most board work is now complete and final taping and sanding are in work. Considerable painting has taken place over the last month and ceiling work is showing progress.

There still are some lags in taping and sanding at the two operating rooms. However, this should not have a major effect now upon completing the area.

The lag behind late starts and late finishes could be assumed to range from 0 to 13 working days, however, the more difficult areas that lag by the higher amount can be finished along with the other ending trades with no major difficulty.

It is anticipated that April 14, 1978 (working day 329) will be held for 1B. The area will require heavy attention over the next month particularly.

Area 1D

Board work and taping and sanding are substantially complete, painting has started and ceiling work is well along. It has been decided to hold testing until all of the glass and doors have been installed. There is some question as to where the glass is in the shielded room. However, this is not expected to be a delay item. The current target of February 6, 1978 (working day 280) is being held for the area 1D.

Area 1E

Painting is well along and all ceiling grid is installed, along with most of the light fixtures. This area is currently meeting all major targets between early and late starts and finishes.

Area 2A

Most work at 2A is meeting targets between early and late starts and finishes.

As noted above, identification of carpet status for specific rooms and areas should be made quickly because we are getting near the time when carpet will be laid.

The fire marshall will be on the project tomorrow to make a final inspection of above ceiling drywall. This is to insure that the barrier is properly installed and will allow the remaining ceiling tile to be installed.

**Monitoring Report #16
St. Lawrence Hospital
Page four**

**RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER**

Area 2B

This area is substantially at the same point as area 2A. Currently all work is meeting targets between early and late starts and finishes.

Area 3A

Work here is in good condition - currently meeting targets tending toward early starts and finishes.

Area 3B

Work here is about at the same status as for 3A - currently meeting targets between early and late starts and finishes, trending toward the early dates.

Summary

Overall, the project is now rounding into the final weeks of the job and it appears that the target dates listed above can be met. It will take hard work and careful attention to finishing trades but the targets appear feasible.

I shall plan to monitor the project again in February and will be in touch with Mr. Branoff regarding the specific date.

Ralph J. Stephenson, P.E.

RJS/m

**To: Mr. Mike Branoff (Orig. & 2 copies)
Mr. Jim Cross (1 cc)**

February 11, 1978

Subject: Monitoring Report #17

St. Lawrence Hospital, Lansing, Michigan

The Christman Company - Construction Managers

Project: 76:44

Date of Monitoring: February 8, 1978 (working day 282) from '77 base calendar;
(working day 547) from '76 base calendar

Monitored from Issue #6 dated November 16, 1977

Revised target field dates for completion, in accordance with Issue #6
dated November 16, 1977

		<u>'76 base</u>	<u>'77 base</u>
Area 1A	February 28, 1978	(W/D 551)	(W/D 296)
Area 1B	April 14, 1978	(W/D 584)	(W/D 329)
Area 1D	February 6, 1978	(W/D 535)	(W/D 280)
Area 1E	March 15, 1978	(W/D 562)	(W/D 307)
Area 2A	February 14, 1978	(W/D 541)	(W/D 286)
Area 2B	February 28, 1978	(W/D 551)	(W/D 296)
Area 3A	March 14, 1978	(W/D 561)	(W/D 306)
Area 3B	March 28, 1978	(W/D 571)	(W/D 316)

Note: All reporting dates in the report below are given in working days referred to a base of January 3, 1977 (working day 1).

Actions taken:

- Inspected project
- Reviewed current job status with Mr. Cross
- Evaluated current job status

General Summary

As of February 8, 1978 (working day 282) the project is moving into final stages of work prior to move-in. Reviewing the points of concern

from Monitoring Report #16, page 2, we find the following:

- Carpet has begun arriving on the job and it is expected that the last two colors will be shipped February 20, 1978 (working day 290); allowing three days for shipment brings all carpet to the job site by February 23, 1978 (working day 293). There are substantial areas ready for carpet now and it will be installed as it arrives on the job.
- Communication systems wiring above the ceiling is still in work and is restraining ceiling tile installation at the third floor.
- Fire marshall inspections at above ceiling walls have been completed on the second and third floors. First floor inspections will be conducted shortly.
- Sprinkler system zone controls have been installed and sprinkler head installation is in progress.
- Food service equipment is almost completely hooked up. It is expected by the end of February the equipment can be turned on and run in.
- The last piece of major electrical switchgear is on the job and in place. The permanent electrical system should be energized today or tomorrow.

In general, the project appears at this time under fairly good control, provided indeterminate elements such as carpet delivery and surgical sinks which have been delayed, are brought to the job promptly.

Again, I suggest the hospital prepare its move-in plan in conjunction with all parties to the job so a feeling can be obtained by the contractors as to where occupancy will begin and in what direction it will progress. The critical element here is to provide accurate dates for occupancy so when final pressures must be put on to complete an area and turn it over, the area is promptly occupied as desired. This is critical in maintaining project credibility during the final phases of the project where it is most important.

A brief review of each area is given below.

Area 1A

Presently it appears that most work will be done by the target date. Food service equipment is still being hooked up but it is expected the contractor will have it ready for operation and run-in by the end of the month. Thus, occupancy at that time is feasible. Since this area is one in which considerable traffic will occur as the food service equipment is put into service, it would be wise to confer with the parties involved now to insure it is ready to receive such a traffic load. Most important will be to know when it will be necessary to keep construction traffic out of the area.

Area 1B

Ceiling suspension is substantially complete and work is now moving into the finish trades at and below the ceiling. Most major problems at area 1B have been resolved with the exception of the delivery of surgical sinks. There have been problems with the manufacture of these sinks but a satisfactory arrangement has been worked out and it is expected the sinks will be on the job in about 6 weeks.

An evaluation of the area shows it can be reasonably expected to meet the target date for completion of April 14, 1978 (working day 329). However, it will need constant supervision.

Area 1D

Most finish work is complete here except some resilient flooring and touch-up painting. It is expected the owner will start moving equipment into the area within the next week.

Area 1E

This area is now being cleaned, ready for installation of floor covering and final finishing work. The target late finish date of March 15, 1978 (working day 307) will be held.

Area 2A

Most major work at area 2A is now complete and floors are being made ready for carpet installation. Carpet should be able to start sometime within the next week, depending upon deliveries to the job site.

Monitoring Report #17
St. Lawrence Hospital
Page four

RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER

Area 2A (continued)

Most work remaining at area 2A is miscellaneous cleaning and corrective work to be done as the area is finished off.

Area 2A is due to be completed on the evening of February 13, 1978 (working day 286). With the exception of carpet, it should hit close to this date.

Area 2B

Area 2B is at the same point as area 2A. Its target completion of the evening of February 27, 1978 (working day 296) can be held, again, providing carpet is on the job as presently promised.

Area 3A

Work at area 3A is currently meeting all targets between early and late starts and finishes. Its finish the evening of March 13, 1978 (working day 306) can be held.

Area 3B

Area 3B is at the same point as area 3A. Its target of the evening of March 27, 1978 (working day 316) can be held.

Summary

The project is now at a point where monitoring can be conducted on a day to day basis and is best done by the field and office management forces of the contractor, the owner and the design team. Therefore, unless a special requirement presents itself, I shall not monitor the project further.

It has been a pleasure associating with the entire design, construction and owner team on the project and I would like to compliment everyone for the excellent manner in which they have conducted themselves.

The project has been put together in professional fashion and despite usual difficulties that occur on projects of this complexity, problems were resolved in such manner that effective action could follow. I wish the project the best of good fortune.

Ralph J. Stephenson, P.E.

RJS/m

To: Mr. Mike Branoff (Orig. & 2 copies)
Mr. Jim Cross (1 cc)