New folder please

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

December 31, 1985

Subject: Monitoring Report #1

Manufacturers Bank Operations Center

Livonia, Michigan

Project: 85:58

Date of Monitoring: December 20, 1985 (working day 249)
(Note: The working day given following each date is a working day reference using a working day calendar with day #1, the base date, being January 2, 1985. December 20, 1985 is 248 working days from the base day, January 2, 1985, day #1. This gives December 20, 1985 a working day designation of 249. In the working day calendar, six holidays per year and all weekends are removed from the date calendar. This gives a working year of about 255 working days with one month generally considered about 22 working days.

Monitored from Issue #1 dated December 20, 1985 (working day 249)

Actions taken:

- Attended project planning scheduling meeting with owner, developer, and architect/engineer
- Discussed project and project characteristics in detail
- Prepared early laundry list of activities for various components
- Prepared summary network model for front end work, early design, preparation of contract documents, and construction
- Reviewed job objectives and goals in detail

General Summary

This meeting was one of a regular weekly series held with the owner, developer, and the architect/engineer attending. In these the project is reviewed thoroughly from a structured agenda and decisions are made and recorded as a part of the meeting.

I suggested to the Redstone organization, who are keeping official notes of the sessions, that an immediate step be taken to set the meeting minute format so each item on the agenda can be tracked relative to where it originally appeared. If, for instance, an item on software selection first appeared on the agenda and in the minutes of meeting #5 and was the 4th item under new business it would be given a permanent reference of 5.4. Each time that item appears in a new meeting, the new meeting number would be prefixed to it. Thus, if the current meeting was #11 it would appear in these minutes as 11.5.4.

Only the number of the current meeting is affixed to the original location of the item. Thus, as meetings progress item are kept on the agenda until resolved. Once resolved, they can be retired to a word processing file where permanent referencing of that item is the last two number, 5.4, and the item can be tracked through all meetings up to where it was finally retired from the minutes.

With the word processing features available now, this is a relatively simple matter and references to any particular pending item can always be found and reviewed as needed. One other item of information that should be contained on each pending item is the initials of the individual or individuals responsible for their resolution.

Although establishing the system will require a bit of planning and thinking through the file format, it should be of great help in tracking the numerous items this particular project has that will have to be resolved. It would be well to have the secretarial force of the Redstone office study the method and begin implementation soon if decided for.

Another reason for using a referencing system is that it is presently the intent to use the minutes of meeting as part of the approval process. There probably will be no formal sign offs on documents; therefore, it becomes imperative that some method of recording approvals at the weekly meetings be found for keeping good job records. Apparently the approval process has been defined and all parties to it know their role in the information flow.

From the session on December 20, 1985 (working day 249) a set of rough notes was prepared by me and given to Mr. Dan Redstone. He will mark these rough notes Not corrected and distribute them to those concerned. These are not meant to take the place of the regular minute meeting notes but merely to serve as a reference as to my understanding of what some of the conditions surrounding the project are. From this and an

early laundry list we proceeded, in the afternoon, to prepare a summary network model of actions to be taken on the project from December 23, 1985 (working day 250) through to the completion of the job. The network model session was attended by representatives of Schostak and Redstone. Copies of the network will be distributed soon to Schostak, Restone, and Manufacturers Bank.

The network model is a statement of activities to be accomplished with connecting lines showing their interrelationship. The sequence of work in the network model moves from left to right with each activity shown in boxes. The estimated elapsed duration in working days is given as a number in the box and the calculation of the network model is made using working days and converting them to dates. This summary network model is presently shown on sheets #1 and #2, Issue #1, dated December 20, 1958 (working day 249). It is a preliminary plan of work only for review and reference since in it the end date is considerably later than the end date presently set as a completion target. However, it was decided that this model should be issued and be the basis of reviews of the system sequencing.

Note that the bold faced printing and box outline along with the interconnections represents the longest path through the project. If any efforts are to be made to reduce total time length, the activities shown in bold faced type should be worked on first. We shall discuss this in more detail at subsequent meetings.

Copies of the network model are included with this report. I shall review the network model and its use in more detail at subsequent meetings. The monitoring report below is based on the network model sheets #1 and #2 along with the general notes and the laundry list prepared at the conference.

The first activity in preparing the network model was to establish an early laundry list of activities, also enclosed with this report. In this laundry list, we established the project components (CP). These are as follows:

- CD - contract documents
- DD - design development documents
- FE - front end work , permits, approvals and other such items
- FI - finish interior building work
- FN - financing

- OP - owner procurement items
- PR - programming
- RI - rough interior building work
- SB - building substructure work
- SD - schematic design work
- SI - site work
- SK - building exterior skin work
- SS - building superstructure work
- SY - building systems work

Some of these items are further defined on the summary network model.

Using the early laundry list of activities, we prepared a summary network. This model indicates that the plan review package should be submitted to the city by January 9, 1986 (working day 516). The city will then review and recommend approval of the site plan which will free up continuation of design development work and completion of schematic design. Meanwhile, other activities all as shown on the network model should be worked upon. These include:

- retention of a food service consultant
- continued preparation of program needs by Redstone for submission to Manufacturers
- continued preparation of program sequence by Manufacturers in conjunction with Redstone
- resolution of easement requirements
- completion of negotiations and execution of professional contracts
- determination of city requirements for sanitary and storm lines
- obtaining of necessary approvals from the city and county
- preparation of a plan of award and construction for building and site work

- preparation of a contract document matrix to set content of each document package
- review of major site and utility characteristics of the project including water, storm, sanitary, grading, retention, power, gas, and telephone
- ongoing discussions to set easement agreements with Schoolcraft and the church housing facility management
- resolution of Detroit Edison pole agreement and road access agreements
- resolution of the several design elements of importance to the job including:
    - retention basin characteristics
    - atrium characteristics
    - power sources
    - location of raised floor
    - landscaping characteristics
    - preparation of necessary surveys
    - checking state and federal environmental agencies for their requirements
    - design of structural frame

There are many other items that need attention that are summarized in the network model by groupings. Many of these can be found in the MNB early laundry list of activities which accompanies this report. In it, the laundry list activities are shown under the appropriate component. This laundry list is a random list of actions that must be taken and may be of help as a checklist for those involved in the project.

The network model next goes on to show preparation of contract documents. These are presently planned to start about March 10, 1986 (working day 558) and be issued successively in packages so proposals for construction can be solicited and received on a phased basis. The content of each of the document packages will be determined as we continue our meetings. This process is a common procedure to follow in planning of this type of work, and most of the people involved in the program are relatively experienced in its proper use.

The activity in the network model for preparing this contract document matrix is activity #20. Note that the network is numbered from left to right, top to bottom, and numbers on the activities should be relatively easy to locate.

Under the present plan, solicitation of early proposals for construction should start in early April (activity #28) with an early construction award being made about early May, 1986 (activity #31). This then permits a start of work on balancing and preparing the building area for construction by the end of May, 1986 (activity #39).

The summary network model makes the assumption that the structural frame is reinforced concrete. If a decision is made to go to a structural steel superstructure, there might be minor revisions to the durations but overall, it should be somewhat the same due to compensating features of each system. It should be noted that the start of building substructure work which is the intial activity for constructing the building proper is shown in mid-July, 1986 with a completion by early December, 1987. This is a construction period of about 16 1/2 months. If this completion time is to be made earlier, then either the construction time must be compressed or the start of construction must be earlier. These are major issues to be addressed in near future meetings of the owner/architect/engineer/developer team.

Again, in our meetings we shall focus heavily on this procedure. Again, it should be emphasized that the summary network model issued with this report is merely a starting point in the process. As we continue to meet and assemble ideas for the project, the network model for each section will be prepared in greater detail to provide day to day guidance and planning for the program.

Meanwhile, careful thought should be given to the present time structure of the total process so that intelligent and meaningful conversations can be conducted about any necessary compression or shortening of the times. Although most of the people involved in this program have worked with network models, laundry lists, and other such techniques, there still may be questions about the material enclosed with this report. If there are questions please do not hesitate to call me at my office at 273-5026 and I will be pleased to clarify whatever points need further explanation.

Meanwhile, I shall be in touch with Mr. Duczynski and the others to establish a time for our next planning and scheduling session.

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

I would also like to take this opportunity to wish everyone on the project team a very pleasant and prosperous New Year.

Ralph J. Stephenson, P.E.

RJS:sps
To: Mr. Larry Eastham
cc: Mr. Greg Demanski
Mr. Steve Duczynski
Mr. Daniel Redstone

Cp	Activity	Remarks
CD	-Contract documents	
DD	-Design development	
FE	-Front end work - permits, approvals,etc	
	Check requirements for retention pond	
	City conduct public hearings on site plan package	
	City review & approve site plan package	
	Clarify and resolve easement requirements	
	Convert Schoolcraft/housing REA to drawing	
	Decide on how construction is to be managed	
	Determine city reqmts for sanitary & storm lines	Where do utilities extend to?
	Determine contract document packaging method	
	Establish REA requirements with college & others	
	Execute arch contract	
	Make utility survey as required	
	Prepare & submit application for site egress	
	Prepare and distribute sign off procedures	
	Prepare format for meeting minutes	Should allow tracking of problems
	Prepare legal check list for attorney discussions	
	Provide notice to vacate to tenant	
	Request power from Detroit Edison	
	Resolve Detroit Edison ROW removal	
	Retain kitchen consultant	
	Submit site plan review package to city	
	Tenant vacate house	
FI	-Finish interior building work	
FN	-Financing component	
OP	-Owner procurement items	
	Prepare list of FFE items	

Cp	Activity	Remarks
OP	Procure computer equipment	
	Procure telephone equipment	
	Satellite dish	
PR	-Programming component	
	Conduct personnel interviews	
	Decide on extent of basement	
	Decide whether power in Fox is to be UG	Should be in REA agreement
	Determine garbage disposal requirements	
	Make decision on cellular floor vs access floor	
	Make decisions on atrium characteristics	
	Provide departmental adjacency requirements	
	Provide departmental functional requirements	
	Provide departmental locations	
	Provide departmental sizes	
	Provide departmental special systems reqmts	
	Provide departmental survey form	
	Provide food service requirements	
	Provide location of computer floor	
	Provide personnel interview notes	
	Redstone give list of program needs	
	Set parking requirements	
RI	-Rough interior building work	
SB	-Substructure	
SD	-Schematic design	
	Analyze subsoil analysis	
	Clarify use requirements for existing site drain	
	Design entry	
	Design phase 1/2 lobby interrelationships	

Cp	Activity	Remarks
SD	Determine full water service requirements	
	Determine how to balance site	
	Establish desired site grades	
	Obtain full existing utility information	
	Prepare & submit curtain wall recommendations	
	Prepare & submit site plan review package	
	Prepare & submit struct frame recommendations	
	Prepare and submit updated cost estimate	
	Prepare model of entry	
	Prepare tree survey	
	Provide electrical requirements to elect co	
	Provide gas requirements to gas co	
	Review & approve site plan review package	
	Review environmental requirements	
	Set floor to floor heights	
SI	-Site work	
SK	-Exterior bldg skin	
SS	-Superstructure	
SY	-Building systems	

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February 3, 1986

Subject: Monitoring Report #2

Manufacturers Bank Operations Center

Livonia,Michigan

Project: 85:58

Date of Monitoring: January 23, 1986 (working day 271)

Monitored from Issue #1 summary network model dated December 20, 1985 (working day 249) sheets #1 and #2

Actions taken:

- Evaluated current job status
- Updated summary network model Issue #1 dated December 20, 1985 (working day 249) to Issue #2 dated January 23, 1986 (working day 271)
- Evaluated current job status
- Prepared network model for issuance of package A contract documents Issue #1 dated January 23, 1986 (working day 271)
- Began discussions re packaging of contract documents
- Reviewed various methods of awarding construction contracts
- Discussed easements and utility requirements of total project

General Summary

As of January 23, 1986 (working day 271) the plan review package has been submitted to the City of Livonia, and it is expected it will go to council sometime in the very near future. The plan has received planning commission approval and the remainder of the approvals and releases should be complete well within our required time scale.

Meanwhile, preparation of early design documents are in work leading to a target release of early contract documents by April 9, 1986 (working day 325). A major portion of our work today consisted of discussing how the contract work is to be awarded and the method that will be used to issue the contract documents.

It appears from our early planning work it will be necessary to release the contract documents in stages if we are to achieve targets near the present desired completion dates. In our general planning we have assumed that construction of the job will require from 18 to 22 months. The Issue #2 network model sheets #1 and #2 summary diagram dated January 23, 1986 (working day 271) shows that with a start of construction triggered by mobilizing and moving on the site on May 7, 1986 (working day 345) that we might expect a completion of the building work by November 25, 1987 (working day 741). This is a time period of about 19 months and is reasonable for this kind of a project.

Compression of time much be achieved either through an earlier start of construction or a reduction in the time required for construction. Another factor in measuring completion is determining where interior work is to begin and how it is to move through to completion as building work is completed.

After much discussion and planning it was decided to break the project, for our present discussions, into several packages. At our session we identified the basic packages as described below.

- Package A - To be done by the prime contractor (TPC) Includes:
  - on site work
  - off site work
  - substructure
  - superstructure
  - cellular floor
  - concrete decks
  - general conditions and requirements

Package B - All exterior building skin work

Everything necessary to close the building to weather

Package C - mechanical and electrical work

Package D - all work in divisions 8 through 12 of the standard specification sections. These divisions are #8, doors and windows; #9, finishes; #10, specialties; #11, equipment; #12, furnishings.

Special packages - Includes:

- elevator
- security system
- food service systems
- landscaping

This is not a complete list of all the contract document packages and there is much more work to be done on this particular matter. We will continue to address packaging the work for staggered issue at each of our subsequent meetings.

At this session, we also prepared a detailed network model for issuance of package A which is a key package in the work, and which will, in all likelihood, determine the basic prime contractor to be retained for the program. This network model which will be issued in the very near future shows the sequence and activities necessary to produce the contract document package needed for on site and off site work, and the substructure and superstructure of the building. In addition, it will contain the general conditions and requirements for most other work.

The network model was reviewed by the Redstone staff and management and will be subjected to further analysis in the very near future. It is a very tight schedule and will depend for its success in implementation upon receiving information required promptly and accurately. Thus, the owner, the architect/engineer, and the developer must work hand in hand in order to insure that proper preparation and timing of the contract documents is possible.

The network model prepared at our session today will also be used to assist in completing negotiation and execution of the architectural/engineering contract. This has not been done and should be a high priority of business in the very near future. In addition, it is essential that the architect/engineer and the Manufacturers National Bank both address the matter of design development program statements intensely over the next few weeks. The entire project program should be well defined and discussed in depth, and approved so contract documents can proceed on through to completion of the work.

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The present plans as shown in the network model summary diagram Issue #2 dated January 23, 1986 (working day 271) indicate that all contract documents should be completed and submitted by July 28, 1986 (working day 401). This is only 130 working days from our current monitoring session and presents a very tight schedule of document production. Therefore, in the immediate future we will have to address in detail the plan of awarding and constructing the facility, the content of each contract document package, and especially, the continued preparation of program statements that will allow design to proceed without delay.

The present intent is to receive proposals for construction package A by April 30, 1986 (working day 340) and to have a contract awarded for package A construction by May 7, 1986 (working day 345). This is especially important now since the structural frame of the building will be structural steel and it is necesary to get an early issue of contract documents out and contracts awarded so fabrication of steel can proceed and be on the job when needed. It presently appears that building substructure work can begin by early July, 1986 with erection of the building superstructure probably starting in late August or early September, 1986.

We will have to re-evaluate the actual construction diagram now that a material has been selected for the structural frame. However, overall it is going to be critical that we work to get as much of the building structure erected and the skin installed before the end of 1986 as possible.

I shall complete the material prepared at our session and issue it in the near future to those involved. Meanwhile, I shall be in touch with Mr. Steve Duczynski shortly to confirm the date of our next planning meeting. It presently is set for all day February 21, 1986 (working day 292). At that session we will plan to monitor the job closely, to have further detailed discussions about the methods by which contract awards are to be made and to complete planning to the greatest degree possible the content of each of the contract document packages along with their production.

Ralph J. Stephenson, P.E.

RJS:sps
To: Mr. Larry Eastham
cc: Mr. Greg Demanski
Mr. Steve Duczynski
Mr. Daniel Redstone

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

March 5, 1986

Subject: Monitoring Report #3

Manufacturers Bank Operations Center

Livonia, Michigan

Project: 85:58

Date of Monitoring: February 21, 1986 (working day 292)

Monitored from package A contract document preparation network, Issue #1 sheet DA-1 dated January 23, 1986 (working day 271) and summary network model sheets #1 and #2, Issue #2 dated January 23, 1986 (working day 271)

Actions taken:

- Continued preparation of random laundry list for tenant improvement work (TI)
- Discussed recent changes and decisions to project as they impact upon plans and schedules
- Reviewed electrical document preparation and prepared network model of electrical work in COD package A
- Updated network model for preparation of package A contract documents to sheet DA 1 Issue #2, February 21, 1986 (working day 292)

General Summary

As of February 21, 1986 (working day 292) preparation of contract documents for package A lags the desired model on sheet DA-1, Issue #1 dated January 23, 1986 (working day 271) in several major decision areas. Therefore, it was felt appropriate this network be updated. We reviewed the apparent requirements relative to the work in that plan of action with the result that the printing and issuing of contract A package documents may now be complete on May 29, 1986 (working day 360) instead of the target date shown in the Issue #1 network model of April 9, 1986 (working day 325). This is a loss in time in preparation of this document package of 35 working days.

In addition, we prepared a network model incorporating the electrical work presently felt necessary to issue package A. This further impacted upon the completion date extending it out to late June, 1986. However, the electrical work will be further evaluated to insure that the work needed for package A work, which is basically site work, structural work, and general requirements actually requires the detail contemplated by the network model for the electrical work on sheet EA-1.

There has been some rethinking of the packaging of the job with the idea that possibly a later issue date could be utilized incorporating a broader scope of work defined in the initial package. It is to be cautioned that the need to initiate field work at as early a time as possible and further the need to order structural steel at an early date should weight heavily in this decision. It had been hoped, initially, as shown in the summary network model sheet #1, Issue #2 dated January 23, 1986 (working day 271) to be able to begin soliciting and receiving proposals for construction package A on April 9, 1986 (working day 325). This contemplated a start of construction in the field by May 7, 1986 (working day 345). With the new completion date for package A alone of May 29, 1986 (working day 360) construction probably would not be able to start until late in June, 1986 and possibly even later. This could have a serious impact on field work and an even greater impact on the delivery of long lead items particularly structural steel.

Thus, I suggest that every effort be made now to identify methods of recapturing the April 9, 1986 (working day 325) issue date for package A. I also suggest that we give careful consideration to limiting the scope of the initial package so that there is required an absolute minimum of contract document work to get it out for proposals. This is a matter that must be discussed immediately by the owner with the developer and the architect/engineer.

As part of our meeting, we also reviewed recent changes in decisions. The cost estimate for the project was updated in mid-February, 1986 and these costs were greater than had been expected and desired. Therefore, a careful analysis of additional cost requirements was made. The focus of cost reductions were on the lobby size and character, the atrium, the exterior stair tower compared to interior stair locations, the building exterior skin and reduction of ceiling heights from 9' to 8'6". Some decisions have already been made including:

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1. Stairs will be located inside the building.

2. Exterior material is to be architectural precast concrete.

3. The atrium is desired since it helps brings light to the interior of the building, makes it better suited for other occupancies and has an intrinsic value for future use of the building.

Another area of concern is the information about and design of the loading dock which impacts upon elevator and loading dock characteristics. These, in turn, affect preparation of structural contract documents in package A. In our rediagramming of the process for preparation of package A contract documents, considerable time was allocated for obtaining information re the loading dock requirements and then further preparing and submitting loading dock and freight elevator schematic design. I suggest that methods be found by which this process can be expedited. It is presently the major sequence of work leading to start of structural drawings and will delay issuance of contract documents if not addressed immediately and effectively.

At this session, we continued preparation of the laundry list for tenant improvement work (contract package Z). A copy of this laundry list was provided to those at the session and is attached to this report. I recommend it be used to further evaluate the scope of tenant improvement work and used as a diagramming and planning tool when the time comes to plan interior tenant improvements in detail. There is a considerable amount of work to be done in tenant improvements and early consideration as to how it is to be designed, how the contract documents are to be prepared, and how the field work is to be let are imperative.

In our monitoring of the summary network model for the total project, the city reviewed, recommended, and approved the site plan by February 10, 1986 (working day 283). Preparation of design development program statements is still in work; however, all questionnaires have been sent to the departments and should be back by early March, 1986. We further discussed the plan of awarding construction contracts. However, there is no firm decision made on this as yet.

In summary, the project is beginning to lag seriously. The major reason is a need to closely relate the program requirements with the design drawings, primarily contract documents. Therefore, I suggest that all parties make a

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thorough review of every decision required to release full production work on structural documents. I also wish to endorse the maintenance of the April 9, 1986 (working day 325) issue date for package A. If we are not able to make these early dates, close in of the building particularly will be a problem since it will be thrown into full winter weather which is always a difficult problem. It is still the intent to hold a target completion on the project for building shell work (all work excluding tenant improvements) for early fall, 1987. However, to do this it is essential that we initiate construction in the field just as quickly as possible. At our subsequent planning sessions, we shall continue to focus on the early contract document packages and the impact they have upon construction of the job.

Ralph J. Stephenson,P.E.

RJS:sps
To: Mr. Larry Eastham
cc: Mr. Greg Demanski
Mr. Steve Duczynski
Mr. Daniel Redstone

3/5/86

MNB Early laundry list

Revision as of 4/18/86

	Cp	ct pkg	Activity	F1	F2	F3	B	F4	PH	R	Si
1	TI	Z	-Tenant improvements								
2	TI	Z	Apply vinyl wall coverings								
3	TI	Z	Debug furniture systems hook up								
4	TI	Z	Hang gyp board at ceilings								
5	TI	ZJ ✓	Install & debug telephone systems								
6	TI	ZF ✓	Install & wire security consoles								
7	TI	Z	Install acoustic ceiling grills & diffusers								
8	TI	Z	Install acoustic ceiling light fixtures								
9	TI	Z	Install acoustic ceiling panels								
10	TI	Z	Install acoustic ceiling suspension & grid								
11	TI	ZJ ✓	Install and debug computer cabling								
12	TI	Z	Install ATM (automated teller machine)								
~~13~~	~~TI~~	~~Z~~	~~Install branch bank furniture~~								
14	TI	Z	Install building sound systems								
15	TI	ZK ✓	Install cafeteria furniture								
16	TI	Z	Install cafeterial intake & exhaust shafts & enclos								
17	TI	Z	Install carpeting K2 ✓ Z ✓								
18	TI	Z K ✓	Install computer furniture, fixtures & millwork								
19	TI	Z	Install computer room cooling systems								
20	TI	Z	Install computer room raised floor								
21	TI	ZI ✓	Install computer systems								
22	TI	Z	Install demountable partitions & doors								
23	TI	Z	Install draperies								
24	TI	Z	Install dry sprinkler systems in computer areas								
25	TI	ZC ✓	Install energy management systems								
26	TI	Z	Install food service ceramic tile								
27	TI	ZG ✓	Install food service equipment								
28	TI	Z	Install food service quarry tile								

3/5/86 MNB Early laundry list

	Cp	ct pkg	Activity	F1	F2	F3	B	F4	PH	R	Si
29	TI	ZK ✓	Install furniture systems at work stations								
30	TI	Z	Install gyp board ceiling susp & framing								
31	TI	Z	Install hard ceiling grills & diffusers								
32	TI	Z	Install hard ceiling light fixtures								
33	TI	Z	Install hardware & door closures ers								
34	TI	ZG ✓	Install hood fire protection system								
35	TI	Z	Install interior glazing in tenant partitions								
36	TI	Z	Install lobby control desks								
37	TI	ZK ✓	Install material handling conveyor systems								
38	TI	ZK ✓	Install meeting room furniture								
39	TI	ZK ✓	Install pallets and shelving at stock room								
40	TI	Z	Install permanent full height partitions & doors								
41	TI	ZK ✓	Install private office furniture								
42	TI	ZF ✓	Install security hardware								
43	TI	ZH ✓	Install signage & graphics								
44	TI	ZK ✓	Install special audio/visual equipment								
45	TI	ZC ✓	Install special computer grounding systems								
46	TI	Z	Install special doors at computer rooms								
47	TI	Z	Install special exhaust for conference & mtg rms								
48	TI	Z	Install special exhaust systems for laser printers								
49	TI	ZK ✓	Install special mail room equipment								
50	TI	ZB ✓	Install spot cooling and heating systems								
51	TI	ZF ✓	Install television security systems								
52	TI	ZF ✓	Install tenant security systems								
53	TI	ZEC ✓	Install tenant underground electrical systems								
54	TI	ZC ✓	Install tenant underground plumbing systems								
55	TI	ZK ✓	Install training equipment								
56	TI	Z	Install uninterrupted power source								

3/5/86 MNB Early laundry list

	Cp	ct pkg	Activity	F1	F2	F3	B	F4	PH	R	Si
57	TI	Z	Install vinyl tile								
58	TI	Z K	Install white noise system								
59	TI	Z	Install window blinds → Level								
60	TI	Z	Paint required interior surfaces								
61	TI	Z K	Plumb furniture systems at work stations								
62	TI	Z	Reinforce floors where necessary								
63	TI	Z	Relocate sprinkler heads as required in tenant areas								
64	TI	Z	Tape & sand ceiling gyp board								
65	TI	Z K	Wire furniture systems at work stations								

Add'l int landscaping plants etc. CI

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CONSULTING ENGINEER

March 30, 1986

Subject: Monitoring Report #4

Manufacturers Bank Operations Center

Livonia, Michigan

Project: 85:58

Date of Monitoring: March 20, 1986 (working day 311)

Monitored from package A contract document preparation network Issue #2 dated February 21, 1986 (working day 292) and summary network model sheets #1 and #2 Issue #2 dated January 23, 1986 (working day 271)

Actions taken:

- Reviewed current job status
- Updated network model for preparation of package A contract documents to Issue #3 and M-3 dated March 20, 1986 (working day 311)
- Updated summary network model to Issue #3 dated March 20, 1986 (working day 311)
- Discussed methods by which food service equipment decisions could be expedited
- Reviewed interaction of tenant interior design work with building design work
- Prepared network model for integration of tenant improvement items into summary diagram
- Discussed profiling of contractor proposals for construction work

General Summary

As of March 20, 1986 (working dau 311) preparation of contract documents for package A is moving relatively well although careful attention had to be given to revisions of the plan of work at our meeting. The major current problem to be resolved deals with the configuration of the cafeteria. This has become a critical functional area about which several decisions must be made. In light of this, it was decided to set a meeting for Wednesday, March 26, 1986 (working day 315) with the food service consultant to decide on several points including:

1. Traffic patterns to be used in design of the area
2. Size and configuration of serving area.
3. Size and configuration of food preparation area.
4. Size and configuration of food storage area.
5. Size and configuration of food receiving area.
6. Size and configuration of dish drop off and wash area.
7. Size and configuration of seating space.
8. Size and configuration of garbage handling area.
9. Layout of cafeteria employee service areas.
10. Food service hood sizes and locations.
11. Food service exhaust and intake shaft sizes and locations.
12. Vending machine locations.
13. Electrical requirements for food service equipment.
14. Off hour accessibility to staff.
15. Hours of operation.
16. Interior design responsibilities.
17. Need for separate utility metering and control systems.

Of these, items 1 through 9 are the most critical to immediate decision making with the remainder to be settled after or as the more important points are discussed.

The meeting on Wednesday, March 26, 1986 (working day 315) should result in at least five major decisions. These are:

1. Is the elevator and service core to stay or is it to to be moved from its present design location?
2. Where is the southeast stair to be located?
3. What is the final configuration of the food service area perimeter?

4. What is the pattern of access and egress at the food service area?

5. What are the major block locations of food service equipment?

With expedited attention being given to the contract group A work it was possible to bring the date for printing and issuing CG- A contract documents back to May 8, 1986 (working day 346) from the previous network model date of May 29, 1986 (working day 339). May 8, 1986 (working day 346) is still considerably later than is desired, but apparently those at the meeting agreed this was the earliest we could possibly expect to issue the first contract documents. Therefore, we used the date to update the summary network model for the entire project, sheets #1 and #2 from Issue #2 dated January 23, 1986 (working day 271) to Issue #3 dated March 20, 1968 (working day 311). This network model will be printed and issued in the very near future along with the revised network model for preparation of contract group A.

Revisions were also made to the logic and dates of the summary network model sheets #1 and #2 Issue #3 dated March 20, 1968 (working day 311) so as to bring total completion of the move into the new facility by December 31, 1987 (working day 765). This move in date assumes that all tenant improvement work, which basically deals with the tenant furniture, fixtures, and equipment (FF & E), is installed and the building is ready to be occupied.

It is still very early to accurately project estimated times for completion of various elements of the interior work. However, for the purposes of our analysis today we assumed that tenant improvement work (TI) would require about 114 days or slightly more than five months to install from beginning of TI work to final move in. Further the assumption was made that about 60 working days into interior building finish work that probably the tenant improvement work could be started. Meanwhile, building interior finish work would continue on out probably until late September or mid-November, 1987 concurrent with early installation of tenant improvement work.

(Note: At our meeting on March 20, 1986 (working day 311) it was mentioned that the building interior general contract work could be finished by September 2, 1987 (working day 662). A check of the building construction network indicates that this date should be October 15, 1987 (working day 712).

The feature that is of importance in TI installation is the overlapping of general contract interior finish work and

tenant improvement finish work. This overlap is greater than desirable but will be absolutely essential if the building is to be occupied by the end of 1987.

In our discussions general contract work is defined as that work conventionally to this date known as building shell work. It consists of constructing the entire facility up to a point where tenant improvement (TI) work, as preliminarily defined in the laundry list attached to Monitoring Report #3 is able to be started. These definitions are not as yet fully resolved and will be worked on in near future scope of work definition meetings.

In order to maintain the target end dates it was necessary to reduce some durations of shell building work from the initial time assumptions. However, the project still appears to be feasible, again provided overlapping of tenant improvement work and building shell work can be accomplished.

Working backwards from the necessary start of tenant improvement work presently estimated at mid-July, 1987 it appears that it will be necessary to retain a tenant work designer and provide authorization to proceed with design work no later than mid or late May, 1986. There is a considerable amount of work to do in preparation of the tenant improvement program, in preparation of the design development and contract document packages, followed by extensive work in soliciting, receiving, and awarding contracts for this work. In subsequent meetings we will focus intently on the process needed to bring FF & E and TI work into focus.

Meanwhile, the issue #3 summary network model, which will be issued in the near future, should provide an overall guideline to the work.

As part of our work today we identified features that should be given careful attention in selecting the general contractor. These items will be cast into a format that will allow them to be used as guidelines for identifying potential candidates for the general contract work.

So far as contract document grouping is concerned, we have not yet addressed the full needs except for contract group package A. Contract group A work accounts for about 42% of the total cost of the job according to the preliminary cost estimates, and from those proposals will be selected what will be called the general contractor. The general contractor will then assist the owner and the architect/engineer in issuing subsequent contract groupings. It will be critical to properly package these subsequent phases so that minimum no delays

occur in awarding contracts and getting work into the field for various sectors of the job. At our next session I recommend we concentrate heavily on analyzing the content of the subsequent contract group packages with the parties involved.

Another area of concern at present is the computer room. Questions about the area deal with what is going to be provided now so as to accommodate a future increase in the amount of space allocated to computer facilities. A basic decision was made that we will size mechanical and electrical equipment now for projected ultimate capacity. However, there is yet to be made a final decision on this matter. It is being continuously reviewed by the in house staff of Manufacturers.

Most design questions about the atrium have been answered although there is still some question about the total use of the space. This matter is apparently at a point now where it no longer is a critical impact upon CG-A work.

Overall, the project is beginning to come together in more cohesive form although there are still many loose ends that must be continuously addressed. Presently, we are holding a target issue date for issue A of the contract group at May 8, 1986 (working day 346). Future contract groupings will be evaluated in our subsequent meetings. It has been assumed that we will complete all work for final move in to the entire project by the end of 1987 with tenant improvement work to start in mid-July, 1987. To do this, it will be important that an interior design consultant be selected and brought on board sometime within the next one to two months. I recommend early attention be given this matter.

As noted above, I shall print and distribute the network diagrams prepared from this meeting including the revised issue M-3 of the contract group A document preparation network dated March 20, 1968 (working day 311) and the updated Issue #3 of the network model summary network model sheets #1, #2,

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and #3. The next planning and review meeting is presently set for a full day Friday, April 18, 1986 (working day 332) at the Redstone office. Unless I hear to the contrary I shall assume that this date is satisfactory to all concerned.

Ralph J. Stephenson, P.E.

RJS:sps

To: Mr. Larry Eastham
Mr. Greg Demanski
Mr. Steve Duczynski
Mr. Daniel Redstone

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

May 1, 1986

Subject: Monitoring Report #5

Manufacturers Bank Operations Center

Livonia, Michigan

Project: 85:58

Date of Monitoring: April 18, 1986 (working day 332)

Monitored from package A contract document preparation network issue M-3 dated March 20, 1986 (working day 311) and summary network models sheets #1 and #2, Issue #3 dated March 20, 1986 (working day 311).

Actions taken:

- Reviewed status of easements
- Monitored preparation of package A contract documents
- Evaluated current status of project on summary network
- Reviewed current status of food service work
- Discussed process of obtaining administrative design review
- Discussed process of obtaining building permit
- Reviewed status of request for proposals
- Continued work on defining proposal packages
- Briefly reviewed backup power supply situation

General Summary

As of April 18, 1986 (working day 332) major work in progress deals with preparation of drawings and specifications for contract document package A. The target for printing and issuing these documents is currently being held at May 8, 1986 (working day 346) and it appears that this date can be met.

It is very important to at this time begin further definition of the contract document packages. We began working on this in depth at our session today, reviewing the past work on contract package and adding into it new items that deal with future packaging on the program.

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A brief discussion of each major element reviewed in our monitoring session is given below.

Contract document package A

Presently most schematic and preliminary design work has been done to the point where structural drawings are well along. However, some information is still needed for completion of these drawings including elevator information, primarily fright elevator, atrium information, service court retaining wall information, exterior precast details where the facing meets the foundation wall, roof drain locations, configuration of the future basement, the embeds that are to be considered for the A package, and miscellaneous information regarding mechanical and electrical work, primarily sleeves and underground line locations.

Elevator information is presently being obtained. It was noted that if the elevator gets any larger it will affect layouts of the floors. However, the intent is to get as much information now and include it into the package A contract documents. It was decided that the elevator package should be released as quickly as possible. This was designated as package E and will be discussed below.

At the atrium, information is primarily needed on venting and openings. At the service court retaining wall, exhaust opening data and layout information is required as soon as possible. The roof drain locations are being resolved internally at Redstones and should not cause a major problem.

Of critical importance are embeds in the cast in place concrete work that must be considered in package A. These could include:

- elevator rail brackets
- elevator sill embeds
- stair supports
- dock leveler embeds
- electrical in floor outlet boxes
- electrical in floor outlet boxes
- electrical trench headers
- piping sleeves

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- electrical sleeves
- precast support angles
- anchor bolts for structural steel

The structural engineer had several questions relative to what miscellaneous items were to be included in package A. Those items to be included were:

- building floor slabs on grade
- loading dock concrete
- dock levelers
- dock leveler embeds

Those items not included were:

- underground utilities at the ground floor
- miscellaneous iron stairs
- site work flat work
- loading dock apron
- main lobby stair

Other miscellaneous items of work to be included will be as the contract document packages are completed.

Site drawings for package A will include the civil work and the electrical and mechanical site work. Site revisions are being made to the building footprint, but the drawings are in reasonably good shape and there should be no major completion difficulties. Curbs and gutters, light pole bases, landscaping, irrigation will be included in the documents. Installation of the well may be in package A although this is not yet finally determined. Cafeteria terrace retaining walls will not be included.

There will be issued with package A a set of architectural reference plans. However, these will be of minimal detail quality to be used for general information. The mechanical and electrical drawings to be issued will be nominal since most of the work that deals with mechanical and electrical work considerations relative to the structure will be shown on the structural drawings.

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Overall, it presently looks as if package A should be able to be issued in reasonably good condition. A list of the elements in package A were printed out from the laundry list and provided to all at the meeting. Present plans are that with the issuance of package A by May 8, 1986 (working day 346) it could be possible to have construction starting on the site by mid-June, 1986 with foundation work beginning in mid or late July, 1986. It is to be re-emphasized that our summary network model shows a very tight completion date in order to finish and move into the new facility by December 31, 1987 a.m. (working day 765). Thus, the award of contracts and the subsequent completion of other packages must be maintained on a very tight and rigorous schedule.

As part of our work package A, we discussed the easements necessary to be obtained from Schoolcraft College. These are being worked upon now by Manufacturers National Bank, and revolve primarily around Fox Road and access to utilities. Manufacturers would like to settle the matter in the near future if at all possible.

Food service work has been discussed in great detail over the past few weeks, since it did impact strongly upon package A work. As of April 18, 1986 (working day 332) there is a tentative plan of food service layout being used as a base drawing. It was noted that freezer sizes are permanently set at the maximum size now. There still is no final determination of electrical requirements. These will be determined from the equipment characteristics.

In order to get under way at the site, it will be necessary to obtain an administrative design review which will be applied for after the presentation on building design to Manufacturers, probably in late April or early May, 1986. It will also be necessary to obtain a partial building permit to start construction. Apparently we do not need the administrative review apparently to apply for this permit. However, approval of the review is needed before the permit will be issued.

As a part of package A it will be necessary to decide on a method of receiving and reviewing proposals from contractors. A preliminary list of contractors has been prepared, and we talked in some detail about the screening and interviewing methods to be used. It is recommenced that any information provided to contractors by Manufacturers in any preissue screening conference be in writing so all contractors have the same information. There, undoubtedly, will be a pre-proposal meeting with all contractors proposing on the project after the A package is issued and before proposals are due. I recommend that attendance at this pre-proposal meeting be mandatory so there is no possibility of information inadvertently not being given to one of the proposers.

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Proposal contract document packages

At our session today we continued elaborating on information to be contained in each of the succeeding contract document packages. It was decided that the following packages will be considered at present. These are listed in ascending order of their letter rather than in issue order. Issue dates for each will be set in subsequent meetings.

Package A - substructure, superstructure, skin and site work

Package B - all exterior skin work

Package C - mechanical and electrical work

Package D - basically spec sections 8 through 12 (Note: There is some overlapping into earlier spec sections in this group of work items. However, the basic elements are in 8 through 12).

Package E - elevator

Package F - security systems

Package G - food service systems

Package H - signs

Package I - computer equipment and installation

Package J - voice and data

Package K - furniture and equipment procurement and installation

Package Z - tenant improvement work

There is still considerable discussion being held about what is included in package Z. To help bring this into focus we made selective runs of our current laundry list after correcting the Z item list to conform to what is intended. This revised laundry list will be rerun and issued as a separate item in the very near future.

It should be pointed out here that award of a contract for design of tenant improvements must be given serious consideration now. In our summary network model Issue #3 dated March 20, 1968 (working day 311)on sheets #1 and #2 it was indicated that a contract for tenant improvement design work must be provided and executed no later than mid-June, 1986 and preferably earlier if we are to meet requirements for completing the project by the end of 1987.

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This will get to be an important element of the project and should be constantly reviewed and kept in mind as a critical item. At subsequent sessions we will refine the total work to be included in each package so as to give well structured guidelines to information that must be brought on line to continue field work on the project.

General

Overall, progress toward early critical dates has been reasonably good and we are now beginning to concentrate efforts on what happens after issue of package A, and after start of field operations. There must be no let up in the attention given this subsequent work since it will be critical to have contract documents prepared for following work just as early as possible. Our present target early finish for all contract documents is August 26, 1986 (working day 422). This is later than is totally desirable, and it is a date that must be evaluated again possible improvement.We shall keep this as an integral part of our future monitoring sessions.

Our next planning and monitoring is to be on May 23, 1986 (working day 357). I shall check with members of the project team to confirm that this date is still valid.

Ralph J. Stephenson,P.E.

RJS:sps

To: Mr. Larry Eastham
cc: Mr. Greg Demanski
Mr. Steve Duczynski
Mr. Daniel Redstone

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

June 6, 1986

Subject: Monitoring Report #6

Manufacturers Bank Operations Center

Livonia,Michigan

Project: 85:58

Date of Monitoring: May 23, 1986 (working day 357)

Monitored from package A contract document preparation issue network Issue M-3 dated March 20, 1986 (working day 311) and summary network models sheets #1 and #2 Issue #3 dated March 20, 1986 (working day 311)

Actions taken:

- Reviewed current status of package A contract documents
- Reviewed total project relative to summary diagram
- Discussed remaining work to be done in front end operations
- Reviewed procedures being considered for contractor selection
- Continued identifying and defining contract document packages

General Summary

As of May 23, 1986 (working day 357) contract document package A,for substructure, superstructure, skin, and site work elements has been issued. Proposals are due back on June 3, 1986 (working day 363) with a pre proposal meeting to be held Tuesday, May 27, 1986 (working day 358). There is some consideration of extending the proposal due date to June 9, 1986 (working day 367). This matter is being reviewed.

Preparation of the design development package is now merging with preparation of contract documents and both of these are being carried out concurrently for the remaining stages of the work. Yet to be completed in the design development activity group are design of the skylights, the roof system, lobby details and finishes, finishes on the monumental stair and atrium details. It is presently the intent to bring in a roofing consultant, and this contract will be executed by Manufacturers National Bank on May 30, 1986 (working day 361).

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Work also continues on the program statements. Those now critical, and needed from Manufacturers National Bank by Redstone are the lower level locker rooms, the service areas, and the computer room area. There was no current word on when this work would be completed.

It is still planned to move into active field operations by early or mid-June, 1986. This may not be totally possible because of the need to very carefully evaluate the initial contract award. During our session we prepared a sample analysis of factors that might be important in making a decision as to which contractor would be best for the project. These factors included such items as:

- job staffing
  - project management
  - field management
  - office management
  - principal commitments
- fees
  - shell building
    - overhead and profit
    - general requirements
  - tenant improvements
    - overhead and profit
    - general conditions
- current workload
  - dollar volume
  - number of projects
  - types of projects
- experience
  - in MNB type buildings
  - with packaging contract document issues
  - with building sizes

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Some sample quantities were assigned to a decision mapping format and a preliminary result run made. It should be pointed out that this is not considered an authoritative evaluation of the various elements, since for many of the factors full information was not available. However, I suggest we use a similar technique in the ultimate evaluation of the contractor proposals. I shall discuss this in more detail with Mr. Demanski and Mr. Duczynski.

We next made a complete review of the laundry list of early front end items. This was taken from a laundry list of early items dated May 23, 1986 (working day 357). A brief review of the analysis is given below:

- clarify and resolve easement requirements

  The location of the primary source of water has been negotiated with Schoolcraft College. However, it now appears that the second source from the east and the north side of the Six Mile Road right of way which was originally approved by the City of Livonia now is not approved for use.

  There are two apparent solutions. First to tap in Fox Street which would require approval by Schoolcraft College and Trinity Baptist Church or tap in the Six Mile south side new extended eight inch main. Apparently Manufacturers would have to extend this line. A review of this matter is in work and it should be resolved as quickly as possible. Meanwhile, the agreement with Schoolcraft College is being formalized by Manufacturers.

- Complete conduct personnel interviews

  Bank programming interviews for the package K work still must be done by Manufacturers. These are in work and will be addressed intensively over the next short period of time. Meanwhile, Redstone will be interviewing for information relative to the tenant improvement package (package Z).

- establish reciprocal easement agreement requirements

  These have been set and are now being reduced to legal documents. There will be agreements between Schoolcraft College and Manufacturers National Bank being prepared by Manufacturers. There will also be agreements between Schoolcraft College and Livonia. These documents are being prepared by those parties. They are not yet executed.

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- execute architectural contract

  In work.

- prepare list of FF & E items

  This is in work and part of our ongoing identification of specific elements for each contract document package.

- procure computer equipment

  Specifications were delivered by Manufacturers Bank this week. These specifications and additional computer information are essential for completion of the mechanical and electrical package C.

- procure telephone equipment

  There is no action on this item as yet. It is very important since it affects the cellular floor and is critical to completion of contract document package C.

- prepare department adjacency requirements

  About 40% complete.

- provide department functional requirements

  About 10% complete.

- provide department locations

  About 80% complete.

- provide department sizes

  About 10% complete.

- provide department special systems requirements

  About 5% complete.

- provide department survey forms

  About 50% complete.

- resolve Detroit Edison right of way removal

This action has not yet been taken but is in progress through Manufacturers attorney. It should be resolved in early or mid-June, 1986.

- retain additional kitchen consultant

The original kitchen consultants' work is now just about complete. Another consultant will be retained to complete the kitchen equipment drawings and specifications that will be used to solicit proposals.

We next concentrated on identifying additional items in the various contract document packages. These packages are still substantially as outlined on page #5 in Monitoring Report #5. The list of contract document packages to be used is given below:

Package A - substructure, superstructure, skin and site work

Package B- all exterior skin work

Package C - mechanical and electrical work

Package D - basically spec sections 8 through 12 (Note: There is some overlapping into earlier spec sections in this group of work items. However, the basic elements are in 8 through 12).

Package E - elevator

Package F - security systems

Package G - food service systems

Package H - signs

Package I - computer equipment and installation

Package J - voice and data

Package K - furniture and equipment procurement and installation

Package Z - tenant improvement work

We are still working to add items needed for each of the packages into our master laundry list. We have issued package A and that laundry list as shown in the master list is

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reasonably accurate. Package B, C, D, E, F, G, H, I, J, K lists are also being brought to completion. The interrelationship between the contract document work in K as compared to work in package Z is somewhat complicated and we are making efforts to resolve this at each of our sessions.

A full tabulation of the laundry list prepared on May 23, 1986 was given to each individual attending that meeting with the intent that they would work on it to add and reclassify items into the proper contract document package. This is very important if we are to clearly define what is to be included in each of the proposal packages to be issued to the selected contractor. Undoubtedly once this contractor has been retained and a contract executed with him, it will be imperative to go over this laundry list with him to determine how he feels the documents should best be issued. This will be especially critical since at some point the selected contractor for package A will be required to provide Manufacturers with a guaranteed maximum price (GMP). There are parameters written into the specification which determine at what point this guaranteed maximum price will be provided. Therefore, it will be essential that close cooperation between Manufacturers, Redstone and the selected contractor be established early and maintained throughout so that the work can proceed with a minimum of conflict and confusion. We shall discuss this matter in greater depth as the project is assembled and brought onto the job.

I shall be in touch with Mr. Duczynski and Mr. Domanski shortly to set the next planning and monitoring session. There will be an effort to space these planning and monitoring meetings more closely together and we shall set the session for as far ahead as we feel it appropriate in the near future.

Ralph J. Stephenson, P.E.

RJS:sps

To: Mr. Larry Eastham
cc: Mr. Greg Domanski
Mr. Steve Duczynski
Mr. Daniel Redstone

1: **Those attending meeting**
1.1: **Greg Demanski**
1.2: **Steve Duczynski**
1.3: **John Fancher - Project manager WA**
1.4: **Don Patton - Vice president WA**
1.5: **Steve Urban**
1.6: **Danny Redstone**
1.7: **Ralph J. Stephenson**
1.8: **Jim Walworth - part of afternoon**
1.9: **Henry Valar - part of afternoon**
2: **People involved in the job**
2.1: **Walbridge Aldinger**
2.1.1: John Moriarty - Field superintendent
2.1.2: John Fancher - Project manager
2.1.3: Don Patton - Vice president and officer in charge
2.1.4: Kenny Beaudoin - General superintendent
3: **Agenda**
3.1: **Unresolved items**
3.1.1: Clarify & resolve
Determine final location of electrical equipment room
MNB concerned about the location because of water damage potential

To be resolved outside of meeting
Redstone has data needed to make decision
Decision will be made June 27, 1986
If relocated & affects bid package A will be issued on a bulletin
Must have information from Redstone to resolve
Danny very concerned about this matter
Must be resolved in conference with Alastair Carlyle
Made tentative decision to leave as is for today

Determine final location of telephone equipment room
MNB concerned about the location because of water damage potential

To be resolved outside of meeting
Redstone has data needed to make decision
Decision will be made June 27, 1986
If relocated & affects bid package A will be issued on a bulletin
Must have information from Redstone to resolve
Danny very concerned about this matter
Must be resolved in conference with Alastair Carlyle
Made tentative decision to leave as is for today

Second source of water
Reduced length of water main in Fox
How do we issue the revision. Steve D. said issue as bulletin

Selected tap into Fox
Schoolcraft easement has been verbally approved

Schoolcraft easement must be legally processed
City must have approval of Schoolcraft to provide water to the site
Must still execute letter of intent with Schoolcraft
Tap crosses Trinity Baptist property
May not need Trinity Baptist approval - Redstone will check
Both taps are shown on the drawing in proper location
Decision on issue of documents to be made later
Second source needed for insurance

Relocation of jogging track and retention pond
Scale pond from drawings & stake it? Can't do this because shape of pond might change. The present location of the pond encroaches on a possible future road. Redstone will revise drawings and issue as bulletin. Will be issued Tuesday, July 1, 1986.

Walbridge needs just as soon as possible
Walbridge will use as a construction retention pond

Formalizing of agreement with Schoolcraft College
Legal work not done as of June 16, 1986
Greg D will follow up on this

Completion of personnel interviews
K package
Completed by MNB
Are now doing organizational survey of departments
No impact on design at present
Z package
To be done by Redstone
Not completed as yet
Being done by Leonardo Fabielli

Establish REA requirements
Included with water easement documents described above

Execute architectural contract
Not executed by MNB as of June 16, 1986
Being reviewed by attorneys

Procurement of computer equipment
Have revised electrical requirements drawings in hand
Revised electrical drawings received June 19, 1986
Paul McKeough reviewing. Seem to be ok

Procurement of telephone equipment
No word on this
No work done as yet
Boxes going in deck on grid
No impact now on job progress

Provide departmental adjacency requirements
About 50% complete
Being done with the organizational survey (being done by GD)

Provide departmental functional requirements

About 15% complete
Being done with organizational studies
Provide departmental locations
About 80% complete
Will not impact on current design
Provide departmental sizes
10% complete
Will not impact on current design
Critical level is the lower level
Impacts on underground utility design
Resolve Detroit Edison easements
Not resolved as yet
DEC has given us the equivalent of a service agreement
Must add new poles
Removal will be at MNB cost - will pay DEC
New poles and line at DEC cost
Approval to DEC was given June 16, 1986
We are now waiting for DEC to move line
SD feels DEC will not move the line until get easement for pole
Guy wires
New pole
No impact on field work in foreseeable future
Property power easement document is a whole new process
No information on how long this will take
Atrium underfloor smoke vent system
Will leave on drawings
Still some question about wall types at the atrium
Fan sizes affected by the openings in atrium wall
Atrium designed not to be enclosed

3.2: **Packaging of contract documents**

3.2.1: Package A - substruct, superstruct,arch conc & site work - issued 5/16/86
Will be issued with addendum #1 changes by Tuesday, July 1, 1986
Buff tone concrete is not available
Will be a white cement
Affects architectural cast in place concrete
Column covers will be cast in place
Redstone will select another color
Brand name cement not available
Important to getting design mixes
Affects architectural precast concrete
Will approved-for-construction drawings for package A be issued?
Drawings will be reissued without changes except for pre bid addendum
WA have already started submittal preparation from initial set
Any changes to the A package drawings must be made by bulletin

Permits
Steve U getting permit - WA doing leg work
Will have shell permit Tuesday, July 1, 1986
Selection of metal deck
Owner has selected Inryco deck

3.2.2: Package B - all exterior skin work
Will take Redstone about 25 man days minus spec items to complete preparation of contract documents. Will take about 11 working days. Will try to issue by July 14, 1986

WA will break into approx 10 contract packages
May have one or more individual contractors in each of the separate WA construction bid packages.
Walbridge will break the contract document packages into constuction bid packages. ie construction bid package B 3 would be for lobby curtain wall & might have one or more specialty contractors involved

01. Fireproofing
Know all UL ratings
Is now a spec item
Will be a spray on material
Must spray the deck

02. Architectural precast & related items
Calking for precast
Redstone progress
Have completed design development
Now to be converted into working drawings
Starting today
Will require 4 man days

03. Lobby curtain wall
Redstone progress
Design development complete
To be put into production today
Will take 2 man days to

04. Sash & glazing & related items
Strip sash
Entry doors
Hardware for entry doors
Redstone progress
Strip sash - almost done - 1 man day to complete productn dwgs
Entry doors & hardware
No production work done
Not tied to security system
No hardware schedule prepared
Will take 6 man days (spec) from approval

05. Skylights & skylight framing
Redstone progress
Almost complete
Will require 2 man days to complete working drawings

06. Exterior louvers if any
Redstone progress
Have no horizontal exterior louvers
07. Exterior doors & hardware
Exterior hollow metal doors
Revolving doors
Redstone progress
Exterior hollow metal doors
Need security information to specify hardware
Man doors must be secure
Greg will obtain info for Redstone
Will require about 5 man days to complete documents
Revolving doors
Just going into production
Will require 2 man days to do contract documents
08. Exterior overhead doors & operators
Redstone progress
Not yet started in working drawings
Will require about 3 man doors to complete documents
09. Steel stairs
Stair framing
Handrails
Redstone progress
Does not include monumental stair
Well along
Will require 2 man days to complete documents
10. Roofing & equipment curbs
Will be a built up ballasted roof on 2 layers of insulation

WA want to hold the roofing back from the edge of the roof to dry in
Must work out construction details of edge condition
Redstone will work with WA to set construction details of roof edge
Redstone progress
Roofing out of design development
Will take about 4 man days to complete production
Roof unit specs will be issued with package B
11. Metal siding
Redstone progress
Will take 2 man days to complete production drawings
12. Roof drain system/building storm system
Need to have roof drains connected by January 15, 1986

13. Long lead mechanical equipment
Boilers - delivery 16 weeks from approval
Could be issued separately from other contract documents in package C

Roof top HVAC units - delivery 12 to 16 weeks from approval
Could be issued separately from other contract documents in package C

MNB must decide on overall lighting characteristics

14. Long lead electrical equipment
THE EMERGENCY GENERATOR, THE UPS & THE UNIT SUBSTATION ARE EXTEMELY CRITICAL ITEMS. PRESENTLY THE D (DELIVERY) SERIES ANALYSIS SHOWS LATER THAN DESIRED RECEIPT OF THE ITEMS ON THE JOB. MUST EXPEDITE!!!

Emergency generator - delivery about 6 months or longer from approval
Could be issued separately from other contract documents in package C

Motor control centers - delivery about 3 months from approval
Could be issued separately from other contract documents in package C

Uninterrupted power system - delivery about 6 months from approval
Still working to determine the type of system to be used

Could be issued separately from other contract documents in package C

MNB may not have data soon enough for early ordering

Unit substation - delivery 6 to 9 months from approval
Could be issued separately from other contract documents in package C

Switchgear
Transformers

3.2.3: Package C - mechanical and electrical work

Factors in issuing CD-C
Electrical could be issued 2 weeks after mechanical
Mechanical could be issued in 60 to 90 calendar days
Might be able to issue by late August, 1986
However are moving long lead items to package B
VA wants to award mech/elect underground by August 15, 1986
VA wants to award mech/elect for slabs by August 15, 1986
Mechanical - also see package B
Long lead time items - some items have been put in B
Fire booster pumps - delivery 12 weeks from approval
Could be issued separately from other contract documents in package C. However probably need the entire fire protection package to let this work.

Need insurance, city and architect approval
Boilers - delivery 16 weeks from approval - put in B
Could be issued separately from other contract documents in package C

Roof top HVAC units - delivery 12 to 16 weeks from approval - put in B
Could be issued separately from other contract documents in package C

MNB must decide on overall lighting characteristics

Halon system - may not be long lead item
Want a halon system in lieu of a wet system at the computer room.
Could be issued separately from other contract documents in package C

Boiler stack - standard item, not normally long lead
Central water heater - standard items
Potentially difficult areas
Will put roof drainage in package B
Need to have roof drains connected by January 15, 1986
Fire protection system approvals
Food service rough in
Have no plan at present
No decision on consultants
Will have decision as soon as consultant proposal received

Check fire rating over the main mechanical equipment room
Quantify roof sleeves to get allowance price on penetrations

Electrical - also see package B
Long lead time items - some items have been put in B
Emergency generator - del -b6 months or longer from approval - put in CB
Could be issued separately from other contract documents in package C

Motor control centers - delivery about 3 months from approval - put in CD-B
Could be issued separately from other contract documents in package C

Uninterrupted power system - del about 6 months from approval - put in CD-B
Still working to determine the type of system to be used

Could be issued separately from other contract documents in package C

Unit substation - delivery 6 to 9 months from approval - put in CD-B
Could be issued separately from other contract documents in package C

Switchgear
Transformers
Telephone equipment
No word from MNB on the system
Energy management systems
MNB must decide how far they want to go with the energy management system.

Potentially difficult areas
Food service rough in
Probably will have special light fixtures in
Lobby
Atrium
Cafeteria
Will need temporary power for elevator
Where do we locate the electric room?
Still up in the air says Jim W
Very important
Are we going to form or core the openings?
Don't have penetrations identified yet
Some electrical penetrations have been identified in CD-A

IBM should review

3.2.4: Package D - interior work
Will try to finish & issue by September 1, 1986
All masonry
Redstone progress
Have exterior masonry at loading dock & at roof stair
May have some interior masonry walls - will be resolved
Will take 2 man days to complete working drawings

3.2.5: Package E - elevator - issued with A
Need power to run elevators
Want one elevator operative by April 1, 1987

3.2.6: Package F - security systems
Will affect preparation of hardware schedules for all security doors.

3.2.7: Package G - food service systems
3.2.8: Package H - signs
3.2.9: Package I - computer equipment and installation
3.2.10: Package J - voice and data
3.2.11: Package K - FFE
3.2.12: Package Z - tenant improvement woek

3.3: How to schedule the project

3.3.1: Issuance of the contract document packages

3.4: Continue identify contract docment packages

4: Separate group doing the tenant improvement work

4.1: Who are the people in charge

4.1.1: Carmine Petrilli - in charge
4.1.2: Leonardo Fabiilli - doing program
4.1.3: Renee Hrdlicka - interior designer

5: Authority patterns

5.1: Steve Ducazynski

5.1.1: Is the project administrator
5.1.2: Schostak is MNB's agent for all phases of the work
5.1.3: All correspondence goes through his office
5.1.4: Bulletin quotes to go to Steve D and Redstone at same time

5.2: Greg Demanski

5.3: If a problem exists in drawing interpretation go the Redstone direct

5.4: Are meeting every week

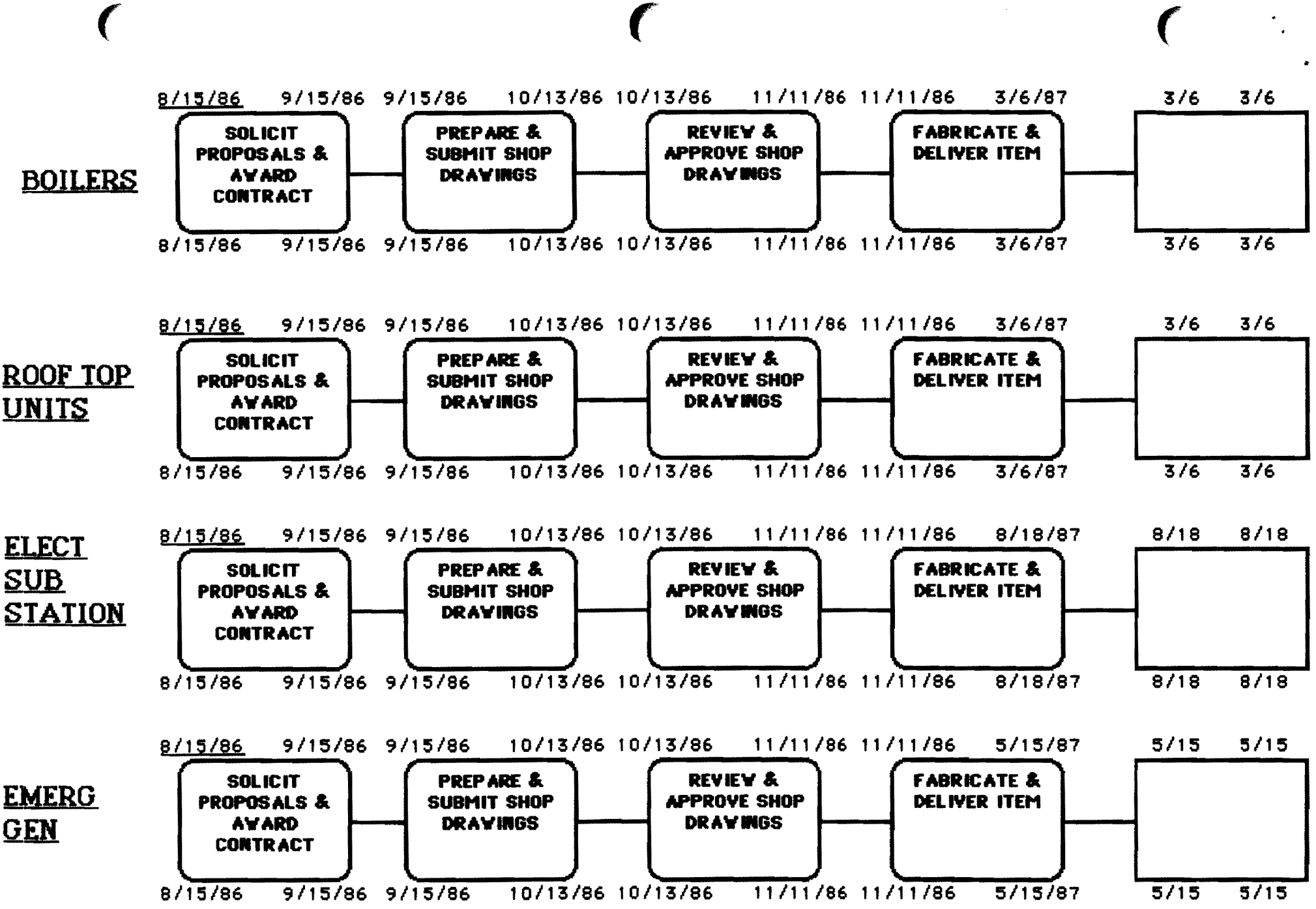
5.4.1: Team meetings
MNB
Schostak
Redstone
Walbridge Aldinger

6: Key dates

6.1: Notice of award - Monday, June 16, 1986
Are assuming all parties will work off the letter of intent

6.2: Letter of intent to be issued today - June 26,1986

6.3: Contract now being revieved by the attorneys
6.4: Trailer moved on site - Wednesday, June 27, 1986
6.5: Full move in to the site - Monday, June 30, 1986
6.6: Intended contract completion date - December 1, 1987
7: Changes
7.1: Redstone issues bulletin
7.1.1: Where the scope is determined by MNB saying it must be done
7.1.2: Where the change & scope is to be revieved before decision is made
Exploration done before the bulletin is issued
7.2: Walbridge Aldinger quotes bulletin
7.3: MNB & Redstone approve bulletin quote & scope
7.4: Redstone issue change order
7.5: Field orders are to be issued only where extreme expediency is needed
8: General notes
8.1: Walbridge Aldinger wants to set col A as base reference line
8.1.1: All work will move from col line A and to the northwest
8.1.2: Structural steel will erect full height starting on col line A
8.2: WA has not mailed schedule of values to Redstone
8.3: WA is assembling submission material


BOILERS
8/15/86
9/15/86
9/15/86
10/13/86
10/13/86
11/11/86
11/11/86
3/6/87
3/6
3/6
SOLICIT PROPOSALS & AWARD CONTRACT
PREPARE & SUBMIT SHOP DRAWINGS
REVIEW & APPROVE SHOP DRAWINGS
FABRICATE & DELIVER ITEM
ROOF TOP UNITS
8/15/86
9/15/86
9/15/86
10/13/86
10/13/86
11/11/86
11/11/86
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FABRICATE & DELIVER ITEM
ELECT SUB STATION
8/15/86
9/15/86
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SOLICIT PROPOSALS & AWARD CONTRACT
PREPARE & SUBMIT SHOP DRAWINGS
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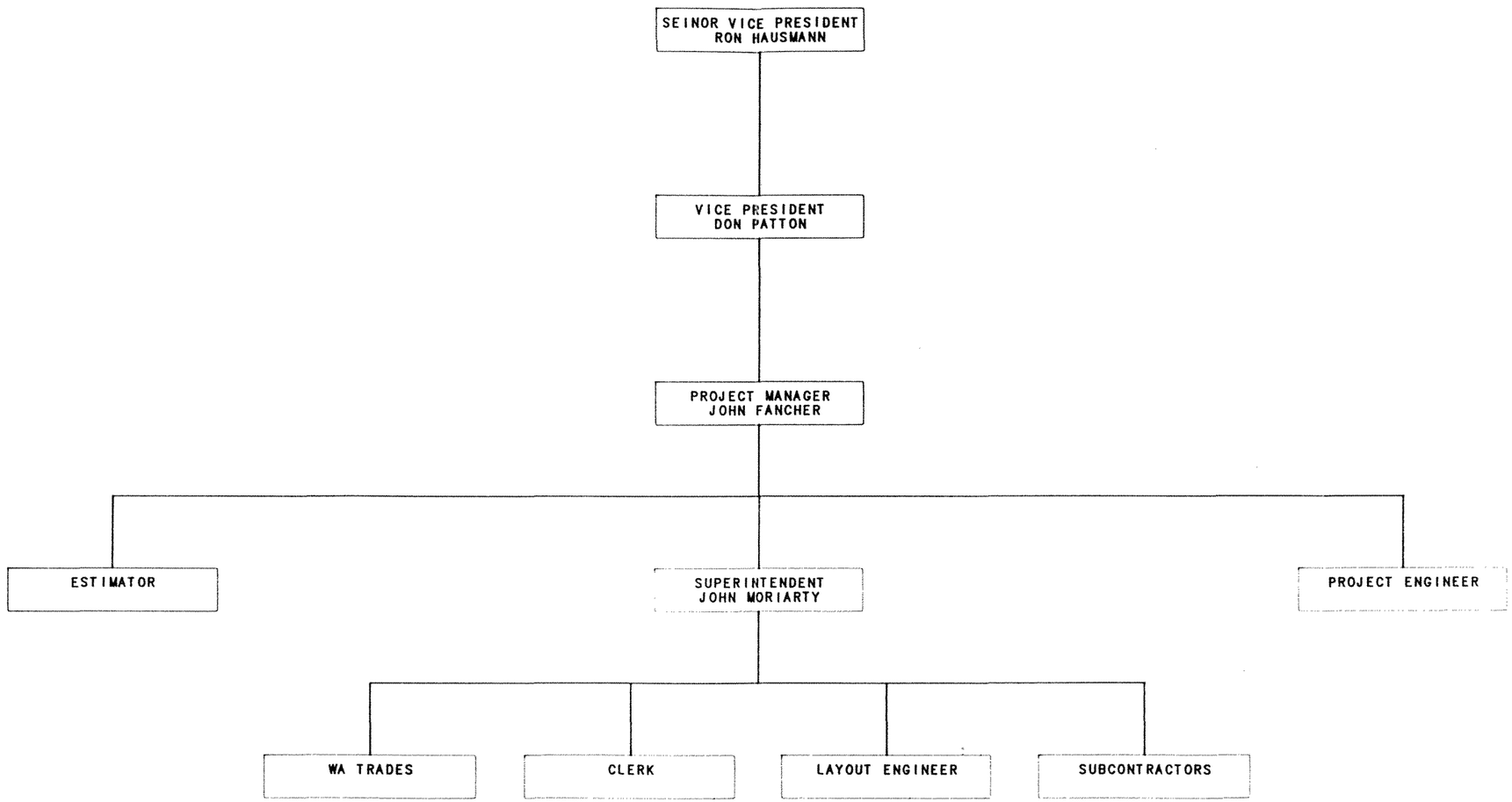
5/15/87
5/15
5/15
SOLICIT PROPOSALS & AWARD CONTRACT
PREPARE & SUBMIT SHOP DRAWINGS
REVIEW & APPROVE SHOP DRAWINGS
FABRICATE & DELIVER ITEM

LIVONIA OPERATIONS CENTER

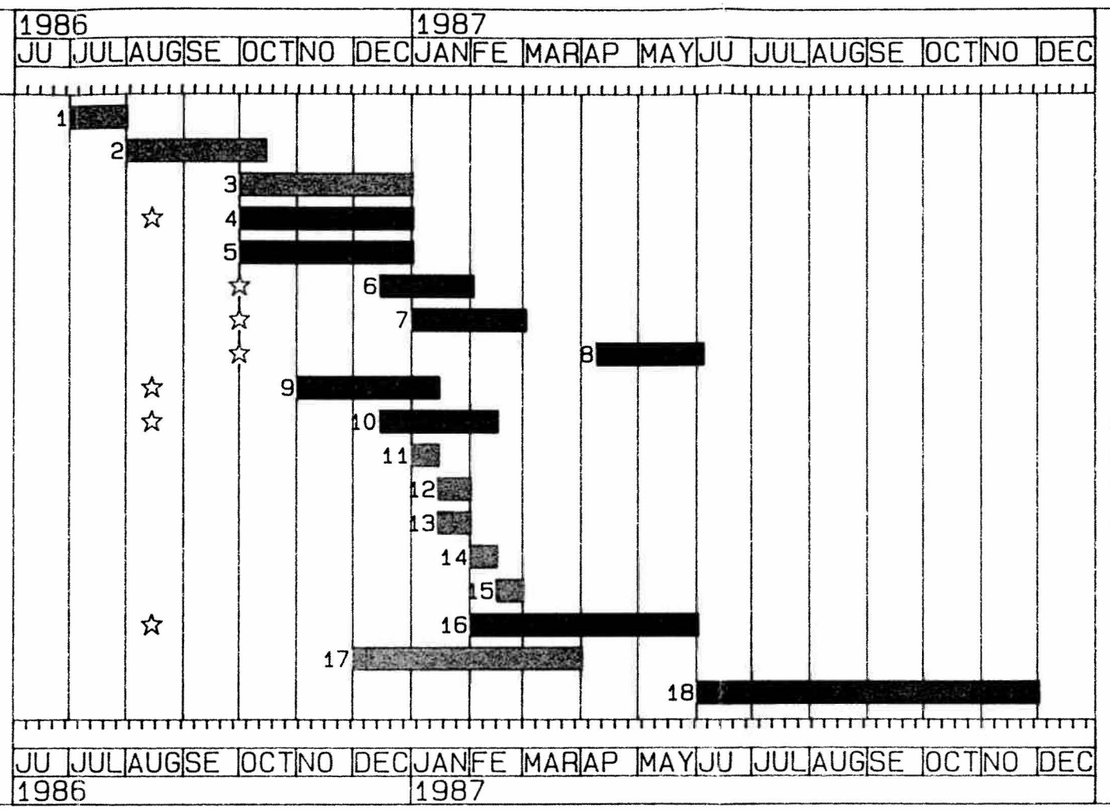
MANUFACTURERS BANK



PROPOSED WALBRIDGE ALDINGER ORGANIZATIONAL CHART

LIVONIA OPERATIONS CENTER
MANUFACTURES BANK

	ACTIVITY DESCRIPTION	CONTRACT AWARD	START	FINISH
1	EXCAVATE BASEMENT CD A		1-JUL-86	1-AUG-86
2	WALLS AND FOOTINGS CD A		1-AUG-86	15-OCT-86
3	STRUCTURAL STEEL CD A		1-OCT-86	1-JAN-87
4	MISC IRON, STAIRS, AND EMBEDS	15-AUG-86	1-OCT-86	1-JAN-87
5	METAL DECKING CD A CD A		1-OCT-86	1-JAN-87
6	ROOFING CD A	1-OCT-86	15-DEC-86	2-FEB-87
7	PRECAST CD B	1-OCT-86	1-JAN-87	2-MAR-87
8	WINDOWS CD B	1-OCT-86	9-APR-87	4-JUN-87
9	MECH/ELECT UNDERGROUND	15-AUG-86	1-NOV-86	15-JAN-87
10	MECH/ELECT FOR SLABS	15-AUG-86	15-DEC-86	15-FEB-87
11	PLACE CONCRETE SLABS 1ST FLOOR		1-JAN-87	15-JAN-87
12	PLACE CONCRETE SLABS 2ND FLOOR		15-JAN-87	1-FEB-87
13	PLACE CONCRETE SLABS BASEMENT		15-JAN-87	1-FEB-87
14	PLACE CONCRETE SLABS 3RD FLOOR		1-FEB-87	15-FEB-87
15	PLACE CONCRETE SLABS 4TH FLOOR		15-FEB-87	1-MAR-87
16	MECH/ELECT ROUGH-IN	15-AUG-86	1-FEB-87	1-JUN-87
17	ELEVATOR (FIRST)		1-DEC-86	1-APR-87
18	TENENT WORK		1-JUN-86	1-DEC-87



PROPOSED WORK BY OTHERS

PROPOSED WORK BY WALBRIDGE ALDINGER

☆ PROPOSED CONTRACT AWARD

WALBRIDGE ALDINGER

PRELIMINARY MILESTONE SCHEDULE

LIVONIA OPERATIONS CENTER

MANUFACTURES BANK

	ACTIVITY DESCRIPTION	CONTRACT AWARD	START	FINISH
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2	WALLS AND FOOTINGS		1-AUG-86	15-OCT-86
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5	METAL DECKING		1-OCT-86	1-JAN-87
6	ROOFING	1-OCT-86	15-DEC-86	2-FEB-87
7	PRECAST	1-OCT-86	1-JAN-87	2-MAR-87
8	WINDOWS	1-OCT-86	9-APR-87	4-JUN-87
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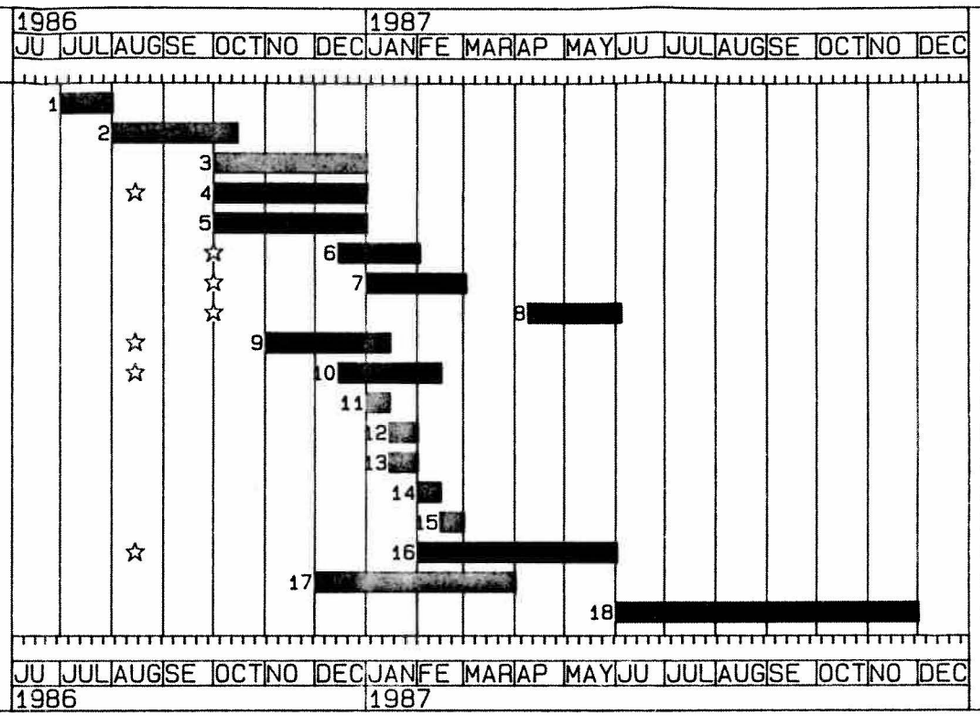

PROPOSED WORK BY OTHERS

PROPOSED WORK BY WALBRIDGE ALDINGER

☆ PROPOSED CONTRACT AWARD

WALBRIDGE ALDINGER

PRELIMINARY MILESTONE SCHEDULE

May 23, 1986 - disk 032

Those attending

2.1: **Greg Demanski**
2.2: **Steve Duczynski**
2.3: **Danny Redstone**
2.4: **Leonardo Fabiilli**
2.5: **Steve Urban**
2.6: **Larry Eastham**
2.7: **Ralph J. Stephenson**

3: **Agenda**

3.1: **Monitor summary diagram**
3.2: **Monitor package A**
3.3: **Update summary diagram**
3.4: **Review agenda for pre bid meeting on Tuesday, May 27, 1986**

3.4.1: How FFE and tenant improvment work will be handled
3.4.2: How the fee and direct cost reporting and billing will be set up
3.4.3: How the planning, scheduling and monitoring is to be done
3.4.4: Extension of due date to June 9, 1986
3.4.5: Review process of arriving at a GMP
3.4.6: How the document packages are to be defined
3.4.7: Criteria for contractor selection
- Proposal completeness
- Costs
  - Construction sevices fees for
    - Building shell
      - A, B, C, D, E
    - Interior finish work
      - F, G, H, Z
  - Reimbursible cost max - general conditions & requirements items
  - Cost of subcontracted work to be awarded

3.5: **Discuss briefly the contractors being considered**

3.5.1: R.E. Dailey Co.
3.5.2: Barton-Malow Co.
3.5.3: Walbridge/Aldinger Co.
3.5.4: DeMaria Building Co.
3.5.5: Freeman-Darling

3.6: **Identify & package succeeding packages**

3.6.1: Package A - substructure, superstructure, skin & site work - issued 5/16/86
3.6.2: Package B - all exterior skin work
3.6.3: Package C - mechanical and electrical work
3.6.4: Package D - interior work
3.6.5: Package E - elevator - issued with A
3.6.6: Package F - security systems
6.7: Package G - food service systems
6.8: Package H - signs
3.6.9: Package I - computer equipment and installation
3.6.10: Package J - voice and data
3.6.11: Package K - FFE

6.12: Package Z - tenant improvement woek

7: **Review 5/23/86 laundry list items for status**

3.7.1: 16 - Clarify and resolve easement requirements
Second source of water - by MNB
Primary source of water has been settled in Larry E. negotiations with Schoolcraft. However the second source from the east in the north side of the Six Mile ROW, which was originally approved by Livonia, is now disapproved.

Two solutions
Tap in Fox Street - would require 2 approvals
Schoolcraft - could get this easement easily
Trinity Baptist - may be difficult to get easement
Tap Six Mile south side new extended 8" water main
MNB would have to extend this line

Must formalize agreement with Schoolcraft College - by MNB

7.2: 18 - Complete conduct personnel interviews
MNB must complete bank programming interviews for K package work
Redstone must interview for Z package work

3.7.3: 31 - Establish REA requirements
Has been established and are now being reduced to legal documents
Between the college and MNB - by MNB
Between the college and Livonia - documents prepared but not executed

3.7.4: 32 - Execute architectural contract
In work

3.7.5: 45 - Prepare list of FFE items

3.7.6: 48 - Procure computer equipment
Did deliver spec this week
Need for completion of package C

3.7.7: 49 - Procure telephone equipment
No action on this item as yet
Is very important
Affects cellular floor
Is critical to contract package C

3.7.8: 50 - Provide departmental adjacency requirements
About 40% complete

7.9: 51 - Provide departmental functional requirements
About 10% complete

3.7.10: 52 - Provide departmental locations
About 80% complete

3.7.11: 53 - Provide departmental sizes

About 10% complete

7.12: 54 - Provide departmental special systems requirements
About 5% complete

3.7.13: 55 - Provide departmental survey form
About 50% complete

3.7.14: 64 - Resolve Detroit Edison ROW removal
Has not been done
Is in process through MNB attorney
Will be resolved in about 2 weeks by early June

3.7.15: 65 - Retain kitchen consultant
Have retained original consultant and his work is complete
Must retain another consultant
To complete kitchen equipment drawings & specifications
These contract documents will be used to solicit proposals

	Cp	ct pkg	Activity
1	SY		-Building systems
2	CD		-Contract documents for shell work
3	DD		-Design development
4	SK		-Exterior bldg skin
5	FN		-Financing component
6	FI		-Finish interior building work
7	FE		-Front end work - permits, approvals,etc
8	OP		-Owner procurement items
9	PR		-Programming component
10	RI		-Rough interior building work
11	SD		-Schematic design
12	SD		Analyze subsoil analysis
13	FE		Check requirements for retention pond
14	FE		City conduct public hearings on site plan package
15	FE		City review & approve site plan package
16	FE		Clarify and resolve easement requirements
17	SD		Clarify use requirements for existing site drain
18	PR		Conduct personnel interviews
19	FE		Convert Schoolcraft/housing REA to drawing
20	PR		Decide on extent of basement
21	FE		Decide on how construction is to be managed
22	PR		Decide on type of cellular fl monuments to be used
23	PR		Decide whether power in Fox is to be UG
24	SD		Design entry
25	SD		Design phase 1/2 lobby interrelationships
26	FE		Determine city reqmts for sanitary & storm lines
27	FE		Determine contract document packaging method
28	SD		Determine full water service requirements
29	PR		Determine garbage disposal requirements
30	SD		Determine how to balance site
31	SD		Establish desired site grades
32	FE		Establish REA requirements with college & others
33	FE		Execute arch contract
34	PR		Make decision on cellular floor vs access floor
35	PR		Make decisions on atrium characteristics
36	FE		Make utility survey as required
37	SD		Obtain full existing utility information
38	FE		Prepare & submit application for site egress
39	SD		Prepare & submit curtain wall recommendations

	Cp	ct pkg	Activity
40	SD		Prepare & submit site plan review package
41	SD		Prepare & submit struct frame recommendations
42	FE		Prepare and distribute sign off procedures
43	SD		Prepare and submit updated cost estimate
44	FE		Prepare format for meeting minutes
45	FE		Prepare legal check list for attorney discussions
46	OP		Prepare list of FFE items
47	SD		Prepare model of entry
48	SD		Prepare tree survey
49	OP		Procure computer equipment
50	OP		Procure telephone equipment
51	PR		Provide departmental adjacency requirements
52	PR		Provide departmental functional requirements
53	PR		Provide departmental locations
54	PR		Provide departmental sizes
55	PR		Provide departmental special systems reqmts
56	PR		Provide departmental survey form
57	SD		Provide electrical requirements to elect co
58	PR		Provide food service requirements
59	SD		Provide gas requirements to gas co
60	PR		Provide location of computer floor
61	FE		Provide notice to vacate to tenant
62	PR		Provide personnel interview notes
63	PR		Redstone give list of program needs
64	FE		RELOCATE ELECT POLE LINE BY DETROIT EDISON
65	FE		Request power from Detroit Edison
66	FE		Resolve Detroit Edison ROW removal
67	FE		Retain kitchen consultant
68	SD		Review & approve site plan review package
69	SD		Review environmental requirements
70	OP		Satellite dish
71	SD		Set floor to floor heights
72	PR		Set parking requirements
73	FE		Submit site plan review package to city
74	FE		Tenant vacate house
75	SI	A	-Site work
76	SB	A	-Substructure
77	SS	A	-Superstructure
78	SB	A	APPLY EXT BASEMENT WALL WATERPROOFING

	Cp	ct pkg	Activity
79	SK	A	Cast concrete column covers
80	SI	A	CLEAR & GRUB SITE
81	SI	A	COMPLETE NECESSARY DEMOLITION WORK
82	SI	A	CONSTRUCT SITE RETAINING WALLS
83	SB	A	DEWATER AS REQUIRED
84	SI	A	DRILL & INSTALL WELL
85	SB	A	EFRP ELEVATOR PITS & EMBEDS
86	SB	A	EFRP EXT WALL & COL FOOTINGS
87	SB	A	EFRP INT SPREAD FOOTINGS
88	SI	A	EIB UG ELECTRICAL DUCT
89	SI	A	EIB UG GAS LINES - TO BE ADDED BY ADDENDUM
90	SI	A	EIB UG SANITARY SEWER SYSTEM
91	SI	A	EIB UG STORM DRAIN SYSTEM
92	SI	A	EIB UG telephone conduit
93	SS	A	Erect cellular metal deck
94	SS	A	ERECT STANDARD METAL DECK
95	SS	A	ERECT STRUCT STEEL & JOISTS
96	SI	A	EXCAVATE FOR RETENTION BASIN
97	SS	A	FRP SUPPORTED FLOOR DECKS
98	SB	A	FRPS EXT BASEMENT WALLS & PIERS
99	SB	A	FRPS interior column piers
100	SB	A	Install electrical grounding mat
101	SY	A	Install emergency generator fuel tank & piping
102	SI	A	Install site landscaping
103	SI	A	Install site landscaping irrigation
104	SI	A	INSTALL SOIL EROSION CONTROL
105	SI	A	Install temporary utilities
106	SB	A	INSTL & PART BACKFILL EXT WALL DRAIN TILE
107	SI	A	INSTL CONSTRUCTION ROADS AS REQUIRED
108	SI	A	Lay out building site
109	SB	A	MASS EXCAVATE FOR BUILDING BASEMENT
110	SI	A	Mobilize & move on site
111	SB	A	PLACE EMBEDS IN BASEMENT WALLS
112	SS	A	PLUMB & TRIM STRUCT STEEL & JOISTS
113	FE	A	Provide cellular floor outlet layout
114	SB	A	SET ANCHOR BOLTS
115	SS	A	Set delivery boxes at cellular floor
116	SS	A	SET SUPPORTED FLOOR DECK EMBEDS
117	SI	A	STOCKPILE TOP SOIL

	Cp	ct pkg	Activity
118	SI	A	Construct exterior building retaining walls
119	SI	A	EIB UG WATER LINES
120	SI	A	LINE RETENTION BASIN WITH CLAY
121	SK	B	-Exterior skin package
122	RI	B	Apply spray on fire proofing
123	SK	B	Caulk exterior joints
124	SK	B	Erect exterior precast panels
125	SK	B	Erect lobby curtain wall framing
126	SK	B	Finish exterior concrete surfaces
127	SK	B	Glaze ext strip sash
128	SK	B	Glaze exterior entry sash and doors
129	SK	B	Install artrium skylight framing
130	SK	B	Install atrium skylight roof frames
131	SK	B	Install atrium skylights
132	SK	AD	Install canopy soffit
133	SK	B	Install ext strip sash
134	SK	B	Install exterior entry sash & doors
135	SK	B	Install exterior louvers
136	SK	B	Install exterior man doors
137	SK	D	Install loading dock soffit
138	SK	B	Install overhead doors at loading dock
139	SK	B	Install revolving doors
140	SK	B	Install roof mechanical equipment curbs
141	SK	B	Install stair tower man door
142	RI	B	Install steel stairs
143	SK	B	Lay insulation & roofing
144		C	-Mechanical and electrical work
145	SB	C	EIB building electrical systems
146	SB	C	EIB building food service piping
147	SB	C	EIB building sanitary lines
148	SB	C	EIB building sprinkler lines
149	SB	C	EIB building storm lines
150	SY	C	EIB building telephone lines
151	SB	C	EIB building water lines
152	FI	C	Install & connect atrium exhaust fans
153	SY	C	Install & connect fire pumps at pump room
154	SY	C	Install & hook up motor control centers
155	SY	C	Install & hook up transformers
156	SY	C	Install & pipe boilers

	Cp	ct pkg	Activity
157	FI	C	Install & pipe water heaters
158	RI	C	Install above ceiling elect hangers
159	RI	C	Install above ceiling mech hangers
160	FI	C	Install above fl life safety distribution systems
161	RI	C	Install above fl rough plumbing
162	RI	C	Install above fl rough spinkler piping
163	FI	C	Install above floor elect conduit & wire
164	RI	C	Install above floor main dist sheet metal duct work
165	SY	C	Install above floor telephone conduit
166	RI	C	Install atrium exhaust ductwork
167	SY	C	Install boiler stack
168	FI	C	Install electric water coolers
169	SY	C	Install electrical equipment rooms
170	SY	C	Install emergency generators
171	SY	C	Install energy management systems
172	RI	C	Install ext wall fin tube piping
173	RI	C	Install food service exhaust black iron shaft
174	SY	C	Install HVAC control systems
175	FI	C	Install janitor sinks
176	FI	C	Install life safety system devices & trim
177	SY	C	Install lightning protection system
178	SY	C	Install mechanical equipment rooms
179	FI	C	Install mechanical finish trim
180	SY	C	Install permanent power
181	FI	C	Install shell acoustic ceiling light fixtures
182	FI	C	Install shell bldg grills & diffusers
183	FI	C	Install shell electrical trim
184	FI	C	Install shell hard ceiling light fixture frames
185	FI	C	Install shower heads at locker rooms
186	TI	C	Install special computer grounding systems
187	SY	C	Install temporary power to run elevators
188	RI	C	Install tenant underground electrical systems
189	RI	C	Install tenant underground plumbing systems
190	FI	C	Install toilet room plumbing fixtures
191	RI	C	Install variable volume distribution boxes
192	SY	C	Set roof top equipment
193	FI	D	-Spec section 8 through 12 plus misc other items
194	FI	D	Apply vinyl wall coverings
195	SI	D	Construct lobby exterior area flat work

	Cp	ct pkg	Activity
196	SI	D	Construct mechanical court flat work
197	SI	D	Construct sidewalks
198	SI	D	Construct terrace flat work
199	RI	D	Erect monumental stair steel at atrium
200	FI	D	Hang gyp board at ceilings
201	FI	D	Hang, tape & sand ext wall gyp board
202	RI	D	Install above floor misc iron hangers
203	FI	D	Install acoustic ceiling grills & diffusers
204	FI	D	Install acoustic ceiling light fixtures
205	FI	D	Install acoustic ceiling panels
206	FI	D	Install acoustic ceiling suspension & grid
207	FI	D	Install atrium handrail assemblies
208	FI	D	Install balcony handrail assemblies
209	FI	D	Install carpeting
210	RI	D	Install ceiling hangers
211	FI	D	Install ceramic tile
212	FI	D	Install col enclosures at atrium and main lobby
213	FI	D	Install convector covers
214	FI	D	Install doors & trim
215	FI	D	Install ext wall sills
216	RI	D	Install ext wall studs at precast
217	FI	D	Install fin hard floor at elevator lobby
218	FI	D	Install fin hard floor at main lobby
219	FI	D	Install food service exhaust shaft fire enclosure
220	RI	D	Install gyp board ceiling susp & framing
221	RI	D	Install handrails and stairs at loading dock
222	FI	D	Install hard ceiling grills & diffusers
223	FI	D	Install hard ceiling light fixtures
224	FI	D	Install hardware & door closers
225	RI	D	Install int masonry walls
226	FI	D	Install interior glazing
227	FI	D	Install lobby control desks & empty conduit
228	FI	D	Install millwork & trim
229	FI	D	Install permanent full height partitions & doors
230	FI	D	Install quarry tile
231	FI	D	Install special ceilings at atrium
232	FI	D	Install special ceilings at main lobby
233	FI	D	Install special wall finishes in elevator lobby
234	FI	D	Install special wall finishes in main lobby

	Cp	ct pkg	Activity
235	FI	D	Install sprinkler heads
236	FI	D	Install vinyl tile
237	FI	D	Paint required interior surfaces
238	FI	D	Tape & sand ceiling gyp board
239	SY	E	-Elevators
240	SY	E	Install elevator cab
241	SY	E	Install elevator door frames
242	SY	E	Install elevator machine room
243	SY	E	Install elevator platform
244	SY	E	Install elevator rails
245	SY	E	Install special access controls at double entry elev
246	SY	E	Test & inspect elevator
247	TI	F	Install & wire security consoles
248	SY	F	Install security hardware
249	SY	F	Install television security systems
250	SY	F	Install tenant security systems
251		G	-Food preparation and service equipment
252	SY	G	Install food preparation equipment
253	SY	G	Install food service equipment
254	SY	G	Install hood fire protection system
255	TI	H	Install signage & graphics
256	SY	I	Install computer systems
257	SY	J	Install & debug telephone systems
258	SY	J	Install and debug computer cabling
259	FI	K	Install cafeteria furniture
260	FI	K	Install computer furniture
261	SY	K	Install furniture systems at work stations
262	FI	K	Install interior landscaping
263	SY	K	Install material handling conveyor systems
264	FI	K	Install meeting room furniture
265	FI	K	Install pallets and shelving at stock room
266	TI	K	Install private office furniture
267	SY	K	Install special audio/visual equipment
268	SY	K	Install special mail room equipment
269	FI	K	Install training equipment
270	SY	K	Install white noise system
271	SY	K	Level furniture systems at work stations
272	CT	Z	-Contract documents for tenant improvements
273	TI	Z	-Tenant improvements

	Cp	ct pkg	Activity
274	TI	Z	Activate cellular floor outlets
275	TI	Z	Apply vinyl wall coverings
276	TI	Z	Debug furniture systems hook up
277	TI	Z	Hang gyp board at ceilings
278	TI	Z	Install acoustic ceiling grills & diffusers
279	TI	Z	Install acoustic ceiling light fixtures
280	TI	Z	Install acoustic ceiling panels
281	TI	Z	Install acoustic ceiling suspension & grid
282	TI	Z	Install ATM (automated teller machine)
283	TI	Z	Install building sound systems
284	TI	Z	Install cafeterial intake & exhaust shafts & enclos
285	TI	Z	Install carpeting
286	TI	Z	Install computer fixtures & millwork
287	TI	Z	Install computer room cooling systems
288	TI	Z	Install computer room raised floor
289	TI	Z	Install demountable partitions & doors
290	TI	Z	Install draperies
291	FI	Z	Install dry sprinkler systems in computer areas
292	TI	Z	Install food service ceramic tile
293	TI	Z	Install food service quarry tile
294	TI	Z	Install gyp board ceiling susp & framing
295	TI	Z	Install hard ceiling grills & diffusers
296	TI	Z	Install hard ceiling light fixtures
297	TI	Z	Install hardware & door closers
298	TI	Z	Install interior glazing in tenant partitions
299	TI	Z	Install permanent full height partitions & doors
300	FI	Z	Install plumbing to work stations
301	TI	Z	Install special doors at computer rooms
302	TI	Z	Install special exhaust for conference & mtg rms
303	TI	Z	Install special exhaust systems for laser printers
304	TI	Z	Install spot cooling and heating systems
305	TI	Z	Install uninterrupted power source
306	TI	Z	Install vinyl tile
307	TI	Z	Install window blinds
308	TI	Z	Paint required interior surfaces
309	TI	Z	Pull lobby control desks wire in conduit
310	TI	Z	Reinforce floors where necessary
311	TI	Z	Relocate sprinkler heads as required in tenant areas
312	TI	Z	Select cellular floor outlets to be activated

	Cp	ct pkg	Activity
313	TI	Z	Tape & sand ceiling gyp board
314	SY	Z	Wire furniture systems at work stations

1: Those attending
1.1: Larry Eastham
1.2: Greg Demanski
1.3: Steve Duczynski]
1.4: Danny Redstone
1.5: George ~~Elbert~~ Elliott
1.6: Steve Urban
1.7: Ralph J. Stephenson
1.8: Henry Vallar
2: Agenda
2.1: Discuss easements from Schoolcraft College
Schoolcraft College will grant easements to the city of Livonia. Could City of Livonia force the college to grant the easements? City prepared the legal documents and asked MNB to go the college and work out an arrangement. College is demanding extension and improvement of Fox Road.

Must determine what triggers the extension of Fox Road? Probably the road will not become public property.

2.1.1: Access to sanitary sewer
2.1.2: Access to storm sewer
2.1.3: Access to water main
2.1.4: Access to telephone cable
2.1.5: Extension of Fox Road & widening to boulevard
Want MNB to construct extensions in reasonable time
Will be totally paid by MNB
College wants the street extended beyond bank's north property line
May have to deal with the church and their road operating agreement
2.1.6: Are the demands reasonable?
2.1.7: Would like to settle the matter next week if possible
MNB will agree to an easement on east side of bank property line
MNB will install road along that line when MNB needs the road
If college wants the road earlier the college will pay for it
If MNB requires access later will pay for the curb cuts
Larry E. will try to resolve the matter direct with the college
2.2: Monitor package A network
2.2.1: Structural drawings
Need elevator information, primarily freight elevator
Technical data from the manufacturer
Are trying to find some info about similar installation
May be 3 or 4 weeks before getting data
Otis

Dover
Detroit
Westinghouse
Will complete as far as possible
Will have a problem if it gets larger
If it gets larger it will affect the kitchen
Will go with generalized drawing now
Will let early contract - put in bid packages
Need atrium information
Exterior wall and floor openings for exhaust vents
Smoke vents at roof
Floor openings at 1st floor for grills
Particularly important to beams framing 1st floor
Need service court retaining wall information
Exhaust opening data and other needed
Will be an exterior fan
Will be an emergency generator
Retaining wall layout will be given to E&B Monday, April 21,1986
How does precast meet foundation wall?
Are meeting with Ken Aird next week to approve ext design
Does not have strong impact on structural design

Will be worked out by the end of next week - by April 28,1986
Need junction information to complete structural drawings
Might affect depth of footings
Need to resolve roof drain locations
Can be done internally and easily
Possibility of having water leakage from food service to electrical room
Will use a waterproof membrane on food service area
Will use a drip pan under each penetration
Does everyone know what the future basement looks like?
What embeds are to be considered for A package?
Elevator rail brackets
Elevator sill embeds
Stair supports
Dock leveler embeds
Electrical in floor outlet box
Electrical trench headers
Piping sleeves
Electrical sleeves
1st floor precast support angles
Anchor bolts for structural steel
Status of structural drawings
S1 - Foundation plan - 25% complete
S2 - 1st floor framing plan - 80% complete
S3 - 2nd floor framing plan - 80% complete
S4 - 3rd floor framing plan - 80% complete

S5 - 4th floor framing plan - 80% complete
S6 - Roof framing plan - 25% complete
S7 - Schedules and notes - 60% complete
S8 - Foundation details - 10% complete
S9 - Framing details - 10% complete
S10 - Framing details - 0% complete

Questions by George Elbert

Are these items included?

Floor slab on grade? - yes
Underground utilities at ground floor? - no
Miscellaneous iron stairs? - no
Site work flat work? - no
Loading dock? - yes
Loading dock apron? - no
Dock levelers? - yes
Dock leveler embeds? - yes
Main lobby stair? - no
Final design may cause minor changes to floor framing
Site retaining walls at terrace? - no if small

Do we install the piers and anchor bolts for future building?

Install footing only for future columns - GE recommended
Will not put joints in wall. Will sawcut in future as needed

Where are the underground sewer lines to be located
What allowance is to be provided for sleeves

2.2.2: Site & civil work

Electrical/mechanical site work contract documents will be issued with A
Some slight revisions to footprint being made
Zeimat & Wozniak dwgs are 90% complete
Have Wayne County approvals on site plan
Site flatwork will not be included in A
Curbs and gutters will be included in A
Light pole bases will be included in A
Landscaping in A
Irrigation in A
Installation of well may be in A
Cafeteria terrace retaining walls not in A

2.2.3: Will issue set of architectural reference plans

Details of waterproofing will be worked up among project team members

2.2.4: Mechanical drawings

Footing drains will be shown on structural drawings
What mechanical drawings are we going to issue?
None are to be issued
All sleeving work will be shown on structural
Mechanical lines are considerably below the bottom of footings
Have the bottom of footing elevations been set?

Is probably an 8" line
Need to determine how many sleeves are to be installed
Want to always go through a wall
Will allocate a number of sleeves to be included in base cost

Fire protection
Do we have two sources of water? - yes
Do we have a loop around the building? - no
Are the hydrants close enough together?
Hose length should not exceed 150' so as to get satisfactory hose coverage.

The insurance department will object if the spacing is not correct.

2.2.5: Electrical drawings
What drawings are to be issued?
Site electrical are only drawings to be issued

2.3: Monitor summary network

2.4: Review status of food service
As of April 18, 1986 have a tentative plan which Redstone has sent to food service. Layout is relatively firm according to Greg Demanski.

However may be other things which have come up since the latest meeting on Friday, April 11, 1986.

Freezer sizes are permanently set at the maximum size now.

2.4.1: Do not have vending machine locations

2.4.2: Should be able to fit them in existing space as is

2.4.3: No final determination on final electrical requirements
Need details of equipment characteristics

2.4.4: FFE design of the seating area is by MNB

2.4.5: Finishes are by Redstone

2.5: Discuss process of obtaining an administrative design review

2.5.1: Will be going in for a review in late April or early May, 1986
LGR will make the application after presentation to MNB
Have a number of questions to check with Livonia

2.6: Discuss process of obtaining a building permit

2.6.1: Will go for a partial permit when drawings are issued

2.6.2: Do not need administrative review to apply for partial permit

2.6.3: Do need approval of review before permit is issued

2.7: Review status of request for proposals

2.7.1: Do we have a firm list of contractors
Are beginning to get inquiries from contractors

Larry has list of contractors
Must review the list

2.7.2: Critique strategy of soliciting proposals

2.7.3: Random ideas about selection of contractor selection
Should consider screening interview prior to issue of A
Pre issue screening
Any information given to the contractors by MNB in pre issue screening conference should be in writing so all contractors have exactly the same information.

Very informal format
For discussing items not possible to cover in contract documents
Contractors should specifically identify their project team
MNB should articulate their goals & objectives
MNB should discuss their time boundaries
MNB review list of those being screened
Contractor should informally review their work load
What are the deposit characteristics of the contractor in MNB
Do you want to propose on the job?
How do you get along on work in the Livonia area?
Do you have a time problem with the proposal?
MNB might briefly review the project characteristics
Preproposal meeting
To be held with all contractors proposing on the project, after the A package is issued and before proposals are due.

Attendance at the pre proposal meeting is mandatory
Methods of processing payments
Requirements for submission of payments
Discuss MNB project

2.8: Continue work on defining proposal packages

2.8.1: Revised tenant improvement list of 3/5/86

2.8.2: Definitions and notes
If you can move it easily it's furniture
If it is built in and difficult to move it's tenant work
Packages may be combined for a single issue as required
Packages describe contract document content, not necessarily single trades

2.8.3: NOTE: THE PACKAGES DESCRIBED BELOW ARE NOT NECESSARILY IN ISSUE ORDER

2.8.4: Package A - Substructure, superstructure, skin and site work

2.8.5: Package B - all exterior skin work

2.8.6: Package C - mechanical & electrical work

2.8.7: Package D - spec sections 8 through 12

2.8.8: Package E - elevator

2.8.9: Package F - security systems
2.8.10: Package G - food service systems
2.8.11: Package H - signs
2.8.12: Package I - computer equipment and installation
2.8.13: Package J - voice & data
2.8.14: Package K - funiture & equipment procurement and installation
2.8.15: Package Z - tenant improvement work
2.9: Talk about backup power supply
2.9.1: Was submitted to MNB Thursday, April 17, 1986

1: Need elevator information, primarily freight elevator
1.1: Technical data from the manufacturer
1.1.1: Are trying to find some info about similar installation
1.1.2: May be 3 or 4 weeks before getting data
Otis
Dover
Detroit
Westinghouse
1.1.3: Will complete as far as possible
Will have a problem if it gets larger
If it gets larger it will affect the kitchen
Will go with generalized drawing now
Will let early contract - put in bid packages
2: Need atrium information
2.1: Exterior wall and floor openings for exhaust vents
2.2: Smoke vents at roof
2.3: Floor openings at 1st floor for grills
2.3.1: Particularly important to beams framing 1st floor
3: Need service court retaining wall information
3.1: Exhaust opening data and other needed
3.2: Will be an exterior fan
3.3: Will be an emergency generator
3.4: Retaining wall layout will be given to E&B Monday, April 21,1986
4: How does precast meet foundation wall?
4.1: Are meeting with Ken Aird next week to approve ext design
Does not have strong impact on structural design
4.2: Will be worked out by the end of next week - by April 28,1986
4.3: Need junction information to complete structural drawings
4.4: Might affect depth of footings
5: Need to resolve roof drain locations
5.1: Can be done internally and easily
6: Possibility of having water leakage from food service to electrical room
6.1: Will use a waterproof membrane on food service area
6.2: Will use a drip pan under each penetration
7: Does everyone know what the future basement looks like?
8: What embeds are to be considered for A package?
8.1: Elevator rail brackets
8.2: Elevator sill embeds
8.3: Stair supports
8.4: Dock leveler embeds
8.5: Electrical in floor outlet box
8.6: Electrical trench headers
8.7: Piping sleeves
8.8: Electrical sleeves
8.9: 1st floor precast support angles
8.10: Anchor bolts for structural steel
8:11: Status of structural drawings
9.1: S1 - Foundation plan - 25% complete
9.2: S2 - 1st floor framing plan - 80% complete

9.3: S3 - 2nd floor framing plan - 80% complete
9.4: S4 - 3rd floor framing plan - 80% complete
9.5: S5 - 4th floor framing plan - 80% complete
9.6: S6 - Roof framing plan - 25% complete
9.7: S7 - Schedules and notes - 60% complete
9.8: S8 - Foundation details - 10% complete
9.9: S9 - Framing details - 10% complete
9.10: S10 - Framing details - 0% complete
10: Questions by George Elhert
10.1: Are these items included?
10.1.1: Floor slab on grade? - yes
10.1.2: Underground utilities at ground floor? - no
10.1.3: Miscellaneous iron stairs? - no
10.1.4: Site work flat work? - no
10.1.5: Loading dock? - yes
10.1.6: Loading dock apron? - no
10.1.7: Dock levelers? - yes
10.1.8: Dock leveler embeds? - yes
10.1.9: Main lobby stair? - no
Final design may cause minor changes to floor framing
10.1.10: Site retaining walls at terrace? - no if small
10.2:11: Do we install the piers and anchor bolts for future building?
10.2.1: Install footing only for future columns - GE recommended
10.2.2: Will not put joints in wall. Will sawcut in future as needed

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July 5, 1986

Subject: Monitoring Report #7

Manufacturers National Bank Operations Center

Livonia, Michigan

Project: 85:58

Date of Monitoring: June 26, 1986 (working day 380)

Monitored from package A contract document preparation issue network Issue M-3 dated March 20, 1986 (working day 311) and summary network model sheets #1 and #2 Issue #3 dated March 20, 1986 (working day 311)

Actions taken:

- Reviewed current status of package A work
- Discussed project with contractor for project
- Continued identification of contract document packages
- Began initial reviews of procurement networks and procedures on long lead time items

General Summary

Proposals for package A work have been received and Walbridge Aldinger has been selected to do the work. The notice of award was given on Monday, June 16, 1986 (working day 372). A letter of intent is to be issued June 26, 1986 (working day 380). The contract is now being reviewed by the attorneys. Walbridge Aldinger moved a trailer on the site Wednesday, June 27, 1986 (working day 381). They intend a full move in to the site by Monday, June 30, 1986 (working day 382). The intended contract completion date is December 1, 1986 (working day 744).

Walbridge Aldinger has asked that column line A be set as a base reference line. All building construction work on the project is intended to move from column line A to the northwest. The intent is to erect structural steel full height again starting on column line A.

At present, the major work being done is on preparation of the schedule of values, completion of contract execution and assembly of submission material. Approved for construction

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drawings will be issued with the addendum #1 changes on Tuesday, July 1, 1986 (working day 383). These drawings will be issued without changes to the contract documents except for the prebid addenda. Any changes to A package drawing other than addenda changes will be made by bulletin.

So far as bulletin procedures are concerned the process is as follows:

1. Redstone issues bulletin.

2. Walbridge Aldinger quotes bulletin.

3. Manufacturers and Redstone review and approve the bulletin quote and scope concurrently.

4. Redstone issues change order.

Field orders are to be issued only where extreme expediency is needed. It should be noted that where the scope of the change and its nature is to be explored before a decision is to be made as to the change, that exploration work is generally to be done if possible before the bulletin is issued.

Early in the meeting we reviewed several unresolved items. The discussions are summarized below:

- determine final location of electrical equipment room and telephone equipment room

  Manufacturers is concerned about the location of these areas because of potentially serious implications of water damage potential. The final location will be resolved in separate meetings. Apparently the data needed to make decisions is available and a decision is expected by June 27, 1986 (working day 381). If the areas are relocated and affect bid package A, changes will be made by bulletin.

- Second source of water

  The Schoolcraft easement has been verbally approved but now must be legally processed. We still also must execute a letter of intent with Schoolcraft College. It may not be necessary to obtain Trinity Baptist's approval. Redstone will check this matter. A decision in the method of issuance the change, if there is any change, will be made later.

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- Relocation of jogging track and retention pond

  The present location of the pond encroaches upon a possible future road. Redstone will revise the drawings and issue as a bulletin on Tuesday, July 1, 1986 (working day 383). It is the intent of Walbridge Aldinger to use the area for retention of storm water, if possible, during construction.

- Completion of personnel interviews

  K package work interviews have been completed by Manufacturers and they are now doing an organizational survey of departments. Apparently this does not currently impact upon design.

  Z package personnel interviews are being done by Redstone and they are not yet completed. They also do not impact upon current design work.

- Execute architectural contract

  This contract is still being reviewed by the attorneys. It has not been executed by MNB as of June 16, 1986 (working day 372).

- Procurement of computer equipment

  Revised electrical equipment drawings are in hand and were received June 19, 1986 (working day 375). Manufacturers staff is presently reviewing these requirements and they seem to be appropriate.

- Procurement of telephone equipment

  There is no current word on this matter and since the boxes are going to be installed on the deck in a grid pattern they will not necessarily impact upon current job progress. However, this matter should be discussed continuously throughout our early work on the job.

- Provide departmental adjacency requirements

  This work is about 50% complete. It is being done in conjunction with the organization survey being conducted internally by Manufacturers.

- Provide departmental functional requirements

  This work is about 15% complete and is being done with the organizational studies.

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- Provide departmental location

  This work is about 80% complete. It does not impact seriously on current design efforts.

- Provide departmental sizes

  This work is currently about 10% complete. It does not necessarily impact upon current work on contract documents. The critical area, however, here is the lower level since it does affect underground utility design work.

- Resolve Detroit Edison easements

  The Detroit Edison Company has given Manufacturers the equivalent of a service agreement. There must be new poles added at Edison cost. The removal of existing work will be at Manufacturers cost. An approval was given to Edison on June 16, 1986 (working day 372) to move the line. There is no current word on when this will start.

  It does not appear at present that there is a major impact from this action on field work in the forseeable future. However, it should be watched carefully since it does ultimately affect the site and building sequencing work. The property power easement document is a different matter and should be reviewed soon since there is no present information on how long this might take to process.

- Atrium under floor smoke vent system

  There are still some unresolved questions about wall types at the atrium. This matter is under current study and a resolution will be obtained just as quickly as possible. It should be noted that fan sizes are affected by the openings in the atrium wall according to Redstone.

We spent considerable time at our session reviewing the packaging of contract documents with Walbridge Aldinger. The packages that have been defined in previous meetings will remain substantially as they are identified. To review these are as follows:;

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Package A - substructure, superstructure, and site work

Package B - exterior skin work

Package C - mechanical and electrical work

Package D - basically spec sections 8 through 12 (Note: There is some overlapping into earlier spec sections in this group of work items. However, the basic elements are in 8 through 12).

Package E - elevator

Package F - security systems

Package G - food service systems

Package H - signs

Package I - computer equipment and installation

Package J - voice and data

Package K - furniture and equipment procurement and installation

Package Z - tenant improvement work

A brief discussion of the work done at our session on each of the packages is given below:

Package A

This package was issued on May 16, 1986 (working day 352) and will be reissued for construction with addendum #1 changes by Tuesday, July 1, 1986 (working day 383).

It was noted by Walbridge that the buff tone concrete specified is not available. This affects the architectural cast in place concrete and also the architectural precast concrete. The matter is being resolved presently and should cause no delays. Permits are being obtained by Redstone's office in conjunction with Walbridge Aldinger. A shell permit should be available by Tuesday, July 1, 1986 (working day 383).

Package B

The intent presently is to issue these contract documents by July 14, 1968 (working day 391). Walbridge Aldinger has broken

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the exterior skin contract document package into several construction bid packages. The document groups issued by Redstone are called contract document packages. These include working drawings and specifications needed to award contracts for groups of work in the building and on the site. Walbridge Aldinger will break these contract document packages into construction bid packages which usually will conform to trade identifications. There may be several contractors within any construction bid package.

The major construction bid packages into which contract document package B will be divided are as follows:

B1 - fire proofing

B2 - architectural precast and related items

B3 - lobby curtain wall

B4 - sash, glazing, and related items

B5 - skylights and skylight framing

B6 - exterior louvers (if any)

B7 - exterior doors and hardware

B8 - exterior overhead doors and operators

B9 - steel stairs, not including the monumental stair

B10 - roofing, insulation and equipment curbs

B11 - metal siding

B12 - roof drain and building storm system

B13 - long lead mechanical equipment

B14 - long lead electrical equipment

The items to be included in each of these was reviewed in depth at our meeting and is described in notes that were distributed at that session.

Of major concern is that we have now placed in package B the long lead mechanical and electrical equipment are to be ordered very early. Long lead mechanical items include boilers and rooftop HVAC units. Long lead electrical items include the emergency generator, motor control centers, the uninterrupted

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power system (UPS) and the unit substations. It is imperative to understand that the long lead time items must be ordered early. Of particular concern is electrical equipment since delivery times are very long at present time. Delivery of the emergency generator is six months or longer from approval of shop drawings. Motor control center deliveries are ranging about three months from approval ; and uninterrupted power system deliveries require about six months from approval. Very critical is procurement of the unit substation. Delivery of substations presently is running from six to nine months from approval.

We proposed some preliminary procurement networks based upon these delivery times and the desired proposal period from Walbridge Aldinger. The most critical of the items appears to be the electrical substation which, if proposals were solicited on August 15, 1986 (working day 415), would require until mid-August, 1987 to obtain.

It is very important that the architect/engineer, the owner, and the contractor work closely and carefully together to insure that the items are ordered as early as possible since in many cases they are critical to completion of early portions of the project. In future meetings we will continue the preparation of the D (delivery) series analysis to determine other critical long lead items that must be given special attention. The focus on long lead electrical equipment indicates that the owner and the architect/engineer must work very hard obtaining all data necessary so the equipment can be specified and early orders placed for it, hopefully before mid-August, 1986.

Another major concern is the planned issue date of contract document package C, mechanical and electrical work for items other than the long lead items in contract document package B. Present indications are that this package might be able to be issued by late August, 1986. This is later than had been desired. However by moving long items into package B the major work needed to insure continuity of construction can be reduced to the minimum. This points up the need to carefully evaluate those items that can be issued in the long lead packages for B. They should be carefully selected and adequate information provided so ordering of the equipment and establishment of delivery dates can be done thoroughly.

Contract document package D, the interior work, will probably be completed and issued by September 1, 1986 (working day 426). It presently appears that the contractor's project work can accommodate this interior work issue without major difficulties. The elevator contract document package E was

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issued along with package A. Present plans by Waldridge Aldinger are to have one elevator operative by April 1, 1987 (working day 574).

Other contract document packages were not discussed in detail, although indications are that the package Z work, tenant improvement, is in progress presently and that design will proceed as generally indicated in our summary network models. At subsequent meetings we plan to continue concentrating on identifying contract document items from the early laundry list dates dated May 23, 1986 (working day 357) which has been provided to all parties involved. We also will begin detailed planning of the construction process for package A work.

I shall be in touch with Mr. Duczynski and Mr. Demanski soon to confirm the next planning and monitoring session, presently set for July 9, 1986 (working day 388).

Ralph J. Stephenson, P.E.

RJS:sps
To: Mr. Larry Eastham
Mr. Greg Demanski
Mr. Steve Duczynski
Mr. Daniel Redstone

RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER

July 23, 1986

Subject: Monitoring Report #8

Manufacturers National Bank Operations Center

Livonia,Michigan

Project: 85:58

Date of Monitoring: July 9, 1986 (working day 388)

Monitored from project summary network model sheets #1 and #2, Issue #3 dated March 20, 1986 (working day 311)

Actions taken:

- Reviewed current status of contract document packages A (substructure, superstructure, and site work) and E
- Discussed issue dates for contract document packages B (exterior skin work)and C (mechanical and electrical work)
- Reviewed current status of construction
- Prepared preliminary detailed network model for construction of the substructure, superstructure, and some elements of the exterior skin of the building
- Made detailed early review of procurement requirements

General Summary

A notice of award was provided to Walbridge Aldinger on June 16, 1986 (working day 372). A letter of intent was issued on June 26, 1986 (working day 380) and Walbridge Aldinger mobilized and moved a trailer on the site June 27, 1986 (working day 381). Stripping top soil at the pond and building began on June 30, 1986 (working day 382).

Presently mass excavation is in progress for building foundations, and the procurement process for early materials and equipment is being pursued vigorously. It is to be stressed that quick turnaround on submittals will be essential at this time since job progress will, in many instances, be determined by how quickly shop drawings, samples and cuts can be submitted, reviewed, and approved.

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As part of our work today we made a detailed review of the procurement process and began preparation of a D series (D for delivery) that will be used as the basis for establishing T submittal approval and delivery information. Copies of the D series were given to all who attended the meeting and during the session these copies were annotated by each individual as they saw fit. I am presently updating the procurement series for use at subsequent meetings, and will have these available at our planning and diagramming sessions.

Several miscellaneous points were discussed early in our session. These are listed below at random and numbered for ease of reference.

1. The cement for buff colored concrete mixes is not available. Therefore, mix designs have not been submitted. There are, however, some other sources of coloring and Mr. Patton is checking these at present. The item is critical and must be followed carefully.

2. It was stressed that embeds in the early construction document packages are only for footings, columns, and foundation walls.

3. Early elevator items needed include pit sizes, rails, sheave beams, embeds, platform, and machinery. It will take about 10 working days to submit cab finishes to the bank. MNB is to respond in five working days.

4. Contract document package B, exterior skin work, is to be issued on August 1, 1986 (working day 405).

5. It should be noted that there are several long lead items to be included in contract document package B.

5. During our session Mr. Walworth, Redstone's chief electrical engineer, reviewed how the UPS and other electrical backup systems operate. This matter was discussed in detail and apparently there are still several points to be clarified. The time between now and when contract document package B is to be issued is very short and any items that must be clarified for early ordering of mechanical and electrical equipment must be done immediately.

6. MNB is to decide on how the computer room is to be cooled and where the units are to be located.

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7. The Redstone office will review the use of dry sprinkler systems versus wet systems with the City of Livonia.

8. There was no word on when the halon system will be designed and issued.

9. A determination should be made early as to whether spray on fireproofing can proceed independent of exterior precast skin elements. This is an important sequencing item and should be given early attention.

As noted above, we made a relatively detailed analysis of many of the early procurement items. These were done on a series of network models entitled the D series in which the four or five major activities of procurement are shown. These include:

- solicitation of proposals and award of contract
- preparation and submittal of shop drawings, samples or cuts
- review and approval of the submittals
- fabrication of the item
- delivery of the item to the job site

In our networks fabrication and delivery have been combined into a single activity. The procurement networks will be used to establish the point in the detailed field networks when materials will or must be on the job. Key items concentrated on in our procurement analysis include the following:

a. concrete mix design

b. footing resteel

c. perimeter wall resteel

d. retaining wall resteel

e. column and supported deck resteel

f. miscellaneous iron embeds

g. structural steel - Present plans are to submit shop drawings for structural steel by July 23, 1986 (working day 398) in such quantity to insure that approval and fabrication

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can be done on a continuing basis. It is expected to have adequate shop drawings approved by August 13, 1986 (working day 413) so fabrication can begin. Presently structural steel is due to start arriving on the job by October 1, 1986 (working day 447).

i. supported slab resteel

j. steel joists - Apparently there are few, if any, steel joists on the job. However, I urge that this matter be checked carefully since usually steel joist deliveries are different than structural steel deliveries.

k. precast sample panel - It is expected to have the sample panel constructed by August 5, 1986 (working day 407) and reviewed and approved by September 4, 1986 (working day 428).

l. metal deck

m. delivery of precast materials

n. exterior aluminum sash

o. exterior sash glass

p. exterior aluminum entries

q. UPS system

r. rooftop units

s. fire pumps

t. electrical equipment (switchgear, panels, MCC's, transformers and other such equipment) - This is a very critical long lead item and must be given a top priority relative to expediting approvals and deliveries. We have assumed that by August 1, 1986 (working day 405) the contractor would be able to solicit proposals, and to award a contract by August 29, 1986 (working day 425). Preparation of shop drawings was assumed to take 25 working days, review and approval 20 working days, and delivery 125 working days (there are approximately 22 working days in a month. This brings delivery of major electrical equipment to the job by April 30, 1987 (working day 595). This is a very late date and every effort must be made to improve it.

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o. Emergency generator - This, too, is a long lead item and should be given early attention.

p. Elevators - Shop drawings are presently in work for elevators and should be submitted by August 20, 1986 (working day 418). Fabrication and delivery of the elevators will be tailored to the needs which presently indicate delivery required by December 1, 1986 (working day 489).

r. Roofing material

s. Exterior entry glass

t. Metal stairs

u. Skylights

For each of the above, we projected an expected delivery point and will confirm these dates as well as extending the list at our next planning session. Tracking procurement will be an ongoing process and must involve all parties - the owner, the architect/engineer, and the contractor in order to be carried out and followed effectively. By the end of our next planning session we should be able to issue a copy of the procurement diagram to those concerned.

To close out our session, we prepared a preliminary network model of the substructure, superstructure, and a portion of the exterior skin construction. In this network model we indicate that delivery of structural steel is presently planned for October 1, 1986 (working day 447). Projections are that structural steel could be up, plumbed, and bolted by January 8, 1987 (working day 515). Supported deck floor pours at the first, second, third, and fourth floors are expected to begin in mid-November, 1986 and be completed by mid-February, 1987. The exterior skin of the building is expected to start in late January, 1987 with the building being closed to weather at varying points between early April, 1987 and mid-June, 1987. These dates conform closely to the preliminary summary schedules prepared by Walbridge Aldinger. The sequencing and logic appears to be reasonable and they took a copy of the diagram to review and revise as they saw necessary.

As with the procurement diagrams, we will plan to make a detailed analysis of this work at our next session and complete preparation of the network model to be used for guiding field activities over the next few months. I shall be

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in touch with Mr. Demanski and Mr. Duczynski shortly to confirm the date of our next session on ~~August 7~~, 1986 (working day ~~109~~ 400). July 25, 1986

Ralph J. Stephenson,P.E.

RJS:sps

To: Mr. Larry Eastham
cc: Mr. Greg Demanski
Mr. Steve Duczynski
Mr. Daniel Redstone
(Distribution to others to be by above parties)

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

August 6, 1986

Subject: Monitoring Report #9

Manufacturers National Bank Operations Center

Livonia, Michigan

Project: 85:58

Date of Monitoring: July 25, 1986 (working day 400)

Monitored from Issue #1 network model dated July 9, 1986 (working day 388). (Note: This model was prepared at the planning and monitoring session on July 9, 1986 (working day 388) with Walbridge Aldinger).

Actions taken:

- Reviewed current status of overall design and construction work on the project
- Discussed issue dates for remaining contract document packages
- Prepared detailed network model issue #2 dated July 25, 1986 (working day 400)
- Reviewed early procurement items and updated procurement D series
- Discussed interrelationships between the planning activities

General Summary

The early part of this session was spent on a detailed review of the current status of the project. Items that have been discussed on an ongoing basis were reviewed including the following:

1. Final location of electrical equipment room. This location has been set, and the concern now is that it be protected to the greatest degree possible from intrusion of water. There is still some discussion about the elevation of the electrical room. The matter is being resolved between Redstone and the bank.

2. Final location of telephone equipment room. This location has been set but there is a concern here, as with the electrical room, about possible water damage. The matter continues under consideration although the location has been established.

3. Second source of water - This matter has been resolved in bulletin #1. The Schoolcraft easement has been verbally approved, but now must be legally processed. The city must have Schoolcraft's approval to provide water to the site. The letter of intent with Schoolcraft has been executed but water pressure questions by the insurance company must be answered. These deal with the number of gallons flowing and the residual and static pressures. Mr. Urban of the Redstone office will follow this matter.

4. Jogging track and retention pond location - This has been set by bulletin #1.

5. Formal agreement with Schoolcraft College - The legal work is complete and awaiting signing by Schoolcraft. Mr. Demanski will follow this.

6. Completion of personnel interviews - The K package interviews will be delivered to Redstone by the end of August, 1986. These are part of an organizational survey being done by Manufacturers Bank.

   Some Z package interviews have been started but they depend on the K package surveys being completed. Z package interviews will be done by Redstone.

7. REA requirements - These have been agreed to by Schoolcraft College.

8. Architectural contract - Was executed by the bank about July 7, 1986.

9. Computer equipment - All computer electrical design decisions have been given to Redstone. The budget for the electrical system according to Redstone may have to be revised. This matter will be discussed by Redstone and the bank.

10. Telephone equipment - The equipment room sizing is now satisfactory and should accommodate whatever configuration is selected.

11. Departmental adjacency requirements - Will be completed by the end of August, 1986.

12. Departmental functional requirements - Will be tabulated by the end of August, 1986.

13. Departmental locations - These are basically determined.

14. Departmental sizing - Is about 60% complete. Will not impact on current design of the lower level.

15. Security control center - The final location of the security control center is still being discussed. The matter will be reviewed by the bank and the design team.

16. Detroit Edison easements - This is a complex matter and should be followed carefully. The new location of the poles has been approved by the design engineer for Redstone. The drawing added to the packet will probably require the service agreement to be reviewed prior to execution. New poles are to be added and there is a general feeling that movement of the existing line will not be accomplished until Edison receives an easement for the poles. There is no word on how long this process will take. Walbridge Aldinger does not feel there is any major impact on field work in the foreseeable future except possibly in stock-piling of soil.

17. Atrium underfloor smoke vent - The smoke vent system problems have been resolved.

18. Precast concrete color and texture - This matter is still not resolved and apparently a decision will have to be made by the bank's top management before any release of the work can be accomplished.

    A sample panel is being built at the site and will be reviewed by Manufacturers in the very near future. Walbridge Aldinger will take sample panels to the executive offices on Monday, July 28, 1986 (working day 401).

19. Lobby finishes - It is desired to present color boards by late August, 1986. Work on lobby finishes will be included in package D. The contract package D is still to be issued September 2, 1986 (working day 426).

20. Elevators - There have been some difficulties with shaft dimensions. These problems are presently being resolved between Redstone and the contractors. Elevator cab design is still to be completed. Elevator #4 has been turned 90 degrees and should be checked by the bank to be certain the rotation does not affect operational characteristics.

21. Computer room cooling - A decision has been made on this matter. It should not affect steel detailing or fabrication.

22. Food service equipment - Engineering design is presently being worked upon and the 6 contract document package will be ready for review by the bank and Canteen on July 28, 1986 (working day 424).

After the above review was completed, we continued detailed planning of the substructure, superstructure, and exterior skin of the building in conjunction with the officer in charge for Walbridge Aldinger, the project manager, and the contractor's scheduling staff.

First a review was made of the Issue #1 network model prepared at our previous session, and it was decided due to changes in logic to redo this diagram. The revisions resulted in an Issue #2 network model, sheets #1 and #2 of the diagram, dated July 25, 1986 (working day 400). This plan indicates that foundation construction will proceed with the intent to complete basement perimeter walls sufficient for structural steel by October 1, 1986 (working day 447). Steel is to be erected from column line A across to column line M in full height tiers. This then means that floor pours will proceed in each of the four tiers or sections of structural steel from the first level through the fourth level. Exterior precast installation will follow a similar pattern and will be erected full height at the various elevations as they become available. Present planning indicates the project will be ready for start of precast about December 9, 1986 (working day 495) and will be ready to start roofing as early as late October, 1986.

It is the present intent to close in as much of the building stee erection moves across as is possible. Presently the full close in point where sash is complete and glazed, is about mid-May, 1987.

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CONSULTING ENGINEER

At the interior, spray on fireproofing work is a major element to be carefully planned and scheduled. Its sequencing will follow generally the same pattern as floor pours from level #1 through level #4 in each section as they becomes available. This sequence may be revised as field conditions and heating requirements demand.

The network model prepared at our session today conforms closely to the planned schedule of the contractor. It is to be emphasized that the needs of the owner are to be able to tie their work closely to the work of the contractor through the use of a logic plan satisfactory to the contractor. Thus, the contractor should make a careful review of all planning work done to insure that they are in agreement. We shall check this and review the sequences at each of our planning sessions.

The work produced at this meeting will be prepared in final form, title blocks added, and the logic plan printed for use by all parties in the very near future. It will be distributed to Walbridge Aldinger by hand carrying. Network models prepared at this session are attached to this report for the use of the design office and the owner. It should be noted that these monitoring reports are sent to Manufacturers, Schostak, and Redstone only. Any additional distribution desired should be from these offices. If it is the intent to provide the contractor with copies of the report they should be forwarded from one of the offices receiving the reports. I shall discuss this with all parties at a near future date.

In addition to the network model I provided Walbridge Aldinger with a bar chart translation of the close in diagram. However, this bar chart was not given to the other parties involved. Copies of it are available as desired.

I shall be in touch shortly with Mr. Demanski and Mr. Duczynski to set the next planning session which is presently set for August 7, 1986 (working day 409).

Ralph J. Stephenson,P.E.

RJS:sps
To: Mr. Larry Eastham
cc: Mr. Greg Demanski
Mr. Steve Duczynski
Mr. Daniel Redstone
(Distribution to others to be by above parties)

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

August 28, 1986

Subject: Monitoring Report #10

Manufacturers National Bank Operations Center

Livonia, Michigan

Project: 85:58

Date of Monitoring: August 6, 1986 (working day 409)

Monitored from Issue #2, sheets 1 and 2, dated July 25, 1986 (working day 400); substructure, superstructure and skin.

Actions taken:

- Reviewed current status of overall construction work on the project
- Updated the substructure, superstructure and skin network to Issue #3, dated August 7, 1986 (working day 409)
- Prepared fourth floor interior network to serve as model for interior at other floors
- Reviewed early procurement items

General Summary

Major work at this session concentrated on updating the net-work model sheets #1 and #2 for the substructure, superstructure and skin work. This was shown on Issue #3, dated August 7, 1986 (working day 409). This network was run and printed in reduced form and distributed to the major parties on the project. If any have not yet received their copy of this diagram please let me know and they shall be sent to you.

In this updated network we retained most of the key target dates for construction of foundations and close in of the building. This model will now be used to establish beginning points for the various interior operations needed to complete the total project.

We also completed a typical network model for the fourth floor. It will be used as a guide and template for network models to be prepared for interior work at other floors. Copies of this template are being distributed to the various members of the project team for their review and analysis prior to our next planning and monitoring session on Sept. 4, 1986 (working day 428) at Redstone's office.

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CONSULTING ENGINEER

At this next session we plan to complete all of diagramming for interior work operations and to begin tying tenant work into landlord activities. Also we will continue monitoring progress on issuance of the contract document packages.

At our meeting on August 7, 1986 (working day 409) we discussed issuance of the mechanical and electrical package. As of that date plans were to issue this contract document package to Walbridge-Aldinger on Sept. 15, 1986 (working day 435). These are critical packages since they are the key to totally releasing all mechanical and electrical elements that must be tightly interwoven with the structure and close-in.

Field progress has been relatively good. Footings are complete on column line 1, and 6 interior columns have been poured. Structural steel detailing is proceeding and it is still planned to have structural steel on the job by early Oct., 1986 although the date has now been moved to a slightly later point of Oct. 6, 1986 (working day 450). However, it is still planned to complete erection, plumbing, and bolting structural steel by Jan. 13, 1987 (working day 518).

Meanwhile, some problems are being encountered on the precast panel color and texture. The mock-up was to be available for inspection Tuesday, August 12, 1986 (working day 412) and at that time a final selection was to be made.

We shall review the procurement elements of the job at our next session and shall do this on a routine basis to determine the status of this activity, particularly in respect to the owner, architect, and engineer's responsibility relative to submissions. This should allow the contractor to better manage the procurement process.

We did not at this meeting go into as detailed a review as usual concerning pending items to be resolved. However, at our next session I recommend we return to the unresolved items list and continue to monitor it closely.

I shall be in touch with Mr. Demanski and Mr. Duczynski shortly to confirm the next planning and monitoring session, date and location.

Ralph J. Stephenson, P.E.

RJS:gmy
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CC: Mr. Greg Demanski
Mr. Steve Duczynski
Mr. Daniel Redstone
(Distribution to others to be by above parties)

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

September 16, 1986

Subject: Monitoring Report #11

Manufacturers Bank Operations Center

Livonia, Michigan

Project: 85:58

Date of Monitoring: September 4, 1986 (working day 428)

Monitored from Issue #3 sheets 1 and 2 dated August 7, 1986 (working day 409).

Actions taken:

- Reviewed current status of project field work
- Reviewed and updated fourth floor typical interior network model
- Prepared interior diagrams for floors B, 1, 2, and 3
- Briefly reviewed current status of design work and issuing dates
- Prepared schematic move in sequence for review and comment

General Summary

As of September 4, 1986 (working day 428) work is moving fairly well on basement perimeter walls, and column footings and piers. Wall and column footings are complete along column line 1, interior footings are about 90% complete, and wall and column footings along column J, column line 9 and column line A are also complete. Foundation walls at column line J are complete. Foundation walls at column line 9 will be done in about 10 working days. Waterproofing was to begin about September 8, 1986. All work on foundations is currently being targeted to receive structural steel October 6, 1986 (working day 450).

The majority of our work today concentrated upon preparing interior network models and reviewing the typical fourth floor diagram for validity.

We first discussed the Issue #3 network model dated August 7, 1986 (working day 409) for the fourth floor. Minor revisions were made to it but generally it was agreed it did provide a

valid sequence of work. This network model will be applied to the second floor interior work since the two areas are somewhat similar.

Projected completion for the first floor in the completion sequence is currently about late October, 1987. This is probably later than desirable and we will have to go back and make some further reviews of the floor dates, particularly in relationship to the turnover cycle expected for floors. The turnover cycle is the number of working days between completion of operations at one area and completion of operations at the next area in the sequence. Thus, if we assume of the five floors, basement, first, second, third, and fourth levels, the top four floors would be completed in a set sequence and the basement floor would be completed concurrently with the other four, we can then calculate the turnover sequence required. For instance, if the desired total end date was November 30, 1987 (working day 743) and the initial floor in the sequence was planned to be delivered on October 12, 1987 (working day 709), it means that the three floors in sequence would have to divide 34 working days between them. These 34 working days divided by 3 is about 11.1. Thus, the initial floor would be delivered on October 12, 1987 (working day 709). The next floor in sequence would be delivered 10 or 11 days later say on October 28, 1987 (working day 721). The next floor in sequence would be delivered 11 days later, or on November 12, 1987 (working day 732) and the last one in sequence would be delivered 11 days later on November 30, 1987 (working day 743). Thus the turnover cycle here is somewhere between 10 and 11 days.

Normally in a building the size of the operations center the turnover sequence required for the floors is on the order of 15 to 20 working days. Therefore, planning for the desired target completion date will have to be done carefully to insure that the work is sequenced and spaced properly to allow turnover in an orderly and proper manner.

To help us determine the sequence of turnover we prepared a network model sheet MVIN #1 Issue #1 dated September 4, 1986 (working day 428) to guide in preparation of the move in sequence. This network was provided to those attending the meeting and will be used as the basis of our discussions at the next planning and monitoring session. The move into this facility will be very complex since it is not possible to

cleanly separate building floor delivery into a straight sequence. Instead move ins will be functional in nature where portions of all floors might be occupied at concurrent times during the move in.

Continuing with our detailed planning work we were able to make modifications to the typical diagrams, for the basement, first and third floors. We will bring these up to a complete logic point but will not be able to establish the final sequence in which the floors will be built until we are able to discuss in more detail the move in sequence desired.

We also reviewed the methods by which the network models and schedules for the project are to be used. Those network and models prepared by me and used to monitored from are substantially the same as the ones being used by the contractor in directing his field operations. The network models prepared by the owner and me in conjunction with the contractor and the architect/engineer are also to be used to plan and tie in tenant work as it relates to interior finish work.

We have had good cooperation in preparation of these master networks from the contractor, and the roles of the plans and schedules to date have been well understood.

Today we also reviewed the current status of contract document preparation. Since this latest monitoring there have been concerns expressed that the dates as discussed at our session on September 4, 1986 (working day 428) cannot be met for electrical contract documents. At our meeting on September 4, 1986 (working day 428) it was planned to issue shell or base building mechanical and electrical documents on September 15, 1986 (working day 435). Shell mechanical and electrical includes:

- vertical distribution
- plumbing for toilet rooms
- perimeter radiation
- electrical distribution to panels on the floors
- UPS system
- light fixtures in public areas

Remaining mechanical and electrical work was to be issued with the tenant work packages probably in February, 1987.

Contract document package D which was all remaining interior work in the landlord package was to be issued about December 1, 1986. This apparently was not a firm, set date and must be clarified in the very near future.

As part of our next planning session work on September 25, 1986 (working day 443) we will review in detail the issuance of contract document for both landlord and tenant work. Presently, the architect/engineer is keeping the contractor closely informed of progress. However, there is a need to closely evaluate progress in this design area.

A brief review of the packages and their current status is given below:

Package B - all exterior site work issued August 1, 1986 (working day 405).

Package C - mechanical and electrical work for shell building was to be issued on September 15, 1986 (working day 435). Is some doubt about this.

Package D - interior work to be issued about October 1, 1986.

Package E - elevators work - issued May 16, 1986 (working day 352).

Package F - security systems - have narrowed choice to 3 companies. Will make a decision by October 1, 1986 (working day 447) on the contractor. The security systems contract may be assigned to the general contractor.

Package G - food service systems - preliminary design drawings have been issued to Manufacturers and to the architect. Construction documents will be issued 2 to 3 weeks after approval of preliminaries. The food service equipment contract will be assigned to the general contractor.

Package H - Signs - no information.

Package I - computer equipment and installation - no decisions on systems to be installed.

Package J - voice and data - no information.

Package K - FF & E (fixtures, furniture and equipment) - no word.

Package Z - tenant improvement work - probably will be issued in February, 1987. The general contractor wants this information as early as possible.

During our planning at the meeting on September 4, 1986 (working day 428) a brief review of lobby interior design status was made by the design office. Work here is proceeding but there is currently no full word on when the work will be completed. We shall discuss this again at our next session.

The work that was done today on the move in planning will have to be closely tied to completion of the total program. Of critical importance to the move in is the vertical transportation to be available. Present plans are to have a freight elevator available by April 1, 1987 (working day 574). By the time the major move in by the owner begins additional elevators should be available.

It is presently planned that the third floor computer areas will be occupied first. These will be followed by work station areas at a part of 3 and all of 2.

Basement service areas are to be completed as required by occupancy of the upper floors.

It is presently desired that the first floor cafeteria be used for possible early serving. Early serving would be cold service, vending equipment, and seating only. The cafeteria will be needed for full service when the upper floors are occupied.

It is presently planned to use the first floor lobby as access for the employees, while construction trades will use the loading dock for access when the building is secure. Move in of computer equipment will be the signal for establishing a secure building. The target date of this is somewhere about October 1, 1987.

RALPH J. STEPHENSON, P.E., P.C.
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The fourth floor is a programming floor and can be occupied at the latest of the dates.

General

Overall current field progress on the job is fair to good. Preparation and issuance of contract documents is experiencing some severe difficulties and must be given prompt attention to insure no delays whatsoever occur to early procurement or to field progress. We shall focus on these items at our next sessions while also planning the move in in detail.

I shall be in touch with Mr. Demanski and Mr. Duczynski shortly to confirm the date of the next meeting.

Ralph J. Stephenson, P.E.

RJS:gmy
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CONSULTING ENGINEER

October 9, 1986

Subject: Monitoring Report #12

Manufacturers Bank Operational Center

Livonia, Michigan

Project: 85;58

Date of Monitoring: September 25, 1986 (working day 443)

Actions taken:

- Briefly reviewed current status of field work
- Discussed tenant contract document package preparation in detail

NOTE: It should be noted that in the rough project notes there was included in the copies made for those at the meeting a heading under item 4 on page #1 called package and contract documents. The information in that was intended to be read only as a description of the packages. The description of the status of those items contained in section 4 were not valid since they came from the previous monitoring and planning meeting. The information contained in item 5, starting on page 2, called "current status of work" is a true reflection of the current status of contract document preparation. Please note this on your rough copy.

General Summary

This meeting was originally to have been concerned with planning tenant occupancy of the shell building. However, early in our discussions, it was decided that we should instead focus on the current status of contract document preparation since there appeared to be some serious problems with issuance of construction documents. Therefore, we made a complete detailed review of each of the packages currently or to be put into work. A summary of contract document packages are given below.

Package A - substructure, superstructure, architectual concrete, and site work

- Issued May 16, 1986 (working day 352)

Package B - exterior skin work

- Issued August 1, 1986 (working day 405)

Package C - shell mechanical and electrical work

We referred to the MNB early laundry list dated May 23, 1986 (working day 357) for a list of the items to be contained in this package. A mechanical document package was issued to the contractor on September 24, 1986 (working day 442). However, it did not include temperature controls, dampers in sheet metal duct work, the energy management system nor fire protection. This caused some concern and the contractor was contacted and requested to hold any solicitation of mechanical proposals until a clarification of the scope of work was obtained. After much discussion, the following course of action was decided upon for each of the named systems below.

Air Distribution System and Controls. Proposals on this will be based on a quanity of mixing boxes as needed for the present layout of floors. With the information available mixing boxes will not be located exactly but installation will be included. Also to be included will be air distribution duct work and returns, including risers and horizonal runs to where laterals take off to mixing boxes. An assumption will be made to the number of diffusers, along with their connections to mixing boxes, over or under a given estimated number to be specified. The work will include furnishing, installing and hook up of controls, fire dampers, main duct work, laterals, mixing boxes, and flexible connections at each floor core area, mechanical rooms, electrical rooms, and perimeter spaces.

Fire Protection. Work will include the wet system risers, horizonal piping to the drops, drops to the heads, and will assume number of heads with a basic cost amount unit allowance for additional or less drops. It also will include furnishing and installing pumps, controls, and accessories.

For the dry system at the computer rooms the same scope of work will be encompassed as for the wet system except for the control systems. There are to be included in the security contract document package. The control package for the dry fire protection system is to be studied further.

Energy Management. Will be included in the security system and will be bought by the bank as a part of contract document Package F.

We next discussed when mechanical package C would actually be issued. It was decided to call the package CM 1 - Package C, mechanical Issue 1. Air distribution system and controls, along with fire protection systems and controls will be issued on October 6, 1986 (working day 450).

The electrical contract documents in Package C will be issued in two groups, issue CE 1 for electrical issue 1 and CE 2 for electrical issue 2.

Issue CE 1 will be complete on October 1, 1986 (working day 447). It will include electrical embed information for the basement and for the kitchen at the first floor. It was noted that it was important to keep waterproofing at this floor intact. It was further noted that whatever embeds are missed for electrical work will be able to use poke throughs within limits. However, use of these outlets must be minimized.

Package CE 2 will be issued October 29, 1986 (working day 467) or earlier. This is the main shell electrical package less the lobby and atrium areas. It doesn't include the Z contract package items listed below.

- above ceiling lighting conduit in perimeter spaces
- life safety distribution in perimeter spaces
- life safety devices and trim in perimeter spaces
- smoke alarm systems in perimeter spaces
- energy management system

The bank should have IBM confirm the computer grounding system to be included in Package CE 2.

Overall, issuance of Package C has become a very critical item and there is some serious concern that this package might not be issued on the new dates as noted above. Therefore, it will be critical to constantly check and confirm these dates with the architect/engineer.

Package D - shell architectural building interior work less atrium. (Efforts are to be made to include the atrium in Package D if possible. But at present it is being assumed the atrium will not be included.)

Package D will be issued October 15, 1986 (working day 457). Several items have been taken out of Package D and put into Package Z, including:

- lobby finishes
- atrium finishes
- food service architectural work
- elevator lobby floor finishes
- carpet at cores and perimeter areas
- quarry tile floor finishes
- security hardware primarily at equipment doors in basement (There are some feeling they should be included in Package D)
- lobby control desk and empty conduit
- special ceilings at atrium and lobby

Another item that has to be picked up at this time is outside concrete flat work. This will be issued as a bulletin to site Package A.

Package F - Security systems.

The choices have been narrowed down to three companies and one proposal has been received. The remainder of the proposals will be made on the contractor by October 10, 1986 (working day 447). A decision will be made on the contractor by October 10, 1986 (working day 454).

The contractor will design and install the system. This makes it essential to resolve hardware design as soon as possible so it does not delay procurement of critical items affected by security system work. The security contract will be assigned to Walbridge-Aldinger. The contract includes the following items:

- bank security
- fire security
- mechanical sensors
- electrical sensors

- control access
- energy management sensors

Package G - food service systems.

The Whitney organization will issue construction documents October 1, 1986 (working day 447). Food service equipment contracts will be assigned to Walbridge-Aldinger. It was noted that food service area architectural finishes will be issued as a part of document Package Z.

Package H - There is no word on these as yet. Redstone is to make a recommendation for signs, including:

- type faces to be used
- location of exterior and interior signs
- number of signs
- recommended text
- construction details
- directory characteristics
- departmental characteristics

Package I - Computer equipment and installation.

All computer equipment has been listed and the bank has sent Redstone the package of requirements. There has been no response to this as yet. It was noted that everything mechanical or electrical that relates to computer equipment must be reviewed by the bank. The bank as yet does not have any feed back on mechanical related items. Detailed room layouts have not yet been prepared for computer equipment.

So far as UPS equipment is concerned the bank has alternate locations identified. An item of importance to the bank is the distance of the UPS equipment from the computer rooms. There are two UPS rooms. One on the third floor and one in the basement. The bank has selected location and sent them to Redstone for review and technical approval. Redstone must give the bank technical data on the distances the UPS equipment can be located from the computer relative to conduit configuration and size.

As it stands now the newer computer equipment will be similar to the current system. The bank mentioned that it should be totally possible at present to complete design for the shell building computer configuration from the data already given to Redstone.

There will be a third and fourth floor space planning meeting on September 26, 1986 (working day 444) and I suggested that a detail agenda be prepared for this meeting, so that all items related to these floors and to computer equipment installation would be resolved.

Package J - voice and data.

Most decisions on voice and data are to be made by the bank by the end of October, 1986.

Package K - fixtures, furniture, and equipment (FF & E). The bank is doing much of this work in conjunction with others. We reviewed the laundry list dated May 23, 1986 (working day 357) to re-identify those items to be included. These items are:

- Cafeteria furniture. Redstone will recommend, the bank will buy and install. Cafeteria furniture includes tables, both indoor and outdoor, chairs, both indoor and outdoor, and lighting fixtures. Lighting fixtures will be selected here but will be included in Package Z.

- Computer furniture. All computer furniture will be bought and installed by the bank. Final electrical hookup, if any, will be in Package Z.

- Work station furniture. All will be bought and installed by the bank. Final electrical hookup, if any, will be in Package Z.

- Interior landscaping. Rental and servicing of interior landscaping will be the bank's responsibility. Built in planters are included in Package D. Most built in landscaping, if any, will appear in Package Z.

- Material handling and conveyor systems. There will be a dumb-waiter added in the dock area and identified in a future bulletin. It will serve the basement through the fourth floor. The bank is currently waiting for recommendations on dumb-waiter standards from Redstone.

One of the questions asked was should it have access for roller carts? These matter was discussed along with others and it was pointed out that the dumb-waiter should be big enough to hold file boxes of computer printouts.

- Meeting room furniture. The bank will buy and install.

- Pallets and shelving in stock rooms. The bank will buy and install.

- Private office furniture. The bank will buy and install.

- Special audiovisual equipment. The bank will buy and install. Final hookup will be by the electrical contractor.

- Special eqiupment.

  Special equipment at the mail room will be bought and installed by the bank and hooked up by the electrical contractor. At other areas the bank will buy and install and the hookup will be by the electrical contractor. There may be some pallet walkers to be used for transporting heavy loads on the basement floor slab. The capacity of this floor slab should be adequate for those loads although it is being rechecked.

- Training equipment. The bank will buy and install.

- White noise system. A decision is to be made soon by the bank. Some at the bank want the system and some do not. It will be important to decide on this before ceiling work is very far along in the field.

Package Z - Tenant improvement work.

The bank is going to be asked to sign off on all floors by November 1, 1986 (working day 470). Contract Z document preparation work will be started in mid-October, 1986. There was a major discussion on how long preparation of contract documents for Package Z would take. There was no end result of this discussion on this and it will be reviewed in depth by the architect/engineer. At our next meeting we will discuss this matter in great detail.

A major lobby and atrium presentation was due to be made on September 26, 1986 (working day 444). Discussion of this Package Z work will be critical since the present intent is to include rough interior work for tenant improvements in the rough shell building work. This rough shell building work is currently due to begin in early January, 1987 and direction must be given by that time as to how much tenant

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CONSULTING ENGINEER

improvement rough work is to be installed. Again, this will be a major part of our detailed reviews at subsequent planning and monitoring sessions.

A major monitoring of construction progress was not made at this session due to the need for detail discussions of the contract document packages. However, from brief and general conversation, it was felt that construction work currently seems to be moving very well.

I recommend that prior to the next planning and monitoring session, I make a field inspection of the project to determine its actual current status in construction.

I shall be in touch with Mr. Greg Demanski shortly to set the next planning and monitoring session and to discuss the field monitoring with him.

Ralph J. Stephenson, P.E.

RJS:gmy
TO: Mr. Larry Eastham
Mr. Greg Demanski
Mr. Steve Duczynski
Mr. Daniel Redstone
(Distribution to others to be by above parties)

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

November 6, 1986

Subject: Monitoring Report #13

Manufacturers Bank Operations Center

Livonia, Michigan

Project: 85;58

Date of Monitoring: October 30, 1986 (working day 468)

Actions taken:

- Reviewed current status of field work from observations of those present
- Reviewed current status of contract document packages
- Discussed content and procedures for contract document Package F (security systems - now called intergrated control systems) in detail
- Prepared preliminary network model for designing and approving intergrated control systems

Field Work

At present, the field status of the project is relatively good. Monitoring at this session was from the observations of those present, and it appears from their comments that the project is currently meeting early and late starts and finishes. Site work is being brought to a point where it can be started up next spring, to be brought to completion along with the building work.

For the substructure most basement walls are complete except for those left out for access. Architectural walls are presently in work, terrace walls have not yet started. Structural steel for the superstructure arrived on the job about October 2, 1986 and is erected and nearly completely detailed from column line A to C. Structural steel is partially erected from column line C to E.

Metal deck is installed on the first, second, and third floors at column lines A to C. Fourth floor deck there has just started. Some deck shakeout has started from column line C to E. No structural steel or metal deck detailing is in progress from C to E as yet.

The site has been stripped and sanitary and storm sewer work is well along. Retention basin work is also in progress with about 60% of the retention basin excavated. Parking lot rough grading is expected to begin soon.

Overall, field progress on the project, as reported at this session, appears to be in conformance with the current network model shown on sheets 1 and 2, Issue #3 dated August 7, 1986 (working day 409).

Contract Document Preparation

We made a detailed evaluation of the current status of all contract document packages not yet issued. A brief review of these is given below. For further comments please refer to the project notes accompaning this report and dated October 30, 1986.

Package C - mechanical and electrical work

A mechanical package was issued for the shell on September 24, 1986 (working day 442). This package was not put out for proposals by the general contractor, and was replaced by subsequent package CM 1 for HVAC and plumbing, October 6, 1986 (working day 450). Bids have been received for this package and a recommendation will be made as to the contractor to be used by the general contractor by October 31, 1986 (working day 469).

The CM 1 package did not include temperature controls or the energy management system. This work has been included in package F which has been renamed the intergrated control system package.

Work included in Package CM 1 include:

- kitchen rough in
- shell domestic plumbing at cores
- known domestic underground plumbing at basement
- perimeter radiation
- tenant locker room rough in
- horizontal HVAC distribution and piping to mixing boxes
- location and quantity of mixing boxes for which unit prices are to be proposed

- a number of diffusers and grills for which unit prices are to be proposed
  (Note: flexible connections from mixing boxes to grills are not included in this issue)

A fire protection package CM 2 was issued October 9, 1986 (working day 453). Bids were due on this package October 30, 1986 (working day 468). The package included the wet and preaction (generally, meaning dry) system. It did not include the halon system or the monitoring connections and signaling devices. The monitoring connections and signaling devices will be included in package F.

The design of this package did not take into account an analysis to be provided by the bank's insurance agents. The design team, therefore, made an interpretation of what these might be since the actual insurance analysis will not be available until about November 7, 1986.

Package D - interior work

This group of contract documents was provided to the general contractor on October 23, 1986 (working day 463). Items not included in this package are listed below:

- outside concrete flat work (put in contract A contract bulletin)
- lobby finishes
- atrium finishes
- food service area architectural
- elevator lobby floor and wall finishes
- carpet at cores and perimeter areas
- quarry tile floor finishes
- security hardward - primarily at equipment doors in basement
- lobby control desk and empty conduit
- special ceilings at atrium and lobby
- stair #4 finishes

It should be noted that most of the items above are to be included in package Z, tenant improvement work. It was mentioned at the meeting that package D contained the dumbwaiter and structural steel for stair #4.

Package F - intergrated control systems (previously security systems)

This is one of the most complex of all of the packages since it is difficult to fully define a total scope of the control packages work. However, it appears that from all discussions to date, the recommendations have been almost unanimous that controls should be grouped into as few packages as possible. Therefore, over the past few weeks there has been a great deal of study and analysis by the bank, the architect/engineer, and the contractors, relative to how this material could best be presented for proposals. In mid or late August, 1986, the bank issued a request for proposals to 3 vendors for the design and installation of a full control system. The request was on the basis of a performance specification prepared by the bank. The 3 proposals were received in late September, 1986 and the bank staff made a thorough analysis of these. The options presented by the 3 vendors were varied and complex. After a late September, 1986 meeting the architect/engineer assembled and was printing a package of contract documents including fire protection, the balance of the HVAC distribution system, along with temperature controls associated with HVAC work when they were told not to issue the temperature control drawings based on recommendations of the control system vendors. This was so this work might be included with the intergrated control system package.

At present, the plan is to select a vendor based upon proposals submitted and in hand, and then to work with that vendor in the design and installation of all system components including:

- Energy management
  - HVAC
  - outside lighting
  - interior lighting
  - atrium lighting
  - temperature regulation
- Building security
  - sump level sensors

- card readers
- cameras

- Intrusion alarms for
  - the general building
  - computer areas
  - receiving areas
  - other areas
- Fire protection monitoring and signaling for
  - detection
  - supression
  - wet and preaction
  - halon
  - hood and range
- Life safety support systems
  - elevator
  - emergency lighting
  - emergency power (Note: the emergency generator will usually be actuated by an outside need. However, it must also be capable of being manually actuated.)
  - sound
  - intercom
  - alarm
    - pull stations
    - personnel alarm
    - employee teller
  - smoke evacuation
- UPS system

- Control sensors, field devices, wiring, panels and displays

This is a complex and critical scope of work which must be carefully knit together with the building work. In light of this we prepared a laundry list and then a rough network model for the design and approval process of these systems. This network was reviewed in detail by all present and must be now restudied and analysed by the entire MNB project staff. A copy was left with Mr. Demanski for his review and approval with executives of Manufacturers Bank, and if appropriate, the selected controls contractor.

Package G - food service system

The food service system package was issued October 21, 1986 (working day 461). Bids are due November 6, 1986 (working day 473).

Package H - signs

No major discussion or word on progress. Mr. Demanski reemphazized the desire by the bank for simplicity in the design, fabrication and installation of the sign work.

Package I - computer equipment and installation

The bank has prepared a lay out of the equipment rooms, however, the architect/engineer is waiting for a final sign off on the third floor before starting. Tenant work in the related equipment installation will be kept in the Z package and will include cooling and electrical for the third floor.

Package J - voice and data

No word. A decision will be made soon on this.

Package K - fixtures, furniture, and equipment

There was no major discussion at this meeting. However, in a brief review it was mentioned that the notes contained in the previous report still generally apply. A brief review of these were made at our session.

Package Z - tenant improvement work

It has been decided that the Z package will not be broken into multiple packages. However, the bank will sign off on the floors, one by one and as the floor sign offs are available, work on each on the contract document packages for that floor will begin.

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

Mr. Dan Redstone provided a preliminary interior design network model, first revision dated October 15, 1986 (working day 457) for review and comments. I have obtained a copy of this and will put it into final network model form for our next session. In this, the intent shown was to issue the tenant improvement package by February 2, 1987 (working day 532). This date is presently being held as a major milestone point for the tenant improvement work package.

The final lobby and atrium presentation will probably be made on November 7, 1986 (working day 474). This is an important item since it will release design for one of the more complex portions of the building.

Much of the tenant improvement work will have to be installed concurrently with the rough work installation being done for the building shell. Also the intergrated control systems package design and installation will depend to a large extent upon decisions made in the tenant improvement for each floor, so the amount of work involved in knitting these packages together is sizable and should be given top attention at all points along the way. We shall plan to carefully monitor this intergration and interrelationship at each of our sessions.

General

The project is now at a point where I feel, and have recommended to the project team, that on-site monitoring be conducted on a regular monthly bases. Therefore, in the near future I shall be inspecting the project directly and shall be in touch with Mr. Demanski shortly to set the monitoring date. I shall also at that point, confirm the date of our next general meeting with the project team.

At our next session I suggest we monitor progress as usual with the project and that we also focus intently upon the intergrated control systems design and plan of action.

Ralph J. Stephenson, P. E.

RJS: gmy
To: Mr. Larry Eastham
Mr. Greg Demanski
Mr. Steve Duczynski
Mr. Daniel Redstone
(Distribution to others to be by above parties)

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

December 11, 1986

Subject: Monitoring Report #14

Manufacturers Bank Operations Center

Livonia, Michigan

Project: 85:58

Date of Monitoring: December 4, 1986 (working day 492)

Actions taken:

- Reviewed current status of field work from observations of those present
- Reviewed current status of contract document package preparation
- Updated network model for preparation for package Z contract documents to issue #2 dated December 4, 1986 (working day 492)
- Updated laundry list of items yet to be issued in contract document packages

Field Work

Monitored from sheets 1 and 2, issue #3 dated August 7, 1986 (working day 409). NOTE: Also monitored from Walbridge Aldinger schedule revision dated August 1, 1986 (working day 405).

In general, field work is moving well on structural steel and still meeting targets between early and late starts and finishes for erection and trimming. However, there have been some serious problems in procurement of cellular metal deck and this work now appears to be lagging desired target dates. The second and third supported decks in the area between column line A and C have been poured out. The first floor is to be poured out within the next few days, with the fourth floor being worked upon now, and to be poured out about December 8, 1986 (working day 494) weather permitting.

A check was made with the contractor at our meeting and apparently cellular deck will begin arriving on the job again by December 9, 1986 (working day 495). The cellular deck between column lines C and E was due to begin sometime between early and mid November, 1986. It probably now will begin sometime near mid December, 1986 which accounts for the delay. However, a very strong effort is going to be made to pick up whatever time loss there may be due to this fabrication problem. The

delivery delay was apparently caused by a change in manufacturing location, as well as by problems with plant equipment.

There now is also some discussion that roofing will start in the near future since most conventional metal deck is on the job and could be erected as areas become available.

At our next session I strongly recommend we update the network model for close in of the building, taking into account both the current network models and schedule bar charts being used. This matter is becoming increasingly important since it is essential to start soon with interior rough work on trades that do not have to be protected from weather.

The exterior skin of the building, primarily exterior precast panels will start sometime within the next one to two weeks. It would be well to see that the floor pours and precast erection are tied together so differential deflections do not adversely affect either the floor slabs or the exterior precast. Precast concrete panels were due to begin in early to mid December, 1986, so if the present proposed starting target date can be maintained it will be reasonably close to the desired target dates.

Site utility work has been almost completed and now has slowed due to the weather. Probably most remaining site work will be done next year.

I shall plan to monitor field progress of the work sometime in the near future and will be in touch with Mr. Demanski to arrange a convenient date for those concerned.

Concrete Document Preparation

We reviewed preparation of remaining contract documents and also updated the master laundry list for those contract documents that contain all remaining design work. This laundry list was distributed at the session and some minor revisions were made to it subsequent to its distribution at this meeting. Therefore, enclosed with this monitoring report is an updated copy of this laundry list in a format similar to that issued at the meeting.

Of concern here is that we pick up all of the items that have been shifted from package D to package Z. There is a considerable number of these and it will be critical that they be taken into account in the issuance of these drawings. Strong

efforts should be made to keep the number of issues of the Z package to a minimum, preferably one issue.

We updated the network model for preparation of contract package Z. It appears that there has been a slippage of about one month in the end date. This matter must be investigated throughly since it is imperative that package Z be available just as quickly as possible.

A brief review of each the project contract document package is given below.

Package A - substructure, superstructure, architectual concrete and site work - issued May 16, 1986 (working day 352).

Package B - exterior skin work - issued August 1, 1986 (working day 405).

Package C - mechanical and electrical work

- CM 1 (mechanical) - issued October 6, 1986 (working day 450). Contract awarded by Walbridge Aldinger about November 21, 1986.

- CM 2 (mechanical) - issued October 9, 1986 (working day 453). Fire protection contract awarded about November 21, 1986.

- CE 1 (electrical) - issued October 1, 1986 (working day 447). Contract awarded by Walbridge Aldinger about November 21, 1986.

- CE 2 (electrical) - issued about November 10, 1986 (working day 475). Bids are due December 4, 1986 (working day 492). No current word on status of proposals.

The mechanical and electrical work documents contained varying scopes that have been defined in previous reports. These are not duplicated in this report and if a reference is needed it should be made back to earlier monitoring reports that describe the content of these packages.

Package D - shell interior work - this package was issued October 23, 1986 (working day 463). It will be made a part of change order #3 to be executed December 5, 1986 (working day 493). Contracts to be awarded include:

- masonry

- dumbwaiter

- miscellaneous metals
- overhead doors

Other package D - subcontract proposals have been received but have not yet decided on as of December 4, 1986 (working day 492). These include:

- interior gyp board
- furnishing of doors and finish hardware
- hollow metal frames
- installation of doors and finish hardware
- convector enclosures
- light gage metal framing for raised floor area platforms

Probably a decision will be made shortly as to how these contracts are to be awarded. There were in addition some items contained in the D package that may be held until the Z package is issued. These include:

- ceramic tile
- caulking and sealants
- toilet room accessories
- possibly waterproofing

I suggest it would be well to issue and secure a contract for hard tile and marble just as quickly as possible since these are usually difficult items to select and obtain. This matter will be taken under consideration.

Package E - elevator - issued May 16, 1986 (working day 352).

Package F - integrated control systems - not discussed in detail.

Package G - food service equipment - issued October 21, 1986 (working day 461). Contract was awarded about November 21, 1986.

Package H - signs - not discussed at this session.

Package I - computer equipment and installation - not discussed at this session.

Package J - voice and data - not discussed at this session.

Package K - FF & E - not discussed in detail at this session.

Package Z - tenant improvement work - a brief review of this package status was given above. As noted the network model for its preparation was updated to issue #2 dated December 4, 1986 (working day 492). In the updated issue it appears that the completion of package Z is now going to be in early March, 1987. This is a very late date and I recommend that every effort be made to find methods by which it can be compressed and that the issuance be made earlier.

On our re-issued sheet DZ-1, a copy of which was forwarded to those concerned, it should be noted that the lobby (LB), atrium (AT), and the cafeteria (CF) are shown as a separate design line to allow for preparation of architectual, mechanical and electrical details for each of these special areas. There still is a considerable number of submissions that must be provided by the architect/engineer including:

1. color and material samples (LB, AT, CF)
2. lighting (AT)
3. interior design of sundry shop (LB)
4. entrance elevation at personnel (LB)
5. outdoor patio furniture (CF)
6. interior furnishings (AT, CF)
7. guard station finishes (LB)
8. atrium stair door access at second floor (AT)
9. carpet samples (AT)
10. quarry tile at locker room
11. light fixture lenses (general office, LB, AT, CF)

It should also be noted that no presentation has yet been made for design of the cafeteria serving line.

Thus, it appears there is a considerable amount of work yet to be done before the actual preparation and completion of contract documents for package Z. This is becoming a very serious matter and I urge that the full attention of the owner, architect/engi-

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CONSULTING ENGINEER

neer, and the developer be focused intently upon this work immediately.

Another factor that should be mentioned is that the logic plan updated for package Z contract documents assumes activities are not restrained by manpower availability. This is a doubtful premise at best and should be examined by the architect/engineer to insure it is a valid assumption. The network model for this work was issued separately from this report. It should be checked over carefully for validity and we should plan to again review it, monitor it, and if necessary update it at subsequent sessions.

The laundry list which was updated to reflect those items not yet included in issued contract documents is enclosed with this report. It should replace the laundry list distributed at the session dated 12/4/86 MNB, Livonia Laundry list of remaining work. We should carefully analyze the remaining items to be included in the contract document packages to insure that they are properly located so that the job can move ahead without any delays due to lack of such contract documentation.

General

It is still of utmost importance that we address the matter of move in sequencing with the owner and with the architect/engineer. Now that contract document packages C and D have been issued, it should be possible to identify the move in sequence and the details of how the building is to be occupied.

At our next meeting I have recommended we address this matter and discuss it in depth. We also at this session, as noted above, should plan to review and update where required the close in diagram to obtain a valid starting date for interior finish work. This starting point for interior finish work is critical since the turnover sequences to be maintained will depend in great part upon prompt starts on the floors as soon as the spaces are available. I shall be in touch with Mr. Demanski shortly to confirm the date of our next meeting.

Ralph J. Stephenson, P. E.

RJS:gmy
TO: Mr. Larry Eastham
CC: Mr. Greg Demanski
Mr. Steve Duczynski
Mr. Daniel Redstone
(Distribution to others to be by above parties)

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

January 26, 1987

Subject: Monitoring Report #15

Manufacturers National Bank Operations Center

Livonia, Michigan

Project: 85:58

Date of Monitoring: January 8, 1987 (working day 515)

Actions taken:

- Reviewed current status of field work with contractor
- Reviewed general status of contract document preparation
- Prepared updated model of third floor interior network to test desired completion dates
- Evaluated work necessary for several critical special systems installations

Field Work

Monitored from issue #3 dated August 7, 1986 (working day 409) sheets #1 and #2.

Currently field work lags the issue #3 network model dated August 7, 1986 (working day 409) by 10 to 20 working days. Structural steel is erected and most of it has been plumbed and bolted. The first, second, third, and fourth floors have been poured out from column line A to C. The first floor in column line C to B has been poured out; the second floor deck column line C, is expected to be poured out January 12, 1987 (working day 517). Other floors will follow in sequence.

There has been some difficulty in acquiring all cellular metal deck needed, however, the contractor expected that by January 14, 1987 (working day 519) all remaining deck would be on the job.

We reviewed the major milestone points in close in of the building and brought the current field plan of the contractor and the monitoring networks in synchronization with each other. The network model which was updated at this session

was printed and given to the contractor's staff. However, it presently is not officially issued and will be used by them to check the logic and general sequencing, along with durations, to confirm it does represent a valid plan of work to full close in of the building.

Work has started on installation of underground utilities at the basement and construction of the floor slab on grade should start on February 10, 1987 (working day 538). Present expectations are that the floor slab on grade will be poured by March 25, 1987 (working day 569). This is a slightly longer lag than reported above but at present does not present a major difficulty in completing interior work. However, the basement floor slab is important to interior finish trades and should be addressed as aggressively as possible.

Roofing has been started with present plans to complete most roof blocking, curbs, drains, insulation, and roofing to horizontal dry in by early February, 1987. Exterior precast panels are to start in mid to late January, 1987 with precast to be completed by March 30, 1987 (working day 572).

Spray on fireproofing which is a very critical trade, is expected to begin sometime in mid to late January, 1987 and follow through as floor decks are poured out.

The overall close in point where all glazing and other close in trades are completed is shown on the issue #3 network model dated August 7, 1986 (working day 409), at May 21, 1987 (working day 610). In the updated network model this close in point is shown at June 23, 1987 (working day 632). However, it should be realized that interior finish trades on the project could start as early as March 30, 1987 (working day 572) when exterior precast is to be completed. This would require some temporary protection in vertical exterior walls of the building.

It is critical for all to understand that the major factor in timely completion of the facility is to get underway with interior rough and finish work just as quickly as possible. The contractor, the owner, and the design team are presently working well together and the present schedule and plan of work appears to be capable of achievement. Weather has been fairly good to date and the building is protected which should allow interior work to proceed on a fairly predictable basis.

I shall plan to monitor the field work again in the very near future by a direct inspection on the site.

Interior work design and planning

We spent a considerable amount of time evaluating the current status of the project relative to interior design, particularly in special trades, such as the computer room fire protection, computer access floor, acquistion of dry wall materials, and the intergrated control systems.

To better evaluate where these elements impact upon the project, the group at the session selected the third floor to concentrate upon as a model and updated the network for this floor. This network was printed and distributed to those at the meeting for their review and study. In it various impacts of the work in progress was shown.

Of particular importance was planning for the intergrated control systems (ICS). Work is currently in progress on determination and approval of the full scope of work, along with preparation of briefing documents for review and approval by various members of the project team. From our planning at this time, it appears that rough intergrated control systems components could possibly start in the field by mid April, 1987. This is later than desirable and I suggest every effort be made to review the current plan for this particular speciality activity so as to be able to get it started sooner.

A direct impact of the control system work is to restrain installation of work that must proceed under the access flooring level. The reason for this is that there is so much computer access flooring that it is desired to get this floor down at an early date since knitting together the above floor rough work such as sheet metal, the halon system, rough mechanical piping, preaction sprinkler piping, rough electrical conduit, along with masonry and the control system work, could pose serious installation problems at this floor.

In the simulation we ran, it appeared that installation of the raised computer floor at the third level should be able to begin by May 1, 1987 (working day 596). Using this starting point and evaluating the concurrent work, based upon preliminary durations established in a general manner in August, 1986, the completion date of the third floor comes out to late November, 1987; considerably later than is desired.

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

Since there was still a set of decisions that must be made about the work impacting upon construction, it was decided to further evaluate the plans resulting from this session and then to again meet to resolve how work was to proceed, particularly with the intergrated control systems, the halon system, and the computer access floor.

Our present planning shows that the halon system installation could start, if deliveries were expedited, by March 13, 1987 (working day 561). Computer access floor could be delivered to the job site by April 20, 1987 (working day 587). Dry wall materials could be on the job by May 19, 1987 (working day 608) and intergrated control systems work might be able to start as early as April 17, 1987 (working day 586).

There is also some concern about the intergrated control system since they would be started from documents that were not necessarily complete. This represents a potential problem area with elements as sensitive to good design as are the controls. However, as noted above, the project team for the owner, the architect/engineer, and the developer, will review the materials prepared at this session and at our next meeting we should thoroughly evaluate the current status of the work and make decisions on the occupancy sequence of the building levels. This is a critical decision element that has yet to be addressed in detail.

I shall be in touch with Mr. Demanski shortly to set the next planning and monitoring session. I shall also review with Mr. Demanski the next field monitoring of the construction on the job.

As noted above, neither of the network models prepared at this session today were not issued officially since considerable work is yet to be done in evaluating and working with the logic and the timing. However, they were provided to those requiring them at the meeting.

Ralph J. Stephenson, P.E.

RJS:gmy
TO: Mr. Larry Eastham
Mr. Greg Demanski
Mr. Steve Duczynski
Mr. Daniel Redstone
(Distribution to others to be by above parties)

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

March 11, 1987

Subject: Monitoring Report #16

Manufacturers National Bank Operations Center

Livonia, Michigan

Project: 85:58

Date of Monitoring: March 6, 1987 (working day 556)

Actions taken:

- Reviewed status of field work
- Reviewed status of Z contract document package
- Updated network model for third floor, landlord and tenant improvement work
- Made detailed review of conditions needed for timely completion of the building by the end of December, 1987

Current Status of Field Work

Monitored from RJS issue #4, sheets 1 and 2, dated January 8, 1987 (working day 515).

The project continues to meet most major current target dates between early and late starts and finishes. Roofing on the building to horizontal dry in is complete, although there still remains some miscellaneous roof flashings and trim to install.

Skylight glass is being installed and will require about 8 more working days. Exterior precast panels are moving well with the expected completion on column line J elevation being March 30, 1987 (working day 572). Installation of exterior sash on column line A has just started. Glass field measurements have been made and glass is expected on the job by the end of April, 1987.

All supported decks have been poured out in the building and spray on fireproofing is moving very well. It is expected that all spray on fireproofing at floors 1, 2, 3, and 4 will be completed in about 3 weeks. The target completion date for this work was April 15, 1987 (working day 584).

Basement slab on grade work is continuing, and should be complete in about 5 working days. It was due to be completed no later than March 17, 1987 (working day 563).

Thus, the building shell is rapidly being brought to a point where interior work, both rough and finish, could be installed with little if any delay. At the third floor, one of the more critical areas, sheet metal ductwork has started and in wall work is expected to be moving into active production soon. The platform for the toilet rooms at the core is also under construction.

Plan Preparation of Package Z Contract Documents

This package will be issued on March 25, 1987 (working day 569). It is expected to be in the contractor's hands on March 30, 1987 (working day 572) ready for solicitation of proposals. This is a very important package since in it is contained additional material needed to continue electrical work both above the ceiling and in stud walls.

A detailed review of this package at our afternoon session revealed that there are still several items that might not be included and still will be pending so far as design is concerned. These include the following for architect/engineer work:

- millwork - except vanities at toilet rooms and cafeteria
- site concrete work
- exterior signage
- electrical and data link for automated teller machine (ATM)
- atrium carpet with design in center
- guard house security console
- computer millwork
- window coverings
- lobby control desks including wire in conduit
- relocated sprinkler heads
- design of sundry shop (This has been released by the owner)

There are also some design elements that must be released by the control contractor and the owner. The control contractor must still provide guard house security console design and Manufacturers National Bank must provide design of interior signage, interior landscaping, and furniture in the K package.

It was decided at our session that the architect/engineer will obtain additional mechanical help, and he presently intends that this will allow them to complete about 98% of the mechanical work scope by March 25, 1987 (working day 569). Electrical design work will be 96% complete by March 25, 1987 (working day 569). There is a chance that the full electrical work might be possible to complete in this next issue. Every effort must be made to do this.

Updating of Network Model for Third Floor Interior Work

A good share of our morning effort was concentrated on preparing a revised network model for third floor interior work based upon current status and the issuance of the Z package. This network model shown on issue #6, sheets 5 and 6, dated March 6, 1987 (working day 556) was prepared in conjunction with the contractors office and field forces. It currently reflects the work status and sequence as proposed. However, as pointed out by the contractor, it does not take into full account the scope of work since the final drawings have not yet been issued. However, the work should be close enough for planning and decision making over the next few weeks.

In this network model, it appears that the third floor completion date will be somewhere between early and mid November, 1987. I am presently making a full diagram of the network and will issue it to the contractor, the owner, Mr. Duczynski, and the architect/engineer. The network model, as prepared, conforms fairly well to the present schedule of work being used by the contractor. However, I urge that both documents be correlated carefully to insure that the plan is correct and that the schedule derived from it can be achieved. We shall make a final updating and issue of the network model once it has been checked by the contractor.

The other floors in the project will have to be delivered sometime between the early November, 1987 date and the end of December, 1987. As can be seen, the turnover cycle is extremely short since there are four other floors besides the third level. Thus, multiple crewing will undoubtedly be required on the job to meet current anticipated targets.

Considerations necessary for Completing a Portion of the Building by the end of December, 1987

The contractor submitted a list of 10 items dealing with concerns relative to the processing of design and construction administration matters. These are reviewed in some detail in the notes that were provided by me of the meeting. Those attending the session were given copies of these notes and a set is attached to this monitoring report. In summary, the 10 points made by the contractor were as follows:

The completion date of a portion of the building by the end of December, 1987 could be achieved if

1. Walbridge Aldinger gets all tenant improvement drawings on March 25, 1987.
2. Scope of work is close to Walbridge Aldinger's understanding of it from the information currently available.
3. That field orders and bulletins will be accommodated without delay.

4. Subcontracting is done in the most timely manner possible.
5. Field and technical questions are answered without delay.
6. Premium time is to be worked early if required.
7. Long lead items are possible to order in adequate time to receive when needed.
8. Strikes and other relatively uncontrollable actions are minimal.
9. Construction areas of the project can be isolated from occupied areas by temporary partitions.
10. Operating floors are signed off by MNB and maintenance is taken on by owner.

In addition, one other qualification was added.

11. Installation of the integrated control system (ICS) is done in timely fashion.

These items should be discussed on an ongoing basis to insure that a full understanding of the conditions surrounding them is had by all parties to the project. They are important and should be given close attantion.

General

There were several general items discussed:

- Roof top units - 6 units are provided to furnish air conditioning to the entire building. These will be delivered March 6, 1987 (working day 556).
- Elevator - a check must be made immediately on special elevator controls or surveillance system that must be installed with the elevator. Mr. Urban will check on this.
- Computer cabling - apparently this will be done by either IBM or by the bank. IBM is to design the comuter cabling.
- Special sliding doors at computer rooms - a check must be made immediately on this to determine if a rated divider is necessary. This is a very critical item. Redstone's office will follow this.
- Spot heating and cooling systems - this item appeared in the laundry list of remaining contract document work as of December 7, 1986 (working day 494). It was shown in the Z package as item 93. I suggest it be checked to insure that there was not intended to be something included in this scope of work that has not yet been identified.

I shall be in touch with Mr. Demanski to set the next planning and monitoring session.

Ralph J. Stephenson, P.E.

RJS:gmy

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

April 15, 1987

Subject: Monitoring Report #17

Manufacturers National Bank Operations Center

Livonia, Michigan

578
146
724
Nov 2, 87

Project: 85:58

Start of move in

Date of Monitoring: April 7, 1987 (working day 578)

Number of working days remaining to start of move in: 146 working days

Actions taken:

- Reviewed current status of contract document preparation
- Discussed design items yet to be issued
- Discussed move in process
- Reviewed current status of third floor interior work
- Prepared interior work network models for second floor and first floor
- Briefly reviewed current status of field work

Current Status of Contract Document Preparation

Packages Z-1, 2, and 3 have been issued. Z-1 is the computer floor, Z-2 is the marble and ceramic tile, and Z-3, the balance of architectural, mechanical and electrical tenant improvement work. Z-3 was issued on March 30, 1987 (working day 572). Bulletin #12 was issued as a part of the Z-3 package.

Field order #47, pre-purchase of florescent light fixtures was approved and awarded April 3, 1987 (working day 576) and is now cleared for delivery.

Contracts have been let for Z-1 and Z-2. Pricing on package Z-3 is currently in work.

We discussed design items yet to be issued in some detail and below is given a brief review of that discussion. The basis of the discussion was taken from page 2 of Monitoring Report #16, dated March 11, 1987.

- Millwork - Apparently the only work remaining is control room millwork which requires additional information from the intergrated controls contractor. This design is to be resolved no later than May 1, 1987 (working day 596) with con-

tract documents for millwork to be issued by May 15, 1987 (working day 606).

- Site concrete work - Issued with package Z-3. However, there are still some design questions to be answered, including the following:

  a. design mix for concrete

  b. mesh to be used in the concrete

  c. type of aggregate to be used in exposed aggregate surface. (There is to be no color in the concrete. Concrete will be scored).

- Miscellaneous site work details - There is still a need for tree grate details, tree well drainage details, and curb details at the tree grates. Also needed are lighting details at the plaza sidewalk, outdoor eating area, and retention basin.

  Also required is the identification ground sign. This sign is presently in design work, with design development sketches to be submitted to the bank by April 17, 1987 (working day 586). Concurrent with this, other exterior signage design development work will be submitted to the bank on the same date.

- Electrical and data link for automated teller machines - The automated teller has been circuited and all design information is available. There has been no presentation made on finishes to the bank as yet. These will be presented on April 17, 1987 (working day 586).

- Atrium carpet - Work on the carpet has been held pending information from the carpet contractor. The carpet under discussion is in the center of the atrium. No additional design is needed from the architect's office.

- Guard house security console - This item was covered above under millwork.

- Computer millwork - No further design is to be done by Redstone.

- Window coverings - A presentation will be made on April 10, 1987 (working day 581) to set decisions on blinds or drapes.

- Lobby control desks - Completed and issued in package Z-3.

- Relocated sprinkler heads - Issued in bulletin #12. The contractor will write the addenda, however, a relocation note is needed in the bulletin.

- Design of sundry shop - The shop design has been released by the owner and a presentation will be made, along with design

of the automated teller machine area on April 17, 1987 (working day 586). Contract documents for the sundry shop are to be issued May 1, 1987 (working day 596).

- Painting schedule - There may be a need for color boards for the room colors. Mr. Dan Redstone will check with his interior department, and the discussion on painting color boards will be completed at the April 17, 1987 meeting (working day 586).

- Electrical items - Those electrical items still required were listed in memo #80 from Redstone to the bank on April 3, 1987 (working day 576). Answers to the request for more information are to be provided to Redstone by April 10, 1987 (working day 581). Presumably this will close out each of these separate electrical elements.

It is of the utmost importance at this point that all remaining design items be cleared on the project. As noted above there are only 146 working days to the start of move in from the date of this monitoring April 7, 1987 (working day 578) to November 2, 1987 (working day 724). Thus, a total focus must now be made on completing decision making so no delays to field operations will be encountered.

Move in discussion

The areas that must be ready for move in by November 2, 1987 (working day 724) and within the 2 weeks following were discussed in depth at our session. These areas are as follows:

Building work

- Third floor - must be complete and ready to move computer equipment onto the floor
- Second floor - must be complete and ready for full occupancy.
- First floor - must be able to accommodate, and in place for, full food service. In addition, the first floor lobby must be ready for full use since this will be the main access to the facility.
- Lower level - ready for full use except at the unassigned areas.
- Systems work - all electrical, mechanical, security, and elevator systems must be complete and the elevators must be operative.
- Exit stairs - all stairwells must be complete. The monumental stair at the atrium does not have to be complete.

- Fourth floor - not necessary for move in. However, work must be ongoing.
- Atrium - at the atrium work must be complete, except for the monumental stair, carpet, marble, ornamental lighting, and painting.

At the first floor, which is one of the critical areas to be occupied in November, 1987, some of the office spaces, some demountable partitions, some carpet, and some painting is not needed for the November 2, 1987 (working day 724) move in date. However, every effort should be made to have as much of that work complete as possible.

Network modeling of floor interior work

Third Floor

The network model for third floor interior work has been shown on sheets 5 and 6, issued on March 6, 1987 (working day 556) as issue #6. Work at this floor is currently meeting most major targets between early and late starts and finishes in the network plan. The completion date shown for third floor interior work was November 2, 1987 (working day 724).

Currently, at the floor, sheet metal ductwork is well along, although no variable air volume boxes are in place. Mechanical piping is about 30% complete, sprinkler piping about 90% complete, and work has started on the toilet room raised floors, and on core metal studs.

Presently, proposals are being received on Z package installation and it does not appear at present that there should be any difficulty in moving ahead with this work.

There is a potential problem with the intergrated control systems work. This contractor was supposed to be on the job, according to the network model, sometime between April 17, 1987 (working day 586) and May 1, 1987 (working day 596). However, the contractor's plans were to move on the job ahead of this date, by April 6, 1987 (working day 577). The contractor is not yet on the job. Control systems will have to be watched, managed, and expedited closely if we are to meet our target dates. I suggest immediate attention be given getting work under way.

We also added an item in for cleaning and sealing concrete floors prior to installation of the computer access floor stanchions. Overall, at present it appears that field work at this floor is well in line with the current network models.

Second Floor

As part of our work we prepared a network diagram for installation of second floor interior work. This took into account the current status of the floor. The completion date for the second floor shows up at November 6, 1987 (working day 728). A copy of this network model was provided to Walbridge Aldinger and Mr. Greg Demanski for their study and evaluation. If it appears to be satisfactory, we will put it into final form, similar to that done with the third floor network model.

I shall be in touch with Mr. Demanski shortly to determine if the logic and time structure is suitable.

First Floor

This network model is shown on pages 9 and 10 of issue #6, dated April 7, 1987 (working day 578). In the network we showed work at all areas, including the main building, cafeteria and food service area, along with lobby interior work.

The completion dates for the basic areas are as follows:

Cafeteria and food service equipment - November 19, 1987 (working day 737).

Lobby area - November 17, 1987 (working day 735)

Remainder of floor - December 4, 1987 (working day 747)

At major areas of the first floor, it probably will be possible to move in to some spaces earlier than December 4, 1987 (working day 747) date.

Copies of the network were given to Mr. Demanski, as well as Walbridge Aldinger for their review and evaluation. Again, I shall be in touch with Mr. Demanski to determine if these diagrams are suitable and whether they should be put into final form.

As with all planning on the project to date, the network models prepared at these sessions are joint efforts and are not intended to supplant or supercede the schedule prepared by the contractor. The networks are to be used by the bank to monitor and evaluate current status. To date the network models have closely coresponded to schedules prepared by the contractor and this system seems to be working satisfactorily at present.

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

General

The only areas remaining to be planned in depth are the fourth floor building area, the lower level building area, and at the outside of the project, the site work. Since the site work seems to be of great importance and must be completed before the onset of colder weather, 1987, I strongly recommend that at a near future meeting we focus on this site work and prepare what operational plans would be appropriate for its construction. The other two building areas, apparently, can be diagrammed any time convenient to the project team.

The concerns that will be expressed on an ongoing basis with the project, deal with the apparent heavy build up in similar field operations that will occur as these three major floors, the third, second, and first, move toward completion within a very narrow bracket of time. The amount of build up must be watched carefully since trade demands will be considerable, particularly as interior stud and dry wall work begins.

In addition, an ongoing evaluation must be made of the potential for work stoppages this summer. No discussion of this matter was held at our meeting, however, we should review potential trade problems in detail at a near future session.

Meanwhile, notes for April 7, 1987 (working day 578) were provided to Mr. Demanski for his use and for distribution. Please note that on page 3, item 4.5, it was stated that 149 working days remain to the start of move in. This should be revised to 146 working days. Please make that revision to your copy of the meeting minutes.

I shall be in touch with Mr. Demanski shortly to set the next planning and discussion session. I shall shortly also set a date for a field monitoring of the project to review on site the current status of the job relative to our plans of work.

Ralph J. Stephenson, P.E.

RJS:gmy
TO: Mr. Larry Eastham
Mr. Greg Demanski
Mr. Steve Duczynski
Mr. Daniel Redstone
(Distribution to others to be by above parties)

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

June 11, 1987

Subject: Monitoring Report #18

Manufacturers National Bank Operations Center

Livonia, Michigan

Project: 85:58

Date of Monitoring: June 3, 1987 (working day 618)

Number of working days remaining to start of move in on November 2, 1987 (working day 724) is 106.

Actions taken:

- Reviewed current field status of the project
- Discussed design items yet to be resolved
- Prepared network model for basement floor interior work
- Updated interior network model for third floor interior work

Field Status

As of June 3, 1987 (working day 618) the project is substantially closed to weather. The roof is complete to dry in although there still remain some roof problems relative to ponding of water that must be resolved. All sash and glass is installed except for access surfaces. No exterior doors are installed as yet, however, the building is generally secure with guard service.

At the interior of the building, elevator work is proceeding well and the freight cab is expected to be installed next week. The freight elevator should be available in about 10 working days. It will be operated by the contractor. All elevator platforms are currently in and generally operative.

Most spray on fireproofing at the building is complete and interior rough work is proceeding at most floors.

We made a relatively detailed evaluation of first floor progress, measuring it against the issue #6 network model, dated April 7, 1987 (working day 578). This network was used as the basis for the contractor schedule presently in effect. It shows a completion date at the first floor of December 4, 1987 (working day 747). This is about a month later than the presently contemplated move in.

At the first floor, work is nearly complete on above ceiling rough mechanical and electrical work. There have been some problems with

fabrication of miscellaneous iron hangers and these should be tracked carefully. However, they are being fabricated presently and should be on the job soon.

Exhaust ductwork from the hoods is installed but not yet fireproofed. The hood is available but not yet installed. Since the hood and the fireproofing must be installed for ceiling work to be fully completed, I suggest this matter be given early attention.

At the cafeteria and food service equipment metal studs and in wall work have begun and it is anticipated by the contractor that cafeteria wall board will be started June 8, 1987 (working day 621). This corresponds to its present desired early start date. Studs at the areas other than the cafeteria and lobby, will probably begin about June 9, 1987. This was the targeted late start date in the present plan of action. Lobby curtain wall framing is being assembled and will start in about 10 working days.

An item that could be critical is the lobby wall marble. We are presently holding a target delivery date of July 30, 1987 (working day 658). The marble is to be shipped from Italy on June 6, 1987 (working day 621) and will be tracked carefully by all concerned.

In general, work at first floor areas is proceeding well in alignment with current early and late starts and finishes.

At the second floor, the project is also moving relatively well in accordance with the issue #6 network model, dated April 7, 1987 (working day 578). Much of the above ceiling rough work has been installed with the exception of sprinkler piping which is about presently 30% complete. It does currently lag the target date set for it.

Miscellaneous iron hangers above the ceiling are lagging and need to be given special attention. Metal studs have been started and some wall board has been hung. Taping and sanding of wall board was due to begin no later than June 3, 1987 (working day 618). Taping and sanding has not yet started and it appears that the projected lag at the second floor is about 6 working days. This lag is over a contemplated completion date for the second floor of November 6, 1987 (working day 728). However, the contractor feels that the lag can be regained and that the current target completion can be held. In general, it appears that with the record of past performance, the second floor work could be brought back in line within the next several weeks.

At the third floor, an evaluation of the current status indicated some concern with sequencing of the access floor and other work related to it. Measuring against the current network models, indicated that the interior work could be as much as 20 to 25 working

days behind desired target completion dates. Therefore, a full update of this network was started at this session. It was not possible to complete diagramming and printing the full network during the planning and scheduling portion of the meeting. However, sequencing of the access floor with the ceiling work, carpet tile, demountable partitions, and ceiling panels, indicates that the floor could probably be completed by late October, 1987. However, it should be cautioned that the proposed plan is an extremely tight sequence and that operations there will have to be watched very carefully.

The third floor is one of the main operational elements of the project required by the bank. Therefore, it will be absolutely essential, under the present plan of work, for this area to be available on November 2, 1987 (working day 724).

I shall complete the updated network model for the third floor and put it in preliminary form for final review by all parties concerned. This will be available sometime in the near future and will be sent to the contractor, Mr. Demanski, Mr. Duczynski, and the Redstone staff for their review and evaluation.

We also updated the basement interior network to check the proposed completion date for it. This diagram, issue #6, dated June 3, 1987 (working day 618) was provided to those at the meeting. It shows a tentative completion date of November 17, 1987 (working day 735). This diagram will be studied carefully by those concerned and, if appropriate, the dates will be incorporated into the contractor's schedule.

No work was done on fourth floor planning since this floor, at present, is not totally critical. However, it should be pointed out that all work on the project is to be completed under present plans by the evening of December 24, 1987 (working day 762). Thus, all areas must be carefully considered and watched to insure that there is no time overrun of the various turnover and occupancy points.

In summary, it appears that field construction work is moving relatively well and should be able to recapture any current lost time so as to hold a move in date of November 2, 1987 (working day 724). However, there are many field related items that must be reviewed in depth and clarified before that time if the move in is to proceed well. This was noted at our meeting, but time did not permit, nor was this the proper forum, for their discussion. The items include the following:

1. What is the process to be used in turning over the space for the move in?

2. What punchout procedures are to be used?

3. What are the trade jurisdictional considerations for moving?

4. What warranty considerations must be cleared for the move in?

5. What elevator considerations must be reviewed to expedit the move into vertical transportation?

6. What will be the maintenance conditions on the project as move in proceeds?

7. What security considerations must be given thought to allow the move in to proceed under secure conditions?

8. What are the official occupancy considerations including the certification of occupancy from the City of Livonia?

These items must be continually reviewed and kept in mind as we approach the move in point, 106 working days from now. To make certain that this move in proceeds well, it would be wise to carefully outline all considerations of this type and the approaches to be used in their implementation.

It also should be realized that there is a possibility of strikes in the very near future. The electricians have settled. The plumbers, however, could possibily go out on strike, due to some disagreement as to relative rates. There is no word on a probability of a walkout with the plumbers at this time. Pipefitters have settled and the iron workers are working on a day to day basis. The sprinkler fitters' contract expires on August 1, 1987 (working day 660). Elevator contractors' contract expires July 1, 1987 (working day 638) according to the contractor. It does not appear that there will be a strike of the elevator constructors.

Current Status of Design Elements Pending

The discussion below is keyed to the design item review in Monitoring Report #17, dated April 15, 1987 and shown on pages 1, 2, and 3.

- Millwork at the control room - Resolved and in the bank's hands.

- Site concrete work - Generally resolved.

- Miscellaneous site work details - All resolved and issued except for the identification ground sign and the exterior signage design development work. The identification ground sign design drawings are to be issued July 1, 1987 (working day 638). Conduit for this sign is already installed. The exterior signage design development package was submitted to the bank and must be resubmitted. It will be resubmitted by July 1, 1987 (working day 638).

- Electrical and data link for automated teller machines - This has been submitted and approved and issued to the contractor. Work is under contract now.

- Atrium carpet - Still being discussed. Not resolved.

- Guard house security console - This work is in the bank's hands. It should be pointed out that the security console must be installed before all the controls are completed. Apparently millwork for this can be obtained as required.

- Computer millwork - Resolved.

- Window coverings - A decision will be deferred on these until later. It should be remembered that the systems balancing and the environmental influence of window coverings on people is an important consideration and should influence deciding when this matter will be decided upon.

- Lobby control desks - Issued.

- Relocated sprinkler heads - Sprinkler heads are required in lower level electrical and mechanical rooms. This matter must be discussed with the various city agencies. The contractor is preparing and submitting other revisions to the sprinkler drawings presently. Also the sprinkler heads at the sliding door must be relocated at the third floor.

- Design of sundry shop - The plan design has been completed. Equipment is to be specified by the food service contractor. No shelving backing has been shown on the drawings as yet. This information is to be released by June 8, 1987 (working day 621). Redstone will prepare a contract document for a bulletin and apparently this bulletin will be issued in late June, 1987.

- Painting schedule - All issued. Color chips remain to be submitted.

- Electrical items - The list of items dated April 2, 1987 (working day 575) has been addressed and the items resolved. Another list of items dated May 23, 1987 (working day 612) is being addressed but not yet totally resolved.

A new item on this design resolution list was added, concerning second floor office revisions at the southeast. These will be issued to the bank for their review and approval on Friday, June 5, 1987 (working day 620).

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

Overall, design work is still in somewhat of a mobile state and as has been urged in the past, all decisions relative to design must be brought to a resolution just as quickly as possible. All parties are working to this end and should continue to do so.

I shall prepare the third floor network model and issue it shortly for study and comments.

I plan to inspect field progress of the project in the near future and Mr. Demanski will make the necessary arrangements at the site.

I shall also be in touch with Mr. Demanski soon to determine the need and, if needed, date for the next general planning and monitoring session.

Ralph J. Stephenson, P.E.

RJS:gmy

TO: Mr. Larry Eastham
Mr. Greg Demanski
Mr. Steve Duczynski
Mr. Daniel Redstone
(Distribution to others to be by above parties)

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

July 18, 1987

Subject: Monitoring Report #19

Manufacturers National Bank Operations Center

Livonia, Michigan

Project: 85:58

Date of Monitoring: July 13, 1987 (working day 645)

Number of working days remaining to desired start of move in on November 2, 1987 (working day 724) is 79.

Actions taken:

- Reviewed current field status of project
- Reviewed current status of contract document preparation
- Discussed requirements for move in
- Reviewed move in dates
- Prepared network model for fourth floor interior work

Project Field Status

The project was monitored in the field on June 29, 1987 (working day 636). This information was covered in construction site monitoring report #3. We once again, today, monitored against the network models in current use and as identified in the construction site monitoring report. It was found that the project was in substantially the same position as outlined in that report. The only noticable change is that there might have been an additional 1 to 3 days of time lost, particularly at the third floor and the access floor area.

Thus, it was felt that the current status of the project warranted a careful and detailed look at the proposed move in date of November 2, 1987 (working day 724). This matter was discussed in great detail and decisions regarding the move in schedule will be formulated over the next few days. It is still desired to have the building available for the start of move in as close to November 2, 1987 (working day 724) as possible. However, alternate occupancy windows are being considered which may result in various combinations of dates for the occupancy sequencing. Therefore, it was decided to maintain a desired occupancy point in a date range, using November 2, 1987 (working day 724) as an optimum.

Current Status of Design Pending Elements

The discussion below is keyed to the design item review in monitoring report #18, dated June 11, 1987 on pages 4 and 5.

- Miscellaneous site work details - All resolved and issued except for exterior site work signage. The identification feature ground sign design was issued July 13, 1987 (working day 645). Exterior signage, details have not yet been submitted to MNB. This matter is becoming critical and I suggest it be addressed as quickly as possible. In addition, we should make certain any building signage on the exterior of the structure is accounted for.

- Atrium carpet (middle 10% area) - This item is in the bank's hands for design and approval.

- Guard house security console - As noted previously, this console must be installed before controls can be completed. The millwork is available as needed and the bank will have it delivered whenever the contractor requires. The contractor suggested that it be made available October 1, 1987 (working day 702).

- Window coverings - A decision will be made on Friday, July 17, 1987 (working day 649) as to the type of covering to be used, the color, the manufacturer, and other characteristics needed. Again, it is to be cautioned that we must watch the relation of window coverings to systems balancing and the pschological environmental influence on people occuping the building at an early time.

- Relocated sprinkler heads - These are sprinkler heads required at the lower level electrical and mechanical rooms. The item was discussed with city agencies and the decision is that additional heads must be installed. Also, a field order will be issued to the sprinkler contractor regarding the halon and the wet system on July 15, 1987 (working day 647).

Contractors are working on the documents at present. The heads at the sliding doors on the third floor must be relocated and this relocation design was issued by bulletin about July 1, 1987. No sprinkler corrective field work has been done as yet.

- Design of sundry shop - Issued by the architect/engineer in bulletin #22 about July 1, 1987. It must be priced.

- Painting schedule - Paint colors will be issued in bulletin #23 on July 13, 1987 (working day 645). The contractor will

have the paint chips by July 13, 1987 (working day 645).

- Electrical items - The list of May 23, 1987 (working day 612) was resolved in bulletin #22 and #23. It basically dealt with locational changes and did not add any additional equipment.

- Fence and jogging track - This is a new item which was issued on bulletin #23 on July 13, 1987 (working day 645).

- Revisions to emergency generator area - The exterior wall of the emergency generator area may have to be penetrated or relocated in order for the generator to operate properly. In addition, this wall has to be extended vertically to properly conceal the generator muffler.

Move In Considerations

The move in of the bank staff to the facility was reviewed in some detail and we began by deciding that a move in manual should be prepared to identify all details of this move.

The manual should address the following:

- space turnover procedures
- punchout procedures
- potential trade juridical considerations
- warranty considerations
- elevator and other equipment operating considerations
- maintenance considerations
- security considerations
- sign off procedures on corrected punch list
- conditions under which a certificate of substantial completion will be issued
- requirements to obtain certificate of occupancy
- procedures for obtaining an elevator certificate from the State of Michigan
- procedures for obtaining a food operation approval from Wayne County Department of Health
- consideration of work to be done by bank's maintenance staff while contractor is still on job
- warranty considerations and method of setting start of warranty dates

- preparation and submittal of operating maintenance manuals
- maintenance considerations during the overlapping occupancy, including clean up, disposal of trash, and parking
- requirements to be met for security provision
- utility considerations including who pays the utility bills for heat, water, snow removal, gas, light, and other such items
- preparation of record drawings, including:

  who is to prepare?

  what form are the drawings to take?

  how are they to be turned over to owner?

  are shop drawings to be maintained?

Preparation of this move in manual is a sizable undertaking and probably preparation of various parts of it will fall to various parties on the job. However, all of the items mentioned, along with others that I am certain we have not considered to date, must be taken into account when moving in to the building. This is particularly so since it will be a phased move in and portions of the building will be brought on line as they are available.

The architect/engineer will initiate work on the move in manual by writing a punch list procedure and reviewing it with the contractor. This document will be available by August 3, 1987 (working day 660) for discussion. It is to be reviewed by the contractor, the bank, and Schostak, along with the Redstone staff, so as to be approved for distribution by August 17, 1987 (working day 670). Probably the punch list unit will be a room or space having a number. Further division of areas will be as required.

In respect to overlapping occupancy, it will be important to properly utilize any bank maintenance personnel within conditions that will avoid juridical problems. In discussing this matter, the bank said they would probably have maintenance personnel on the job observing and learning about the building in September, 1987. This should be kept in mind so that the owner transition to the site is smooth and without difficulty.

We next discussed operational characteristics of the computer room prior to the main move. The computer room must be operational a minimum of 30 calendar days before the main staff move in to the building. This is a critical date and we spent some time identifing what is needed for a third floor computer occupancy condition.

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

The following items must be totally operational for the third floor to be occupied and used.

freight elevator

loading dock

phone system

integrated control system

maintenance area at basement

all exit stairways

all domestic mechanical and electrical systems

halon system

In addition, the computer and sorter rooms must be totally secure. There also must be a brown bag eating area, which is yet to be located. The security station at the first floor also must be available and operating.

It can be seen that the move in is a very complex process and should be given careful and ongoing attention during this early planning period.

General

Overall, the project is current lagging desired target dates to a degree where several move in characteristics must be established in detail. These are presently being evaluated. I strongly recommend that we continue monitoring field progress to identify trends in construction of the facility. To assist in this, we diagrammed the fourth floor interior work in detail today. This network model was distributed at the meeting and a copy of it is attached to this report. Please note that completion of this fourth floor work is now the morning of December 30, 1987 (working day 764).

I shall be in touch with Mr. Greg Demanski to set the next planning and monitoring meeting.

Ralph J. Stephenson, P.E.

RJS:gmy
TO: Mr. Larry Eastham
Mr. Greg Demanski
Mr. Steve Duczynski
Mr. Daniel Redstone
(Distributed to others to be by above parties)

1: **Manufacturers National Bank - Livonia Center**
2: **Meeting - July 13, 1987**
3: **Those attending meeting**
3.1: **Larry Eastham - MNB ~~- in meeting part time~~**
3.2: **Greg Demanski MNB**
3.3: **Steve Duczynski - Schostak ~~- in meeting part time~~**
3.4: **Steve Urban - Redstone**
3.5: **John Fancher - Project manager WA**
3.6: **John Moriarity - Project superintendent WA**
3.7: **Ralph J. Stephenson**
3.8: **~~Danny Redstone - Redstone - in meeting part time~~**
4: **Agenda** Dan Pelton - VP - WA
4.1: **Review current status of job**
4.2: **Discuss contract document status**
4.3: **Discuss requirements for move in**
4.4: **Review move in dates**
4.5: **Discuss use of overtime**
4.6: **Possibly diagram 4th floor**
5: **~~Current status of project~~**
5.1: **RJS reviewed current status**
5.2: **Still at about same position as on June 29, 1987 (636)**
5.2.1: May have lost one to three additional days
5.3: **Freight elevator inspected & have temporary permit**
6: **~~Contract document status~~**
6.1: **Items from June 3 meeting notes**
6.1.1: Miscellaneous site work details
All resolved & issued except
Identification feature ground sign
Was issued July 13, 1987 (645)
Exterior signs not submitted to MNB as yet
6.1.2: Atrium carpet - middle 10%
In bank's hands for design & approval
6.1.3: Guard house security console
Must be installed before controls can be completed
Any Herman Miller millwork can be obtained as needed
MNB will order & have delivered whenever WA says is needed
Will need about October 1, 1987
6.1.4: Window coverings
Decision will be made by Friday, July 17, 1987 (649)
Type of covering to be used
Manufacturer
Color
Watch systems balancing & environmental influence on people
6.1.5: Relocated sprinkler heads
Sprinkler heads required in lower level electrical & mechanical rooms
Was discussed with city agencies
Must install additional heads
Must issue field order to sprinkler contractors - halon & wet system

Will be issued July 15, 1987 (647)
Is being put on paper now by contractors
Must relocate heads at sliding doors on 3rd fl
Was issued by bulletin on about July 1, 1987
Field work not done as yet

6.1.6: Design of sundry shop
Issued by Redstone in bulletin 22 about July 1, 1987
Must be priced

6.1.7: Painting schedule
Issuing paint colors in bulletin 23 on July 13, 1987 (645)
WA will have paint chips by July 13, 1987 (645)

6.1.8: Electrical items
List of May 23, 1987 addressed in bulletins 22 & 23
Basically deals with locational changes
Did not add new panel

6.2: [redacted] items

6.2.1: Added fence at jogging track - issued on bulletin 23 - July 13, 1987 (645)

6.2.2: Must make revisions at emergency generator area
Exterior wall is too close to cooling fan
May not work
Will be tested
Could cut hole in wall & insert grill
Exterior wall is too low to hide muffler
Will be extended

7: Status of potential strikes

7.1: Sprinkler fitters contract expires at end of month - no strike likely

7.2: No other major problems

8: [redacted] considerations - move in manual

Greg Demanski said that when the move in starts the bank will bring the full operation up & going immediately. There is no experimental period.

See monitoring report 17, dated April 15, 1987, pages 3 & 4 & notes of April 7, 1987 under Move In Notes for conditions defined for move in.

8.1: What space turn over process is to be used

8.1.1: What punch out procedures are to be used

8.1.2: Punch out procedures
Should have separate punch outs for
Mechanical
Electrical
Architectural finishes
Integrated control system
Site work
Fire protection
Elevators
Should set up sign off procedure to remove items as completed

Redstone will write up punch list procedures & review it with WA
Al Malin & Steve Urban will prepare base document by August 1, 1987
Will be reviewed by WA, MNB, Schostak & Redstone
Will be approved and ready for distribution by August 15, 1987

8.1.3: A room will be ready for acceptance when punch list for room is zero
A room will be considered a space with a number
Could be divided into smaller areas if needed

8.2: **What are the [illegible] jurisdictional considerations**
WA wanted to know if MNB was to do any work on the building before WA is done with their work.

Will there be any work done by MNB maintenance staff while WA still is on the job.

Will still be punch list items.

How do we avoid jurisdictional problems? Substantial completion of an area is normally point where the problems can be moderated.

Will have MNB maintenance observing and learning about the building about September, 1987.

8.3: **What are the warranty considerations**
8.3.1: OMM manuals
8.3.2: Dates will be set jointly by WA, MNB, Redstone
8.4: **What are the elevator considerations**
8.4.1: Who operates elevators during MNB move in
MNB suggest keep elevators separate in use until WA moves out
8.5: **What are the maintenance considerations**
During the overlap in occupancy by both WA and MNB how is maintenance of the premises to be handled.

8.5.1: Trash
8.5.2: Clean up
8.5.3: Parking for the parties
8.6: **What are the security considerations**
8.6.1: All contractor personnel will have to have clearance & identification
8.7: **What are the official occupancy considerations**
8.7.1: Certificate of substantial completion - from Redstone
8.7.2: Certificate of occupancy - from City of Livonia
8.7.3: Elevator certificate - from State of Michigan
8.7.4: Food operation approval - from Wayne County Department of Health
8.8: **What are the utility considerations**

8.8.1: Who pays utility bills
- Heat
- Water
- Snow removal
- Gas
- Light
- etc

8.9: Record drawings

8.9.1: Who is to prepare?

8.9.2: How are they to be turned over to owner?

8.9.3: Are shop drawings to be retained?

8.9.4: Procedures to be followed in preparing operating & maintenance manuals

9: General notes

9.1: Must have computer room operational min of 30 calendar days before move

9.2: Could not move after 1st week in December, 1987

9.3: Next window is week end of January 16, 17, 18, 1988

9.3.1: Holiday weekend

9.4: What is the potential for having building complete by Dec 7, 1987

9.4.1: Would be the computer move in date

9.4.2: WA feel could have following done by Dec 7, 1987
- 3rd
- 2nd
- 1st except for atrium - scaffolding would still be in

9.4.3: Atrium could be done by first of year, 1988

9.4.4: Based on minimal overtime

9.4.5: Based on prompt resolution of conflicts & other design problem

9.4.6: Based on total minimizing of changes

10: Area characteristics for move in

10.1: For 3rd floor move in - day 0 - to be achieved between 11/2/87 & 12/7/87

10.1.1: To be totally operational
- Freight elevator
- Loading dock
- Phone system
- Intergrated control system
- Maintenance area in basement
- All exit stairways
- All domestic mechanical & electrical systems
- Halon system

10.1.2: To be totally secure
- Computer room
- Sorter room

10.1.3: Must have a brown bag eating place - to be located

10.1.4: Security station at 1st floor