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May 15, 1986

Subject: Monitoring Report #1

Opus Airport Hilton Hotel

Minneapolis, Minnesota

Opus Corporation, Minneapolis, Minnesota

Project: 86:13

Date of Monitoring: April 29 and 30, 1986 (84 and 85)

Contract completion date for Opus: March 15, 1987 (working day 307)

Informal desired completion date: February 1, 1987 (working day 277)

Monitored from updated close in network Issue #6 dated April 29, 1986 sheets #3 and #4 (There was an earlier close in network issued; however, we made a complete revision of this at our session and it was from this revised network that the current job status was measured.)

Actions taken:

- Inspected project
- Reviewed project in field with Mr. Bob Lund
- Updated close in diagram for project
- Prepared network models for basement, first floor, and second floor of low rise
- Prepared interior work template for tower
- Reviewed project in detail with Mr. Al Corrigan, Mr. Larry Woelfel, Mr. Dave Bangasser, and Mr. Bob Lund

General Summary

Currently tower floor pours are moving well with the 12th floor to be poured out by Wednesday, April 30, 1986 (working day 85). The roof deck is to be poured out by May 8, 1986 (working day 91). At the low rise the second floor north half was being poured out today, April 30, 1986 (working day 85). The south half of the second floor should be poured out early the week of May 1, 1986. No dates have yet been set for pouring out the basement floor slab on grade or the first floor slab on grade.

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Precast panels are erected on the south face up to the second level. Panels are presently being placed at the east faced first floor.

Metal deck at the structural steel low rise portion has not yet been started. Deck is available but is being held waiting for trimming out of roof steel at the folding door track.

A roofing contract had not been let as of April 30, 1986 (working day 85). However, it was intended that this contract would be let momentarily.

All tower glass submittals have been approved, and sash and glass for the tower should start arriving on the job about June 1, 1986, along with sash and glass for the structural steel portion of the low rise. It should be noted here that glass submittals have not yet been approved for the structural steel portion. They are on their second submittal.

At the tower area, rough interior work is moving fairly well. Plumbing rough in is up to the fourth floor and electrical risers are being installed at the seventh floor. Underground plumbing at slab on grade work in most areas is complete and food service equipment information is generally adequate to proceed with most remaining underground work. However, there was no current word as to when slab on grade work might start.

Interior drawings are needed for the proper maintenance of progress on the building work proper. These drawings were originally to be issued on February 15, 1986 (working day 33) but now will not be received until April 29, 1986 (working day 84).

The pool area is a special area and here structural steel will be set after southeast corner precast exterior walls are set. Pool curtain wall shop drawings have been submitted but are to be resubmitted. Pool curtain wall should be on the job by August 1, 1986 and will take about 5 weeks to erect and glaze.

In our planning work for the project at this meeting there were several key issues addressed. Of critical importance is the general close in for the entire project. On our updated network models we identified three close in points for the building - partial close in of the low rise area, an intermediate close in point, and the complete close in point. These are described in more detail below:

- Partial close in - Close in of the low rise where the roof dry in is complete. Target - June 11, 1986 (working day 114)

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- Intermediate close in point - Where precast roof and glass are complete so that interior finish work can start - September 2, 1986 (working day 171)

- Complete close in - where the building is completely closed to weather with all exterior skin elements erected - October 8, 1968 (working day 197)

These close in points are very critical to initiating finish work at the various sectors of the building. Of equal importance is maintenance of progress on rough interior work so that as building close in proceeds the succeeding interior finish work at various sectors of the project can also be put into work. In the tower it is of utmost importance that rough interior mechanical and electrical installation proceed to the point where metal studs can start and the floors made ready for hanging drywall.

To analyze this requirement, we updated the interior finish network and prepared an evaluation based upon the information contained in it. It was assumed that metal studs could begin by May 1, 1986 (working day 86) at the third floor. The start of work at the third floor on metal studs by then could possibly allow board to start on the floor by mid-May, 1986 provided the building was tight enough to weather to prevent damage to rough board work. Our early diagrams indicate that completion of interior work at a floor might take as much as 56 working days from the point where board work could start.

This is longer than usual on projects of this type and we made a review as to why this might be the case. One possible reason is the present plan to spray on insulation on the stud walls before hanging the second side of the board. I suggest this matter be evaluated very carefully since there are characteristics of spray on fireproofing that could interfere with timely performance. One of these is the wet nature of the spray on material and the difficulty in drying out spray on work so board surfaces could safely be hung, and the space between the board closed without danger of excessive moisture causing possible later damage to the board.

Another element is that the spray on would have to move from room to room since part of the dividing wall would be up. This would necessitate considerable shifting of manpower and equipment as the spray on proceeds. Spray on is also a very wet and dirty trade requiring a great amount of clean up.

We allowed a nominal amount of time for this spray on insulation but it does pose problems to the total sequencing

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of the project and could conceivably delay work beyond the time point desired. A further evaluation of this matter is being made at present by the project team.

In our review of the tower and low rise areas, it appears that the essential ingredients presently are to get the rough work well started, and concurrently to concentrate fully on close in of the buildings. In order to meet the desired date of Opus work completion in early February, 1987 it probably will require a turnover cycle be maintained at the residential floors of about 10 working days. This matter will be further studied in subsequent monitoring sessions as tower close in and interior work proceeds.

It should be noted that in hotels of this type the low rise areas are normally those that have the most potential for delaying the job. Therefore, decisions and construction at the low rise should proceed just as quickly as possible particularly at the first and second levels.

Another sector of the project that must be given careful attention now is site work. Since project completion is early in 1987, site work will have to be substantially completed by mid-fall, 1986. At present, the site is almost fully utilized for various construction operations. Summer weather is well upon us and since this is the ideal time in which to initiate and bring to completion exterior utility and paving work it should be put into the field just as quickly as possible. We did not do any major planning of site work at our session; however, I recommend that in the near future we do a full network model for site work to be accomplished this summer and fall. I shall be in touch with Mr. Bangasser shortly to review the work procedures from here on out. At present, all network models and files that have been prepared are on disks and have been left with Mr. Bangasser and Mr. Lund. This should be enough to continue work on detailed planning of the facility; however, I recommend that we meet periodically to evaluate job status and to update and prepare new network models as may be necessary.

Ralph J. Stephenson, P.E.

RJS:sps

To: Mr. Dave Bangasser
cc: Mr. George Wilkenson