

CONSULTING

WORK MODELING

CRITICAL PATH METHOD

# COPY

90:21

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

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July 5, 1990

Subject: Monitoring Report #1  
Mott Memorial Building Renovation  
Phase #2  
Flint, Michigan

From: Ralph J. Stephenson PE

Project: 90:21

Data disk: d220

Date of Monitoring: June 29, 1990 (wd 128)

Monitored from:

- Issue #1 networks dated May 11, 1990 (wd 94)
  - Sheet #1 - Early Abatement Work
  - Sheet #2 - 1st Floor North Wing
  - Sheet #3 - Auditorium Interior work

Key dates:

- May 1, 1990 (wd 86) - Letter of intent issued
- December 17, 1990 (wd 246) am - Contract completion date

Actions taken:

- Review current status of project
- Prepared network model for auditorium interior work
- Prepared network models for 1st and 2nd floors north
- Reviewed work scope for fan rooms
- Reviewed work scope for tunnel

Those attending meeting: (some attended meeting part time)

- Junior Paul - Mott Community College
- Jerry Harburn - THA
- Robert Mengel - MKK
- Dave Anthony - E & L
- Al Wallace - E & L

July 5, 1990

- Don Johnson - Fisher Wright
- Mike Green - Commercial Carpet Supply
- Ralph J. Stephenson - Consultant

### General Summary

#### Auditorium (aud)

Abatement is nearly complete and considerable area has been freed up for demolition and remodeling to proceed.

Abatement work at the auditorium will be followed by application of spray on fireproofing at the structural steel. Once spray on is complete interior rough and finish work will begin at the stage area and in the main auditorium area concurrently. This work is shown on sheet #3, issue #2 of the network model.

It is estimated that finish work to completion of carpeting and seating will require about 67 working days bringing completion of all work at the auditorium to an early finish of early October, 1990. Contract work other than the trussed stage, carpeting and seating is currently planned for an early finish of late September, 1990.

A copy of sheet #3, issue 2, dated June 29, 1990 (wd 128) is enclosed for review, comments, information and duplication by Mr. Anthony, Mr. Harburn and Mr. Paul as may be required. Once the network model is released for official issue by those involved it will be corrected, printed and distributed along with whatever additional translations are required.

I shall be in touch shortly with Mr. Anthony of Erickson and Lindstrom, and Mr. Jerry Harburn of THA relative to the release of the final network models.

#### North and East Wing Work

Work at the wings is designated in the network models as follows:

July 5, 1990

1N - First Floor North Wing  
2N - Second Floor North Wing  
2E - Second Floor East Wing  
1E - First Floor East Wing

*July 1990*

The work will generally move from 1N to 2N to 2E to 1E. General finishing cycle time will be about 15 working days. The networks for 1N and 2N have been completed and are enclosed with this report. Networks for 2E and 1E will be prepared following the same general logic plan as for 1N. These will be printed and sent out for review shortly.

Major work completion of 1N is presently targeted for the pm of September 17, 1990 (wd 183). Demolition work at the first floor north is nearly complete and installation of rough above floor work has started. A key milestone at this floor is the start of acoustic ceiling suspension and grid currently set for August 2, 1990 (wd 151).

Completion of 2N is currently set for the pm of October 9, 1990 (wd 199). Using a 15 working day turnover cycle brings completion of the next area in sequence, 2E to the pm of October 30, 1990 (wd 214), and area 1E to the pm of November 23, 1990 (wd 229). The networks for 2E and 1E are not yet completed but I shall prepare these for review and comment based on the completion dates above. We shall use the logic and durations for 1N as the basis for the east wing networks.

#### Tunnel Work (tun)

At present much of the tunnel abatement work is completed and major demolition will be started on July 2, 1990 (wd 129). It is estimated that demolition will take about five working days and that the remaining work in the tunnel will take approximately 20 working days more. This would bring tunnel work to completion about August 6, 1990. This date should be confirmed with the mechanical contractor.

July 5, 1990

Fan Room Work

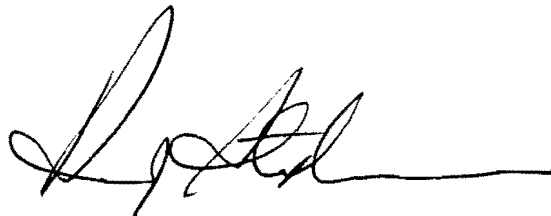
We discussed fan room work only in broad terms and will plan the work in greater detail at our next planning and monitoring meeting. Currently shop drawings for air houses will be resubmitted on July 9, 1990 (wd 133). Approval is expected by the pm of July 13, 1990 (wd 138) and the air houses will be delivered in 60 working days, or about October 9, 1990. This procurement process should be checked carefully to confirm the dates and their appropriateness.

General

Enclosed with this monitoring report are the networks for the auditorium and for the first and second levels of the North Wing. It would be appreciated if these work plans would be reviewed and released for final printing. I shall be in touch with Mr. Anthony of Erickson & Lindstrom soon to check on the status of the review.

Please note that sheets #4 and #5 are not pasted up. It was felt that each of those receiving these drawings might wish to duplicate the diagram and then paste the material together. A small key diagram for sheets #4 and #5 are enclosed as a guide to pasting up the network model.

This report is being sent to Mr. Dave Anthony, Mr. Jerry Harburn and Mr. Junior Paul. Further distribution as needed will be made by them. I shall phone Mr. Harburn and Mr. Anthony shortly to set the date of our next planning and monitoring session.



Ralph J. Stephenson PE PC

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August 13, 1990

Subject: Monitoring Report #2  
Mott Memorial Building Renovation  
Phase #2  
Flint, Michigan

From: Ralph J. Stephenson PE

Project: 90:21

Data disk: d220 rjs

Date of Monitoring: August 6, 1990 (wd 153)

Note: Meeting notes were taken of the discussions held in the Erickson & Lindstrom offices. These have been edited and additions and revisions were made to the set given limited circulation at the meeting. The edited notes are attached to this report.

Monitored from:

- Issue #2 networks dated June 29, 1990 (wd 128)
  - Sheet #3 - Auditorium Interior work
  - Sheet #4 - 1st Floor North Wing
  - Sheet #5 - 2nd Floor North Wing

Key dates:

- May 1, 1990 (wd 86) - Letter of intent issued
- December 17, 1990 (wd 246) am - Contract completion date

Actions taken:

- Inspected project
- Reviewed status of project with Mr. Al Wallace, superintendent
- Review status of project with owner & architects
- Updated network model for auditorium interior work
- Updated network models for 1st and 2nd floors north
- Discussed network models for 1st and 2nd floors east
- Discussed & set turnover cycle for floor renovation work

August 13, 1990

- Reviewed work scope for fan rooms
- Reviewed work scope for tunnel

Those attending meeting: (some attended meeting part time)

- Junior Paul - Mott Community College
- Jerry Harburn - THA
- Robert Mengel - MKK
- Dave Anthony - E & L
- Al Wallace - E & L
- Don Johnson - Fisher Wright
- Terry Nowak - Controlled Temperature, Inc.
- Ralph J. Stephenson - Consultant

General Summary

Auditorium (aud) - Contract completion date - am December 17, 1990 (wd 246) - Desired target completion date (not for occupancy) shown on issue #3 network model, sheet #3 - late November, 1990

Abatement work is complete, spray on fireproofing has been applied at the stage area and all demolition is nearly complete. Masonry patching is in work and well along.

There was considerable discussion about the revisions presently pending at the auditorium. This material is summarized in the meeting notes accompanying this report. In summary, the existing auditorium ceiling has been completely removed and new ceiling work is to be described in bulletins #2 and #3.

Bulletin #2 which contains all new ceiling work except for light fixtures has been priced and a change order #2 will be issued for the work in Bulletin #2 on August 7, 1990 (wd 154).

Light fixture bulletin information for the new ceiling work will be available by August 9, 1990 (wd 157) and this should allow delivery of new light fixtures by early or mid September, 1990. During this period the

August 13, 1990

auditorium scaffold can be erected and work is expected to begin on the new ceiling about October 8, 1990.

North and East Wing Work - Contract completion date - am December 17, 1990 (wd 246).

Desired completion dates (not for occupancy) of the wings is as follows:

- 2N - Second Floor North Wing - target completion - pm October 9, 1990 (wd 199)
- 2E - Second Floor East Wing - target completion - pm October 30, 1990 (wd 214)
- 1N - First Floor North Wing - target completion - pm November 20, 1990 (wd 229)
- 1E - First Floor East Wing - target completion - pm December 12, 1990 (wd 244)

Work will generally move from 2N to 2E to 1N to 1E. Please note this is a change from the sequence outlined in Monitoring Report #1, dated July 5, 1990. Finishing cycle time will be maintained at 15 working days or less.

Demolition at the second floor north & east is substantially complete and installation of rough above floor work is well along. Metal studs have been erected at both areas and considerable dry wall has been installed. No major production taping and sanding of dry wall has yet started but is due to begin August 7 to 9, 1990.

At the second floor east (2E) an important sequence must be put into work immediately. This concerns cutting and coring for dental area rough in and installation of mechanical and electrical rough in in the ceiling below. The reason for installing this work now is to reduce to a minimum the disruption that might be caused by a later installation when floor 1E is occupied.

The time table for the work is as follows. All dates are am times unless otherwise noted:

August 13, 1990

- Gazell Reno issue rough in information - by August 20, 1990 (wd 163)
- Write & issue bulletin for pricing - by August 22, 1990 (wd 165)
- Price bulletin - by August 30, 1990 (wd 171)
- Write & issue change order to start field work - by 9/4/90 (wd 173)
- Owner execute change order - by 9/18/90 (wd 183)
- Install coring, piping & electrical - by 10/30/90 (wd 213)
- Ceiling work at floor below starts - by 10/30/90 (wd 213)

This is a very important schedule of work to maintain and will be shown in the network models now being readied for issue.

At the first floor most major demolition has been completed and stud work and dry wall work has begun. Above floor mechanical and electrical installation has also been started. First floor work will follow second floor work as noted above. Therefore in the network models for the sequencing I have shown some activities restrained by a starting cycle time period. It is anticipated, however, that the contractors will be able to work in several of the areas as space becomes available.

#### Tunnel Work (tun)

Tunnel work is well along and as of August 6, 1990 (wd 153) it was expected that the installation would require from two to five more days.

#### Fan Room Work

Pumps and fans are to be delivered October 9, 1990 (wd 198) with installation beginning as soon as equipment is on the job. Work at the three fan rooms will be concurrent and will take about 15 working days. This brings the anticipated completion of fan rooms 1, 2 & 3 to early November, 1990.

Cooling tower & chilled water pump installation will begin about November 1, 1990 after the cooling season, and will require about 10 working days to install. This brings completion of the cooling tower pumps



August 13, 1990

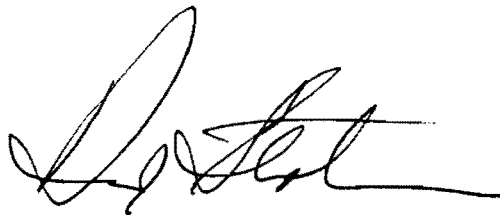
to mid or late November, 1990.

General

This report is being sent in advance of distributing the updated network model issues. The networks are being prepared and should be mailed soon. They will show the plans of work for the auditorium and the four sections of the north and east wings. Also to be issued is a summary network model of the entire project giving an overview of the job in very broad scale. The summary plan is a good network to use as a higher management review tool.

This report is being sent to Mr. Dave Anthony, Mr. Jerry Harburn and Mr. Junior Paul. Further distribution as needed will be made by those receiving the copies.

I shall be in touch with Mr. Harburn and Mr. Anthony shortly to set the date of our next planning and monitoring session.

A handwritten signature in black ink, appearing to read 'R. Stephenson', with a large, sweeping flourish at the end.

Ralph J. Stephenson PE PC

- NETWORK MODELING
- CRITICAL PATH METHOD

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September 5, 1990

Subject: Monitoring Report #3  
Mott Memorial Building Renovation  
Phase #2  
Flint, Michigan

From: Ralph J. Stephenson PE

Project: 90:21

Data disk: d220 rjs

Date of Monitoring: September 5, 1990 (wd 174)

Monitored from:

- Issue #3 networks dated as noted below
  - Sheet #sm1 - Summary Plan of Work - August 6, 1990 (wd 153)
  - Sheet #3 - Auditorium Interior work - August 6, 1990 (wd 153)
  - Sheet #4 - 1st Floor North Wing - August 6, 1990 (wd 153)
  - Sheet #5 - 2nd Floor North Wing - August 6, 1990 (wd 153)
  - Sheet #6 - 2nd Floor East Wing - August 6, 1990 (wd 153)
  - Sheet #7 - 1st Floor East Wing - August 3, 1990 (wd 152)

Key dates:

- May 1, 1990 (wd 86) - Letter of intent issued
- December 17, 1990 (wd 246) am - Contract completion date

Actions taken:

- Inspected project with Mr. Al Wallace, superintendent for E & L, Mr. Bob Mengel, architect MKK and Mr. Junior Paul, MCC
- Reviewed status of project with Dean Sharon Johnson, MCC, Mr. Al Wallace, Mr. Bob Mengel and Mr. Junior Paul

General Summary

Auditorium (aud) - Contract completion date - am December 17, 1990 (wd 246) - Desired target completion date (not for occupancy) shown on issue

September 5, 1990

#3 network model, sheet #3 - late November, 1990.

Demolition at the stage area is complete and masonry has been patched and revised. Miscellaneous iron channel work is expected to begin shortly. It was due to start no later than August 31, 1990 (wd 172). However there should be little difficulty in regaining the small lag in this work.

At the stage area there are four permanent floor box electrical outlets which conflict with the new stage partition layout. Inquiries are to be made of the space occupants to see if the outlets can be abandoned and the new power sources provided. Mr. Paul and Mr. Mengel will follow this matter.

Auditorium ceiling revisions have been issued and the ceiling lights were released on emergency field order #1, signed August 23, 1990 (wd 166). Light fixtures are due to arrive on the job in 15 to 25 working days from the release date. This puts the late fixture delivery at about September 28, 1990. Meanwhile Mr. Wallace intends to erect the auditorium scaffold in the near future and begin early work on the main ceiling suspension and framing.

Carpet for the main auditorium is apparently to be provided and installed by the owner. The carpet tile has not been selected nor ordered as yet. We discussed this matter during our review session and it was decided to assign the work to the general contractor by change order.

Auditorium seating reinstallation must also be assigned. The seats are presently in storage pending a decision in this matter. Indications are that the work will be authorized under a work order. Existing seat fastening studs are damaged and are not in such shape to properly receive the reinstallation so these studs will be removed and new fasteners driven in the floor.

2nd Floor North Wing (2N) - Contract completion date - am December 17, 1990 (wd 246). Desired completion date (not for occupancy) - pm October 9, 1990 (wd 199)

September 5, 1990

Most rough above floor work including mechanical piping, rough electrical conduit, metal studs and in wall work is complete. There has been some difficulty in determining the required ductwork fire dampers at wall penetrations. This matter has been resolved by change order and the dampers are on ordered. Delivery is expected in 15 to 25 working days. They will pose some inconvenience to installation of acoustic ceiling work but should not cause a serious job delay provided delivery is as noted above.

Dry wall and painting work has proceeded well at the second floor and considerable ceiling grid has been installed along with some light fixtures. Ceramic tile is complete at toilet rooms

An item of concern discussed in our job inspection review is the voice, data and video runs above the ceiling. This work is yet to be designed. Dean Johnson and Mr. Paul will investigate the matter immediately.

Doors are not yet on the job. Mr. Wallace noted that they are to be delivered about October 1, 1990. This is later than had been indicated as a desired date on the network models. However Mr. Wallace said that the later delivery will not interfere with scheduled work.

Plumbing fixtures are not yet installed at the toilet rooms, but frequently it is found that overly early installation of fixtures exposes them to excessively hard use and construction damage. It should be noted that a tempering valve must be installed in the pipe tunnel before the fixtures on the first and second floors can be made operational.

In general most major work at 2N, with exceptions as noted above is meeting targets between early and late starts and finishes.

2nd Floor East Wing (2E) - Contract completion date - am December 17, 1990 (wd 246). Desired completion date (not for occupancy) - pm October 30, 1990 (wd 214)

Rough above floor work at area 2E is at about the same stage as for area

September 5, 1990

2N. Considerable finish painting work has been done and acoustic grid will probably be started on September 6 or 7, 1990. This is considerably ahead of the planned early start of September 18, 1990 (wd 183).

The same comments relative to fire dampers, voice, data and video rough in, plumbing fixtures and doors noted above under area 2N apply also to work at area 2E.

An area of concern in the 2E area is installation of future dental piping and conduit sleeves, and rough in at the above ceiling space below in area 1E.

This sequence of work was to have begun with release of the drawings for the work by August 17, 1990 (wd 163). These drawings have not been issued and the full sequence is now about 11 working days behind the plan of work. Apparently design work is in work. This matter must be addressed and resolved immediately if we are to reduce to a minimum the potential disruption of later rough in installation after floor 1E is occupied.

Coring, piping and electrical rough in work should be done at the above floor space for 1E by the am of October 30, 1990 (wd 213). This is the date on which the ceiling installation at 1E is planned to start.

1st Floor North Wing (1N) - Contract completion date - am December 17, 1990 (wd 246). Desired completion date (not for occupancy) - pm November 20, 1990 (wd 229)

Above floor rough interior work is nearly complete including metal studs, in wall work, mechanical piping, electrical conduit and sheet metal ductwork. There are problems similar to those at the second floor on fire dampers. Some dry wall has been hung, taped and sanded and most ceramic tile has been completed at the toilet rooms.

Currently work at 1N is meeting major targets between early and late starts and finishes.

1st Floor East Wing (1E) - Contract completion date - am December 17,

September 5, 1990

1990 (wd 246). Desired completion date (not for occupancy) - pm  
December 12, 1990 (wd 244)

Major work at 1E is at about the same stage as at area 1N and is meeting early start and finish targets.

To be kept in mind is the critical start of ceiling suspension, presently set for October 30, 1990 (wd 213). This work should be follow installation of floor penetrations above and installation of dental plumbing and electrical rough in as noted in the 2E discussion.

#### Tunnel Work (tun)

According to Mr. Wallace major tunnel work is generally complete.

#### Fan Room Work

Pumps and fans are still to be delivered October 9, 1990 (wd 198) with installation beginning as soon as equipment is on the job. Work at the three fan rooms will require about 15 working days.

Cooling tower & chilled water pump installation is expected to begin about November 1, 1990 with completion of the cooling tower pump installation by mid or late November, 1990.

#### General

The finishing sequence of project areas has been shown in approximate three week intervals starting with area 2N, proceeding to 2E, to 1N and finishing out at 1E. It should be kept in mind that the sequencing was set in this manner to allow a progressive completion of the job that would not impose excessive manpower requirements during the last few weeks of the project. Thus the finishing sequence shown and the date structure of the current networks should be used as a schedule targets and as little as possible of the finish work left for completion in late November to late December, 1990.

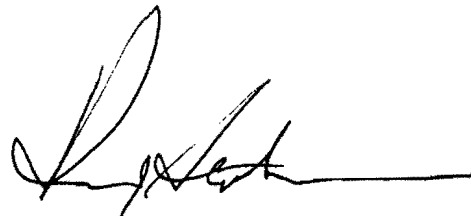
RALPH J. STEPHENSON, P.E., P.C.  
CONSULTING ENGINEER

September 5, 1990

Currently most work is meeting major targets between early and late starts and finishes although some problems are being encountered in delivery of fire dampers, diffusers, and doors, and in the voice, data and video run design and installation. Of importance is the release of the dental area rough in work at area 2E and 1E

This report is being sent to Mr. Dave Anthony, Mr. Jerry Harburn and Mr. Junior Paul. Further distribution as needed will be made by those receiving the copies.

I shall be in touch with Mr. Harburn and Mr. Anthony shortly to set the date of our next planning and monitoring session.

A handwritten signature in black ink, appearing to read 'R. Stephenson', with a long horizontal line extending to the right.

Ralph J. Stephenson PE PC

COPY

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November 5, 1990

Subject: Monitoring Report #4  
Mott Memorial Building Renovation  
Phase #2  
Flint, Michigan

From: Ralph J. Stephenson PE

Project: 90:21

Data disk: d220 rjs

Date of Monitoring: October 26, 1990 (wd 211)

Monitored from:

- Issue #3 networks dated as noted below
  - Sheet #sm1 - Summary Plan of Work - August 6, 1990 (wd 153)
  - Sheet #3 - Auditorium Interior work - August 6, 1990 (wd 153)
  - Sheet #4 - 1st Floor North Wing - August 6, 1990 (wd 153)
  - Sheet #5 - 2nd Floor North Wing - August 6, 1990 (wd 153)
  - Sheet #6 - 2nd Floor East Wing - August 6, 1990 (wd 153)
  - Sheet #7 - 1st Floor East Wing - August 3, 1990 (wd 152)

Key dates:

- May 1, 1990 (wd 86) - Letter of intent issued
- December 17, 1990 (wd 246) am - Contract completion date

Actions taken:

- Inspected project with Mr. Al Wallace, E & L, Mr. Dave Anthony, E & L, Mr. Mike St. Germain, MKK, Mr. Jerry Harburn, THA, and Mr. Junior Paul, MCC
- Reviewed status of project with those inspecting project
- Reviewed remaining auditorium work in detail
- Updated network model for auditorium remodeling to sheet #3, issue #4, dated October 26, 1990 (wd 211)

Auditorium (aud) - Contract completion date - am December 17, 1990 (wd



November 5, 1990

246) - Desired target completion date (not for occupancy) shown on issue #3 network model, sheet #3 - late November, 1990.

Work at the auditorium ceiling has proceed reasonably well with brown and scratch coat work complete. There is some question as to the finish to be applied to the ceiling adjacent the stage. This matter was discussed in detail by the owner, the architect and the general contractor staff. The finish desired should be selected immediately since all plaster and related work at the auditorium ceiling is to be complete ready for painting by the pm of November 2, 1990 (wd 217).

Another item that must be given early attention is selection of color and type, and award of a contract for carpet. Apparently a request for carpet proposals has been issued. However it was not clear at our meeting how the pricing was to be submitted and when a contract was to be awarded. Installation of carpet is presently planned to start on November 28, 1990 (wd 233). This is only 22 working days from October 26, 1990 (wd 211), the date on which the project was monitored.

In general conversations during our monitoring, it was indicated that standard carpet could be obtained in about ten working days after order from the supplier. Special carpet may require 20 to 30 working days to deliver after the order is entered.

A major problem in the carpet sequence is that the old seating is being reinstalled. This seating is presently stored in various areas of the building that must be reoccupied when classes resume. Since installation of carpet restrains reinstalling the seats, carpet is a key item.

The present schedule of class resumption indicates the faculty will be back on January 8, 1991 (wd 260) and the students will be back on January 10, 1991 (wd 262). All work in areas to be occupied must be complete by January 4, 1990 (wd 258) according to Mr. Junior Paul.

The stage area at the auditorium is now at a point where for work to proceed the front portion of the auditorium scaffold must be dismantled.

November 5, 1990

This scaffold is expected to out of the way of stage work by the am of November 5, 1990 (wd 217). Removal of the scaffold will allow installation of miscellaneous iron work, sheet metal ductwork, and mechanical and electrical systems work.

Concurrently it is anticipated that field measurements for stage acoustic panels will be taken on November 1, 1990 (wd 215). Installation of panels is expected to begin by the am of November 30, 1990 (wd 235) or earlier. Following installation of the acoustic panels and related trim the area can be final cleaned and released. This target date for release is now shown as the pm of December 20, 1990 (wd 250).

The auditorium network model was updated at this session to reflect the current plan of work anticipated by the owner and the contractor. This network, sheet #3, issue #4, dated October 26, 1990 is attached. It is anticipated that those receiving this report will further distribute the network as required.

2nd Floor North Wing (2N) - Contract completion date - am December 17, 1990 (wd 246). Desired completion date (not for occupancy) - pm October 9, 1990 (wd 199)

Rough in for voice and data systems is almost complete. Installation of ceiling grid is complete and light fixtures, grills and diffusers are nearly complete. Acoustic panels are being installed. Painting is well along and some resilient tile has been laid. Toilet room plumbing fixtures are installed.

The contractor desired target date for major work completion, not for occupancy, was the pm of October 9, 1990 (wd 199). Although the present work status is somewhat behind this target, there remains only 10 to 15 working days to complete the area. Floor renovation remaining at 2N will probably be done concurrently with 2E.

2nd Floor East Wing (2E) - Contract completion date - am December 17, 1990 (wd 246). Desired completion date (not for occupancy) - pm October

November 5, 1990

30, 1990 (wd 214)

Work at area 2E is at about the same point as for area 2N. The entire 2nd floor renovation will probably be brought to completion together. There does not, at present, seem to be any major difficulties in completing by the contract date of am December 17, 1990 (wd 246).

There have been some problems getting dental area mechanical and electrical rough in under way. The work was quoted on October 15, 1990 (wd 202), and the owner gave a verbal go ahead on October 17, 1990 (wd 204). Coring began on October 26, 1990 (wd 211). It is expected that installation will not materially delay renovation at the 2nd or 1st floor.

1st Floor North Wing (1N) - Contract completion date - am December 17, 1990 (wd 246). Desired completion date (not for occupancy) - pm November 20, 1990 (wd 229)

Ceiling suspension and grid is nearly complete and most light fixtures, grills and diffusers have been installed. Voice and data rough in is nearly complete.

At the toilet rooms ceramic tile is complete and some toilet fixtures have been set.

Overall the area lags the desired completion date of November 20, 1990 (wd 229) by 5 to 10 working days. However it appears presently that there will be no major difficulty in meeting a completion target of December 17, 1990 am (wd 246). In all likelihood both of the first floor areas 1N and 1E will be finished concurrently working on them as a single unit.

1st Floor East Wing (1E) - Contract completion date - am December 17, 1990 (wd 246). Desired completion date (not for occupancy) - pm December 12, 1990 (wd 244)

Area 1E work is about at the same point as work in area 1N. Probably the two areas will be completed together as a unit. Work at area 1E is

November 5, 1990

currently meeting all major targets between early and late starts and finishes.

As with other interior areas there should be no major difficulty in completing the renovation work by the contract end date of December 17, 1990 am (wd 246).

#### Fan Room Work

Fan room installation according to Mr. Wallace is about 90% complete with no difficulties anticipated in completing work as planned.

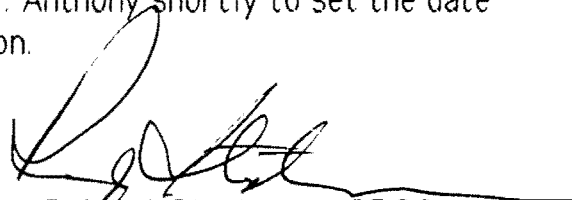
#### General

Overall, renovation work at the classroom areas is moving well and although slightly behind desired completion dates set for work cycling purposes, is at a point where there should be little difficulty completing the work by the contract date. No updating of the networks was considered necessary at this monitoring.

There have been difficulties in keeping auditorium work moving well. As a result we updated the network model for the auditorium from information provided by the general contractor, architect/engineer and the owner in the monitoring meeting. The updated network has been put in final form and is attached to the monitoring report.

This report is being sent to Mr. Dave Anthony, Mr. Jerry Harburn and Mr. Junior Paul. Further distribution as needed will be made by those receiving the copies.

I shall be in touch with Mr. Harburn and Mr. Anthony shortly to set the date of our next planning and monitoring session.



Ralph J. Stephenson PE PC

# COPY

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CONSULTING ENGINEER

November 29, 1990

Subject: Monitoring Report #5  
Mott Memorial Building Renovation  
Phase #2  
Flint, Michigan

From: Ralph J. Stephenson PE

Project: 90:21

Data disk: d220 rjs

Date of Monitoring: November 28, 1990 (wd 233)

Monitored from:

- Issue #3 networks dated as noted below  
Sheet #sm1 - Summary Plan of Work - August 6, 1990 (wd 153)  
Sheet #3 - Auditorium Interior work - August 6, 1990 (wd 153)  
Sheet #4 - 1st Floor North Wing - August 6, 1990 (wd 153)  
Sheet #5 - 2nd Floor North Wing - August 6, 1990 (wd 153)  
Sheet #6 - 2nd Floor East Wing - August 6, 1990 (wd 153)  
Sheet #7 - 1st Floor East Wing - August 3, 1990 (wd 152)
- Issue #4 network dated as noted below  
Sheet #3 - Auditorium Interior work - October 26, 1990 (wd 211)

Key dates:

- May 1, 1990 (wd 86) - Letter of intent issued
- December 17, 1990 (wd 246) am - Contract completion date

Actions taken:

- Inspected project with Mr. Al Wallace, E & L, Mr. Dave Anthony, E & L, Mr. Robert Mengel, MKK, Mr. Jerry Harburn, THA, and Mr. Junior Paul, MCC
- Reviewed status of project with those inspecting project

November 29, 1990

- Evaluated current status of project

Auditorium (aud) - Contract completion date - am December 17, 1990 (wd 246). Projected target completion date (not for occupancy) shown on issue #4 network model, sheet #3 dated October 26, 1990 (wd 211) is December 20, 1990 pm (wd 250). Measurement of job status is from this network model.

Ceiling work at the auditorium area is complete except for the screen cloth and trim work adjacent the stage. Scaffolding has been dismantled and floor preparation work has been substantially completed. Carpet is on the job and installation is to begin December 3, 1990 (wd 236). The start date for carpet in issue #4 dated October 26, 1990 (wd 211) was November 28, 1990 (wd 233). Thus the projected lag in carpet is about three working days.

Auditorium seating reinstallation is expected to begin by December 10, 1990 (wd 241). The issue #4 start of seating was shown at December 4, 1990 (wd 237). From these projections the auditorium portion of the area should be substantially complete by mid December, 1990.

Stage area miscellaneous iron and sheet metal ductwork has been installed. The new sound, fire alarm, and electrical power and light rough in work at the stage is also complete.

Refinishing the stage floor will begin November 29, 1990 (wd 234) and should take five working days or less. At present acoustic panels are due on the job sometime the week of December 10, 1990. It is expected that the panels will be complete in early or mid week of December 17, 1990. This could bring completion of the auditorium stage to a point where it could be ready for final inspections by about December 24, 1990.

2nd Floor North & East Wings (2 N & E) - Contract completion date - am December 17, 1990 (wd 246)

Most work with the exception of carpet, chalk and tack boards, signage, architectural trim items and clean up are substantially complete at the

November 29, 1990

2nd floor. Carpet is being installed and nearly all areas are ready for chalk and tack boards and signage. There has been some difficulty obtaining firm delivery dates for chalk and tack boards but the contractors will give this item heavy attention during the next week and work will probably get underway early in December, 1990. There was no current word on the availability of signage.

Some difficulty has been experienced with owner installation of the voice, data and video connections between various remodeled areas and the remote dial frame (RDF). This work is being followed presently by Mr. Paul and will be expedited to the greatest extent possible. It would be desirable to complete all above ceiling work as the areas are finished off to avoid possible damage to already installed work.

1st Floor North & East Wings (1 N & E) - Contract completion date - am December 17, 1990 (wd 246).

Most interior finish work at the first floor, except under the future dental clinic, is well along with unfinished items generally being resilient tile, carpet, chalk and tack boards, signage, trim work and some toilet partitions. Owner installation of the voice, data and video final runs from the area to the remote dial frames is also yet to be done.

At area 1E under the dental lab, acoustic ceiling work is being held pending receipt and installation of above ceiling insulation and completion of patching at above ceiling pipe openings in masonry walls. Ceiling work will probably be started about December 10, 1990.

#### General

Overall, work at the classroom areas is moving well and should be substantially completed by mid December, 1990 with the possible exception of the 1E area under the dental clinic.

A matter yet to be resolved for all remodeled areas is that of final plumbing inspection. Apparently rough plumbing work has been inspected and approved. The mechanical contractor requested a final inspection but

November 29, 1990

this has not yet been made. The project team is to review the matter and determine what must be done to obtain needed approvals.

There are still some difficulties in keeping auditorium work moving well but if installation of stage acoustic panels can be expedited work there could be complete by late December, 1990.

Plans should be made now for punching out areas as they are completed, obtaining a certificate of substantial completion and getting a certificate of occupancy for the facility. There has been some indication that the contractor will request that punch out inspections begin December 10, 1990 (wd 241).

The present schedule of class resumption indicates faculty will be back on January 8, 1991 (wd 260) and students will return January 10, 1991 (wd 262). All work in areas to be occupied is targeted to be complete by January 4, 1990 (wd 258).

This report is being sent to Mr. Dave Anthony, Mr. Jerry Harburn and Mr. Junior Paul. Further distribution as needed will be made by those receiving the copies.

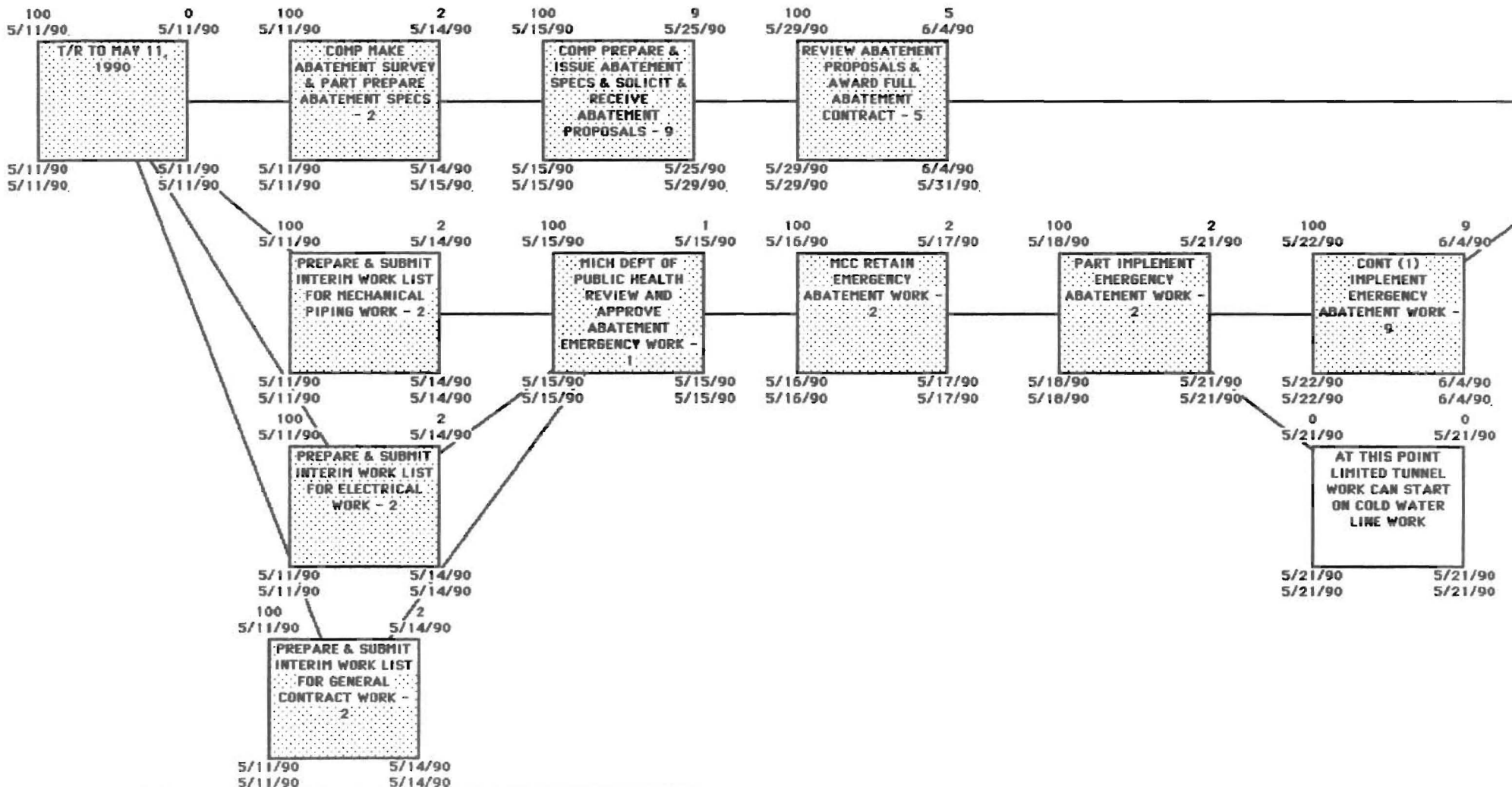
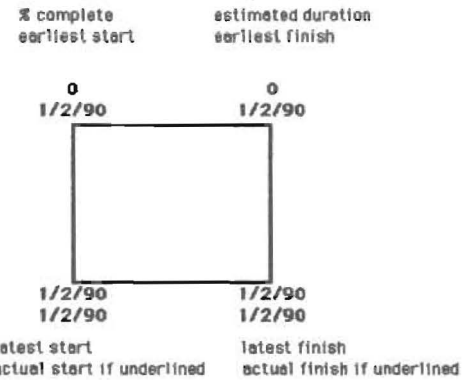
Today's monitoring concludes my work on the project unless special conditions arise that make additional evaluation of the project necessary. I want to compliment the planning, design, owner and contractor team members for their good work on the job, and thank them all for their help and cooperation in planning and monitoring over the past seven months.

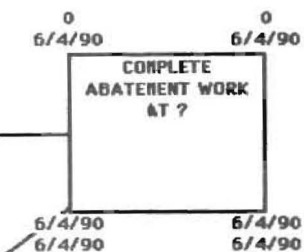


Ralph J. Stephenson PE PC



Status of project as of June 29, 1990 (wd 128)





Status as Friday, June 29, 1990 (wd 128)

EARLY ABATEMENT WORK

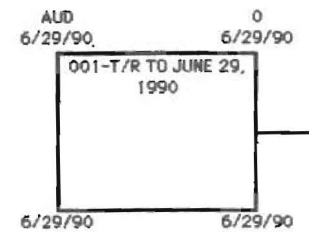
NETWORK MODEL FOR C. S. MOTT  
COMMUNITY COLLEGE - FLINT,  
MICHIGAN - MOTT MEMORIAL  
BUILDING REMODELING

Issue #1 - May 11, 1990  
Issue #1 - monitored June 29, 1990  
•This network superseded June 29, 1990  
by individual abatement plans  
on unit diagrams

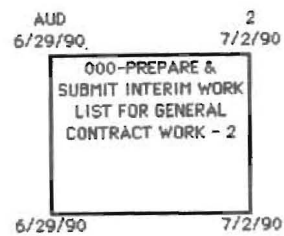
mtr06/29/90\sh#1 mmb revta  
disk #

**Erickson & Lindstrom  
General Contractors  
Flint, Michigan**

Ralph J. Stephenson PE PC  
Consulting Engineer  
323 Hiawatha Drive  
Mt. Pleasant, Michigan 48858  
ph 517 772 2537



Location                      Duration  
Early start (am)              Early finish (pm)



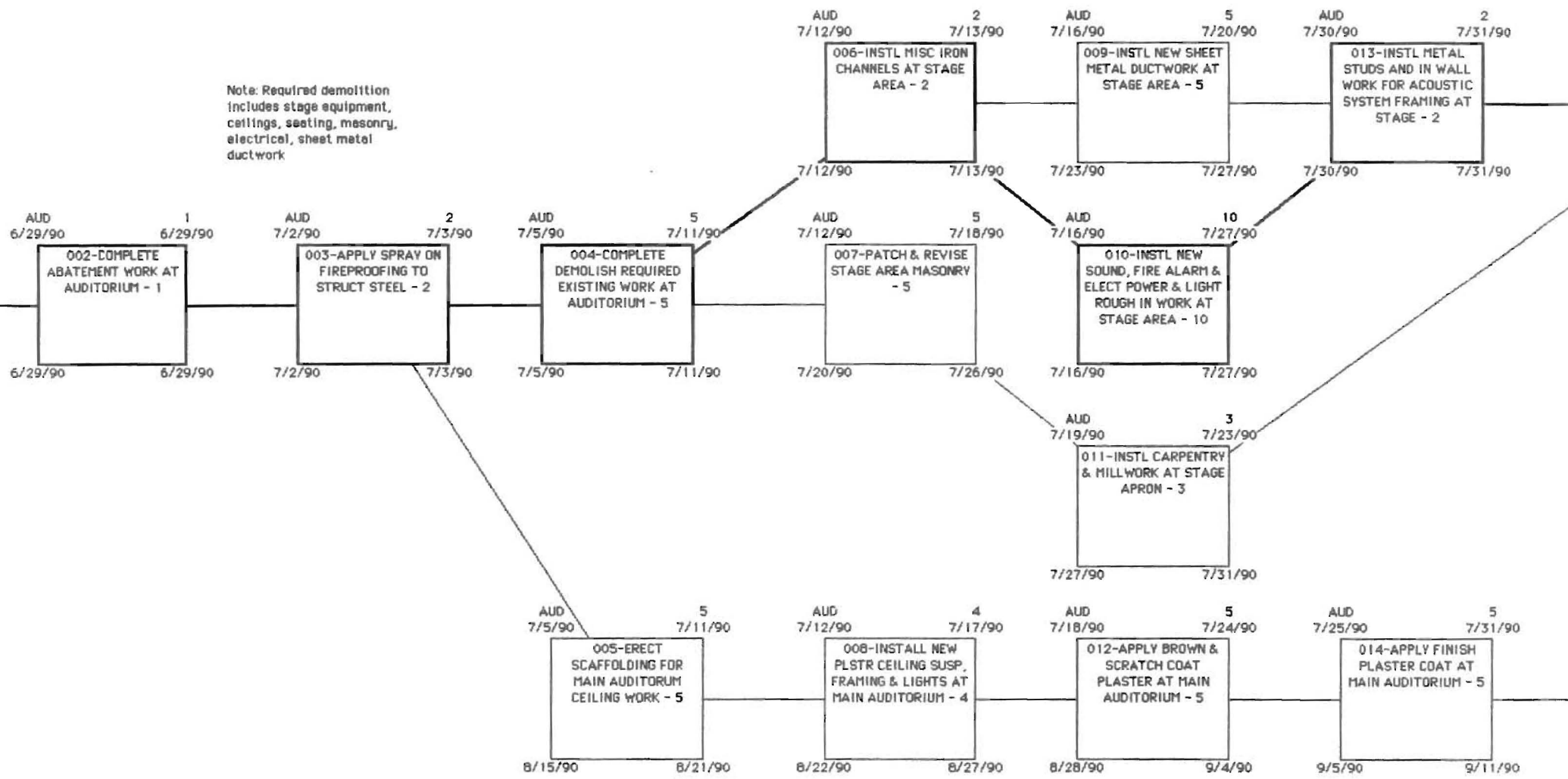
- Activity number
- Activity description
- Estimated duration of activity in elapsed working days

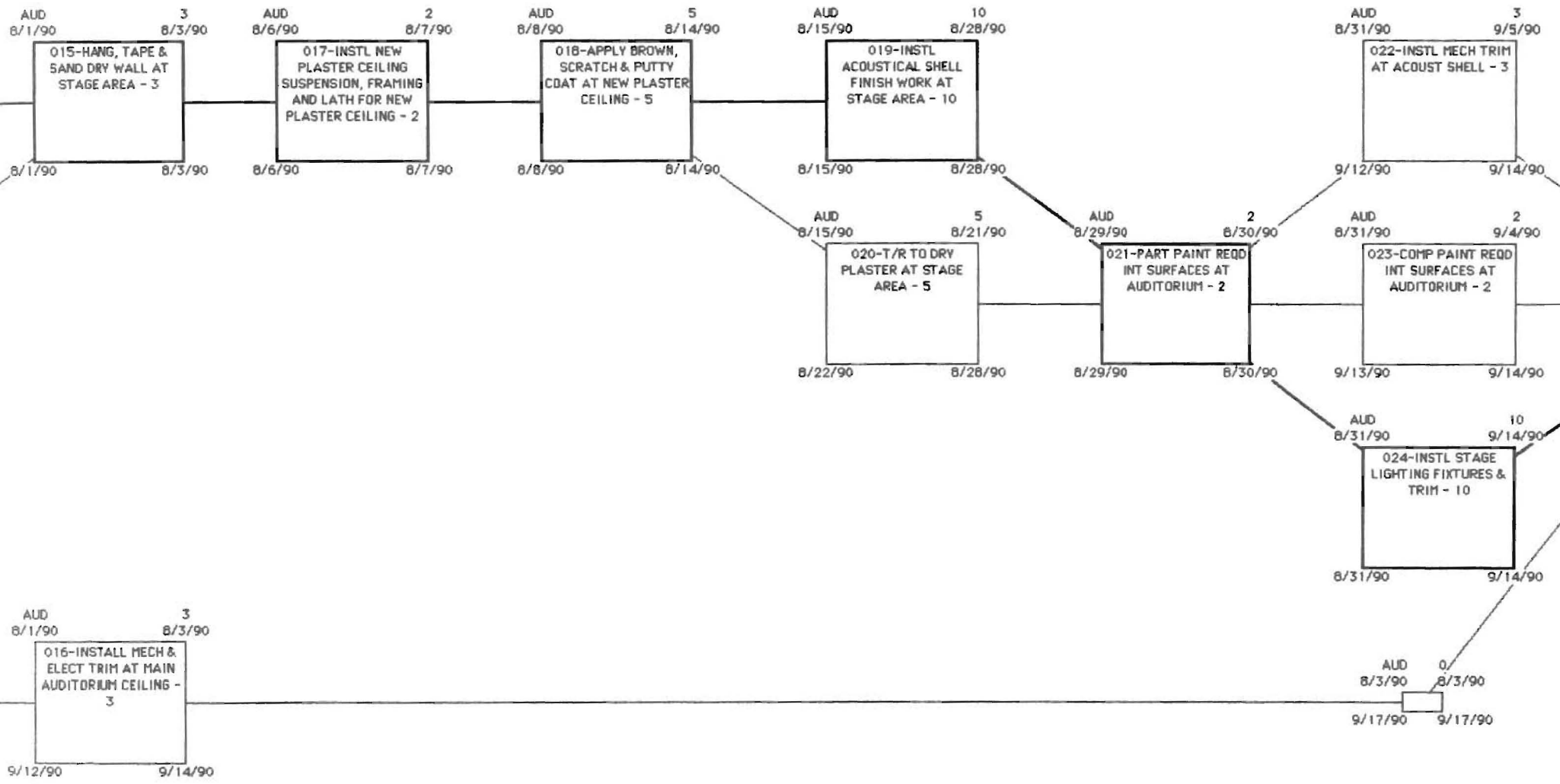
Late start (pm)                      Late finish (pm)

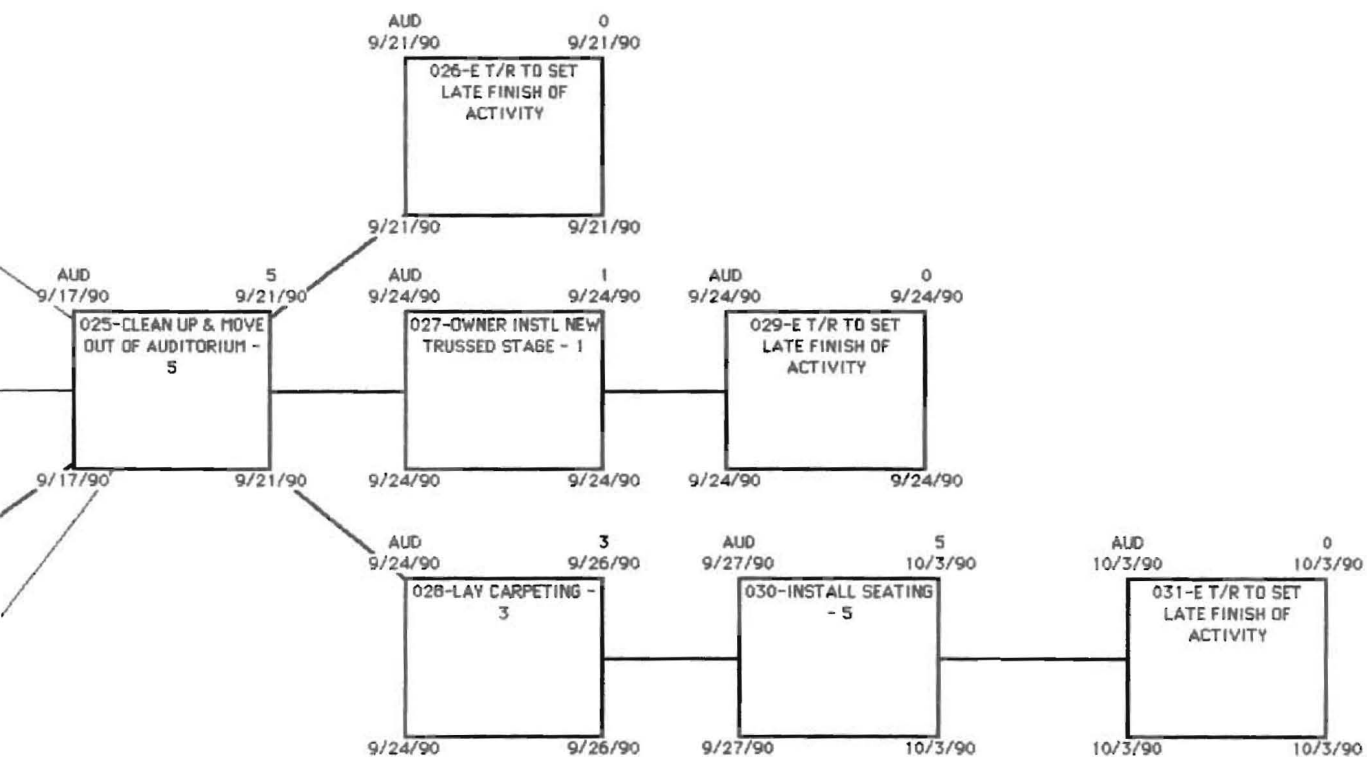
### Activity Information Key

NOTE: In wall work includes frames, lintels, conduit, sheet metal duct & other build ins

Note: Required demolition includes stage equipment, ceilings, seating, masonry, electrical, sheet metal ductwork







**Auditorium Interior Work**

**NETWORK MODEL FOR C. S. MOTT  
COMMUNITY COLLEGE - FLINT,  
MICHIGAN - MOTT MEMORIAL  
BUILDING REMODELING**

**Erickson & Lindstrom  
General Contractors  
Flint, Michigan**

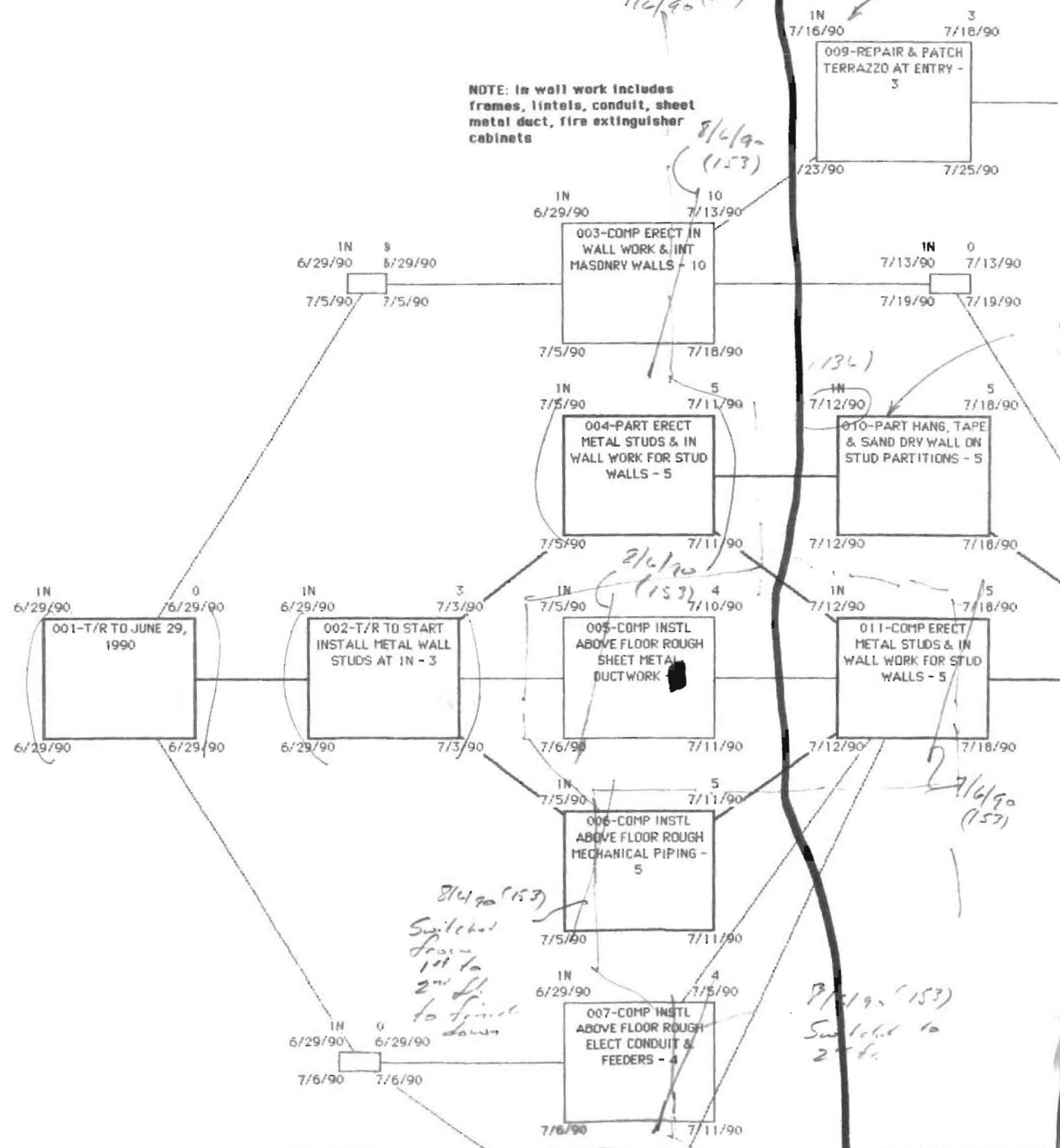
Issue #1 - May 11, 1990  
Issue #2 - June 29, 1990  
12sh#3 mmb renvta  
disk #  
LAN 001  
HAN 031

Ralph J. Stephenson PE PC  
Consulting Engineer  
323 Hiawatha Drive  
Mt. Pleasant, Michigan 48858  
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Sketches at 8/6/90 (157)

8/6/90 (157) 4:11 PM

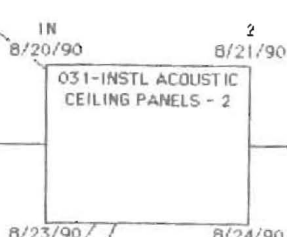
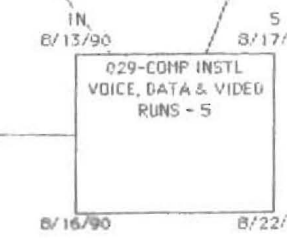
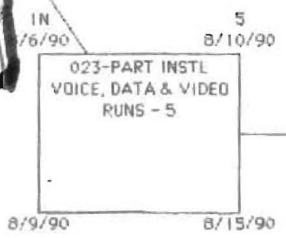
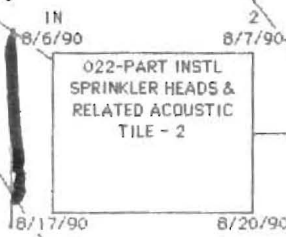
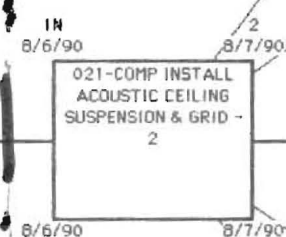
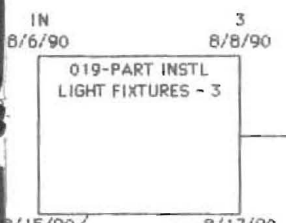
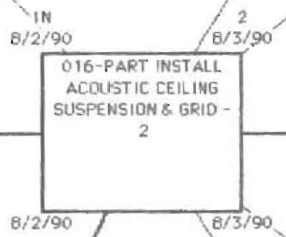
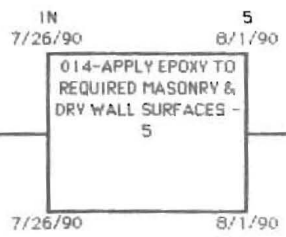
NOTE: in wall work includes frames, lintels, conduit, sheet metal duct, fire extinguisher cabinets



about 8/15/90

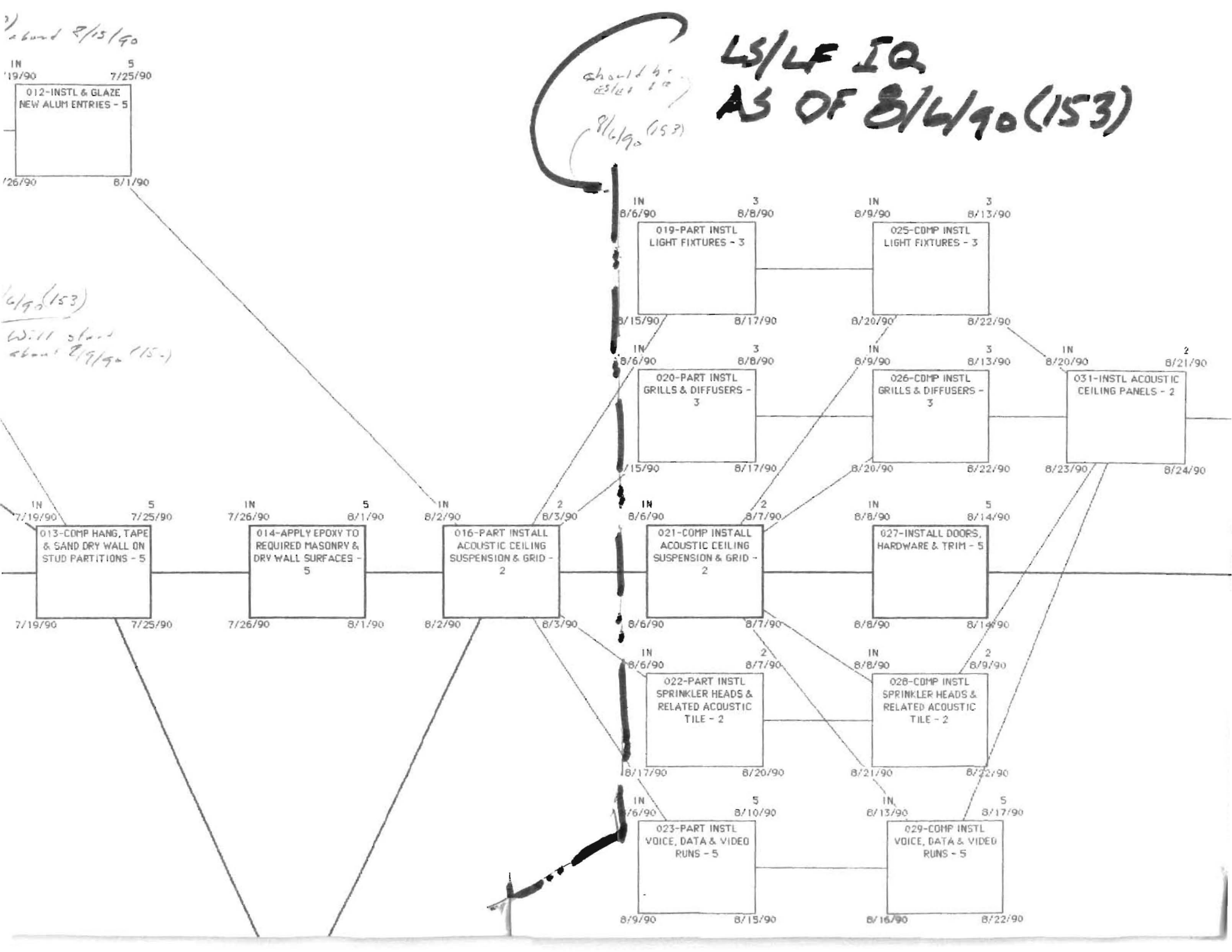


6/90 (153)  
Will start about 8/9/90 (15-)



should be 8/16/90 (153)

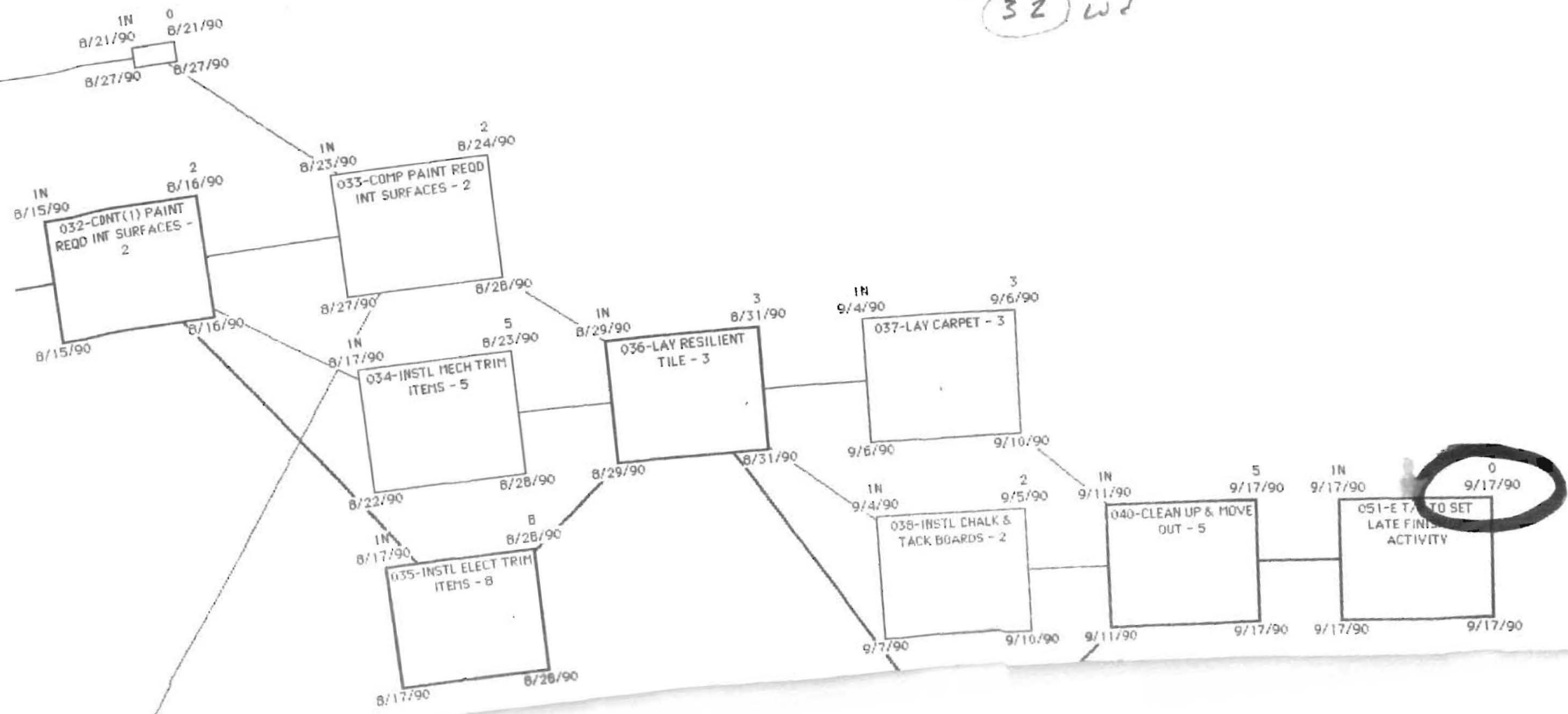
# LS/LF IQ AS OF 8/6/90 (153)





# 1ST FL NORTH WING (IN)

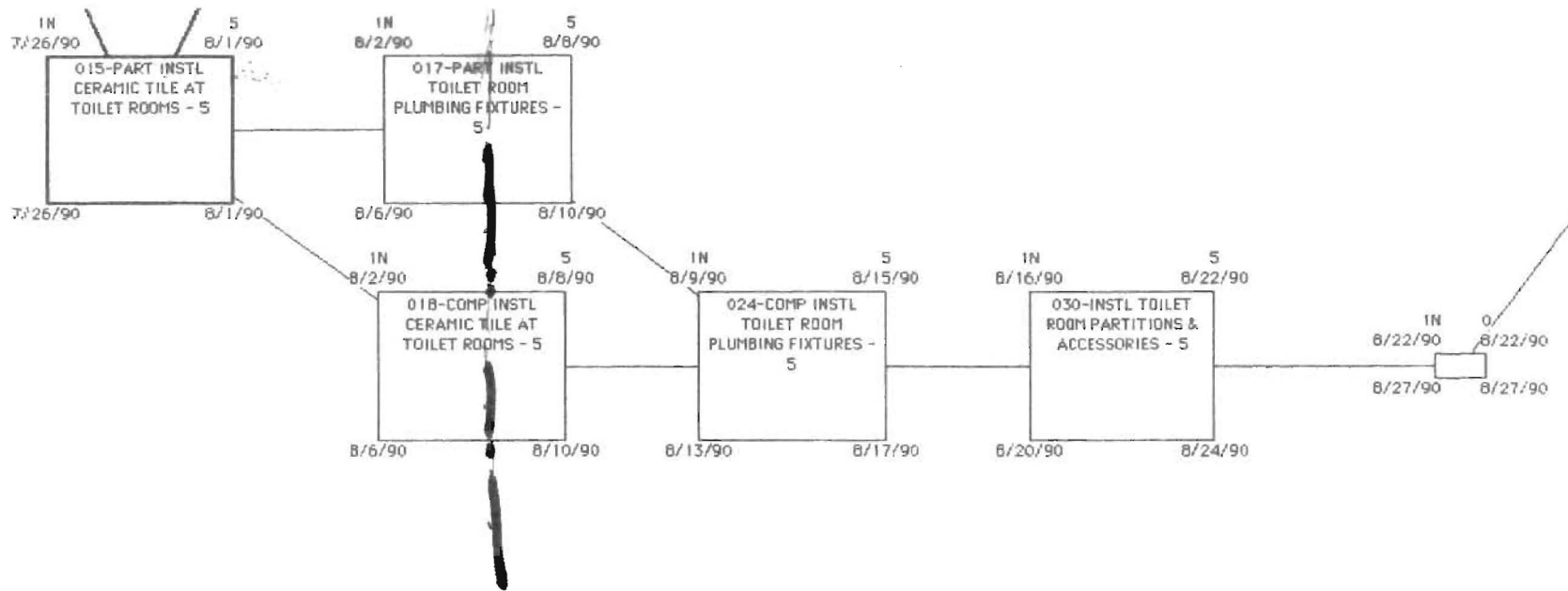
PM 9/17/90 (183) comp 2<sup>nd</sup> floor work  
 AM 8/2/90 (151) start of ceiling work  
32 wd



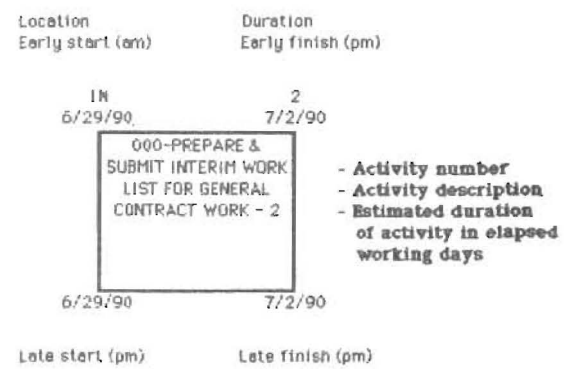


6/90 (153)

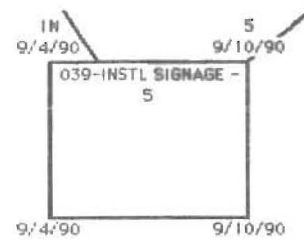
Signature of work  
 Done early July 90  
 10/1/90 N 10 2"



6.11.66  
 from  
 12.20.93



**Activity Information Key**



1st Floor North Wing - 1N

**NETWORK MODEL FOR C. S. MOTT  
COMMUNITY COLLEGE - FLINT,  
MICHIGAN - MOTT MEMORIAL  
BUILDING REMODELING**

Issue #1 - not issued  
Issue #2 - June 29, 1990  
12sht#4 mmb in revtn  
disk #220

**Erickson & Lindstrom  
General Contractors  
Flint, Michigan**

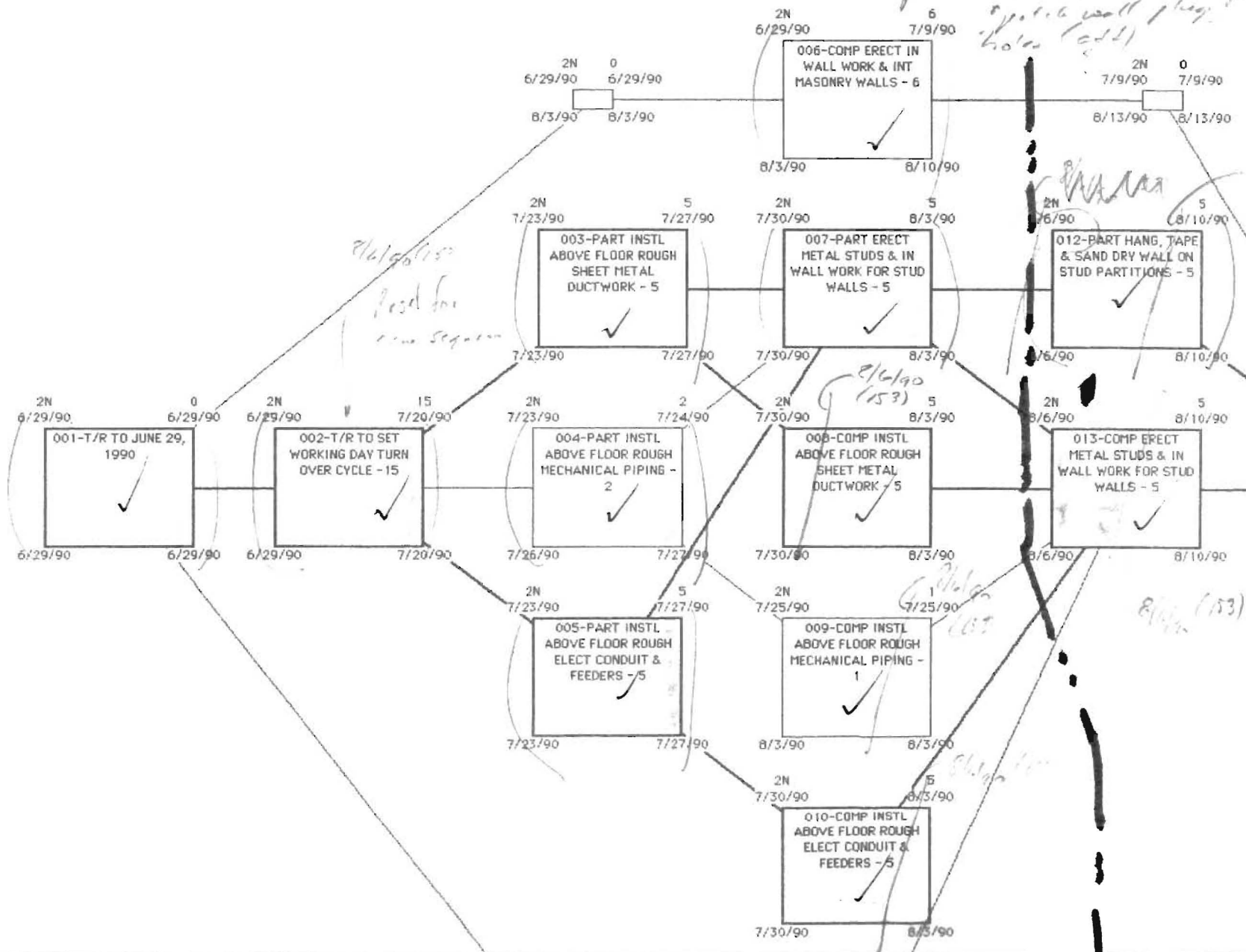
Ralph J. Stephenson PE PC  
Consulting Engineer  
323 Hiawatha Drive  
Mt. Pleasant, Michigan 48858  
ph 517 772 2537

**SHEET  
#4**

LS/LA  
OF C

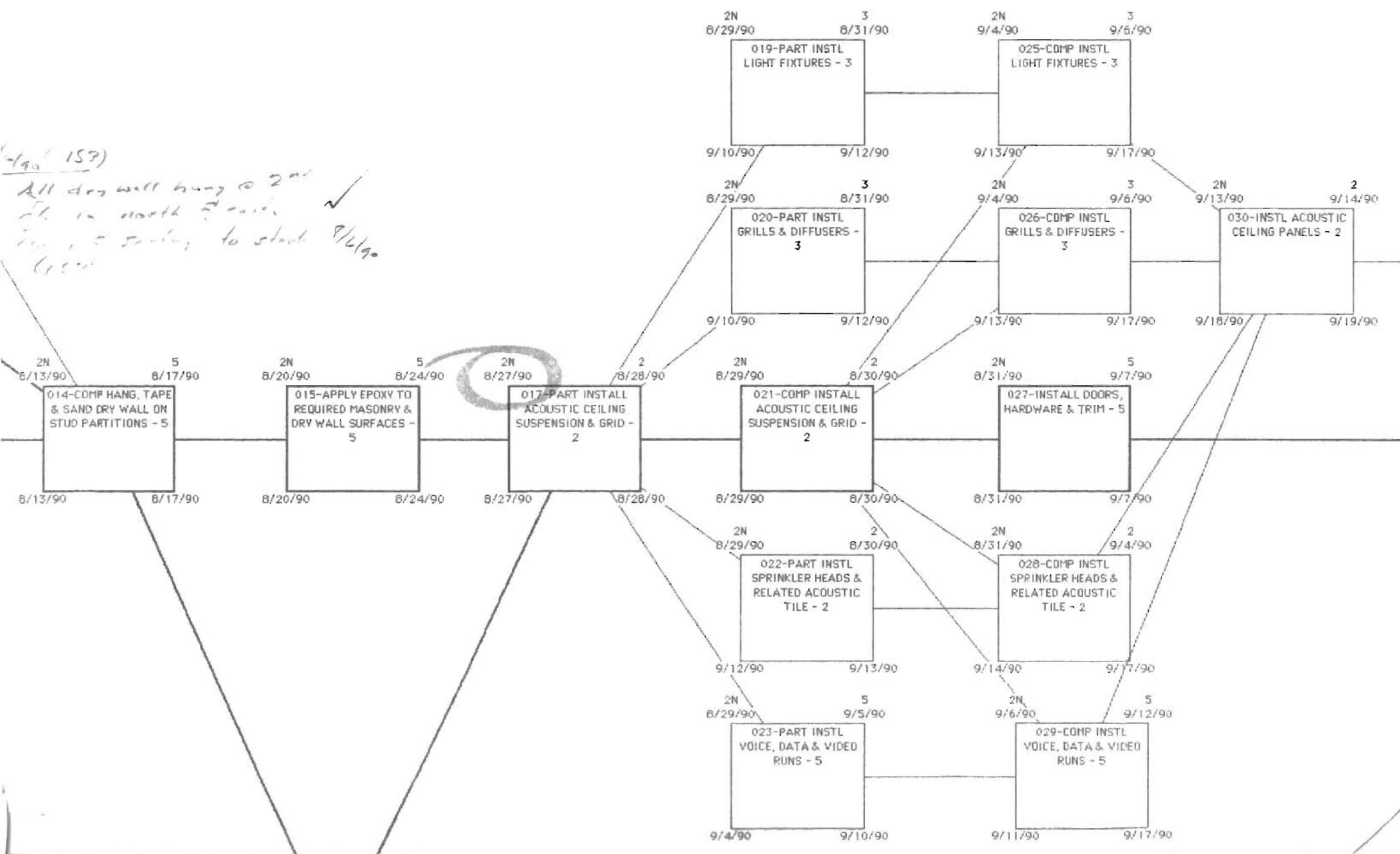
NOTE: In wall work includes frames, lintels, conduit, sheet metal duct, fire extinguisher cabinets

8/6/90 (153)  
Tendant work  
Main room  
Special wall plug  
holes (add)



IQ AS  
8/6/90 (153)

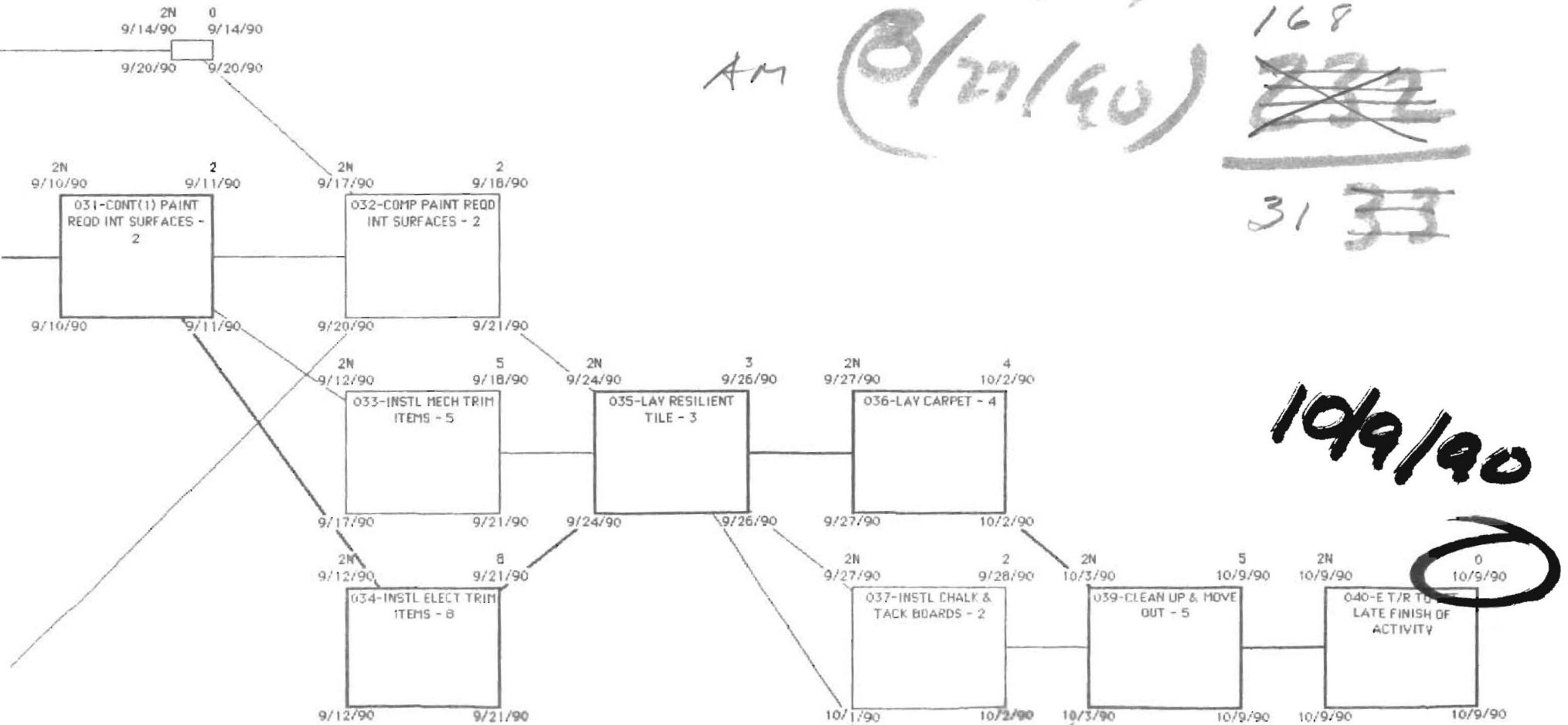
(1-90 (153))  
All dry wall hung @ 2nd  
fl. in north & south  
rooms & ready to start 8/6/90  
(153)

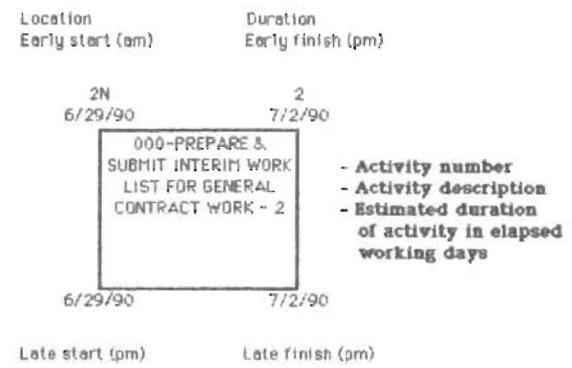
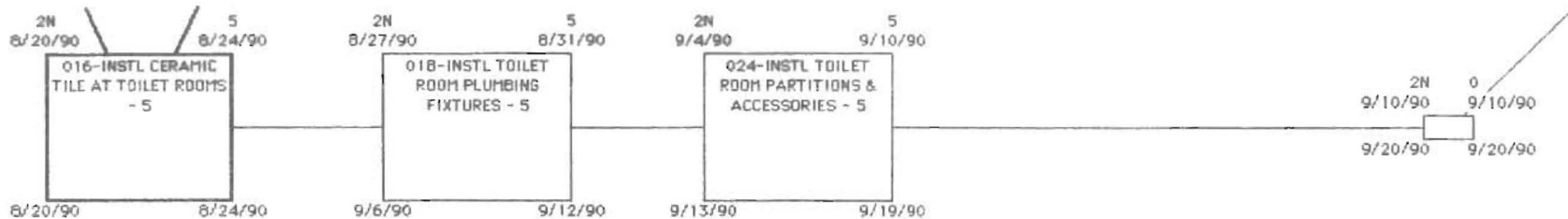


# 2ND FL NORTH (2N)

PM (10/9/90) 199

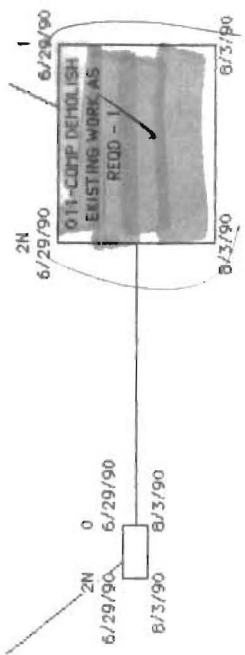
AM (8/27/90) ~~232~~  
 168  
 31 33





**Activity Information Key**







10/9/90

2nd Floor North Wing - 2N

**NETWORK MODEL FOR C. S. MOTT  
COMMUNITY COLLEGE - FLINT,  
MICHIGAN - MOTT MEMORIAL  
BUILDING REMODELING**

**Erickson & Lindstrom  
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ph 517 772 2537

Issue #1 - not issued  
Issue #2 - June 29, 1990  
I2sh#5 mmb in revtn  
disk #220  
LAN 001  
HAN 040

**SHEET  
#5**