

RALPH J. STEPHENSON, P. E.
CONSULTING ENGINEER

June 26, 1972

Subject: Monitoring Report #1 (Construction Phase A)

New International Terminal
Metropolitan Airport
Detroit, Michigan

Project: 72:10 - F (F designates field construction monitoring)

Date of Monitoring: June 22, 1972 (working day 123)

Monitored from Issue P1 dated January 22, 1972

Actions taken:

- Participated in diagramming session for construction phase A, including sub structure, super structure and metal deck work

General Summary

This meeting was attended by representatives of the Wayne County Road Commission, Barton Malow, Redstone Associates, the excavator, the steel fabricator and erector, and the metal deck supplier. Mr. Bill Robinson, general superintendent for the general contractor on the project, represented the overall field managership for this phase. We diagrammed the general administrative and physical actions leading up to start of excavation, the construction of all interior/exterior footings and walls to grade and established a tentative delivery point for major structural steel on the job. Presently it is anticipated that stripping of the building site will begin June 23, 1972 (working day 124) and will be followed by final layout and setting of batter boards. Construction of exterior spread footings on column line D is expected to start June 30, 1972 (working day 129). Present plan procedure is to work from south to north on column line D, then west to east on column line 28, next north to south on column line K, then returning and working from north to south on the interior footings along column line F. Next, the interior shear wall footings and shear walls to grade will be built, followed by the construction of the north stair tower foundation and then the spread footings and piers along column line L, including the entrance footings.

Present plans (from Issue P1 dated June 22, 1972) anticipate completion of work on column line L at September 18, 1972 (working day 183), a total of 54 working days or two and one half months. Structural steel is presently being scheduled to leave the shop in Indiana on October 16, 1972 (working day 203) and could be on the site by October 23, 1972 (working day 208). Thus, there is a 25 working day difference between completion of all foundation work for the main building and anticipated start of erection of structural steel. This gap is relatively small for this type of project and I suggest we do not consider any cutting of that difference since there is a possibility of time being lost during the foundation construction

period due to weather, inspection results, lags in fabrication or deliveries and other normally expected job delays. Mr. Walstrom of the steel fabricator said that they are going to try to complete erection of structure steel within two months of the starting date and finish trimming out and tightening up the structure within ten additional days, giving a total erection time of about 54 working days from the late October start. Mr. Walstrom requested we keep this date as a tentative target, since he has to confirm it and erection time in detail with his shop and field people.

Erection of structural steel is expected to start at the south end where most of the major mechanical and electrical services enter the building and move from south to north so that deck forming, close-in and other such operations can follow from the south end.

It is to be emphasized, and this was discussed in detail at the meeting, that construction of supported decks and erection of exterior close-in materials is expected to dovetail with structural steel erection. Thus, an erection procedure should be established so as to allow progressive plumbing and bolting of the structural frame as it is erected. This, in turn, will allow metal deck to be placed and floor slabs to be put into work, concurrently with completion of erection of the structural steel. Dovetailing of these operations is essential since the period of time in which we are beginning this work is early winter and we must gain every advantage possible on working toward close-in.

One sequencing problem that should be resolved quickly concerns construction of flight station foundations. There are three groups of these and presently they are located very close to the edge of paving limits for exterior apron work to be put into construction very shortly. These flight station foundations are not necessary for erection of structural steel. However, they are necessary for completing the easterly edge of the anticipated pre-winter construction on the aprons. The foundations are reasonably complicated and if they are constructed first, will delay start of construction of the main building foundations. If they are constructed after the main building foundations are complete, there is a chance it may be necessary to accommodate their construction in the construction of the easterly strip of the apron. Presently, my recommendation is that we do not relax our intent to concentrate on the main building foundations since, as pointed out above, if we can tighten our foundation and structural steel schedule up in any way, we should make certain that the project is ready. I further recommend that construction sequencing on the apron be planned so it will allow, if required, a later completion of the sections of the easterly strip of the apron needed to be held until construction of the flight station footings. This might require some sections of the apron to be left open so the footings can be constructed after the main building work. The matter is now being investigated by all concerned.

So far as the actual field work is concerned, Barton Malow has moved onto the site and layout of the construction fence has been initiated with erection of the fence to follow. The four corners of the building have been established and stripping of the site is about to start. It was agreed by all at this meeting that we would review the P1 plan of work and then plan another monitoring and diagramming session at which we will resolve the sequence of construction for the flight station footings. I shall be in touch with Mr. Kania and Mr. Colton to arrange a meeting at a mutually satisfactory time.

Ralph J. Stephenson
Ralph J. Stephenson, P.E.

Monitoring Report #1
(Construction Phase A)
New International Terminal
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RALPH J. STEPHENSON, P. E.
CONSULTING ENGINEER

To: Mr. Don Redmond (5 copies)
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Mr. Ken Hafer
Louis G. Redstone Associates
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RALPH J. STEPHENSON, P. E.
CONSULTING ENGINEER
July 18, 1972

Subject: Monitoring Report #2 (Construction Phase A)

New International Terminal
Metropolitan Airport
Detroit, Michigan

Project: 72:10 - F (F designates field construction monitoring)

Date of Monitoring: July 13, 1972 (working day 137)

Monitored from Issue P1 dated June 22, 1972 and
Issue P2 dated July 13, 1972

Actions taken:

- Diagrammed construction Phase A structural steel, metal deck work and related mechanical and electrical installation
- Inspected construction site
- Evaluated job progress

General Summary

This meeting was attended by representatives of the Wayne County Road Commission, the Macomb Corporation (briefly), Harlan Electric, American Bridge, Barton Malow and Redstone. We monitored present construction progress and continued diagramming the remainder of Phase A construction work up to and including placement of metal deck on erected structural steel.

Present work is moving relatively well with the exception of exterior piers and grade beams on column line D. These are presently restrained by late delivery of anchor bolts. Anchor bolts had an early delivery goal of June 27 (working day 126) and a late delivery allowable of July 12 (working day 136). As of today, July 13, 1972 (working day 137), they were not on the job. Mr. Walstrom of American Bridge, said they will be shipped Friday, July 14, 1972 and should be on the job Monday morning, July 17, 1972 (working day 139).

Construction of spread footings is substantially complete on column line D and excavation has started around the north end of the building. Some early work has been done on deep interior spread footings on middle column line F due to availability of equipment.

At the meeting we diagrammed the south, middle and north flight stations on the west side of the main structure. Mr. Robinson said he will start this work on or about July 27, 1972 (working day 147). We have given the flight station footing construction a late finish the same as the late finish of all other footings - the morning of September 18, 1972 (working day 183). It was decided at our diagramming session that paving of the new apron will be held one additional width of apron strip to the west of the flight stations so installation of flight station foundations will not interfere with apron paving this fall. This was agreed to by

all parties concerned. Thus, when paving resumes on the apron next year, the additional strip originally anticipated to be paved this fall will be installed.

We also diagrammed installation of temporary power and primary service duct and manholes. Mr. Snow said that the critical element in temporary power is delivery of potheads, wire, cable and accessories. He is going to make every effort to expedite deliveries and is aiming now to have all necessary material on the site by August 11, 1972 (working day 158). This will allow activation of temporary power to the job site by August 16, 1972 (working day 161). Immediately after completion of temporary power service, work on the primary service duct and manholes will begin. This network diagram is shown on sheet P1, Issue 2 of the preliminary network model.

As a major part of this conference, we also diagrammed the erection of structural steel. American Bridge plans to erect structural steel in five major divisions of approximately three bays each. It was agreed that erection will proceed from south to north and that plumbing and bolting of division one structural steel will begin five working days after erection of division one structural steel has started. Division one structural steel will be completely plumbed and bolted five working days after its erection is completed. This same general sequence will be followed throughout with completion of all plumbing and bolting of division five structural steel following by four working days the completion of erection of division five structural steel. We built five working days of weather into the structural steel sequence. The procedure and dates below were agreed to by all parties at this meeting.

Delivery of structural steel	-	October 23, 1972 (working day 208)
Shake out of structural steel	-	Ten working days
Erection of structural steel starts	-	November 6, 1972 (working day 218)
Plumbing and bolting of structural steel starts	-	November 13, 1972 (working day 223)
All structural steel erected, divisions one through five	-	January 25, 1973 (working day 273)
All structural steel, divisions one through five completely plumbed and bolted	-	January 31, 1973 (working day 277)

Erection of division one metal deck will start after division one steel has been completely plumbed and bolted on November 28, 1972 (working day 233). Metal deck will follow a pattern such that it will be completely erected ten working days after division five structural steel has been plumbed and bolted. Thus, all metal deck is planned to be in place by February 14, 1973 (working day 287). It is to

be emphasized that the above schedule has been agreed to and since it is critical we begin horizontal floor decks and vertical close-in of the building as quickly as possible, it is essential this set of target dates be maintained.

Presently shop drawings have been moving much more slowly than had been originally committed. Mr. Westrom said that he would get on this immediately. Shop drawings are critical to prompt fabrication of structural steel.

The preliminary network model, Issue P2 dated July 13, 1972, will be printed and issued to Mr. Don Redmond of Barton Malow, Mr. Robert Kania of the Wayne County Road Commission and Mr. Ken Hafer of Louis G. Redstone Associates. Distribution will be from them to the appropriate sub contractors and agencies.

General Summary

The project has gotten off to a relatively good start in the field and present progress is generally in accordance with the network diagram with the exception of construction of piers and grade beams. These lag by approximately three working days due to late delivery of anchor bolts by American Bridge. Anchor bolts are now due on the job Monday, July 17, 1972 (working day 139). It is critical that they be expedited to the greatest extent possible since they are essential for continued progress on sub structure construction. Another item that must be watched closely is production of shop drawings for structural steel. These are presently lagging over the originally committed targets and if we are to meet our October 23, 1972 structural steel delivery date to the site (steel on the site ready for shake out), shop drawing production must be improved.


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RJS/m

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RALPH J. STEPHENSON, P. E.
CONSULTING ENGINEER

August 1, 1972

Subject: monitoring Report #3 (Construction Phase A)

New International Terminal
Metropolitan Airport
Detroit, Michigan

Project: 72:10 - F (F designates field construction monitoring)

Date of Monitoring: August 1, 1972 (working day 150)

Monitored from Issue P2 dated July 13, 1972

Actions taken:

- Inspected project
- Reviewed job with Mr. Bill Robinson of Barton Malow
- Attended construction conference
- Color coded field and office networks

General Summary

This was a regular construction meeting at which representatives of the Wayne County Road Commission, Barton Malow and Redstone's office were in attendance. Major work of the meeting consisted of discussing general job progress.

So far as current project status is concerned, the job lags by approximately five working days due, in part, to late delivery of anchor bolts and in part, to a temporary slow-down of excavation. Mr. Robinson points out it is expected to move back on the planned logic sequence as of today and to make a heavy effort to pick up all lost time within the next two to three weeks. It appears presently this is a feasible course of action.

Footings have been completed on the D column line and forming of piers and walls is well in work. Because of equipment availability, the column footings on F line were constructed earlier than originally planned. It is expected now to move to the north of the building on column line 20, move across to the east and then down column line K as planned in Issue P2.

Structural steel is being detailed and it is anticipated that all shop drawings will be in the hands of the architect/engineer on August 14, 1972 (working day 159). This is a very critical item and if there is any possibility of earlier submission of shop drawings, it would expedite checking.

RALPH J. STEPHENSON, P. E.
CONSULTING ENGINEER

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(Construction Phase A)
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We are still maintaining target dates as set in Monitoring Report #2.

So far as installation of temporary power and primary service duct is concerned, Mr. Snow of Harlan reported to Mr. Benton on July 26 that delivery of pot heads, accessories, cable and wire was to be some time between August 9, 1972 (working day 156) and August 11, 1972 (working day 158). This is consistent with our present schedule which calls for activation of temporary power on or before August 16, 1972 (working day 161). Mr. Robinson reported that temporary power is needed in the present general contract operations and any expediting of this that is possible would be appreciated.

Flight station foundation work will move concurrently with construction of footings on column line A and will begin sometime early next week. It has some float time available and presently is not critical. If a choice is to be made between construction of foundations in the major building compared to those at the flight station, I suggest that main building footings be concentrated upon so they can be completed with no possibility of a late finish which might interfere with structural steel erection.

Another element discussed was the processing of bulletins and change orders. This, as with most sizable projects, becomes a very important part of the field and office procedures. I recommend that a review of these procedures be made so the system expedites processing of all revisions made necessary to working drawings and specifications subsequent to letting of contracts. This will become a critical matter, particularly in the second phase of construction where it is difficult to gain all tenant information prior to letting of initial construction contracts.

General Summary

Overall, the project is moving fairly well although it now lags by approximately five working days in construction of the main foundations. Mr. Robinson feels this time can be picked up. So at present with an accelerated work program, it appears there will be no major delays to delivery of foundations by mid-September.

We have established a completion date on Phase A of the contract the evening of February 13, 1973 (working day 237). This represents the completion of erection of the metal deck on structural steel.

Ralph J. Stephenson
Ralph J. Stephenson, P.E.

RJS/m

To: Mr. Don Redmond (5 copies)
Mr. Robert Kania (3 copies)
Mr. Ken Hafer

August 17, 1972

Subject: Monitoring Report #4 (Construction Phase A)

New International Terminal
Metropolitan Airport
Detroit, Michigan

Project: 72:10 - F

Date of Monitoring: August 15, 1972 (working day 160)

Monitored from Issue #1 dated July 26, 1972

Target end date for Construction Phase A: February 13, 1973 (working day 287)

Actions taken:

- Inspected project
- Evaluated job progress
- Participated in construction conference
- Color coded field network

General Summary

Currently foundation construction is moving at a fair pace. There is some apparent lag, probably about nine working days, in footings along column line K. However, this lag is not a true measure of job status since construction of footings along column line F, originally to follow column line K footings, were started earlier than originally anticipated.

A truer measure of the behind time can be seen in work on column line F. Footings there were due to be completed on August 17, 1972 (working day 162). Mr. Robinson anticipates that they will be completed by August 18, 1972 (working day 163). This presumes optimum field conditions and if we assume there may be some slight delays due to weather or other operating conditions, the evaluation shows a lag of two to three working days.

However, there are other problems on the job that will cause delays to completion of foundation work. The most serious of these is along column line D where concrete in five footings has tested out at doubtful strengths relative to specified strengths. Major discussions are being conducted now as to the correction method and it appears that three of the footings may have to be completely removed and replaced. If this is the case, we can assume there will be from 3 to 7 days of demolition work, 8 to 10 days of reconstruction work on foundations alone, with another 3 to 5 working days required to build grade beams - for a total of from 14 to 22 working days from start of removal (if this course of action is pursued.)

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(Construction Phase A)
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Mr. Robinson feels that reconstruction of these footings, if necessary, can proceed concurrently with other work. Therefore, if we assume that such work can start on August 18 (working day 163), it can be assumed that the reconstruction will be complete about the middle of September. I urge that a rapid decision be made in this matter since any delays to installation of these footings could seriously inconvenience backfilling, leveling of the site and making ready for structural steel erection.

After a brief review of the structural steel status, it was generally agreed that according to present indicators, the target dates established in Issue #1 for fabrication, delivery and erection of structural steel are to be held. To review briefly:

Structural steel delivery to site	-	October 23, 1972 (working day 208)
Unload and shake out structural steel complete	-	By November 6, 1972 (working day 218)
Start of erection of structural steel	-	November 6, 1972 (working day 218)
Completion of structural steel, erection, plumbing and bolting	-	January 30, 1973 (working day 277)

Mr. Desai of Redstone's reports that substantially all shop drawings for structural steel are now in his hands and are being processed as rapidly as possible. A prefabrication meeting is to be held later this month.

Construction of the flight stations has been delayed until equipment can be freed up from the interior of the main structure. The late start on flight station work to meet the target September 15th date for foundation completion was August 16, 1972 (working day 161). Mr. Robinson reports that work there will start this coming Friday, August 18, 1972 (working day 163). This gives a lag at the flight station work of two working days.

It appeared from an inspection of the site that installation of temporary power is now actively in work. However, as of early morning August 15, 1972, this power was not yet available to Mr. Robinson for general contractor use. Power is needed on the job site.

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(Construction Phase A)
New International Terminal
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RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER

General Summary

Overall, foundation work for the terminal and flight stations lags by two to three days over the September 15, 1972 target date. However, it may be necessary to reconstruct several footings along the D line which may delay the job past the target date. If prompt action is taken on this matter, indications are that the September 15th goal could be met. Structural steel shop drawings are now nearly complete and template preparation is due to begin August 18, 1972. Indications are that present fabrication and delivery dates are to be held.

The network plan, Issue #1, dated July 26, 1972 has been distributed to the Wayne County Road Commission, Barton Malow and Redstone Associates. Accompanying the network diagram was a computer printout. These documents were reviewed in detail at the meeting and it is now assumed that all parties to the work are proceeding in accordance with the Issue #1 plan of work. If there are any questions about the network, please feel free to contact me.


Ralph J. Stephenson, P.E.

RJS/m

To: Mr. Don Redmond (5 copies)
Mr. Robert Kania (3 copies)
Mr. Ken Hafer

RALPH J. STEPHENSON, P. E.
CONSULTING ENGINEER

August 29, 1972

Subject: Monitoring Report #5 (Construction Phase A)

New International Terminal
Metropolitan Airport
Detroit, Michigan

Project: 72:10 - F

Date of Monitoring: August 25, 1972 (working day 168)

Monitored from Issue #1 dated July 26, 1972

Target End Date for Construction Phase A: February 13, 1973 (working day 287)

Actions taken:

- Inspected project
- Evaluated job progress
- Conferred with Mr. William McIntyre re job status
- Color coded field network

General Summary

Three footings along column line D have been removed due to lower than specified concrete strengths being reported. One of these footings has been replaced - the others are scheduled to go in Monday and Tuesday, August 28 and 29. Piers and grade beams will be rebuilt immediately following installation of footings. This work is moving in accordance with the anticipated times required as noted in Monitoring #4.

Work along column line 28 at the north end of the building is moving between early and late finishes with the footings being in and piers constructed; grade beams are substantially complete and backfilling started.

All footings and piers are in along column line K with four grade beams at the north being poured and in the process of being stripped. Column line K work is moving between early start and late starts.

Column line F footings are completed with piers, and are backfilled substantially ready for leveling plates.

The flight stations were originally scheduled to start on July 27, 1972 (working day 147). This was revised as of our last meeting to a starting date the middle of August. They have not as yet started and currently are behind by seven working days. Mr. McIntyre reports that these should be put into work sometime within the next two weeks. Although there is no major delay caused by an extension of the construction of these flight stations past the foundation target of September 15th, it would be wise to establish a firm date by which they are to be built and to

RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER

Monitoring Report #5
(Construction Phase A)
New International Terminal
Page two

sequence these so that we are certain there is absolutely no interference with structural steel when it arrives on the job site in October. I recommend immediate attention be paid to these flight station foundations and a firm starting date established which Barton Malow regards as valid.

Other lagging areas are in the interior shear wall footings and the north stair tower foundations. These were originally due to start on a late start of August 18, 1972 (working day 163). Mr. McIntyre reports that they will begin on August 28, 1972 (working day 169), giving them a projected lag of six to eight working days. These footings should move reasonably well and it is anticipated by our schedule they will move from the north stair tower to the exterior spread footings, piers and backfilling on column line L.

This monitoring was done late Friday afternoon and no authentic information was available on the present status of structural steel. However, we are assuming as of this point that the dates already established for delivery to the site on October 23, 1972 will hold.

Temporary power has now been made available by the electrical contractor on site work to Barton Malow. There is a current holdup on utilization of this power due to transformation problems. These are expected to be resolved next week.

The weather over the past two weeks has been rainy which may account for some of the delays to job progress, particularly in starting flight station, shear wall and stair tower foundation work.

Precipitation in the month of August has run slightly higher than usual and having fallen in small increments, caused problems of continuity on the job. It appears that the remainder of the month may be reasonably dry and I suggest, as noted above, that every effort be made to expedite all foundation construction so when steel begins arriving on the site, there is absolutely no possibility of delay to shaking structural work out and beginning erection.



Ralph J. Stephenson, P.E.

RJS/m

To: Mr. Don Redmond (5 copies)
Mr. Robert Kania (3 copies)
Mr. Ken Hafer

RALPH J. STEPHENSON, P. E.
CONSULTING ENGINEER

August 29, 1972

Subject: Monitoring Report #5 (Construction Phase A)

New International Terminal
Metropolitan Airport
Detroit, Michigan

Project: 72:10 - F

Date of Monitoring: August 25, 1972 (working day 168)

Monitored from Issue #1 dated July 26, 1972

Target End Date for Construction Phase A: February 13, 1973 (working day 287)

Actions taken:

- Inspected project
- Evaluated job progress
- Conferred with Mr. William McIntyre re job status
- Color coded field network

General Summary

Three footings along column line D have been removed due to lower than specified concrete strengths being reported. One of these footings has been replaced - the others are scheduled to go in Monday and Tuesday, August 28 and 29. Piers and grade beams will be rebuilt immediately following installation of footings. This work is moving in accordance with the anticipated times required as noted in Monitoring #4.

Work along column line 28 at the north end of the building is moving between early and late finishes with the footings being in and piers constructed; grade beams are substantially complete and backfilling started.

All footings and piers are in along column line K with four grade beams at the north being poured and in the process of being stripped. Column line K work is moving between early start and late starts.

Column line F footings are completed with piers, and are backfilled substantially ready for leveling plates.

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RALPH J. STEPHENSON, P.E.
CONSULTING ENGINEER

Monitoring Report #5
(Construction Phase A)
New International Terminal
Page two

sequence these so that we are certain there is absolutely no interference with structural steel when it arrives on the job site in October. I recommend immediate attention be paid to these flight station foundations and a firm starting date established which Barton Malow regards as valid.

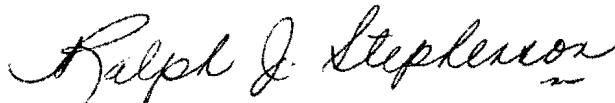
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Temporary power has now been made available by the electrical contractor on site work to Barton Malow. There is a current holdup on utilization of this power due to transformation problems. These are expected to be resolved next week.

The weather over the past two weeks has been rainy which may account for some of the delays to job progress, particularly in starting flight station, shear wall and stair tower foundation work.

Precipitation in the month of August has run slightly higher than usual and having fallen in small increments, caused problems of continuity on the job. It appears that the remainder of the month may be reasonably dry and I suggest, as noted above, that every effort be made to expedite all foundation construction so when steel begins arriving on the site, there is absolutely no possibility of delay to shaking structural work out and beginning erection.



Ralph J. Stephenson, P.E.

RJS/m

To: Mr. Don Redmond (5 copies)
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Mr. Ken Hafer

OCT 4 1972

R E C E I V E D
SEP 25 1972
**W. C. R. C. FIELD
ENGINEERING**

RALPH J. STEPHENSON, P. E.
CONSULTING ENGINEER
September 23, 1972

WR-72-A3
cc SWC
L.S.
H.B.T.
Stephenson
RJK
G.B.S.
A.R.
file

Subject: Monitoring Report #6 (Construction Phase A)

New International Terminal
Metropolitan Airport
Detroit, Michigan

R E C E I V E D
SEP 29 1972
**W. C. R. C. FIELD
ENGINEERING**

ATT	READ
	S.W.C.
	C.J.D.
	R.W.S.
	H.B.T.
	J.E.K.
✓	L.A.S. 9-27
✓	R.W.K. 10/2/72
	E.S.
	R.D.L.
	OFFICE

Project: 72:10 - F

Date of Monitoring: September 21, 1972 (working day 186)

Monitored from Issue #1 dated July 26, 1972

Target End Date for Construction Phase A: February 13, 1973 (working day 287)

Actions taken:

- Inspected project
- Conferred with Mr. William Robinson re job progress
- Evaluated job progress
- Checked with Wayne County Road Commission staff re electrical progress

General Summary

As of September 21, 1972 (working day 186) all major structural steel supporting footings are in place and generally backfilled to grade. The interior shear wall footings and walls to grade have been completed and the north stair tower foundations are complete, except for minor tie-ins to grade beams along column line 28.

All footings along column line L (supporting precast columns) are complete and piers are now being constructed. The sequence of work on the flight stations has been changed and they are being built from north to south with the north station now nearly complete. Concrete for foundation work at the middle flight station is now being placed and layout and site stripping for the south flight station has started.

So far as general position relative to the target end date of September 15, 1972 (working day 183) is concerned, the project currently lags by about fifteen working days. Mr. Robinson estimates all work on substructure elements including the flight stations, shear walls, stair tower and column line L work will be done in 10 to 15 working days. There were several delays, one of which was the exceptionally wet weather encountered during the months of August and September.

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(Construction Phase A)
New International Terminal
Page two

RALPH J. STEPHENSON, P. E.
CONSULTING ENGINEER

Structural steel fabrication is presently in work and our date for delivery to the job site was set for October 23, 1972. Mr. Walston of American Bridge, however, has written Barton Malow stating that there will be a one week delay in this delivery due to reasons as he outlined in the memo. The target start of erection date is November 6, 1972 and it appears presently that there should be no difficulty in meeting this starting date even with the one week delay in delivery. The reason is we have assumed a ten day unloading and shake-out period at the job site. Mr. Robinson is making every effort to put the site in such condition that shake-out as needed will be expedited to the greatest possible extent. I suggest close coordination between the structural steel fabricator/erector and all other parties be maintained starting now so no erection delay whatsoever will be encountered when the steel arrives on the job. All time that can be picked up will be of great help in moving the project ahead during the coming winter.

Installation of the primary manhole and conduit was due to proceed and be completed by an original target of September 13, 1972. However, this work has been delayed and presently it is expected that layout of the service duct will start on September 22, 1972 (working day 187). It would be desirable although not essential that this primary underground work be completed by the time structural steel begins arriving on the site. Tentatively, in conference with staff members at the Wayne County airport offices, it was decided to set a target of October 20, 1972 (working day 207) for completion of the primary manhole and conduit. Presently there appears to be no major difficulty in meeting this date even though cable must be measured and ordered to length. I suggest this matter of primary power installation be checked further to see that there are no problems incurred by moving target completion to a later date.

In summary, the project is now 10 to 15 working days from foundation completion. However, presently all major footings and walls to receive structural steel are completed and backfilled. The structural steel is due on the job October 27, 1972 compared to the original target date of October 20, 1972. This should not delay start of erection of structural steel presently scheduled for division 1 on November 6, 1972 (working day 218). We shall hold these dates in our monitoring and evaluation.

2 this date may change. RJS 10/2/72

not done shipping this is not done 10/2/72

Ralph J. Stephenson
Ralph J. Stephenson, P. E.

RJS/m

To: Mr. Don Redmond (5 copies)
Mr. Robert Kania (3 copies)
Mr. Ken Hafer

RALPH J. STEPHENSON, P. E.
CONSULTING ENGINEER
October 10, 1972

Subject: Monitoring Report #7 (Construction Phase A)

New International Terminal
Metropolitan Airport
Detroit, Michigan

Project: 72:10 - F

Date of Monitoring: October 10, 1972 (working day 199)

Monitored from Issue #1 dated July 26, 1972

Target End Date for Construction Phase A: February 13, 1973
(working day 287)

Actions taken:

- Conferred with Wayne County Road Commission staff re general progress
- Evaluated new structural steel delivery schedule

General Summary

At the morning meeting American Bridge submitted a revised delivery schedule and erection schedule for structural steel. Presently it is the intent to start shipping Division 1 structural steel on October 20th (working day 207) and to complete shipment of Division 1 by October 30th (working day 213). The intent then is to start Division 1 structural steel erection on or before November 6, 1972 (working day 218), the currently scheduled target date for start of Division 1 steel erection.

American Bridge also anticipates completion of erection and detailing of structural steel in nine weeks which is within our currently anticipated issue 1 network plan projection. As has been recognized, structural steel is critical to early start on close-in of the structure and anything that can be done to expedite delivery and erection will be of great help in carrying the project into winter, well prepared for cold weather work.

I discussed the project meeting and job progress with Mr. Kania of the Wayne County Road Commission after the meeting. He mentioned that there has been concrete on the K line grade beams that did not come up to required design strengths. It is the intent presently to remove these grade beams and replace them. This work is to start in the very near future. It does not appear presently that replacement of grade beams should affect structural steel erection.

Monitoring Report #7
(Construction Phase A)
New International Terminal
Page two

RALPH J. STEPHENSON, P. E.
CONSULTING ENGINEER

There has been additional slowing of work on the flight stations and these foundations are not yet complete. However, the project is presently able to receive all structural steel for the superstructure. Therefore, foundation work being carried on now, both replacement of grade beams and construction of flight stations, should not delay start of erection of structural steel.

A pre-erection meeting for reviewing structural steel work is to be held October 18th with all those concerned. At this meeting details of receipt and shake-out of structural steel will be worked out along with the detailed erection considerations. It is important that all potential problems connected with structural steel be ironed out prior to its arrival on the job site. This is critical since we are now entering cold weather and any expediting possible would be helpful to all contractors involved.

It is becoming critical that the superstructure contract be awarded as quickly as possible so that ordering and detailing of long lead time items can be put in work as soon as possible. With present information, approval on this work could be sometime this week.



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To: Mr. Don Redmond (5 copies)
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Mr. Ken Hafer
Mr. Chas. Van Dusen

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October 26, 1972

Subject: Monitoring Report #8 (Construction Phase A)

New International Terminal
Metropolitan Airport
Detroit, Michigan

Project: 72:10 - F

Date of Monitoring: October 24, 1972 (working day 209)

Monitored from Issue #1 dated July 26, 1972

Target End Date for Construction Phase A: February 13, 1973 (working day 287)

Actions taken:

- Inspected project
- Participated in construction conference
- Color coded networks
- Evaluated job progress

General Summary

Substructure construction is now substantially complete, ready for structural steel with the exception of two vestibule piers at the south end. These have been excavated for but heavy rain over the weekend filled the hole and made it impossible to complete work at that time. Mr. Robinson feels he will have the area pumped dry and the piers in by the end of this week. Leveling plates are now being set and also should be completed by the end of the week.

There have been additional problems with low concrete test strengths and repairs to the grade beams on the east column line are to be started in the very near future. Cores have been taken of other concrete areas in the interior and exterior of the building and these will be tested to determine if other corrective action must be taken. It appears now that none of these low test areas will affect the start of structural steel.

Steel trusses were to have been shipped today and status of this will be checked by the Road Commission staff. Erection of superstructure structural steel is expected to begin on or before November 6, 1972 (working day 218). Presently the site is very wet and muddy and although it is expected to dry out this week,

it would be appropriate to consider the potential possibility of using the apron strip at the west of the International Terminal as a storage and shakeout area if required by the steel erector. Presently the intent is to take members directly from the truck and erect as they arrive on the site. This is an erection detail to be worked out in the field. I suggest since structural steel delivery is very critical that careful check be made on the plant and shipping progress of structural steel this week. We are still holding the start of structural steel for November 6, 1972, and assuming a nine week erection schedule to completion of plumbing and bolting.

The matter of the precast concrete canopy columns was reviewed at the construction meeting. So far as we know, there is no contract let yet to the precast contractor. Since in all likelihood, the phase D (superstructure work) general contractor will want to complete canopy work before the onset of freezing and winter weather in 1973, we probably should assume that the canopy columns will be needed at a time so canopy construction can proceed in the spring, summer and fall of 1973. Tentatively we will work to an April delivery on precast although there is some chance, according to the construction meeting discussion, that production of the sculptured columns will take longer than that to achieve. Mr. Hafer and I will investigate with the Wayne County Road Commission the situation on these columns and have this information available at an early date. I shall be in touch with Mr. Hafer on this.

The superstructure contract (contract B) has been approved and a pre-construction meeting will be held Thursday, October 26, 1972 (working day 211). It will be essential to dovetail closely the work of contract D (superstructure) with that of contract A (foundation and structural steel) since pouring of floor slabs on erected metal deck should be accomplished as quickly as in-floor work can be set. It is the intent of the metal deck fabricator and erector to ship metal deck to the job to arrive very soon after supporting steel has been started. The deck may be used for safety deck depending upon arrangements between the steel erector and the metal deck erector. In any event we should assume that concrete decks will be in construction just as soon after stage one structural steel is erected as possible.

General Summary

Foundation construction for receipt of structural steel is substantially complete with the exception of leveling plates which are now in work and construction of two vestibule column supports at the south end of the building. Structural steel erection is due to start on November 6, 1972 and be complete within nine weeks. Metal deck will follow closely dovetailing with structural steel. Forming, reinforcing and pouring supported floor decks will begin as soon as some deck

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Page three

RALPH J. STEPHENSON, P. E.
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is erected. Of prime importance now is to make certain that all work which might affect structural steel is completed so that minimal delays are encountered in the steel erection process.



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CONSULTING ENGINEER

November 10, 1972

Subject: Monitoring Report #9 (Construction Phase A)

New International Terminal
Metropolitan Airport
Detroit, Michigan

Project: 72:10 - F

Date of Monitoring: November 6, 1972 (working day 218)

Monitored from Issue #1 dated July 26, 1972

Target End Date for Construction Phase A: February 13, 1973
(working day 287)

Actions taken:

- Inspected project
- Participated in construction conference
- Color coded networks
- Evaluated job progress

General Summary

Structural steel was due on the job November 6, 1972 (working day 218). There have been some delays in fabrication and presently it is now due to arrive at the site Thursday, November 9, 1972 (working day 221). This gives structural steel a lag of three working days. It is still a critical matter for structural steel to be erected as rapidly as possible, and based on commitments of the structural steel contractor, our present schedule will be adhered to so far as completion dates are concerned.

Mr. Kania reports that presently six more trusses are on the road to the site and four more trusses are leaving the shop this week. Columns are leaving so as to arrive with the erection cranes and crews on Thursday, November 9, 1972. All trusses should be completed at the plant within the next two weeks, by November 17, 1972 (working day 227). Metal deck is due on the job the week of November 27, 1972 which should allow erection to start near our present projected schedule date.

This meeting was held in conjunction with the general contractor for Phase D - the superstructure work and he is gearing to move onto the job and begin his field operations immediately upon first erection of metal deck. It will be

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RALPH J. STEPHENSON, P. E.
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absolutely critical to closely tie Phase A and Phase D work together since we are now fighting cold weather and must get as many concrete decks poured as possible in good weather to minimize cold weather operations.

Discussions at our meeting again emphasized the need to be completely aware of site limitations so far as occupancy and operation are concerned. This is particularly so at the south end of the site where present airline operations are on a continual basis and at the west side of the site where the new apron has been installed.

Mr. Colton mentioned it would be important to let the subcontract for escalators since there may be some minor revisions to structural steel depending upon the supplier of this equipment. The general contractor will get this information in the very near future.

Since Phase A and Phase D work is now meshing closely, there will be some overlapping of work and the next few meetings will be combined conferences for both elements of the project.

So far as field work is concerned, filling and fine grading for the interior of the building is proceeding. Flight stations at the north and middle areas have been substantially completed and final pours are being made at the south flight station now. There is no present holdup to erection of structural steel although a minor checklist has been submitted for processing by the steel erector which the general contractor on Phase A is taking care of. There should be no delays to start of steel erection on Thursday, November 9th. We have set a preliminary diagramming session for the superstructure Phase D work on Friday, November 10, 1972 at 10 A. M. This will be with the general contractor, the architect and representatives of the Wayne County Road Commission.

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Mr. Chas. Van Deusen

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November 25, 1972

Subject: Monitoring Report #10 (Construction Phase A)

New International Terminal
Metropolitan Airport
Detroit, Michigan

Project: 72:10 - F

Date of Monitoring: November 21, 1972 (working day 229)

Monitored from Issue #1 dated July 26, 1972

Target End Date for Construction Phase A: February 13, 1973
(working day 287)

Actions taken:

- Inspected project
- Participated in construction conference
- Color coded networks
- Evaluated field progress

General Summary

Structural steel is now being erected with the three south bays of columns up and two trusses set in Division 1. Erection of structural steel began on Monday, November 16, 1972 (working day 226) which gave it a lag over the original November 6, 1972 date of eight working days. Representatives of American Bridge feel that they will be ready for welding structural steel by November 28, 1972 (working day 233) and ready to have deck set on erected structural steel in Division 1 on December 1, 1972 (working day 236). Division 1 metal deck was due to start originally on November 28, 1972 (working day 233). If the above schedule can be maintained, the work, by the time the deck is to start, will have pulled back to within three working days of original schedule. This is to be encouraged.

The site presently is not in the best of condition for expediting structural steel erection, and there was some discussion about improving access. I suggest whatever action is necessary to improve entrance to the job be provided to avoid unnecessary delays.

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(Construction Phase A)
New International Terminal
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RALPH J. STEPHENSON, P. E.
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American Bridge representatives also said that structural steel will be provided to the job on a continuing basis and that shop fabrication should be no cause for delay of erection in the field. We are presently assuming that the current schedule of erection, or better, is to be maintained.

Mr. Robinson of Barton Malow reports that as of today his foundation work for Phase A is substantially complete with the exception of minor backfilling and very small amounts of concrete work.

General Summary

Phase A work is generally from four to eight working days behind the current schedule. If anticipated progress can be maintained without delay from delivery of structural steel, it is entirely possible this time will be picked up over the next two weeks. Metal deck is currently due to be on the job the week of November 27, 1972 with erection scheduled to start on December 1, 1972. Overall, the project is in reasonably good condition and hopefully, will improve in the coming weeks.


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November 25, 1972

Subject: Monitoring Report #10 (Construction Phase A)

New International Terminal
Metropolitan Airport
Detroit, Michigan

Project: 72:10 - F

Date of Monitoring: November 21, 1972 (working day 229)

Monitored from Issue #1 dated July 26, 1972

Target End Date for Construction Phase A: February 13, 1973
(working day 287)

Actions taken:

- Inspected project
- Participated in construction conference
- Color coded networks
- Evaluated field progress

General Summary

Structural steel is now being erected with the three south bays of columns up and two trusses set in Division 1. Erection of structural steel began on Monday, November 16, 1972 (working day 226) which gave it a lag over the original November 6, 1972 date of eight working days. Representatives of American Bridge feel that they will be ready for welding structural steel by November 28, 1972 (working day 233) and ready to have deck set on erected structural steel in Division 1 on December 1, 1972 (working day 236). Division 1 metal deck was due to start originally on November 28, 1972 (working day 233). If the above schedule can be maintained, the work, by the time the deck is to start, will have pulled back to within three working days of original schedule. This is to be encouraged.

The site presently is not in the best of condition for expediting structural steel erection, and there was some discussion about improving access. I suggest whatever action is necessary to improve entrance to the job be provided to avoid unnecessary delays.

Monitoring Report #10
(Construction Phase A)
New International Terminal
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RALPH J. STEPHENSON, P. E.
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American Bridge representatives also said that structural steel will be provided to the job on a continuing basis and that shop fabrication should be no cause for delay of erection in the field. We are presently assuming that the current schedule of erection, or better, is to be maintained.

Mr. Robinson of Bartor Malow reports that as of today his foundation work for Phase A is substantially complete with the exception of minor backfilling and very small amounts of concrete work.

General Summary

Phase A work is generally from four to eight working days behind the current schedule. If anticipated progress can be maintained without delay from delivery of structural steel, it is entirely possible this time will be picked up over the next two weeks. Metal deck is currently due to be on the job the week of November 27, 1972 with erection scheduled to start on December 1, 1972. Overall, the project is in reasonably good condition and hopefully, will improve in the coming weeks.


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December 8, 1972

Subject: Monitoring Report #11 (Construction Phase A)

New International Terminal
Metropolitan Airport
Detroit, Michigan

Project: 72:10 - F

Date of Monitoring: December 5, 1972 (working day 238)

Monitored from Issue #1 dated July 26, 1972

Target End Date for Construction Phase A: February 13, 1973
(working day 287)

Actions taken:

- Inspected project
- Participated in construction conference
- Color coded networks
- Evaluated field progress

General Summary

Structural steel has been erected for Division 1 and one bay of Division 2. Erection currently lags about 9 working days. Plumbing and bolting of Division 1 has started and currently lags by about 11 working days. This is an extremely serious delay since we now have several truck loads of metal deck on the job and ready for installation. Also, the contractor for Issue D has moved onto the work and will be hard pressed to get floor pours into work at an early date. It is recommended that every effort be made by the steel erector to complete plumbing, bolting and welding of Division 1 structural steel so metal deck can be placed.

There was considerable discussion about access to the job and conditions that the Issue D contractor must work around to start his work, particularly at the south stair tower and the conveyor tunnels. This matter should be resolved quickly since it is going to be urgent that stair towers, tunnels and shear walls go in concurrently with horizontal floor pours.

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New International Terminal
(Construction Phase A)
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Page two

RALPH J. STEPHENSON, P. E.
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Overall, present job status indicates a progressive loss in time and this trend should be reversed before it becomes a serious matter. It should be recognized that the weather over the past two weeks has been exceptionally bad, with heavy precipitation, icing and wet conditions encountered practically each day. However, the weather cannot be expected to get much better this winter, therefore, any work that can be done early in the winter certainly will escape the problems that it will face later.


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