

STATE OF NEW YORK

ADIRONDACK PARK AGENCY

In the Matter

of

the Application for a Project Permit for the Construction of Certain 90- and 70-meter ski jump facilities proposed by the Lake Placid Olympic Organizing Committee at Intervale (Town of North Elba) Essex County, New York, to be used for the 1980 Winter Olympic Games.

TRANSCRIPT OF CONTINUED PROCEEDINGS

at a public hearing upon the above-entitled application before the Adirondack Park Agency of the State of New York, at the Olympic Arena, Lake Placid, New York, continuing on Monday, November 29, 1976, at 10:45 a. m.

PRESIDING:

VICTOR JOHN YANNACONE, Jr., Esq.,

Hearing Officer.

APPEARANCES:

(As heretofore noted with the following exception:)

ABSENT:

Beverley E. Harris, Executive Director,
Adirondack Park Local Government Review Board

P R O C E E D I N G S

THE HEARING OFFICER: All right, all; it's 10:45. Let the record indicate we're opening at 10:45 because the Hearing Examiner had difficulty traveling from Long Island. Fog closed Islip Airport last night and I had to drive and make it in two runs.

The purpose of this morning's hearing is to accept the statement of Ramon Lopez as the first witness on behalf of the Petitioner and proceed with his cross examination by those parties wishing to cross examine.

Is Mr. Lopez here?

MR. LAMB: We can get him.

THE HEARING OFFICER: All right. We will suspend for two minutes or whatever length of time is necessary to get Mr. Lopez. In the meantime, are there copies of the Logic Chart, the CPM or the PERT model?

MR. KAFIN: We have some.

THE HEARING OFFICER: You have some. Could I have one? Have you got an extra one please?

(A document was offered to the

Hearing Officer.)

THE HEARING OFFICER: All right.

Before we swear Mr. Lopez, the Agency has provided me with a hearing assistant and for the remainder of the hearings, as long as I'm blessed with a hearing assistant, I will ask the hearing assistant to mark the initial submissions with the evidentiary numbers in accordance with the manner we agreed upon. At the close of each hearing, counsel and the reporter will remark the exhibit numbers officially and make sure that there are no errors or corrections in numbering that have to be made. If they are made, they can be made on stipulation or subject to review at the next hearing.

At this time, I would like to ask Mr. Lopez if he has any objections to testifying under oath.

MR. LOPEZ: No, sir.

THE HEARING OFFICER: All right.

Mr. Lopez, will you stand and be sworn? Raise your right hand.

RAMON LOPEZ

called as a witness for and in behalf of the Project

Sponsor, having been first duly sworn, was examined and testified as follows:

THE HEARING OFFICER: All right, will you give your name and full address for the record.

THE WITNESS: Ramon Lopez, 49 Parkside Drive, Lake Placid, New York.

THE HEARING OFFICER: All right, Mr. Lopez, at the last hearing, Counsel submitted a statement on your behalf and I'm going to show you a copy thereof and ask you if that is the statement presented on your behalf?

MR. KAFIN: Mr. Hearing Officer, could I do it my way? I think it might tie it to the record a little bit better since we have a statement in the transcript. I'd like to refer to it by transcript pages so that eons later when we look at this record, we'll know what pages.

THE HEARING OFFICER: I was going to ask with reference to the transcript, but go ahead.

MR. KAFIN: All right.

DIRECT EXAMINATION BY MR. KAFIN:

Q. Mr. Lopez, I direct your attention to "Statement of Ramon Lopez" which appears at pages 136

through 149 of the transcript, and ask you if that is your statement.

A. It is.

Q. And if you were asked to make that statement under oath today, would you make it in that manner without change?

A. That's right.

THE HEARING OFFICER: Now, before --

MR. KAFIN: Mr. Hearing Officer, I don't know how you want to proceed. I would then go and deal with the exhibits that are related to the statements, but --

THE HEARING OFFICER: All right; that's what I wanted to do now. I have identified certain portions of the statement which I would like marked for exhibits today, and I've taken the liberty of numbering them as the initial exhibits of today's hearing, and if there are additional exhibits thereafter, counsel is free to submit them, but even though we may not have the actual documents today, I want to reserve the number and have them added.

As Exhibit 761129:1, a copy of

H. R. 8906, a bill authorizing appropriation of \$50 million for the 1980 Olympic Winter Games, referred to at transcript page 139;

As Exhibit 761129:2, a Senate bill, S. 2184 introduced into the United States Senate on July 26th, '75, referred to on transcript page 139;

As Exhibit 761129:3, the transcript of the hearings conducted by the Subcommittee on Transportation and Commerce of the Committee on Interstate and Foreign Commerce of the House of Representatives;

As Exhibit that's referred to on transcript page 139.

As Exhibit 761129:4, the budget data prepared by the firm of Witt & VanKeuren -- K-e-u-r-e-n -- referred to on transcript page 139;

As Exhibit 761129:5, the revision to the budget figures prepared by the Lake Placid Olympic Organizing Committee and referred to on transcript page 140;

As Exhibit 761129:6, the statement of President Ford made on May 7th, 1976 referred to on transcript page 140;

As Exhibit 761129:7, a bill entitled

H. R. 13490, a replacement bill to H. R. 8906,
referred to on transcript page 141;

As Exhibit 761129:8, a copy of the
Committee report by the Committee on Interstate and
Foreign Commerce of the United States House of Repre-
sentatives referred to on transcript page 141;

As Exhibit 761129:9, the report of
the Committee on Commerce of the United States Senate
dated May 13, 1976 referred to on transcript page
142;

As Exhibit 761129:10, the report of
the Committee on -- of Conference, I'm sorry, on
Senate 2184, dated August 31, 1976, referred to on
transcript page 143;

As Exhibit 761129:11, the Conference
Bill, S. 2184 entitled "Olympic Winter Games Au-
thorization Act of 1976" referred to on transcript
page 143;

As Exhibit 761129:12, the report,
if any, of the initial investigation of the Gil-
bane Building Company referred to on transcript
page 147;

As Exhibit 761129:13, the rebudget --

MR. HANNA: Pardon me, Mr. Hearing Officer; what was that reference?

THE HEARING OFFICER: Transcript 147, my notes. Is that --

MR. HANNA: And that's what, 12?

THE HEARING OFFICER: That's the report of the initial investigation referred to by the Gilbane, prepared by the Gilbane Building Company and referred to in the second full paragraph, second line.

As Exhibit 761129:13, the rebudget referred to in transcript page 147;

As Exhibit 761129:14 numbered in consecutive order A through whatever letter is necessary, the estimates of construction referred to on transcript page 148 in the initial paragraph;

As Exhibit 761129:15, letters A through whatever letter is necessary, copies of the design contracts or standard design contract referred to on transcript page 148 in the sixth line thereof;

As Exhibit 761129:16, designated letters A through whatever letter is necessary to

complete it, the documents of qualification submitted by the company as part of its bid proposals referred to on page transcript page 148;

As exhibit 761129:17, copies of documents -- they may be lettered A through whatever letter is necessary to complete them -- referring to explanations of the systems of cost and schedule control referred to on transcript page 148, second line from the bottom;

As Exhibit 761129:18, the time schedule for the total project referred to on transcript page 149;

As Exhibit 761129:19, the initial schedule referred to on transcript page 149;

As Exhibit 761129:20, the more detailed Logic Diagrams -- they may be designated A through whatever letter is necessary -- that are referred to in the first full paragraph of the transcript page 149;

And as Exhibit 761129:21, letters A through whatever letter is necessary to complete the exhibit, the CPM printouts relating thereto. My indication is that the 14th page of the state-

ment of the witness, Ramon Lopez, is transcript page 152; is that correct?

MR. KAFIN: No, we have a pagination problem. It runs from 136 through 149.

THE HEARING OFFICER: I'm sorry, then reduce all the numbers I gave you in the transcript by three.

All right. Now --

MR. KAFIN: Now, Mr. Hearing Officer, is it your direction that we produce each of the documents to which you referred?

THE HEARING OFFICER: Eventually for inclusion as an appendix to the record as each of these exhibit numbers. No rush today unless someone requires them.

MR. KAFIN: I believe that some of them may not exist.

THE HEARING OFFICER: If they don't, a statement indicating they don't will cure it. I want to reserve the numbers and keep them in track with the statement on direct examination.

Now, would you introduce Mr. Lopez' qualifications with reference to Exhibit 761119:69?

MR. KAFIN: Yes.

Q. Mr. Lopez, I show you Exhibit Number 761119:69, and ask you if that is a statement of your educational experience?

A. It is.

Q. And is it true and correct in all material respects?

A. It is.

MR. KAFIN: Mr. Hearing Officer, do you wish me to offer the exhibits as we go through them or make a blanket offer?

THE HEARING OFFICER: On qualifications I'd like you to offer it.

MR. KAFIN: Well, then I'm going to offer Exhibit 761119:69.

THE HEARING OFFICER: I'll receive it subject to cross examination. Let the record indicate that Exhibit 761119:69 has been received in evidence.

All right, gentlemen, we have not previously discussed the order of cross examination of the witnesses.

MR. KAFIN: Mr. Hearing Officer, at the risk of interrupting --

THE HEARING OFFICER: Yes.

MR. KAFIN: -- may I just take the other two exhibits that are related to this testimony and do a little formal dance; just so that the record is complete?

THE HEARING OFFICER: Yes.

BY MR. KAFIN:

Q. Mr. Lopez, I show you Exhibit 761119:85 and ask you if that is the CPM printout that is referred to in your testimony?

A. That is.

Q. Do you wish to make any changes or additions to that at this time?

A. The only modification would be the one noted in the statement where we said if a modification was made to the Logic indicating approval of the A.P.A. prior to the start of schematic drawings, there would be a change in the date requiring final approval of the A.P.A. of the concept.

Q. Would you, referring to the exhibit, tell us exactly where that change would be.

A. On page 2 of the printout, I-J numbers 0175 to -- 00175 to 00190, duration of ten days, "APA approve

concept," if there was a modification to the Logic made, their revised date would be early start 29 November '76; early finish date 13 December '76; late start 27 December '76; late finish 10 January '76. It would require one restraint data added to the Logic Diagram.

Q. Now, let me show you Exhibit 761119:86 and ask you if this is the Logic Diagram referred to in your testimony?

A. It is.

Q. Now, with respect to this exhibit, is any change required to conform it to the second assumption in your testimony?

A. If you were to add a restraint following activity '175 to '190, "APA approve concept," to show a restraint from activity '190 to activity '200, "***start schematics," that would be the modification referred to.

Q. And how would that restraint be described on the exhibit here or drawn in?

THE HEARING OFFICER: Which exhibit, Counsellor?

MR. KAFIN: This is Exhibit --

THE HEARING OFFICER: 86?

in evidence subject to cross examination.

MR. BROOKS: He said :75 --

THE HEARING OFFICER: No, :75 is the
CPM.

MR. KAFIN: This is :85.

THE HEARING OFFICER: Oh, this is :85.
This is :85 and :86. Let the record be corrected to
show the :75 is :85.

MR. KAFIN: Now, Mr. Hearing Officer,
with that, the witness is available for cross
examination.

THE HEARING OFFICER: All right. May
I -- do you have an extra copy of the -- would some-
body furnish me with a roll of masking tape for a
minute? Hopefully, one of the radio station people.

Now, as I previously pointed out, we
have not yet discussed the order of cross examination,
and I would prefer to proceed in this order: the
State, the parties of right, namely, the Adirondack
Council, the intervenors who have been given the
privilege of cross examination, in that order. Is
there any objection from any of the parties to that
order or any suggestions for any --

begin.

THE HEARING OFFICER: All right, Mr. Hanna, proceed.

CROSS EXAMINATION BY MR. HANNA:

Q. Mr. Lopez, who is the consulting engineer on this project?

A. For the ski jump complex?

Q. That's right.

A. Stone & Webster Engineering Corporation.

Q. And that corporation is also the designer?

A. That's right.

Q. Now, I am going to be referring through this cross examination to Exhibit 761119:85 and :86. For ease, I will simply refer to :85 and :86, :85 being the printout and :86 the Logic Diagram. I will also refer to codes and by "codes," I mean of the last three digits that have been incorporated on the Logic Diagram.

THE HEARING OFFICER: All right, excuse me a minute, Mr. Hanna. I'm going to ask the hearing reporter to, in the typing of the transcript, to add the prefix 761119 before each mention of Exhibits ":85" and ":86" unless I state otherwise during the

actual conduct of this hearing. O.K. Go ahead, Mr. Hanna.

Q. Now, Code '130, what is meant by "CM develop general conditions?"

A. These are the general conditions which would be a standard part of every package put out for bid by the Lake Placid Olympic Organizing Committee. These would refer to the conditions of the trade contracts.

Q. And briefly, without enormous detail but very briefly, what would that cover?

A. The responsibility of the contractor and the owner as contracting parties, the requirement for bonds, the requirement for coordination between contractors on a project, the conditions under which the contractor is accepting the contract.

THE HEARING OFFICER: Excuse me, Mr. Hanna. To tidy the record, I'm going to ask the witness or counsel, at the first reference to any line item in Exhibit 761119:85 to please explain the abbreviations used in the printed statement, in particular, in this particular line item 130, "CM" refers to, I assume, contract manager?

THE WITNESS: Construction manager

it is.

THE HEARING OFFICER: And "General"

-- "gen" is an abbreviation for "general?"

THE WITNESS: "General."

THE HEARING OFFICER: And "Conds" is
an abbreviation for "conditions?"

THE WITNESS: That's right.

BY MR. LAHNA:

Q. I take you are the Construction Manager?

A. We are serving in the role of Project Manager
and, therefore, as Construction Manager.

Q. At Code '170, "Designer prepare 90-meter concepts."
What is meant by "concepts?"

A. Are you referring to '165-170?

Q. Yes, '170.

THE HEARING OFFICER: Now, Counsellor,
there are two columns at the initial portion of the
CYM Chart, an "I" column and a "J" column. So we
don't clutter the record, let's make sure we identify
the code number by its column also. That will be
I-165 J-170, and in the prior question it would be
I-130 and J-135.

MR. LAHNA: Mr. Hearing Officer, I don't

think that's necessary, but maybe for the record, why doesn't the witness explain what's meant by the "I" column and the "J" column.

THE WITNESS: Every activity on a Logic Diagram is identified by two numbers. The -- in the case of the designer preparing concepts for the 90-meter jump, the "I" number is the preceding the "J" which is the number, to wit., the successor. It's the activity designing concepts for the 90-meter jump, is identified by the preceding number and the following number which is '165-170.

Q. So in your reference on eighty -- Exhibit 761119:86, at '170, what do you mean by what do you mean by that? Would you explain again? I'm not sure I understood. On your Logic Chart, Exhibit 761119:86, you show a '170.

A. That's right, I-70.

Q. "Designer prep 90-meter concepts."

A. That's right. I-70 is the on that "designer prepares concepts" is followed by the successor number. Every activity has to have at least two numbers.

Q. All right. So referring back to my question which would be corrected to read '165, code '165-170, describe what is meant by "concepts."

A. That is how the designer contemplates developing the site to provide these 70- and 90-meter ski jump facilities at the site proposed.

Q. Would that include the structure?

A. At this point, no, sir; it's preliminary.

Q. So the designer has not prepared a concept?

A. We have --

Q. With respect to the structure?

A. We have a concept drawing. We do not have details of the concept.

Q. On the basis of that concept, would you describe the structure for the 90-meter tower?

A. It's shown as -

THE HEARING OFFICER: Counsellor, excuse me a minute. The witness has just referred to a concept diagram. Is this a document that can be produced?

THE WITNESS: Yes, sir.

THE HEARING OFFICER: All right. Can we have it marked Exhibit 761129:22.

(Ramon Lopez)

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MR. KAFIN: May I just confer with him?

THE HEARING OFFICER: Yes. We're going to suspend for three or four minutes. Counselor, can you get a copy of that?

MR. BROOKS: Going to get it now.

THE HEARING OFFICER: O. K., fine. Let's take a two- or three-minute break.

(Whereupon a short recess was taken.)

THE HEARING OFFICER: Could we go back on the record for a moment? Before we get carried away, I have two or three questions I'd like to ask Mr. Lopez just to clarify my own understanding of the Exhibit 761119:86 and 761119:85. In Exhibit 761119:85, Mr. Lopez, the "I" designation, the code number "I" is the initial node of the appropriate line item on Exhibit 761119:86; is that correct?

THE WITNESS: That's correct.

THE HEARING OFFICER: And the "J" number is the terminal node for that activity?

THE WITNESS: That's right.

THE HEARING OFFICER: And in the column that says "Activity Description" that's the acti-

vity description that is represented by a line with an arrow headed one end or the other connecting the initial node and the terminal node for that activity; is that correct?

THE WITNESS: Correct.

THE HEARING OFFICER: O. K.

MR. HANNA: While we're on the record, why don't I keep going and ask some more questions?

MR. BROOKS: Here's your photograph.

THE HEARING OFFICER: Here comes the exhibit.

MR. BROOKS: Drawing, rather.

MR. KAFIN: This will be Exhibit

761129:22.

THE HEARING OFFICER: Can I ask whether that could be reproduced in any fashion?

THE WITNESS: We have it in blueprint form downstairs.

THE HEARING OFFICER: O. K., fine. Then the copies will be distributed in the usual manner and identified with the number that we've given it which is 761129:22.

MR. KAFIN: Excuse me, Mr. Hearing

Officer, but which is the exhibit, the blueprint or the pretty picture?

THE HEARING OFFICER: It depends on who has ultimate custody of the exhibits. If it's me, I want the pretty picture; otherwise, the blueprint is perfect. No, the original, unless required as a matter of necessity to complete the record, remains the property of the parties offering them or using them, and the copies are distributed. I would suggest, however, if this can be reproduced by photographic means in color, at least one color copy should be in the original archival record maintained by the Agency.

MR. KAFIN: We'll try to do that.

THE HEARING OFFICER: O. K. The exhibit is available and I'm going to have it marked in evidence and the parties may refer to it as they need it. Exhibit 761129:22 for today is being marked in evidence.

(Copy of a schematic drawing of certain ski jump facilities was marked and received in evidence as Exhibit Number 761129:22.)

BY MR. HANNA:

Q. At codes 310 to '325, "CM prepare conceptual cost estimate;" has that been completed?

A. No, sir, it has not.

Q. What is meant by the term "first bid package;" what's included in the term "first bid package" referred to at Code 295-'350?

A. As the schematics are developed, we will be reviewing the drawings to identify which work first has long lead times and should be pursued first and, second, based on the phasing of the project and availability of the site, which construction work would be done first. In all probability, the first bid package would be the excavation for foundations and site work.

Q. At Code '625'630, what is meant by the reference "PL&S?"

A. Prepare and submit.

Q. And what is a shop drawing?

A. These are the fabrication type drawings prepared by the manufacturer to indicate what he is going to manufacture or fabricate to conform with the contract drawings.

Q. That would be relating to metals of various kinds of members?

A. It could be almost any kind of material.

Q. You're not - you're not referring there to steel?

A. It - we don't know what the structure is at this time, sir.

Q. Now, what do you include within the term "working drawing" code 290-'600?

A. Working drawings are the actual documents that are used by a contractor for pricing his proposal. These are the detailed, most people might refer to them as contract drawings.

Q. And what would they show, things like tonnage, total tonnage?

A. No, sir, if you're referring to structural steel, it would show the size of the member and the length of the steel member, type of connection it has. They could relate to site work giving existing elevations and proposed revised elevations.

Q. With respect to the structures, would there be drawings for each - each member?

A. Yes, sir.

Q. And who will prepare these drawings?

A. The working drawings are prepared by the designer.

Now, at code if I'm reading correctly, '301 to '205, the boring spec's; have they been completed?

A. The specifications, yes, sir.

Q. Have the soil borings been begun?

A. On this specific site, no, sir.

Q. That's code 231 to 240?

A. That's right, sir.

Q. Without the soil borings, the designer will not know the bearing capacity of the subsurface; is that correct?

A. That's right, sir.

Q. And without knowing that, the designer can not prepare the foundation design; is that correct?

A. That's right, sir.

Q. Where on Exhibit 761119:26 would you show foundation design?

A. We would start the foundation in the schematic stage and it would most likely be part of the first or second package.

THE HEARING OFFICER: Refer to the item numbers by I-J.

THE WITNESS: Starting activity '200 to 255 starts schematics and would continue through activity 290 to '600, "90-meter structural working drawings" and again you would have it again the 70-

Q. Now, what are the different factors that are included within the term "schematics," codes 255-'270?

A. Schematic drawings are the further development of the concept, but the schematic drawings do not go as far as working drawings. They - your project development goes first through approval of a concept. Then you start to refine that and become a little more specific during the schematic stage and then your final construction documents become the - start the work -- the working drawing stage.

Q. Who prepares the schematics?

A. The designer.

Q. And where in the Exhibit 761119:86 do you take care of design criteria, such things as wind load, earthquake load, live load, et cetera?

A. Wind load, and earthquake load, sir, are responsibility of the design engineer in his conducting his professional practice.

Q. Where in the flow is that --

A. They are not specifically identified, sir. They are part of his responsibility during the development of the drawings.

Q. Sometime prior to the schematics?

A. No, sir, it can be going on while he's doing the schematics.

Q. So either before or as part of the schematic would be the preparation of design criteria?

A. Please, would you define what you're referring to as design criteria?

Q. Determination of such things as the wind load, earthquake load, vertical load, live load.

A. Those - those criteria are dictated by New York State Building Code.

Q. With respect to this particular structure?

A. As far as loadings and wind load, yes, sir, and earthquake design, yes, sir.

Q. And relating those -- relating those to this particular structure, of course, is not in the bid.

A. It's in the responsibility of the designer.

Q. Now, how many drawings would you expect would come out of the schematics?

A. I don't think I'd be able to answer that for you, sir.

Q. Has Stone & Webster agreed on a 10-day period for the completion of the schematics?

A. Specifically, no, sir.

Q. In your experience as a contractor, would you find that the 10-day period allowing for schematics for a 26-story structure is -- is short or long?

THE HEARING OFFICER: Counsellor, I'm going to have to object and entertain an objection to the characterization of "26-story structure" unless you define the height of a story. I'd prefer you use it in meters.

MR. HANNA: 266-foot structure.

THE HEARING OFFICER: All right, fine.

THE WITNESS: Would you repeat --

MR. HANNA: I don't mean precisely a 266 --

THE HEARING OFFICER: No, of course not.

MR. HANNA: Obviously, I'm talking about something in the approximate range.

THE WITNESS: Would you repeat the question, sir?

Q. Well, my question is based upon your experience as a contractor and dealing with consulting engineers. Would you find that completion of schematics within a 10-day period was short in your experience, long in your experience, or how would you characterize it?

A. A tower of that type, I would say it's an acceptable time limit.

Q. Would you say it was on the short end of that time limit or the long?

A. I don't think we're giving the designer the luxury to sit back and take his time with the project. We're pushing him.

Q. And what was the basis for your selection of ten days?

A. Judgment on our part.

Q. Based on what?

A. Experience with design of structures, understanding what they go through and the extent of involvement they might have in it.

Q. So your 10-day period was based on your judgment and not on consultation with -- with Stone & Webster?

A. That's right.

Q. How are the schematic drawings going to get from the designer back to you? Are they going to be mailed?

A. There are two -- numerous possibilities. One is air freight which we've used in the past, the mails or personal delivery. It would be typical at the end of a schematic design phase to have a presentation to the owner for his examination to understand what

development process is all about.

Q. Is that included within the 10-day period?

A. Yes, sir. That's ten working days. That comment should be possibly added, that the durations shown on the schedule are all in terms of working days and do not include Saturdays, Sundays or holidays.

Q. Now, what is meant by the term "spec's" at codes '260-'265, believe it goes on to code '266?

A. Those are the detailed documents which spell out in detail the requirements for materials and equipment shown on the working drawings.

Q. In other words, prefatory to making up the working drawings?

A. No, sir, it can be going on simultaneously during the schematics or during the working drawing stages. This is just an outline which gives a little more detail to the schematics, permits us to understand more fully exactly what the intent of the designer is.

Q. Now, with respect to code '290 to '600, has Stone & Webster agreed to the 15-day period that you assigned for that?

A. No, sir.

Q. And the basis for that is the same as the selection

of the 10-day period with respect to the schematics?

A. That's right, sir.

Q. Would -- what was the last building project that you were involved with that had over ten stories in the structure or one of the last? I don't mean to be precise.

THE HEARING OFFICER: Again, Counsellor, I'm going to have to entertain an objection to the characterization of "stories." I'd prefer it if you'd use distances, approximate or relative distances. Stories vary in different areas of the country and the world.

MR. BROOKS: The applicant objects, for the record.

Q. Over 120 feet in height?

A. The Richard Russell Federal Office Building in Atlanta, Georgia; Connecticut Financial Center in Hartford, Connecticut and Federal Reserve Bank in Minneapolis, Minnesota.

Q. How long did the working drawings take for those buildings?

A. You're comparing two different types of structures.

Q. Well, how long did they take?

A. There's a difference

THE HEARING OFFICER: I'm going to sustain an objection to the relevance of those structures in view of the witness' testimony that they are not comparable. If counsel wishes to explore their comparability on cross examination, he may.

BY MR. HANNA:

Q. What would you regard would be an unreasonably long time period for developing working drawings for the concept that has been introduced in evidence here?

THE HEARING OFFICER: Referring to Exhibit 761129:22 today?

MR. HANNA: Yes.

A. Total working drawings for the entire project?

Q. For the 90-meter tower and ramp.

A. For the tower and ramp?

Q. Right.

A. Separated from the tower.

Q. For the tower and the in-run ramp.

A. I would assume a total of about four.

Q. In-run ramp?

A. Total of about, being -- the ramp and not the landing area?

Q. I mean the in-run ramp.

THE HEARING OFFICER: All right, excuse me, Counsellor.

MR. HANNA: Connected to the tower.

THE HEARING OFFICER: Excuse me, Counsel.

For the purpose of clarifying the record, it appears that this structure consists of a number of parts as indicated in the exhibit designated 761129:22 for today. I'm going to ask the witness to identify from his point of view as the Construction Manager what the independent items are and describe them briefly, starting with the tower which is the most obvious feature of the system.

THE WITNESS: You have a tower connected by, for explanation at this point, I'd use a runway system; I'm not a ski expert.

THE HEARING OFFICER: What is it being called for your purposes as part of the construction operation?

THE WITNESS: This is the tower.

THE HEARING OFFICER: All right, that includes a tower.

THE WITNESS: To the take-off point. After the take-off point, we will call the remaining

structure the landing area which, as shown here, includes the earthwork at the bottom of the landing area. In addition to that, the rendering is showing some spectator stands, judges' stands, scoreboard.

THE HEARING OFFICER: O. K.

MR. HANNA: I will be --

THE HEARING OFFICER: Will you divide -- excuse me just a second. Will you divide the tower into the two features that are indicated on this rendering? One is a vertical member. What do they call that, the tower?

THE WITNESS: We're referring to the tower as the entire structure to the take-off point.

THE HEARING OFFICER: All right, indicating a vertical member and --

THE WITNESS: -- and an angular member.

THE HEARING OFFICER: And it's assumed that the skiers will come down the angular member and eventually depart from the end thereof.

THE WITNESS: Right.

THE HEARING OFFICER: And hopefully land on the remaining portion.

MR. BROOKS: They always do.

THE HEARING OFFICER: All right, Counsellor, with that identification, go ahead.

MR. HANNA: I will be referring to the tower, which would be the vertical portion, and I'll sometimes be referring to the in-run ramp, which will be the slanted portion running down to the take-off.

THE HEARING OFFICER: All right. We will adopt that terminology for the remainder of this session, the tower and the in-run.

BY MR. HANNA:

Q. Now, what would you regard to be an unreasonably long time for the preparation of working drawings for the tower and the in-run ramp?

MR. BROOKS: I object. I don't see the relevancy of that. What would be an unreasonable time?

THE HEARING OFFICER: No, counsel is permitted to ask that and if the witness knows he should answer. The witness is an expert and has experience.

A. The total drawings should take not more than

four weeks for the structure.

THE HEARING OFFICER: Is that four working weeks or 28 calendar days?

THE WITNESS: That's 20 -- 20 working days.

THE HEARING OFFICER: 20 working days, fine.

Q. What would be an unreasonably short period?

MR. BROOKS: 24 hours. I renew my objection.

THE HEARING OFFICER: Overruled.

A. That's a question of manpower in whether you work three shifts a day on the design or -- I would say a designer could give you a concept within eight hours, schematics. Q. Talking about working drawings.

A. Working drawings, I would say maybe a week.

Q. Would be unreasonably short?

A. I think it can be done in a week. I think less than that can be really putting a strain on the design firm.

THE HEARING OFFICER: I'm going to sustain an objection to further reference to

"reasonable" and "unreasonable" and ask counsel to use the phrases "probable" or "improbable."

Q. Does the witness wish to change his -- change his dates if the questions had been asked that way?

A. I don't think so.

THE HEARING OFFICER: And for the purpose of these hearings, "improbably" means possible but not likely.

MR. BROOKS: Is that like with a reasonable degree of medical certainty?

THE HEARING OFFICER: No, it's more precise than with a reasonable degree of medical certainty.

BY MR. HANNA:

Q. Code '600 to '610 speak of ED -- EDA approval.

and I suppose, for the record, would you identify EDA?

A. EDA is the Economic Development Administration. They're the vehicle which the Department of Commerce is using for providing funds for the Olympics under the federal authorization.

Q. Does approval of working drawings and the other

drawings referred to here require an EDA approval on Exhibit 761119:86 , have to be approved by the regional EDA Office?

A. They will be approved by them at some point. They will be involved in seeing the development of the process from start of the design. When they receive a set of drawings, it's not a total surprise to them, they've never seen them before.

Q. But they will receive some working drawings?

A. At that point, they will receive the final working drawings. They will have seen preliminaries prior to that.

Q. When will they have seen preliminaries?

A. As they're developed.

Q. You mean over the three-week period they're being developed they will see preliminaries?

A. Yes, sir.

Q. Once the regional EDA office has approved, must the Washington Office of EDA approve?

A. We have not been advised of that.

Q. Have you been advised that you will not be required to get both the regional and Washington approval?

A. The only notification that we have received is verbal and that is to the point that EDA in Philadelphia would like to know what is going on and be kept appraised of the status of the project.

Q. Now, at code '620 to '625, the selection of the 90-meter structural contractor; would you describe the process of selecting the -- the contractor?

A. Selecting of the contractor is reviewing the bids, make sure you have a qualified fully complete low bid and making the award.

Q. That involves the question of comparability of bids, does it not?

A. Would you define what you mean by that, sir?

Q. Isn't it true that bids come in sometimes and it is not necessarily immediately apparent as to whether they are entirely comparable?

A. What do you mean by "comparable?" A bid will be put out with contract drawings and specifications. It will -- there will be no exceptions to the bid. The contractor bids lump sum dollars without exception.

Q. And that's the only portion of the bid?

A. That's right, sir.

Q. There is no examination of -- of the contents of the bid or review of variations in it?

A. No, sir, it's lump sum dollar. Low qualified bidder is awarded the contract.

Q. In the advertisement and the bidding, do the major steel mills and -- or indeed all steel mills advise as to what periods they can respond -- respond to bids for various -- for structural steel?

A. A bid package is put -- is advertised for bid and the notice is published with a date the advertisement is placed and the date on which bids will be received and it's up to the bidding party to submit his bid in that time frame.

Q. But isn't it -- isn't it known that steel mills can react just so fast and that --

A. I have seen steel mills quote orders within eight hours.

Q. Have they also quoted them within six weeks?

A. Yes, sir, depends upon how long the bid period is.

Q. In your view, is a four-week period likely to reduce the number of available bids as opposed to a six-week period?

A. No, sir. It's not unusual for a contractor with a long bid period to put the drawings on the side -- to the side until the last two weeks.

Q. With respect to code '630 to '635 -- I'm sorry, code '625 to '630, the shop drawings, where would you anticipate the fabricators are going to be located who will be producing these shop drawings?

A. You're asking for a judgment there. I would say in the northeast.

Q. What major -- what -- what areas, what cities would be the closest cities?

A. Fabricators?

Q. Yeah.

A. Would be Albany, Burlington, Vermont, the Syracuse area.

THE HEARING OFFICER: Counsellor, may we have fabricators of what? What kind of --

MR. LAWDA: Why don't we ask the witness?

THE HEARING OFFICER: Mr. Lopez.

deliveries of fabricated items. His actual deliveries would take place over a period of time of the construction. He doesn't have an obligation to deliver the total steel on that date, but that's the date he's to start delivering to maintain the construction sequence.

Q. But he can not begin the fabrication until the shop drawings are approved; is that correct?

A. He can begin fabrication at his risk. If he is sure -- if he is certain that he has complied with the designer's intent in his preparation of the shop drawings, he can proceed immediately on the basis that he will have approved shop drawings.

Q. He could?

A. Yes, sir. On developing these schedules, I think it has to be understood we're working on concept.

Q. Is it fair to say, however, your concept apparently includes structural steel?

A. No, sir, it says structural items.

Q. Well --

A. It could be precast; it could be poured in place concrete; it could be any structural material.

THE WITNESS: The

THE HEARING OFFICER: What do you understand the meaning of the word "fabricators?"

THE WITNESS: The attorney has been leaning toward structural steel. I'm responding on the theory that structural steel might be the material selected.

THE HEARING OFFICER: That hasn't been determined yet?

THE WITNESS: No, sir.

BY MR. HANNA:

Q. What's the basis for your assumption that ten days is sufficient for fabrication?

A. Which activity are you referring to, sir?

Q. '625-'630?

A. '625 and '630 is not fabrication time. It's preparation of shop drawings.

Q. I stand corrected. '635 and '640.

A. We've shown that as a ten-day activity item. In actuality, a fabricator would start when he has gotten into a structural -- his shop drawings somewhere following the 22nd of April when we say he has until the 20th of May to start de-

Q. Well, if it was structural steel, for example, where in your Exhibit 761119:06 is there a time for the production of the structural steel before it goes to the fabricator/

A. For which -- you're talking of steel shapes right now, the market on steel shapes indicates that you don't have long delivery times or long lead times. There are a number of items which are stocked, readily available from suppliers.

Q. Such as?

A. Almost all of your standard rolled steel shapes. You might pay a premium but you can buy them at warehouse prices. On some of the specialty items, you might have to go to fabrication and await delivery.

Q. Are these the kind of shapes that would normally be involved with a cross -- cross truss kind of --

A. We have -- we're identifying them solely as a structural item at this point. We don't know what the structure is going to be.

Q. If you were dealing with prestressed concrete what would the -- what would the function of the fabricator be in that process?

A. Supplying the tendons, the anchorage devices,

any reinforcing steel required.

7. And where would the -- where would the prestressed -- where would the production of the prestressed material, structural members, be -- be referred to in your exhibit 761119:06 for the 90-meter?

A. We're talking prestress; it would most likely be start following submission of approved shop drawings and complete --

THE HEARING OFFICER: Counsellor, wait a minute. Mr. Lopez, give us the I-3 identification.

THE WITNESS: By numbers?

THE HEARING OFFICER: Yeah.

THE WITNESS: On the 90-meter ski jump, it would most likely start following activity '625-'630, "prepare and submit 90-meter structural shop drawings" and continue through -- go to activity '960-'965, "90-meter ramp erect."

Q. But the actual construction of the prestressed material, not the -- the making of the prestressed structural members?

A. That can go on over a time period and be delivered to the job site as required. It's -- your fabrica-

tion process is not one where you start today and complete all your fabrication and pull up all your trucks to the job site and say, "Here it is." You bring it in to the job site as required and the fabricator is also fabricating on an as required basis.

Q. Where does it relate construction to beginning of shop drawings, beginning '625-'630; where would you relate it there; how much has to be done?

A. In starting the fabrication?

Q. That's right. No, I'm talking in beginning the making of the prestressed members themselves, not the fabrication of the tendons and the fasteners and related matters.

A. If you're using a standard highway shape and it's prestressed concrete, the form work is usually available at a prestressing plant. At that point, it's merely finalizing the arrangement of the tendons and determining the length of the member required.

Q. So you're assuming that you're going to have to be dealing with essentially stock items in the construction of this?

A. We're not anticipating special order materials.

THE HEARING OFFICER: Excuse me a

moment, Mr. Hanna. Mr. Lopez, you've been referring to tendons. Would you describe them for those of us that think of tendons as the organs of the body that connect certain joints to keep us all strung up together?

THE WITNESS: A tendon is, in simplified terms, I guess, a stranded wire of a length determined by the length of the member which is being placed, capable of being stretched under pressure forcing the member to take usually a curved shape to allow for deflection.

THE HEARING OFFICER: Now, the member you're referring to in this case would be a member made of concrete?

THE WITNESS: If it's prestressed concrete, yes, sir.

THE HEARING OFFICER: All right. What is the purpose of the tendon?

THE WITNESS: The tendon --

THE HEARING OFFICER: Structurally.

THE WITNESS: The tendon permits a smaller member to carry greater loads because you

are taking advantage of the carrying capacity in the tension that's placed on the cable.

THE HEARING OFFICER: All right. Just so we get the record straight, with reference to prestressed concrete, would you explain for us the difference between prestressed concrete and reinforced concrete? First tell us what reinforced concrete is.

THE WITNESS: Reinforced concrete is concrete designed which contains reinforcing steel or rods.

THE HEARING OFFICER: What's the difference between the reinforcing rod in reinforced concrete and the tension member in -- or the tendon in prestressed concrete.

THE WITNESS: In prestressed concrete, you can also have reinforcing rods. The tendons are placed in it to increase its carrying capability.

THE HEARING OFFICER: Carrying capability in what dimension?

THE WITNESS: In vertical load.

THE HEARING OFFICER: And is there a structural limitation in terms of its bearing capacity depending on the direction of the load?

THE WITNESS: Yes, sir.

THE HEARING OFFICER: All right.
Tell us what that difference is in capability.

THE WITNESS: Concrete in compression is stronger than concrete in tension.

BY MR. HANNA:

Q. If, in order to construct the 90-meter tower, it was required to special order structural steel, would the -- would the delivery time from order to delivery stretch to six months?

A. The part of our responsibilities in going through these design drawings is to watch time. If we're getting into a material that is not readily available to meet our timetable, we will then propose an alternate material to the designer.

THE HEARING OFFICER: That wasn't the question Mr. Hanna asked you. Would the reporter read the question back please?

(The record was read by the reporter.)

MR. KAFIN: The question contains an improper assumption; I don't see how the witness can answer it.

THE HEARING OFFICER: It's up to the witness to tell us it contains an improbable assumption if it does. The question is: Would it extend the time assuming the fact as set forth by Mr. Hanna?

THE WITNESS: The first assumption would be that we would accept drawings that would not permit us to meet our schedule. That -- that we do not anticipate. Our schedule becomes part of the architect's contract and also the contractor's contract.

THE HEARING OFFICER: And these are, as we say in the legal field, "time is of the essence" contracts?

THE WITNESS: Yes, sir.

THE HEARING OFFICER: Are there penalty clauses to be contained therein?

THE WITNESS: We will most likely not have a fixed liquidated damage clause but leave it available for suit based on damages suffered by the owner.

THE HEARING OFFICER: Actual damages?

(Witness nods head.)

THE HEARING OFFICER: All right.

THE HEARING OFFICER: Counsel, all you have to do is make an offer of proof. If you want to make the offer of proof I'll accept the assumption. I'll ask the witness to answer the question. However, if you do not produce on the offer of proof, I will strike the answer.

MR. BROOKS: The question?

THE HEARING OFFICER: And the answer. Do you want to make the offer of proof? If not, I'm not going to permit speculative examination of expert witnesses.

BY MR. HANNA:

Q. Mr. Lopez, with respect to Exhibit 22, the concept drawing -- show it to him--is it your opinion that that concept can be produced without special ordered steel or -- well, let's leave it at that for the moment?

A. This would not require special order reinforcing steel. I don't know what it would require on structural steel. I haven't seen a design for structural steel.

Q. It would not require for reinforcing?

A. No, sir.

Q. What about prestressed?
WILLIMAN
CERTIFIED SHORTHAND REPORTER

A. Prestressed shouldn't require special order.

MR. HANNA: Mr. Hearing Officer, I return to my question.

THE HEARING OFFICER: Let's hear the rephrasing --

MR. BROOKS: It's an improbable assumption.

MR. HANNA: I'm asking the witness to make the assumption.

THE HEARING OFFICER: Let's hear the assumption and let's hear the rephrasing of the question.

MR. HANNA: I'm asking the witness to make the assumption.

THE HEARING OFFICER: Assuming, Mr. Witness, assuming, Mr. Lopez, that the effectuation of this concept in structural steel requires special order, now the question is would this produce a delay of up to six months?

MR. HANNA: My question was, would the -- would the time from order to delivery be six months?

THE HEARING OFFICER: Yes.

THE WITNESS: If you were doing it in structural steel?

MR. HANNA: That's right.

THE HEARING OFFICER: Special order structural steel.

MR. KAFIN: The witness has testified that no special order reinforcing steel would be required and no special order prestressed steel would be required, but we still haven't reached any evidence which supports the assumption that's contained in the question.

THE HEARING OFFICER: No, the assumption is fully supported by the fact the witness has indicated the design affectuation in terms of material has not been determined yet and structural steel is a viable alternative. Therefore, the question is perfectly reasonable at this time. Assuming that it is structural steel and assuming it does require special order structural steel, then --

THE WITNESS: The assumption there though is that it cannot be done without special order structural steel.

THE HEARING OFFICER: No, even if it

could be done without special order structural steel, the question before you as an expert is: If it did require special order structural steel, then could the delay be as much as six months?

THE WITNESS: No, sir.

MR. KAFIN: Aren't we back in the improbable?

THE HEARING OFFICER: No.

THE WITNESS: No, sir. Steel deliveries are running well under that right now.

THE HEARING OFFICER: All right.

There's your answer.

BY MR. HANNA:

Q. What are they running?

A. In some cases, two to three months.

Q. And in other cases?

A. I would say the outside right now is about four months.

Q. Going back to a question the Hearing Officer asked, what will the penalty be for delay in producing drawings of -- strike the question. Will the contracts require delivery of drawings within a set period of time?

A. Yes, sir.

Q. Will that set period of time be the date that has been specified on this Exhibit 86?

A. Yes, sir.

Q. Will any leeway be provided?

A. Only provided there is float time within the schedule.

Q. Pardon?

A. Only provided there is float time within the schedule.

Q. Would there be float time for the working drawings for the 90-meter ski jump?

A. The 90-meter ski jump drawings are on the critical path; no, sir.

Q. So the answer to that question with respect to each item was if, on Exhibit 761119:85 it says "critical" there would be no leeway?

A. That's right.

Q. If there was float time, the leeway would be up to the maximum of the float time?

A. That's right.

Q. And the penalty would be whatever damages were suffered by the -- by the owner?

A. That's right.

Q. Or the equivalent of the owner. Now, what are -- at codes '290 to '800, what are the miscellaneous support facilities -- the facilities?

A. Those are defined in the application, sir. They include the judges' tower, any spectator stands.

Q. Is that it?

A. I would have to refer to the application to get the complete list.

Q. Now, at code '835 to '840, you show a fabrication delivery of miscellaneous support facilities materials of eighty working days?

A. That's right, sir.

Q. What kind of materials are you including?

A. Depends upon what the designer designs.

Q. Well, what was the basis for your eighty days?

A. It's an assumption on our part.

Q. Based upon what?

A. Assuming that possibly we'll be using stands that are fabricated off site and brought in. We could use, if the designer were to select a pre-fabricated module for something, it could be built off site and brought in. It's not a critical item

on the schedule.

Q. Does the fact that it wasn't a critical item on the schedule influence the long number of days?

A. No, sir.

Q. Then why did you say it wasn't a critical item in response to that question?

A. Well, you're bringing up a point that we have eighty days for an activity, fabricate and delivery of support facilities materials, and I'm not objecting to that and I'm saying that we have 114 days float on it in addition.

Q. What I'm trying to get is the type of materials that require eighty days to fabricate and deliver.

A. We're -- we're dealing in concept here and we're into developing a schedule in which we're making certain judgments. We don't know what the specifics are at this point. I don't have a design of a judges' tower to say that this is what is in it and this is what is required. Some of this can include the timing systems.

Q. But I wanted to get at the assumptions you made to produce the precise number, namely, eighty days. How did you come up with the eighty days?

A. Assuming all off site fabrication of almost all the materials and assuming that we've got some timing devices in there that have to be accommodated in that time.

Q. Well, did you -- did you inquire of somebody producing off -- of, say, the off site stand, to determine how long it would take them; is that the basis for your conclusion?

A. No, sir, it's judgment.

Q. Based upon what?

A. Experience. We feel certain that anything that's required for the support facilities we could have delivered to the job site within eighty days.

Q. And that would mean that you could -- you could develop and fabricate spectator stands?

A. If they're fabricated off site, yes, sir.

Q. And you concluded with respect to each one of the support facilities listed in the application, no matter how it was designed to be fabricated, it could be done in eighty days.

A. We're looking at a broad picture and saying yes, almost anything that a designer should develop we should be able to have on the job site in that time.

Q. Including -- including special -- special order items?

A. Within prudent judgment, special order items.

Q. The tower for the 70-meter jump will be approximately 110 feet high, is that correct?

A. I believe that's right.

Q. Which makes it less than half of the 90-meter tower?

A. (Witness nods head.)

Q. Do you anticipate it will be of similar construction, material, to the tower for the 90-meter jump?

A. I would assume it would be from an aesthetic standpoint.

Q. And because of the smaller structure, there will be fewer -- fewer members?

A. When you say "members," we refer to structural steel. I don't know that the tower is structural steel.

THE HEARING OFFICER: Counselor, would you accept a rephrasing of that to "less materials?"

MR. HANNA: Less -- fewer components.

THE WITNESS: Yes, sir.

Q. And the components, themselves, will in some degree

be smaller?

A. Not necessarily.

Q. But the likelihood is that it would be?

A. No, sir.

Q. Wouldn't there be less vertical load at least on some portion of the structure upwind?

A. If it's in reinforcing steel, there might be fewer number 18 rods installed in the structure than in the 90 because of height, but you could still have 24-foot long number 18 reinforcing rods.

Q. But you'll have fewer components?

A. Yes.

Q. As a result, wouldn't it be true that you would require fewer working drawings than for the 90-meter?

A. Not necessarily.

Q. And what would cause it to have the same number of working drawings or approximately the same number of working drawings?

A. Depends upon the scale to which the designer works.

Q. But the likelihood is that it would require fewer?

A. No, sir.

Q. And why not?

A. It could -- it could require the exact same number. It depends upon the detail to which the structural designer goes on each sheet of drawings.

Q. Would it be likely to require more?

A. I would doubt it.

MR. HANNA: Can we have about three minutes?

THE HEARING OFFICER: Sure, take five minutes.

(Whereupon, a short recess was taken.)

THE HEARING OFFICER: All right, let's try to go back to work. All right, we're reconvening at 12:22. The witness is still under oath.

Mr. Hanna, proceed.

BY MR. HANNA:

Q. I take it, Mr. Lopez, you would not believe there would be more working drawings for the 110-foot tower than there would be for the 266-foot tower?

A. I would doubt it.

Q. Would the likelihood be that there would be fewer?

A. There is that possibility. It depends -- depends on the design.

Q. You would expect, therefore, that it would take about as long to reproduce the same number, at least the same number of drawings for the 90-meter as for the 70-meter?

A. Reproduction time?

Q. That's right, if it's the same number.

A. Reproduction time for bid documents depends on the number of bidders that you have as well as the number of sheets of drawings involved in the bid package.

Q. You would expect more for the 70-meter or for the 90-meter?

A. In terms of bidders?

Q. That's right.

A. The decision as to whether or not it's a single-bid package for both or a separate package for the 70 and a separate one for the 90 hasn't been totally finalized. The number of bidders is really dependent upon what the market is like when you're going out for bids.

Q. If they were separate, would you expect about the same for both?

A. I would think you would have about the same.

Q. Would the bid documents for the 90-meter -- for the 70-meter tower be required to be responded to in the same way as the bid documents for the 90-meter tower if they were separate?

A. In terms of lump sum bid?

Q. In other words, you would make one response, namely, the amount that you would --

A. That's basing all bid documents under the federal procurement regulations.

Q. So you would expect that it would take at least as

long to review the 70-meter bids as for the 90-meter bids?

A. The review of bids depends on the time available to you. In some cases, you can open bids and as soon as you've read all the bids, say, "There's the low bidder," and let it go.

Q. But in terms of the amount of time which you have -- that you'd have to take, it would be about the same?

A. Yes, sir.

Q. I take it your expectation is as well to be using stock components for the 70-meter as well as for the 90-meter tower and ramp, and in-run ramp?

A. Our restraint on design would be limited to being able to have the materials required available within the time span allotted for the work to be done. I don't think we're trying to restrict the designer to stock items if, in fact, we can special order an item and have it available when it's required to meet the construction schedule.

Q. But as between the 70-meter and the 90-meter, you do not anticipate any differences with respect to

whether you're using stock items or special order items?

A. Could you restate that again? I'm sorry.

Q. Well, you answered that you were not limiting necessarily the designer as to whether they use stock or custom special order items and I said, my question, however, related as between the 70-meter and the 90-meter, you're not expecting to treat them differently with respect to whether there would be stock or whether there would be special order?

A. If there is more float time in the 70-meter jump construction schedule and the price differential justified going to a special order item that did not affect the completion date, I don't think we would object to a special order item.

Q. Was that your assumption for a six-week period for fabrication, delivery of materials for the 70-meter?

A. Which activity item are you referring to, sir?

Q. Activity '535 to '540.

A. Our basis for allotting more time for that activity was the fact that the critical item we anticipated would be the 90-meter jump taking longer

to construct than the 70 and, therefore, we're placing the emphasis on the construction of the 90-meter jump and allotting more time for the 70. If we had to go to overtime work in a fabrication shop to meet a schedule, we want the time spent on the 90 because that's going to take the long time to erect.

Q. Is that the only basis for allowing two weeks for fabrication and delivery of the 90-meter materials and six weeks for the fabrication and delivery of the 70-meter materials?

A. Yes, sir.

Q. In your budget estimates referred to in your testimony, did you include overtime amounts for fabrication and delivery materials?

A. Our budget estimate for the ski jump is based on the fact that we should be able to build that type of a tower of that height within the \$2.5 million that was originall anticipated.

Q. No special consideration was given for whether overtime was needed to do that or not?

A. No, sir.

Q. Would you expect there would be fewer shop drawings

for the 70-meter tower and in-run structure than for the 90-meter tower and in-run, referring to codes '525-'530, codes '625-'630?

A. The extended shop drawings would depend on the complexity of the design.

Q. But assuming that they would be similar in construction, you would expect fewer shop drawings?

A. Fewer --

Q. That is, in a 110-foot structure than in a 266.

A. There are fewer components. I would assume that there would be fewer drawings. The exact number I could not testify to.

Q. Now, what must a designer do to approve the shop drawings in any of the codes '530 through '830 to '535 to '835?

A. Review of shop drawings, the designer checks the details as provided by the fabricator to ensure that they comply with his design intent.

Q. And the shop drawings would have to be forwarded to the designer from the fabricator?

A. Either they're forwarded directly to the designer or the designer comes to the fabricator and reviews the shop drawings at his plant, depends

upon the time available.

Q. To have the designer and other people going to the -- to the fabricator to check drawings is a more expensive process, is it not, than simply mailing them back and forth?

A. The only time difference is the time spent in mailing. Your extent of the review is usually quicker if you can do it with the person who prepared them.

Q. But it's travel time back and forth?

A. Yes, sir. That can be done in off hours.

Q. Generally charged for, is it not?

A. For travel time, yes.

THE HEARING OFFICER: The Hearing Officer is going to take administrative judicial notice that an individual using commercial transportation can travel from one point to another faster than a first-class letter for the same distance between the same two points in any area of the United States, including walking across town in Midtown Manhattan.

MR. HANNA: The traveler is not charging while being mailed, you might say.

MR. BROOKS: That's not necessarily
so.

THE WITNESS: Depends upon the
salary arrangement of the individual and his
corporation.

MR. BROOKS: That's very good.

BY MR. HANNA:

Q. I take it, however, that there would be -- there would have to be at least some of that sort of traveling around in order to meet time schedules that you've laid out here?

A. I would anticipate some travel to properly coordinate drawings and expedite approvals.

Q. Now, at code '910 to '930, what kind of excavation are you planning, or how much excavation? Excuse me, how much excavation are you planning?

A. We don't know, sir. The foundations haven't been designed yet.

Q. You would anticipate any rock excavation?

A. We'll know after the borings are completed.

Q. What was the basis of your 20-day -- your 20-day projection --

A. It's an assumption that within 20 days, a contractor should be able to provide whatever excavation is required and concrete placement required to install a foundation for a tower.

Q. And is there any basis of that other than your own judgment?

A. No, sir. Until you have design drawings, you

can't define the exact extent of the work required.

THE HEARING OFFICER: Excuse me a moment, Counselor. Mr. Lopez, does that 20 days include time to -- for the concrete to cure and set?

THE WITNESS: It -- no, sir, it does not have to reach full design strength at the time you start the next activity.

THE HEARING OFFICER: How much, to use your phrase, float is there between the termination of the pouring operations and the time before the concrete has to be load bearing?

THE WITNESS: Depending on the loading you're placing on it where we show the next activity being the "tower construct," you can start construction the following morning.

THE HEARING OFFICER: O.K.

THE WITNESS: If you're talking with all forms and starting out in that fashion, if you're talking -- depends upon the weight that you're going to place on the foundation at that point.

THE HEARING OFFICER: All right. You've allowed then in the subsequent activities for the period of time necessary for the concrete to

reach design strength?

A. We -- your design strength is reached within -- if you don't use any additives, within 28 days. Typically, you do not need full design strength except on a slab prior to the time that you set your next material on it and if it's a slab, if you've reshored underneath it, you can continue.

THE HEARING OFFICER: All right,

Mr. Hanna.

BY MR. HANNA:

Q. Would you anticipate that the foundation for the 110-foot tower would be significantly smaller than the tower for the 90 foot -- the 90-meter --

A. It depends upon the intent of the designer and the soil conditions. It could -- it could be smaller. It could be larger, depending on what kind of a footing design he decided to use and whether -- depending also on the amount of reinforcing steel he used.

Q. If the subsoil were essentially the same, the necessity for a larger -- there would be no necessity for a foundation for the 70 as large as that for the 90, is that correct?

A. If the design of the foundation were the same for both, the smaller towers should have a smaller foundation.

Q. What is the basis for your 50-day estimate for constructing the tower, the 90-meter tower -- excuse me, '930-'960?

A. The time duration is a judgment on our part allowing for designer choice in the material that's being used.

Q. Well, assuming it was steel, did you -- did you make some calculations --

A. If it was steel, it should be completed within that time frame. If it's poured concrete, it should be completed within that time frame.

Q. Well, let's take this steel for a moment. How do you -- how do you compute that period?

A. If you want to get into fine details of determining the time duration, I would have to know how many pieces of steel there are, how many connections there are, are they bolted in the field or can we assemble them on the ground and tilt up larger sections. You're looking at an assumption.

Q. Well, did you make it --

A. We're assuming from past experience that we could construct the tower 260-some feet high within 50 work days.

Q. Well, how much or how -- how fast -- I take it back. Do you have any -- did you base that on any productivity figures as to how fast X tons of steel can be erected in a Y period?

A. We haven't computed time.

Q. No, in making your estimate.

A. No, sir, it's based on a judgment that you should be able to put up a tower of that height within 50 working days.

Q. But I'm asking for the basis of that judgment.

A. Experience.

Q. Yeah, but what is -- what is it -- what is the basis for that experience? Have you any calculations with respect to either structural steel or reinforced concrete or prestressed concrete that led you to conclude 50 working days is appropriate?

A. The basis of it is past experience putting up poured concrete towers, structural steel towers, and knowing that within 50 days we should be able to complete that portion of the construction.

Q. Did you do any calculations that led you to that?

A. No, sir, we did not do calculations. We don't know what the materials are yet.

Q. You did no -- you did no calculations for the three -- I take it, the three possible materials that it could be?

A. No, sir, our judgment says that within 50 days, whichever material is selected, we should be able to do it in that time.

Q. Have you ever constructed a ski jump before?

A. Not a ski jump as such, towers similar to it.

Q. If you were going to erect a cross truss type of structure, something similar to a roller coaster, would the 50 days be adjusted up or down?

A. What -- what section, what piece of the structure are you referring to?

Q. The whole structure.

A. The --

Q. I'm just talking about the tower and the inrun.

A. The sloping member.

Q. Just the tower and the inrun.

A. The vertical tower and the inrun?

Q. Right.

A. I believe we have two separate activities in there, 50 days for the vertical tower and 50 days for the sloping member.

Q. All right, call it a hundred days. Would you adjust the time up or down?

A. No, sir, it depends upon again how much fabrication you can do on the ground. If you can preassemble this and lift it with a couple of cranes or one crane in one major piece, you might be able to do it in less time. If you're looking at erection bents to support the steel as you're assembling, the hundred days should be adequate.

Q. Adequate for what?

A. For erecting it in the air.

Q. That cross truss --

A. Conventional piece by piece assembly.

Q. Do you anticipate at all having to construct any scaffolding?

A. To support this structure?

Q. While it's being constructed?

A. During construction?

Q. While it's being constructed.

A. It's possible.

Q. Is that taken into account?

A. Yes, sir.

Q. Where?

A. It would take place during the 50-day duration to construct the tower and the 50 days to erect the ramp.

Q. Well, what is the code '926 to '955?

A. It's a dummy activity.

Q. It's what?

A. What's called a dummy activity.

THE HEARING OFFICER: Counselor, if I may. Mr. Lopez, that's an activity in a design procedure such as this that accounts for computer space but doesn't represent any physical activity on the part of the project, does it?

THE WITNESS: That's right. It's -- it's used to portray the sequence and a limitation.

THE HEARING OFFICER: It provides a terminal node and an initial node where otherwise there would not be any, right?

(Witness nods head.)

MR. HANNA: Well, I was just curious because it seems to take 27 days.

THE HEARING OFFICER: No, it takes zero days.

MR. HANNA: '926 to '955?

THE HEARING OFFICER: No, it takes zero days according to my chart.

MR. HANNA: It seems to take from the 3rd of August to the 30th of August.

THE WITNESS: That's right, because -- no, the early start is the 3rd of August; the early finish is the 3rd of August and it has 19 days and it has 19 days float time because the activity to which it is going to has 19 days float time.

MR. HANNA: I see. I stand corrected.

THE HEARING OFFICER: All right.

BY MR. HANNA:

Q. So on this basis you anticipate that this 70-meter tower and in-run ramp will take about half the time to erect as the 90-meter tower and the 90-meter in-run ramp?

A. That's right.

Q. Now, is there planned that there will be an elevator in the -- in the 110-foot tower with the 70 meter?

A. Considerations to date have not included an elevator in the 70-meter jump.

Q. Now, where in Exhibit 86 is the design and construction of elevator reflected?

A. Design and construction will take place during the design period. The design would take place following the erection of the tower and prior to completion of the project.

Q. Where is that reflected?

A. It's a nonessential item in the basic logic to the project right now.

Q. Nonessential, is it?

A. Nonessential to the sequence in timing.

Q. But where would it come in 761119:86, just not

included at all?

A. It would follow '985 activity, J node '985, and complete prior to activity '1015, which is the punch list.

Q. What do you anticipate the order time is on elevators?

A. On an elevator right now?

Q. Yes.

A. Six months.

Q. Would eight months sound unreasonable?

A. No, sir. The order for the elevator could be placed if the designer had the drawings available, it could be placed at the same time that we're going out for bid with the structural package for the tower.

Q. How long would it take to install the elevator once it was delivered to the site?

A. Sixty to ninety days.

Q. Four months would not be unreasonable?

A. No. If you're using "unreasonable" as the time it might take.

Q. Do you have any estimates on the amount of fill that will be required for the outruns, '915 to '935?

A. Offhand, I don't recall the figure. It's in the application. Can I refer to something?

THE HEARING OFFICER: Yes, you may refer to the application at any time so long as you identify what you're referring to.

THE WITNESS: On Page III-70 of the application for project permit for a 70- and 90-meter ski facility, subparagraph (d) under "Grading: Regrading of the area proposed for the 90- and 70-meter jumps will be required. At least 2,800 cubic yards of net additional fill will be necessary and up to 17,000 cubic yards will be required if earth rather than structure is used to achieve all grade changes other than the tower."

Q. I take it there have been no decisions yet as to whether it will be all fill or whether it will be --

A. No, sir.

Q. Did you make any assumptions as to what it would be in your estimate of 45 working days at --

A. In 45 days we should be able to move 17,000 yards of earth.

Q. What kind of bleachers are you anticipating at '945 to '975 that require 60 days, working days, to erect?

A. They could be permanent, semipermanent.

Q. Well, my question really relates to what is -- what is the complexity of the bleachers that requires ten more working days than constructing the 256-foot tower?

A. Well, for one item, it's an area that we're not sure at this point what it's going to be. Secondly, we're not sure of the material he's going to use and, second or third, when you get into the construction of the bleachers there might be additional support facilities required for them that we're not aware of at this time. When you talk permanent structures, you're still taking foundations and a complete structural package to erect them.

Q. And that is more complex than the -- than, say, the 90 -- the tower for the 90-meter jump?

A. When you get into -- you get into a tower 260 feet high, you start a repetitive process and people become accustomed to their sequence going all the way up and you can pour at a certain rate. When you get into talking the bleachers, you're talking numerous small footings. It's a time-consuming

task and the number of people you can put on the project is limited. If they're precast concrete in that time period we would have to have the material fabricated and delivered to the job.

Q. But if that -- that prefab, that fabrication is not included then in the middle section of Exhibit 761119:86. Is it, for example, included under code '835 to '840?

A. '835 to '840 is miscellaneous support materials which we take to be the time in building the judges' stands and any facilities required for that type of thing separate from the bleachers.

Q. Separate from the bleachers. So you're including in code '945 to '975, fabrication time?

A. Yes. I take that back. We're stating that prior to 9 -- the start of '945, we will have had the shop drawings approved and now we're in the field starting the work. We need delivery of the bleachers sometime within that time span. The Logic Diagram is not detailed to the point where every specific item is spelled out, but rather the major flow of activities that have to take place. The design of the bleachers can take place and the

documents be available for us to bid any time prior to the start of activity '945 allowing sufficient time for fabrication and bid advertising and receipt of bids. If '945-'975 -- I can check dates on those -- that activity is to start the earliest the 10th of November 1977 with the latest start the 21st of April 1978. That means that any time prior to the 10th of November '77, if we went out for bids and received the bids prior to that date and started the work on site not later than the 21st of April 1978, our project would still be on time and meet the final completion date.

Q. But this all relates to fabrication with presumably, you know, you have a float on that and this being code '840, a code '840 in the middle tier of your Exhibit 761119:86 indicates that the fabrication will be taken care of up to '840. By the time you reach code '840 --

A. The details in which the Logic Diagram is prepared is to present the major items that enter into the construction of the facility. We have not identified every step of the process for every specific activity through the total construction of

(Ramon Lopez)

250-A

the project.

Q. No, but what I'm just asking is: Isn't the 60 days that you've allowed at '945 and '975 solely for erection, not for fabrication?

A. There can be fabrication going on at the same time provided the man is finished or the contractor is finished with the work in the field at the end of that 60-day activity.

Q. But that fabrication is taken care of in the 80 days on code '835 to '840?

A. The fabrication, according to the schedule, can take place any time. Fabrication can take place any time prior to the 18th of July, 1978, provided the material is installed at the project site prior to the 18th of July, 1978.

Q. No, I -- we seem to be crossing here. You're talking about dates on Exhibit 85 when they can be done. I'm talking about duration that you've allowed for, the time it takes to complete a particular phase of it.

A. That's right, and we're saying that in 60 days we can construct the bleachers.

Q. You can erect the bleachers, is that right?

A. That's right.

Q. To construct --

A. They might be poured in place bleachers. We have allotted 60 days and said in that time period, in three working -- three months of working time, a contractor should be able to complete all of the bleacher construction required at the facility.

Q. And it would take ten working days longer than to construct the 226-foot tower.

A. That's the time we are allotting them for that work.

Q. I'm not sure I get that answer. I asked if it takes that long to complete that work and you said that's how much you're allotting.

A. That's right.

Q. Are you saying that it may or may not take that long?

A. It could take less; it could take more. We're saying it should not take longer than 60 days.

Q. Your labor chart at Page III-109 of the application --

THE HEARING OFFICER: What page are you referring to, Counsel?

MR. HANNA: III-109.

THE HEARING OFFICER: All right, I'm going to have a Page III -- III-109 --

MR. HANNA: I believe that's already

been marked.

THE HEARING OFFICER: You got an exhibit number for it?

MR. HANNA: I don't happen to have an exhibit number off the top of my head.

A VOICE: Project Sponsor's Number 38.

THE HEARING OFFICER: All right, then let's refer to it as Project Sponsor's, that would be 7611 --

MR. KAFIN: -- 19.

THE HEARING OFFICER: -- 19:38, and at this time if the project sponsor wishes to offer it or Mr. Hanna wishes to offer it, I'll deem it marked in evidence subject to whatever cross-examination is relevant. Any objection?

MR. KAFIN: No objection. We offer it.

THE HEARING OFFICER: It's deemed marked.

MR. HANNA: I would -- well, we can talk about that later. I assume all of these have been marked.

THE HEARING OFFICER: They've been marked for identification.

MR. BROOKS: Well, we offer it in evidence.

THE HEARING OFFICER: Yes. I'm deeming it marked in evidence now.

BY MR. HANNA:

Q. Does this assume that you will not be constructing both towers at the same time?

A. No, sir. You can be constructing them at the same time. The basis for this chart is developed by Gladstone based on information which we provided them concerning the breakout of costs for equipment, labor and materials. They have allocated, based on the time schedule that we gave for the construction.

Q. But you are going to be constructing both towers simultaneously. Would that require that the number of labor -- the amount of labor would have to increase?

A. Not necessarily.

Q. Well, what circumstances would make it --

A. Depending on the material, you might be swinging from one tower to the other on alternate days. If it's concrete, you might pour on a tower one day and the next day that labor crew is pouring on the second tower.

Q. So we would not necessarily increase the amount of labor?

A. You're looking at a theoretical distribution of manpower based on dollar expenditures during a time frame. If you can tell us the exact materials being utilized, we can tell you the manpower, and design, we can tell you the manpower that's required to do it.

Q. I see. So these figures -- these figures would have to be revised once you knew what it was that was being constructed, the materials?

A. When you get down to specifics to detail manpower requirements based on design, yes, they would have to be reexamined.

MR. HANNA: Mr. Hearing Officer, I may have a few more questions. They would not be numerous if I had them. I would suggest maybe we break for lunch now and come back. I would assume that I'd be down to a half a dozen questions if I choose to ask them.

THE HEARING OFFICER: Well, I would prefer if at all possible to complete your examination now, especially if it's not going to take that

much longer. I still have to find out how many other people want to cross-examine Mr. Lopez.

Let me ask now: Are there any more counsel that wish to cross-examine Mr. Lopez assuming there were no further cross-examination by Mr. Hanna at this time?

MR. GLENNON: Yes, Mr. Examiner, there will be a few brief questions from the agency.

MR. GITLEN: And the Department as well.

THE HEARING OFFICER: Mr. Hanna, can you complete now?

MR. HANNA: Well, my question is whether I'm going to ask the questions or not. I'd like to have a little time for thinking about that and rather than thinking about it now, I'd suggest we go out now and think about it during lunch and then return.

THE HEARING OFFICER: All right, let's break now until two o'clock and at two o'clock reconvene.

(Whereupon at 1:15 p.m. a luncheon recess was taken until 2:00 p.m.)